

AE Order Number Banner

Application Number: pMSG2335337210

PMX-342

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

November 2, 2023

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. 432; API 30-025-26974
Lea County, NM

Occidental Permian Ltd. respectfully requests administrative approval to inject produced CO₂ into the above referenced injector in the North Hobbs Unit per Order No. R-6199-F. The wells are currently authorized to inject water and purchased CO₂. 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.
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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)A

[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
 Print or Type Name

Roni Mathew
 Signature

Regulatory Advisor
 Title

10/19/2023
 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 ☒ Pressure Maintenance _____ Disposal _____ Storage
Application qualifies for administrative approval? ☒ 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? ☒ 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: 10/19/2023
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. 432
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. 432
- 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 #432" 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	Status after Jan 2014
30-025-07624	SOUTH HOBBS G/SA UNIT #013	OCCIDENTAL PERMIAN LTD	Plugged
30-025-12504	NORTH HOBBS G/SA UNIT #532	OCCIDENTAL PERMIAN LTD	Plugged
30-025-07542	STATE LAND SECTION 32 #008	OXY USA INC	Plugged
30-025-07541	STATE LAND SECTION 32 #007	OXY USA INC	Plugged
30-025-49478	NORTH HOBBS G/SA UNIT #967	OCCIDENTAL PERMIAN LTD	Active

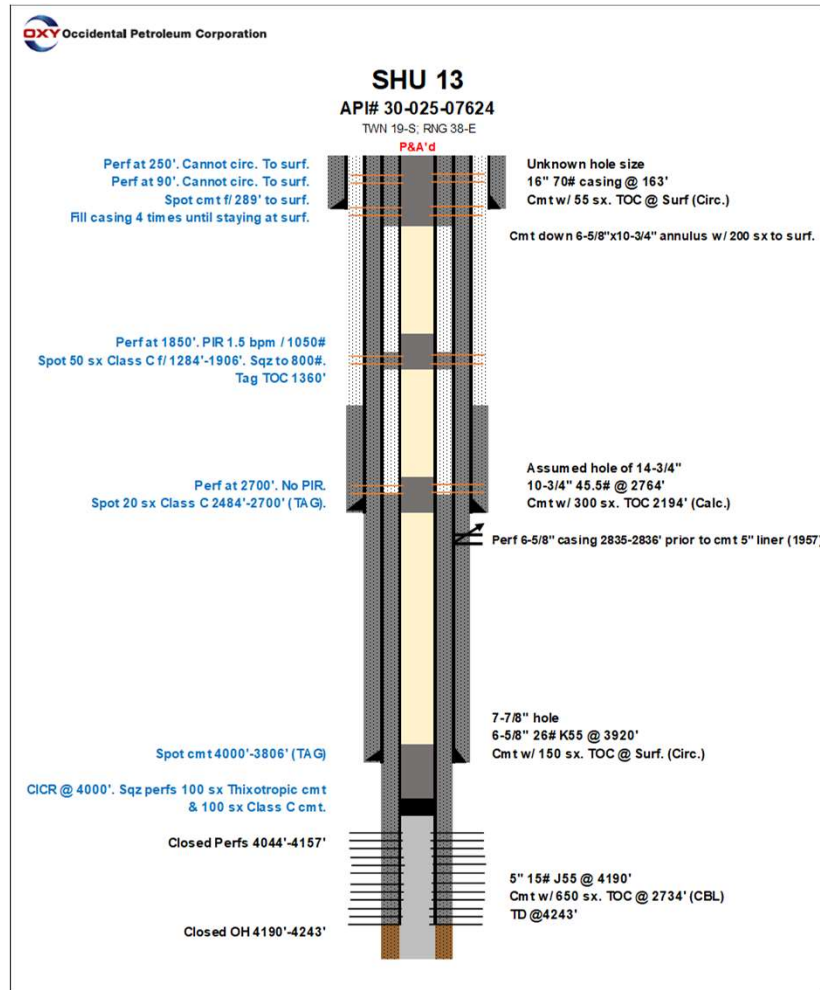
- The wellbore diagrams, their tabulated data, and the area of review map are attached.
- VII. Proposed Operation
 - 1. Average Injection Rate 3,000 BWPD / 10,000 MCFGPD
Maximum Injection Rate 8,000 BWPD / 20,000 MCFGPD
 - 2 This will be a closed system.
 - 3. Average Surface Injection Pressure 1,300 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. Water analysis Malcomb Combs Windmill and DUNLIN-1 and their location map are included with the application.

