AE Order Number Banner

Application Number: pEG2519236074

Initial

Application

Part 1

SWD-2658

MACK ENERGY CORP [13837]

Received: 06/26/2025

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: _____ **OGRID Number:** _____
Well Name: _____ **API:** _____
Pool: _____ **Pool Code:** _____

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.

_____ Date

_____ Print or Type Name

_____ Phone Number

Deana Weaver
_____ Signature

_____ e-mail Address

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 XX_____Disposal _____Storage
Application qualifies for administrative approval? XX_____Yes _____No

II. OPERATOR: Mack Energy Corporation

ADDRESS: P.O. Box 960 Artesia, NM 88210

CONTACT PARTY: Deana Weaver PHONE: 575-748-1288

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 XX_____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: Deana Weaver TITLE: Regulatory Tech II

SIGNATURE: Deana Weaver DATE: 6/26/2025

E-MAIL ADDRESS: dweaver@mec.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: File Electronically Via OCD Permitting

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.

Side 1

INJECTION WELL DATA SHEET

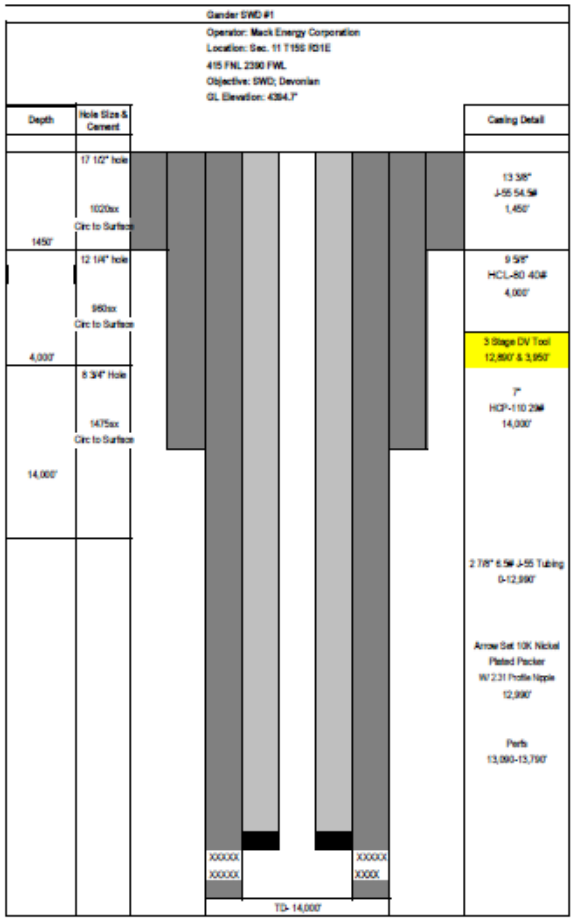
OPERATOR: Mack Energy Corporation

WELL NAME & NUMBER: Gander SWD #1

WELL LOCATION: 415 FNL 2390 FWL | C | 11 | T15S | R31E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17 1/2" Casing Size: 13 3/8"

Cemented with: 1020 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circ

Intermediate Casing

Hole Size: 12 1/4" Casing Size: 9 5/8"

Cemented with: 960 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circ

Production Casing

Hole Size: 8 3/4" Casing Size: 7"

Cemented with: 1475 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circ

Total Depth: 14,000'

Injection Interval

13,090' feet to 13,790'

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 2 7/8" Lining Material: EUE IPC

Type of Packer: Arrow Set 10K Nickel Plated Packer w/ 2.31 Profile Nipple

Packer Setting Depth: 12,990'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? XX Yes _____ No

   If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: Devonian

3. Name of Field or Pool (if applicable): SWD; Devonian

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. N/A

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Miss- 12,025', L. Miss- 12,450', Woodford- 13,010'
   Montoya- 13,790'

Mack Energy Corporation
Gander SWD #1- C-108

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.

Operator: Mack Energy Corporation (OGRID # 013837)
Lease/Well Name & Number: Gander SWD #1
Legal Location: 415 FNL & 2390 FWL – Unit C – Section 11 T15S R31E – Chaves County
Coordinates: 33.0365826, -103.7931304 (NAD 83)

(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.

Casing String	Hole Size (in)	Casing Size (in)	Casing Depth (ft)	Sacks Cmt (sx)	Top of Cmt (ft)	Method Determined
Surface	17 1/2	13 3/8	1450’	1020	0	Circulation
Intermediate	12 1/4	9 5/8	4,000’	960	0	Circulation
Production	8 3/4	7	14,000’	1,475sx	0	Circulation

DV Tool: @ 12,890’ & 3,950’ on Production Casing string.
A wellbore diagram is included in ***Attachment 1***.

(3) A description of the tubing to be used including its size, lining material and setting depth.
2 7/8” 6.5 J-55 EUE IPC @ 12,990’

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.
Arrow Set 10K Nickel Plated Packer w/ 2.31 R Profile Nipple @ 12,990’

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.
Injection Formation Name- Devonian
Pool Name- SWD; Devonian
Pool Code- 96101

(2) The injection interval and whether it is perforated or open-hole.
Perforated injection between 13,090-13,790’

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

(4) Give the depths of any other perforated intervals and details on the sacks of cement or bridge plugs used to seal off such perforations.
None

Mack Energy Corporation
Gander SWD #1- C-108

(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.

- **Overlying**
  - Rustler (1390')
  - Top Salt (1470')
  - Base Salt (2175')
  - Yates (2405')
  - Seven Rivers (2650')
  - Queen (3200')
  - Grayburg (3620')
  - San Andres (3960')
  - Glorieta (5470')
  - Tubb (6775')
  - Abo (7540')
  - Wolfcamp (8840')
  - Cisco (9625')
  - Atoka (11,325')
  - Miss (12,025')
  - L. Miss (12,450')
  - Woodford (13,010')
- **Underlying**
  - Devonian (13,090')
  - Montoya (13,790')

V. AOR Maps

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.

The following figures are included in **Attachment 2**:

- 2-Mile Well Map
- 1-Mile Well Map
- 1-Mile AOR Well List
- 2-Mile Lease Map
- 1-Mile Surface Ownership Map
- 1-Mile Mineral Ownership Map

VI. AOR List

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 type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

Details of the wells within the 1-mile AOR are included in **Attachment 2**.

VII. Operational Information

Attach data on the proposed operation, including:

(1) Proposed average and maximum daily rate and volume of fluids to be injected;

Maximum: 20,000 bwpd
Average: 15,000 bwpd

(2) **Whether the system is open or closed;**

The system is closed.

Mack Energy Corporation
Gander SWD #1- C-108

(3) Proposed average and maximum injection pressure;
Maximum: 2,618 psi
Average: 1,000 psi

(4) Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water;
It is anticipated that produced water from San Andres production wells in the area will be injected into the proposed SWD. Therefore, water analyses from this formation was obtained and are included in **Attachment 3**.

(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.)
N/A- There is not a Devonian well in the area to get a sample. We can provide the sample during completion. We can perf and swab the well to provide a sample.

VIII. Geologic Description

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.

The Gander SWD #1 injected fluid will be contained within the Devonian Formation. Immediately above the Devonian, the Woodford Shale is low permeability and the Mississippian Lime Formation is low porosity and low permeability carbonate. The Woodford and Mississippian Lime Formations, which are combined 1065' thick, will be the upper seal and contain the Devonian injected fluid. Below the Devonian Formation is 100' of low porosity and low permeability carbonate in the Montoya Formation. The top 100' of the Montoya will be the bottom seal and contain the Devonian injected fluid.

- Lithologic Detail- Dolomite
- Geological Name- Devonian
- Thickness- 700'
- TD- 14,000'
- Injection Depth- 13,090'- 13,790' perforated completion

A Seismic Risk Assessment is included in **Attachment 4.**

Mack Energy Corporation
Gander SWD #1- C-108

IX. Proposed Stimulation Program

Describe the proposed stimulation program, if any.
Treated with 10,000 gallons 15% acid.

X. Logging and Test Data

Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
Logs will be run and submitted to the Division once the well is completed.

XI. Groundwater Wells

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.
Based on data obtained from the New Mexico Office of the State Engineer (OSE), a total of 4 groundwater wells are located within 1 mile of the proposed SWD location.
Attachment 5 includes a 1-Mile Water well Map and Water Sample will be forwarded.

XII. No Hydrologic Connection Statement

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.
A signed affirmative statement is included in **Attachment 6.**

XIII. Proof of Notice

Applicants must complete the "Proof of Notice" section on the reverse side of this form. 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.
A copy of the application was mailed to the Affected Persons, including the OCD District Office, surface owner, leasehold operators within the AOR and BLM/SLO if they own minerals within the AOR.
Attachment 7 includes a list and letters of the Affected Persons receiving notice of the application and the associated certified mailing receipts.

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.
A Public Notice was published in the Roswell Daily Record, a newspaper of general circulation in the area, and the associated affidavit is included in **Attachment 7.**

Attachment 1

C-102

Submit Electronically
Via OCD Permitting

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

Revised July 9, 2024

Submittal Type: ☑ Initial Submittal ☐ Amended Report ☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name
	96101	SWD; Devonian

Property Code	Property Name	Well Number
	GANDER SWD	1

OGRID No.	Operator Name	Ground Level Elevation
13837	MACK ENERGY CORPORATION	4394.7

Surface Owner: ☐State ☑Fee ☐Tribal ☐Federal | Mineral Owner: ☐State ☐Fee ☐Tribal ☑Federal

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
C	11	15 S	31 E		415 NORTH	2390 WEST	33.0365826°N	103.7931304°W	CHAVES

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
C	11	15 S	31 E		415 NORTH	2390 WEST	33.0365826°N	103.7931304°W	CHAVES

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
40	Infill	N/A	N	N/A

Order Numbers. | Well setbacks are under Common Ownership: ☑Yes ☐No

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County

Unitized Area or Area of Uniform Interest	Spacing Unit Type ☐Horizontal ☐Vertical	Ground Floor Elevation:

OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest run leased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order here to fore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Deana Weaver 4/28/2025

Signature Date

Deana Weaver

Printed Name

dweaver@mec.com

Email Address

SURVEYOR CERTIFICATIONS

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.

FILIMON F. JARAMILLO NEW MEXICO 12797 REGISTERED PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor

FILIMON F. JARAMILLO

CertificateNumber: PLS 12797

Dateof Survey: APRIL 18, 2025

SURVEY NO. 10414

Note: 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.

ACREAGE DEDICATION PLATS

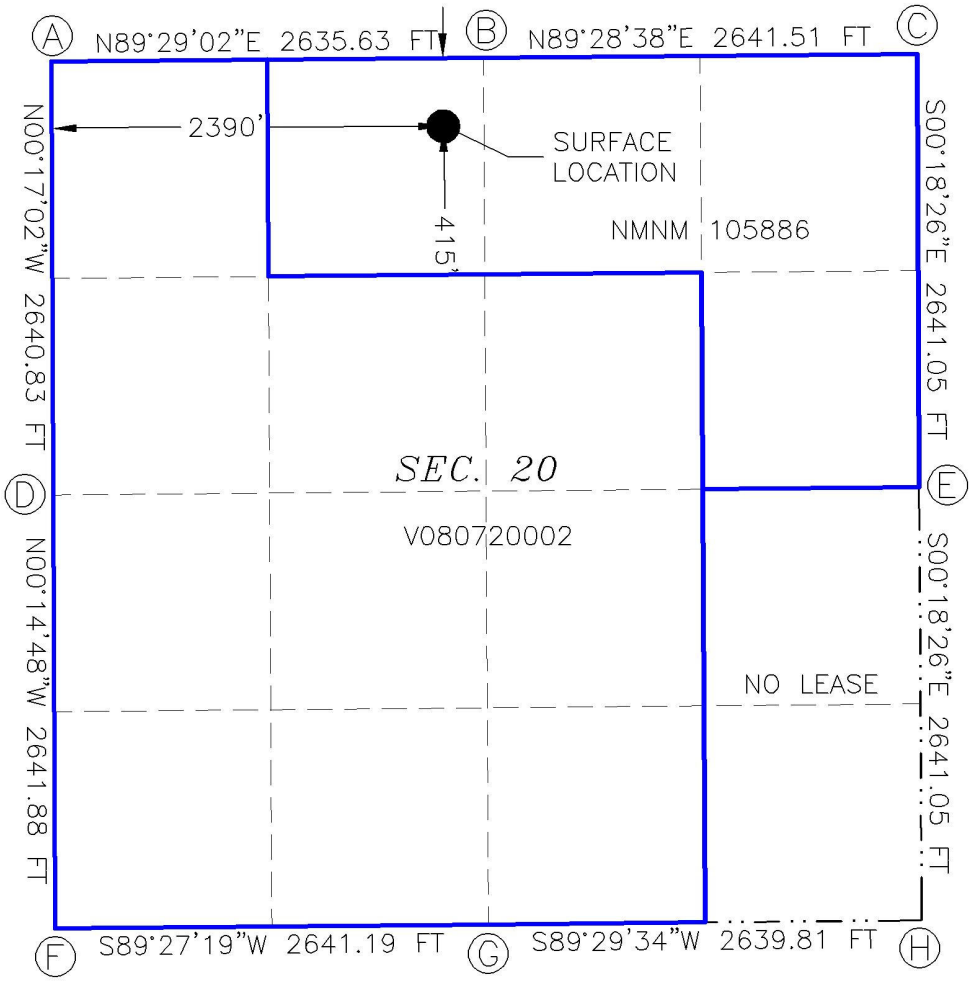
This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.

GANDER SWD 1
EL. = 4394.7

GEODETIC COORDINATES
NAD 83 NMSP EAST
SURFACE LOCATION
415' FNL, 2390' FWL
N.=741271.66
E.=706883.66
LAT.=33.0365826°N
LONG.=103.7931304°W

BOTTOM OF HOLE
415' FNL, 2390' FWL
N.=741271.66
E.=706883.66
LAT.=33.0365826°N
LONG.=103.7931304°W

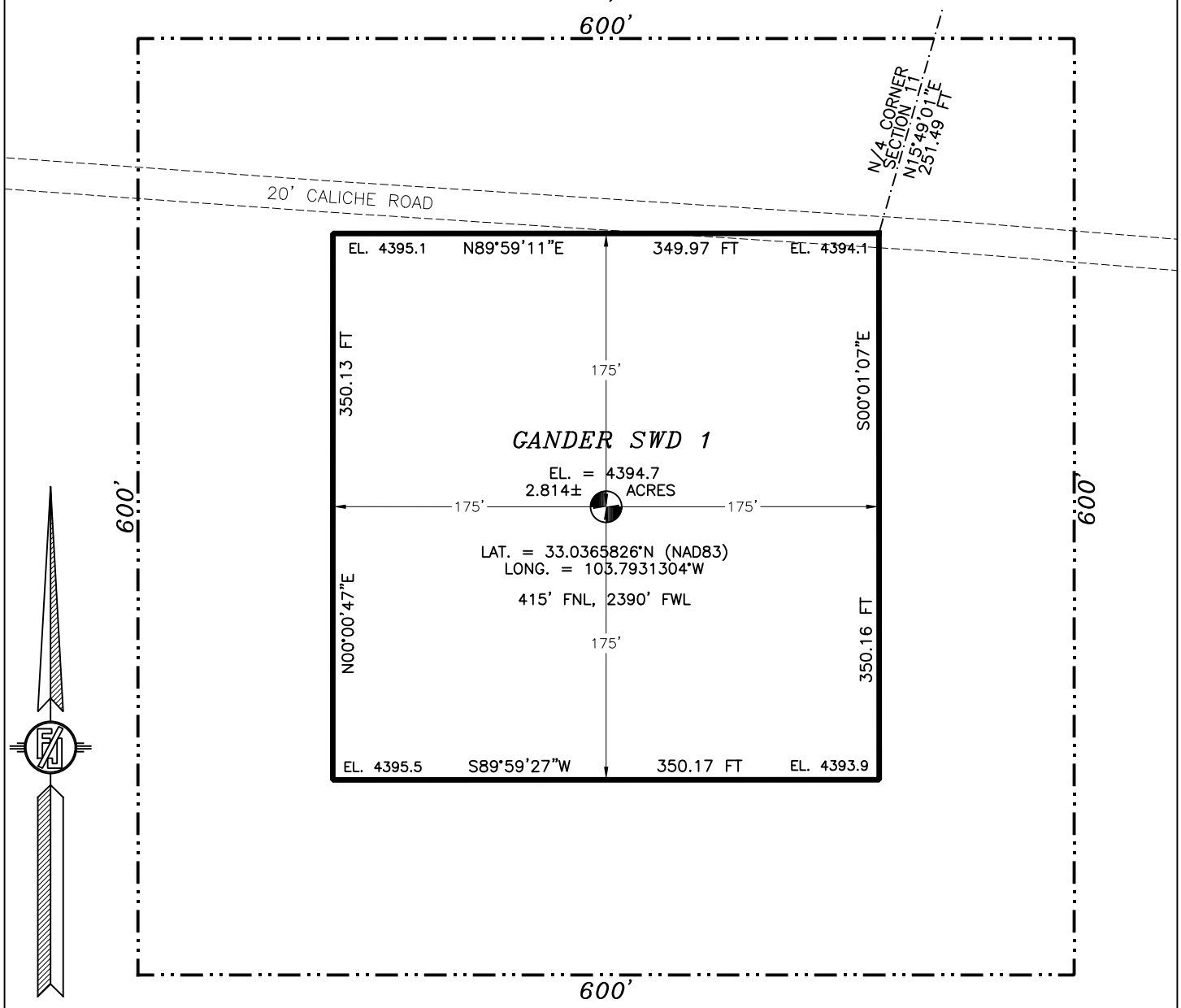


CORNER COORDINATES TABLE
NAD 83 NMSP EAST

A	N.=741664.96	E.=704492.22
B	N.=741688.69	E.=707127.06
C	N.=741712.79	E.=709767.77
D	N.=739024.86	E.=704505.31
E	N.=739072.48	E.=709781.92
F	N.=736383.69	E.=704516.67
G	N.=736408.79	E.=707157.06
H	N.=736432.16	E.=709796.08

LEGEND
SECTION LINE
QUARTER LINE
LEASE LINE
WELL PATH

GANDER SWD 1
MACK ENERGY CORPORATION
IN THE NE/4 NE/4 NW/4 OF
SECTION 11, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
APRIL 18, 2025



010 50 100 200
SCALE 1" = 100'

SEE NEXT SHEET (2-7) FOR DESCRIPTION

GENERAL NOTES

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A WELL PAD

2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83), COORDINATES ARE NAD 83, ELEVATIONS ARE NAVD 88

DRIVING DIRECTIONS: FROM THE INTERSECTION OF ST. HWY. 249 & ST. HWY. 172 (HAGERMAN CUTOFF), GO NORTH ON ST. HWY. 172 APPROX. 0.9 MILES, TURN RIGHT ON CALICHE ROAD, TURN LEFT AFTER CATTLE GUARD AND GO NORTH APPROX. 0.9 MILES, TURN RIGHT AND GO EAST APPROX. 0.45 MILES TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 25 DAY OF APRIL 2025

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

SHEET: 1-7

SURVEY NO. 10414

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

GANDER SWD 1
MACK ENERGY CORPORATION
IN THE NE/4 NE/4 NW/4 OF
SECTION 11, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
APRIL 18, 2025

DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN FEE LAND IN THE NE/4 NE/4 NW/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M., CHAVES COUNTY, NEW MEXICO.

