AE Order Number Banner

Application Number: pMSG2404533365

PMX-350

OCCIDENTAL PERMIAN LTD [157984]

Occidental Permian LTD.
A subsidiary of Occidental Petroleum Corporation

5 Greenway Plaza, Suite 110, Houston, Texas 77046-0521
P.O. Box 27570, Houston, Texas 77227-7570
Phone 713.215.7000

January 9, 2024

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

RE: Pressure Maintenance Project
North Hobbs Unit
Well No. 221; API 30-025-07504
Lea County, NM

Occidental Permian Ltd. respectfully requests administrative approval without hearing, to commence injection (water, CO2, and produced gas) per the authorized Order No. R-6199-F. The H2S contingency plan which covers both North and South Hobbs Units will be updated to reflect this change.

In support of this request, please find the following documentation:

- Administrative Application Checklist
- Form C-108 with required data attached
- Injection Well Data Sheet with Wellbore Schematic
- Form C-102
- AOR Map

Per R-6199-F Paragraph 3 on page 9, "*(…) Application for approval of additional injection wells in the expanded Phase I Area of the North Hobbs Unit shall be filed in accordance with NMAC 19.15.26.8 and may be approved administratively by the Division Director without Notice and hearing.*" The injector in this application is located within the expanded Phase I Area of the North Hobbs Unit.

If you have any questions regarding this application, please contact me at 713-215-7827 or email roni_mathew@oxy.com.

Sincerely,

Roni Mathew

Roni Mathew
Regulatory Advisor

DATE IN	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO.

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- 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

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☒ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify Additional Injector within approved project area (R-6199-G)

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **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.

Roni Mathew	Roni Mathew	Regulatory Advisor	1/9/2024
Print or Type Name	Signature	Title	Date

roni_mathew@oxy.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: _____Secondary Recovery __X__Pressure Maintenance _____Disposal _____Storage
Application qualifies for administrative approval? __X__Yes _____No

II. OPERATOR: OCCIDENTAL PERMIAN LTD

ADDRESS: P.O. Box 4294 Houston, TX 77210-4294

CONTACT PARTY: Roni Mathew PHONE: 713-215-7827

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? __X__Yes _____No
If yes, give the Division order number authorizing the project: R-6199-F

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: Roni Mathew TITLE: Regulatory Advisor

SIGNATURE: Roni Mathew DATE: 1/9/2024

E-MAIL ADDRESS: roni_mathew@oxy.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: February 11, 2014 as part of Order No. R-6199-F application

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.

C-108 Application Attachment
Occidental Permian Ltd.
North Hobbs G/SA Unit No. 221
Lea County, New Mexico

I. This is a pressure maintenance project. The project qualifies for administrative approval.

II. OCCIDENTAL PERMIAN Ltd.
P.O. Box 4294 Houston, TX 77210-4294
Contact Party: Roni Mathew, 713-215-7827

III. Injection well data sheet and wellbore schematic has been attached for NORTH HOBBS G/SA UNIT No. 221

IV. This is an expansion of an existing project authorized under Order No. R-6199-F.

V. The map with a two mile radius surrounding the injection well and a one half mile radius for area of review is attached.

VI. In accordance to Order No. R-6199-F Section 4 OCCIDENTAL PERMIAN Ltd certifies that: The area of review for well "NORTH HOBBS G/SA UNIT #221" shows no substantive changes in the information furnished in support of Order No. R-6199-F concerning the status of construction of any well that penetrates the injection interval within the one-half (1/2) mile around the injection well, with the exemption of the wells listed below:

API	Well Name	Operator	Well Status
30-025-49764	NORTH HOBBS G/SA UNIT #971	OCCIDENTAL PERMIAN LTD	New
30-025-49765	NORTH HOBBS G/SA UNIT #972	OCCIDENTAL PERMIAN LTD	New
30-025-49768	NORTH HOBBS G/SA UNIT #980	OCCIDENTAL PERMIAN LTD	New
30-025-49740	NORTH HOBBS G/SA UNIT #970	OCCIDENTAL PERMIAN LTD	New
30-025-49742	NORTH HOBBS G/SA UNIT #981	OCCIDENTAL PERMIAN LTD	New
30-025-49767	NORTH HOBBS G/SA UNIT #978	OCCIDENTAL PERMIAN LTD	New
30-025-07510	NORTH HOBBS G/SA UNIT #141	OCCIDENTAL PERMIAN LTD	Plugged
30-025-07509	NORTH HOBBS G/SA UNIT #131	OCCIDENTAL PERMIAN LTD	Plugged

The wellbore diagrams, their tabulated data, and the area of review map are attached.

VII. Proposed Operation

1. Average Injection Rate 3,000 BWPD / 10,000 MCFGPD
   Maximum Injection Rate 8,000 BWPD / 20,000 MCFGPD
2. This will be a closed system.
3. Average Surface Injection Pressure 1,300 PSIG
   Maximum Surface Injection Pressure
   - Produced Water 1,150 PSIG
   - CO2 1,250 PSIG
   - CO2 w/produced gas 1,650 PSIG

   (In accordance with Order No. R-6199-F, effective 7/18/13)
4. Source Water – San Andres Produced Water
   (Analysis previously provided at hearing, Case No. 14981)

VIII. The information was previously submitted as part of Order No. R-6199-F application

IX. Acid stimulate well with ~4,000 gal 15% HCL. Max rate = 4-5 BPM. Flush acid with ~200 bbls off fresh water.

X. Logs were filed at the time of drilling.

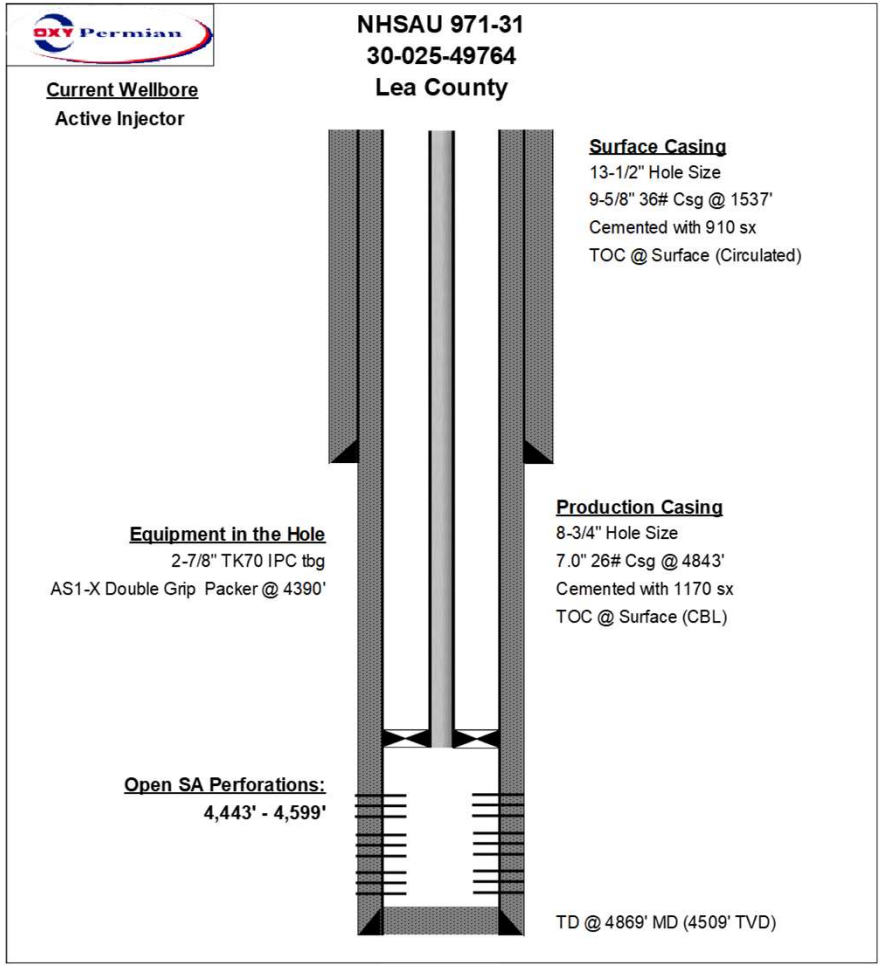
XI. Per our field personnel, the water wells noted below are located within 1 mile of the subject well. Water analysis for each are included with the application.

