

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:** Apache Corporation **OGRID Number:** 873  
**Well Name:** North Monument G/SA Unit 010 **API:** 30-025-05729  
**Pool:** Eunice - Monument; Grayburg - San Andres **Pool Code:** 23000

**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

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

**FOR OCD ONLY**

- ☐ Notice Complete  
☐ Application  
 Content  
 Complete

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.**

Brian Wood

Print or Type Name

Signature

1-10-23

Date

505 466-8120

Phone Number

brian@permitswest.com

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: XXX Secondary Recovery          Pressure Maintenance          Disposal          Storage  
Application qualifies for administrative approval? XXX Yes          No

II. OPERATOR: APACHE CORPORATION  
ADDRESS: 303 VETERANS AIRPARK LANE, SUITE 3000, MIDLAND, TX 79705  
CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120

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 XXX No  
If yes, give the Division order number authorizing the project: R-9596

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.  
**NORTH MONUMENT G/SA UNIT 010**  
**30-025-05729**

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.

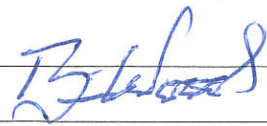
\*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

\*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: BRIAN WOOD  TITLE: CONSULTANT  
SIGNATURE:          DATE: JAN. 9, 2023  
E-MAIL ADDRESS: brian@permitswest.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

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:

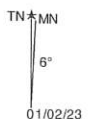
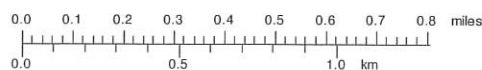
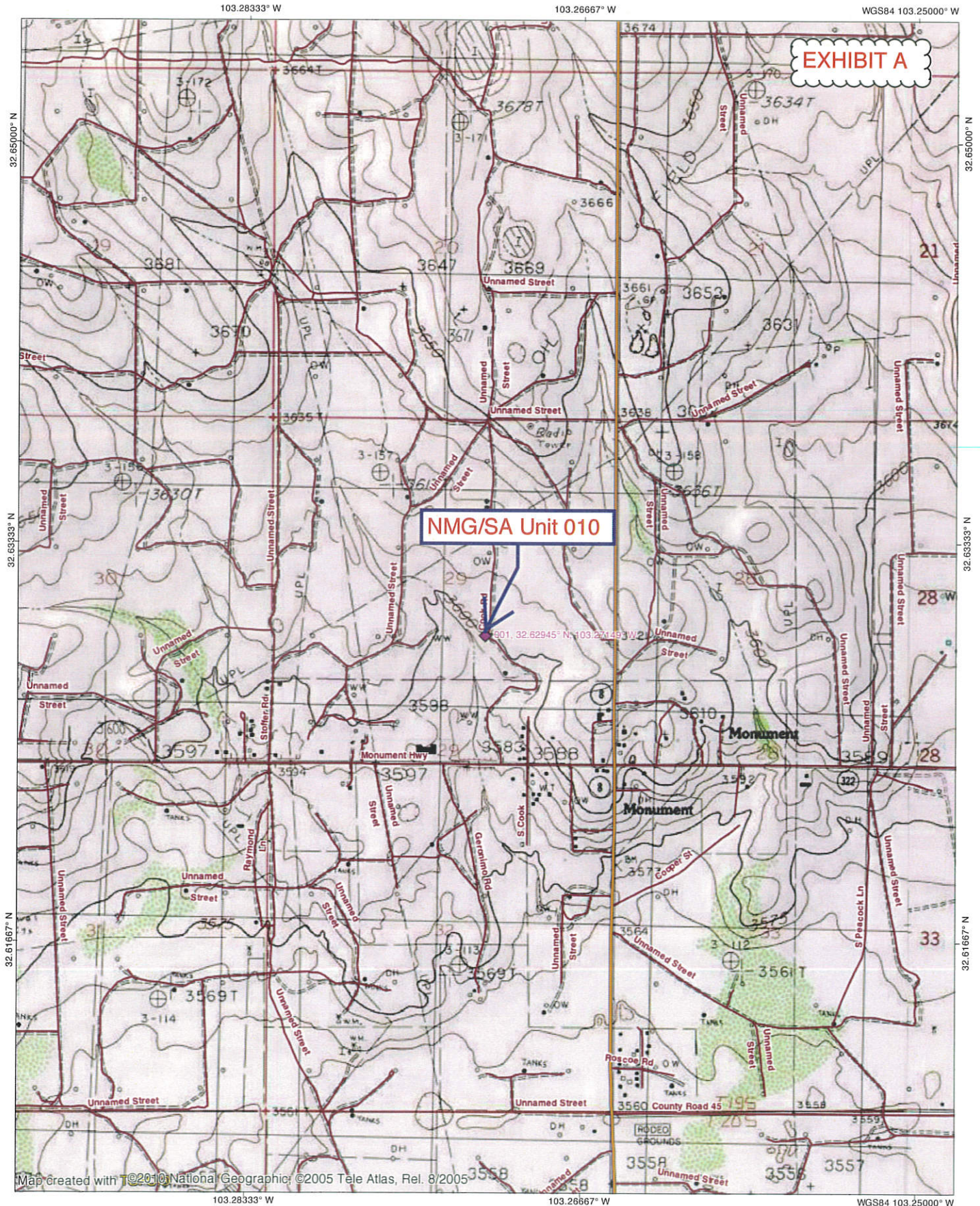
- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates 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.

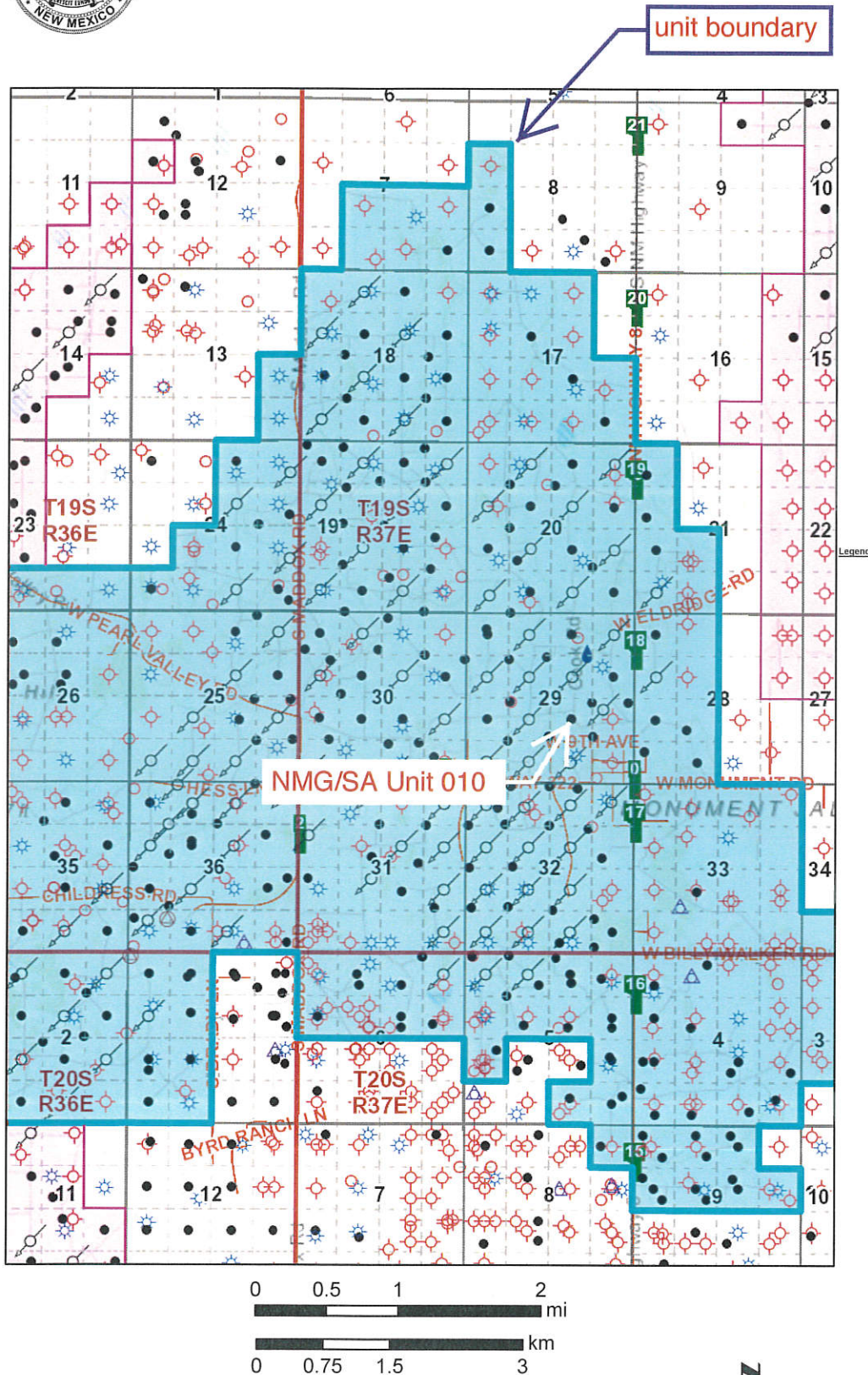
TOPO! map printed on 01/02/23 from "Untitled.tpo"





## New Mexico State Land Office

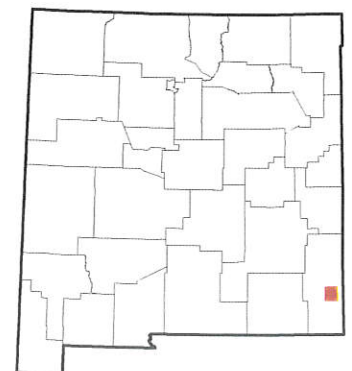
EXHIBIT A



## Disclaimer:

The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.

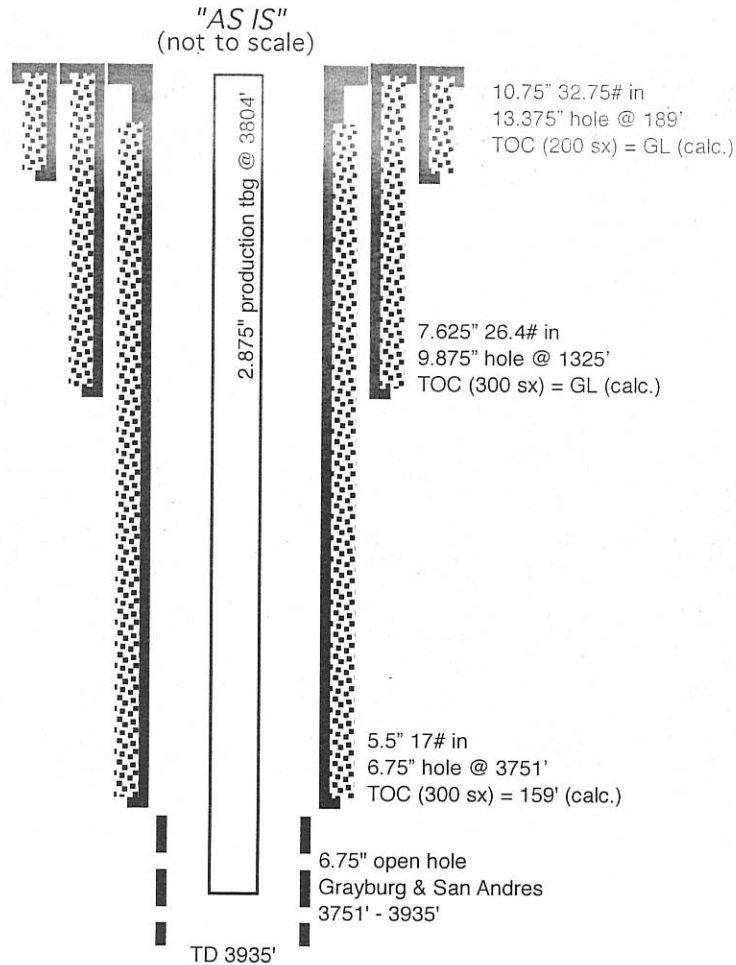


Side 1

## INJECTION WELL DATA SHEET

OPERATOR: APACHE CORPORATIONWELL NAME & NUMBER: NORTH MONUMENT G/SA UNIT 010

WELL LOCATION: 1980' FSL & 1980' FEL      J      29      19 S      37 E  
 FOOTAGE LOCATION      UNIT LETTER      SECTION      TOWNSHIP      RANGE

WELLBORE SCHEMATICWELL CONSTRUCTION DATASurface Casing

Hole Size: 13.375"      Casing Size: 10.75"  
 Cemented with: 200 sx.      or \_\_\_\_\_ ft<sup>3</sup>  
 Top of Cement: SURFACE      Method Determined: CALC.