BEGINNING AT THE NORTHEAST CORNER OF THE PARCEL, WHENCE THE NORTH QUARTER CORNER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N15°49'01"E, A DISTANCE OF 251.49 FEET;
THENCE S00°01'07"E A DISTANCE OF 350.16 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE S89°59'27"W A DISTANCE OF 350.17 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;
THENCE N00°00'47"E A DISTANCE OF 350.13 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE N89°59'11"E A DISTANCE OF 349.97 FEET TO THE NORTHEAST CORNER OF THE PARCEL, THE POINT OF BEGINNING;
CONTAINING 2.814 ACRES MORE OR LESS.

GENERAL NOTES

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A WELL PAD

2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83), COORDINATES ARE NAD 83, ELEVATIONS ARE NAVD 88

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 25 DAY OF APRIL 2025

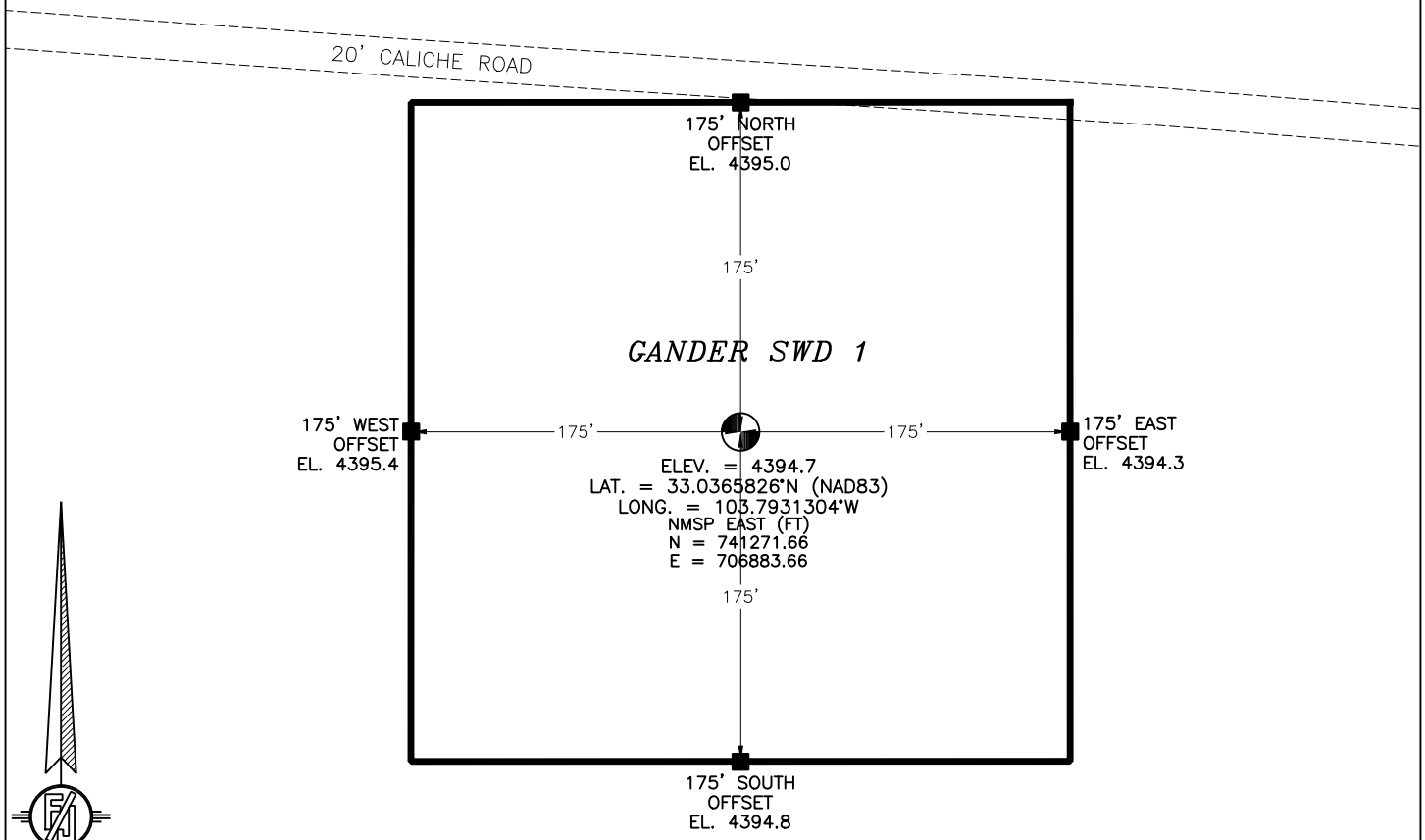
FILIMON F. JARAMILLO NEW MEXICO 12797 REGISTERED PROFESSIONAL SURVEYOR

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

GANDER SWD 1
MACK ENERGY CORPORATION
IN THE NE/4 NE/4 NW/4 OF
SECTION 11, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
APRIL 18, 2025

SITE MAP



I, FILIMON F. JARAMILLO, NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO PLS# 17986

FILIMON F. JARAMILLO NEW MEXICO 17986 REGISTERED PROFESSIONAL SURVEYOR

010 50 100 200
SCALE 1" = 100'

SHEET: 3 OF 5

SURVEY NO. 10414

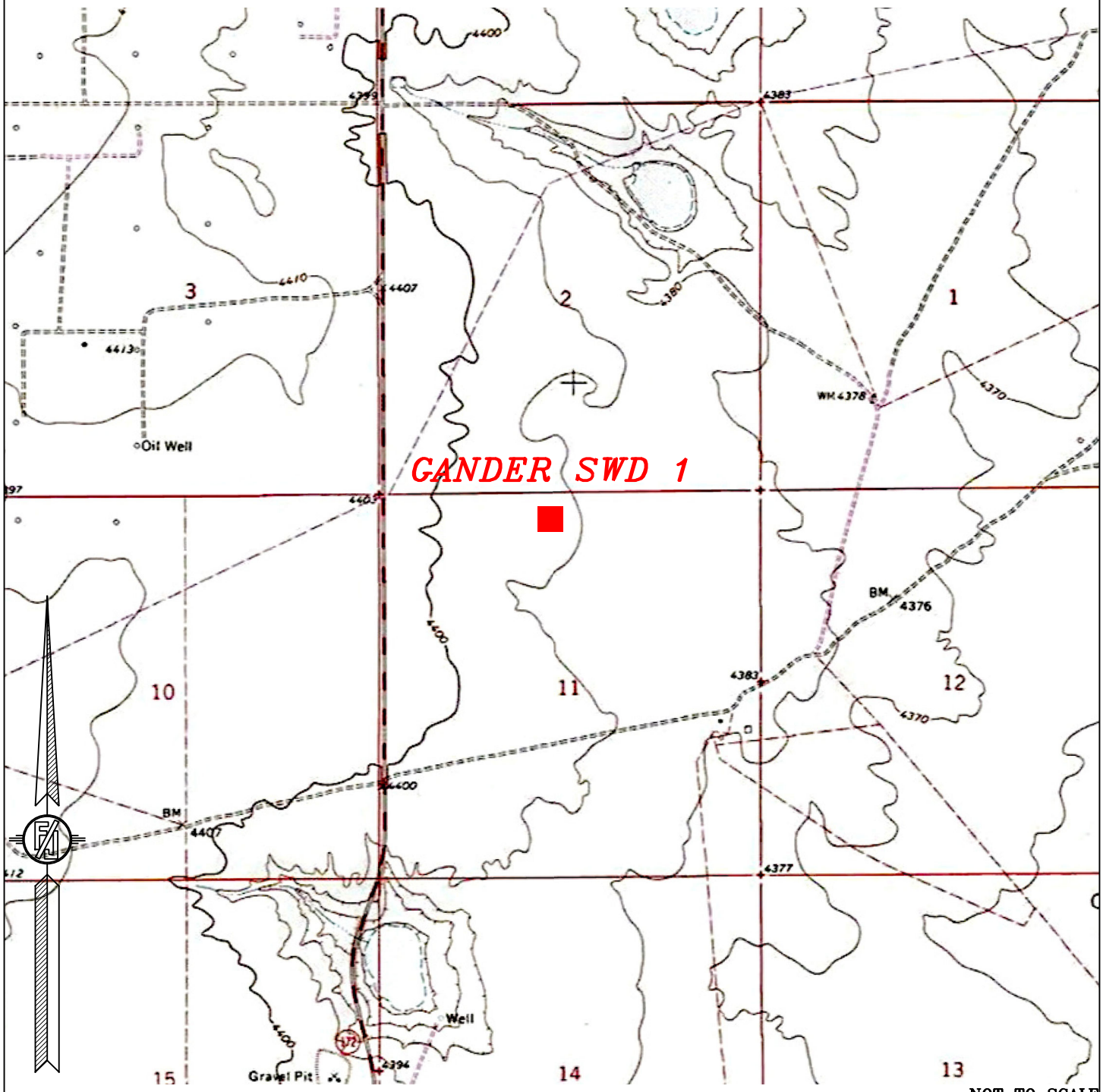
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

GANDER SWD 1

MACK ENERGY CORPORATION

IN THE NE/4 NE/4 NW/4 OF
SECTION 11, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
APRIL 18, 2025

LOCATION VERIFICATION MAP



NOT TO SCALE

SHEET: 4-7 SURVEY NO. 10414

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

GANDER SWD 1
MACK ENERGY CORPORATION
IN THE NE/4 NE/4 NW/4 OF
SECTION 11, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
APRIL 18, 2025

AERIAL ACCESS ROUTE MAP

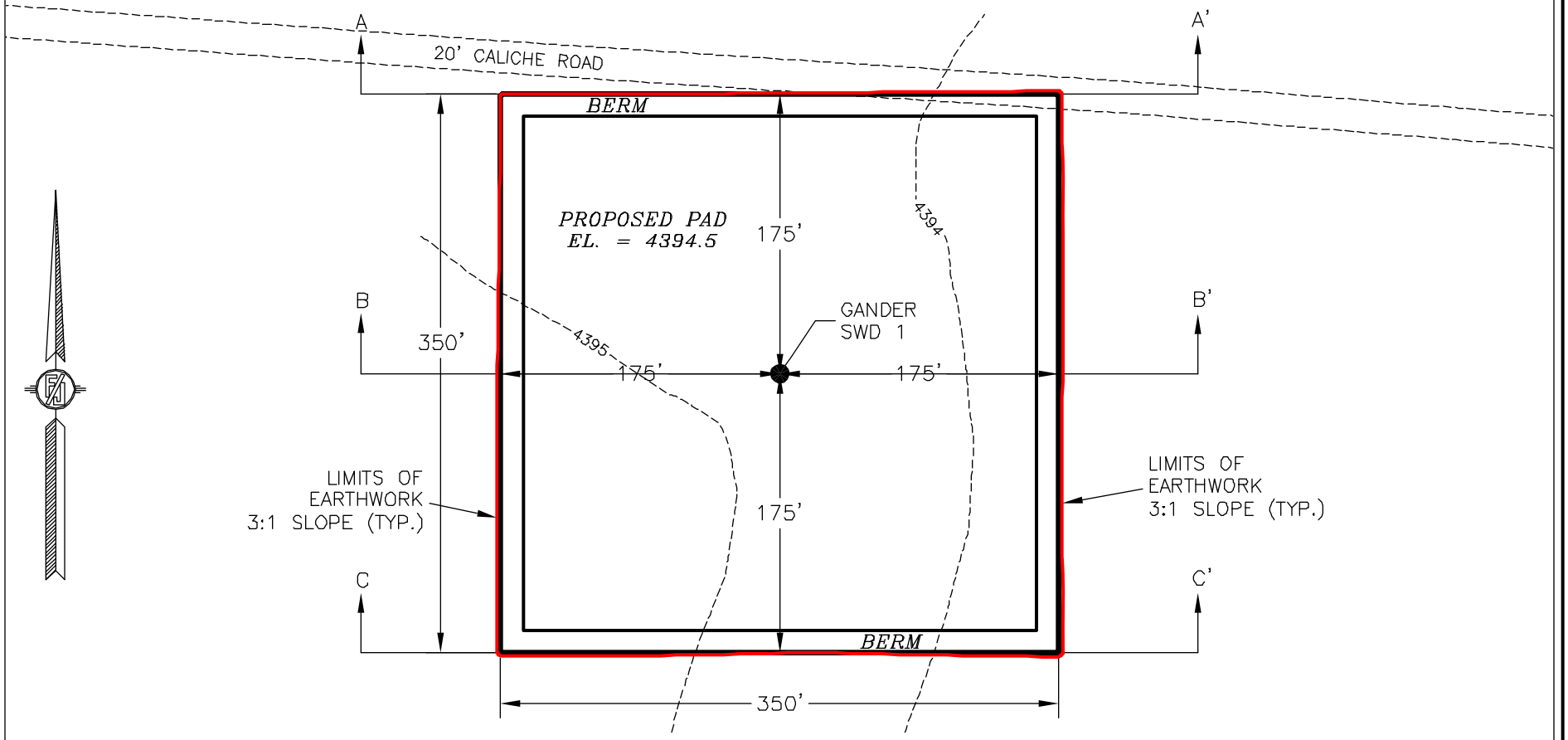
NOT TO SCALE
AERIAL PHOTO: GOOGLE EARTH

DRIVING DIRECTIONS: FROM THE INTERSECTION OF ST. HWY. 249 & ST. HWY. 172 (HAGERMAN CUTOFF), GO NORTH ON ST. HWY. 172 APPROX. 0.9 MILES, TURN RIGHT ON CALICHE ROAD, TURN LEFT AFTER CATTLE GUARD AND GO NORTH APPROX. 0.9 MILES, TURN RIGHT AND GO EAST APPROX. 0.45 MILES TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

SHEET: 5-7 SURVEY NO. 10414

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

PLAN VIEW



I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, NMPS 12797

FILIMON F. JARAMILLO 12797 REGISTERED PROFESSIONAL SURVEYOR

MACK ENERGY CORPORATION
PAD ELEVATIONS AND CROSS SECTIONS
FOR GANDER SWD 1
SECTION 11, TOWNSHIP 15 SOUTH,
RANGE 31 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

APRIL 18, 2025

010 50 100 200
SCALE 1" = 100'

CUT	FILL	NET
745 CU. YD	1677 CU. YD	932 CU. YD (FILL)

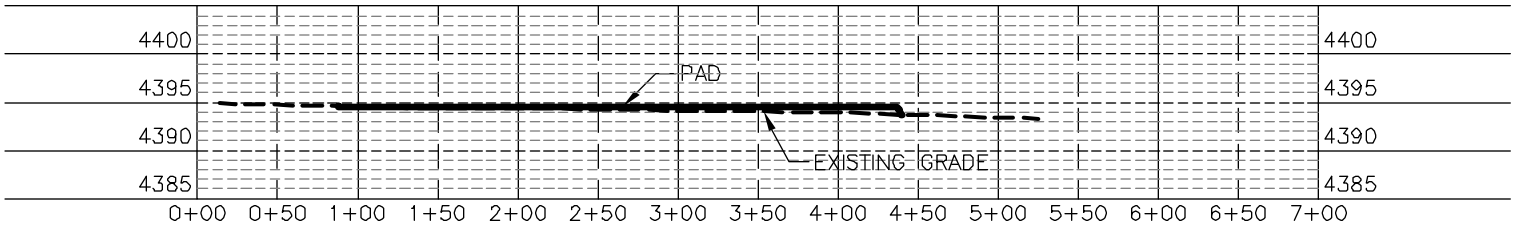
EARTHWORK QUANTITIES ARE ESTIMATED

JARAMILLO SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 *CARLSBAD, NEW MEXICO*

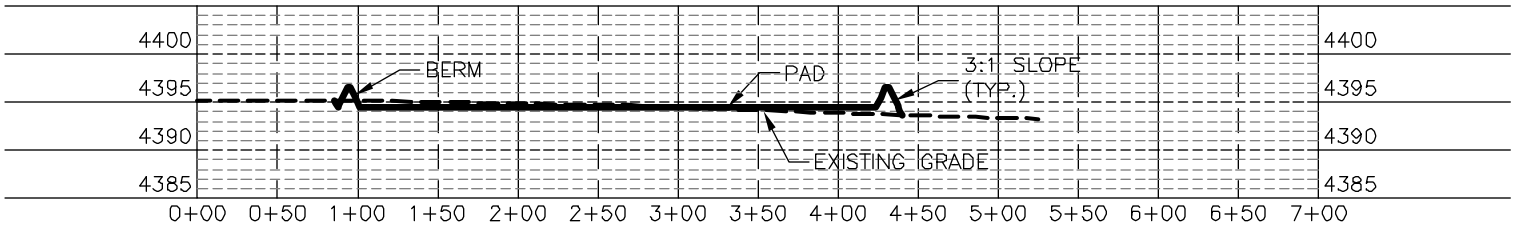
SHEET 6-7
SURVEY NO. 10414

CROSS-SECTIONS

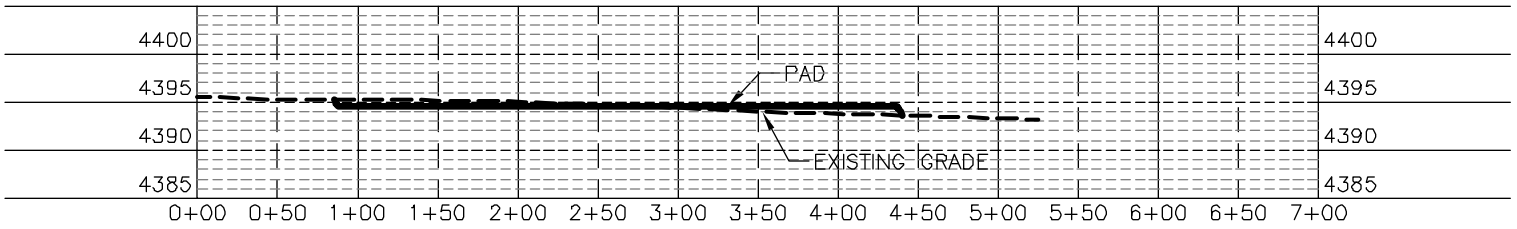
SECTION A-A'



SECTION B-B'



SECTION C-C'



I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, NMPS 12797

FILIMON F. JARAMILLO 12797 REGISTERED PROFESSIONAL SURVEYOR

MACK ENERGY CORPORATION
PAD ELEVATIONS AND CROSS SECTIONS
FOR GANDER SWD 1
SECTION 11, TOWNSHIP 15 SOUTH,
RANGE 31 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

APRIL 18, 2025

0 12 60 120 240
SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
745 CU. YD	1677 CU. YD	932 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

JARAMILLO SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 *CARLSBAD, NEW MEXICO*