Water Well Name	Lat	Long	Date Collected
L-4920X	32.707399°	-103.197122°	6/18/2021
L-4920	32.703335°	-103.196544°	6/18/2021
L-14866-POD1 – N. Goings Ln.	32.705239°	-103.183839°	10/13/2013

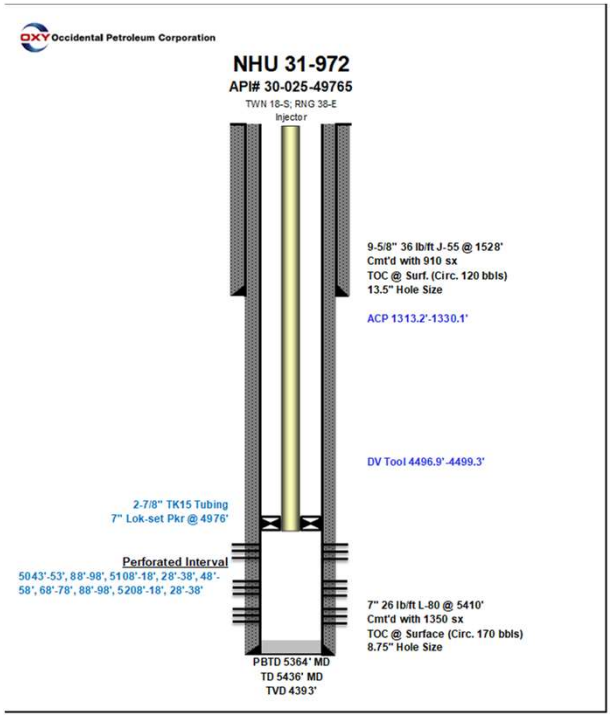
XII. N/A. This is a pressure maintenance project, not a disposal well.

XIII. Order No. R-6199-F allows the administrative approval, from the Division Director, of additional injection wells without notice and hearing. Notices to producers and surface owners for the water/CO2 flood area were provided at the time of the application and hearing for Order No. R-6199-F.

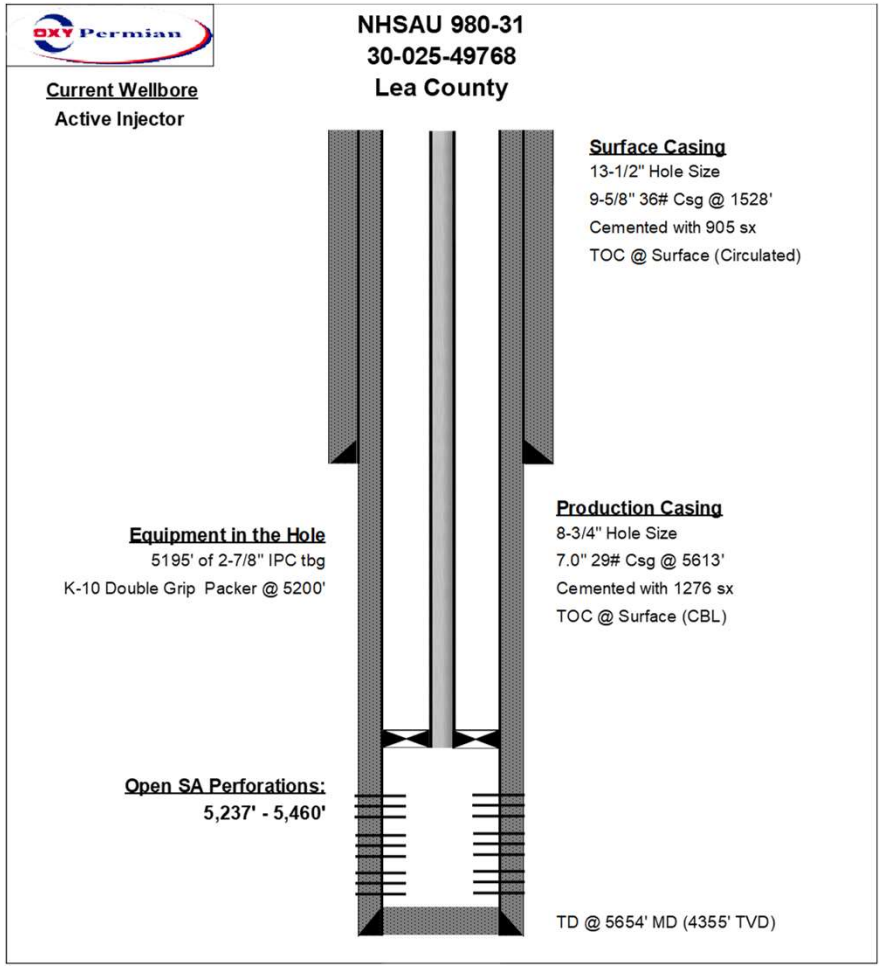
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-49764	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	971	Injection	New	1562	S	872	E	I	31	18S	38E	11/2/2022	4509	13.5 8.75	9.625 7	1537 4843	910 1170	0 0	Circ. CBL	4443'-4599' GRAYBURG-SAN ANDRES	



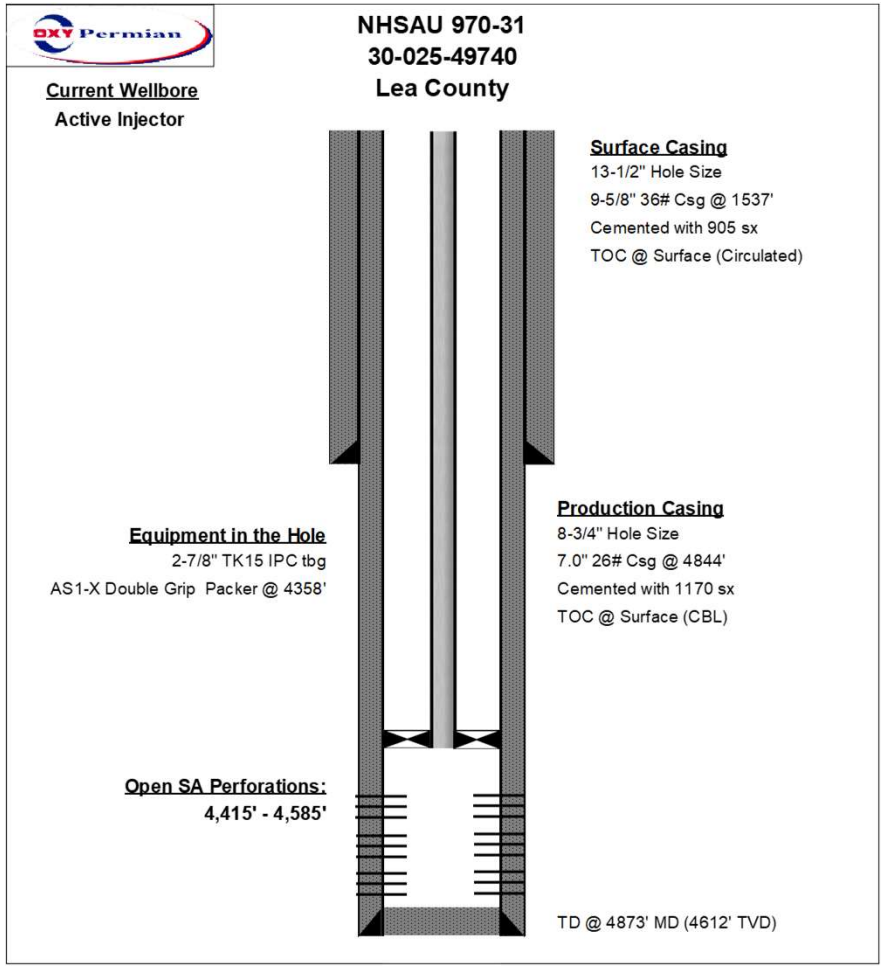
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-49765	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	972	Injection	New	145	S	1604	W	I	31	18S	38E	10/28/2022	4393	13.5 8.75	9.625 7	1528 5410	910 1350	0 0	Circ. CBL	5043'-5238' GRAYBURG-SAN ANDRES	