Intermediate Casing

Hole Size: 9.875"      Casing Size: 7.625"  
 Cemented with: 300 sx.      or \_\_\_\_\_ ft<sup>3</sup>  
 Top of Cement: SURFACE      Method Determined: CALC.

Production Casing

Hole Size: 6.75"      Casing Size: 5.5"  
 Cemented with: 300 sx.      or \_\_\_\_\_ ft<sup>3</sup>  
 Top of Cement: 159'      Method Determined: CALC.

Total Depth: 3751' (OPEN HOLE 3751' - 3935')

Injection Interval

3774 feet to 3870'

(Perforated or Open Hole; indicate which)  
 ■■■■■■■■

# INJECTION WELL DATA SHEET

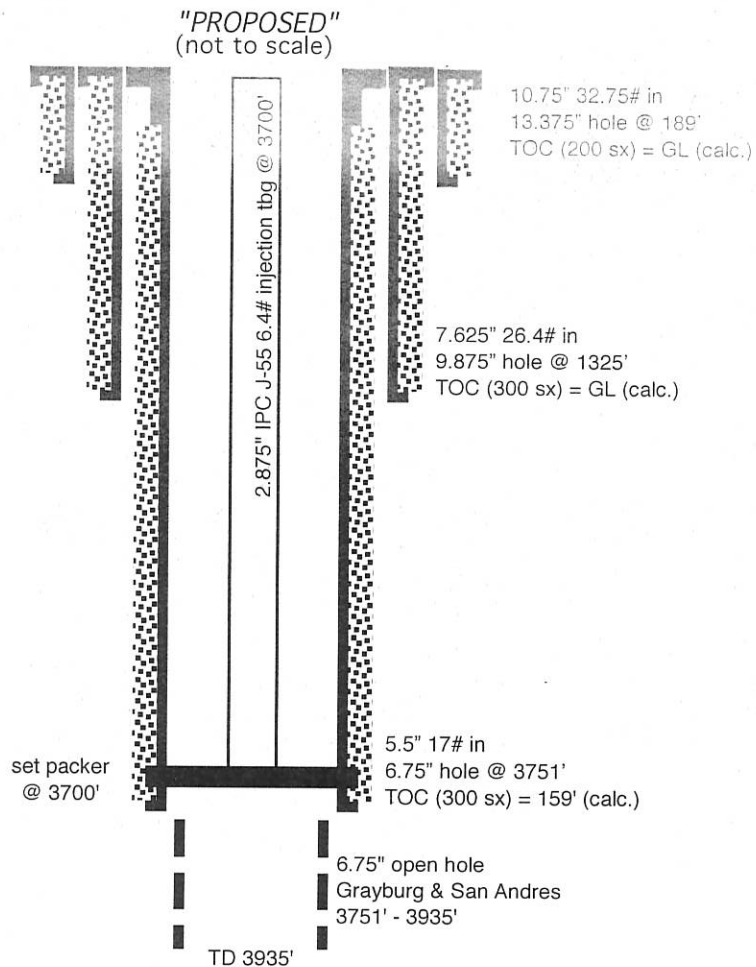
Side 1

OPERATOR: APACHE CORPORATION

WELL NAME & NUMBER: NORTH MONUMENT G/SA UNIT 010

WELL LOCATION: 1980' FSL & 1980' FEL J 29 19 S 37 E  
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

## WELLBORE SCHEMATIC



## WELL CONSTRUCTION DATA

### Surface Casing

Hole Size: 13.375" Casing Size: 10.75"  
Cemented with: 200 sx. or        ft<sup>3</sup>  
Top of Cement: SURFACE Method Determined: CALC.

### Intermediate Casing

Hole Size: 9.875" Casing Size: 7.625"  
Cemented with: 300 sx. or        ft<sup>3</sup>  
Top of Cement: SURFACE Method Determined: CALC.

### Production Casing

Hole Size: 6.75" Casing Size: 5.5"  
Cemented with: 300 sx. or        ft<sup>3</sup>  
Top of Cement: 159' Method Determined: CALC.

Total Depth: 3751' (OPEN HOLE 3751' - 3935')

### Injection Interval

3774 feet to 3870'

(Perforated or Open Hole; indicate which)  
■■■■■■■■■■

INJECTION WELL DATA SHEETTubing Size: 2.875" J-55 6.4# Lining Material: INTERNAL PLASTIC COATType of Packer: LOCK SET INJECTIONPacker Setting Depth: 3700'

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

Additional Data

1. Is this a new well drilled for injection? \_\_\_\_\_ Yes XXX No

If no, for what purpose was the well originally drilled? GRAYBURG - SAN ANDRES OIL WELL

2. Name of the Injection Formation: GRAYBURG & SAN ANDRES
3. Name of Field or Pool (if applicable): EUNICE-MONUMENT; GRAYBURG-SAN ANDRES (POOL #23000)

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. \_\_\_\_\_ NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_

OVER: YATES (2573'), SEVEN RIVERS (2830'), & QUEEN (3348')

UNDER: ABO ( $\approx$ 7065')

# Affidavit of Publication

STATE OF NEW MEXICO  
COUNTY OF LEA

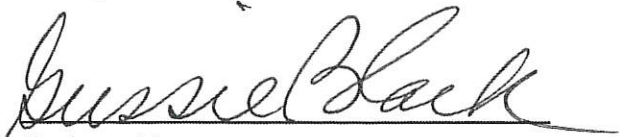
EXHIBIT K

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

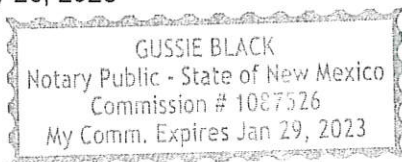
Beginning with the issue dated  
January 05, 2023  
and ending with the issue dated  
January 05, 2023.

  
Publisher

Sworn and subscribed to before me this  
5th day of January 2023.

  
Business Manager

My commission expires  
January 29, 2023  
(Seal)



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

## LEGALS

### LEGAL NOTICE January 5, 2023

Apache Corporation is applying to convert the North Monument G/SA Unit 010 oil well to a water injection well. The well, API 30-025-05729, is at 1980 FSL & 1980 FEL, Sec. 29, T. 19 S., R. 37 E., Lea County, NM. This is 1/2 mile northwest of the Monument, NM Post Office. Water will be injected at a maximum pressure of 754 psi into the Grayburg and San Andres formations from 3774' to 3870'. Maximum injection rate will be 700 bwpd. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 or ocd.engineer@state.nm.us within 15 days. NMOCD Engineering Bureau phone is 505 476-3441. Additional information can be obtained by contacting: Brian Wood, Permits West, Inc., 37 Verano Loop, Santa Fe, NM 87508. Phone number is (505) 466-8120.  
#00274597

02108485

00274597

BRIAN WOOD  
PERMITS WEST  
37 VERANO LOOP  
SANTA FE, NM 87508



January 9, 2023

NM State Land Office  
P. O. Box 1148  
Santa Fe NM 87504

**TYPICAL NOTICE**

Apache Corporation is planning (see attached application) to convert its North Monument G/SA Unit 010 oil well (30-025-05729) to a water injection well. As required by NM Oil Conservation Division (NMOCD) Rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: North Monument G/SA Unit 010 (fee lease)      ID: 3935'  
Proposed Injection Zones: Grayburg & San Andres from 3774' to 3870'  
Where: 1980' FSL & 1980' FEL Sec. 29, T. 19 S., R. 37 E., Lea County, NM  
Approximate Location: 1/2 mile northwest of the Monument, NM Post Office  
Applicant Name: Apache Corporation      (432) 818-1088  
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a water injection well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The NMOCD Engineering Bureau address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Phone number is (505) 476-3441. E-mail address is: ocd.engineer@state.nm.us

Please call me if you have any questions.

Sincerely,

Brian Wood

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To BLM  
520 E. Greene  
Carlsbad NM 88220  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Hess Corp.  
500 Dallas St.  
Level 2  
Houston TX 77002  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Shell Western E&P  
PO Box 576  
Houston TX 77001  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Jimmie & Betty Cooper  
P.O. Box 36  
Monument NM 88265  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Mewbourne Oil Co.  
P.O. Box 5270  
Hobbs NM 88241  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Southwest Royalties  
PO Box 53570  
Midland TX 79710  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Empire New Mexico LLC  
2200 S. Utica Place  
Suite 150  
Tulsa OK 74114  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To NM State Land Office  
PO Box 1148  
Santa Fe NM 87504  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Wagner Oil Co.  
500 Commerce St.  
Suite 600  
Midland TX 79702  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Extex Operating Company  
1616 S. Voss Road  
Suite 400  
Houston TX 77057  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Oil Well Drilling Co.  
110 Ghis Tower East  
Midland TX 79702  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)™

**OFFICIAL USE**

Coronado Station  
JAN 10 2023  
SANTA FE NEW MEXICO 87505

Postmark Here

Extra Services & Fees (check box, add fee as appropriate)

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

Postage \$

Total Postage and Fees \$

Sent To Wiser Oil Co.  
110 Ghis Tower East  
Midland TX 79702  
Street and Apt. No., or P.O. Box  
City, State, ZIP+4® Apache NMGS AU 1110

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

EXHIBIT L

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee \$  
Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
Postage \$  
Total Postage and Fees **Wiser Oil Co.**  
\$ **8115 Preston Rd.**  
Sent To **Suite 400**  
Street and Apt. No., or P.O. Box **Dallas TX 75225**  
City, State, ZIP+4® **Apache NMGS AU 1110**  
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee \$  
Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
Postage \$  
Total Postage and Fees **Wiser Oil Co.**  
\$ **P.O. Box 192**  
Sent To **Sistersville WV 26175**  
Street and Apt. No., or P.O. Box **Apache NMGS AU 1110**  
City, State, ZIP+4®  
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee \$  
Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
Postage \$  
Total Postage and Fees **Wiser Oil Co.**  
\$ **611 W. Mahone**  
Sent To **Suite D**  
Street and Apt. No., or P.O. Box **Wetzel NM 88211**  
City, State, ZIP+4® **Apache NMGS AU 1110**  
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee \$  
Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
Postage \$  
Total Postage and Fees **Wiser Oil Co.**  
\$ **707 17th St.**  
Sent To **Suite 3600**  
Street and Apt. No., or P.O. Box **Denver CO 80202**  
City, State, ZIP+4® **Apache NMGS AU 1110**  
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