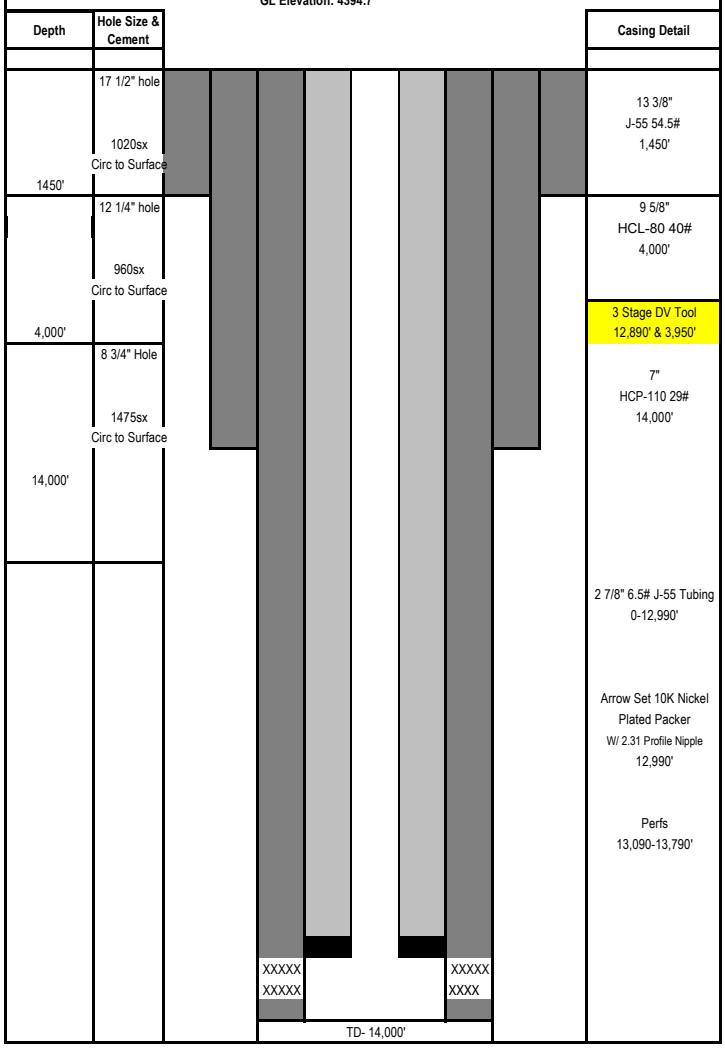
SHEET 7-7
SURVEY NO. 10414

Gander SWD #1
415 FNL 2390 FWL
Sec. 11 T15S R31E
Formation Tops

Rustler	1,390’
Top Salt	1,470’
Base Salt	2,175’
Yates	2,405’
Seven Rivers	2,650’
Queen	3,200’
Grayburg	3,620’
San Andres	3,960’
Glorieta	5,470’
Tubb	6,775’
Abo	7,540’
Wolfcamp	8,840’
Cisco	9,625’
Atoka	11,325’
Miss	12,025’
L. Miss	12,450’
Woodford	13,010’
Devonian	13,090’
Montoya	13,790’

Gander SWD #1

Operator: Mack Energy Corporation
Location: Sec. 11 T15S R31E
415 FNL 2390 FWL
Objective: SWD; Devonian
GL Elevation: 4394.7'



Attachment 7

Legal Notice

Mack Energy Corporation, Post Office Box 960, Artesia, NM 88211-0960, has filed an Application with the New Mexico Oil Conservation Division seeking authorization to inject produced water into the Gander SWD #1 415 FNL 2390 FWL of Section 11, T15S, R31E, NMPM, Chaves County, New Mexico. The water will be injected into the Devonian at a disposal depth of 13,090-13,790' (Perforated). Water will be injected at a maximum surface pressure of 2,618# and a maximum injection rate of 15,000-20,000 BWPD. Any interest party with questions or comments may contact Deana Weaver at Mack Energy Corporation, Post Office Box 960, Artesia, NM 88211-0960 or call 575-748-1288. Objections to this application or requests for hearing must be filed with the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within fifteen days of the date of publication of this notice.

Legal Notice:

Publish June 27th, 2025

Legal Notice

Mack Energy Corporation, Post Office Box 960, Artesia, NM 88211-0960, has filed an Application with the New Mexico Oil Conservation Division seeking authorization to inject produced water into the Gander SWD #1 415 FNL 2390 FWL of Section 11, T15S, R31E, NMPM, Chaves County, New Mexico. The water will be injected into the Devonian at a disposal depth of 13,090-13,790' (Perforated). Water will be injected at a maximum surface pressure of 2,618# and a maximum injection rate of 15,000-20,000 BWPD. Any interest party with questions or comments may contact Deana Weaver at Mack Energy Corporation, Post Office Box 960, Artesia, NM 88211-0960 or call 575-748-1288. Objections to this application or requests for hearing must be filed with the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within fifteen days of the date of publication of this notice.

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

March 23, 2022

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

RE: Mack Energy Corporation & Chase Affiliates

Dear Mr. McClure:

Mack Energy Corporation is a Chase Family owned entity. The following Chase individuals or companies are all affiliates of Mack Energy Corporation and usually own an interest in wells drilled and/or operated by Mack Energy Corporation.

- Mack C. Chase Trust
- Robert C. Chase or RDC Minerals LLC
- Richard L. Chase or Ventana Minerals LLC
- Gerene Dianne Chase Ferguson or DiaKan Minerals LLC
- Broken Arrow Royalties LLC
- Chase Oil Corporation
- Sendero Energy LLC
- Katz Resources LLC
- M Squared Energy LLC

All of these family members and companies all office in the same building so notifications can be hand delivered; therefore we request that the certified mail process be waived when these parties are involved.

If you have any questions or need additional information please do not hesitate to contact me. Your assistance is greatly appreciated.

Sincerely,
Mack Energy Corporation

Staci Sanders
Land Manager

/ss

Re: Application of Mack Energy Corporation for administrative approval for Central Tank Battery and Off Lease Measurement of oil and gas production at a CTB Facility located in Section 28, Township 15S Range 29E, NMPM, Chaves County, New Mexico.

List of Affected Parties

Sendero Energy LLC

Katz Resources LLC

M Squared Energy LLC

Chase Oil Corp

Robert C Chase

Broken Arrow Royalties LLC

Ventana Minerals LLC

DiaKan Minerals LLC

Bureau of Land Management

Statement of Affected Person Notification
C-108
Gander SWD #1
Mack Energy Corporation
Proposed Disposal Well

Name	Address		City	State	Zip	Certified Mail Id
New Mexico State Land Office	310 Old Santa Fe Trail		Santa Fe	NM	87501	9589 0710 5270 0130 1882 48
McCright & Associates, LLC	306 W. Wall St. Suite 1000		Midland	TX	79701	9589 0710 5270 0130 1882 55
Chevron USA Inc	6301 Deauville Blvd		Midland	TX	79706	9589 0710 5270 0130 1882 62
Chase Oil	PO Box 1767		Artesia	NM	88211-1767	
ConocoPhillips Company	600 W. Illinois Ave		Midland	TX	79701	9589 0710 5270 0130 1882 79
Coterra Energy Operating Co.	6001 Deauville Blvd	Suite 300N	Midland	TX	79706	9589 0710 5270 0130 1882 86
Bam Permian Operating LLC	4416 Briarwood Ave	Ste 100 PMB 53	Midland	TX	79707	9589 0710 5270 0130 1882 93
COG Operating LLC	600 W. Illinois Ave		Midland	TX.	79701	9589 0710 5270 0130 1883 09
Magnum Hunter Production Inc	6001 Deauville Blvd	Suite 300 N	Midland	TX	79706	9589 0710 5270 0130 1883 16
Kevin O Butler & Assco Inc	PO Box 1171		Midland	TX	79702	9589 0710 5270 0130 1883 23
KerrMcGee	P.O. Box 1330		Houston	TX	77251	9589 0710 5270 0130 1883 30
Union Oil Co of California	PO Box 2100		Houston	TX	77210	9589 0710 5270 0130 1883 47
801, LLC	PO Box 900		Artesia	NM	88211-0900	9589 0710 5270 0130 1883 54
Medlin Ranches, Inc	P.O. Box 50		Maljamar	NM	88264	9589 0710 5270 0130 1886 06
Harvard Petroleum Company, LLC	P.O. Box 936		Roswell	NM	88202	9589 0710 5270 0130 1886 13
Team Operating, LLC	P.O. Box 835		Pinehurst	TX	77362	9589 0710 5270 0130 1886 20
Bureau Of Land Management	2909 W. 2nd Street		Roswell	NM	88201	9589 0710 5270 0130 1887 43

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1883 23
Return Receipt Requested

Kevin O Butler & Assoc. Inc
P.O. Box 1171
Midland, TX 79702

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

The letter will serve as a notice that Mack Energy Corporation has requested administrative approval from the NMOCD to drill this well as a water disposal. If you have any objections, you must notify the Oil Conservation Division in Santa Fe in writing at 1220 South St. Francis Drive, Santa Fe, NM 87505 within fifteen (15) days of receiving this letter.

Sincerely,

Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1883 30
Return Receipt Requested

Kerr McGee
P.O. Box 1330
Houston, TX 77251

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

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Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1883 47
Return Receipt Requested

Union Oil Co of California
P.O. Box 2100
Houston, TX 77210

To all Interest Owners:

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Regulatory Technician II

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MACK Energy Corporation

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Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1883 54
Return Receipt Requested

801, LLC
P.O. Box 900
Artesia, NM 88211-0900

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

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Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1886 06
Return Receipt Requested

Medlin Ranches, Inc
P.O. Box 50
Maljamar, NM 88264

To all Interest Owners:

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Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1886 13
Return Receipt Requested

Harvard Petroleum Company, LLC
P.O. Box 936
Roswell, NM 88202

To all Interest Owners:

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Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
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Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1886 20
Return Receipt Requested

Team Operating, LLC
P.O. Box 835
Pinehurst, TX 77362

To all Interest Owners:

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Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1887 43
Return Receipt Requested

Bureau of Land Management
2909 W. Second Street
Roswell, NM 88201

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

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Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 746-9539

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1882 48
Return Receipt Requested

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

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

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Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

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MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 746-9539

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1882 55
Return Receipt Requested

McCright & Associates, LLC
306 W. Wall St. Suite 1000
Midland, TX 79701

To all Interest Owners:

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Sincerely,

Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1882 62
Return Receipt Requested

Chevron USA Inc
6301 Deauville Blvd.
Midland, TX 79706

To all Interest Owners:

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Sincerely,

Mack Energy Corporation

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1882 79
Return Receipt Requested

ConocoPhillips Company
600 W. Illinois Ave
Midland, TX 79701

To all Interest Owners:

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Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
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Via Certified Mail 9589 0710 5270 0130 1882 86
Return Receipt Requested

Coterra Energy Operating Co.
6001 Deauville Blvd. Suite 300N
Midland, TX 79706

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

The letter will serve as a notice that Mack Energy Corporation has requested administrative approval from the NMOCD to drill this well as a water disposal. If you have any objections, you must notify the Oil Conservation Division in Santa Fe in writing at 1220 South St. Francis Drive, Santa Fe, NM 87505 within fifteen (15) days of receiving this letter.

Sincerely,

Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1882 93
Return Receipt Requested

Bam Permian Operating LLC
4416 Briarwood Ave.
Ste. 100 PMB 53
Midland, TX 79707

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

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Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1883 09
Return Receipt Requested

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

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

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Sincerely,

Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 748-7374

June 26, 2025

Via Certified Mail 9589 0710 5270 0130 1883 16
Return Receipt Requested

Magnum Hunter Production Inc
6001 Deauville Blvd
Suite 300 N
Midland, TX 79706

To all Interest Owners:

Enclosed for you review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 13,090-13,790'. The Gander SWD #1 located 415 FNL & 2390 FWL, Sec. 11 T15S R31E, Chaves County.

The letter will serve as a notice that Mack Energy Corporation has requested administrative approval from the NMOCD to drill this well as a water disposal. If you have any objections, you must notify the Oil Conservation Division in Santa Fe in writing at 1220 South St. Francis Drive, Santa Fe, NM 87505 within fifteen (15) days of receiving this letter.

Sincerely,

Mack Energy Corporation

Deana Weaver

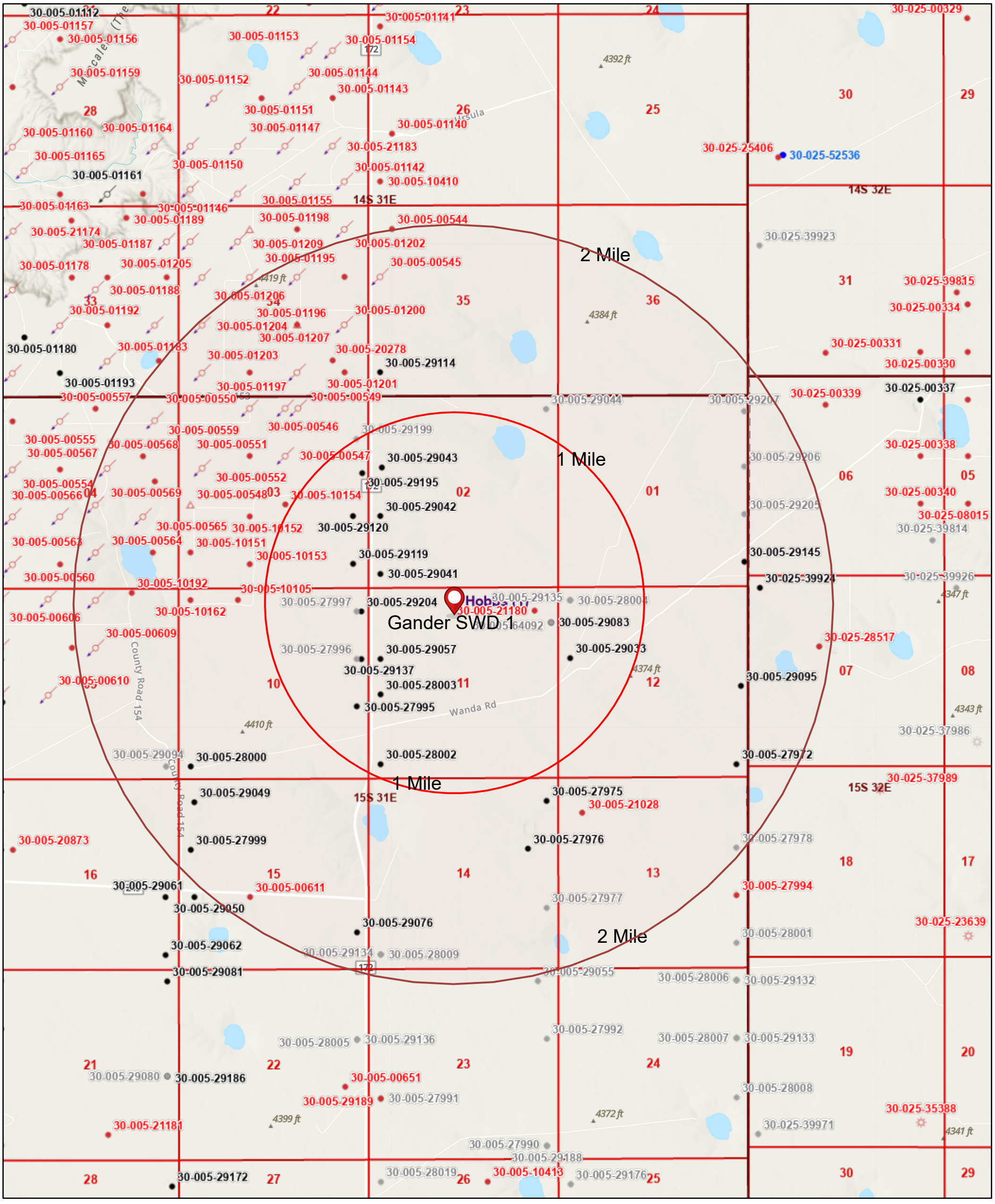
Deana Weaver
Regulatory Technician II

DW/

Attachments

Attachment 2

2 Mile Well Map



4/28/2025, 2:21:53 PM

Override 1

Wells - Large Scale

Gas, Cancelled

Gas, Plugged

Injection, Active

Injection, Plugged

Oil, Active

Oil, Cancelled

Oil, New

Oil, Plugged

Salt Water Injection, Plugged

OCD Districts

PLSS First Division

PLSS Townships

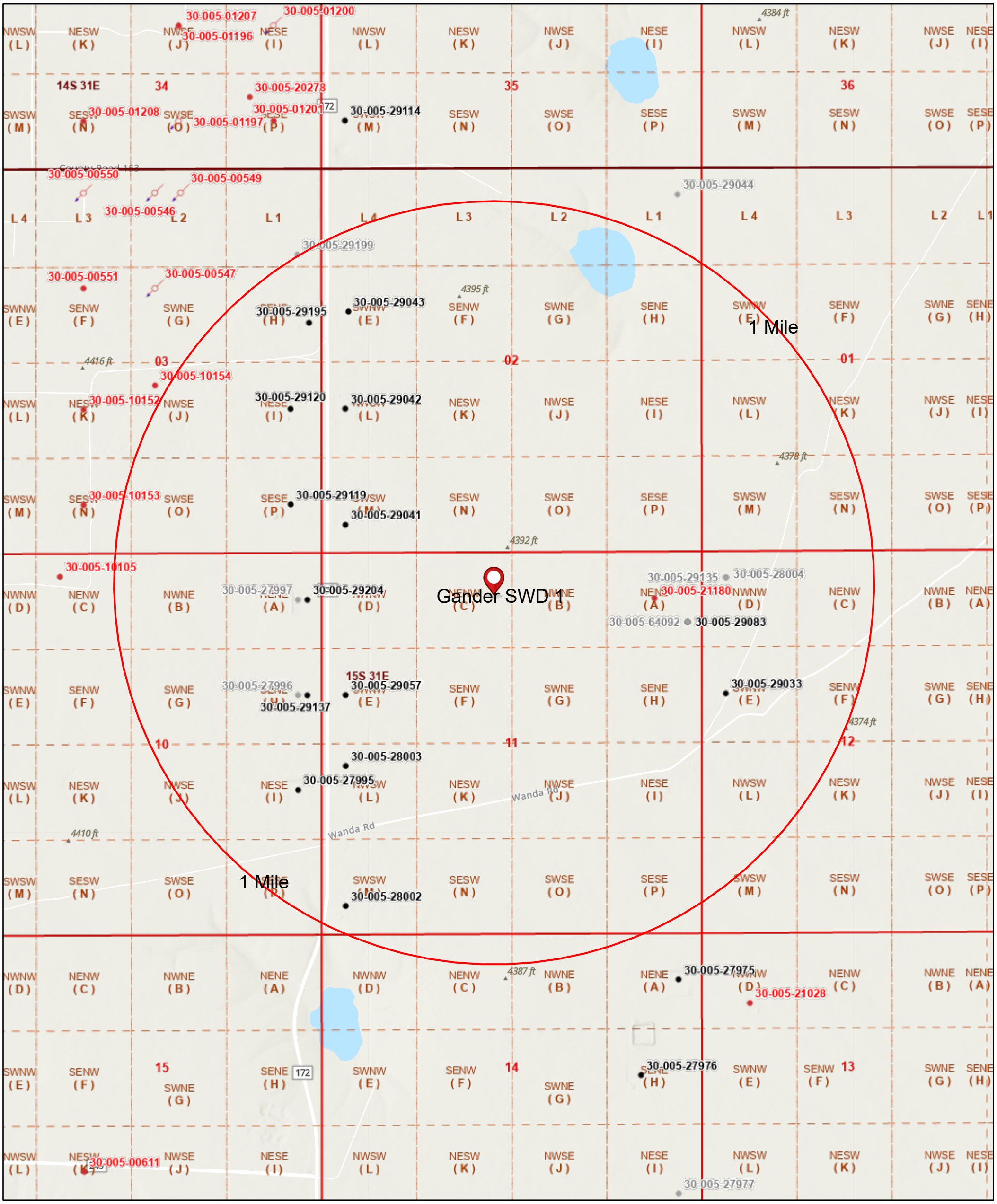
1:36,112

0 0.35 0.7 1.4 mi

0 0.5 1 2 km

New Mexico Oil Conservation Division

1 Mile Well Map



4/28/2025, 2:24:00 PM

Wells - Large Scale

- Injection, Plugged
- Oil, Active
- Oil, Cancelled
- Oil, Plugged
- Salt Water Injection, Plugged
- PLSS Second Division
- PLSS First Division
- PLSS Townships

