BEFORE THE OIL CONSERVATION DIVISION EXAMINER HEARING NOVEMBER 2, 2023

CASE Nos. 23614-23617

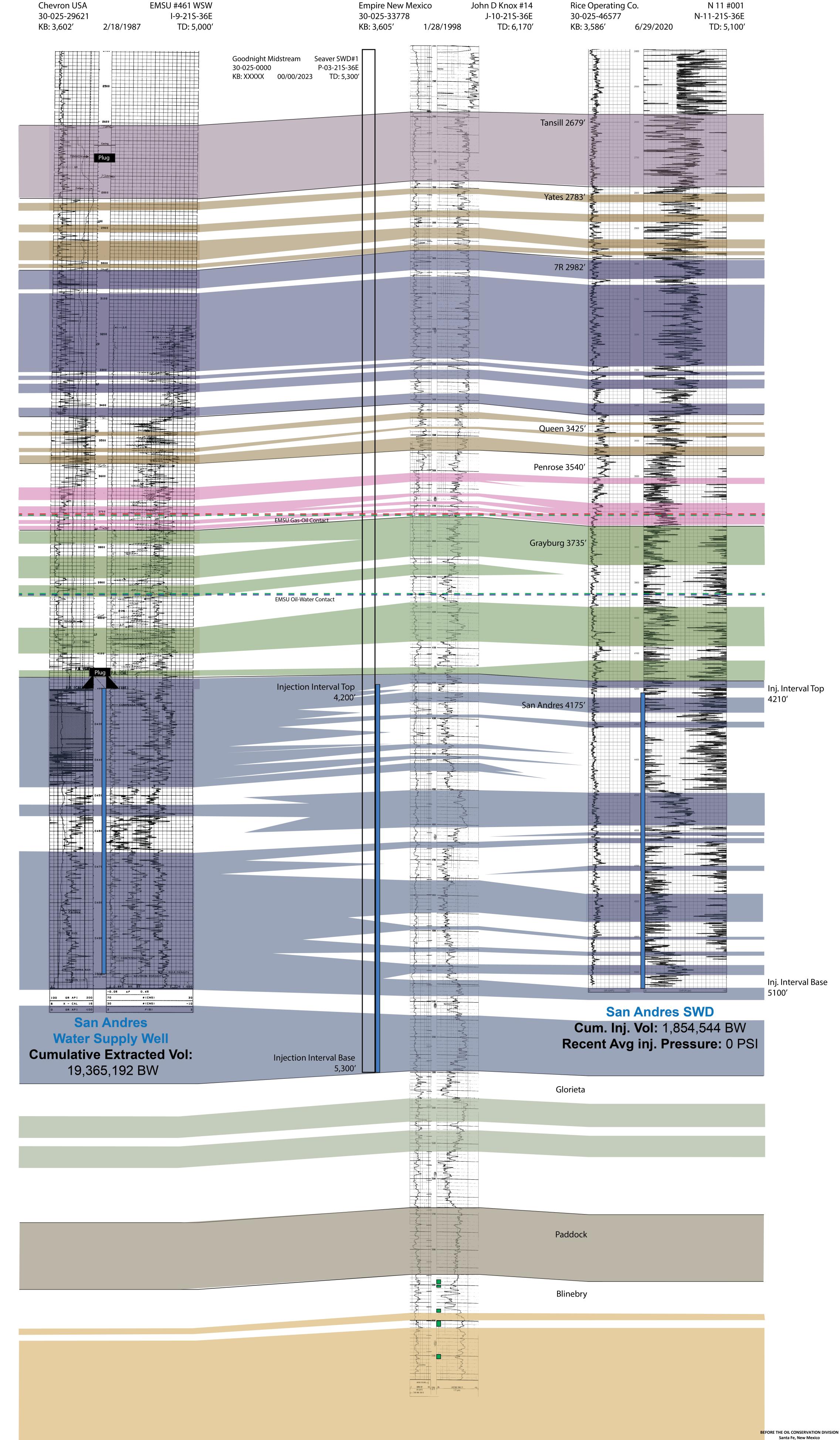
EXHIBITS B-7 THRU C

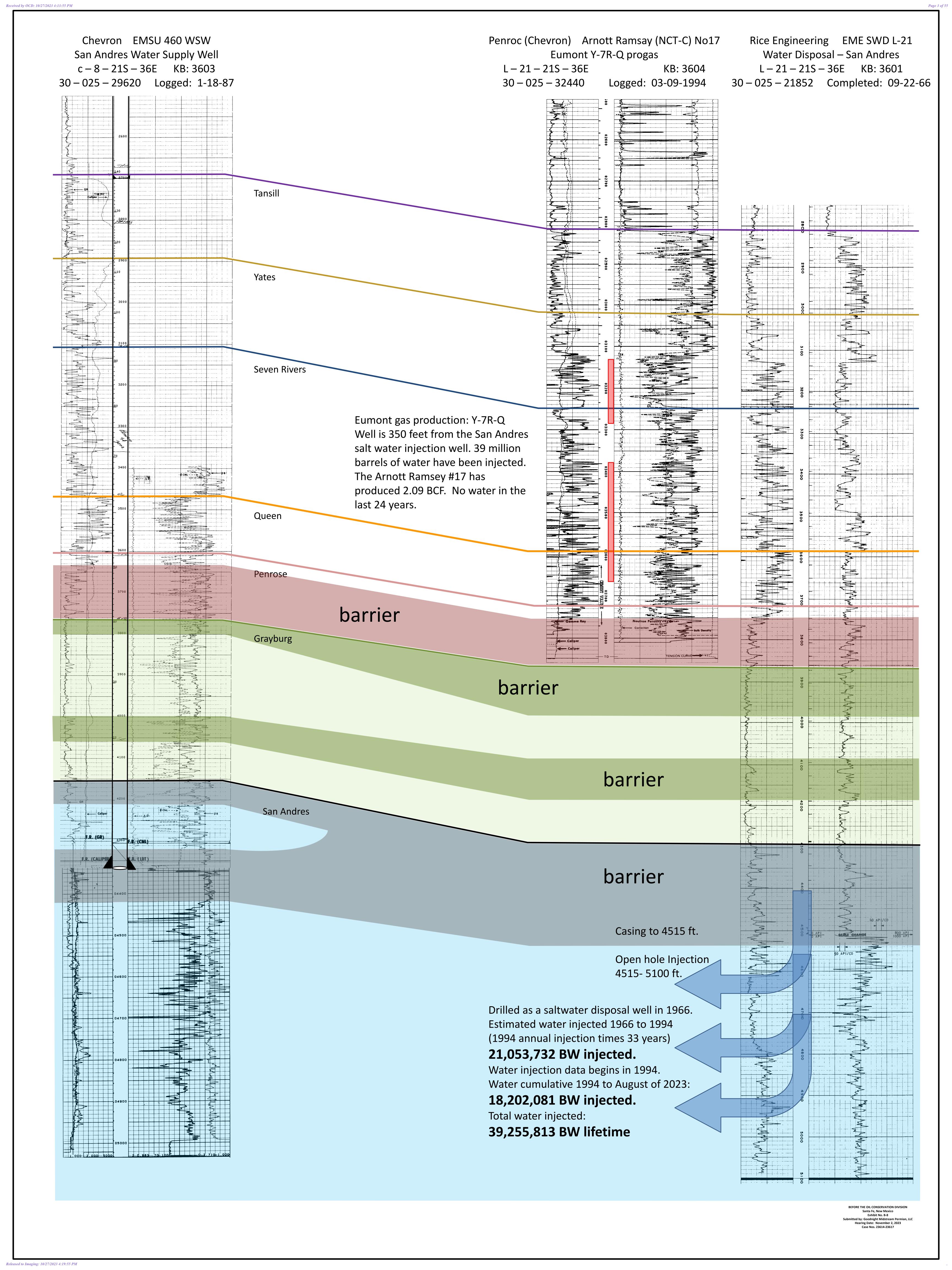
Doc Gooden SWD #1 Well Hernandez SWD #1 Well Hodges SWD #1 Well Seavers SWD #1 Well

LEA COUNTY, NEW MEXICO



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Wells Providing Water for the EMSU Grayburg Water Flood