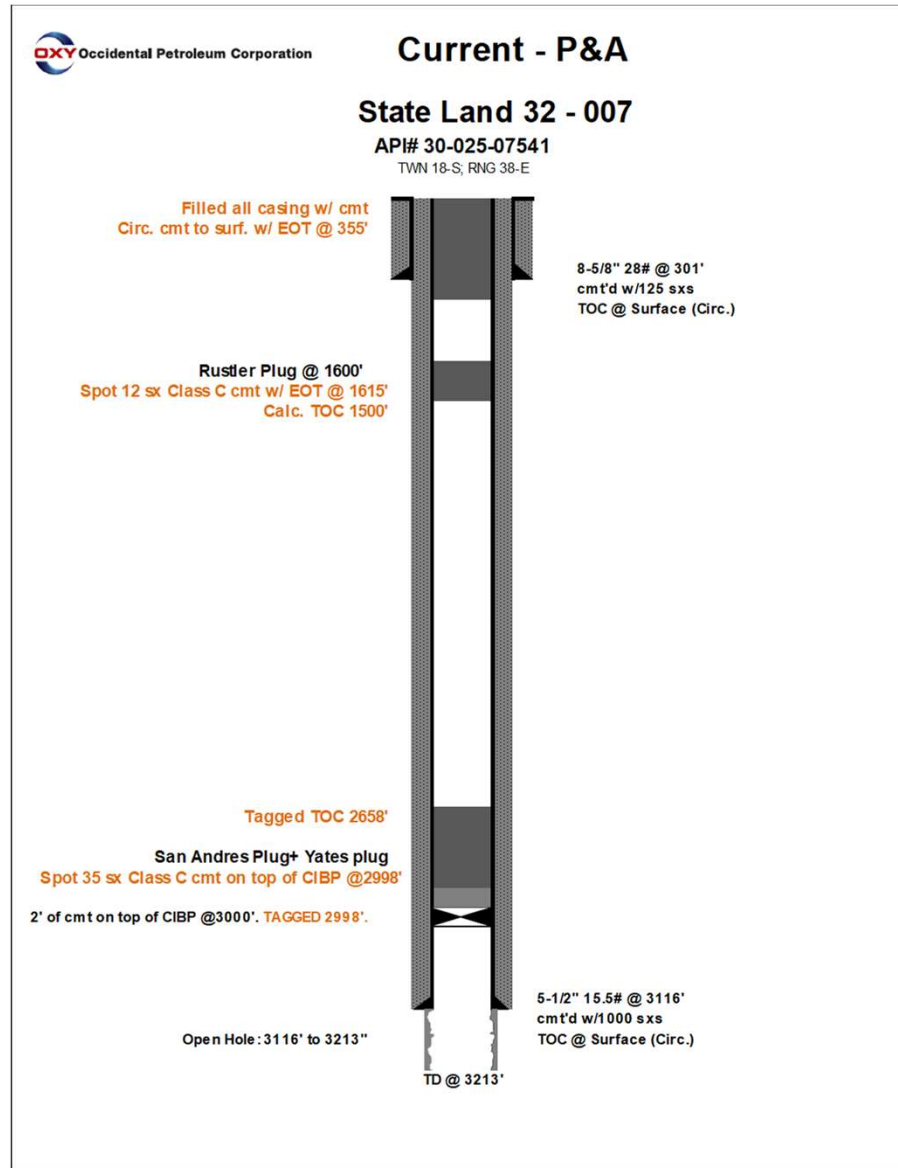
WATER WELL NAME	LAT	LONG	Date Collected
Malcomb Combs Windmill	32°41'13.53"N	103°9'51.426"W	3/25/2013
DUNLIN-1	32°41'33.50"N	103°10'24.76"W	8/30/2019

- 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.

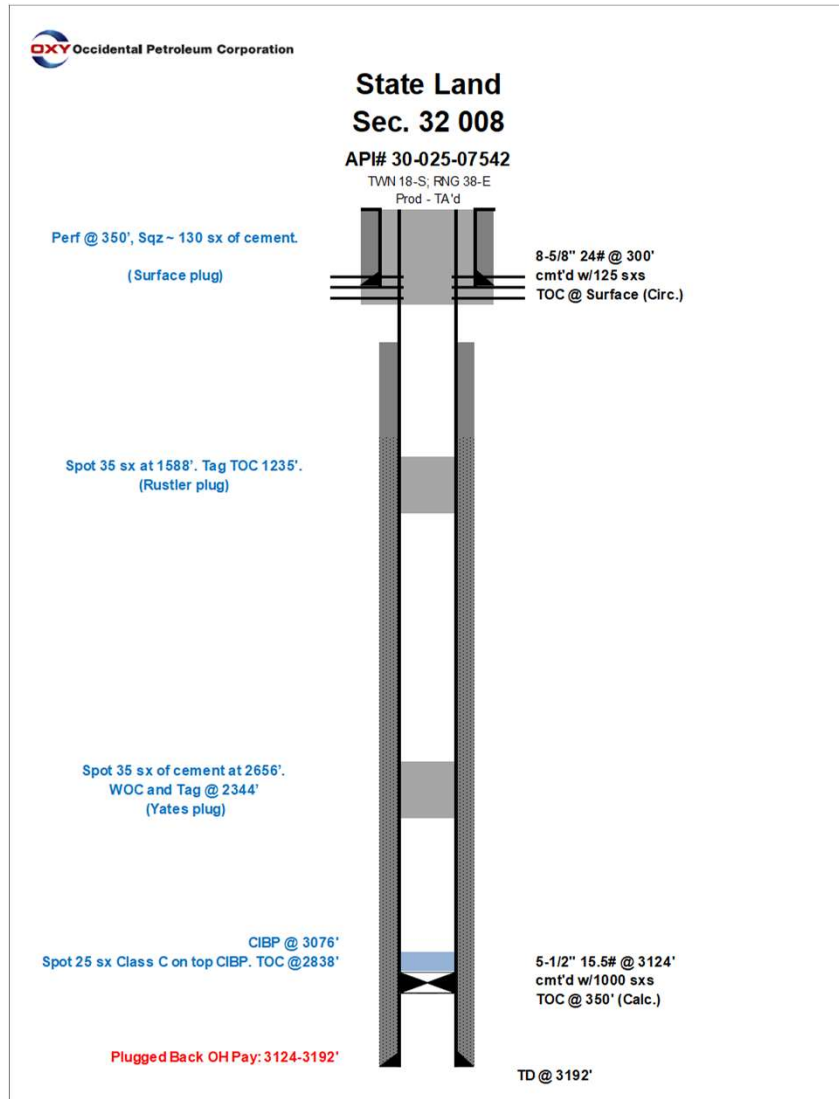
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-07624	OCCIDENTAL PERMIAN LTD	SOUTH HOBBS G/SA UNIT	013	Injection	Plugged, Site Released	330	N	2310	W	C	5	19S	38E	9/4/1930	4243	Unkn 14.75 7.875 7.875	16 10.75 6.625 5	163 2764 3920 4190	55 300 350 975	Surf 2194 Surf. 2734	Circ Calc Circ CBL	4044'-4243' GRAYBURG-SAN ANDRES	Well Plugged on 09/05/2019