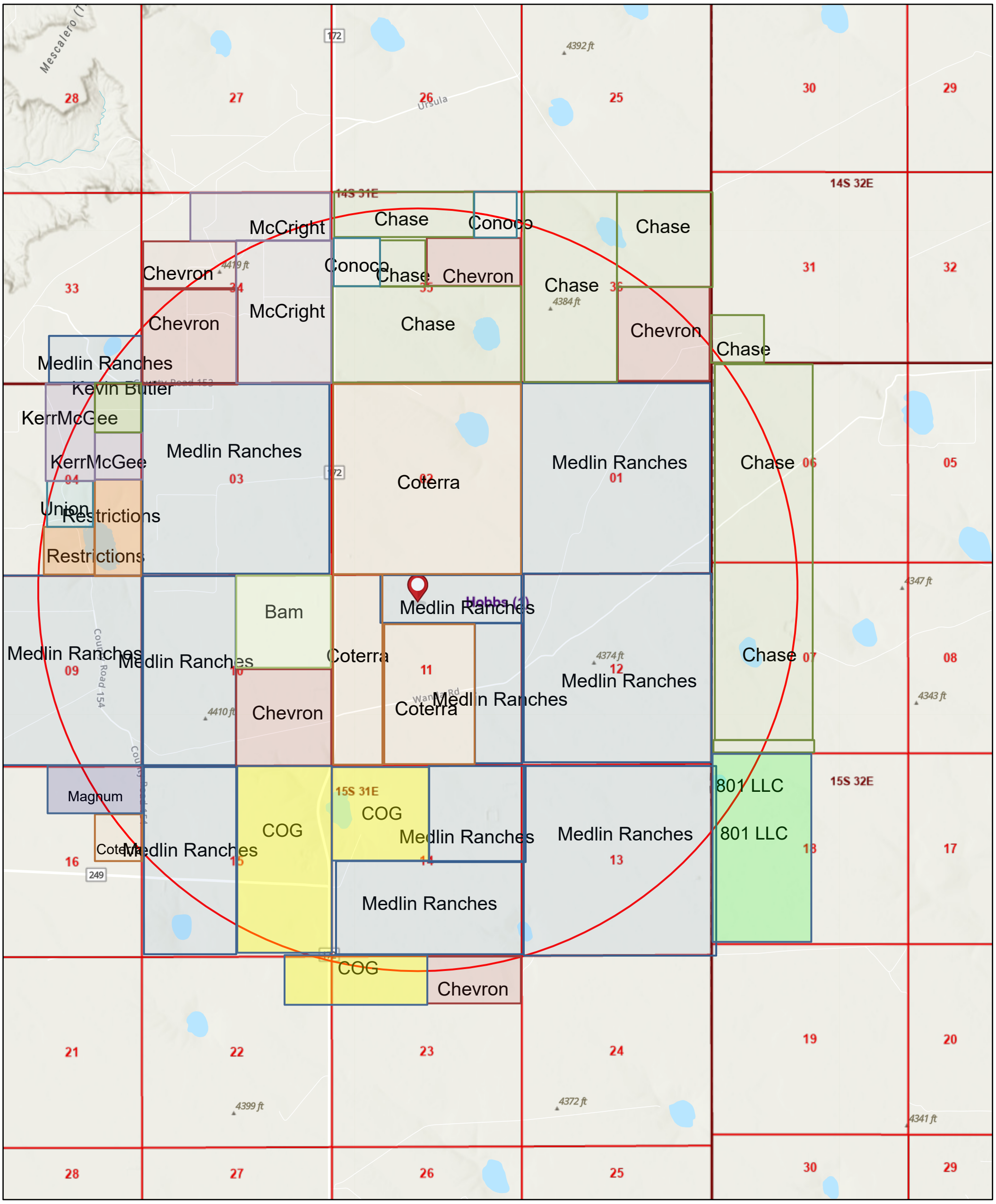
1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

New Mexico Oil Conservation Division

2 Mile Lease Map



4/29/2025, 8:52:12 AM

Areas

- Override 1
- Override 2
- Override 3
- Override 4
- Override 5
- Override 6
- Override 7
- Override 8
- Override 9
- Override 10
- Override 11
- Override 12
- Override 13
- Override 14
- Override 15
- Override 16
- OCD Districts
- PLSS First Division
- PLSS Townships

1:36,112

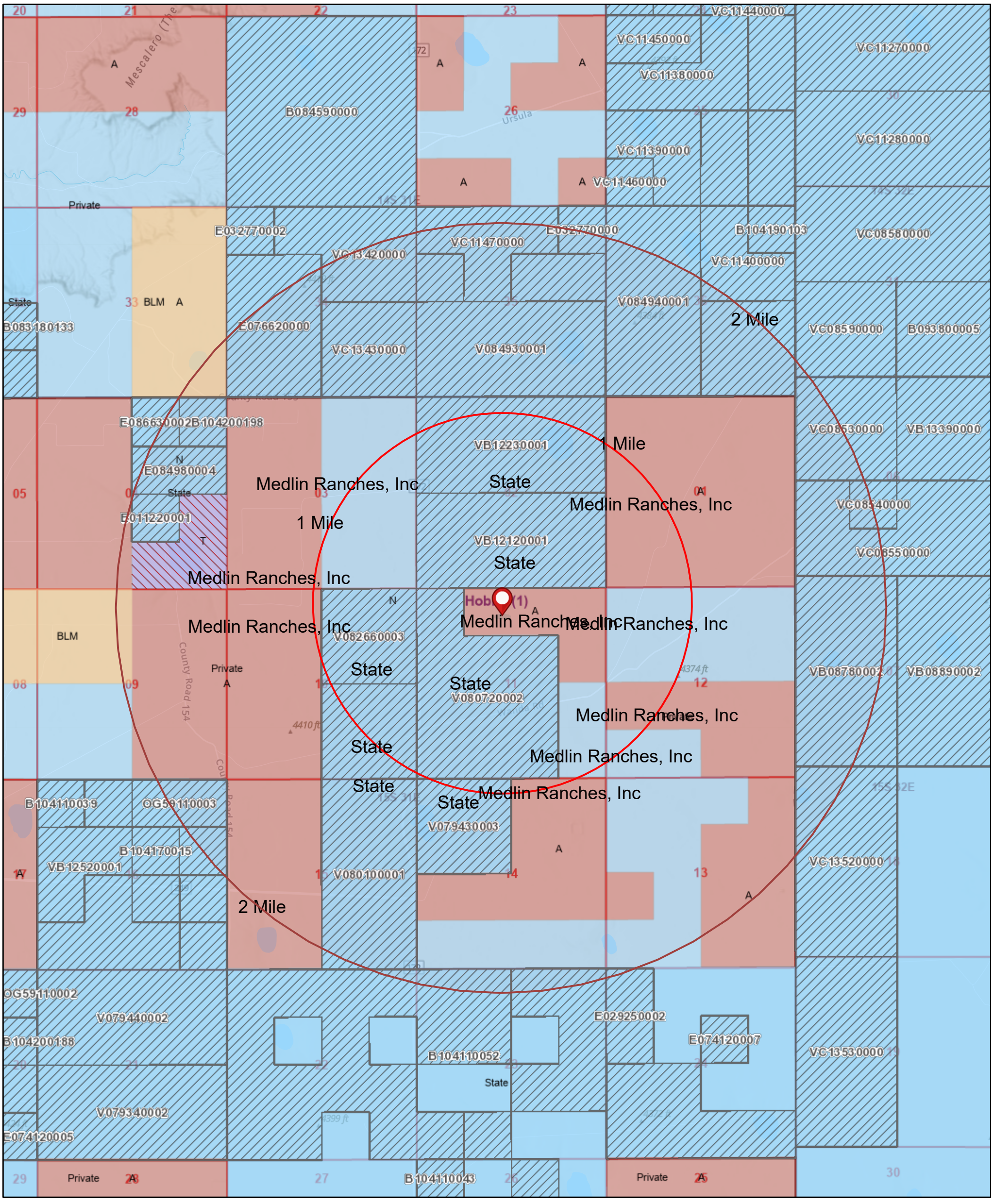
0 0.35 0.7 1.4 mi

0 0.5 1 2 km

Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, OCD, BLM

New Mexico Oil Conservation Division

1 Mile Surface Ownership Map



4/29/2025, 9:22:43 AM

Override 1

Oil and Gas Leasing Restrictions

Oil and Gas Leases

Mineral Ownership

A-All minerals are owned by U.S.

N-No minerals are owned by the U.S.

T-Other minerals are owned by the U.S.

Land Ownership

BLM

P

S

OCD Districts

PLSS First Division

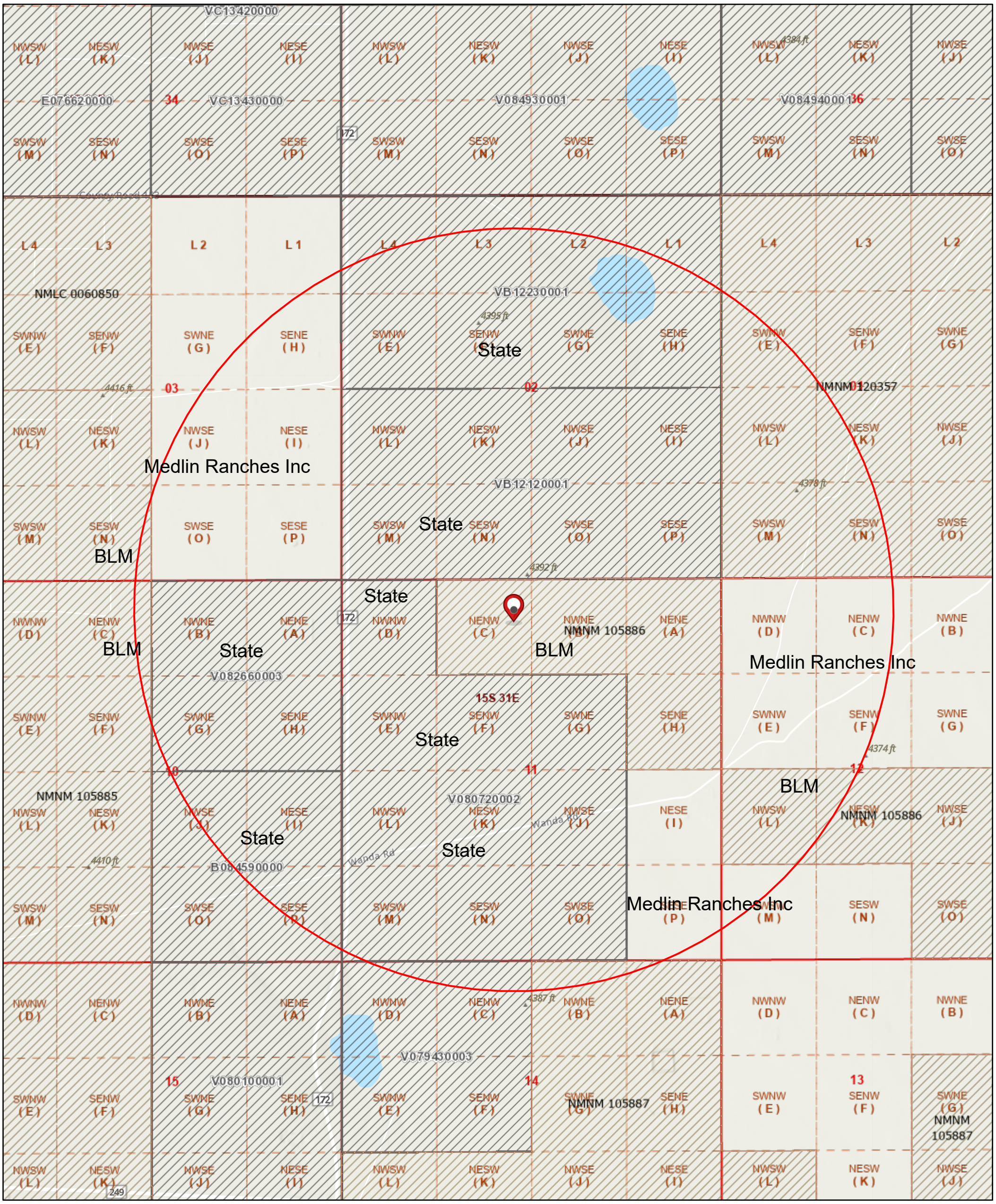
PLSS Townships

1:36,112

0 0.35 0.7 1.4 mi

0 0.5 1 2 km

1 Mile Mineral Map



6/26/2025, 8:25:00 AM

- Authorized
- Oil and Gas Leasing Restrictions
- Oil and Gas Leases
- PLSS Second Division
- PLSS First Division
- PLSS Townships