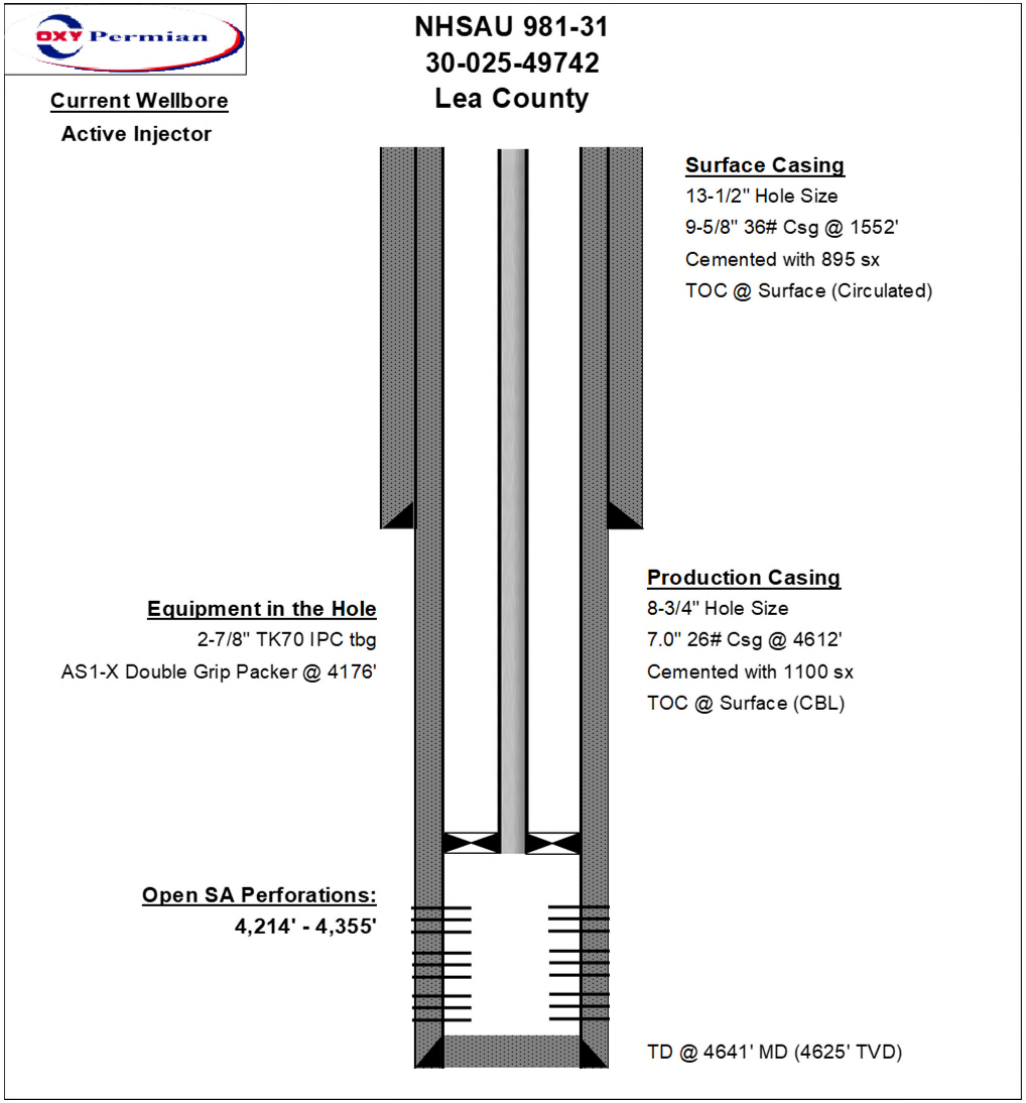
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-49768	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	980	Injection	New	1662	S	871	E	I	31	18S	38E	10/13/2022	4355	13.5 8.75	9.625 7	1528 5613	905 1276	0 0	Circ. CBL	5237'-5460' GRAYBURG-SAN ANDRES	



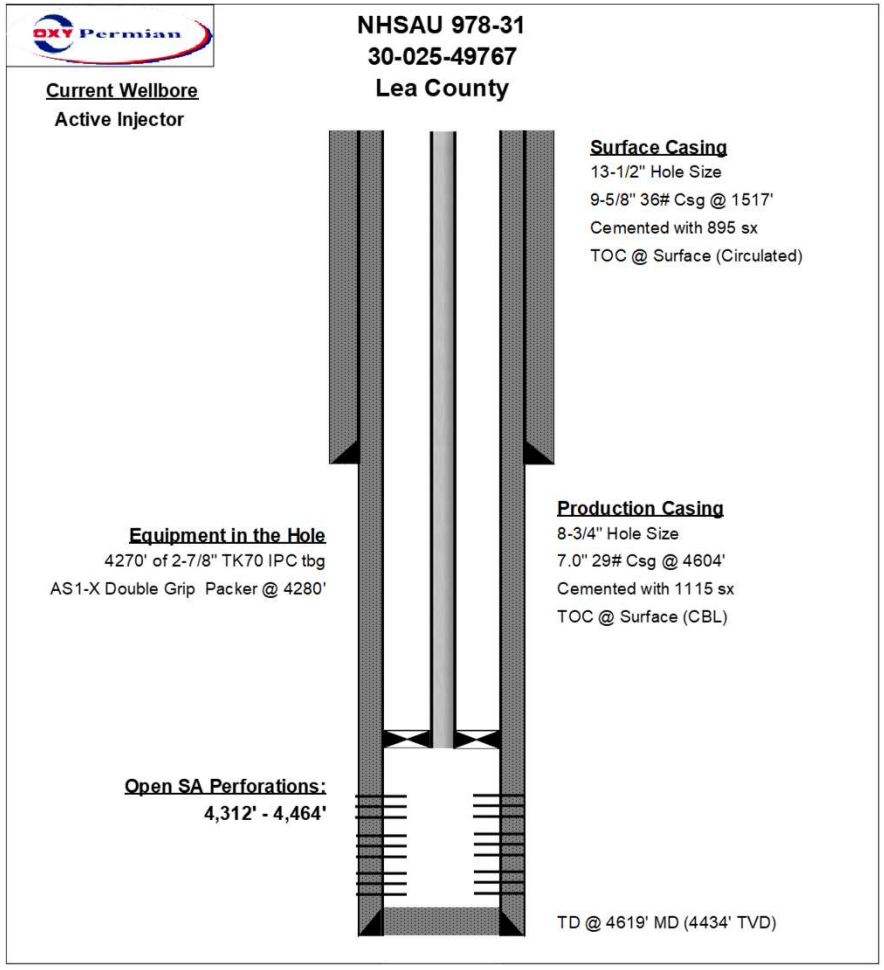
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-49740	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	970	Injection	New	1562	S	902	E	I	31	18S	38E	11/8/2022	4612	13.5 8.75	9.625 7	1537 4844	905 1170	0 0	Circ. CBL	4415'-4585' GRAYBURG-SAN ANDRES	