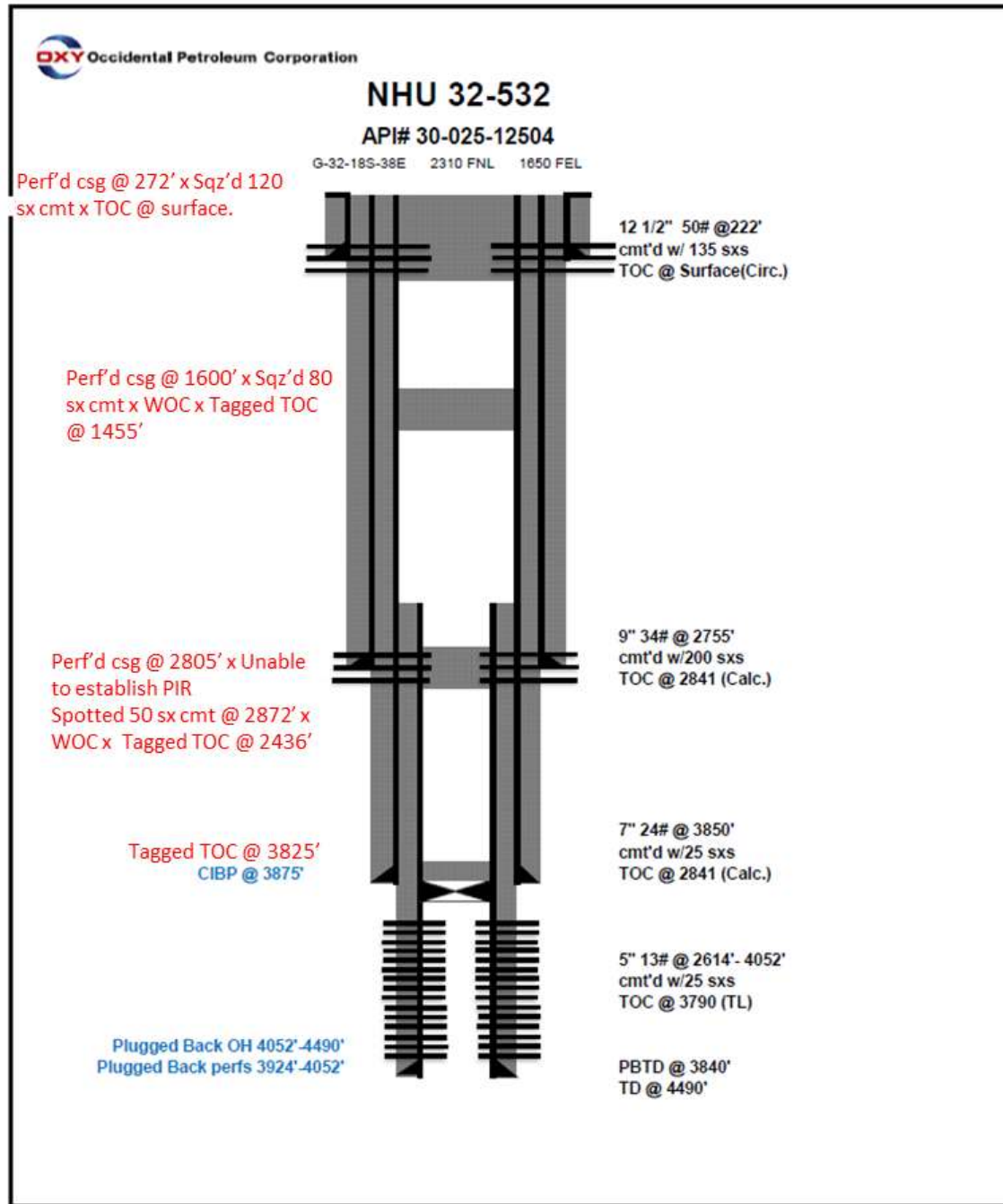
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-07541	OXY USA INC	STATE LAND SECTION 32	007	Oil	Plugged, Site Released	585	S	585	E	P	32	18S	38E	6/7/1948	3213	11 7.875	8.625 5.5	301 3116	125 3116	Surf Surf	Circ Circ	3116'-3213' BOWERS; SEVEN RIVERS	Well Plugged on 01/31/2020