EMSU Water Supply Well NAME	А	PI	Location	Status	Start	End	Years as Active WSW	Documented Measured Volumes	Reconstructed from Tests and Modeled Averages	Total Water Bbls extracted from the San Andres
Chevron WSW EMSU #457	025	29149	Q - 5 - 21S - 36E	T&A	1987	2004	17	27,292,824	14,876,823	42,169,647
Chevron WSW EMSU #458	025	29618	I - 4 - 21S - 36E	T&A	1987	2012	25	35,546,076	13,986,538	49,532,614
Chevron WSW EMSU #459	025	29826	B - 5 - 21S - 36E	Active	1987	2023	36	75,869,112	24,744,166	100,613,278
Chevron WSW EMSU #460	025	29620	C - 8 - 21S - 36E	P&A	1987	2002	15	33,145,521	31,972,778	65,118,299
Chevron WSW EMSU #461	025	29621	I - 9 - 21S - 36E	P&A	1987	2002	15	8,452,395	10,912,797	19,365,192
Chevron WSW EMSU #462	025	29622	L - 9 - 21S - 36E	Convert to Oil	1987	2005	18	45,502,836	25,974,689	71,477,525
							Sum:	225,808,764	122,467,791	348,276,555

OCD case document 08397_4659 EMSU Tech Committee Report provides monthly WSW production volumes for 1978 and 1988.

OCD case document 08397_4658 EMSU Tech Committee Report provides monthly WSW production volumes for 1989.

Years 1989 to 1994 were reconstructed from well tests and Tech Committee Charts.

OCD online database was used for years 1994 to present.



RE: Goodnight Midstream, LLC Doc Gooden SWD well permit

Lot P, Section 3, Township 21S Range 36E Lea County, New Mexico

Goodnight Midstream conducted a hydrogeologic investigation related to the proposed injection well. The scope of the investigation was to determine if there is any hydrologic connection between the proposed injection interval and any sources of underground drinking water.

Goodnight geologist performed an analysis of subsurface well log data. It is our conclusion that there is no evidence of faulting in the data we evaluated at the depths that are being considered. There are small scale flexures which may or may not be associated with small scale faults. None of these flexures extend above the Wolfcamp unconformity and are not seen in the Leonard intervals.

Goodnight acquired and evaluated 3D seismic to the west but does not cover the lands that this salt water disposal well is located upon. This data shows the geologic setting in the area. No faults are seen in the Artesia Group, San Andres, Glorieta, or Leonard series. The San Andres contains small scale flexures and changes in seismic velocity that may indicate karsting. These flexures and velocity anomalies are being used to target disposal reservoir opportunities. The Grayburg thickens over the San Andres sag. There is also a thickening of the Yates relative to the low in the San Andres. These stratigraphic changes do not indicate the presence of faulting and there is no communication between these intervals.

Water has been disposed into the San Andres in this area since 1966. There is a good record of pressure separation. Production from the Artesia group has proceeded without interruption or encroachment from San Andres disposal for more than 50 years. Containment and isolation from the hydrocarbon intervals would then also be isolated from any sources of fresh water above.

We see no evidence of faulting that would extend to or form a connection between the injection zone and any underground sources of drinking water.

Geology and Reservoir Engineering Manager

Goodnight Midstream, LLC

ween the injection

BEFORE THE OIL CONSERVATION DIVISION

Santa Fe. New Mexico

Santa Fe, New Mexico
Exhibit No. B-10
Submitted by: Goodnight Midstream Permian Hearing Date: November 2, 2023



RE: Goodnight Midstream, LLC Hernandez SWD well permit

Lot P, Section 10, Township 21S Range 36E Lea County, New Mexico

Goodnight Midstream conducted a hydrogeologic investigation related to the proposed injection well. The scope of the investigation was to determine if there is any hydrologic connection between the proposed injection interval and any sources of underground drinking water.

Goodnight geologist performed an analysis of subsurface well log data. It is our conclusion that there is no evidence of faulting in the data we evaluated at the depths that are being considered. There are small scale flexures which may or may not be associated with small scale faults. None of these flexures extend above the Wolfcamp unconformity and are not seen in the Leonard intervals.

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We see no evidence of faulting that would extend to or form a connection between the injection zone and any underground sources of drinking water.

Geology and Reservoir Engineering Manager

Goodnight Midstream, LLC

BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico Exhibit No. B-11

Maging: 10/27/2023 4:19:55 PM Submitted by: Goodnight Midstream Permian, Hearing Date: November 2, 2023



RE: Goodnight Midstream, LLC Hodges SWD well permit

Lot 11, Section 4, Township 21S Range 36E Lea County, New Mexico

Goodnight Midstream conducted a hydrogeologic investigation related to the proposed injection well. The scope of the investigation was to determine if there is any hydrologic connection between the proposed injection interval and any sources of underground drinking water.

Goodnight geologist performed an analysis of subsurface well log data. It is our conclusion that there is no evidence of faulting in the data we evaluated at the depths that are being considered. There are small scale flexures which may or may not be associated with small scale faults. None of these flexures extend above the Wolfcamp unconformity and are not seen in the Leonard intervals.

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We see no evidence of faulting that would extend to or form a connection between the injection zone and any underground sources of drinking water.

Geology and Reservoir Engineering Manager

Goodnight Midstream, LLC

between the injection

BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico
Exhibit No. B-12

Submitted by: Goodnight Midstream Permian, Hearing Date: November 2, 2023 Hearing Date: November 2, 2023



RE: Goodnight Midstream, LLC Seaver SWD well permit

Lot K, Section 10, Township 21S Range 36E Lea County, New Mexico

Goodnight Midstream conducted a hydrogeologic investigation related to the proposed injection well. The scope of the investigation was to determine if there is any hydrologic connection between the proposed injection interval and any sources of underground drinking water.

Goodnight geologist performed an analysis of subsurface well log data. It is our conclusion that there is no evidence of faulting in the data we evaluated at the depths that are being considered. There are small scale flexures which may or may not be associated with small scale faults. None of these flexures extend above the Wolfcamp unconformity and are not seen in the Leonard intervals.

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We see no evidence of faulting that would extend to or form a connection between the injection zone and any underground sources of drinking water.

Preston McGuire

Geology and Reservoir Engineering Manager

Goodnight Midstream, LLC

10/23/23

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. R-13

Exhibit No. B-13
Submitted by: Goodnight Midstream Permien,

LLC Hearing Date: November 2, 2023 Case Nos. 23614-23617

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EUNICE MONUMENT SOUTH SECONDARY RECOVERY UNIT

(Royalty Owners Overview)
LEA COUNTY, NEW MEXICO

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B-14
Submitted by: Goodnight Midstream Permian, LLC
Hearing Date: November 2, 2023
Case Nos. 23614-23617

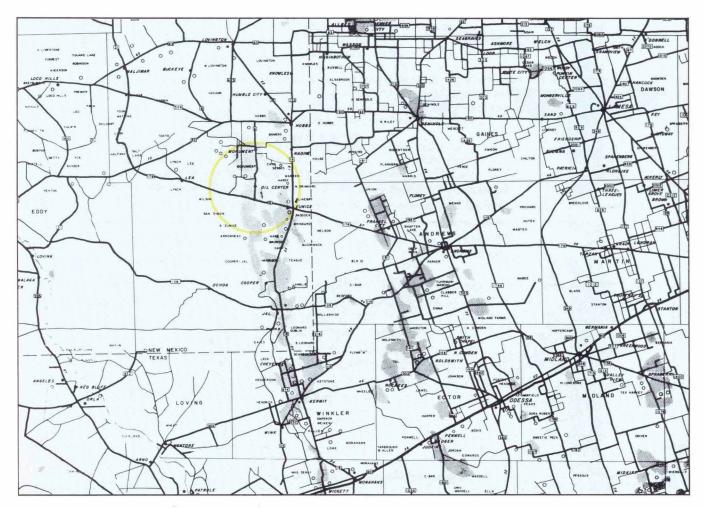
INTRODUCTION

The Proposed Eunice Monument South Secondary Recovery Unit in Lea County, New Mexico, encircles the Town of Oil Center, is approximately four miles south of the Town of Monument, and is fifteen miles southwest of the City of Hobbs. The unit area covers 14,190 acres in Townships 20 and 21 South, Ranges 36 and 37 East, New Mexico Principal Meridian, and includes all or portions of 24 sections of land. At its longest and widest portions, the unit area is six miles by five and one-fourth miles.