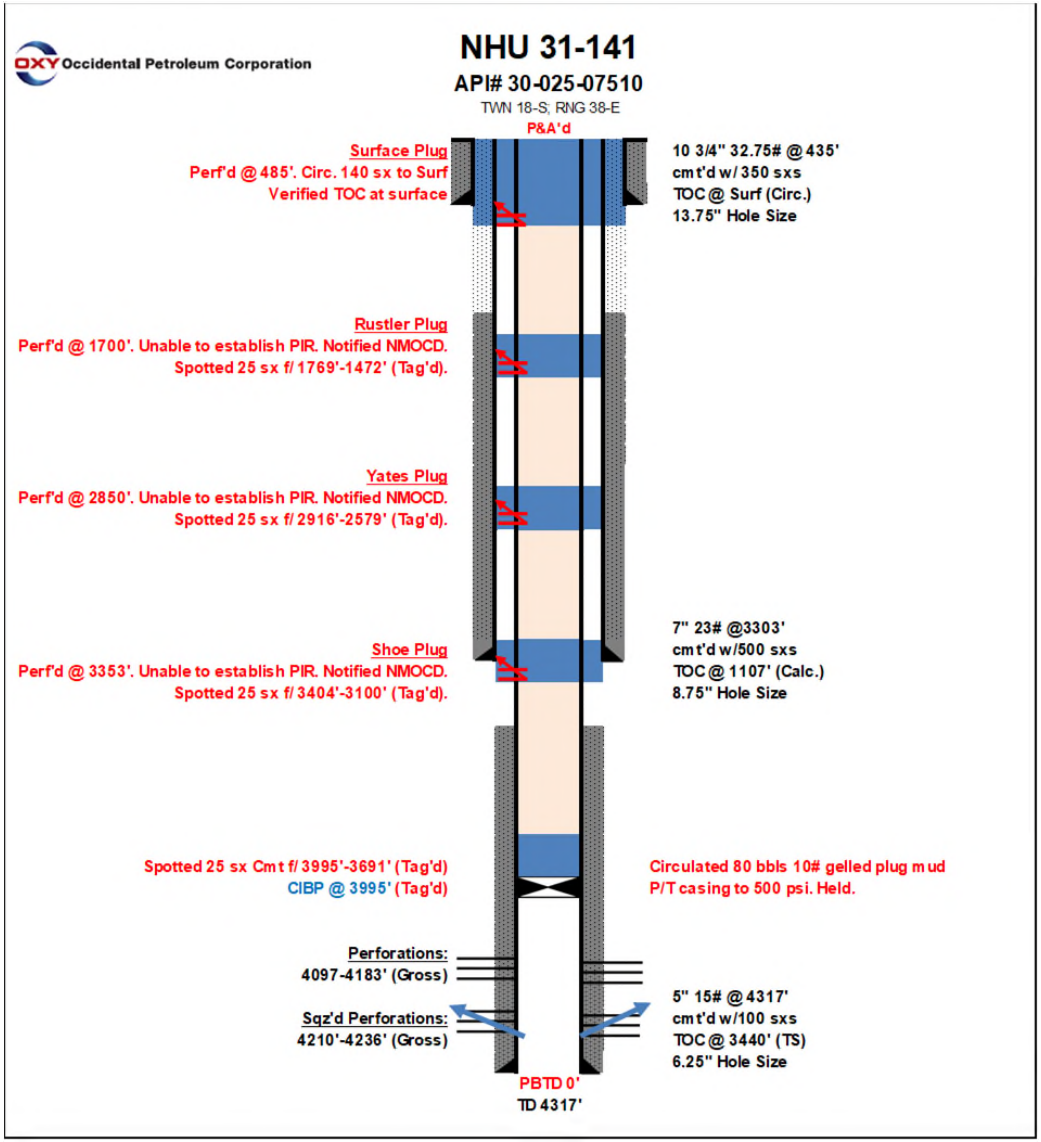
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION
30-025-49742	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	981	Injection	New	980	N	1702	W	C	31	18S	38E	9/15/2022	4625	13.5 8.75	9.625 7	1552 4612	895 1100	0 0	Circ. CBL	4214'-4355' GRAYBURG-SAN ANDRES



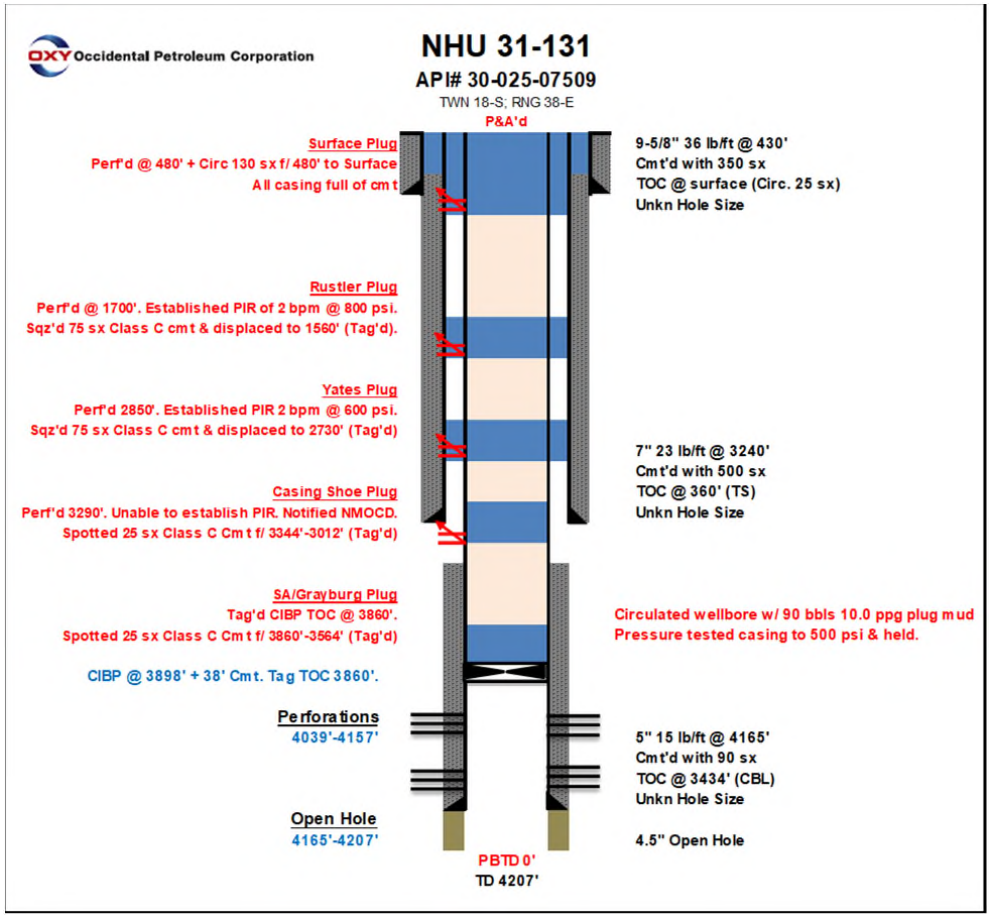
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-49767	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	978	Injection	New	1662	S	901	E	I	31	18S	38E	10/21/2022	4434	13.5 8.75	9.625 7	1517 4604	895 1115	0 0	Circ. CBL	4312'-4464' GRAYBURG-SAN ANDRES	



OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION
OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	141	Injection	Plugged, Not Released	990	S	990	W	M	31	18S	38E	12/31/1949	4317	13.75 8.75 6.25	10.75 7 5	435 3303 4317	200 500 100	0 1107 3440	Circ. Calc. CBL	4097'-4236' GRAYBURG-SAN ANDRES



API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION
30-025-07509	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	131	Oil	Plugged, Not Released	2310	S	990	W	L	31	18S	38E	9/29/1949	4207	12.25 8.75 6.25	9.625 7 5	430 3240 4165	350 500 90	0 360 3434	Circ. TS CBL	4039'-4207' GRAYBURG-SAN ANDRES



Side 1

INJECTION WELL DATA SHEET

OPERATOR: Occidental Permian LTD.

WELL NAME & NUMBER: NORTH HOBBS G/SA UNIT 221

WELL LOCATION: 2194' FNL 2246' FWL | F | 31 | 18 S | 38 E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

Production Casing 2:
Hole Size: 6-1/8"
Casing Size: 5.0"
Cemented With: 325 sx
TOC: 2944'
Method Determined: CBL
Casing TD: 4215'

Proposed Liner:
Casing Size: 3-1/2"
Liner top: 3800'
Liner Btm: 4300'
Cemented With: 100 sx
TOC: 3800'

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 16.0" Casing Size: 12-1/2"

Cemented with: 300 sx. ***or*** _____ ft^3

Top of Cement: Surface Method Determined: Circulated

Intermediate Casing

Hole Size: 11-3/4" Casing Size: 9-5/8"

Cemented with: 400 sx. ***or*** _____ ft^3

Top of Cement: 1328' Method Determined: Calculated

Production Casing

Hole Size: 8 3/4" Casing Size: 7.0"

Cemented with: 450 sx. ***or*** _____ ft^3

Top of Cement: 1243' Method Determined: Calculated

Total Depth: _____ MD

Injection Interval

~4120' TVD (Perforated) feet to ~4300' TVD (Perforated)

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 2-7/8" & 2-1/16" Lining Material: IPC