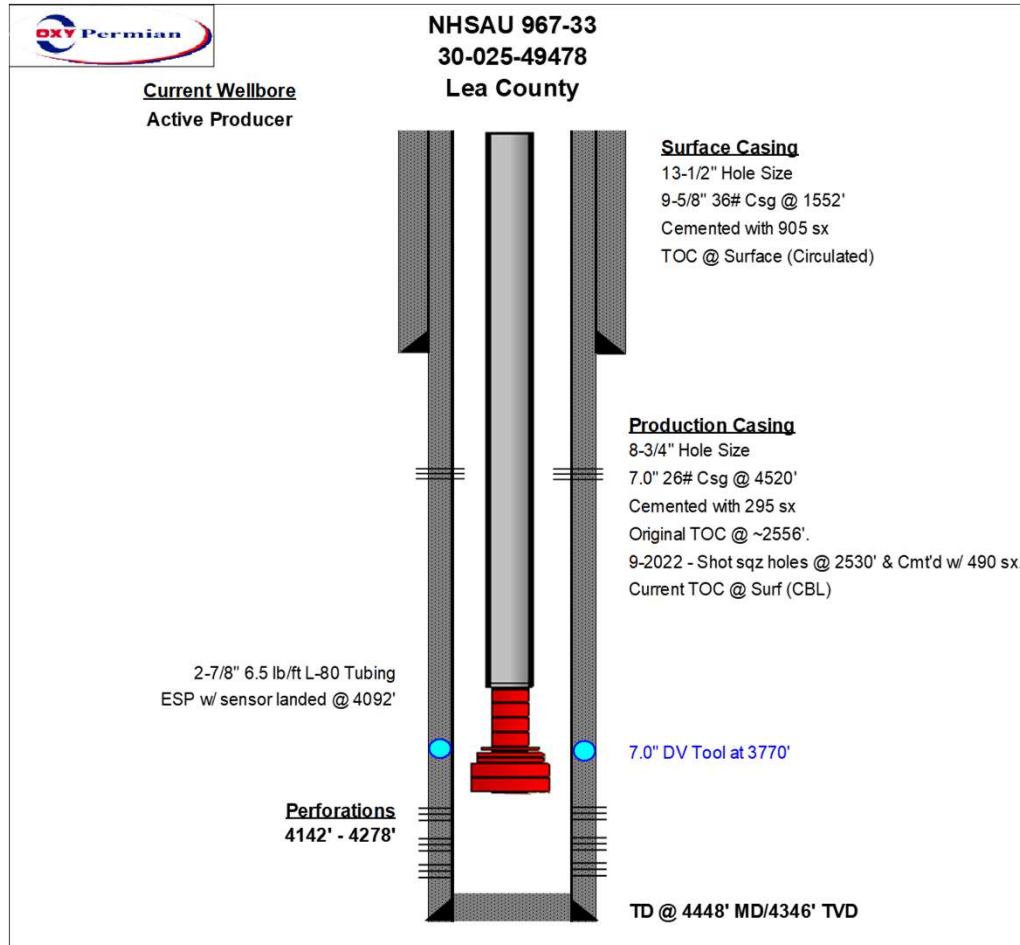
API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG. N/S	N/S	FTG. E/W	E/W	UNIT	SEC.	TSHP.	RNG.	DATE DRILLED	TVD (ft)	HOLE SIZE (in)	CSG. SIZE (in)	SET AT (ft)	SX. CMT.	CMT. TOP (ft)	MTD.	COMPLETION	REMARKS
30-025-07542	OXY USA INC	STATE LAND SECTION 32	008	Oil	Plugged, Site Released	1980	S	660	E	I	32	185	38E	7/1/1945	3192	11 7.875	8.625 5.5	300 3124	125 1000	Surf 350	Circ Calc	3124'-3192' BOWERS; SEVEN RIVERS	Well Plugged on 09/14/2021



API NUMBER	OPERATOR	LEASE	WELL NO.	WELL TYPE	STATUS	FTG.	N/S	FTG.	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
		NAME				N/S		E/W															
30-025-12504	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	532	Oil	Plugged, Not Released	2310	N	1650	E	G	32	18S	38E	11021	4490	12.250	10.250	222	135	Surf	Circ	4052'-4490' HOBBS; GRAYBURG-SAN ANDRES	Well Plugged on 05/26/2022
																9.000	8.625	2755	200	2841	Calc		
																7.000	5.500	3850	25	2841	Calc		
																	5.000	4052	25	3790	TL		



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
30-025-49478	OCCIDENTAL PERMIAN LTD	NORTH HOBBS G/SA UNIT	967	Oil	Active	1803	S	1152	W	L	33	18S	38E	9/8/2022	4346	13.5 8.75	9.625 7	1552 4423	905 785	0 0	Circ. CBL		4142'-4278' GRAYBURG-SAN ANDRES



Side 1

INJECTION WELL DATA SHEET

OPERATOR: OCCIDENTAL PERMIAN LTDWELL NAME & NUMBER: North Hobbs G/SA Unit #432

WELL LOCATION: <u>1401 FSL, 1295 FEL</u>	<u>I</u>	<u>32</u>	<u>18S</u>	<u>38E</u>
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