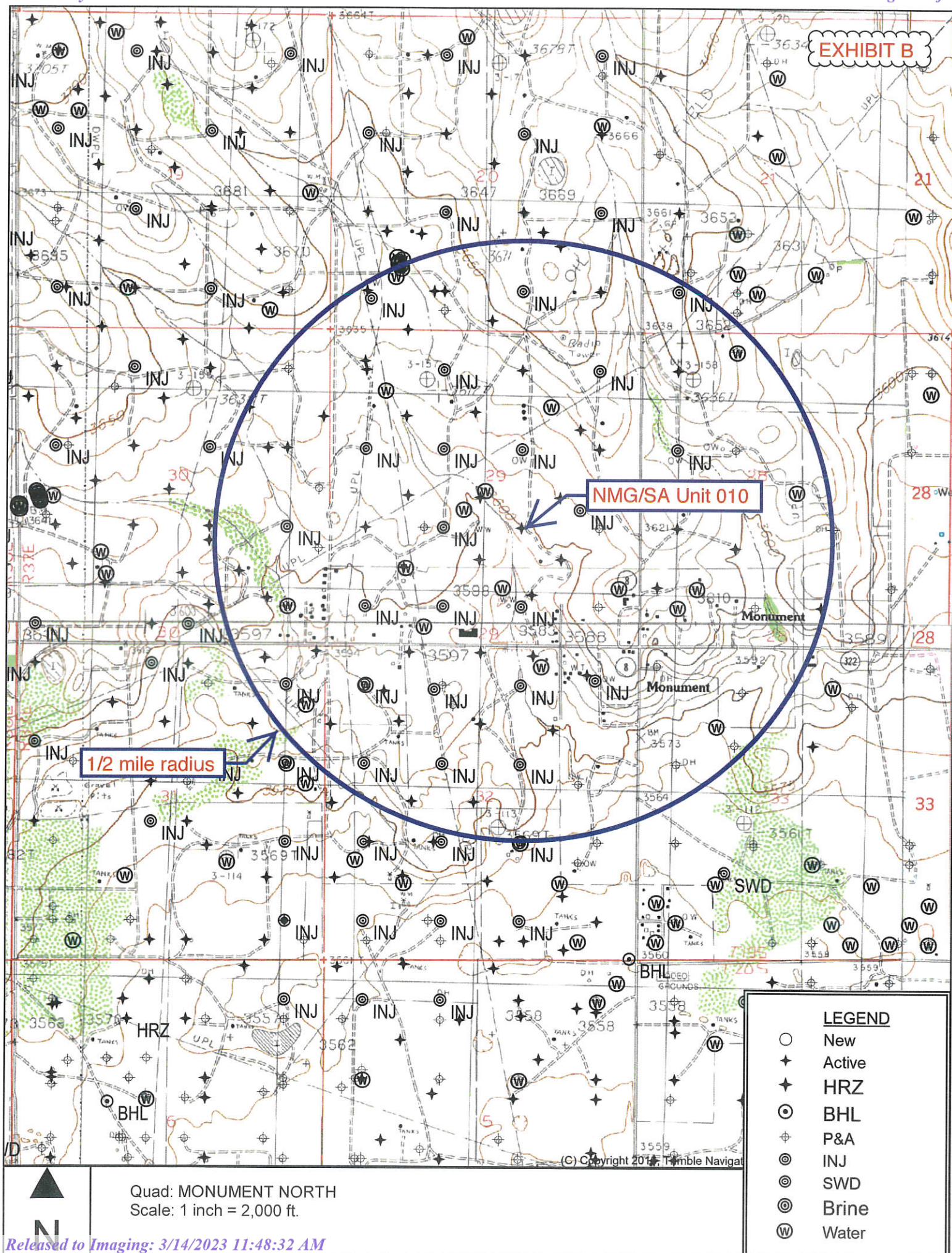
U.S. Postal Service™  
CERTIFIED MAIL® RECEIPT  
Domestic Mail Only

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee \$  
Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
Postage \$  
Total Postage and Fees **Wiser Oil Co. c/o El Paso**  
\$ **P.O. Box 1492**  
Sent To **El Paso NM 79999**  
Street and Apt. No., or P.O. Box **Apache NMGS AU 1110**  
City, State, ZIP+4®  
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

EXHIBIT L



SORTED BY DISTANCE FROM NMG/SAU 010

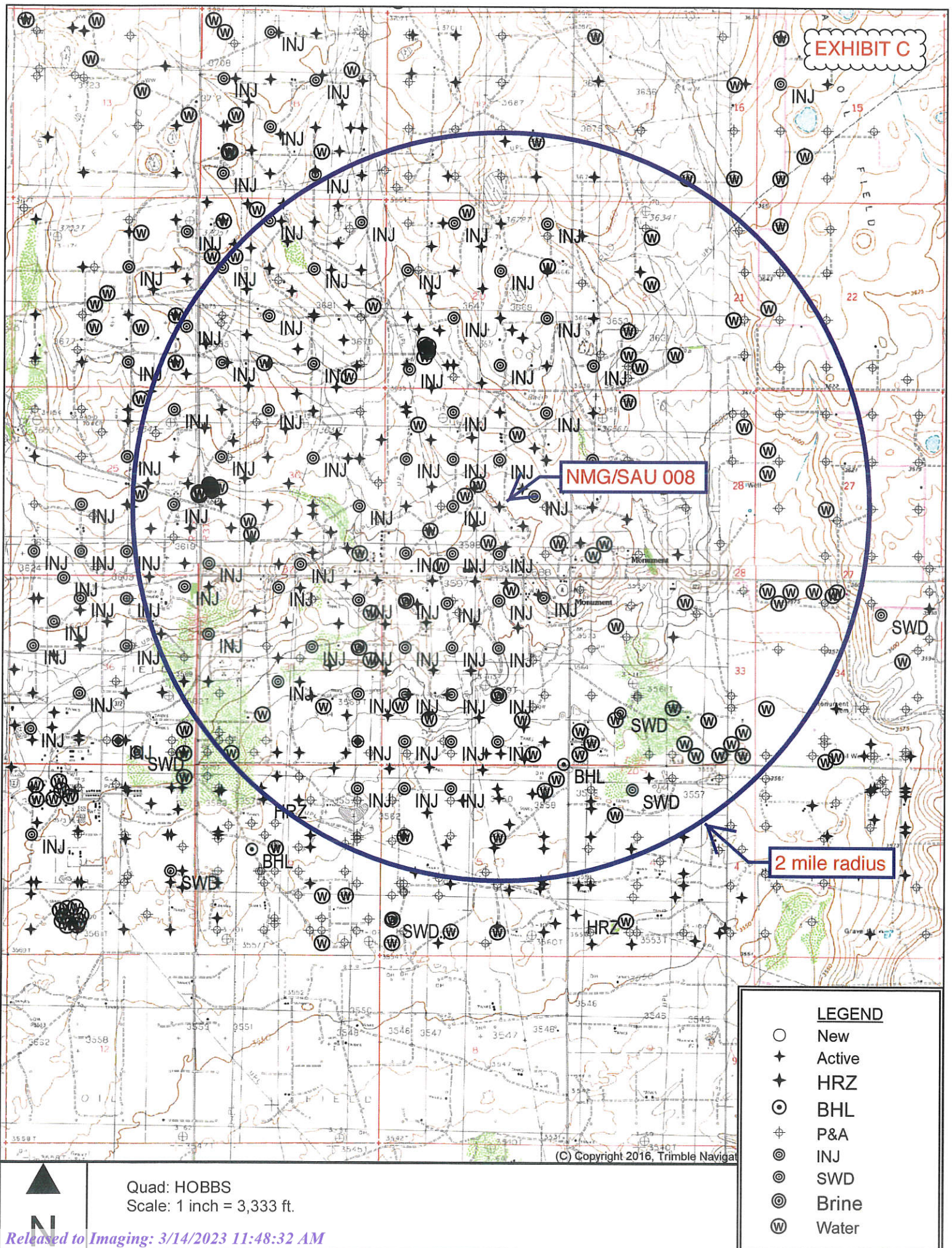
API	OPERATOR	WELL	TYPE	UNIT- SECTION- T19S-R37E	TVD	ZONE @ TD	FEET FROM NMG/SAU 010
3002535601	Apache	N Monument GSA Unit 318	O	J-29	3960	Grayburg	828
3002535617	Apache	N Monument GSA Unit 317	O	K-29	3960	Grayburg	853
3002535619	Apache	N Monument GSA Unit 321	O	I-29	3937	Grayburg	858
3002535618	Apache	N Monument GSA Unit 320	O	K-29	3943	Grayburg	866
3002505735	Apache	N Monument GSA Unit 009Y	I	I-29	3950	Grayburg	1039
3002533226	Mewbourne	State F Com 002	G	O-29	3808	Grayburg	1135
3002505725	Apache	N Monument GSA Unit 011	I	K-29	3945	Grayburg	1305
3002505732	Apache	N Monument GSA Unit 007	I	G-29	3952	Grayburg	1317
3002505730	Apache	N Monument GSA Unit 015	I	O-29	3914	Grayburg	1320
3002505734	Mewbourne	State F Com 001	P&A	I-29	3943	Grayburg	1327
3002525396	Apache	State P Gas Com 003	P&A	K-29	3588	Queen	1637
3002505726	Apache	N Monument GSA Unit 014	I	N-29	3930	Grayburg	1853
3002505721	Apache	N Monument GSA Unit 006	I	F-29	3945	Grayburg	1856
3002505737	Apache	N Monument GSA Unit 008	O	H-29	3960	Grayburg	1867
3002505731	Gulf	Williams 003	P&A	P-29	3943	Grayburg	1873
3002541751	Apache	N Monument GSA Unit 435	O	I-29	3982	Grayburg	1881
3002505736	Wagner	Mexico X Com 001	G	H-29	3660	Queen	1923
3002541044	Apache	N Monument GSA Unit 391	O	K-29	4020	San Andres	1985

EXHIBIT B

SORTED BY DISTANCE FROM NMG/SAU 010

3002535602	Apache	N Monument GSA Unit 319	O	M-29	3939	Grayburg	2087
3002538147	Apache	N Monument GSA Unit 345	O	F-29	3990	Grayburg	2087
3002531505	Apache	N Monument GSA Unit 018	W	B-29	5150	Grayburg	2092
3002541728	Apache	N Monument GSA Unit 439	O	B-32	4000	Grayburg	2151
3002535128	Apache	N Monument GSA Unit 294	O	C-32	3930	Grayburg	2192
3002505718	Apache	N Monument GSA Unit 013	O	M-28	3930	Grayburg	2525
3002505723	Apache	N Monument GSA Unit 012	O	L-29	3930	Grayburg	2631
3002505733	Apache	N Monument GSA Unit 002	O	B-29	3960	Grayburg	2637
3002505783	Apache	N Monument GSA Unit 002	I	B-32	3910	Grayburg	2640
3002505710	Apache	N Monument GSA Unit 012	O	L-28	3952	Grayburg	2653

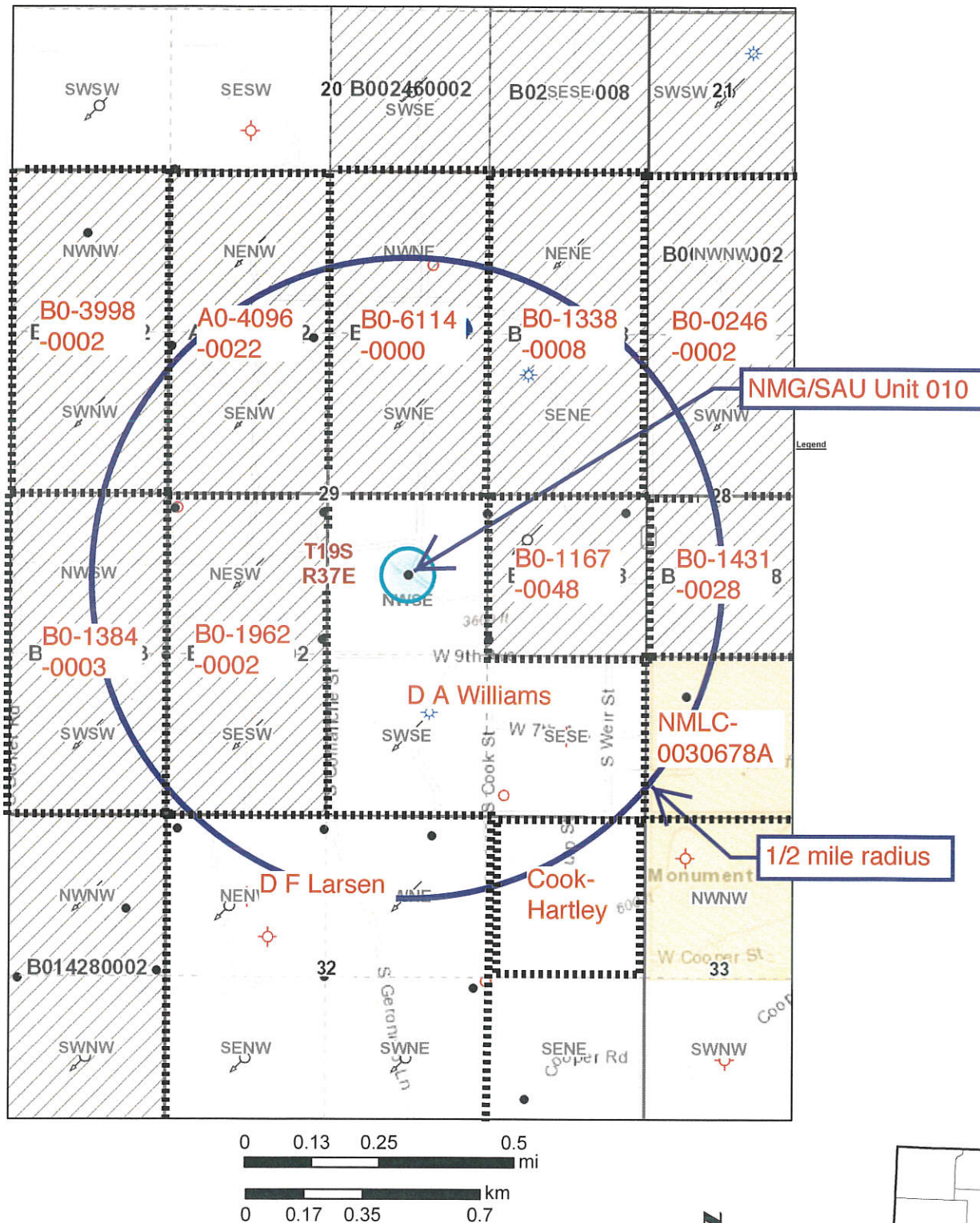
EXHIBIT B





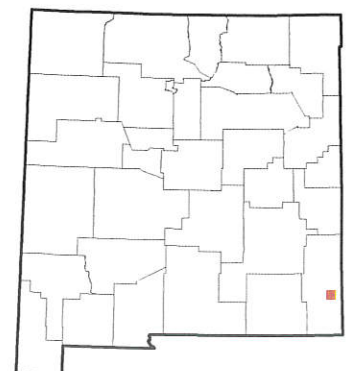
## New Mexico State Land Office

EXHIBIT D



Disclaimer:  
The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.