Type of Packer: 3-1/2" x 2-1/16" AS1-X Packer

Packer Setting Depth: Approx. 4100' TVD

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

Additional Data

1. Is this a new well drilled for injection? _____Yes ___X___No

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

   _____

2. Name of the Injection Formation: San Andres

3. Name of Field or Pool (if applicable): Hobbs; Grayburg - San Andres

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

   _____

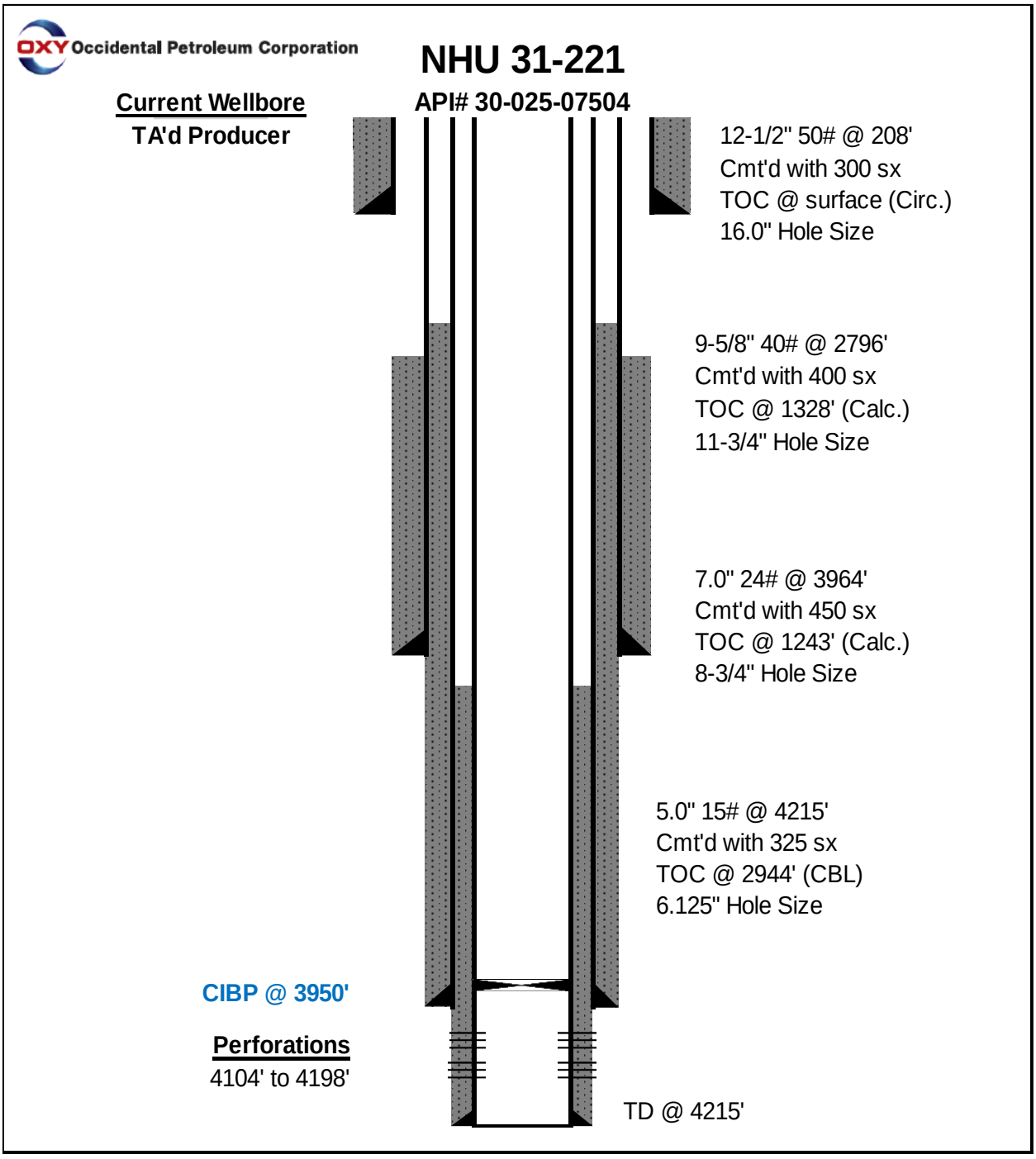
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: _____

   Byers (Queen) @ ~180' TVDSS

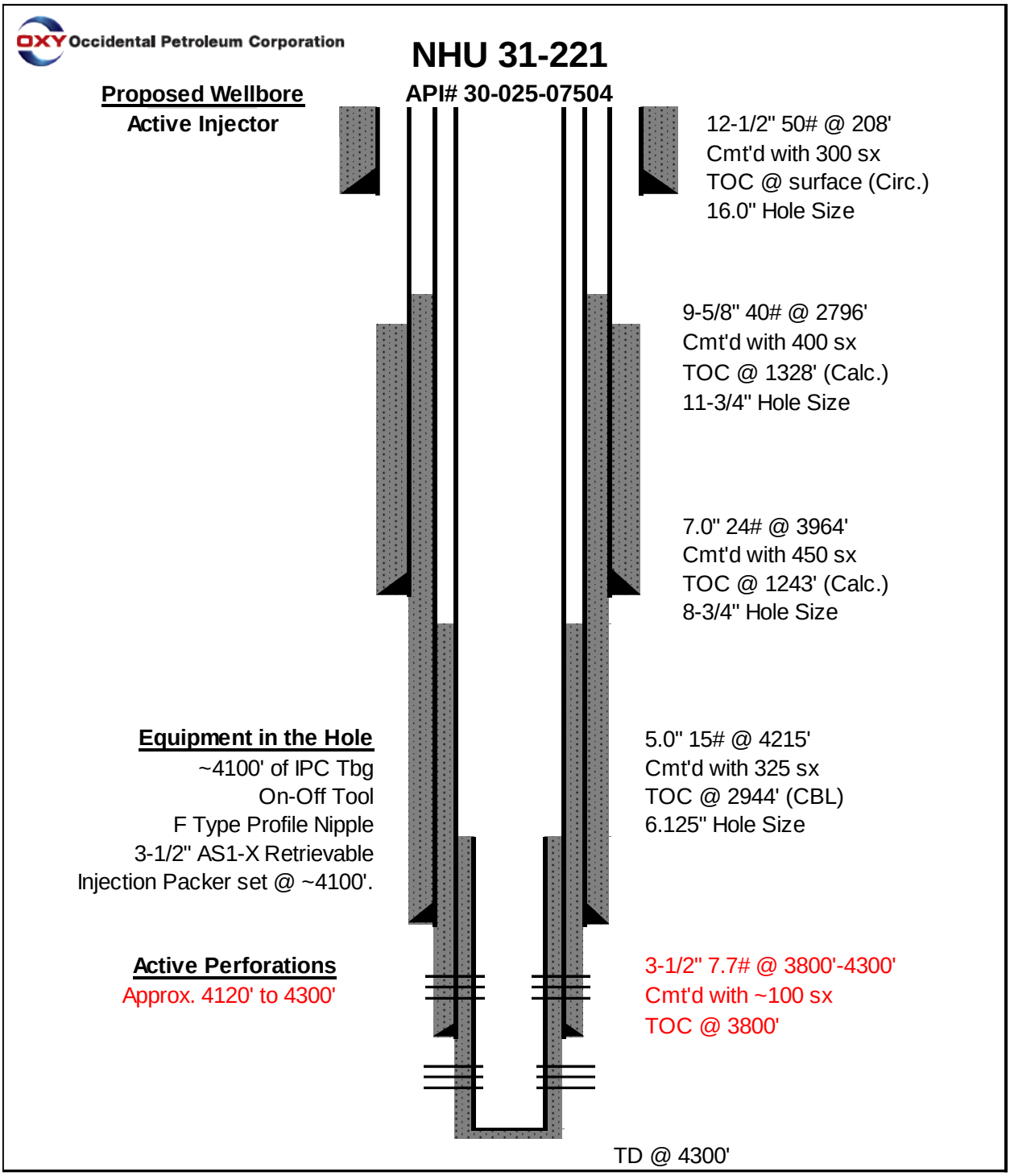
   Glorieta @ -1820' TVDSS

   _____

Current WBD


Occidental Petroleum Corporation
NHU 31-221
API# 30-025-07504
Current Wellbore
TA'd Producer
12-1/2" 50# @ 208'
Cmt'd with 300 sx
TOC @ surface (Circ.)
16.0" Hole Size
9-5/8" 40# @ 2796'
Cmt'd with 400 sx
TOC @ 1328' (Calc.)
11-3/4" Hole Size
7.0" 24# @ 3964'
Cmt'd with 450 sx
TOC @ 1243' (Calc.)
8-3/4" Hole Size
5.0" 15# @ 4215'
Cmt'd with 325 sx
TOC @ 2944' (CBL)
6.125" Hole Size
CIBP @ 3950'
Perforations
4104' to 4198'
TD @ 4215'

Proposed WBD



31-221 Convert to Injector Preliminary Job Plan:

1. RU WL
2. RIH w/ RBP & set at 1000'
3. Dig out and install new wellhead
4. RD WL
5. MIRU PU
6. ND WH x NU BOP
7. PU & RIH w/ bit
8. DO CIBP @ 3950'. CO to 4215' TD.
9. Squeeze existing perfs under CICR w/ ~500 sx cmt
10. DO cmt. Test squeeze.
11. Deepen well to ~4300' new TD.
12. Install 3-1/2" Liner f/ ~3800' to 4300'. Cmt liner in place.
13. Perforate liner f/ ~4120' to 4300'.
14. Acid treat perfs w/ ~5000 gal 15% HCl
15. RIH w/ injection packer set ~4100'. Install IPC tubing.
16. Put well on sour WAG injection.