See attached

WELL CONSTRUCTION DATASurface CasingHole Size: 12.25" Casing Size: 8.625"Cemented with: 600 sx. *or* ft³Top of Cement: Surface Method Determined: Circ.~~Intermediate~~ Casing
ProductionHole Size: 7.875" Casing Size: 5.5" @ 4400' (Production)Cemented with: 950 sx. *or* ft³Top of Cement: Surface Method Determined: Circ.~~Production~~ Casing
LinerHole Size: 5" Casing Size: 4" (Liner)Cemented with: 450 sx. *or* ft³Top of Cement: 3806' Method Determined: CBLTotal Depth: 3806' - 4358'Injection Interval4075' feet to 4170' (Perforated)

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEETTubing Size: 2.875" Lining Material: Duoline (fiberglass)Type of Packer: 4" Arrowset 1-X Dbl GripPacker Setting Depth: 4025'Other Type of Tubing/Casing Seal (if applicable): NAAdditional Data

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

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

2. Name of the Injection Formation: Grayburg/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) @ 270' TVDSS

Glorieta @ -1660' TVDSS

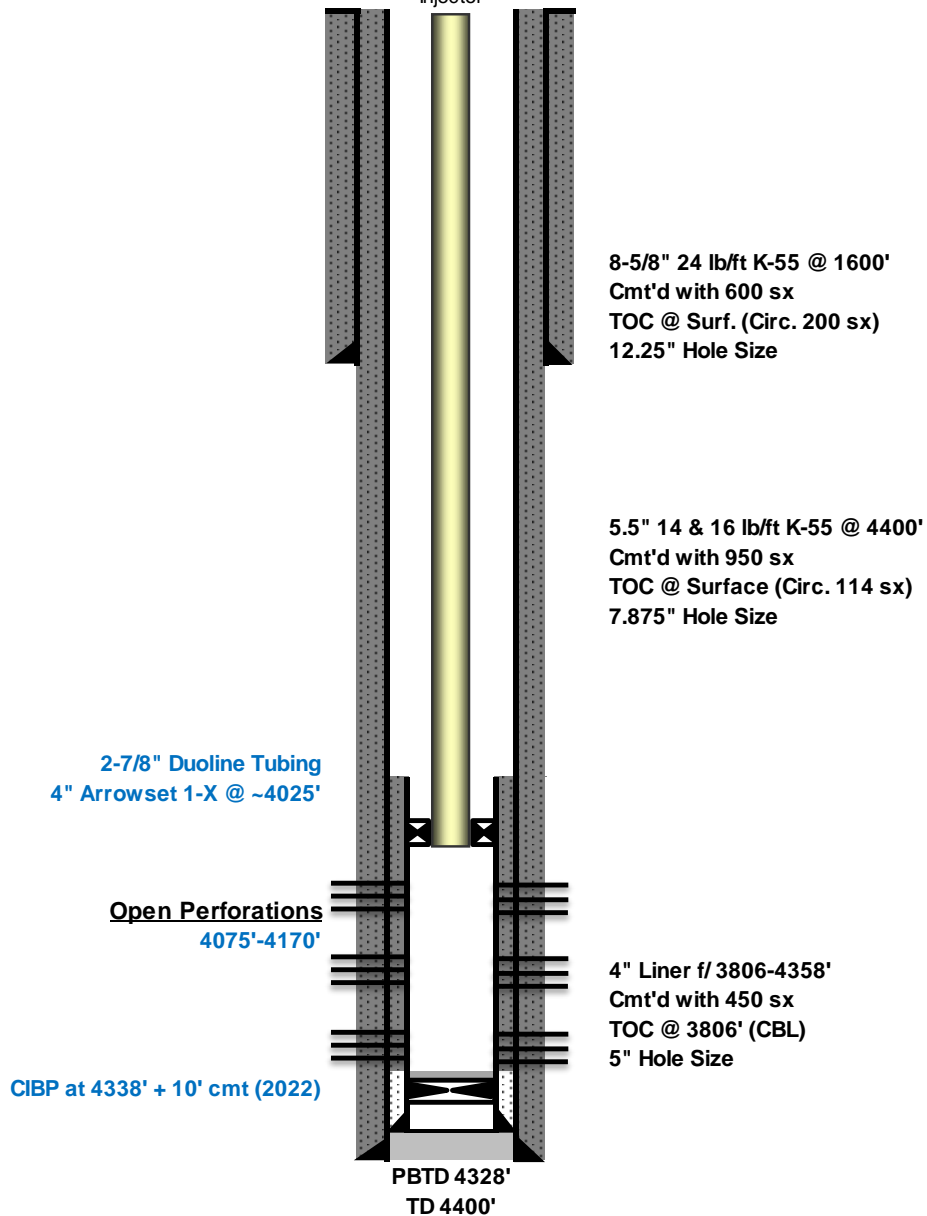
WBD

Occidental Petroleum Corporation

NHU 32-432**API# 30-025-26974**

TWN 18-S; RNG 38-E

Injector



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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-26974	Pool Code 31920	Pool Name HOBBS; GRAYBURG-SAN ANDRES
Property Code 19250	Property Name NORTH HOBBS G/SA UNIT	Well Number 432
OGRID No. 157984	Operator Name OCCIDENTAL PERMIAN LTD.	Elevation 3630.3'