The field was discovered March 21, 1929 with the completion of the Continental Lockhart "B-31" well in Section 31, Township 21 South, Range 36 East, N.M.P.M., Lea County, New Mexico. Following discovery, the field was designated as the Eunice (Queen-Penrose, Grayburg and San Andres geological formations) Pool. In 1953, the Eunice Pool was separated into the Eumont Gas Pool and Eunice Monument Oil Pool.

The oil field was developed on 40-acre spacing with the majority of wells being drilled and completed during the three-year period from 1934 through 1937. Peak oil production from the collective wells occurred in May of 1937 when the monthly production was 791,800 barrels of oil, or 25,542 barrels per day.

Since May of 1937, oil production within the unit has steadily declined. Twenty-three companies have drilled and completed 344 oil wells, but because of production decline, only 200 oil wells are active. The remaining wells have been temporarily abandoned, plugged, or recompleted in other zones. The oil production is now approximately 60,000 barrels of oil per month, or 7½ % of the peak (1937) monthly production.



HOW CAN WE EXTEND THE LIFE OF THIS FIELD — 1929 TO _

As with all oil fields, production has declined with time. In 1979, the Working Interest Owners (companies operating the wells and paying the maintenance costs) began a series of meetings and engineering studies to attempt to extend the productive life of this field by recovering oil that can never be produced with the present method of operation and existing facilities.





QUEEN PENROSE for in receive the

WATER INJECTION

After the various company geologists and engineers completed their laboratory and reservoir studies, they concluded that a unit should be formed to inject water into the oil producing formations to force oil trapped in the rocks to the pumping units of the producing wells. This method of recovery is being successfully employed in many of the older oil fields in the area

For this proposed unit, salt water from the <u>non-productive San Andres</u> formation, supplemented by the reinjection of produced water, was recommended for pressurized injection into the oil producing portions of the Grayburg and Lower Penrose formations.

To understand the benefits of water injection, a brief discussion of primary and secondary recovery is helpful.

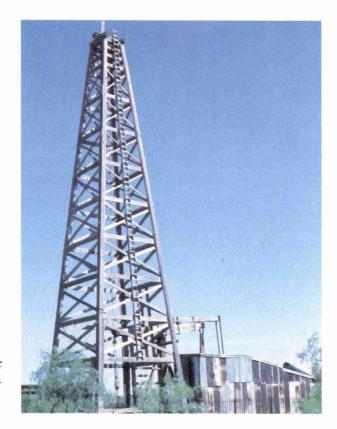
GLORIETA

SAN ANDRES

PRIMARY RECOVERY

Water, oil and gas existed under high temperature and high pressure when the first well was drilled into the oil producing formations. Because of the high gas pressure, the Continental Lockhart "B-31" well was a true gusher when it was drilled in 1929. The oil, along with some water and gas, was pushed out the well bore by the pressure of the gas. As more wells were drilled, the pressure decreased and pumps had to be installed on the wells.

With the decreased reservoir pressure, a large amount of oil was trapped in the pore spaces of the reservoir rocks. The diagram shown below represents the pore spaces in the reservoir at different times during the life of the field. The original condition of the reservoir at the time of discovery is shown in Figure (a), with only oil and water filling the pore spaces. It is seen that as oil is produced, gas bubbles, water, and the small pore spaces prevent recovery of 80% of the oil in place. At this point, as shown in Figure (b), a large amount of oil remains trapped in the reservoir.

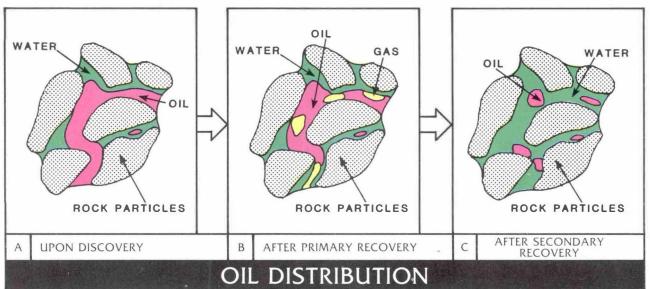


SECONDARY RECOVERY

Two natural forces provide the energy necessary to move oil from the reservoir to a producing well. One is the expansion of the gas that is dissolved in the oil (solution gas drive) and the second is the movement of water which displaces the oil (water drive).

Generally speaking, a reservoir that has a water drive (natural or man-made) will yield significantly more oil than if subjected only to a solution gas drive. When it is determined that a reservoir is primarily producing by gas expansion, consideration is given to supplementing the solution gas drive with the injection of water to recover additional oil.

A water injection program, also referred to as secondary recovery, requires pressurized injection of water through selected wells into the oil-bearing reservoir. The injected water forces the oil to the surrounding producing wells where it is pumped to the surface. Following a water injection program, a large portion of the original oil is recovered as shown in Figure (c).



UNITIZATION FOR WATER INJECTION

★ WHAT IS UNITIZATION?

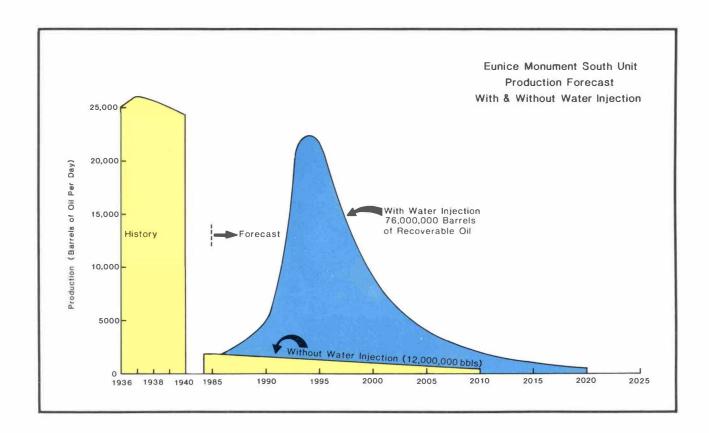
Basically, unitization is the joining of the various leases and interests within an agreed upon land area to cooperatively develop the energy resources in accordance with the best economic, geological and engineering principles applicable to the particular oil reservoir. Unitization allows for different recovery methods to be used; thereby, as a general rule, increasing production and providing more income to Royalty and Working Interest Owners.

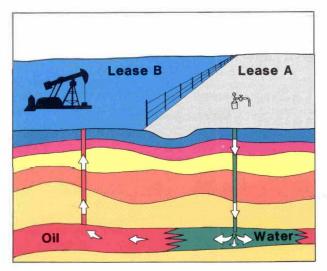
* WHY IS IT NECESSARY TO UNITIZE?

With a program of water injection, oil is displaced across property lines and some of the wells on the property may be used for the injection of water instead of the production of oil. It is therefore necessary to join all properties in a way that they can be treated and operated as a single property. This requires that Working Interest Owners and Royalty Interest Owners pool their respective interests and share in oil produced. This pooling and sharing is called "unitization" and the property formed is called a "unit."

★ WILL WATER INJECTION RESULT IN RECOVERING MORE OIL?

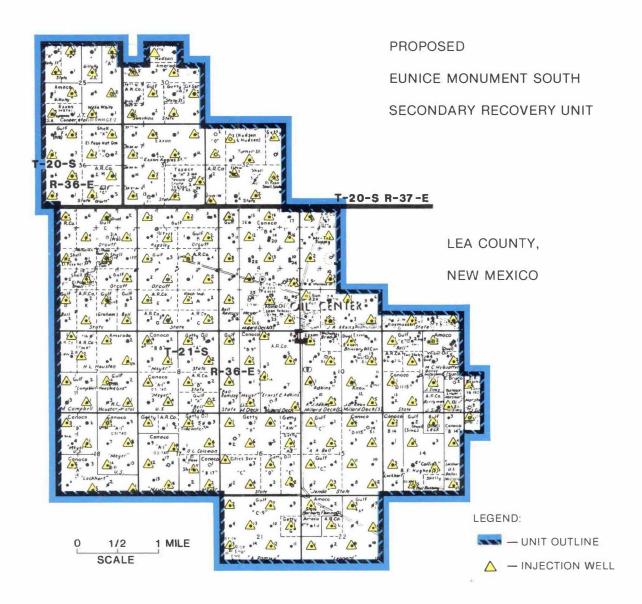
Yes, joint studies by the various companies operating wells in the area indicate that since the drilling of the first well in 1929, the area has produced 120 million barrels (yellow) of oil and, it is projected, will ultimately produce only 12 million more barrels of oil without water injection. However, with water injection, it is estimated that as much as an additional 64 million barrels (blue), may be recovered.