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) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-07504	31920	HOBBS; GRAYBURG-SAN ANDRES

Property Code	Property Name	Well Number
19520	NORTH HOBBS G/SA UNIT	221

OGRID No.	Operator Name	Elevation
157984	OCCIDENTAL PERMIAN LTD.	3643.9'

Surface Location

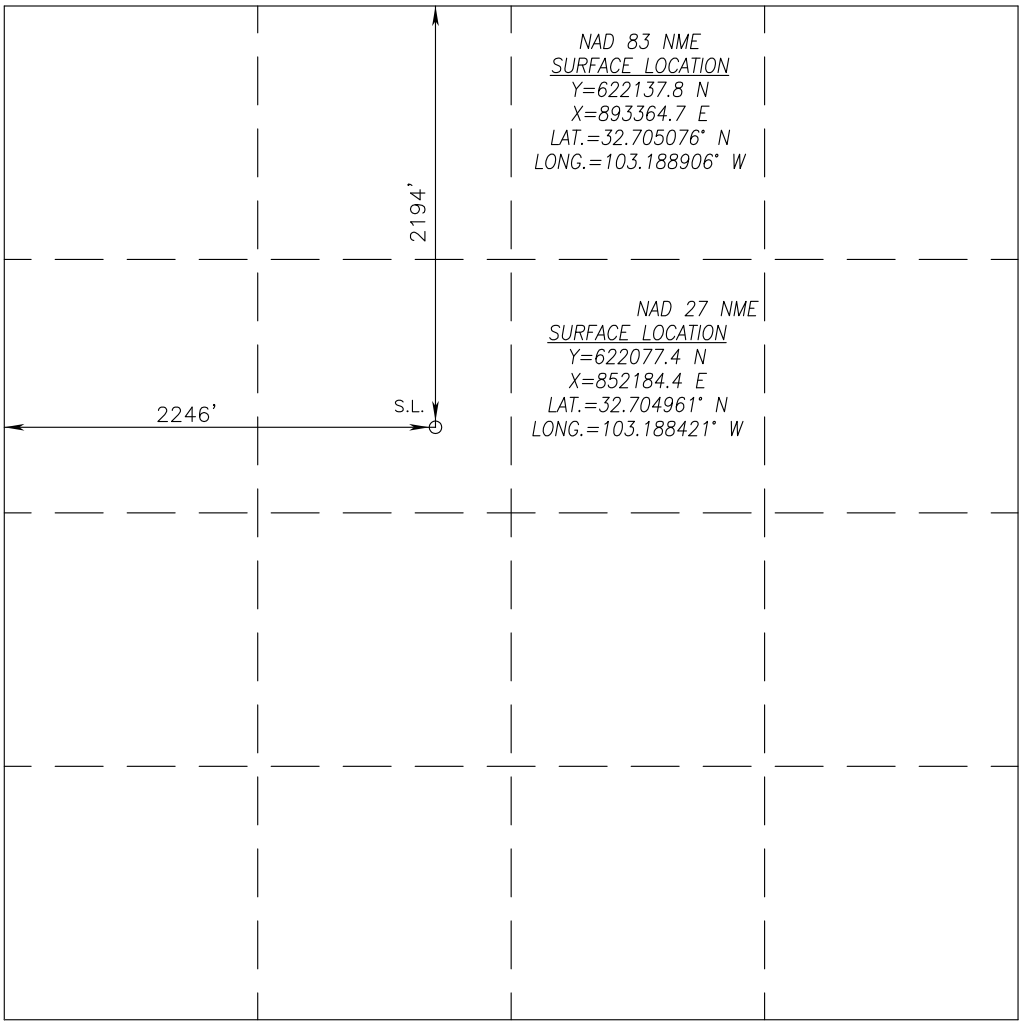
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	31	18-S	38-E		2194	NORTH	2246	WEST	LEA

Bottom Hole Location If Different From Surface

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

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

Roni Mathew 1/9/2024
Signature Date

Roni Mathew
Printed Name

roni_mathew@oxy.com
E-mail Address

SURVEYOR CERTIFICATION

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

DECEMBER 1, 2023
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
17777
LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 12/13/23
Certificate No. CHAD HARCROW 17777
W.O. #23-976 DRAWN BY: WN

North Hobbs G/SA Unit 221 AOR

Oil and Gas Wells

Wells - Large Scale

- Miscellaneous
- CO2, Active
- CO2, Cancelled
- CO2, New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas, Active
- Gas, Cancelled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abandoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection, Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New
- Water, Plugged
- Water, Temporarily Abandoned
- undefined

OCD Districts and Offices

OCD District Offices

Public Land Survey System

PLSS Second Division

PLSS First Division

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

June 25, 2021

Dusty Armstrong

Laboratory Services, Inc.

2609 W. Marland

Hobbs, NM 88240

RE: OXY

Enclosed are the results of analyses for samples received by the laboratory on 06/18/21 10:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Laboratory Services, Inc. 2609 W. Marland Hobbs NM, 88240	Project: OXY Project Number: NONE GIVEN Project Manager: Dusty Armstrong Fax To: (505) 397-3713	Reported: 25-Jun-21 17:23

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WELL # 1L-4920 X	H211573-01	Water	18-Jun-21 10:15	18-Jun-21 10:45
WELL # 2L-4920	H211573-02	Water	18-Jun-21 10:30	18-Jun-21 10:45

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Laboratory Services, Inc. 2609 W. Marland Hobbs NM, 88240	Project: OXY Project Number: NONE GIVEN Project Manager: Dusty Armstrong Fax To: (505) 397-3713	Reported: 25-Jun-21 17:23

WELL # 1L-4920 X

H211573-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**220**		5.00	mg/L	1	1060808	AC	18-Jun-21	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	1060808	AC	18-Jun-21	310.1	
Chloride*	**100**		4.00	mg/L	1	1061604	GM	21-Jun-21	4500-Cl-B	
Conductivity*	**770**		1.00	umhos/cm @ 25°C	1	1061814	AC	18-Jun-21	120.1	
pH*	**7.49**		0.100	pH Units	1	1061814	AC	18-Jun-21	150.1	
Temperature °C	**17.7**			pH Units	1	1061814	AC	18-Jun-21	150.1	
Resistivity	**13.0**			Ohms/m	1	1061814	AC	18-Jun-21	120.1	
Specific Gravity @ 60° F	**1.003**		0.000	[blank]	1	1061801	AC	18-Jun-21	SM 2710F	
Sulfate*	**61.6**		10.0	mg/L	1	1061811	AC	18-Jun-21	375.4	
TDS*	**453**		5.00	mg/L	1	1061813	GM	21-Jun-21	160.1	
Alkalinity, Total*	**180**		4.00	mg/L	1	1060808	AC	18-Jun-21	310.1	
Sulfide, total	<0.0100		0.0100	mg/L	1	1062103	AC	21-Jun-21	376.2	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Barium*	**0.064**		0.050	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Calcium*	**80.3**		0.100	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Iron*	<0.050		0.050	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Magnesium*	**14.2**		0.100	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Potassium*	**2.41**		1.00	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Sodium*	**45.0**		1.00	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Laboratory Services, Inc. 2609 W. Marland Hobbs NM, 88240	Project: OXY Project Number: NONE GIVEN Project Manager: Dusty Armstrong Fax To: (505) 397-3713	Reported: 25-Jun-21 17:23