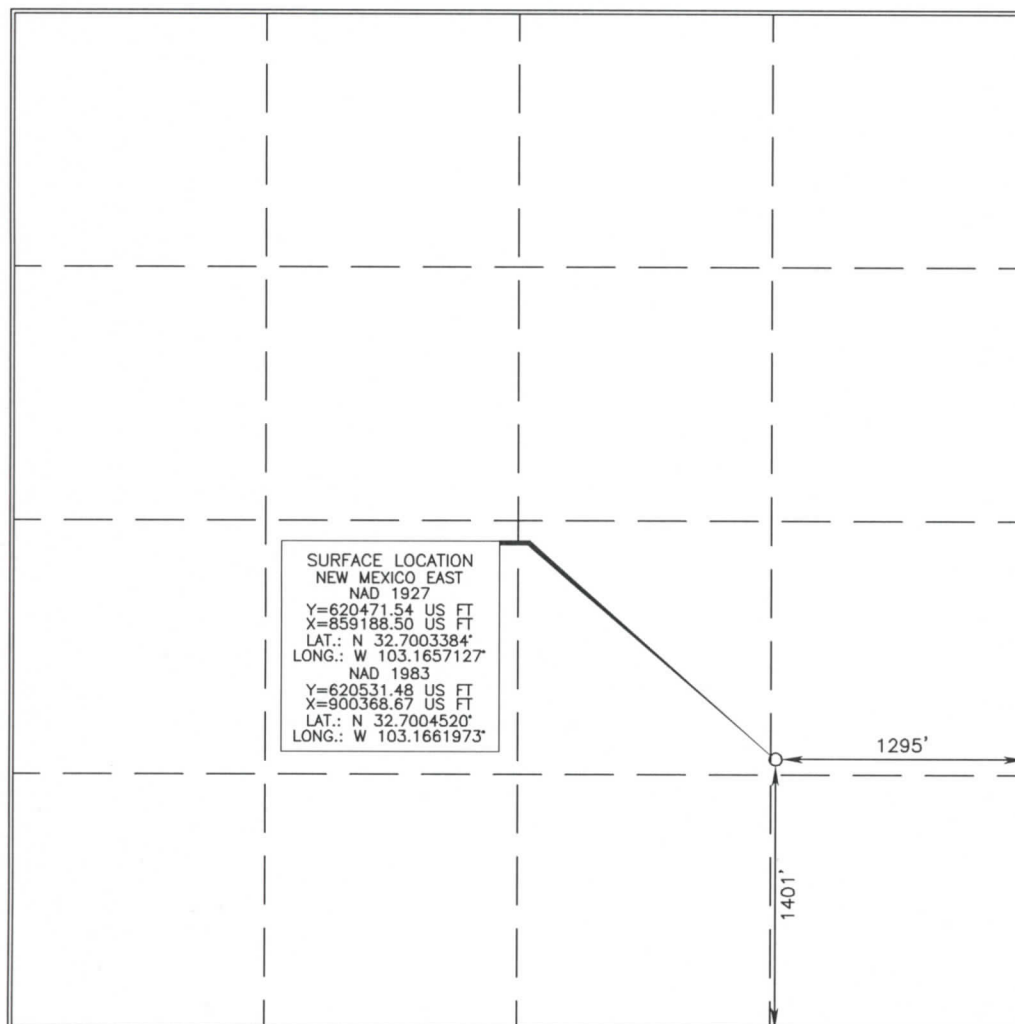
Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	32	18 SOUTH	38 EAST, N.M.P.M.		1401'	SOUTH	1295'	EAST	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 40	Joint or Infill	Consolidation Code	Order No.						

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

Roni Mathew

10/19/2023

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.

JULY 29, 2022

Date of Survey

Signature and Seal of
Professional Surveyor

Certificate Number

15079

WO# 220729WL-b (KA)