## NORTH MONUMENT G/SA UNIT 010 AREA OF REVIEW LEASES

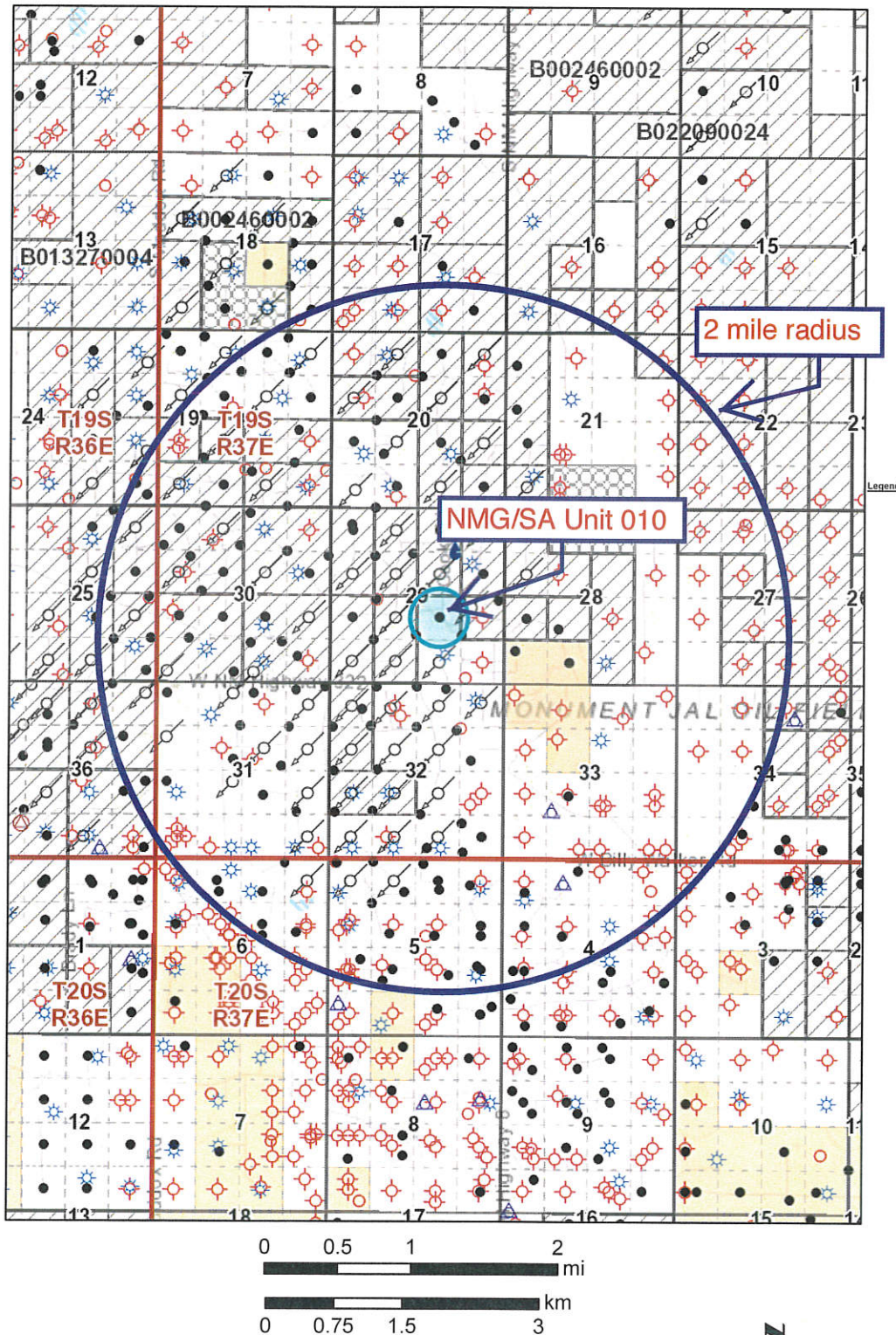
Aliquot Parts in Area of Review (T. 19 S., R. 37 E.)	Lessor	Lease	Lessee(s) of Record	Well Operators (all zones)
SWNW Sec. 28	NMSLO	B0-0246-0002	Southwest Royalties	Apache
NWSW Sec. 28	NMSLO	B0-1431-0028	Leaco NM E&P, aka, Apache	Apache
SWSW Sec. 28	BLM	NMLC-0030678A	ZPZ Delaware, aka Apache	Apache
E2NE4 Sec. 29	NMSLO	B0-1330-0008	Southwest Royalties	Apache, Wagner
W2NE4 Sec. 29	NMSLO	B0-6114-0000	Oil Well Drilling & Wiser Oil	Apache, Wagner
E2NW4 Sec. 29	NMSLO	A0-4096-0022	Leaco NM E&P, aka, Apache	Apache, Empire NM
SWNW Sec. 29	NMSLO	B0-3998-0002	Southwest Royalties	Apache, Empire NM
NESE Sec. 29	NMSLO	B0-1167-0048	Shell Western	Apache, Mewbourne
W2SE4 & SESE Sec. 29	fee	D A Williams	Apache	Apache, Mewbourne
E2SW4 Sec. 29	NMSLO	B0-1962-0002	Leaco NM E&P, aka, Apache	Apache
W2SW4 Sec. 29	NMSLO	B0-1384-0003	Leaco NM E&P, aka, Apache	Apache
NWNE Sec. 32	fee	Cook Hartley	Apache	Apache, Extex
NWNE & NENW Sec. 32	fee	D F Larsen	Apache	Apache

EXHIBIT D



## New Mexico State Land Office

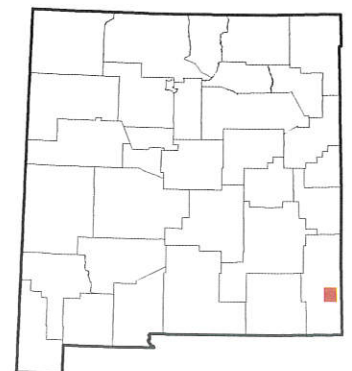
EXHIBIT E



## Disclaimer:

The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.



WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
N Monument GSA Unit 318	9/16/01	3960	Eunice Monument; Grayburg-SA	O	11	8.625	1329	450 sx	GL	Circ 67 sx
3002535601					7.875	5.5	3960	600 sx	GL	Circ
J-29-19S-37E										
N Monument GSA Unit 317	8/2/01	3960	Eunice Monument; Grayburg-SA	O	11	8.625	1324	550 sx	GL	Circ 140 sx
3002535617					7.875	5.5	3960	910 sx	GL	Circ 60 sx
K-29-19S-37E										
N Monument GSA Unit 321	9/24/01	3937	Eunice Monument; Grayburg-SA	O	11	8.625	1328	450 sx	GL	Circ 40 sx
3002535619					7.875	5.5	3936	950 sx	GL	Calc
I-29-19S-37E										
N Monument GSA Unit 320	7/25/01	3943	Eunice Monument; Grayburg-SA	O	11	8.625	1320	450 sx	GL	Circ 26 sx
3002535618					7.875	5.5	3943	1050 sx	GL	Circ 125 sx
K-29-19S-37E										

WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
N Monument GSA Unit 009Y	11/5/55	3950	Eunice Monument; Grayburg-SA	I	11	8.625	323	300 sx	GL	Circ 25 sx
3002505735					7.875	5.5	3948	750 sx	GL	Calc
I-29-19S-37E										
State F Com 002	1/27/96	3808	Eumont; Yates-7 Rvrs-Queen	G	12.25	8.625	407	350 sx	GL	Circ 44 sx
3002533226					7.875	5.5	3808	750 sx	GL	Circ 106 sx
O-29-19S-37E										
N Monument GSA Unit 011	4/24/36	3945	Eunice Monument; Grayburg-SA	I	17.5	12.5	203	150 sx	GL	Calc
3002505725					11	8.625	2520	500 sx	570	Calc
K-29-19S-37E					7.875	6.625	3808	100 sx	2918	Calc
N Monument GSA Unit 007	3/13/36	3952	Eunice Monument; Grayburg-SA	I	16	12.5	125	200 sx	GL	Calc
3002505732					12.5	9.625	1130	400 sx	GL	Calc
G-29-19S-37E					8.75	7	3800	225 sx	2520	Calc
					6	open hole	3952	N/A	N/A	N/A

WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
N Monument GSA Unit 015	10/17/36	3914	Eunice Monument; Grayburg-SA	I	13.75	10.75	274	200 sx	GL	Calcs
3002505730					9.8875	7.625	1292	200 sx	292	Calc
O-29-19S-37E					6.75	5.5	3734	200 sx	1614	Calc
					4.625	open hole	3914	N/A	N/A	N/A
State F Com 001	6/12/36	3943	Eumont; Yates-7 Rvrs- Queen	P&A	17.5	12.5	151	150 sx	GL	Circ
3002505734					12.5	9.625	1363	450 sx	500	Estimated
I-29-19S-37E					8.75	7	3688	250 sx	1900	Calc
					6.75	open hole	3943	N/A	N/A	N/A
State P Gas Com 003	1/28/77	3588	Eumont; Yates-7 Rvrs- Queen	P&A	12.25	8.625	289	250 sx	GL	no report
3002525396					7.875	5.5	3420	1100 sx	GL	Circ
K-29-19S-37E										

WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
N Monument GSA Unit 014	8/26/36	3930	Eunice Monument; Grayburg-SA	I	17.5	12.5	180	190 sx	GL	Calc
3002505726					11	8.625	2508	500 sx	541	Calc
N-29-19S-37E					7.875	6.625	3806	100 sx	2794	Calc
					no report	open hole	3930	N/A	N/A	N/A
N Monument GSA Unit 006	1/24/36	3945	Eunice Monument; Grayburg-SA	I	17.5	12.5	162	150 sx	GL	Calc
3002505721					11	9.625	2510	450 sx	GL	Calc
F-29-19S-37E					8.75	7	3815	100 sx	3150	Calc
N Monument GSA Unit 008	5/31/36	3960	Eunice Monument; Grayburg-SA	O	15	13	221	175 sx	GL	Calc
3002505737					10.75	9.625	1200	300 sx	GL	Calc
H-29-19S-37E					8.25	7	3800	300 sx	914	Calc
					6.25	open hole	3960	N/A	N/A	N/A

WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
Williams003	1/1/00	3943	Eunice Monument; Grayburg-SA	P&A	13.75	10.75	279	200 sx	GL	no report
3002505731					9.875	7.625	1330	230 sx	355	Calc
P-29-19S-37E					6.75	5.5	3720	175 sx	1507	Calc
N Monument GSA Unit 435	7/14/14	3966	Eunice Monument; Grayburg-SA	O	11	8.625	1335	450 sx	GL	Circ 25 sx
3002541751					7.875	5.5	3966	950 sx	GL	CBL
I-29-19S-37E										
N Monument GSA Unit 391	5/15/13	4020	Eunice Monument; Grayburg-SA	O	11	8.625	1269	445 sx	GL	Circ
3002541044					7.875	5.5	4020	695 sx	72	CBL
K-29-19S-37E										
N Monument GSA Unit 319	7/17/01	3939	Eunice Monument; Grayburg-SA	O	11	8.625	1320	475 sx	GL	Circ 104 sx
3002535602					7.875	5.5	3939	820 sx	GL	Circ 42 sx
M-29-19S-37E										

WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
N Monument GSA Unit 345	11/13/06	3990	Eunice Monument; Grayburg-SA	O	11	8.625	395	300 sx	GL	Circ
3002538147					7.875	5.5	3990	750 sx	125	CBL
F-29-19S-37E										
N Monument GSA Unit 018	6/23/92	5150	Eunice Monument; Grayburg-SA	W	26	20	1357	2300 sx	GL	Circ 275 sx
3002531505					17.5	13.375	2650	875 sx	1108	Estimated
B-29-19S-37E					12.25	9.625	3637	1280 sx	GL	Circ 35 sx
N Monument GSA Unit 439	8/4/14	3944	Eunice Monument; Grayburg-SA	O	11	8.625	1263	650 sx	GL	Circ 248 sx
3002541728					7.875	5.5	4000	950 sx	GL	CBL
B-32-19S-37E										
N Monument GSA Unit 294	9/22/00	3930	Eunice Monument; Grayburg-SA	O	11	8.625	1207	475 sx	GL	Circ 136 sx
3002535128					7.875	5.5	3930	1000 sx	GL	Circ 105 sx
C-32-19S-37E										

WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
N Monument GSA Unit 013	8/27/36	3930	Eunice Monument; Grayburg-SA	O	15	12.5	252	300 sx	GL	no report
3002505718					11	9.625	1383	400 sx	GL	Calc
M-28-19S-37E					9.25	7	3816	300 sx	1896	Calc
N Monument GSA Unit 012	4/18/36	3930	Eunice Monument; Grayburg-SA	O	17.5	12.5	192	200 sx	no report	no report
3002505723					11	8.625	2492	500 sx	no report	no report
L-29-19S-37E					7.875	6.625	3810	100 sx	no report	no report
N Monument GSA Unit 002	5/27/36	3960	Eunice Monument; Grayburg-SA	O	16	12	114	200 sx	no report	no report
3002505733					12.5	9.625	1190	400 sx	no report	no report
B-29-19S-37E					9.75	7	3750	523 sx	no report	circ 130 sx
					7	4.5	3630	347 sx	no report	no report

Sorted by distance from NMG/SAU 010

WELL	SPUD	TVD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW TOC DETERMINED
N Monument GSA Unit 002	2/5/37	3910	Eunice Monument; Grayburg-SA	I	17.5	12.5	192	200 sx	GL	Calc
3002505783					11	8.625	2492	600 sx	132	Calc
B-32-19S-37E					7.875	6.625	3795	100 sx	2783	Calc
					7.875	open hole	3910	N/A	N/A	N/A
N Monument GSA Unit 012	11/22/36	3952	Eunice Monument; Grayburg-SA	O	17.5	12.5	196	200 sx	GL	Circ
3002505710					11	8.625	2559	500 sx	no report	no report
L-28-19S-37E					7.875	6.625	3805	100 sx	no report	no report

EXHIBIT F

## Gulf Oil Corporation -- Pre-Ongard Well # 3 (D.A. Williams # 3)

## Wellbore Diagram -- Current Status - P&amp;A'd 7/27/1955

GL=3618'  
Spud: 11/17/36

API: 30-025-05731

Date : 11/7/22  
M. MonzonSurface Location660' FSL & 660' FEL,  
Sec 29, T19S, R37E, Lea County, NM**Surface Casing**  
10-3/4" 32# @ 279' w/ 200 sx to surface

Plug 25' to surf

Hole Size  
=13 3/4"

Cmt Retainer @ 950' - sqzd 171 sxs of cmt

Perf @ 1,000' (2 circulation holes)

**Intermediate Casing**  
7-5/8" 22# @ 1338' w/ 200 sx (Calc TOC @ 355')Hole Size  
=9 7/8"

Cmt Retainer @ 2200' - sqzd 250 sxs of cmt

Hole Size  
=6 3/4"**Production Casing**  
5-1/2" 17# @ 3720' w/ 175 sxs  
(Calc TOC @ 1507')

OH from 3720-3945'

Hole Size  
=4-3/4"

TD =3945'

**EXHIBIT F**

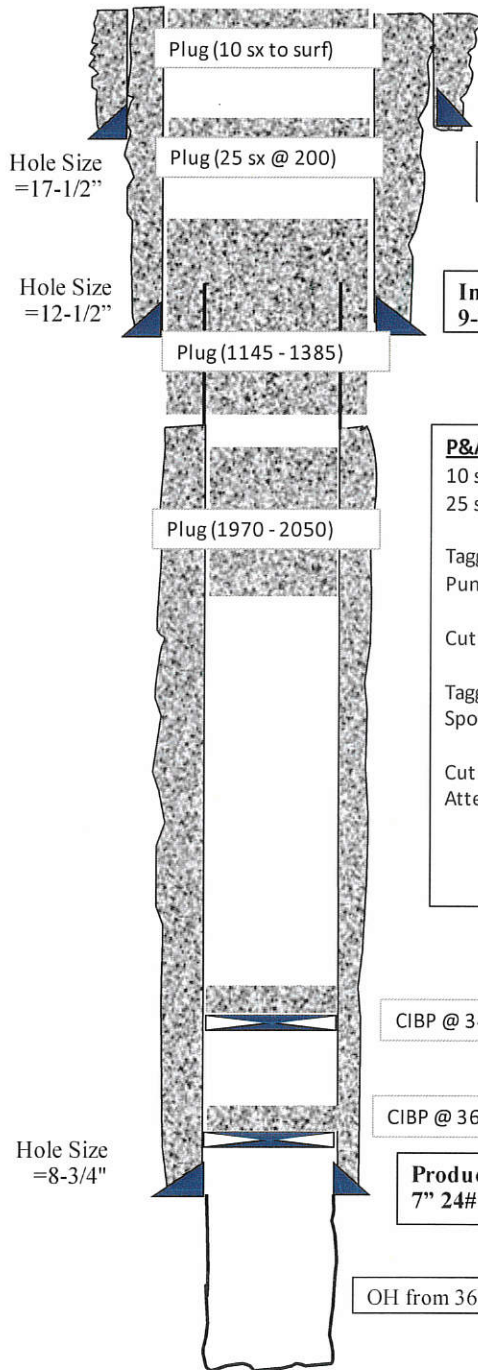
GL=3609'  
Spud:  
7/11/1936

# Mewbourne Oil Company - State F Com # 1

## Wellbore Diagram – P&A (7/3/1996)

API: 30-025-05734

Date : 11/8/2022  
M. Monzon



### Surface Location

1980' FSL & 660' FEL,  
Sec 29, T19S, R37E, Lea County, NM

### Surface Casing

12-1/2" 50# @ 151' w/ 150 sx cmt to surface

### Intermediate Casing

9-5/8" 36# @ 1363' w/ 430 sx cmt to surface

### P&A Cmt Plugs:

10 sx to surface

25 sx at 200'

Tagged plug @ 1145'

Pumped 50 sxs of cmt @ 1385'

Cut 7" @ 1320' and lay down 42 jts of csg

Tagged plug @ 1970'

Spot 100' cmt plug from 1950-2050'

Cut 7" @ 2000' - pulled 10' and got stuck

Attempt to cut 7" casing @ 2,800' & 2,500' - casing did not pull free

CIBP @ 3450' w/ 35' cmt on top

CIBP @ 3638' w/ 5' cmt on top

### Production Casing

7" 24# @ 3657' w/ 250 sx (Calculate TOC @ 1900')

OH from 3657'-3943'

TD =3943'

Drawing not to scale

**EXHIBIT F**

GL=3608'  
Spud: 1/28/77

# Apache Corporation - State P Gas Com # 3

Wellbore Diagram – P&A (1/20/2021)

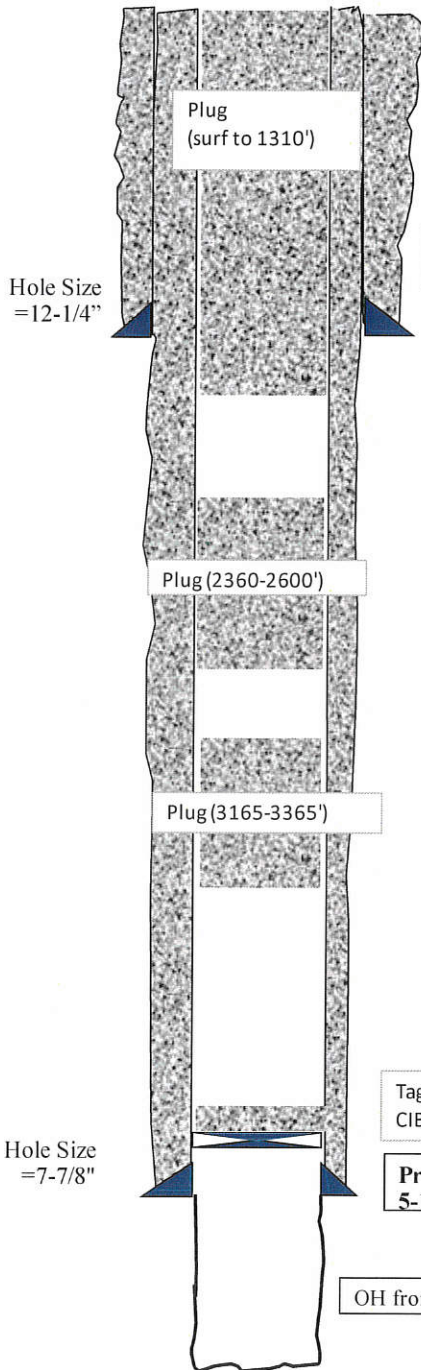
API: 30-025-25396

Date : 11/7/2022  
M. Monzon

## Surface Location



1980' FSL & 1650' FWL,  
Sec 29, T19S, R37E, Lea County, NM



## Surface Casing

8-5/8" 24# @ 289' w/ 250 sx cmt to surface

## P&A Cmt Plugs:

Cmt plug - 152 sxs --> 1310 to surface

Tagged TOC @ 2351'

Cmt plug - 30 sxs --> 2600 - 2360

Tagged TOC @ 3365'

CIBP @ 3400' w/ 35' cmt on top

## Production Casing

5-1/2" 17# @ 3420' w/ 1100 sx cmt to surface

OH from 3420'-3588'

TD =3588'

Drawing not to scale

P.O. BOX 1468  
MONAHANS, TEXAS 79756  
PH. 943-3234 or 563-1040

Martin Water Laboratories, Inc.  
WATER CONSULTANTS SINCE 1953  
BACTERIAL AND CHEMICAL ANALYSES

**EXHIBIT G**  
709 W. INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

To: Ms. Denise Wann  
P. O. Drawer "D"  
Monument, NM 88265

Laboratory No. 1290205  
Sample received 12-20-90  
Results reported 1-2-91

Company: Amerada Hess Corporation  
County: Lea, NM  
Field: Eunice Monument  
Lease: As Listed

Subject: To determine the amount of precipitated barium sulfate in submitted mixtures of waters.

<u>Mixture of Waters</u>	<u>Precipitated Barium Sulfate</u> <u>as BaSO<sub>4</sub>, mg/l</u>
1. 90% EMSU water supply well #460 & 10% Larsen #4	0.2
2. 60% EMSU water supply well #460 & 40% Larsen #4	0.2
3. 50% EMSU water supply well #460 & 50% Larsen #4	0.0
4. 40% EMSU water supply well #460 & 60% Larsen #4	0.3
5. 90% EMSU water supply well #460 & 10% State F #3	0.4
6. 60% EMSU water supply well #460 & 40% State F #3	0.0
7. 50% EMSU water supply well #460 & 50% State F #3	0.4
8. 40% EMSU water supply well #460 & 60% State F #3	3.4
9. 90% EMSU water supply well #460 & 10% State F #4	0.0
10. 60% EMSU water supply well #460 & 40% State F #4	0.3
11. 50% EMSU water supply well #460 & 50% State F #4	0.3
12. 40% EMSU water supply well #460 & 60% State F #4	0.5
13. 90% EMSU water supply well #460 & 10% State K #1	0.2
14. 60% EMSU water supply well #460 & 40% State K #1	0.2
15. 50% EMSU water supply well #460 & 50% State K #1	*
16. 40% EMSU water supply well #460 & 60% State K #1	0.0
17. 90% EMSU water supply well #461 & 10% Larsen #4	0.4
18. 60% EMSU water supply well #461 & 40% Larsen #4	0.0
19. 50% EMSU water supply well #461 & 50% Larsen #4	0.2
20. 40% EMSU water supply well #461 & 60% Larsen #4	0.0
21. 90% EMSU water supply well #461 & 10% State F #3	0.0
22. 60% EMSU water supply well #461 & 40% State F #3	0.1
23. 50% EMSU water supply well #461 & 50% State F #3	0.2
24. 40% EMSU water supply well #461 & 60% State F #3	0.2
25. 90% EMSU water supply well #461 & 10% State F #4	0.0
26. 60% EMSU water supply well #461 & 40% State F #4	0.0
27. 50% EMSU water supply well #461 & 50% State F #4	0.0
28. 40% EMSU water supply well #461 & 60% State F #4	0.3


\*No sample submitted at this mixture. We did not consider it necessary to make an extra mixture of these waters because of the absence of any detectable barium sulfate in the other combinations.