1:18,056

0 0.17 0.35 0.7 mi

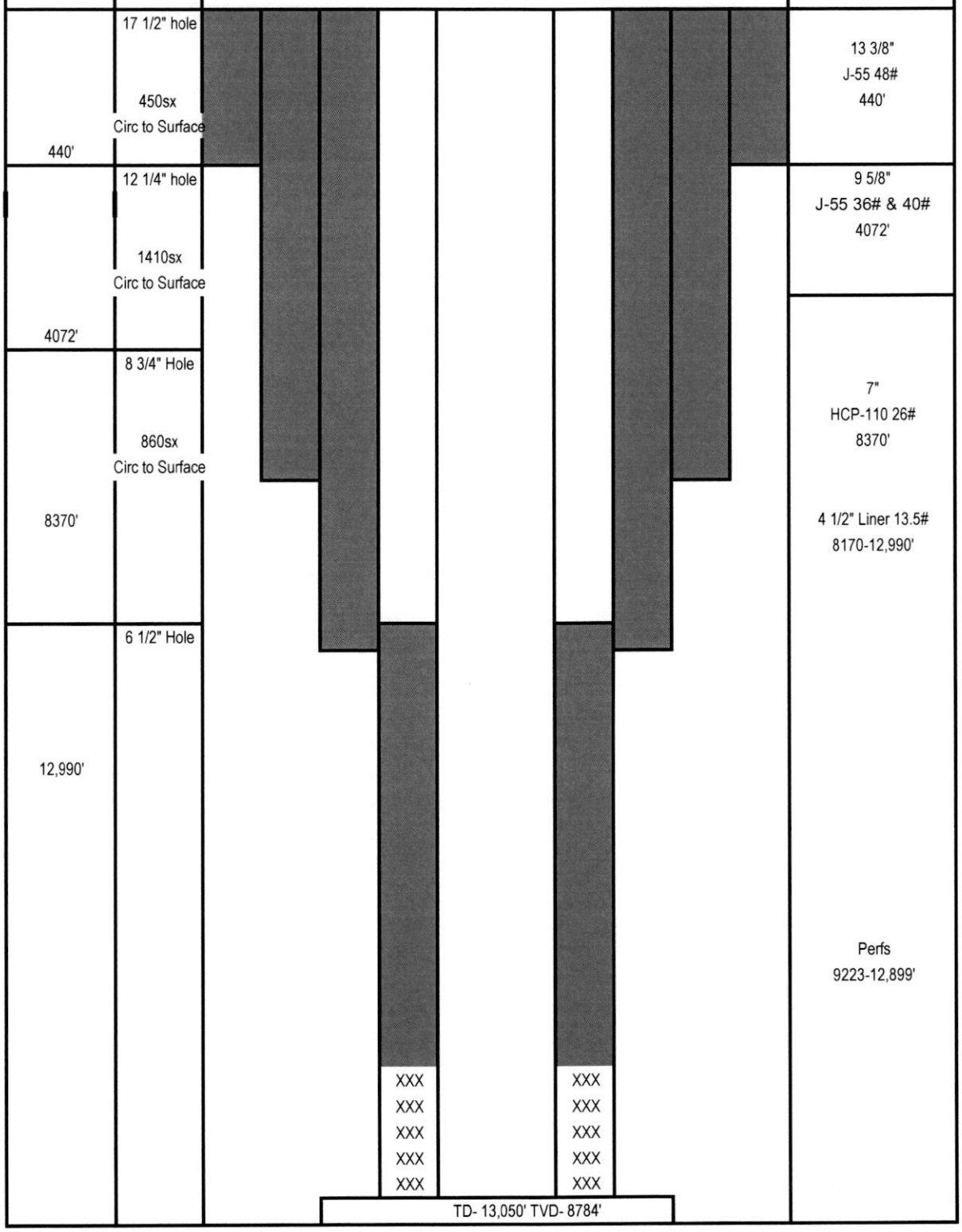
0 0.28 0.55 1.1 km

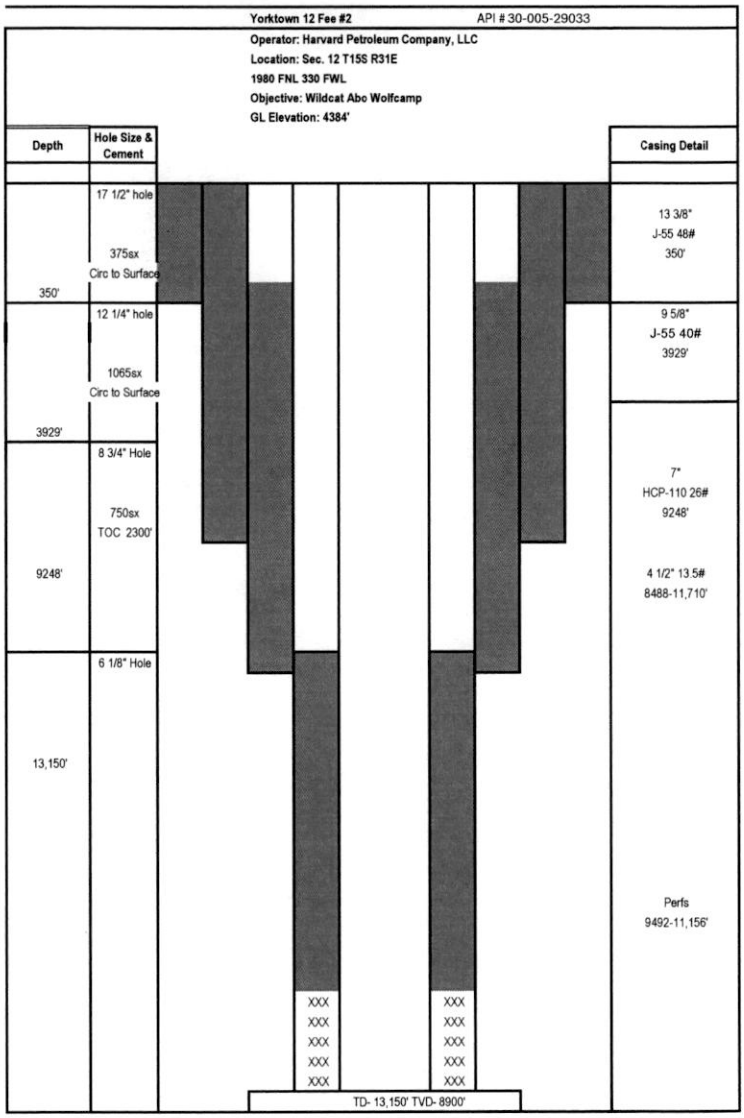
New Mexico Oil Conservation Division

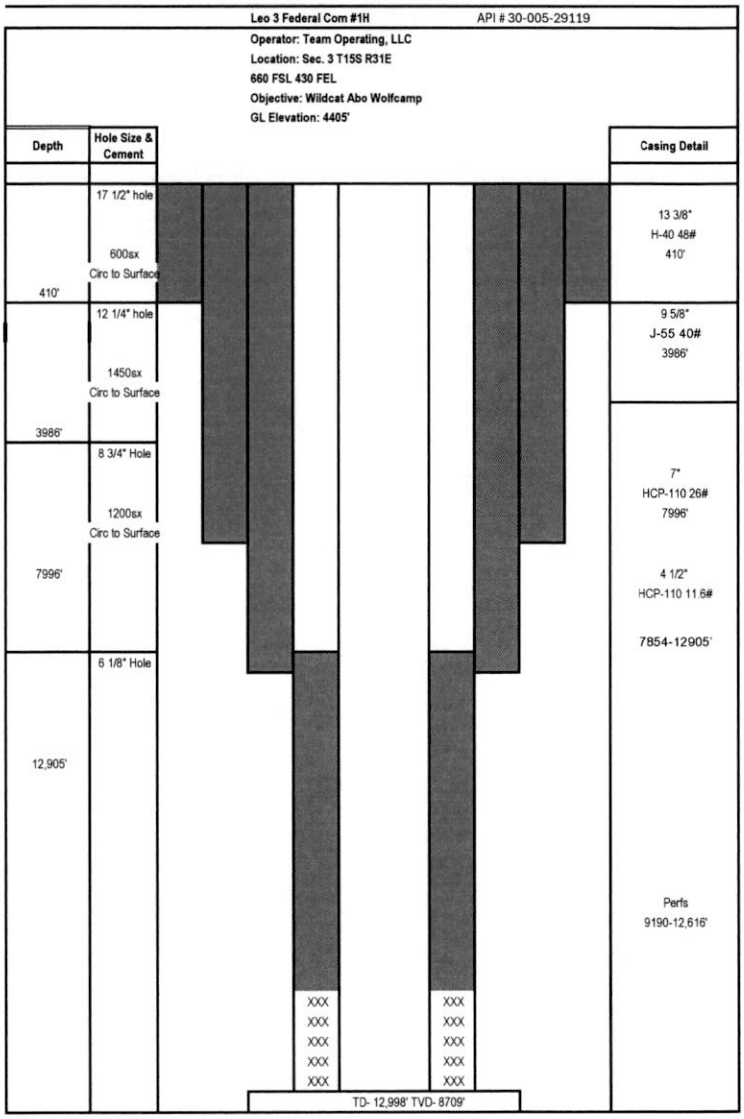
API	Well Name	Well Type	Well Status	ogrid	ogrid_name	PLSS Location (ULSTR)	SPUD Date	Lease Type	Measured Depth	Associated Pools	Effective Date	Last Produced	Plug Date
30-005-21180	PRE-ONGARD WELL #001	Oil	Plugged (site released)	214263	PRE-ONGARD WELL OPERATOR	A-11-15S-31E	12/31/1899	No Data	0	No Data	12/31/1899	12/30/9999	12/31/1899
30-005-29083	NINJA BMN STATE COM #001H	Oil	Active	328565	BAM Permian Operating, LLC	A-11-15S-31E	2/12/2009	Federal	13,050	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	11/14/2021	1/31/2025	
30-005-29033	YORKTOWN 12 FEE #002	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	E-12-15S-31E	8/13/2008	Fee	13,150	[17290] DENTON, WOLFCAMP; [97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	
30-005-29119	LEO 3 FEDERAL COM #001H	Oil	Active	332148	TEAM OPERATING, L.L.C.	P-03-15S-31E	4/29/2011	Federal	12,998	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	8/6/2024	1/31/2025	
30-005-27995	TAURUS STATE FEDERAL COM #002H	Oil	Active	332148	TEAM OPERATING, L.L.C.	I-10-15S-31E	10/15/2009	State	13,246	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	11/16/2023	1/31/2025	
30-005-29120	LEO 3 FEDERAL COM #002H	Oil	Active	332148	TEAM OPERATING, L.L.C.	I-03-15S-31E	5/4/2012	Federal	13,020	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	8/13/2024	1/31/2025	
30-005-29195	BOXER 3 FEDERAL COM #001H	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	H-03-15S-31E	1/7/2012	Federal	13,380	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	
30-005-29204	PERSEUS 10 FEDERAL COM #004H	Oil	Active	328565	BAM Permian Operating, LLC	A-10-15S-31E	7/5/2013	Federal	13,330	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	1/26/2022	1/31/2025	
30-005-29137	PERSEUS 10 FEDERAL COM #003H	Oil	Active	328565	BAM Permian Operating, LLC	H-10-15S-31E	6/16/2010	Federal	13,362	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	1/26/2022	1/31/2025	
30-005-29042	WASP 2 STATE #002H	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	L-02-15S-31E	8/22/2010	State	13,256	[97019] WILDCAT, ABO; [97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	
30-005-29057	ENTERPRISE 11 FEDERAL COM #003H	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	E-11-15S-31E	10/19/2008	Federal	13,258	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	
30-005-28002	ENTERPRISE 11 STATE COM #001	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	M-11-15S-31E	4/22/2008	State	13,242	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	
30-005-28003	ENTERPRISE 11 STATE COM #002	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	L-11-15S-31E	10/4/2008	State	13,210	[97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	
30-005-29041	WASP 2 STATE #001H	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	M-02-15S-31E	2/12/2010	State	13,232	[97019] WILDCAT, ABO; [97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	
30-005-29043	WASP 2 STATE #003H	Oil	Active	10155	HARVARD PETROLEUM COMPANY, LLC	E-02-15S-31E	3/18/2011	State	13,041	[97019] WILDCAT, ABO; [97715] WILDCAT G-05 S153111O, ABO-WOLFCAMP	5/22/2023	1/31/2025	

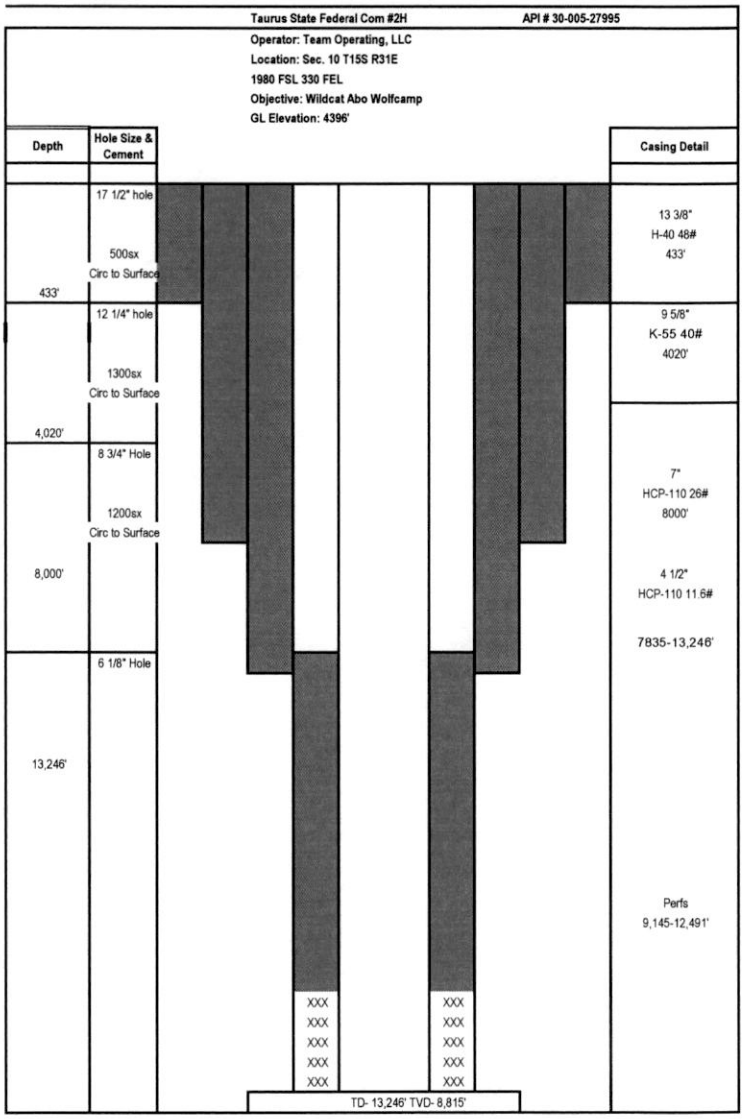
Ninja BMN State Com #1H **API # 30-005-29083**

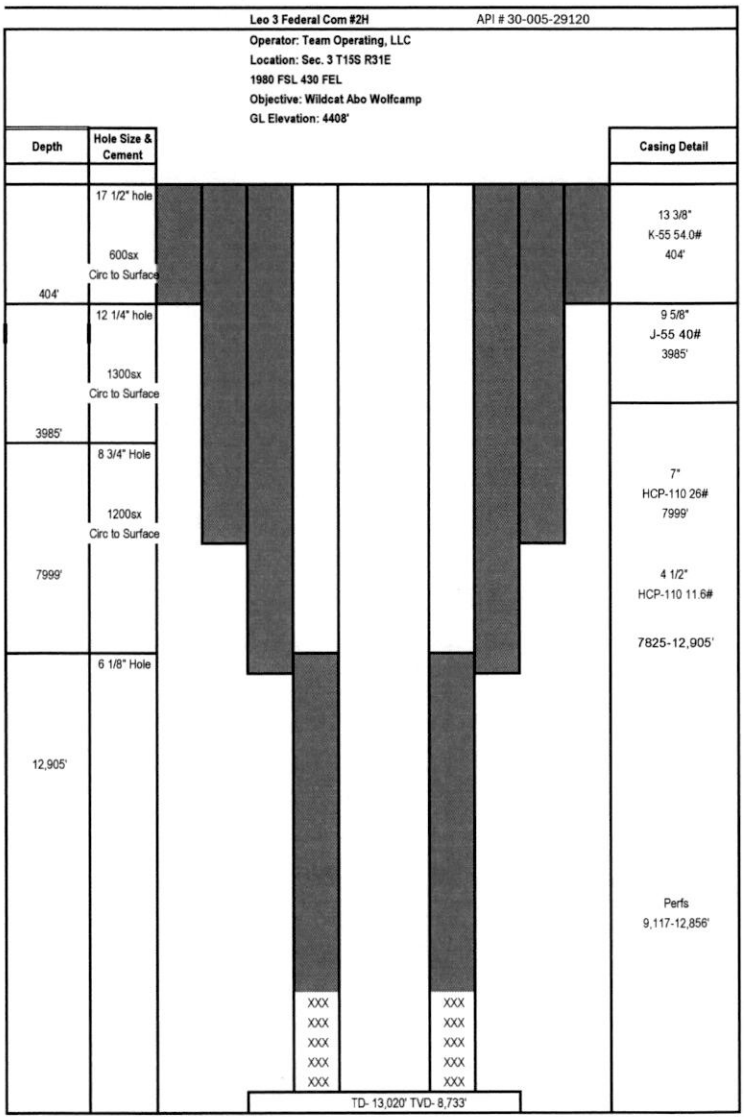
Operator: BAM Permian Operating, LLC
Location: Sec. 11 T15S R31E
990 FNL 200 FEL
Objective: Wildcat G-05 S1531110; Abo-Wolfcamp
GL Elevation: 4404'

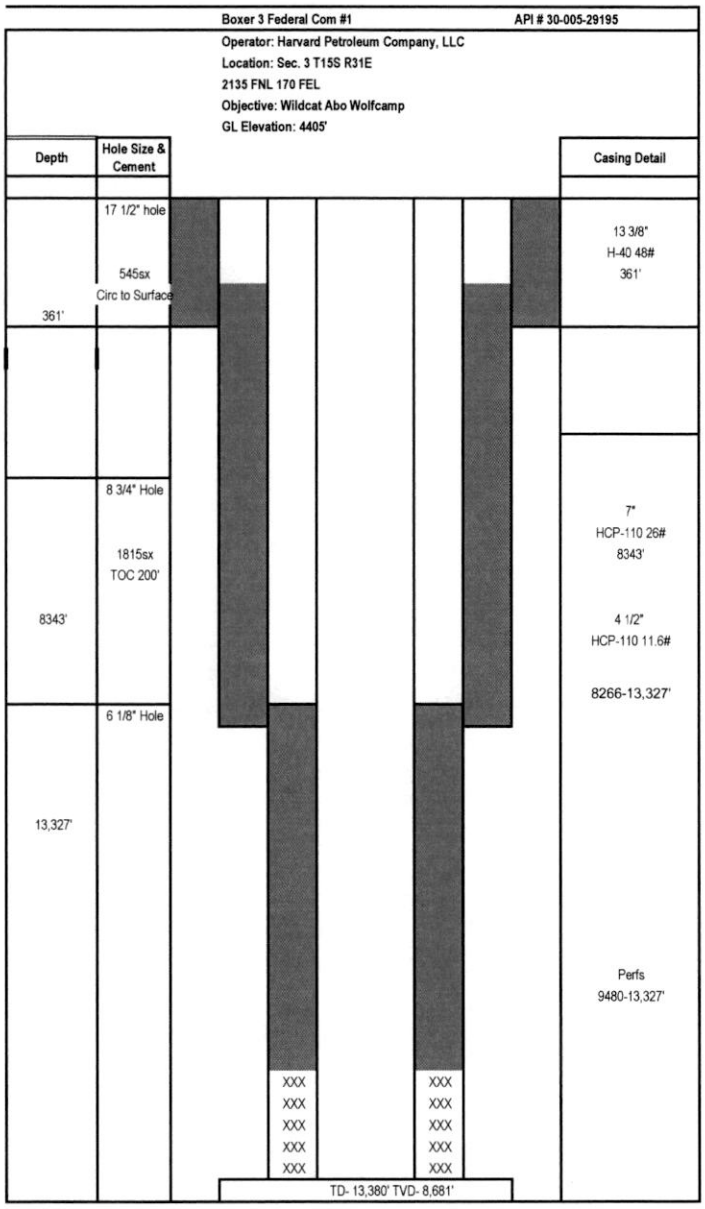


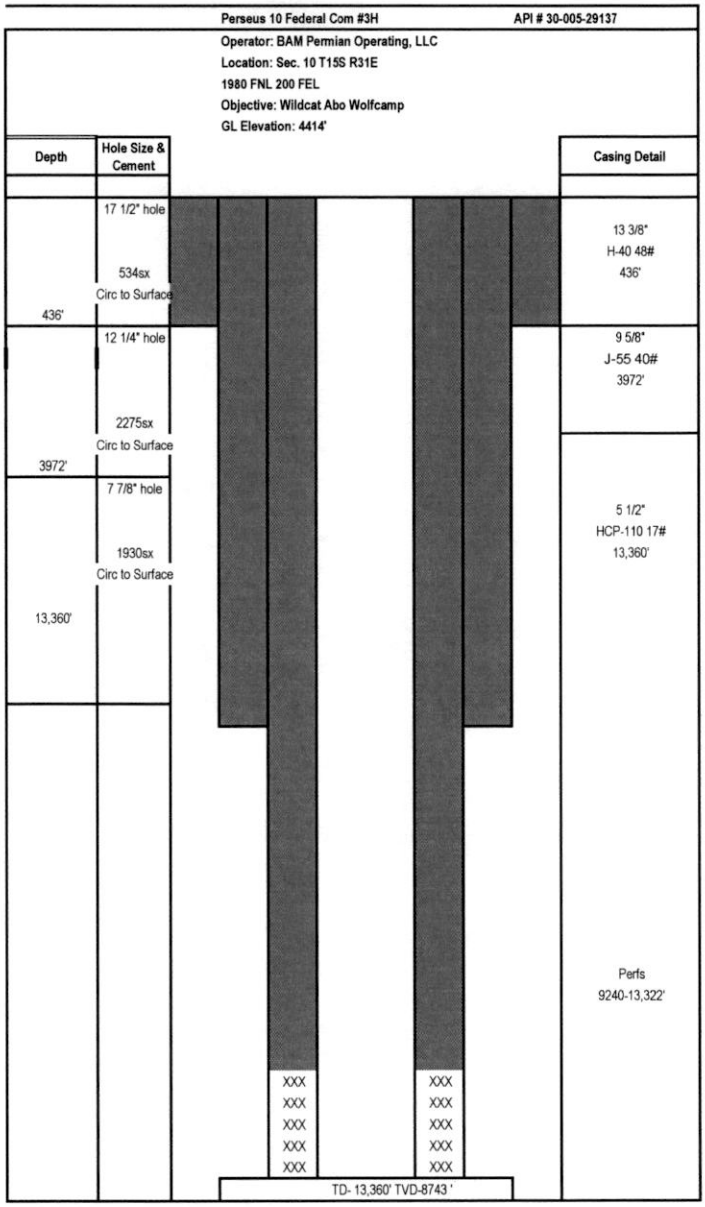

Yorktown 12 Fee #2
API # 30-005-29033
Operator: Harvard Petroleum Company, LLC
Location: Sec. 12 T15S R31E
1980 FNL 330 FWL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4384'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
375sx
Circ to Surface
350'
13 3/8"
J-55 48#
350'
12 1/4" hole
1065sx
Circ to Surface
3929'
9 5/8"
J-55 40#
3929'
8 3/4" Hole
750sx
TOC 2300'
9248'
7"
HCP-110 26#
9248'
4 1/2" 13.5#
8488-11,710'
6 1/8" Hole
13,150'
Perfs
9492-11,156'
XXX
TD- 13,150' TVD- 8900'