G/SA Unit 432

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

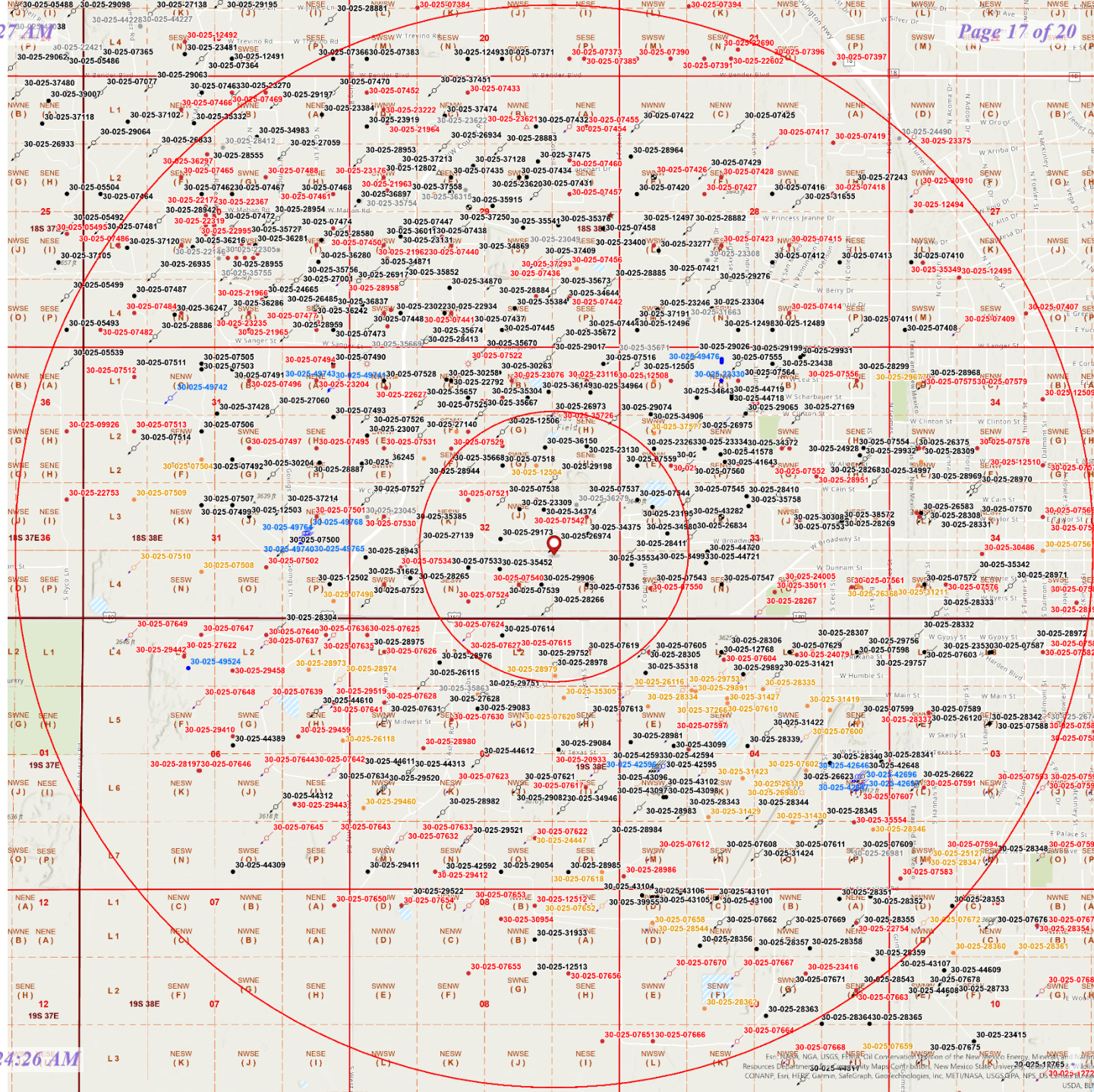
OCD Districts and Offices

OCD District Offices



Public Land Survey System

PLSS Second Division



MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
561-5579

Company: **Nalco Company**

Well Number:	Malcomb Combs Windmill	Sample Temp:	70
Lease:	OXY	Date Sampled:	3/25/2013
Location:	Inj. #239	Sampled by:	Bobby Hunt
Date Run:	3/27/2013	Employee #:	27-022
Lab Ref #:	13-mar-n69274	Analyzed by:	GR

Dissolved Gases

		Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulfide	(H ₂ S)	.00	16.00	.00
Carbon Dioxide	(CO ₂)	NOT ANALYZED		
Dissolved Oxygen	(O ₂)	NOT ANALYZED		

Cations

Calcium	(Ca++)	86.11	20.10	4.28
Magnesium	(Mg++)	16.88	12.20	1.38
Sodium	(Na+)	30.32	23.00	1.32
Barium	(Ba++)	NOT ANALYZED		
Manganese	(Mn+)	.00	27.50	.00
Strontium	(Sr++)	NOT ANALYZED		

Anions

Hydroxyl	(OH-)	.00	17.00	.00
Carbonate	(CO ₃ =)	.00	30.00	.00
BiCarbonate	(HCO ₃ -)	219.96	61.10	3.60
Sulfate	(SO ₄ =)	28.00	48.80	.57
Chloride	(Cl-)	100.11	35.50	2.82
Total Iron	(Fe)	0.14	18.60	.01
Total Dissolved Solids		481.52		
Total Hardness as CaCO ₃		284.48		
Conductivity MICROMHOS/CM		875		

pH	7.070	Specific Gravity 60/60 F.	1.000
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CaSO ₄ Solubility @ 80 F.	18.22MEq/L,	CaSO ₄ scale is unlikely
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CaCO₃ Scale Index

70.0	-.830	100.0	-.480	130.0	.030
80.0	-.700	110.0	-.240	140.0	.030
90.0	-.480	120.0	-.240	150.0	.260

Nalco Company

TABLE 1
WATER QUALITY ANALYTICAL RESULTS
 Results of Water Supply Well Sampling and Investigation
 South Hobbs Grayburg/San Andres Unit, Hobbs, New Mexico
 Occidental Petroleum Corporation