WELL # 2L-4920

H211573-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**224**		5.00	mg/L	1	1062105	AC	21-Jun-21	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	1062105	AC	21-Jun-21	310.1	
Chloride*	**92.0**		4.00	mg/L	1	1061604	GM	21-Jun-21	4500-Cl-B	
Conductivity*	**773**		1.00	umhos/cm @ 25°C	1	1061814	AC	18-Jun-21	120.1	
pH*	**7.49**		0.100	pH Units	1	1061814	AC	18-Jun-21	150.1	
Temperature °C	**17.7**			pH Units	1	1061814	AC	18-Jun-21	150.1	
Resistivity	**12.9**			Ohms/m	1	1061814	AC	18-Jun-21	120.1	
Specific Gravity @ 60° F	**1.001**		0.000	[blank]	1	1061801	AC	18-Jun-21	SM 2710F	
Sulfate*	**66.9**		10.0	mg/L	1	1061811	AC	18-Jun-21	375.4	
TDS*	**461**		5.00	mg/L	1	1061813	GM	21-Jun-21	160.1	
Alkalinity, Total*	**184**		4.00	mg/L	1	1062105	AC	21-Jun-21	310.1	
Sulfide, total	<0.0100		0.0100	mg/L	1	1062103	AC	21-Jun-21	376.2	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Barium*	**0.067**		0.050	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Calcium*	**74.4**		0.100	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Iron*	<0.050		0.050	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Magnesium*	**11.7**		0.100	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Potassium*	**2.41**		1.00	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	
Sodium*	**67.5**		1.00	mg/L	1	B211388	JDA	25-Jun-21	EPA200.7	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Laboratory Services, Inc. 2609 W. Marland Hobbs NM, 88240	Project: OXY Project Number: NONE GIVEN Project Manager: Dusty Armstrong Fax To: (505) 397-3713	Reported: 25-Jun-21 17:23

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1060808 - General Prep - Wet Chem										
Blank (1060808-BLK1)				Prepared & Analyzed: 08-Jun-21						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (1060808-BS1)				Prepared & Analyzed: 08-Jun-21						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	305	12.5	mg/L				80-120			
Alkalinity, Total	250	10.0	mg/L	250		100	80-120			
LCS Dup (1060808-BSD1)				Prepared & Analyzed: 08-Jun-21						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	305	12.5	mg/L				80-120	0.00	20	
Alkalinity, Total	250	10.0	mg/L	250		100	80-120	0.00	20	
Batch 1061604 - General Prep - Wet Chem										
Blank (1061604-BLK1)				Prepared & Analyzed: 16-Jun-21						
Chloride	ND	4.00	mg/L							
LCS (1061604-BS1)				Prepared & Analyzed: 16-Jun-21						
Chloride	104	4.00	mg/L	100		104	80-120			
LCS Dup (1061604-BSD1)				Prepared & Analyzed: 16-Jun-21						
Chloride	100	4.00	mg/L	100		100	80-120	3.92	20	
Batch 1061801 - General Prep - Wet Chem										
Duplicate (1061801-DUP1)		**Source: H211562-01**		Prepared & Analyzed: 18-Jun-21						
Specific Gravity @ 60° F	1.003	0.000	[blank]		1.010			0.701	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Laboratory Services, Inc. 2609 W. Marland Hobbs NM, 88240	Project: OXY Project Number: NONE GIVEN Project Manager: Dusty Armstrong Fax To: (505) 397-3713	Reported: 25-Jun-21 17:23

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1061811 - General Prep - Wet Chem										
Blank (1061811-BLK1)				Prepared & Analyzed: 18-Jun-21						
Sulfate	ND	10.0	mg/L							
LCS (1061811-BS1)				Prepared & Analyzed: 18-Jun-21						
Sulfate	23.4	10.0	mg/L	20.0		117	80-120			
LCS Dup (1061811-BSD1)				Prepared & Analyzed: 18-Jun-21						
Sulfate	23.3	10.0	mg/L	20.0		116	80-120	0.257	20	
Batch 1061813 - Filtration										
Blank (1061813-BLK1)				Prepared: 18-Jun-21 Analyzed: 23-Jun-21						
TDS	ND	5.00	mg/L							
LCS (1061813-BS1)				Prepared: 18-Jun-21 Analyzed: 21-Jun-21						
TDS	527		mg/L	500		105	80-120			
Duplicate (1061813-DUP1)		**Source: H211552-02**		Prepared: 18-Jun-21 Analyzed: 23-Jun-21						
TDS	571	5.00	mg/L		571			0.00	20	
Batch 1061814 - General Prep - Wet Chem										
LCS (1061814-BS1)				Prepared & Analyzed: 18-Jun-21						
pH	7.10		pH Units	7.00		101	90-110			
Conductivity	501		uS/cm	500		100	80-120			
Duplicate (1061814-DUP1)		**Source: H211572-01**		Prepared & Analyzed: 18-Jun-21						
pH	6.83	0.100	pH Units		6.80			0.440	20	
Conductivity	7450	1.00	umhos/cm @ 25°C		7200			3.41	20	
Resistivity	1.34		Ohms/m		1.39			3.41	20	
Temperature °C	17.6		pH Units		17.7			0.567	200	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Laboratory Services, Inc. 2609 W. Marland Hobbs NM, 88240	Project: OXY Project Number: NONE GIVEN Project Manager: Dusty Armstrong Fax To: (505) 397-3713	Reported: 25-Jun-21 17:23

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1062103 - General Prep - Wet Chem										
Blank (1062103-BLK1)				Prepared & Analyzed: 21-Jun-21						
Sulfide, total	ND	0.0100	mg/L							
Duplicate (1062103-DUP1)		**Source: H211572-01**		Prepared & Analyzed: 21-Jun-21						
Sulfide, total	0.0329	0.0100	mg/L		0.0344			4.54	20	
Batch 1062105 - General Prep - Wet Chem										
Blank (1062105-BLK1)				Prepared & Analyzed: 21-Jun-21						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (1062105-BS1)				Prepared & Analyzed: 21-Jun-21						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	292	12.5	mg/L				80-120			
Alkalinity, Total	240	10.0	mg/L	250		96.0	80-120			
LCS Dup (1062105-BSD1)				Prepared & Analyzed: 21-Jun-21						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	330	12.5	mg/L				80-120	12.0	20	
Alkalinity, Total	270	10.0	mg/L	250		108	80-120	11.8	20	
Matrix Spike (1062105-MS1)		**Source: H211573-02**		Prepared & Analyzed: 21-Jun-21						
Alkalinity, Total	264	4.00	mg/L	100	184	80.0	70-130			

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Laboratory Services, Inc. 2609 W. Marland Hobbs NM, 88240	Project: OXY Project Number: NONE GIVEN Project Manager: Dusty Armstrong Fax To: (505) 397-3713	Reported: 25-Jun-21 17:23

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B211388 - Total Rec. 200.7/200.8/200.2										
Blank (B211388-BLK1)				Prepared: 24-Jun-21 Analyzed: 25-Jun-21						
Potassium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Magnesium	ND	0.100	mg/L							
Barium	ND	0.050	mg/L							
Iron	ND	0.050	mg/L							
LCS (B211388-BS1)				Prepared: 24-Jun-21 Analyzed: 25-Jun-21						
Potassium	8.22	1.00	mg/L	8.00		103	85-115			
Barium	2.00	0.050	mg/L	2.00		99.8	85-115			
Sodium	2.91	1.00	mg/L	3.24		89.9	85-115			
Magnesium	20.6	0.100	mg/L	20.0		103	85-115			
Calcium	4.00	0.100	mg/L	4.00		100	85-115			
Iron	4.00	0.050	mg/L	4.00		100	85-115			
LCS Dup (B211388-BSD1)				Prepared: 24-Jun-21 Analyzed: 25-Jun-21						
Magnesium	20.6	0.100	mg/L	20.0		103	85-115	0.00238	20	
Barium	1.97	0.050	mg/L	2.00		98.6	85-115	1.13	20	
Potassium	8.08	1.00	mg/L	8.00		101	85-115	1.71	20	
Iron	4.03	0.050	mg/L	4.00		101	85-115	0.696	20	
Sodium	2.89	1.00	mg/L	3.24		89.2	85-115	0.817	20	
Calcium	4.00	0.100	mg/L	4.00		100	85-115	0.0699	20	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: laboratory Services
Project Manager: Dustin Armstrong
Address:
City: State: Zip:
Phone #: Fax #:
Project #: Project Owner:
Project Name: Oxy
Project Location:
Sampler Name:

BILL TO
P.O. #:
Company:
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST
Scale
T. Sulfide

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER: water	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
H211573-1	Well #1 (L-4920-X	G	3						✓		✓		6-18	10:45
2	Well #2 (L-4920)	G	3						✓		✓		6-18	10:30