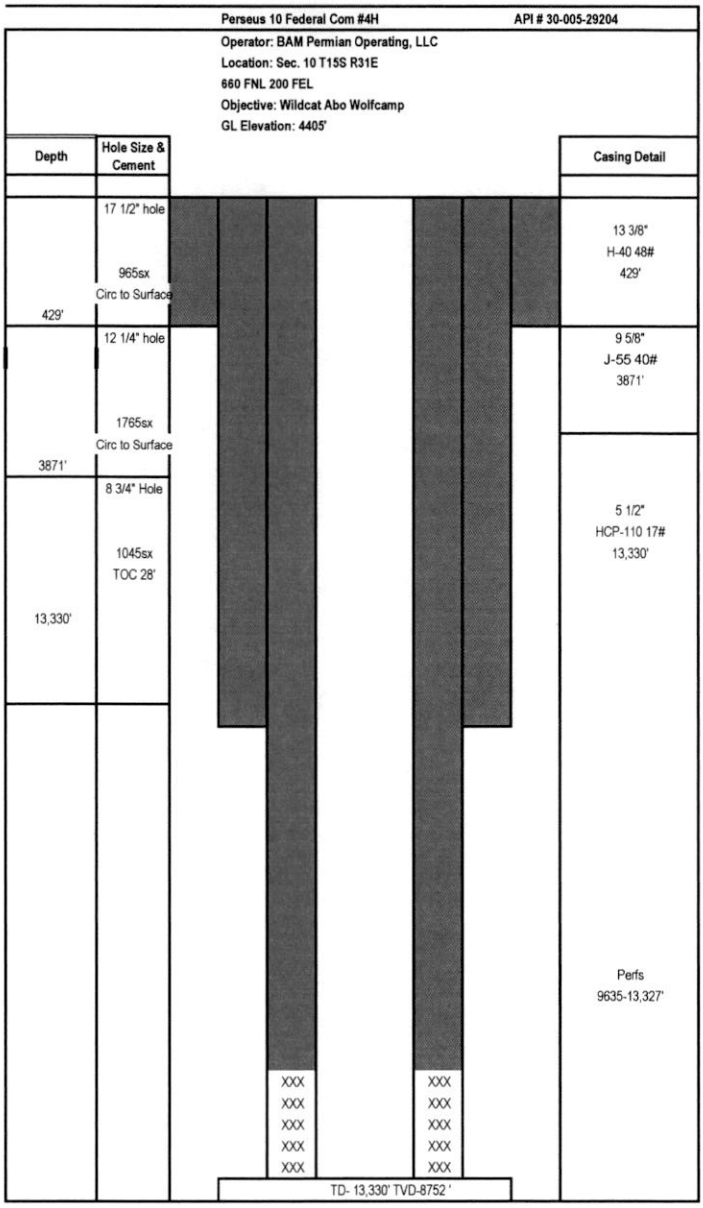

Leo 3 Federal Com #1H
API # 30-005-29119
Operator: Team Operating, LLC
Location: Sec. 3 T15S R31E
660 FSL 430 FEL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4405'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
600sx
Circ to Surface
410'
13 3/8"
H-40 48#
410'
12 1/4" hole
1450sx
Circ to Surface
3986'
9 5/8"
J-55 40#
3986'
8 3/4" Hole
1200sx
Circ to Surface
7996'
7"
HCP-110 26#
7996'
4 1/2"
HCP-110 11.6#
7854-12905'
6 1/8" Hole
12,905'
Perfs
9190-12,616'
XXX
TD- 12,998' TVD- 8709'

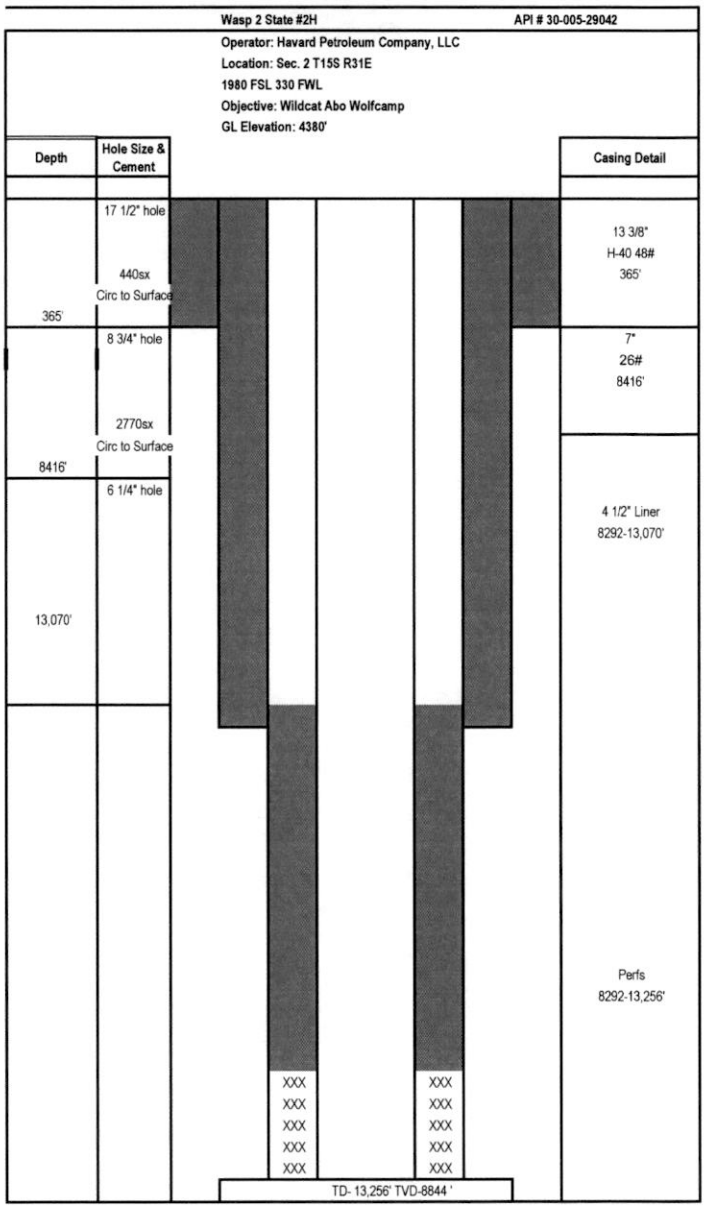

Taurus State Federal Com #2H
API # 30-005-27995
Operator: Team Operating, LLC
Location: Sec. 10 T15S R31E
1980 FSL 330 FEL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4396'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
500sx
Circ to Surface
433'
13 3/8"
H-40 48#
433'
12 1/4" hole
1300sx
Circ to Surface
4,020'
9 5/8"
K-55 40#
4020'
8 3/4" Hole
1200sx
Circ to Surface
8,000'
7"
HCP-110 26#
8000'
4 1/2"
HCP-110 11.6#
7835-13,246'
6 1/8" Hole
13,246'
Perfs
9,145-12,491'
XXX
TD- 13,246' TVD- 8,815'

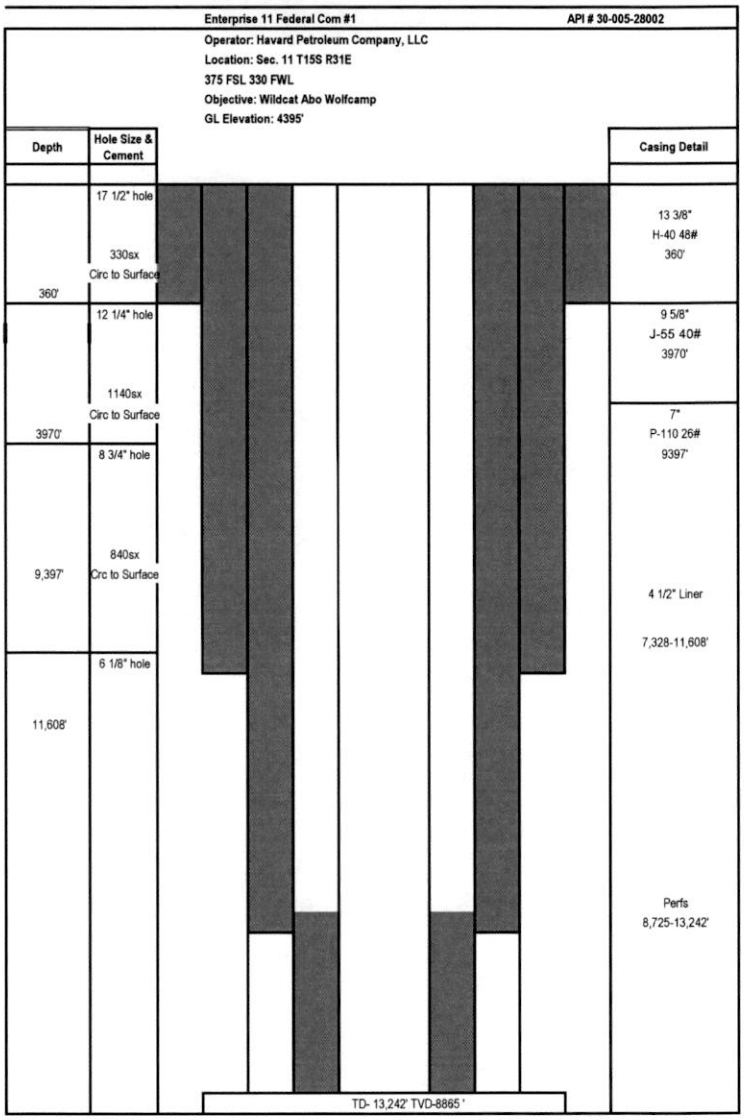

Leo 3 Federal Com #2H
API # 30-005-29120
Operator: Team Operating, LLC
Location: Sec. 3 T15S R31E
1980 FSL 430 FEL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4408'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
600sx
Circ to Surface
404'
13 3/8"
K-55 54.0#
404'
12 1/4" hole
1300sx
Circ to Surface
3985'
9 5/8"
J-55 40#
3985'
8 3/4" Hole
1200sx
Circ to Surface
7999'
7"
HCP-110 26#
7999'
4 1/2"
HCP-110 11.6#
7825-12,905'
6 1/8" Hole
12,905'
Perfs
9,117-12,856'
XXX
TD- 13,020' TVD- 8,733'

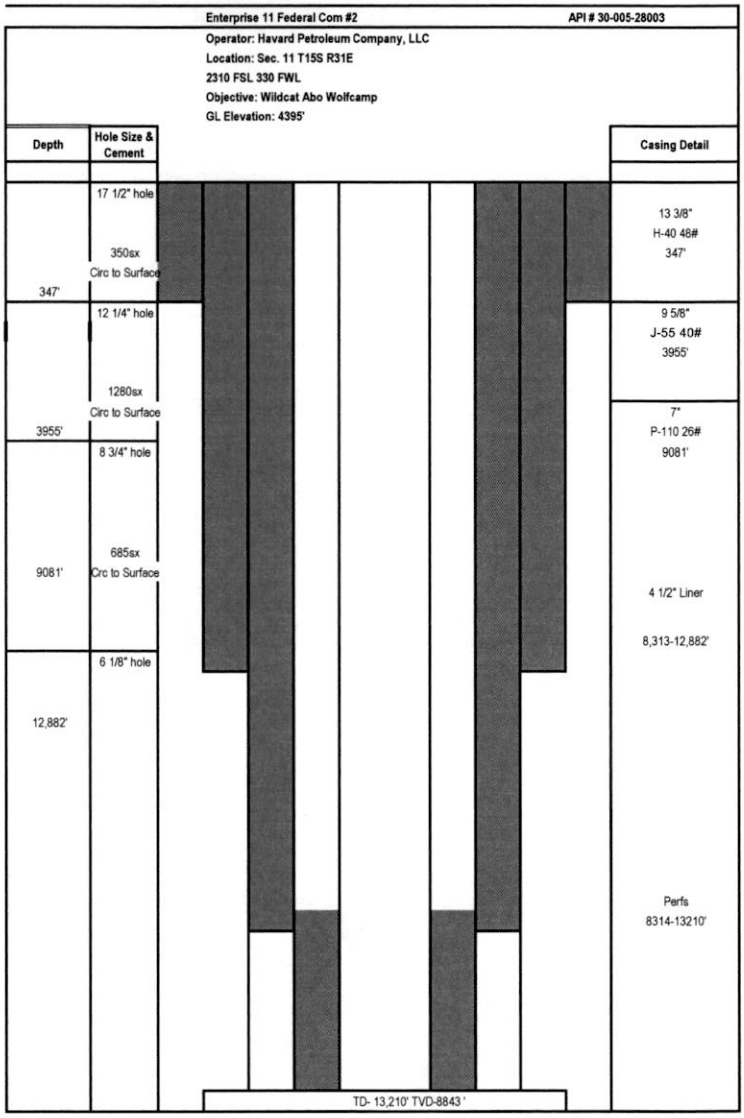

Boxer 3 Federal Com #1
API # 30-005-29195
Operator: Harvard Petroleum Company, LLC
Location: Sec. 3 T15S R31E
2135 FNL 170 FEL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4405'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
545sx
Circ to Surface
361'
13 3/8"
H-40 48#
361'
8 3/4" Hole
1815sx
TOC 200'
8343'
7"
HCP-110 26#
8343'
4 1/2"
HCP-110 11.6#
8266-13,327'
6 1/8" Hole
13,327'
Perfs
9480-13,327'
XXX
TD- 13,380' TVD- 8,681'

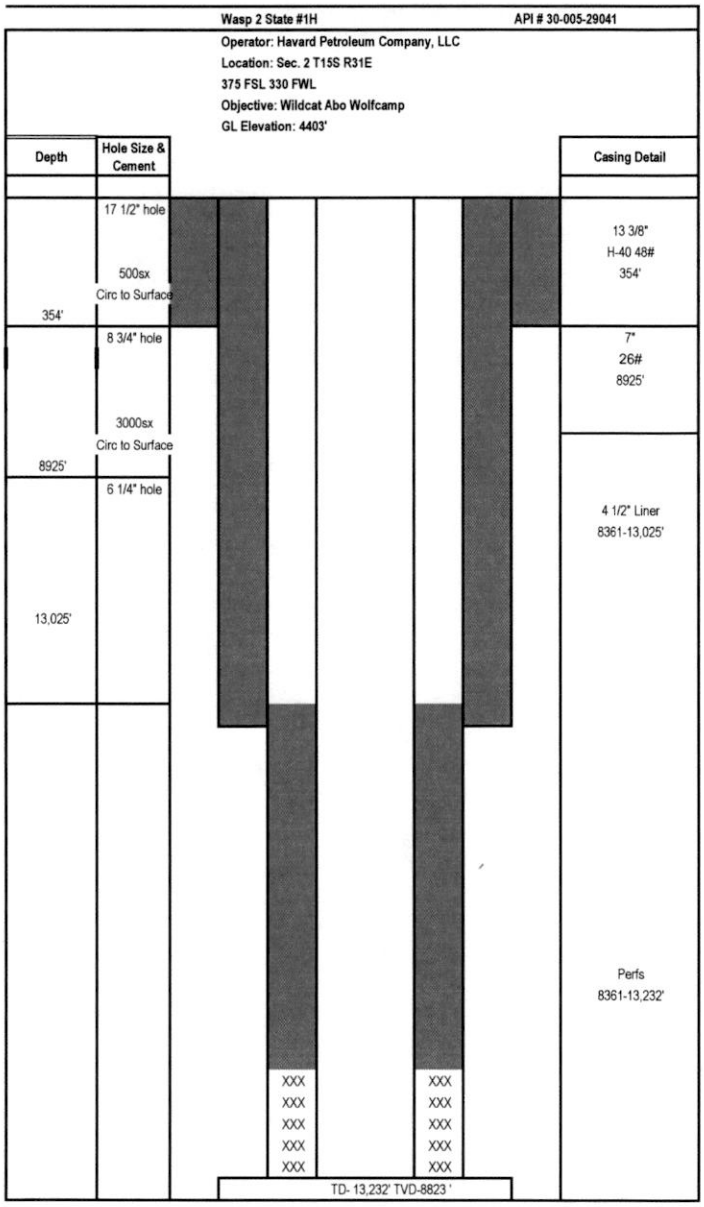

Perseus 10 Federal Com #3H
API # 30-005-29137
Operator: BAM Permian Operating, LLC
Location: Sec. 10 T15S R31E
1980 FNL 200 FEL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4414'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
534sx
Circ to Surface
436'
13 3/8"
H-40 48#
436'
12 1/4" hole
2275sx
Circ to Surface
3972'
9 5/8"
J-55 40#
3972'
7 7/8" hole
1930sx
Circ to Surface
13,360'
5 1/2"
HCP-110 17#
13,360'
Perfs
9240-13,322'
XXX
XXX
XXX
XXX
XXX
XXX
XXX
XXX
XXX
XXX
TD- 13,360' TVD-8743 '

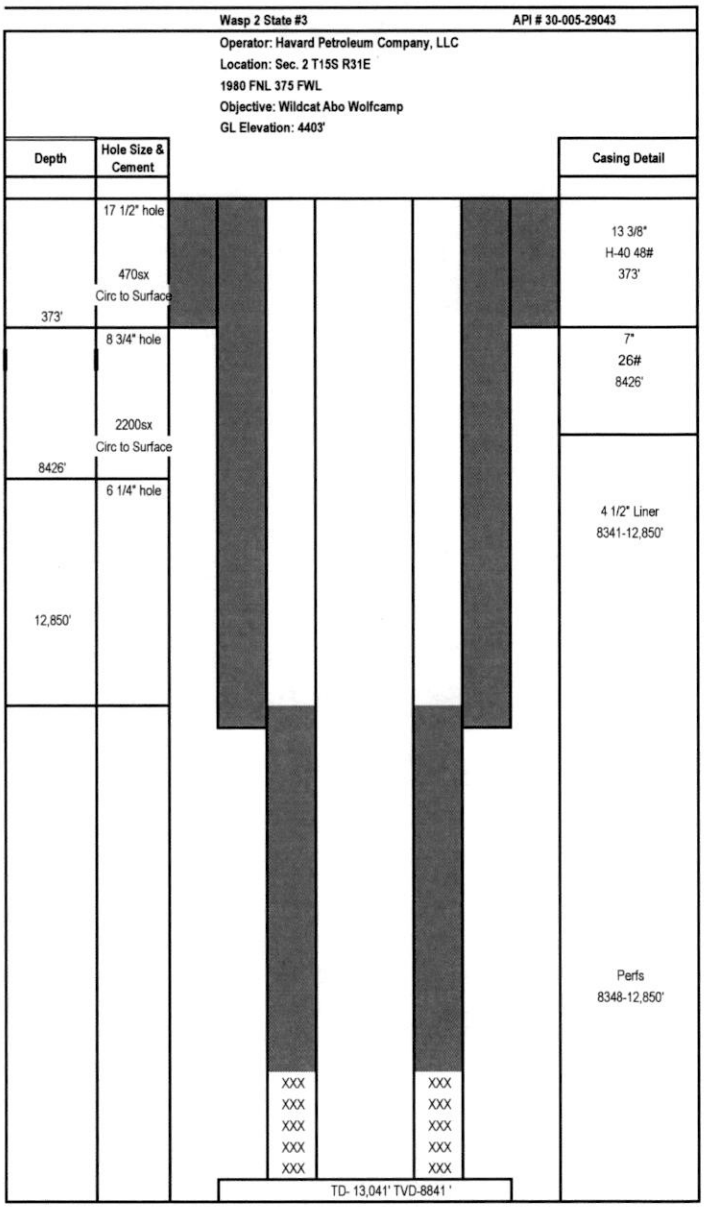

Perseus 10 Federal Com #4H
API # 30-005-29204
Operator: BAM Permian Operating, LLC
Location: Sec. 10 T15S R31E
660 FNL 200 FEL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4405'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
965sx
Circ to Surface
429'
13 3/8"
H-40 48#
429'
12 1/4" hole
1765sx
Circ to Surface
3871'
9 5/8"
J-55 40#
3871'
8 3/4" Hole
1045sx
TOC 28'
13,330'
5 1/2"
HCP-110 17#
13,330'
Perfs
9635-13,327'
XXX
TD- 13,330' TVD-8752 '