With a water injection program, oil may be moved from one property to another. As illustrated, oil may be moved from Lease A to Lease B and produced from the well located on Lease B. In view of this movement of oil, it is necessary to pool or unitize all interests in order for owners of both leases to receive their share of the income from the oil produced.

In comparison to this two-well illustration, Eunice Monument South Unit, as proposed, will extend over an area of 14,190 acres and will have approximately 170 injection wells and 190 producing wells.



UNITIZATION'S AFFECT UPON ROYALTY OWNERS

★ ARE MOST OF THE WORKING INTEREST AND ROYALTY OWNERS IN FAVOR OF THE UNIT?

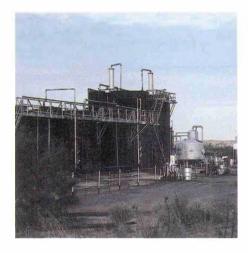
Yes, in excess of 80% of the Working Interest Owners have indicated approval of the unit and the water injection program. The State of New Mexico and the federal government own 78% of the lands within the unit, and because of the projected increase in recoverable oil and income, both have indicated preliminary approval of the unit.

★ HOW WILL UNIT PRODUCTION BE ALLOCATED?

Unitization allocates to each tract in the unit a percentage of the unit's overall production based upon a formula which compares overall unit production figures to cumulative oil production from the tract, the primary oil reserves of the tract, and the oil production from January 1, 1982 through September 30, 1982 for the tract. This formula allows equitable sharing in the increased unit production even if the property contains only an injection well and no producing oil well.

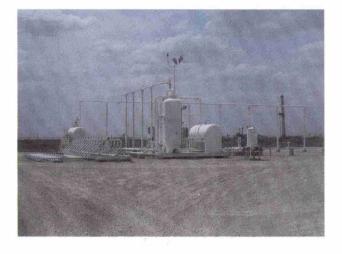
★ HOW WILL JOINING THE UNIT AFFECT MY INCOME?

As indicated in the graph on page 4, oil production (and your royalty income) has been declining annually. When unitization is completed and water injection has begun, the estimates of unit production and your income are expected to increase through 1993. After 1993 your monthly income is still projected to be greater than if no water injection were begun.











* WHEN WILL THE WATER INJECTION PROGRAM BEGIN? WHAT IS THE COST? WHO PAYS FOR IT?

The construction is expected to begin in late 1984. It is estimated to cost approximately \$60 million, all of which will be paid by the Working Interest Owners (companies) and at no cost to you, the Royalty Owner.

* WHAT WILL HAPPEN TO INCOME I RECEIVE FROM WELLS THAT PRODUCE FROM ZONES OTHER THAN THE UNITIZED FORMATIONS?

Income from gas wells or oil wells that produce from zones above or below the unitized formations will not be affected by this agreement.

* HOW DO I KNOW I WILL BE GETTING MY "FAIR SHARE" OF THE UNIT'S PRODUCTION?

The companies owning an interest in the unit area include Gulf, Chevron, Exxon, Conoco, Cities Service, Getty, Amoco, Atlantic Richfield, Sun, Amerada Hess, Shell, Texaco, and others. Each of these companies competes with the others, each has a competent staff of geologists, engineers, accountants and attorneys, and each answers to a board of directors. Because of the competitive nature of the business, each of these companies must be assured that it is getting a fair and equitable deal or it will not join the unit. As a result of the numerous meetings and studies conducted since 1979, the majority of these Working Interest Owners have agreed that the formula, as set out in Section 13 of the attached Unit Agreement, fairly represents their interest in the tract and the unit. They are also convinced that their share of the production and revenues will increase by joining the unit.

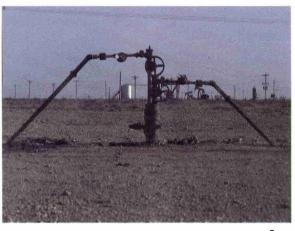
The New Mexico Oil Conservation Division is required by law to assure that the royalty owners will be benefited and that the participation formula is fair, reasonable and equitable, and protects the rights of all owners of interest within the unit area before it may approve the establishment of this unit

Since a Royalty Owner's interest in a tract is a set percentage, it will not change. The revenue received by the Royalty Owner will be based upon his percentage of ownership in that tract multiplied by the overall unit production allocated to that tract. For example, if the Royalty Owner's interest in a tract is 5% of that tract's production before unitization, this ownership will become 5% of the tract's interest in the overall unit's production after unitization.











A SUCCESSFUL WATER INJECTION PROGRAM REQUIRES COOPERATION

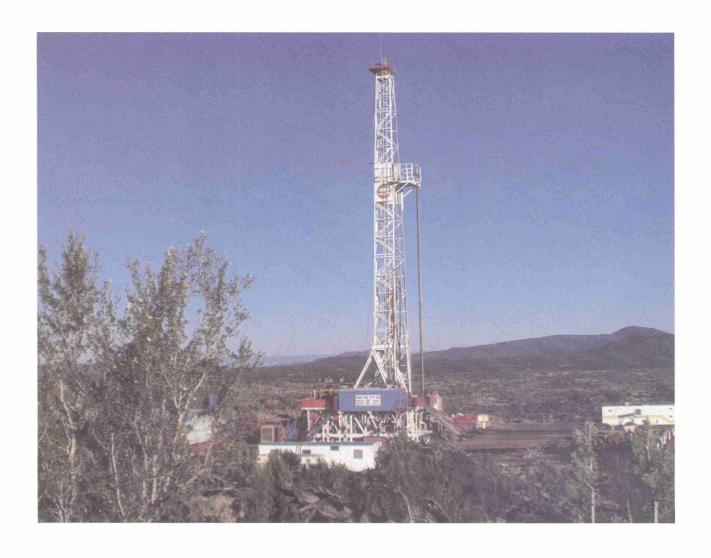
Unitization of the Eunice Monument South field requires the cooperation of the various oil companies and Royalty Owners. In forming a unit, it is necessary for Royalty and Working Interest Owners to join in a written agreement which states, among other things, the method of arriving at each tract's participation. By signing the Ratification to the agreement, the Royalty Owner is agreeing to the unitization and water injection concept, the tract participation formula, and his interest in the tract.

Since the purpose of the unitization and water injection is to increase both the amount of oil recovered and the rate of recovery, the Royalty Owner should receive more money, but does not pay any of the costs associated with increasing the production.

We urge you, therefore, to PLEASE COMMIT YOUR INTEREST to the unit BY SIGNING, BEFORE A NOTARY PUBLIC, SIX (6) COPIES of the attached "Ratification and Joinder" to the Unit Agreement and return them in the enclosed, self-addressed, postage paid envelope as soon as possible.

If you have any additional questions, please call Mr. Ray M. Vaden at (915) 687-7202, or address your correspondence to:

Land Department Manager Gulf Oil Corporation P. O. Box 1150 Midland, Texas 79702



Minutes of Technical Committee Meeting

Proposed Eunice Monument South Unit

May 4, 1982

The Technical Committee meeting began at 9:00 a.m., May 4, 1982, at the Midland Center, Midland, Texas. Representatives of 15 operators having working interests within the proposed Unit were present. The attendees represented 93% of the Unit acreage.

Mr. D. T. Berlin, chairman of the Technical Committee, opened the meeting by introducing Gulf personnel. Mr. Berlin announced the agenda items and briefly reviewed the Technical Committee voting procedure. He then turned the meeting over to Mr. Tom Wheeler to proceed with the Committee discussion.