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Date: 6-18-21 Time: 1045 Received By: Tamara Oldaker
Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
REMARKS:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:
Observed Temp. °C 3.0
Corrected Temp. °C
Sample Condition: Cool ☑ Yes Intact ☑ Yes / ☐ No ☐ No
CHECKED BY: (Initials) TO

Turnaround Time: Standard ☑ Rush ☐
Thermometer ID #113
Correction Factor None
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.1 06/04/20

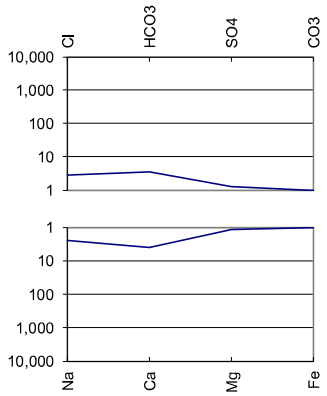
† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL LABORATORIES
SCALE INDEX WATER ANALYSIS REPORT

Company	: LABORATORY SERVICES	Date Sampled	: 06/18/21
Lease Name	: OXY	Company Rep.	: DUSTY ARMSTRONG
Well Number	: WELL #1 1L-4920 X (H211573-01)		
Location	: NOT GIVEN		

	ANALYSIS					
1.	pH	7.49				
2.	Specific Gravity @ 60/60 F.	1.0030				
3.	CaCO3 Saturation Index @ 80 F.	-0.200				
	@ 140 F.	+0.500	'Calcium Carbonate Scale Possible'			
	Dissolved Gasses					
4.	Hydrogen Sulfide	0.000	PPM			
5.	Carbon Dioxide	ND	PPM			
6.	Dissolved Oxygen	ND	PPM			
	Cations		/ Eq. Wt.	=	MEQ/L	
7.	Calcium (Ca++)	80.30	/ 20.1	=	4.00	
8.	Magnesium (Mg++)	14.20	/ 12.2	=	1.16	
9.	Sodium (Na+)	45	/ 23.0	=	2.52	
10.	Barium (Ba++)	0.064	/ 68.7	=	0.00	
	Anions					
11.	Hydroxyl (OH-)	0	/ 17.0	=	0.00	
12.	Carbonate (CO3=)	0	/ 30.0	=	0.00	
13.	Bicarbonate (HCO3-)	220	/ 61.1	=	3.60	
14.	Sulfate (SO4=)	62	/ 48.8	=	1.26	
15.	Chloride (Cl-)	100	/ 35.5	=	2.82	
	Other					
16.	Total Iron (Fe)	0.000	/ 18.2	=	0.00	
17.	Total Dissolved Solids	453				
18.	Total Hardness As CaCO3	259.0				
19.	Calcium Sulfate Solubility @ 90 F.	1,426				
20.	Resistivity (Measured)	13.000	Ohm/Meters	@ 77	Degrees (F)	

Logarithmic Water Pattern



PROBABLE MINERAL COMPOSITION

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	3.60	=	292
CaSO4	68.07	X	0.39	=	27
CaCl2	55.50	X	0.00	=	0
Mg(HCO3)2	73.17	X	0.00	=	0
MgSO4	60.19	X	0.00	=	0
MgCl2	47.62	X	1.16	=	55
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	0.87	=	62
NaCl	58.46	X	1.65	=	97

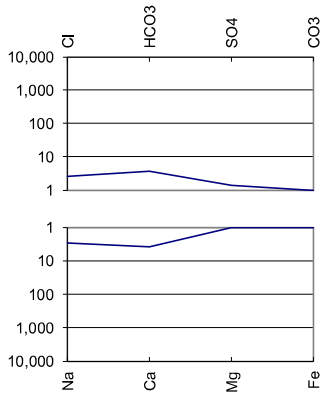
ND = Not Determined

CARDINAL LABORATORIES
SCALE INDEX WATER ANALYSIS REPORT

Company	: LABORATORY SERVICES	Date Sampled	: 06/18/21
Lease Name	: OXY	Company Rep.	: DUSTY ARMSTRONG
Well Number	: WELL #2 L-4920 X (H211573-02)		
Location	: NOT GIVEN		

	ANALYSIS					
1.	pH	7.49				
2.	Specific Gravity @ 60/60 F.	1.0010				
3.	CaCO3 Saturation Index @ 80 F.	-0.226				
	@ 140 F.	+0.474	'Calcium Carbonate Scale Possible'			
	Dissolved Gasses					
4.	Hydrogen Sulfide	0.000	PPM			
5.	Carbon Dioxide	ND	PPM			
6.	Dissolved Oxygen	ND	PPM			
	Cations		/ Eq. Wt.	=	MEQ/L	
7.	Calcium (Ca++)	74.40	/ 20.1	=	3.70	
8.	Magnesium (Mg++)	11.70	/ 12.2	=	0.96	
9.	Sodium (Na+)	68	/ 23.0	=	2.97	
10.	Barium (Ba++)	0.067	/ 68.7	=	0.00	
	Anions					
11.	Hydroxyl (OH-)	0	/ 17.0	=	0.00	
12.	Carbonate (CO3=)	0	/ 30.0	=	0.00	
13.	Bicarbonate (HCO3-)	224	/ 61.1	=	3.67	
14.	Sulfate (SO4=)	67	/ 48.8	=	1.37	
15.	Chloride (Cl-)	92	/ 35.5	=	2.59	
	Other					
16.	Total Iron (Fe)	0.000	/ 18.2	=	0.00	
17.	Total Dissolved Solids	461				
18.	Total Hardness As CaCO3	234.0				
19.	Calcium Sulfate Solubility @ 90 F.	1,439				
20.	Resistivity (Measured)	12.900	Ohm/Meters	@ 77	Degrees (F)	

Logarithmic Water Pattern



PROBABLE MINERAL COMPOSITION

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	3.67	=	297
CaSO4	68.07	X	0.04	=	2
CaCl2	55.50	X	0.00	=	0
Mg(HCO3)2	73.17	X	0.00	=	0
MgSO4	60.19	X	0.00	=	0
MgCl2	47.62	X	0.96	=	46
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	1.34	=	95
NaCl	58.46	X	1.63	=	95

ND = Not Determined

MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
561-5579

Company: ***Nalco Company***

Well Number:	Going Lane Office	Sample Temp:	70
Lease:	OXY	Date Sampled:	10/24/2013
Location:		Sampled by:	Bobby Hunt
Date Run:	10/31/2013	Employee #:	27-022
Lab Ref #:	13-nov-n72697	Analyzed by:	GR

Dissolved Gases

			Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulfide	(H2S)		.00	16.00	.00
Carbon Dioxide	(CO2)	**NOT ANALYZED**			
Dissolved Oxygen	(O2)	**NOT ANALYZED**			

Cations

Calcium	(Ca++)		57.89	20.10	2.88
Magnesium	(Mg++)		21.03	12.20	1.72
Sodium	(Na+)		116.11	23.00	5.05
Barium	(Ba++)	**NOT ANALYZED**			
Manganese	(Mn+)		.00	27.50	.00
Strontium	(Sr++)	**NOT ANALYZED**			

Anions

Hydroxyl	(OH-)		.00	17.00	.00
Carbonate	(CO3=)		.00	30.00	.00
BiCarbonate	(HCO3-)		342.16	61.10	5.60
Sulfate	(SO4=)		56.00	48.80	1.15
Chloride	(Cl-)		103.11	35.50	2.90
Total Iron	(Fe)		0	18.60	.00
Total Dissolved Solids			696.30		
Total Hardness as CaCO3			230.95		
Conductivity MICROMHOS/CM			976		

pH 7.600 Specific Gravity 60/60 F. 1.000

CaSO4 Solubility @ 80 F. 19.15MEq/L, CaSO4 scale is unlikely

CaCO3 Scale Index

70.0	-.280	100.0	.070	130.0	.580
80.0	-.150	110.0	.310	140.0	.580
90.0	.070	120.0	.310	150.0	.810

Nalco Company

Goins Lane Office	32°42’18.86”N	103°11’01.82”W

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 314244

CONDITIONS

Operator: OCCIDENTAL PERMIAN LTD P.O. Box 4294 Houston, TX 772104294	OGRID: 157984
	Action Number: 314244
	Action Type: [IM-SD] Admin Order Support Doc (ENG) (IM-AAO)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	None	2/14/2024