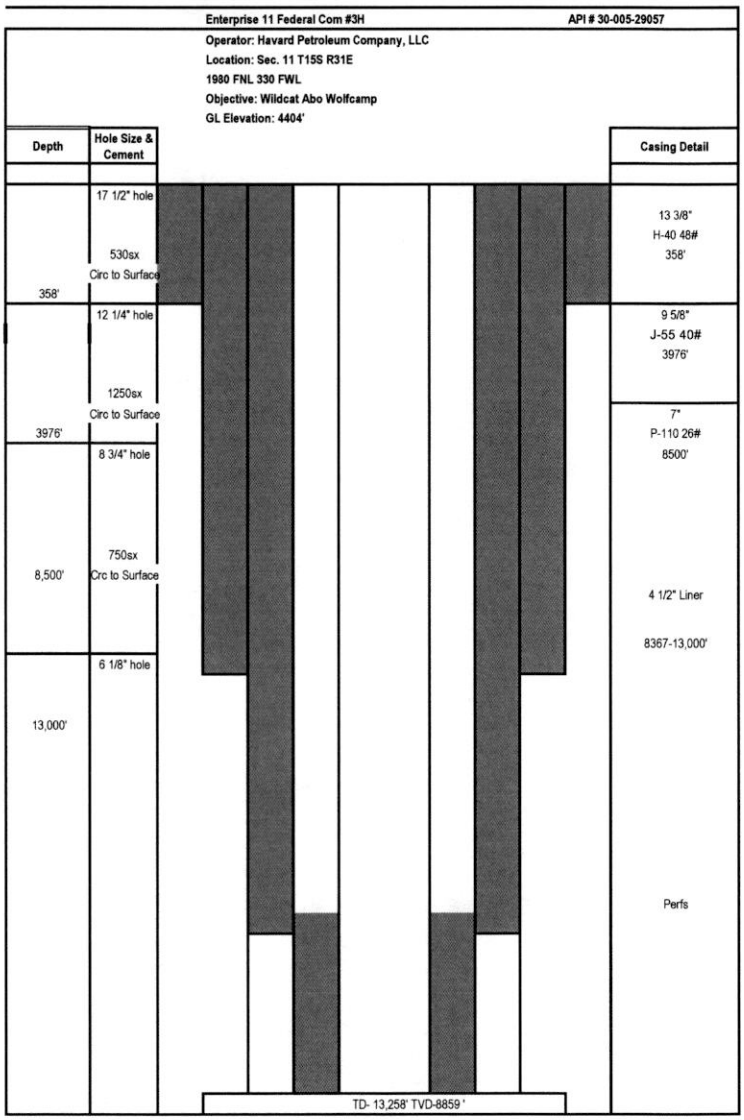

Wasp 2 State #2H
API # 30-005-29042
Operator: Havard Petroleum Company, LLC
Location: Sec. 2 T15S R31E
1980 FSL 330 FWL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4380'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
440sx
Circ to Surface
365'
13 3/8"
H-40 48#
365'
8 3/4" hole
2770sx
Circ to Surface
8416'
7"
26#
8416'
6 1/4" hole
13,070'
4 1/2" Liner
8292-13,070'
Perfs
8292-13,256'
XXX
TD- 13,256' TVD-8844 '


Enterprise 11 Federal Com #1
API # 30-005-28002
Operator: Havard Petroleum Company, LLC
Location: Sec. 11 T15S R31E
375 FSL 330 FWL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4395'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
330sx
Circ to Surface
360'
13 3/8"
H-40 48#
360'
12 1/4" hole
1140sx
Circ to Surface
3970'
9 5/8"
J-55 40#
3970'
8 3/4" hole
840sx
Circ to Surface
9,397'
7"
P-110 26#
9397'
4 1/2" Liner
7,328-11,608'
6 1/8" hole
11,608'
Perfs
8,725-13,242'
TD- 13,242' TVD-8865 '


Enterprise 11 Federal Com #2
API # 30-005-28003
Operator: Havard Petroleum Company, LLC
Location: Sec. 11 T15S R31E
2310 FSL 330 FWL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4395'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
350sx
Circ to Surface
347'
13 3/8"
H-40 48#
347'
12 1/4" hole
1280sx
Circ to Surface
3955'
9 5/8"
J-55 40#
3955'
7"
P-110 26#
9081'
8 3/4" hole
685sx
Circ to Surface
9081'
4 1/2" Liner
8,313-12,882'
6 1/8" hole
12,882'
Perfs
8314-13210'
TD- 13,210' TVD-8843 '


Wasp 2 State #1H
API # 30-005-29041
Operator: Havard Petroleum Company, LLC
Location: Sec. 2 T15S R31E
375 FSL 330 FWL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4403'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
500sx
Circ to Surface
354'
13 3/8"
H-40 48#
354'
8 3/4" hole
3000sx
Circ to Surface
8925'
7"
26#
8925'
6 1/4" hole
13,025'
4 1/2" Liner
8361-13,025'
Perfs
8361-13,232'
XXX
TD- 13,232' TVD-8823 '


Wasp 2 State #3
API # 30-005-29043
Operator: Havard Petroleum Company, LLC
Location: Sec. 2 T15S R31E
1980 FNL 375 FWL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4403'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
470sx
Circ to Surface
373'
13 3/8"
H-40 48#
373'
8 3/4" hole
2200sx
Circ to Surface
8426'
7"
26#
8426'
6 1/4" hole
12,850'
4 1/2" Liner
8341-12,850'
Perfs
8348-12,850'
XXX
TD- 13,041' TVD-8841 '


Enterprise 11 Federal Com #3H
API # 30-005-29057
Operator: Havard Petroleum Company, LLC
Location: Sec. 11 T15S R31E
1980 FNL 330 FWL
Objective: Wildcat Abo Wolfcamp
GL Elevation: 4404'
Depth
Hole Size & Cement
Casing Detail
17 1/2" hole
530sx
Circ to Surface
358'
13 3/8"
H-40 48#
358'
12 1/4" hole
1250sx
Circ to Surface
3976'
9 5/8"
J-55 40#
3976'
8 3/4" hole
750sx
Circ to Surface
8,500'
7"
P-110 26#
8500'
4 1/2" Liner
8367-13,000'
6 1/8" hole
13,000'
Perfs
TD- 13,258' TVD-8859 '

P&A- 8/15/1948 | Pre-Ongard Well #1 | API # 30-005-21180

Operator: Pre-Onard Well Operator
Location: Sec. 11 T15S R31E
660 FNL 660 FEL
Objective:
GL Elevation: 3885'

Depth	Hole Size & Cement		Casing Detail
			10sx cmt plug @ 200' 1550' 2150'
		TD- 3616"	

Attachment 3

Catalyst Oilfield Services
11999 E Hwy 158
Gardendale, TX 79758
(432) 563-0727
Fax: (432) 224-1038

Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	81463
Area:	Artesia	Analysis ID #:	80383
Lease:	Prince Rupert		
Location:	Fed #4H 0		
Sample Point:	Wellhead San Andres		

Sampling Date:	1/10/2019
Analysis Date:	1/22/2019
Analyst:	Catalyst
TDS (mg/l or g/m3):	150968.6
Density (g/cm3):	1.102
Hydrogen Sulfide:	5
Carbon Dioxide:	97
Comments:	

Anions	mg/l	meq/l
Chloride:	89383.7	2521.19
Bicarbonate:	175.7	2.88
Carbonate:		
Sulfate:	2800.0	58.3
Borate*:	190.4	1.2
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	6.65
pH at time of analysis:	
pH used in Calculation:	**6.65**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	53970.0	2347.56
Magnesium:	1013.0	83.33
Calcium:	2725.0	135.98
Potassium:	644.4	16.48
Strontium:	55.6	1.27
Barium:	0.9	0.01
Iron:	9.0	0.32
Manganese:	0.857	0.03

Conductivity (micro-ohms/cm):	200079
Resistivity (ohm meter):	.0500

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.05	0.91	-0.13	0.00	-0.13	0.00	-0.11	0.00	1.22	0.60
100	0.13	2.72	-0.20	0.00	-0.13	0.00	-0.13	0.00	1.02	0.30
120	0.22	4.84	-0.26	0.00	-0.11	0.00	-0.15	0.00	0.84	0.30
140	0.30	7.26	-0.30	0.00	-0.06	0.00	-0.15	0.00	0.69	0.30
160	0.37	9.68	-0.34	0.00	0.00	6.96	-0.15	0.00	0.56	0.30
180	0.45	12.70	-0.37	0.00	0.08	166.07	-0.14	0.00	0.45	0.30
200	0.52	15.73	-0.40	0.00	0.18	328.81	-0.13	0.00	0.36	0.30
220	0.60	18.75	-0.42	0.00	0.28	485.19	-0.11	0.00	0.28	0.30

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	78595
Area:	Artesia	Analysis ID #:	76096
Lease:	Chilliwack		
Location:	Fed Com 1H 0		
Sample Point:	Wellhead San Andres		

Sampling Date:	11/28/2018
Analysis Date:	12/3/2018
Analyst:	Catalyst
TDS (mg/l or g/m3):	175963.5
Density (g/cm3):	1.118
Hydrogen Sulfide:	4
Carbon Dioxide:	108
Comments:	

Anions	mg/l	meq/l
Chloride:	**104292.8**	**2941.72**
Bicarbonate:	**131.8**	**2.16**
Carbonate:		
Sulfate:	**3200.0**	**66.62**
Borate*:	**108.1**	**0.68**
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	6.95
pH at time of analysis:	
pH used in Calculation:	**6.95**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	**63550.0**	**2764.27**
Magnesium:	**1027.0**	**84.49**
Calcium:	**2882.0**	**143.81**
Potassium:	**707.0**	**18.08**
Strontium:	**63.7**	**1.45**
Barium:	**0.8**	**0.01**
Iron:	**0.1**	**0.**
Manganese:	**0.189**	**0.01**

Conductivity (micro-ohms/cm):	**200381**
Resistivity (ohm meter):	**.0499**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.28	2.95	-0.07	0.00	-0.05	0.00	-0.04	0.00	1.17	0.30
100	0.32	3.84	-0.14	0.00	-0.06	0.00	-0.07	0.00	0.97	0.30
120	0.36	5.02	-0.21	0.00	-0.05	0.00	-0.09	0.00	0.79	0.30
140	0.39	6.20	-0.26	0.00	-0.01	0.00	-0.10	0.00	0.63	0.30
160	0.43	7.38	-0.31	0.00	0.05	111.64	-0.10	0.00	0.50	0.30
180	0.46	9.16	-0.34	0.00	0.12	261.08	-0.09	0.00	0.38	0.30
200	0.50	10.93	-0.38	0.00	0.21	418.50	-0.08	0.00	0.29	0.30
220	0.55	12.99	-0.41	0.00	0.31	573.26	-0.07	0.00	0.21	0.30

Water Analysis- San Andres

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	81533
Area:	Artesia	Analysis ID #:	80615
Lease:	Saskatoon		
Location:	Fed Com 1H 0		
Sample Point:	Wellhead San Andres		

Sampling Date:	1/10/2019
Analysis Date:	1/23/2019
Analyst:	Catalyst
TDS (mg/l or g/m3):	151377.2
Density (g/cm3):	1.105
Hydrogen Sulfide:	4
Carbon Dioxide:	90
Comments:	

Anions	mg/l	meq/l
Chloride:	**91681.1**	**2585.99**
Bicarbonate:	**153.7**	**2.52**
Carbonate:		
Sulfate:	**700.0**	**14.57**
Borate*:	**144.3**	**0.91**
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	7.23
pH at time of analysis:	
pH used in Calculation:	**7.23**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	**54050.0**	**2351.04**
Magnesium:	**1173.0**	**96.5**
Calcium:	**2767.0**	**138.07**
Potassium:	**647.0**	**16.55**
Strontium:	**60.1**	**1.37**
Barium:	**0.6**	**0.01**
Iron:	**0.0**	**0.**
Manganese:	**0.416**	**0.02**

Conductivity (micro-ohms/cm):	**197210**
Resistivity (ohm meter):	**.0507**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.57	6.35	-0.72	0.00	-0.71	0.00	-0.66	0.00	0.45	0.30
100	0.57	7.26	-0.79	0.00	-0.72	0.00	-0.69	0.00	0.25	0.00
120	0.58	8.77	-0.84	0.00	-0.69	0.00	-0.70	0.00	0.07	0.00
140	0.59	10.28	-0.89	0.00	-0.65	0.00	-0.71	0.00	-0.08	0.00
160	0.60	12.10	-0.93	0.00	-0.59	0.00	-0.70	0.00	-0.21	0.00
180	0.63	13.91	-0.96	0.00	-0.51	0.00	-0.70	0.00	-0.32	0.00
200	0.66	16.03	-0.99	0.00	-0.41	0.00	-0.69	0.00	-0.42	0.00
220	0.71	18.45	-1.01	0.00	-0.31	0.00	-0.67	0.00	-0.49	0.00

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	118208
Area:	Artesia	Analysis ID #:	107555
Lease:	Montreal		
Location:	1H 0		
Sample Point:	Wellhead	San Andres	

Sampling Date:	2/13/2020
Analysis Date:	3/4/2020
Analyst:	Catalyst
TDS (mg/l or g/m3):	172020.9
Density (g/cm3):	1.116
Hydrogen Sulfide:	7.4
Carbon Dioxide:	102
Comments:	

Anions	mg/l	meq/l
Chloride:	101615.8	2866.21
Bicarbonate:	197.6	3.24
Carbonate:		
Sulfate:	3400.0	70.79
Borate*:	110.4	0.7
Phosphate*		

*Calculated based on measured elemental boron and phosphorus.

pH at time of sampling:	7.14
pH at time of analysis:	
pH used in Calculation:	7.14
Temperature @ lab conditions (F):	75

Cations	mg/l	meq/l
Sodium:	62440.0	2715.99
Magnesium:	965.3	79.41
Calcium:	2569.0	128.19
Potassium:	660.8	16.9
Strontium:	57.8	1.32
Barium:	3.4	0.05
Iron:	0.2	0.01
Manganese:	0.550	0.02

Conductivity (micro-mhos/cm):	199270
Resistivity (ohm meter):	.0502

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.58	8.60	-0.09	0.00	-0.08	0.00	-0.05	0.00	1.83	1.78
100	0.59	10.08	-0.16	0.00	-0.08	0.00	-0.08	0.00	1.63	1.78
120	0.60	11.86	-0.23	0.00	-0.07	0.00	-0.10	0.00	1.45	1.78
140	0.61	13.93	-0.28	0.00	-0.03	0.00	-0.10	0.00	1.30	1.78
160	0.63	16.01	-0.32	0.00	0.03	69.97	-0.10	0.00	1.16	1.78
180	0.65	18.38	-0.36	0.00	0.11	226.51	-0.10	0.00	1.05	1.78
200	0.68	21.05	-0.39	0.00	0.19	391.65	-0.09	0.00	0.95	1.48
220	0.73	24.01	-0.42	0.00	0.29	555.31	-0.08	0.00	0.87	1.48

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	100487
Area:	Drilling	Analysis ID #:	94751
Lease:	Maple Ridge		
Location:	Fed #1 0		
Sample Point:	Wellhead San Andres		

Sampling Date:	7/29/2019
Analysis Date:	8/8/2019
Analyst:	Catalyst
TDS (mg/l or g/m3):	144232
Density (g/cm3):	1.097
Hydrogen Sulfide:	14
Carbon Dioxide:	162.8
Comments:	

Anions	mg/l	meq/l
Chloride:	84902.3	2394.79
Bicarbonate:	241.6	3.96
Carbonate:		
Sulfate:	3300.0	68.71
Borate*:	173.9	1.1
Phosphate*		

*Calculated based on measured elemental boron and phosphorus.

Cations	mg/l	meq/l
Sodium:	51250.0	2229.25
Magnesium:	1177.0	96.82
Calcium:	2566.0	128.04
Potassium:	564.2	14.43
Strontium:	53.5	1.22
Barium:	1.5	0.02
Iron:	1.5	0.05
Manganese:	0.460	0.02

pH at time of sampling:	6.41
pH at time of analysis:	
pH used in Calculation:	6.41
Temperature @ lab conditions (F):	75
Conductivity (micro-mhos/cm):	194536
Resistivity (ohm meter):	.0514

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	-0.09	0.00	-0.09	0.00	-0.09	0.00	-0.04	0.00	1.52	0.91
100	0.01	0.30	-0.15	0.00	-0.08	0.00	-0.06	0.00	1.33	0.91
120	0.10	3.96	-0.20	0.00	-0.06	0.00	-0.08	0.00	1.15	0.61
140	0.21	8.22	-0.25	0.00	-0.01	0.00	-0.08	0.00	1.00	0.61
160	0.31	12.48	-0.28	0.00	0.06	131.82	-0.08	0.00	0.87	0.61
180	0.41	17.35	-0.31	0.00	0.14	299.86	-0.07	0.00	0.76	0.61
200	0.51	21.92	-0.33	0.00	0.24	471.86	-0.06	0.00	0.67	0.61
220	0.61	26.79	-0.35	0.00	0.35	637.46	-0.04	0.00	0.60	0.61

Water Analysis- San Andres

CATALYST Oilfield Services

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	55880
Area:	Artesia	Analysis ID #:	53988
Lease:	White Rock		
Location:	Federal #1H 0		
Sample Point:	Wellhead San Andres		

Sampling Date:	12/21/2017
Analysis Date:	1/6/2018
Analyst:	Catalyst
TDS (mg/l or g/m3):	161820.5
Density (g/cm3):	1.107
Hydrogen Sulfide:	11
Carbon Dioxide:	242
Comments:	

Anions	mg/l	meq/l
Chloride:	93901.4	2648.62
Bicarbonate:	241.6	3.96
Carbonate:		
Sulfate:	5000.0	104.1
Borate*:	229.5	1.45
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	6.9
pH at time of analysis:	
pH used in Calculation:	**6.9**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	58100.0	2527.21
Magnesium:	969.6	79.76
Calcium:	2737.0	136.58
Potassium:	571.6	14.62
Strontium:	66.0	1.51
Barium:	0.0	0.
Iron:	3.8	0.14
Manganese:	0.000	0.

Conductivity (micro-ohms/cm):	**176042**
Resistivity (ohm meter):	**.0568**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.43	9.88	0.10	359.72	0.11	305.55	0.18	14.96	0.00	0.00
100	0.49	12.27	0.03	111.03	0.10	296.88	0.16	13.17	0.00	0.00
120	0.55	14.96	-0.03	0.00	0.13	355.53	0.14	11.97	0.00	0.00
140	0.60	17.96	-0.08	0.00	0.17	467.16	0.13	11.67	0.00	0.00
160	0.64	20.95	-0.12	0.00	0.23	615.30	0.14	11.67	0.00	0.00
180	0.69	24.54	-0.15	0.00	0.31	784.69	0.14	12.27	0.00	0.00
200	0.75	28.13	-0.18	0.00	0.40	962.15	0.15	12.87	0.00	0.00
220	0.80	31.72	-0.20	0.00	0.51	1137.23	0.17	13.77	0.00	0.00

Attachment 4

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

June 25, 2025

PN 1904.SEIS.00

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

Subject: **Mack Energy Corporation**
Gander SWD #1 - Seismic Potential Letter

Dear Mr. Goetze,

At the request of Mack Energy Corporation (Mack), ALL Consulting, LLC (ALL) has assessed the potential injection-induced seismicity risks in the vicinity of Mack's Gander SWD #1, a proposed saltwater disposal (SWD) facility in Chaves 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 Gander SWD #1 to contribute to seismic activity in the area.