Ms. Denise Wann, Amerada Hess Corporation - Laboratory No. 1290205 (Page 2)

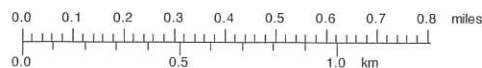
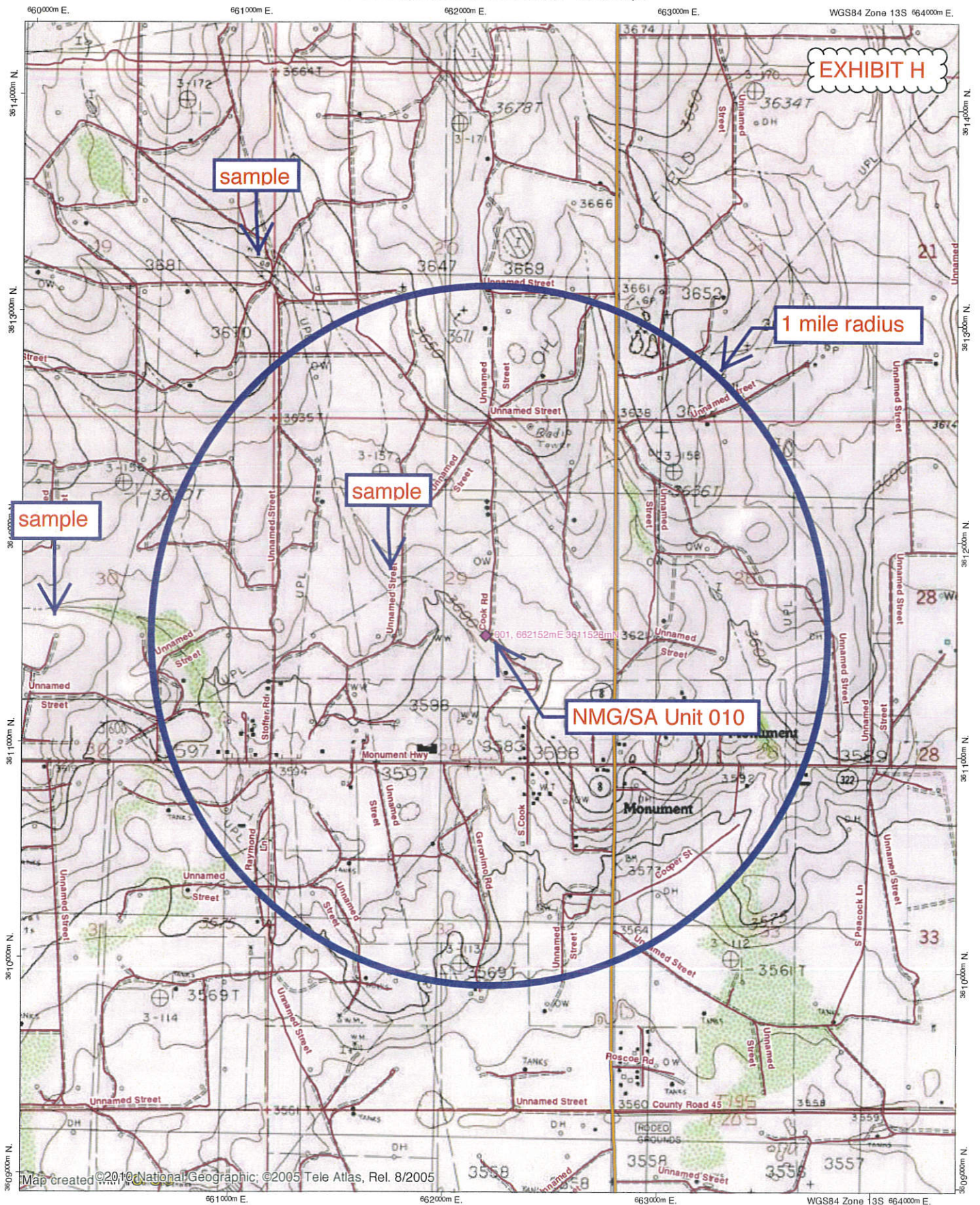
EXHIBIT G

<u>Mixture of Waters</u>	<u>Precipitated Barium Sulfate</u>	
	<u>as BaSO<sub>4</sub>, mg/l</u>	
29. 90% EMSU water supply well #461 & 10% State K #1	0.0	
30. 60% EMSU water supply well #461 & 40% State K #1	0.0	
31. 50% EMSU water supply well #461 & 50% State K #1	0.0	
32. 40% EMSU water supply well #461 & 60% State K #1	0.0	

Remarks: The above results clearly need to be qualified. We have reported the results acquired, but our detectable limits are estimated to be approximately 0.5 mg/l; and when we get a reading below that level, we do not consider it conclusive evidence that any barium sulfate is present. Therefore, only a single sample herein showed what we consider to be a reasonable quantity of barium sulfate in the mixed waters. This was 3.4 mg/l that was detected in the combination of 40 percent of well #460 and 60 percent of State "F" #3. It is our carefully considered conclusion that these results do not indicate any significant incompatibility between the waters that were mixed herein. We would only consider it advisable to maintain some observation over conditions in a system handling the mixture of these waters for the possibility of any barium sulfate deposits or precipitates. We do not consider the results to indicate that any of the waters mixed herein are actually sufficiently incompatible to prevent their mixing.

  
Waylan C. Martin, M.A.

TOPO! map printed on 01/02/23 from "Untitled.tpo"



01/02/23



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

**EXHIBIT H**





























(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)













(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	Depth	Well	Depth	Water	Column
		Sub-basin		64	16	4											
<a href="#">L 09631</a>		L	LE	1	4	29	19S	37E		662153	3611526* 		2		35		
<a href="#">L 09632</a>		L	LE	1	4	29	19S	37E		662153	3611526* 		2		35		
<a href="#">L 09633</a>		L	LE	1	4	29	19S	37E		662153	3611526* 		2		35		
<a href="#">L 03922</a>		L	LE				29	19S	37E	661958	3611717* 		270		42	22	20
<a href="#">L 03949</a>		L	LE				29	19S	37E	661958	3611717* 		270		36	18	18
<a href="#">L 03956</a>		L	LE				29	19S	37E	661958	3611717* 		270		40	20	20
<a href="#">L 04799</a>		L	LE				29	19S	37E	661958	3611717* 		270		150		
<a href="#">L 10498</a>		L	LE				29	19S	37E	661958	3611717* 		270		60		
<a href="#">L 05611</a> <a href="#">POD3</a>		L	LE	2	2	3	29	19S	37E	661850	3611620* 		315		80	28	52
<a href="#">L 01252</a>		L	LE	1	3	4	29	19S	37E	662058	3611223* 		319		43		
<a href="#">L 05314</a>		L	LE	1	3	4	29	19S	37E	662058	3611223* 		319		34	14	20
<a href="#">L 05500</a>		L	LE	2	4	4	29	19S	37E	662661	3611229* 		590		55		
<a href="#">L 02596</a>		L	LE			3	29	19S	37E	661556	3611315* 		632		50	20	30
<a href="#">L 06496</a>		L	LE	3	4	3	29	19S	37E	661656	3611018* 		711		50	27	23
<a href="#">L 03380</a>		L	LE	2	1	2	32	19S	37E	662265	3610822* 		714		40	35	5
<a href="#">L 03982</a>		L	LE		3	3	28	19S	37E	662964	3611135* 		902		43	31	12
<a href="#">L 07223</a>		L	LE	2	3	3	28	19S	37E	663063	3611234* 		957		60		
<a href="#">L 01251</a>		L	LE	4	1	1	29	19S	37E	661434	3612218* 		995		51	38	13
<a href="#">L 06492</a>		L	LE		1	1	32	19S	37E	661362	3610712* 		1135		50	27	23
<a href="#">L 03905</a>		L	LE		4	4	30	19S	37E	660953	3611109* 		1270		35	20	15
<a href="#">L 03906</a>		L	LE		4	4	30	19S	37E	660953	3611109* 		1270		35	20	15
<a href="#">L 03954</a>		L	LE		4	4	30	19S	37E	660953	3611109* 		1270		35	20	15
<a href="#">L 03995</a>		L	LE		4	4	30	19S	37E	660953	3611109* 		1270		35	20	15
<a href="#">L 05995</a>		L	LE		4	4	30	19S	37E	660953	3611109* 		1270		40	23	17
<a href="#">L 00010</a>		L	LE		4	2	32	19S	37E	662574	3610327* 		1272				
<a href="#">L 10397</a>		L	LE			1	33	19S	37E	663177	3610534* 		1427		34	13	21
<a href="#">L 11873</a> <a href="#">POD1</a>		L	LE	1	2	1	28	19S	37E	663246	3612447* 		1428		71		
<a href="#">L 01271</a>		L	LE	4	2	2	31	19S	37E	661059	3610606* 		1429		38	20	18

## EXHIBIT H

<a href="#">L 03884</a>	L	LE		28	19S	37E	663567	3611738*		1430	47	30	17
<a href="#">L 03885</a>	L	LE		28	19S	37E	663567	3611738*		1430	47		
<a href="#">L 05565 POD3</a>	L	LE		28	19S	37E	663567	3611738*		1430	70		
<a href="#">L 14366 POD2</a>	L	LE	2 3 3	20	19S	37E	661473	3612797		1439	32		
<a href="#">L 14366 POD1</a>	L	LE	2 3 3	20	19S	37E	661500	3612840		1465	32		
<a href="#">L 13926 POD2</a>	L	LE	2 3 3	20	19S	37E	661495	3612857		1482	32	21	11
<a href="#">L 13926 POD3</a>	L	LE	2 3 3	20	19S	37E	661485	3612865		1495	32	21	11
<a href="#">L 13926 POD1</a>	L	LE	2 3 3	20	19S	37E	661484	3612874		1502	32	21	11
<a href="#">L 13521 POD1</a>	L	LE	4 4 3	20	19S	37E	661504	3612887		1506	34	22	12
<a href="#">L 07626</a>	L	LE	1 1 4	32	19S	37E	662077	3610019*		1510	30		
<a href="#">L 14366 POD3</a>	L	LE	2 3 3	20	19S	37E	661477	3612899		1528	32		
<a href="#">L 01817</a>	L	LE	1 4	32	19S	37E	662178	3609920*		1608	85	12	73

Average Depth to Water: **22 feet**Minimum Depth: **12 feet**Maximum Depth: **38 feet****Record Count:** 40**UTMNAD83 Radius Search (in meters):****Easting (X):** 662152**Northing (Y):** 3611528**Radius:** 1610

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/7/23 10:13 AM

WATER COLUMN/ AVERAGE DEPTH TO  
WATER

## Hall Environmental Analysis Laboratory, Inc.



## Analytical Report

Lab Order 2211086

Date Reported: 11/14/2022

CLIENT: Permits West

Client Sample ID: Sec 29

Project: NMGSAU

Collection Date: 11/1/2022 12:50:00 PM

Lab ID: 2211086-001

Matrix: AQUEOUS

Received Date: 11/2/2022 11:33:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 1664B</b>							Analyst: dms
N-Hexane Extractable Material	ND	9.46		mg/L	1	11/9/2022 4:42:00 PM	71367
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JTT
Chloride	210	50		mg/L	100	11/3/2022 8:38:51 AM	R92333
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: SNS
Total Dissolved Solids	720	40.0	*D	mg/L	1	11/8/2022 10:21:00 AM	71300