Mr. Wheeler began by reviewing the status of the data which has been requested from Unit Operators. Approximately two thirds of the Unit Operators have not complied with all data requests, and some have not answered any Unit correspondence. Mr. Wheeler asked that the Information Request summary, Attachment 1, be reviewed by all Operators. A complete parameter table cannot be constructed until all Operators have provided correct information regarding the tract legal descriptions and Working Interest divisions.

Mr. Wheeler introduced the three agenda items for the day as follows:

- 1. Definition of the vertical limits of the unitized interval
- 2. Finalization of the Unit boundary
- 3. Committee consensus of the Tract production decline curves

 He reminded the participants that the goal of the Committee was to provide recommendations to the Working Interest Owners on these three topics.

During the discussion of the vertical interval to be unitized, Mr. Wheeler described the five alternatives which have been investigated by Gulf. The bottom of the interval must be the base of the San Andres formations to include the area's most prolific water production zone, however, the five alternatives for the top of the interval are as follows:

- 1. Top of the Grayburg Formation
- 2. Top of the Penrose Formation
- 3. An intermediate marker between the upper Penrose sand and lower
 Penrose carbonate section
- 4. A subsea datum
- 5. A combination of 1 and 4 (above)

Each alternative has advantages and disadvantages, however, after an extensive analysis of the cross sections from the Unit, Gulf engineers and geologists had concluded that the following vertical limit definition should be proposed to the Working Interest Owners: "The Unitized Interval shall include the formations from a lower limit defined by the base of the San Andres formation, to an upper limit defined by the top of the Grayburg formation or a -100 foot subsea Gatum, whichever is higher."

The significant advantages of this definition include the following:

- Includes all known Eumont Oil and Eunice Monument Oil production in the Unit area
- 2. Excludes most gas well completions in the area
- Minimizes the number of workovers required to prevent waterflooding non-unitized formations
- Exposes the total oil productive interval in the Unit area to Waterflood operations

When no other alternatives were presented by Committee members for consideration, the Committee unanimously accepted the above definition of the Unit vertical limits.

The second discussion topic, final boundary selection, involved review of all properties adjacent to the current boundary to determine whether additional acreage should be included in the Unit. After discussion the Committee voted to include three tracts which have current or past Eunice Monument oil production. The three tracts are outlined on Attachment 2, and are identified below.

- Tract 114 80 acres of Amoco "State 'C' Tract 11" Lease located in S/2 SE/4 Section 2, Township 21 South, Range 36 East, Lea County, New Mexico.
- Tract 115 Amoco "McQuatters" lease covering N/2 NE/4 Section 11,
 Township 21 South, Range 36 East, Lea County, New Mexico.
- 3. Tract 116 40 acres of Conoco "Lockhart B" Lease located in NW/4 NW/4 Section 13, Township 21 South, Range 36 East, Lea County, New Mexico.

Mr. Huan Pham presented ARCO's recommendation that the Committee consider adding three tracts as listed below:

- Arco "Ida White" Lease 80 acres in N/2 SE/4 Section 35, Township
 South, Range 36 East.
- Arco "Endure State" Lease 160 acres in SE/4 Section 12 Township
 South, Range 35 East.
- 3. Arco "State 176" Lease 280 acres composed of N/2 NW/4, SE/4 NW/4 and W/2 E/2 Section 19, Township 21 South, Range 36 East.

The Technical Committee voted against the addition of the Arco tracts.

The Committee heard a request from Ms. Pam Morphew, representing the interests of Doyle Hartman and James Rasmussen, to delete tracts 70 and 113 from the Unit. These adjacent 40 acre tracts are located in the eastern portion of the Unit. Tract 70 is the Hartman operated Rasmussen State lease which has a high GOR Eunice Monument oil well, the #1 Rasmussen State, and an abandoned Eunice Monument well, the #1 Rasmussen State 'G'. Tract 113 has the abandoned #2 Rasmussen State 'G' Eunice Monument oil well. After discussion the Committee voted to recommend to the Working Interest Owners that the tracts not be excluded from the Unit at this time.

The last agenda item was the finalization of production decline curves.

All curves were individually reviewed, declined and approved by group consensus.

Reserve calculations will be based on these decline curves.

The meeting was adjourned following completion of the decline curve review.

The water injection plant and treating facilities will be located at the central battery site. Water will be transferred under pressure to the primary distribution headers located at each satellite battery site, then to secondary headers located in the field, each serving from three to five injection wells.

The total water requirement will be provided by reinjection of produced water, and from make-up water provided by nine San Andres supply wells. For this cost estimate, the assumption was made that new water supply wells would be drilled; however, there is a possibility that existing wellbores may be available which could be purchased and completed in the San Andres.

COST ESTIMATE

The cost estimate for the above preliminary design can be summarized into seven major categories as listed below:

	<u>Item</u>	<u>Tangibles</u>	Intangibles
1.	Production and Injection Facilities	\$ 12,548,200	\$ 6,681,450
2.	Drill & Equip 9 Water Supply Wells	3,051,000	1,989,000
3.	Drill & Equip 19 Producers	2,726,500	3,543,500
4.	Drill & Equip 16 Injectors	1,336,000	2,984,000
5.	Remedial Work - 208 Wells	10,060,000	9,295,000
6.	Coring Cost - 20 Wells		1,000,000
7.	Pumping Unit Replacements	6,726,000	570,000
	Subtotal	\$ 36,447,700	\$ 26,062,950
	Grand Total	\$ 62,510,650	·

1. Production and Injection Facilities

This item includes all storage, transfer, treatment, metering and sales equipment. This item also includes costs for electrifying the unit, retiring existing facilities as they are replaced, and settling right-of-way and damage claims due to construction.

2. Drill and Equip 9 Water Supply Wells

This item provides for drilling, completing, and equipping nine wells to provide water from the lower San Andres formation. The wells will be required to provide the water injection requirement which is expected to peak at 2.7 MM barrels per month during filling.

		' NEW MEXICO NERALS DEPARTMENT	
	STATE LAND	ATION DIVISION OFFICE BLDG. ONEW MEXICO	
	7 Nove	ember 1984	
	COMMISS	SION HEARING	
	VOLUME I	OF II VOLUMES	
IN THE N	MATTER OF:		
	Application of Gulf for statutory uniti County, New Mexico.	zation, Lea 📉 83	ASE 397
	Application of Gulf for a waterflood pr County, New Mexico.	roject, Lea 81	ASE 398
		· · · · · · · · · · · · · · · · · · ·	ASE 399
BEFORE:	Richard L. Stamets, Commissioner Ed Kel		
	TRANSCRIE	PT OF HEARING	
	APPEA	ARANCES	
For the Commiss	Oil Conservation sion:	Jeff Taylor Attorney at Law Legal Counsel to the I	Divisior
		State Land Office Bldc Santa Fe, New Mexico	J•
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2	APPEAR	A N C E S
3	At	Thomas Kellahin torney at Law LLAHIN & KELLAHIN
4	P.	O. Box 2265 nta Fe, New Mexico 87501
5	Ke	n M. Brown
6		torney at Law llf Oil Corporation
7		Y 0
8	At	mes M. Sperling torney at Law DRALL, SPERLING, ROEHL,
9	н	ARRIS & SISK est Office Box 2168
10	i e e e e e e e e e e e e e e e e e e e	buquerque, New Mexico 87103
11	At	nest L. Padilla torney at Law
12	ì	O. Box 2523 inta Fe, New Mexico 87501
13	IND	EX
14		
15	STATEMENT BY MR. KELLAHIN	5
16	RAY M. VADEN Direct Examination by	Mr. Kellahin 9
17	Cross Examination by M Cross Examination by M	Mr. Padilla 33
18	RAY HOFFMAN	
19	Direct Examination by Cross Examination by N	Mr. Padilla 55
20	Cross Examination by M Cross Examination by M Redirect Examination by	Mr. Stamets 60
21	Recross Examination by	
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At the top of this summary is another number. It says "well" and as an example "14-4". That would indicate that it's cross section 14 and the well is at location number 4, and that is from the west.

The Penrose in this area, the lower part of the Penrose, the oil column in this area thins from the Grayburg up into the lower part of the Penrose. The middle Penrose is usually tight across the whole area except for the southern western edge of the field and this provides a pretty effective barrier between the oil column and the Penrose sand.