Geologic Evaluation

The Gander SWD #1 is requesting a permit to inject into the Devonian-Silurian Formation at a depth of 13,090-13,790 feet below ground surface (bgs). The Devonian-Silurian Formation consists of limestones, shales, and dolomites and is overlain by approximately 80 feet of low porosity and permeability Woodford Shale, which would prevent the upward migration of injection fluid and serve as the upper confining layer (see **Attachment 1**). Additionally, the Devonian-Silurian Formation is underlain by various low porosity and permeability zones within the Montoya and Simpson Groups, which consist of limestones, dolomites, and interbedded shale zones. No geophysical logs penetrating the Montoya Group were identified within 10 miles of the Gander SWD #1. A stratigraphic chart depicting the geologic setting is included as **Figure 1**.[1]

[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

Seismic Events and Fault Data

A review of United States Geological Survey (USGS) and New Mexico Tech Seismological Observatory (NMTSO) earthquake catalogues determined that the closest recorded seismic event was a M1.44 that occurred on May 16, 2021, and was located approximately 1.55 miles west of the Gander SWD #1 (see **Attachment 2**). **Per the USGS earthquake catalog, zero (0) seismic event M2.5 or greater have been recorded within 10 miles of the Gander SWD #1.**[2]

Fault data from United States Geological Survey (USGS) and the Texas Bureau of Economic Geology (BEG)[3] indicates that the closest known fault is located approximately 5.2 miles east of the Gander SWD #1 (see **Attachment 2**). This identified fault is within the Precambrian basement, which is approximately 2,210 feet below the proposed injection interval. A map of the seismic events and faults within 10 miles of the Gander 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

---

[2] *USGS Earthquake Catalog*. U.S. Geological Survey. (n.d.). https://earthquake.usgs.gov/earthquakes/search/

[3] 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.

[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.

presence or lack of faulting within the injection interval are major considerations when determining the risk of injection-induced seismicity.

Depth to Precambrian Basement

Geophysical data from nearby well records, aeromagnetic surveys, and gravity surveys indicates the top of the Precambrian basement to be approximately 16,000 feet bgs at the Gander SWD #1, or approximately 2,210 feet below the proposed injection interval.[3] **There are insufficient Precambrian basement penetrations and/or public well data regarding Precambrian basement depth to generate an accurate structural contour map of the Precambrian basement in the vicinity of the Gander SWD #1.**

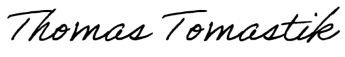
Formation Parting Pressure

Class II SWDs in New Mexico are administratively permitted with a maximum injection pressure gradient of 0.2 psi/ft. Review of New Mexico Oil Conservation Division (NMOCD) Order IPI-537 from the Mack Energy Round Tank SWD #1, which is located approximately 16.3 miles southwest of the proposed Gander SWD #1, determined the fracture gradient of the Devonian Formation in the region is 0.41 psi/ft from an approved step-rate test. Typical SWD permitting standards in New Mexico would indicate that formation parting pressure would not be exceeded by the Gander SWD #1.

Conclusion

As experts on the issue of induced seismicity, seismic monitoring, and mitigation, it is our expert opinion that the potential for the Gander SWD #1 to cause injection-induced seismicity is expected to be minimal, at best. This conclusion assumes the Gander SWD #1 will be operated under formation parting pressure at the regulated 0.2 psi per foot and is based on (1) the presence of confining layers above and below the proposed injection interval, (2) the significant vertical and lateral distance between the proposed injection interval and the nearest identified Precambrian basement fault, and (3) the lack of historic seismicity on mapped deep faults within 10-miles of the proposed Gander SWD #1 location.

Sincerely,
ALL Consulting



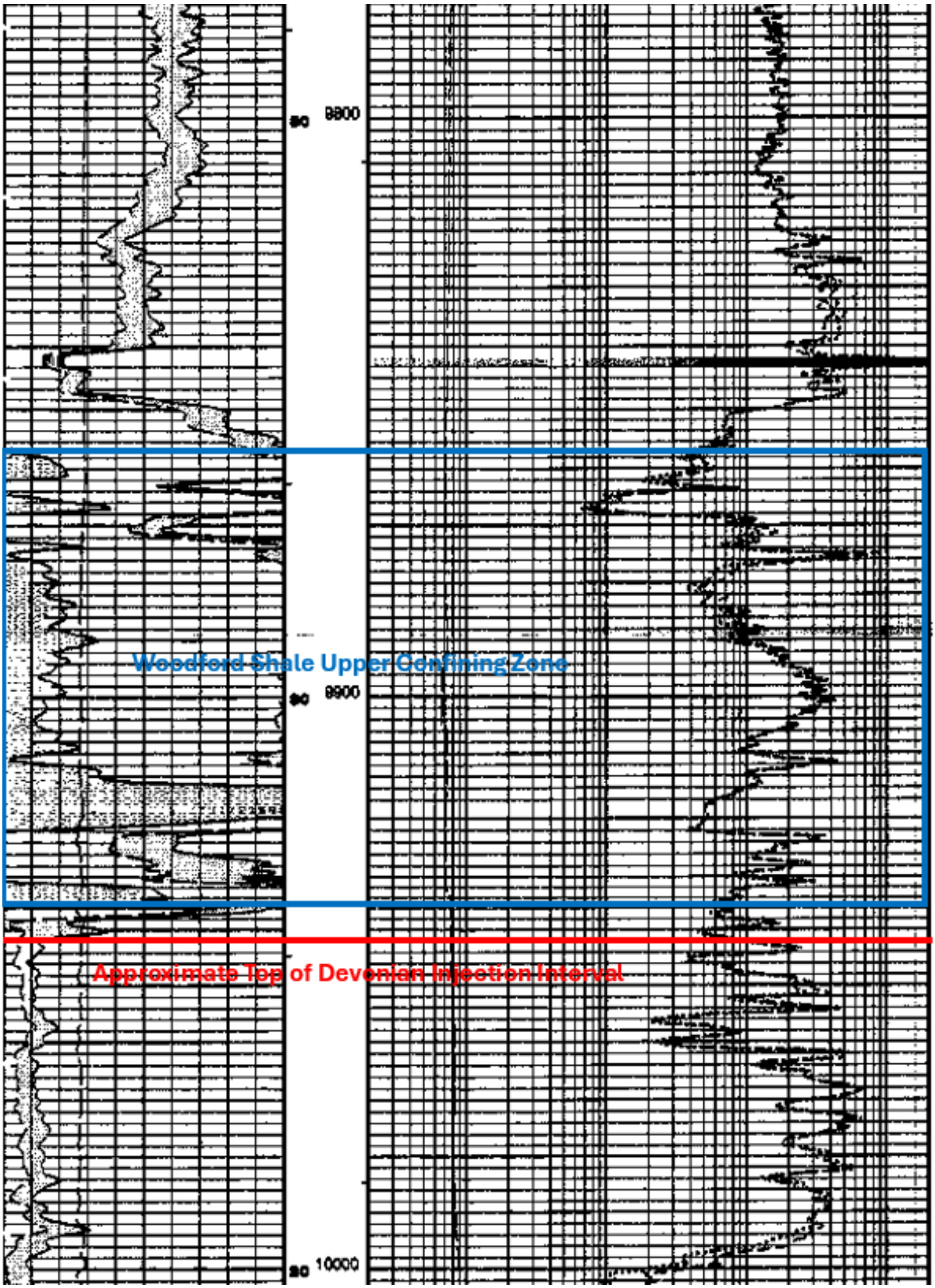
Reed Davis
Geophysicist

Thomas Tomastik
Chief Geologist

Attachment 1
Upper Confining Zone

Mack Energy Corporation
Gander SWD #1 Seismic Potential Letter
June 25, 2025

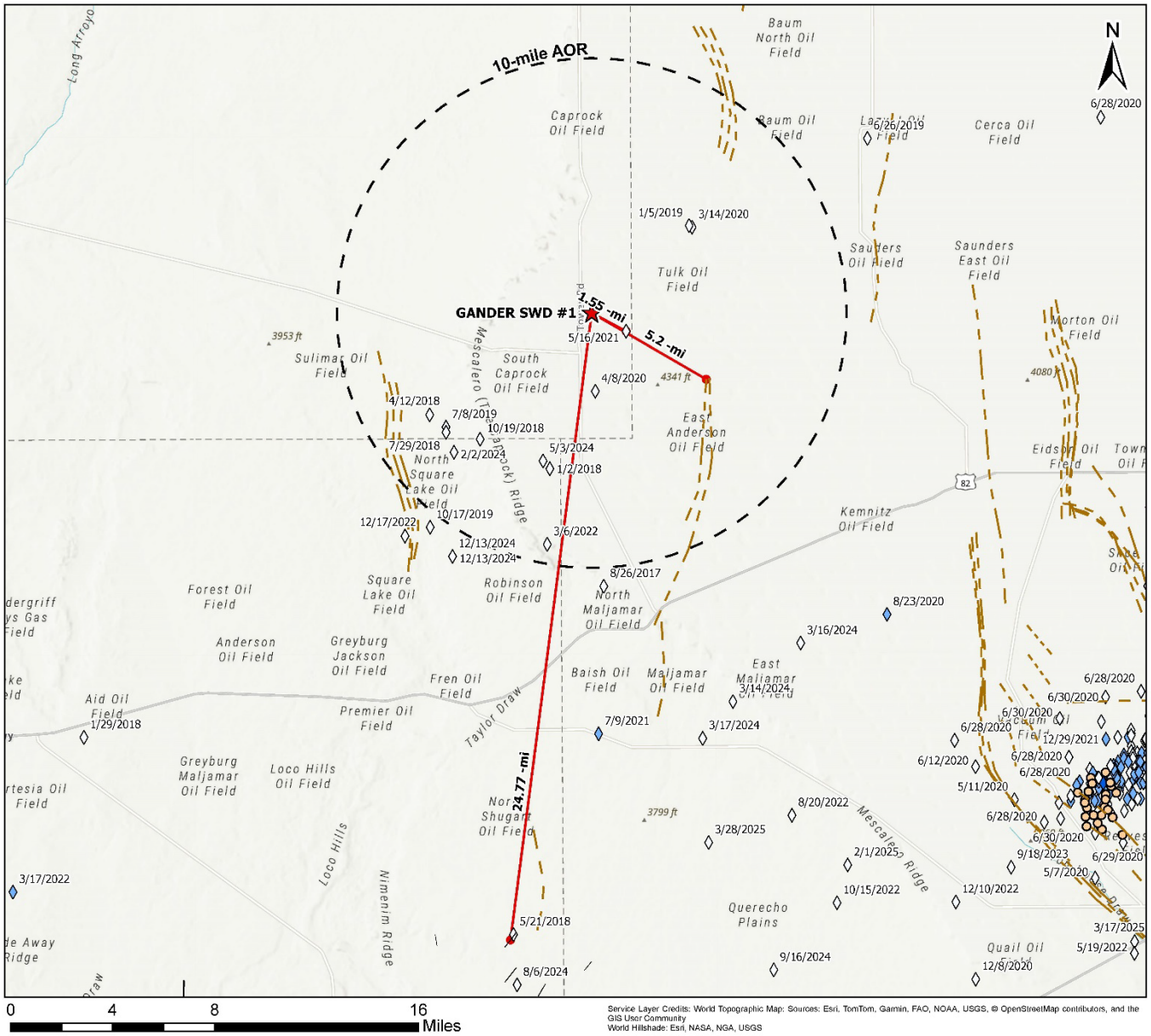
Woodford Shale Upper Confining Zone from API No. 30-025-33185



Attachment 2
Seismic Analysis Map

Mack Energy Corporation
Gander SWD #1 Seismic Potential Letter
June 25, 2025

Gander SWD #1 Nearby Seismic Events and Faults



Service Layer Credits: World Topographic Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
World Hillshade: Esri, NASA, NGA, USGS

Legend

- Proposed SWD
- Shallow Faults
- Deep Faults

Stress Orientations (Lund, Snee, Zoback 2020)
Indicator, Quality

- Wellbore, A (1)
- Wellbore, B (3)
- Wellbore, C (2)

NMTSO Seismic Events - 5/5/2025
Magnitude

- 0 - 2.0 (91)
- 2.1 - 3.0 (71)
- 3.1 - 4.0 (1)
- 4.1 - 4.5 (0)

USGS Seismic Events - 5/5/2025
Magnitude

- 0.8 - 2.0 (0)
- 2.1 - 3.0 (23)
- 3.1 - 4.0 (0)
- 4.1 - 4.6 (0)

Seismic Analysis Map

GANDER SWD #1
CHAVES COUNTY, NEW MEXICO

Proj Mgr: Reed Davis	May 05, 2025	Mapped by: Ben Bockelmann

Prepared for: MACK Energy Corporation
Prepared by: ALL CONSULTING

Attachment 6

XII. AFFIRMATIVE STATEMENT

RE: Gander SWD #1

We have examined the available geologic and engineering data and find no evidence of open faults or any other hydraulic connection between the disposal zone and any underground source of drinking water.

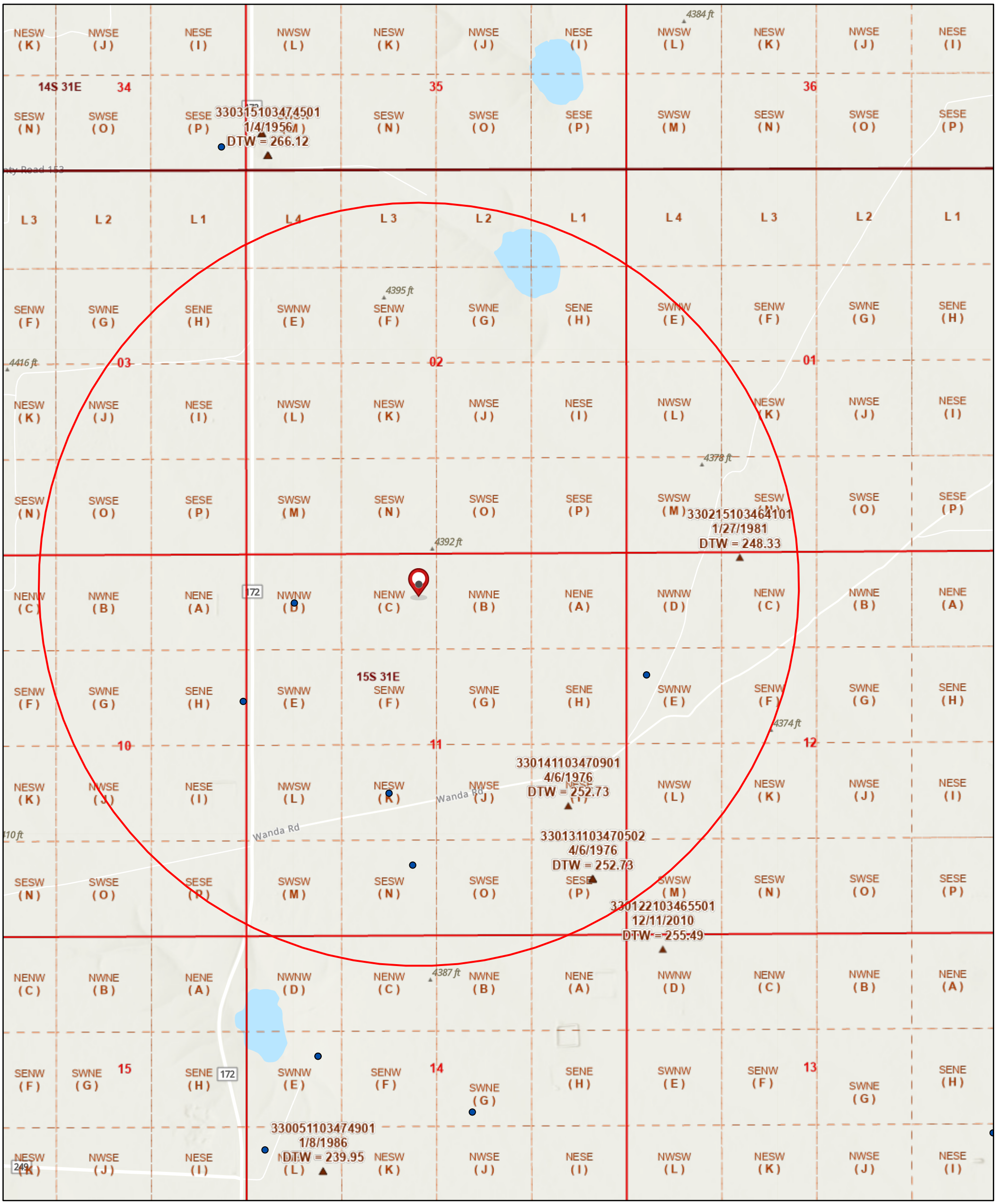
Mack Energy Corporation

Date: 4/28/25

Charles Sadler, Geologist

Attachment 5

1 Mile Water Well Lookup



5/6/2025, 2:06:44 PM

- OSE Water PODs
- USGS Historical GW Wells
- PLSS Second Division
- PLSS First Division
- PLSS Townships

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, USGS, OCD, BLM

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(acre ft per annum) | (R=POD has been replaced and no longer serves this file, C=the file is closed) | (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) | (NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q64	q16	q4	Sec	Tws	Range	X	Y	Map
L 03600	L	SRO	890.000	UNION OIL CO. OF CALIFORNIA	LE	L 03608						NE	SW	11	15S	31E	612583.0	3655108.0 *	
					LE	L 03609						NW	NW	11	15S	31E	612171.0	3655906.0 *	
L 03608	L	IRR	0.000	UNION OIL CO. OF CALIFORNIA	LE	L 03608						NE	SW	11	15S	31E	612583.0	3655108.0 *	
L 03609	L	IRR	0.000	UNION OIL CO. OF CALIFORNIA	LE	L 03609						NW	NW	11	15S	31E	612171.0	3655906.0 *	
L 06307	L	DOL	3.000	JESSIE WSTEVENS	CH	L 06307				Shallow	NE	SE	SW	11	15S	31E	612686.0	3654805.0 *	

Record Count: 5

Filters Applied:

PLSS Search:
Range: 31E
Township: 15S
Section: 11

Sorted By: File Number(basin, nbr, suffix)

*** UTM location was derived from PLSS - see Help**

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

CONDITIONS

Operator: MACK ENERGY CORP P.O. Box 960 Artesia, NM 882110960	OGRID: 13837
	Action Number: 479413
	Action Type: [C-108] Fluid Injection Well (C-108)

CONDITIONS

Created By	Condition	Condition Date
erica.gordan	None	7/11/2025