		Matrix:				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
		Location ID:				Aldaz-1	Aldaz-1	Cochran D-1	Cochran D-1	Curtis-1	Dulin-1	IWW-1	Levey-1
		Sample Date:				8/29/2019	10/18/2019	9/3/2019	9/3/2019	9/5/2019	8/30/2019	10/23/2019	7/24/2019
		Sample Type:				N	N	N	Dup	N	N	N	N
		Collected By:				GSI	GSI	GSI	GSI	GSI	GSI	GSI	GSI
Analyte Type	Analyte	USEPA		NMED		Units							
		Screening Limit	Limit Type	Screening Limit	Limit Type								
Coliform	E. Coli	--	NS	--	NS	Unitless	-	-	-	-	-	-	Absent
Coliform	Fecal Coliforms	--	NS	--	NS	MPN/100 mL	-	-	-	-	-	-	<2
Coliform	Total Coliforms	--	NS	--	NS	Unitless	-	-	-	-	-	-	Present
Inorganic	Alkalinity, Bicarbonate as CaCO ₃	--	NS	--	NS	mg/L	242	-	149	102	158	270	-
Inorganic	Alkalinity, Bicarbonate as HCO ₃	--	NS	--	NS	mg/L	-	-	-	-	-	386	-
Inorganic	Alkalinity, Carbonate as CaCO ₃	--	NS	--	NS	mg/L	<20	-	<20	<20	<20	-	<20
Inorganic	Alkalinity, Total as CaCO ₃	--	NS	--	NS	mg/L	242	-	149	102	158	270	316
Inorganic	Chloride	250	SMCL	250	WQS	mg/L	143	-	78.3	77.4	50.5	174	88
Inorganic	Nitrate Nitrite as N	10	MCL	10	WQS	mg/L	1.96	-	1.77	1.76	3.46	5.99	0.031
Inorganic	Sulfate	250	SMCL	600	WQS	mg/L	137	-	53.7	53.2	56.1	62.4	94.6
Inorganic	Sulfide (Total)	--	NS	--	NS	mg/L	-	-	-	-	-	<0.01	-
Inorganic	Sulfide as H ₂ S, Dissolved-Dissolved	--	NS	--	NS	mg/L	0.137	-	<0.00954	<0.00954	<0.00954	-	-
Inorganic	Total Dissolved Solids (TDS)	500	SMCL	1000	WQS	mg/L	756	-	369	377	355	774	579
Inorganic	Total Organic Carbon	--	NS	--	NS	mg/L	-	-	-	-	-	-	1.3
Metal	Calcium	--	NS	--	NS	mg/L	111	-	70.5	72.8	72.2	139	48.8
Metal	Iron	0.3	SMCL	1	WQS	mg/L	2.52	-	<0.027	<0.027	<0.027	<0.027	0.71
Metal	Iron, Dissolved	0.3	SMCL	1	WQS	mg/L	-	-	-	-	-	-	0.283
Metal	Magnesium	--	NS	--	NS	mg/L	19.1	-	12.5	12.8	12.1	24.4	11.9
Metal	Manganese	0.05	SMCL	0.2	WQS	mg/L	0.133	-	0.0004 J	0.0005 J	0.0005 J	0.0533	0.161
Metal	Manganese, Dissolved	0.05	SMCL	0.2	WQS	mg/L	-	-	-	-	-	-	0.134
Metal	Potassium	--	NS	--	NS	mg/L	3.61 b	-	2.3	2.36	2.28	3.66 b	4.6 Ja
Metal	Sodium	--	NS	--	NS	mg/L	132 b	-	47.7	48.9	40.9	95.6 b	160
Field Parameter	Dissolved Oxygen	--	NS	--	NS	mg/L	7.73	1.12	8.3	8.3	12.5	2.47	1
Field Parameter	Oxidation-reduction Potential (ORP)	--	NS	--	NS	mV	-35	53	79	79	101	12	-36
Field Parameter	pH, Field	6.5 - 8.5	SMCL	6 - 9	WQS	ph Units	7.41	7.26	7.21	7.21	6.86	7.24	7.59
Field Parameter	Specific Conductance, Field	--	NS	--	NS	mmhos/cm	1.2	1.26	0.671	0.671	0.65	1.24	0.966
Field Parameter	Temperature	--	NS	--	NS	°C	19.83	18.41	19.95	19.95	19.52	20.12	19.96
Field Parameter	Turbidity	--	NS	--	NS	NTU	24.3	0	0	0	0	5.6	0

Notes

1. NS = No standard; "-" = not analyzed.
2. "<" = concentration below the Minimum Detection Limit (MDL); "J" = estimated concentration above the MDL but below the quantitation limit; "b" = compound was found in the blank and the sample.
3. mg/L = milligrams per liter; MPN/100 mL = Most Probable Number of viable cells in 100 milliliters of sample.
3. Samples analyzed at Eurofins TestAmerica, Houston, Texas and Cardinal Laboratories, Hobbs, New Mexico.
4. MCL = Maximum Contaminant Level; SMCL = Secondary Maximum Contaminant Level. These standards are set by the U.S. Environmental Protection Agency (U.S. EPA).
5. WQS = Water quality standards for groundwater presented in 20.6.2 NMED New Mexico Water Quality Control Commission Regulations, New Mexico Environment Department (NMED).
6. The Levey-1 sample was comprised of water actively expelled from the wellhead at the time of sampling.

Revised to include: 15/10/2023 10:34:30 AM

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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 296120

CONDITIONS

Operator: OCCIDENTAL PERMIAN LTD P.O. Box 4294 Houston, TX 772104294	OGRID: 157984
	Action Number: 296120
	Action Type: [IM-SD] Admin Order Support Doc (ENG) (IM-AAO)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	None	12/19/2023