The Penrose sand is -- is that sand in the very top of the Penrose and generally found over the whole field.

On the western and southern edges of the field the sand, which is a dolomitic sand, changes into dolomite by a facies change or is cemented tight with dolomitic cement, with a corresponding loss of porosity and permeability along the edge of the unit.

Q All right, sir, when you look at Exhibit Number Eighteen, which is the line of cross section east to west on the southern portion of the unit, would you describe what you see in that cross section?

A Basically it's the same as you see -basically it's the same as our cross section 14 as to tops
and datums and it shows the same as cross section 14 (not
clearly audible).

```
53
1
            Q
                        When you look at the oil column in
2
    unit area, that is included generally in the Grayburg and
3
    the lower portion of the Penrose, is that correct?
4
                       That's correct.
             A
5
                       The upper portion of the Penrose is that
6
    sand that is gas productive.
7
             Α
                       Yes, it is.
8
                        When you talked about the dense dolo-
             Q
9
            are the dense dolomites between the oil column and
    the gas column?
10
                       Yes, they are.
                                         The base of the sand is
             Α
11
    the top of the Penrose.
12
                       Within the Penrose section, then, there's
             0
13
    a dolomite interval that separates the oil and the gas?
14
             Α
                       Yes, sir, dolomite stringers, long sand
15
    stringers.
                The dolomite in the area is tight.
16
                       In your opinion is that an effective bar-
17
    rier between the oil and the gas in the area?
                       Yes, it is, over most of the field.
18
             Α
                       All right, when we look at the top of the
19
    Grayburg and the base of the Penrose do we see any forma-
20
    tional barrier between the top of the Grayburg and the base
21
    of the Penrose in the oil column?
22
                       No, we don't.
             Α
23
                        Are you familiar with what Gulf proposes
24
    to use as the definition for the formation or the unit
25
    terval?
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1 2 3	STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION STATE LAND OFFICE BLDG. SANTA FE, NEW MEXICO
4	8 November 1984
_	COMMISSION HEARING
5	*VOLUME II OF II VOLUMES*
6 7	IN THE MATTER OF:
8	Application of Gulf Oil Corporation CASE for statutory unitization, Lea 8397 County, New Mexico.
9	Application of Gulf Oil Corporation CASE for a waterflood project, Lea 8398 County, New Mexico.
11 12	Application of Gulf Oil Corporation CASE for pool extension and contraction, 8399 Lea County, New Mexico.
13 14	BEFORE: Richard L. Stamets, Chairman Commissioner Ed Kelley
15	TRANSCRIPT OF HEARING
16	APPEARANCES
17	AFFEARANCES
18	For the Oil Conservation Jeff Taylor Commission: Attorney at Law
19	Legal Counsel to the Division State Land Office Bldg.
20	Santa Fe, New Mexico 87501
21	
22	
23	
24	
25	
	į

214 1 In addition to distributing in this pack-0 2 age of exhibits Exhibit Thirty-two, I've also distributed 3 the next exhibit, which is 33-A. 4 Yes, sir. 5 All right, would you identify that for 0 6 us? 7 It lists data on the proposed operation Α 8 injection system for the waterflood project in the Eunice Monument South Unit. 9 All right, sir, would you describe for us 10 what the proposed method of operation is for the unit? 11 Okay. As shown on Exhibit Number Thirty-12 three-A, our average daily rates and maximum daily rates are 13 and 500 barrels of water per day, respectively. 14 system is going to be a closed system. The proposed average 15 and maximum injection pressures will be 350 psi and 740 psi, 16 respectively. 17 This will be until we can determine fracture gradient and obtain proper approval from the OCD 18 Director for possibly injecting at higher injection pres-19 sures. 20 To monitor and control the rates and 21 pressures at the wellhead, our plans are to install pressure 22 rate controllers on each injection well. 23 There are currently plans to drill appro-24 ximately nine water supply wells to provide make-up water 25 from the San Andres formation. This make-up water will be