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report****EXHIBIT I**Lab Order **2211086**Date Reported: **11/14/2022****CLIENT:** Permits West**Client Sample ID:** Sec 30**Project:** NMGSAU**Collection Date:** 11/1/2022 1:30:00 PM**Lab ID:** 2211086-002**Matrix:** AQUEOUS**Received Date:** 11/2/2022 11:33:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 1664B</b>							Analyst: <b>dms</b>
N-Hexane Extractable Material	ND	9.50		mg/L	1	11/9/2022 4:42:00 PM	71367
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>JTT</b>
Chloride	110	5.0		mg/L	10	11/3/2022 8:51:16 AM	R92333
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>SNS</b>
Total Dissolved Solids	512	20.0	*	mg/L	1	11/8/2022 10:21:00 AM	71300

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

**Hall Environmental Analysis Laboratory, Inc.****EXHIBIT I****Analytical Report**Lab Order **2211086**Date Reported: **11/14/2022****CLIENT:** Permits West**Client Sample ID:** Sec 19**Project:** NMGSAU**Collection Date:** 11/1/2022 10:20:00 AM**Lab ID:** 2211086-003**Matrix:** AQUEOUS**Received Date:** 11/2/2022 11:33:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 1664B</b>							Analyst: <b>dms</b>
N-Hexane Extractable Material	ND	9.44		mg/L	1	11/9/2022 4:42:00 PM	71367
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>JTT</b>
Chloride	110	5.0		mg/L	10	11/3/2022 9:16:05 AM	R92333
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: <b>SNS</b>
Total Dissolved Solids	515	20.0	*	mg/L	1	11/8/2022 10:21:00 AM	71300

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		



NM Oil Conservation Division  
1220 S. St. Francis Dr.  
Santa Fe, NM 87505

**Re: Geology Statement**  
**Apache Corporation**  
**North Monument G/SA Unit #010**  
**Section 29, T. 19S, R. 37E**  
**Lea County, New Mexico**

To whom it may concern:

Publicly available geologic and engineering data related to the proposed well have been thoroughly reviewed, and no evidence for open faults or any other hydrologic connection between the proposed Grayburg and San Andres injection zone and any underground sources of drinking water has been found. Please see the attached seismic risk assessment for additional information.

Sincerely,

Cory Walk  
Geologist



**Seismic Risk Assessment**  
**Apache Corporation**  
**North Monument G/SA Unit #010**  
**Section 29, Township 19 South, Range 37 East**  
**Lea County, New Mexico**

**Cory Walk, M.S.**

A handwritten signature in black ink that reads "Cory Walk". The signature is written in a cursive, flowing style.

**Geologist**

**Permits West Inc.**

**January 6, 2023**

Apache Corporation  
North Monument G/SA Unit #010

## SEISMIC RISK ASSESSMENT PAGE 1

EXHIBIT J

## GENERAL INFORMATION

North Monument G/SA Unit #010 is located in the SE ¼, section 29, T19S, R37E, about 0.5 miles northwest of Monument, NM in the Central Basin Platform of the greater Permian Basin. Apache Corporation proposes to convert this existing oil well to a water injection well. The proposed injection zone is within the Grayburg and San Andres Formations through a cased hole from 3,774'-3,870' below ground surface. The Grayburg and San Andres are primarily carbonate reservoirs with some sandstones present. This report assesses any potential concerns relating to induced seismicity along deep penetrating Precambrian faults or the connection between the injection zone and known underground potable water sources.

## SEISMIC RISK ASSESSMENT

*Historical Seismicity*

Searching the USGS earthquake catalog resulted in no (0) earthquakes above a magnitude 2.5 within 6 miles (9.7 km) of the proposed injection site since 1970 (Fig 1). According to this dataset, the nearest historical earthquake occurred June 28, 2020 about 12.2 miles (~19.6 km) northwest and had a magnitude of 2.7.

*Basement Faults and Subsurface Conditions*

A structure contour map (Fig. 1) of the Precambrian basement shows the North Monument G/SA Unit #010 is approximately 5.2 miles from the nearest basement-penetrating fault inferred by Ewing et al (1990) and about 59 miles from the nearest surface fault.

Snee and Zoback (2018) state, "In the western part of Eddy County, New Mexico,  $S_{Hmax}$  is ~north-south (consistent with the state of stress in the Rio Grande Rift; Zoback and Zoback, 1980) but rotates to ~east-northeast-west-southwest in southern Lea County, New Mexico, and the northernmost parts of Culberson and Reeves counties, Texas." Around the North Monument G/SA Unit #010 site, Snee and Zoback indicate a  $S_{Hmax}$  direction of N105°E and an  $A_\phi$  of 0.85, indicating a normal/strike-slip faulting stress regime.

Induced seismicity is a growing concern of deep injection wells. Snee and Zoback (2018) show that due to its orientation, the nearest Precambrian fault has a low probability of slipping (Fig. 2). Also, the proposed injection zone is much shallower in the Grayburg and San Andres Formations and therefore would not affect the deep Precambrian faults. In addition to the existing fault orientation, the vertical (approx. 6300') and horizontal (5.2 miles) separation between the proposed water injection zone and any deep Precambrian faults is large enough to infer that there is no immediate concern or potential of induced seismicity as a result from this injection well.

## GROUNDWATER SOURCES

Three principal aquifers are used for potable groundwater in southern Lea County; these geologic units include the Triassic Santa Rosa formation, Tertiary Ogallala formation, and Quaternary alluvium. Nicholson and Clebsch (1961) state, "Potable ground water is not available below the Permian and Triassic unconformity but, because this boundary is not easily defined, the top of the Rustler anhydrite

**Apache Corporation**  
**North Monument G/SA Unit #010**

**SEISMIC RISK ASSESSMENT PAGE 2**

**EXHIBIT J**

formation is regarded as the effective lower limit of 'potable' ground water." Around the North Monument G/SA Unit #010 well, the top of a thick anhydrite unit interpreted to represent the Rustler Formation lies at a depth of ~1380 feet bgs.

**STRATIGRAPHY**

A thick permeability barrier (Rustler Anhydrite and Salado Fm; 1300+ ft thick) exists above the targeted Grayburg and San Andres injection zone. Well data indicates ~2,400 ft of rock separating the top of the injection zone from the previously stated lower limit of potable water at the top of the Rustler anhydrite formation.

**CONCLUDING STATEMENT**

All available geologic and engineering data evaluated around the North Monument G/SA Unit #010 well show no potential structural or stratigraphic connection between the Grayburg and San Andres injection zone and any subsurface potable water sources. The shallow injection zone, spatial location and orientation of nearby faults also removes any major concern of inducing seismic activity.

Apache Corporation  
North Monument G/SA Unit #010

## SEISMIC RISK ASSESSMENT PAGE 3

EXHIBIT J

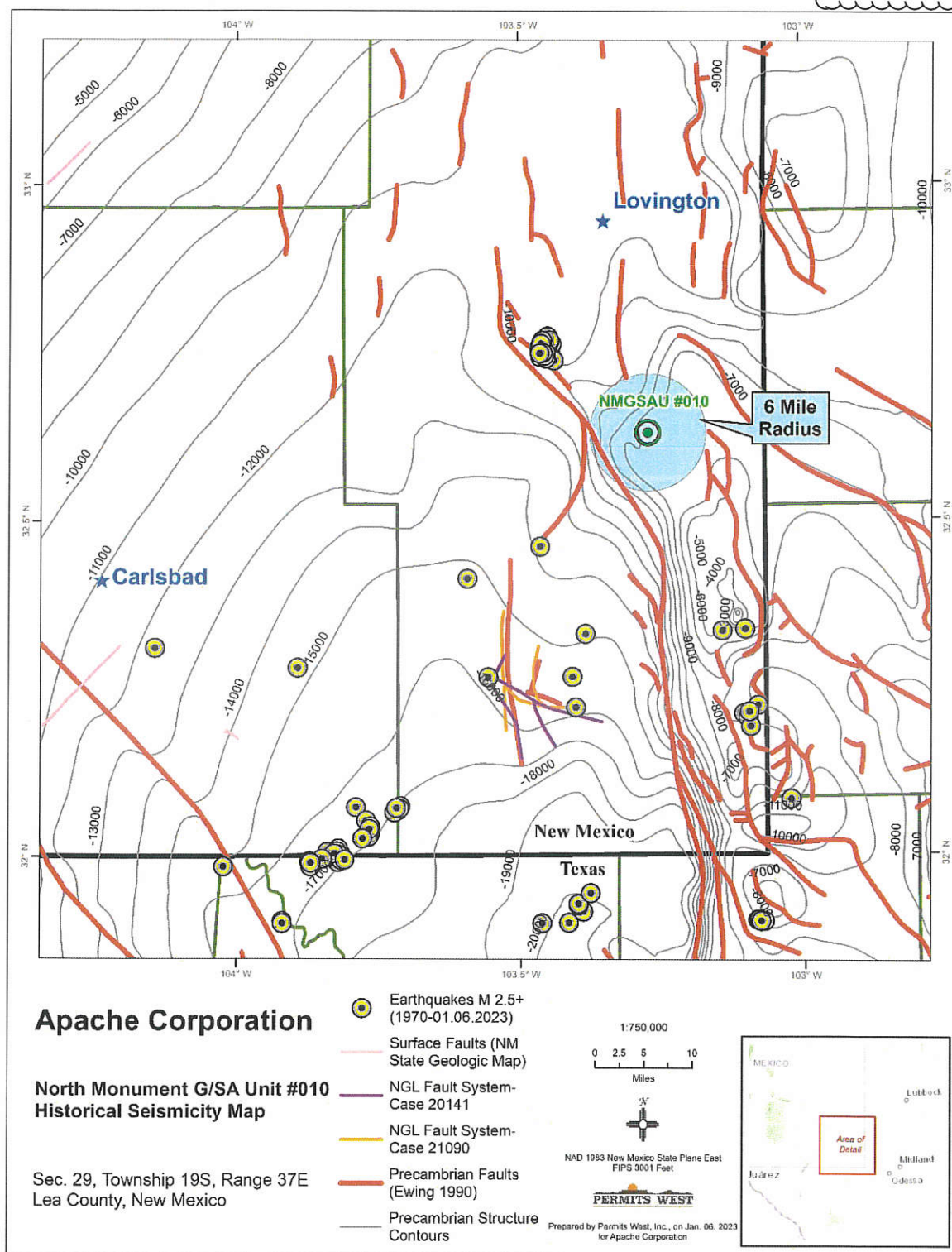


Figure 1. Structural contour map of the Precambrian basement in feet below sea level. Red lines represent the locations of Precambrian basement-penetrating faults (Ewing et al., 1990). The North Monument G/SA Unit #010 well lies ~5.2 miles east of the closest deeply penetrating fault, ~59 miles from the nearest surface fault and ~12.2 miles from the closest historic earthquake.