1 215 used initially as the primary source of injection water and 2 once we have the unit fully developed, we will be switching 3 over to using produced water as our primary source of injec-4 tion water. 5 Do you have any estimates now of the per-6 centages between make-up water and produced water that will 7 be used by the project? 8 Not at this time. Our present plans are Α 9 initially we'll be using approximately 60,000 barrels 10 of water per day for 133 injection wells. And what is the source of produced water 0 11 in the unit? 12 Α It will be from the unitized intervals, 13 the Grayburg formation, principally. 14 Do you anticipate that the maximum injec-15 tion pressure at any individual injection well will be based 16 upon the .2 psi per foot of depth gradient established as 17 matter of practice by the Commission until you have other 18 data available to justify a higher rate? 19 Α Yes, sir, that's our plan. All right, sir, it you'll turn to Exhibit 0 20 Number Thirty-three-B, I believe, is the next one, and de-21 scribe that one for us. 22 Thirty-three-B is a water compatibility 23 analysis performed on the make-up water and the produced 24 water and it illustrates that there is no incompatibility 25 evident by the mixing of these two waters.

224 1 ation. We can plug a lot of that into the computer to check 2 you to see that -- on your reports -- to see that you're 3 really following that. That's a lot of calculations for all of us to try and figure out what individual pressure limits 5 are. 6 I'm wondering if it would be possible to 7 establish groupings of pressures in this reservoir, say per-8 haps all the wells on the two sections on the west side would have the same pressure limit, and the three down in the middle, the same pressure limit, and so on, let's say, 10 for the east side, so that we wouldn't have, what, 149 dif-11 ferent pressures; we might have, say, five or six different 12 pressure limits within the limits of the pool we would have 13 to process. 14 Α With the installation of those pressure 15 rate controllers we'd be able to control pressures and rates 16 on an individual injection well basis. 17 Where we may want a well to take -- take more water, inject more water into a well, it might require 18 different pressures, other situations. 19 It's just a suggestion. We can look into 0 20 it and if it works out, we'll try and do it. 21 Okay, sir. Α 22 Now I understand that you will in-23 only into the Grayburg and the Penrose and not jecting 24 San Andres, is that correct? 25 A That is correct.

San Andres SWD Injection

Goodnight Midstream

АРІ	Well / Formation	PLLS Location	Date Of First Injection	Volume of Water Injected	Days in Operation	Average BWPD	Inside EMSU Boundary	
30-025-43901	Ryno San Andres	H-17-21S-36E	3/14/2019	13,915,844	1,665	8,358	Yes	Re-completed: San Andres 6/2020
30-025-47947	Sosa San Andres	N-17-21S-36E	4/18/2021	15,691,240	899	17,454	Yes	
30-025-44386	Ted San Andres/Glorieta	F-28-21S-36E	3/31/2019	12,811,643	1,648	7,774	No	
30-025-46382	Yaz San Andres	A-28-21S-36E	10/8/2019	14,768,685	1,457	10,136	No	
30-025-26491	Piper* San Andres	M-18-21S-37E	1/1/2012	26,713,658	4,294	6,221	No	
30-025-45349	Nolan Ryan San Andres	O-13-21S-36E	10/31/2019	13,091,799	1,434	9,130	No	
30-025-46398	Scully San Andres	F-4-22S-36E	3/12/2020	8,616,661	1,301	6,623	No	
30-025-50079	Pedro San Andres/Glorieta	M-28-21S-36E	7/21/2022	10,749,619	440	24,431	No	
30-025-50634	Dawson San Andres	P-17-21S-36E	1/17/2023	3,650,077	260	14,039	Yes	
30-025-50633	Banks San Andres	D-17-21S-36E	5/5/2023	1,823,291	152	11,995	Yes	
Piper AKA Penroc State	e E 27 #2							
San Andres Op	perated by Others							
30-025-21852	Rice EME SWD #021	L-21-21S-36E	9/22/1966	39,255,813	20,831	1,884	Yes	w/ volume before records
30-025-04484	Empire E M S U #001	W-4-21S-36E	3/2/1987	4,229,556	13,365	316	Yes	w/ volume before records
30-025-12786	Rice EME SWD #033M	M-33-20S-36E	4/14/1960	59,370,620	23,183	2,561	No	w/ volume before records
30-025-46579	Owl P15 #001	P-15-21S-36E	11/1/2020	2,040	1,067	2	Yes	
30-025-46577	Rice N11 #001	N-11-21s-36E	11/1/2020	1,854,544	1,067	1,738	Yes	
30-025-38789	Parker Parker SWD #005	A-24-21S-36E	3/15/2015	7,773,660	3,125	2,488	No	

35,660,864 **269,979,614** 5,467

6,523

No

10/15/2008

N-18-21S-37E

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Exhibit No. B-18
Submitted by: Goodnight Midstream Permian, LLC
Hearing Date: November 2, 2023
Case Nos. 23614-23617

Rice State E 27 #1

30-025-26317

OCD Hobbs

Form 3160-5	
(August-2007)	

UNITED STATES

OBBS OCE	1.5 7 0 111
IODBO O'OL	Expires: July 31,
	OMB NO. 1004-
	FORM APPROV

DEPAR	RTMENT OF THE INTERIOR
BURE	AU OF LAND MANAGEMENT

August 2007)		EPARTMENT OF THE I			NO	Pac Oor		pires: July 31,	
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SU	BMIT IN TRI	PLICATE - Other instru	ctions or	reverse si		CEIVED	7. If Unit or CA	/Agreement, N	lame and/or No.
1. Type of Well							8. Well Name an		
☑ Oil Well ☐ Ga	as Well 🗖 Otl	ner					EMSU CTB	200	_
Name of Operator XTO ENERGY IN	IC.	Contact: E-Mail: sherry_pa		Y P PACK ergy.com			9. API Well No. 30-025-044		