Apache Corporation  
North Monument G/SA Unit #010

## SEISMIC RISK ASSESSMENT PAGE 4

EXHIBIT J

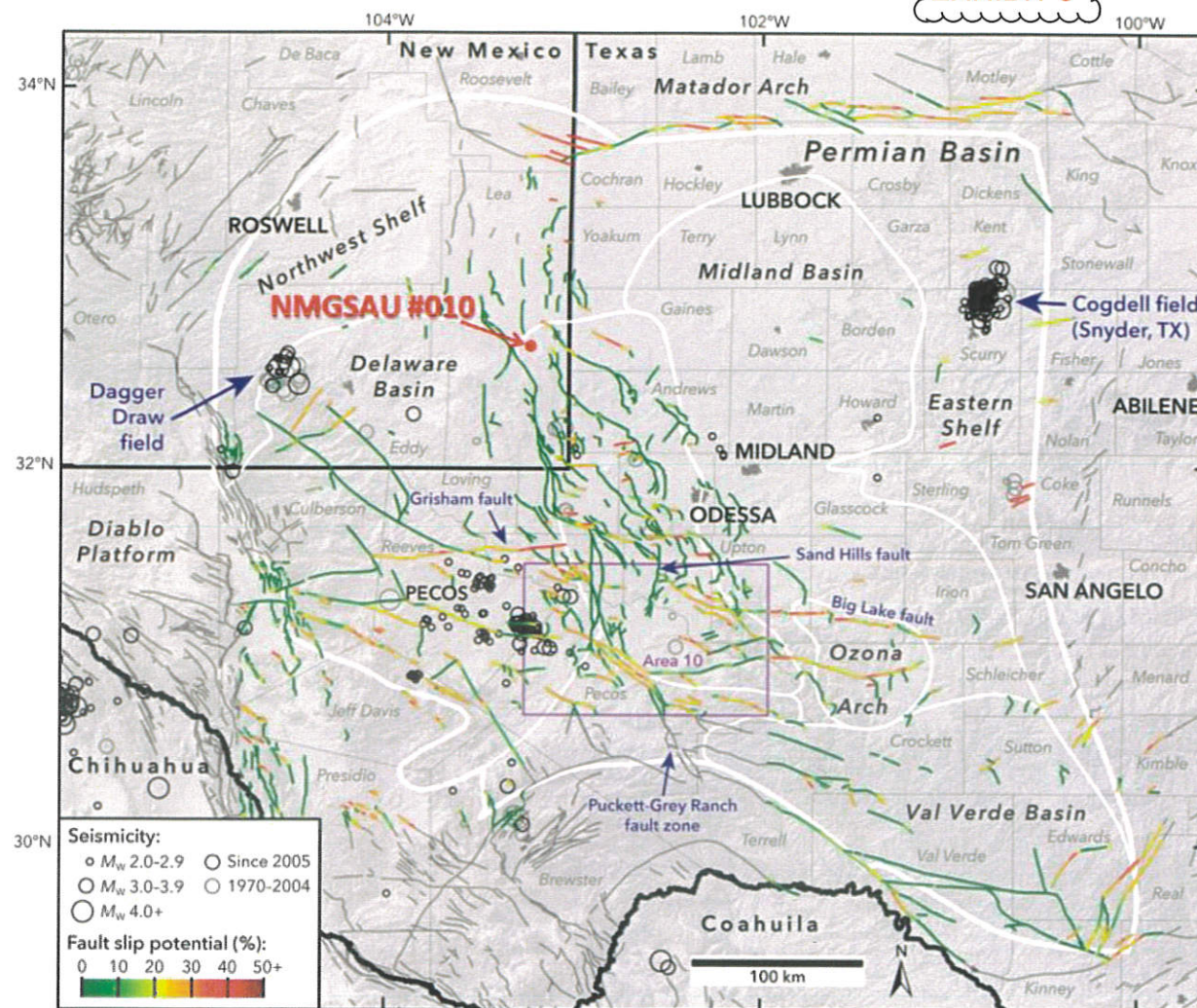


Figure 2. Modified from Snee and Zoback (2018). The nearest deep Precambrian fault lies ~5.2 miles west of the proposed injection well and has a low probability (0%) of slip. Also, the proposed injection zone is much shallower in the Grayburg and San Andres and therefore removes any major concern of inducing seismicity on any known fault.

**Apache Corporation**  
**North Monument G/SA Unit #010**

**SEISMIC RISK ASSESSMENT PAGE 5**

**References Cited**



Ewing, T. E., 1990, The tectonic map of Texas: Austin, Bureau of Economic Geology, The University of Texas at Austin.

Geologic Map of New Mexico, New Mexico Bureau of Geology and Mineral Resources, 2003, Scale 1:500,000.

Nicholson, A., Jr., and Clebsch, A., Jr., 1961, Geology and ground-water conditions in southern Lea County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Ground-Water Report 6, 123 pp., 2 plates.

Snee, J.-E.L., Zoback, M.D., 2018, State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity: Leading Edge, v. 37, p. 127–134.

APACHE CORPORATION  
NORTH MONUMENT G/SA UNIT 010  
1980' FSL & 1980' FEL  
SEC. 29, T. 19 S., R. 37 E., LEA COUNTY, NM

PAGE 1

30-025-05729

I. Goal is to convert an oil well to a water injection well. The well is 3935' deep and is producing from the Grayburg and San Andres. The well is currently open hole from 3751' to 3935'. The injection interval (3774' – 3870') will be identical to the producing interval (3774' – 3870'). The Grayburg and San Andres are part of the Eunice – Monument; Grayburg – San Andres Pool (code = 23000).

The well and zones are part of the North Monument G/SA Unit (Unit #300156, Case 10253, Order R-9494) that was established in 1991 by Amerada Hess Corp. The waterflood was approved in Case 10252, Order R-9596, also in 1991. The well was a water injector (WFX-773) from 2002 to 2004 and again in 2008. Cumulative injection was 189,579 barrels. Apache became Unit operator in 2006.

The well was formerly known as the North Monument G/SA Unit Block 11 #10, and before that was known as the D. A. William #1. Apache operates 12 wells with the nomenclature of "North Monument G/SA Unit 010". Apache, internally, refers to the well as NMGSAU 1110.

II. Operator: Apache Corporation (OGRID #873)  
Operator phone number: (432) 818-1088  
Operator address: 303 Veterans Airpark Lane, Suite 3000  
Midland, TX 79705  
Contact for Application: Brian Wood (Permits West, Inc.)  
Phone: (505) 466-8120

III. A. (1) Lease: fee (D. A. Williams)  
Lease Size: 120.00 acres (see Exhibit A for maps)  
Closest Lease Line: 660'  
Lease Area: W2SE4 & SESE Section 29, T. 19 S., R. 37 E.  
Unit Size: 13,385 acres  
Closest Unit Line: 4620' east

A. (2) Surface casing (10.75", 32.75#) is set at 189' in a 13.375" hole and cemented with 200 sacks to GL (calculated).

APACHE CORPORATION  
NORTH MONUMENT G/SA UNIT 010  
1980' FSL & 1980' FEL  
SEC. 29, T. 19 S., R. 37 E., LEA COUNTY, NM

PAGE 2

30-025-05729

Intermediate casing (7.625", 26.4#) is set at 1378' in a 9.875" hole and cemented with 300 sacks to GL (calculated).

Production casing (5.5", 17#) is set at 3751' in a 6.75" hole and cemented with 300 sacks to 159' (calculated).

The well is open hole (6.75") in the Grayburg - San Andres from 3751' to 3935'.

Mechanical integrity of the casing will be assured by hydraulically pressure testing to 500 psi for 30 minutes.

- A. (3) Tubing will be IPC, 2.875", J-55, 6.4#. Setting depth will be 3700'. (Top perforation will be 3774'.)
- A. (4) A lock set injection packer will be set at 3700' (74' above the highest perforation of 3700').
- B. (1) Injection will be in the Grayburg and San Andres zones in the Eunice - Monument; Grayburg - San Andres Pool (pool code = 23000).
- B. (2) Injection interval will be 3774' - 3870'.
- B. (3) Well was originally drilled in 1936 as a Grayburg - San Andres oil well.
- B. (4) The well is cased from GL to 3751' and open hole from 3751' to 3935'. There are no perforations above the open hole.
- B. (5) Next higher oil or gas zone within the area of review is the Queen at 3348' - 3459'. Injection interval will be 3774' - 3870'. Next lower oil or gas zone within the area of review is the Abo. Its top is at ≈7065'.

IV. This is not a horizontal or vertical expansion of an existing injection project. Records for the unit approval (R-9494, Case 10253) include a discussion of the

APACHE CORPORATION  
NORTH MONUMENT G/SA UNIT 010  
1980' FSL & 1980' FEL  
SEC. 29, T. 19 S., R. 37 E., LEA COUNTY, NM

PAGE 3

30-025-05729

Grayburg - San Andres water flood. The water flood (R-9596, Case 10252) was approved at the same time in 1991. At least three water flood expansions (WFX-739, -773, and -942) have been approved since then. Closest unit boundary is 4620' east. Seven injection wells are within a half-mile radius (see Exhibit B).

V. Exhibit B shows and tabulates all 27 existing wells (16 producers + 7 injectors + 3 P&A + 1 WSW) within a half-mile (2640') radius, regardless of depth. Exhibit C shows all 493 existing wells (172 oil or gas producing wells + 63 injection or disposal wells + 121 P & A wells + 2 waterflood supply wells + 135 freshwater wells) within a two-mile radius.

Exhibit D shows and tabulates all leases (BLM, fee, and NMSLO) within a half-mile radius. Exhibit E shows all lessors (BLM, fee, and NMSLO) within a two-mile radius.

VI. Twenty-seven wells are within a half-mile. Twenty-five of the 27 wells penetrated the Grayburg and/or San Andres. The 25 penetrators include 14 oil or gas wells, 7 water injectors, 3 P&A wells, and 1 WSW well. Exhibit F tabulates the penetrators and diagrams the P&A wells.

- VII. 1. Average injection rate will be  $\approx 600$  bwpd. Maximum will be 700 bwpd.
2. System will be closed. The well will tie into the existing Unit pipeline system.
3. Average injection pressure will be  $\approx 350$  psi. Maximum injection pressure would be 754 psi ( $= 0.2$  psi/foot  $\times 3774'$  (top perforation)).
4. Water source will be two existing  $\approx 5125'$  deep lower San Andres water supply wells (#018 and #624) plus produced water from the Grayburg and San Andres. Both water streams (source and produced) are commingled before being piped to injection wells. An analysis (Exhibit G) from the hearing concluded the waters are compatible.

APACHE CORPORATION  
NORTH MONUMENT G/SA UNIT 010  
1980' FSL & 1980' FEL  
SEC. 29, T. 19 S., R. 37 E., LEA COUNTY, NM

PAGE 4

30-025-05729

5. Grayburg and San Andres are productive within one mile of the well.

VIII. The Grayburg Formation is interbedded mudstone, wackestone, packstone, grainstone, and dolomite. The San Andres Formation is a massive dolomite with some siltstone and sandstone strata. There is not a clear marker between the Grayburg and San Andres in the Unit. The porous dolomites are the productive part of the formations. Notable depths are:

Quaternary = 0'  
Ogallala = 40'  
Rustler = 1290'  
Top Salt = 1380'  
Base Salt = 2438'  
Tansill = 2484'  
Yates = 2573'  
Seven Rivers = 2830'  
Queen = 3348'  
Penrose = 3460'  
Grayburg = 3659'  
injection interval = 3774' - 3870'  
San Andres = 3783'  
TD = 3935'

State Engineer records (Exhibit H) show 33 water wells are within a 1-mile radius. Deepest of the 33 is 150'.

NMG/SA Unit 010 penetrates the Ogallala aquifer and is >9 miles northeast of the Capitan Reef. No existing underground drinking water source is below the San Andres within a mile radius. Produced water has been injected into 3 zones (Yates, Seven Rivers, Queen) above the Grayburg within T. 19 S., R. 37 E. via nine wells. Produced water has been disposed into 3 zones (San Andres, Delaware, Bone Spring) below the Grayburg within T. 19 S., R. 37 E. via five SWD wells. Over 395,075,017 barrels of water have been injected in the NMG/SA Unit to date.

APACHE CORPORATION  
NORTH MONUMENT G/SA UNIT 010  
1980' FSL & 1980' FEL  
SEC. 29, T. 19 S., R. 37 E., LEA COUNTY, NM

PAGE 5

30-025-05729

- IX. The well will be stimulated with acid to clean out scale or fill.
- X. A GR-Neutron log is on file with NMOCD.
- XI. Three windmills within a 1-1/4 mile radius were sampled during a November 1, 2022, field inspection. Analyses from the windmills are in Exhibit I. (Floyd Cody, Manager of the Monument Municipal Domestic Water Consumers Association says most well owners abandoned their wells when the utility came on-line.)
- XII. Apache (Exhibit J) is not aware of any geologic or engineering data that may indicate the Grayburg or San Andres are in hydrologic connection with any underground source of water. There are 1,611 Grayburg injectors and 1,180 San Andres injectors in New Mexico. Previously approved Unit water flood expansions include WFX-739, -773, and -942.
- XIII. A legal ad (see Exhibit K) was published on January 5, 2023. Notice (this application) has been sent (Exhibit L) to the surface owners (Jimmie & Betty Cooper), lessees of record (Oil Well Drilling, Shell Western, Southwest Royalties, and Wiser Oil), government lessors (BLM & NMSLO), and all other well operators (Empire NM, Extex, Mewbourne, and Wagner) within the 1/2 mile area of review.

**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**

CONDITIONS

Action 175842

CONDITIONS

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 175842
	Action Type: [C-108] Fluid Injection Well (C-108)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	None	3/14/2023