3a. Address 200 N. LORAINE			Ph: 43	ne No. (include 2-620-6709			10. Field and Po 23000	ol, or Explora	tory
MIDLAND, TX 79			1	2-224-1126			11 C		
4. Location of Well (1	Footage, Sec., T	., R., M., or Survey Description	1)				11. County or Pa	arish, and Stat	3
Sec 4 T21S R368	E Mer NMP 1	980FNL 660FWL					LEA COUN	JTY, NM	
12. C	HECK APPI	ROPRIATE BOX(ES) TO	O INDIC	ATE NATU	JRE OF N	OTICE, R	EPORT, OR O	THER DAT	îA
TYPE OF SUBM	ISSION				TYPE OF	ACTION			
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Notice of Intent		☐ Alter Casing		Fracture Tre	cture Treat Re		eclamation		ell Integrity
☐ Subsequent Repert	ort	☐ Casing Repair		New Constr	v Construction				ther
☐ Final Abandonm	nent Notice	☐ Change Plans		Plug and Ab	g and Abandon 🔲 Tem		porarily Abandon		ting and/or Flari
_		☐ Convert to Injection		Plug Back			-	ng	
If the proposal is to de Attach the Bond under following completion	eepen direction or which the wo of the involved pleted. Final Al	eration (clearly state all pertine ally or recomplete horizontally, rk will be performed or provide loperations. If the operation re bandonment Notices shall be filinal inspection.)	give subsu the Bond sults in a n	rface locations No. on file with aultiple comple	s and measure h BLM/BIA. etion or recon	ed and true vo Required su apletion in a	ertical depths of all bsequent reports sh new interval, a Fort	pertinent mark hall be filed wi m 3160-4 shal	kers and zones. thin 30 days l be filed once
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14. I hereby certify that	the foregoing is	true and correct. Electronic Submission #	207976 ve	rified by the	BLM Well	Information	ı Svstem	Santa Fe, Ne Exhibit No	
		For XT(D ENERG	Y IN¢., sent	to the Hob	bs	Submitt	ed by: Goodni	ght Midstream, LLC
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THIS SPACE FOR FEDERAL OR STATE O Approved By Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. JUN 27 2013 notice does not warrant or Office Title 18 U.S.C. Section 1901 and Fittle 43 U.S.C. Section 1212 make is a crime for any person knowingly and willfully to make it any damagness of representations as to any matter within its jurisdiction BUREAU OF LAND MANAGEMENT

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

BEFORE THE OIL CONSERVATION DIVISION

EMSU CTB

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EUNICE MONUMENT SO. UNIT 101 GRBG/SA		30-025-30220
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EUNICE MONUMENT SO.	UNIT 440 GRBG/SA	اختف		30-025-04735
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EUNICE MONUMENT SO.	UNIT 561 GRBG/SA			30-025-33595
EUNICE MONUMENT SO.	UNIT 562 GRBG/SA	•		30-025-35462
EUNICE MONUMENT SO.	UNIT 574 GRBG/SA			30-025-35160
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EUNICE MONUMENT SO. I	•			30-025-37279
EUNICE MONUMENT SO. I				30-025-31426
EUNICE MONUMENT SO. I		-		30-025-31409
EUNICE MONUMENT SO. U	UNIT 640 GRBG/SA 🏻	-		30-025-34212
EUNICE MONUMENT SO. U	JNIT 641 GRBG/SA 🛎	<i>5</i>	FEDERAL	30-025-33189
EUNICE MONUMENT SO. U	JNIT 642 GRBG/SA 🗝	~		30-025-30958
EUNICE MONUMENT SO. U	JNIT 649 GRBG/SA.		FEDERAL	30-025-33187
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EUNICE MONUMENT SO. U	JNIT 658 GRBG/SA	•		30-025-37280
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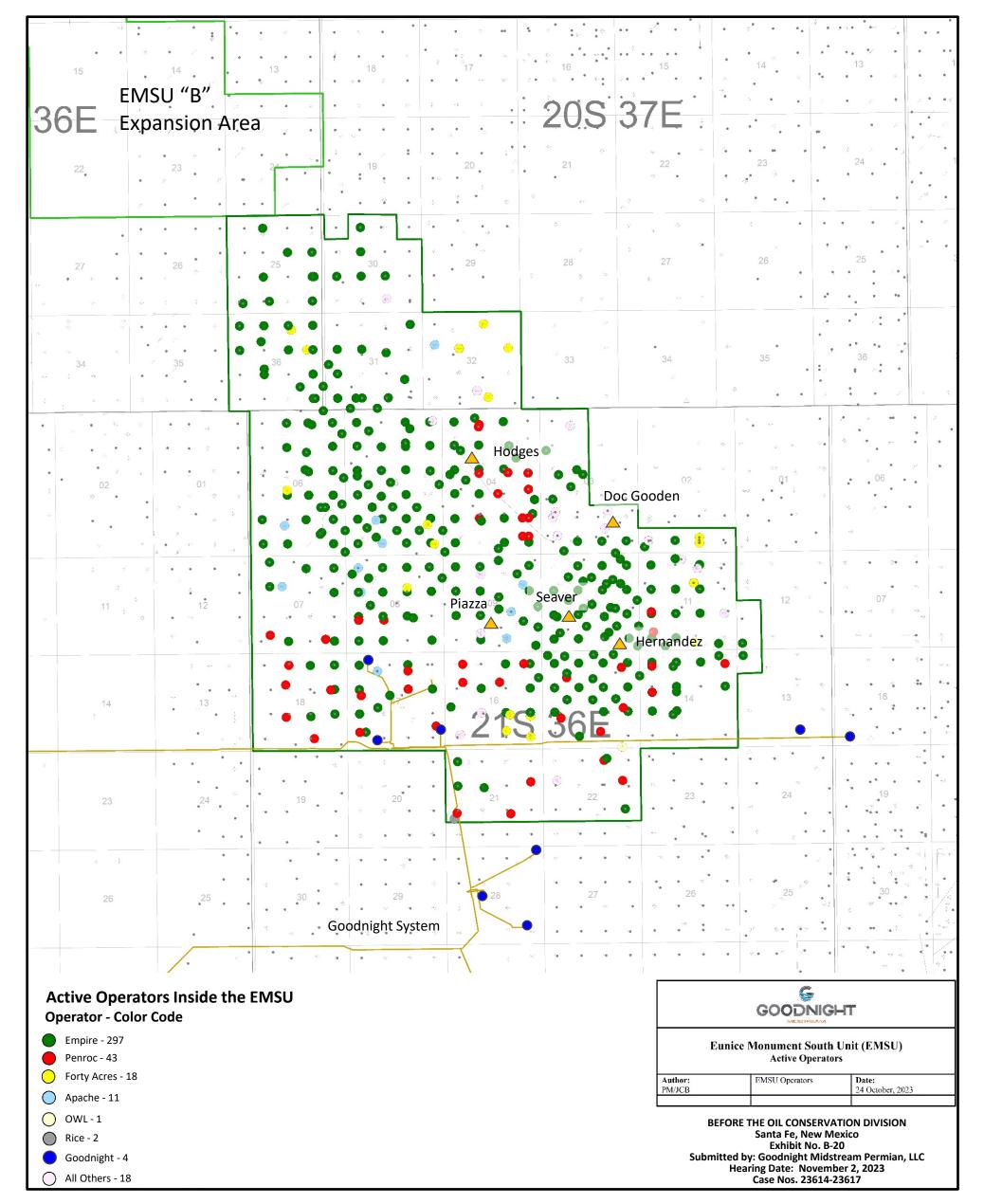
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EUNICE MONUMENT SO. UNIT 775 GRBG/SA	FEDERAL	30-025-35459
EUNICE MONUMENT SO. UNIT 776 GRBG/SA	S	30-025-35460

BUREAU OF LAND MANAGEMENT Carlsbad Field Office 620 East Greene Street Carlsbad, New Mexico 88220 575-234-5972

6/27/2013 Condition of Approval to Flare Gas

- 1. Report all volumes on OGOR reports.
- 2. Comply with NTL-4A requirements
- 3. Subject to like approval from NMOCD
- 4. Flared volumes will still require payment of royalties
- 5. Install gas meter on vent/flare line to measure gas prior to venting/flaring operations if it is not equipped as such at this time. Gas meter to meet all requirements for sale meter as Federal Regulations and Onshore Order #5.
- 6. This approval does not authorize any additional surface disturbance.
- 7. Submit updated facility diagram as per Onshore Order #3.
- 8. Approval not to exceed 90 days for date of approval.
- 9. Submit Subsequent Report with actual volumes of gas flared for each month gas is flared.
- 10. If flaring is still required past 90 days submit new request for approval.
- 11. If a portable unit is used to flare gas it must be monitored at all times.
- 12. Comply with any restrictions or regulations when on State or Fee surface.

JDB6272013



Received by OCD: 10/27/2023 4:13:55 PM

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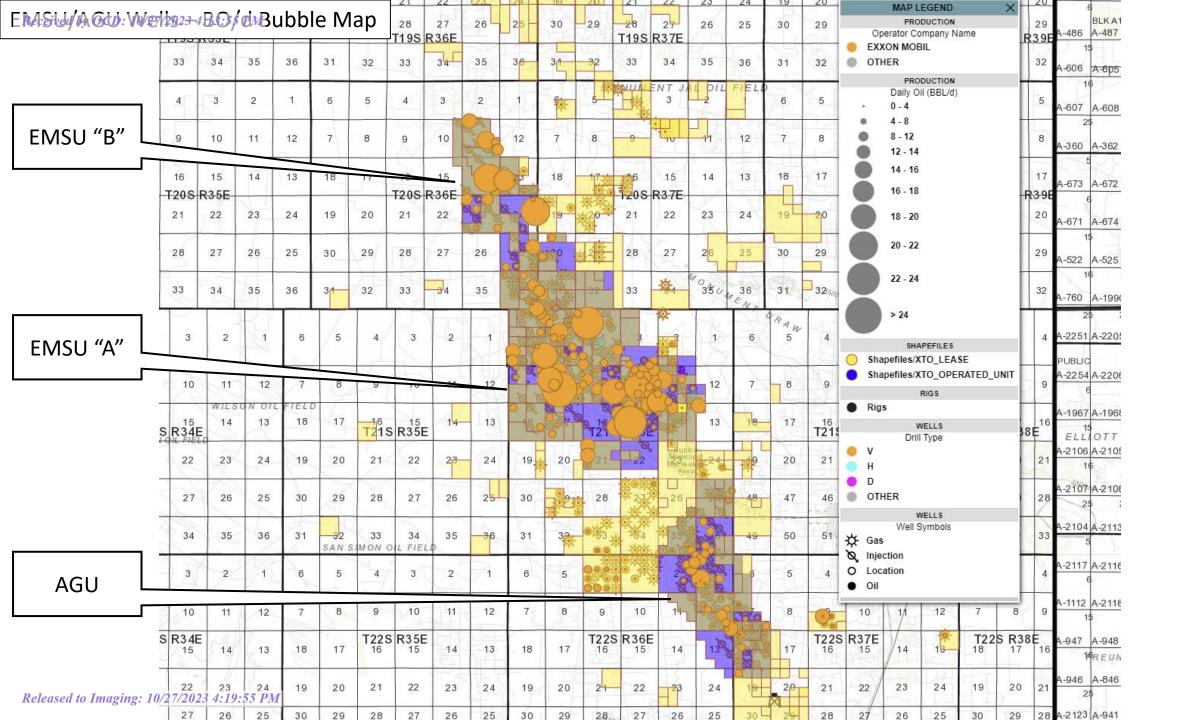


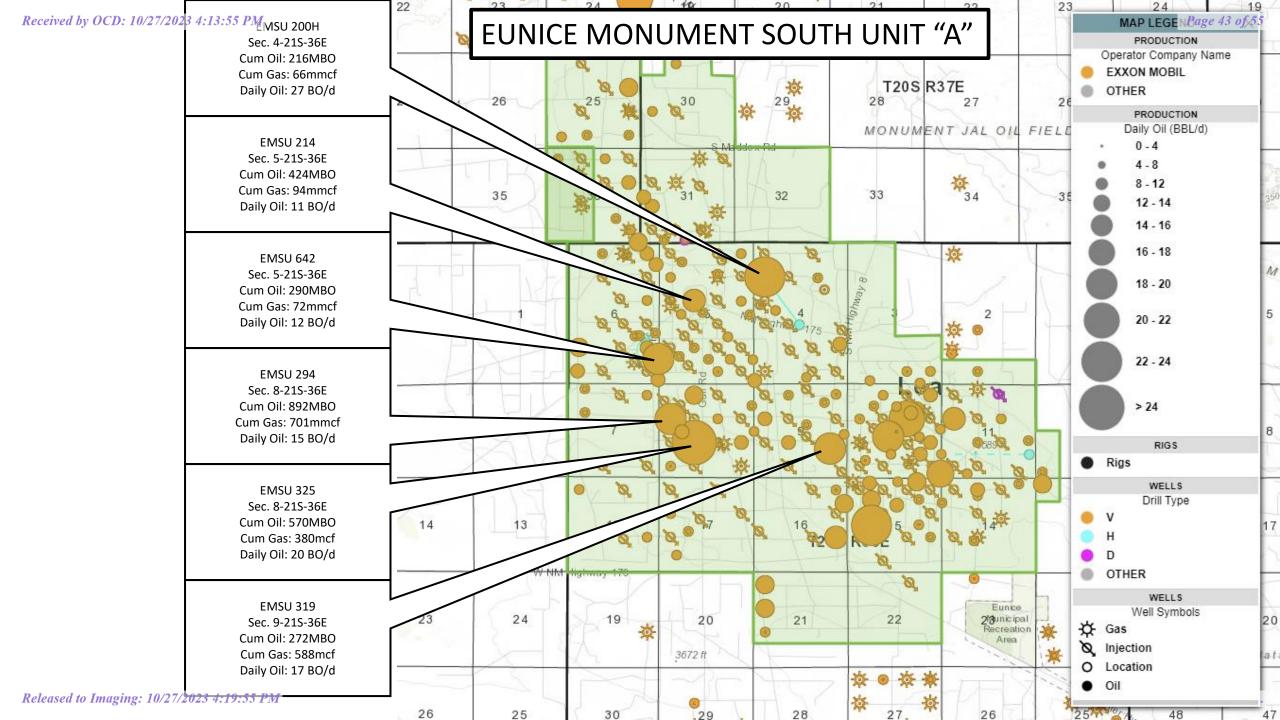
BO/d Bubble Maps
Log Data Coverage (XOM & NUTECH)
EMSU "A" – CO2 Pilot High-Grade

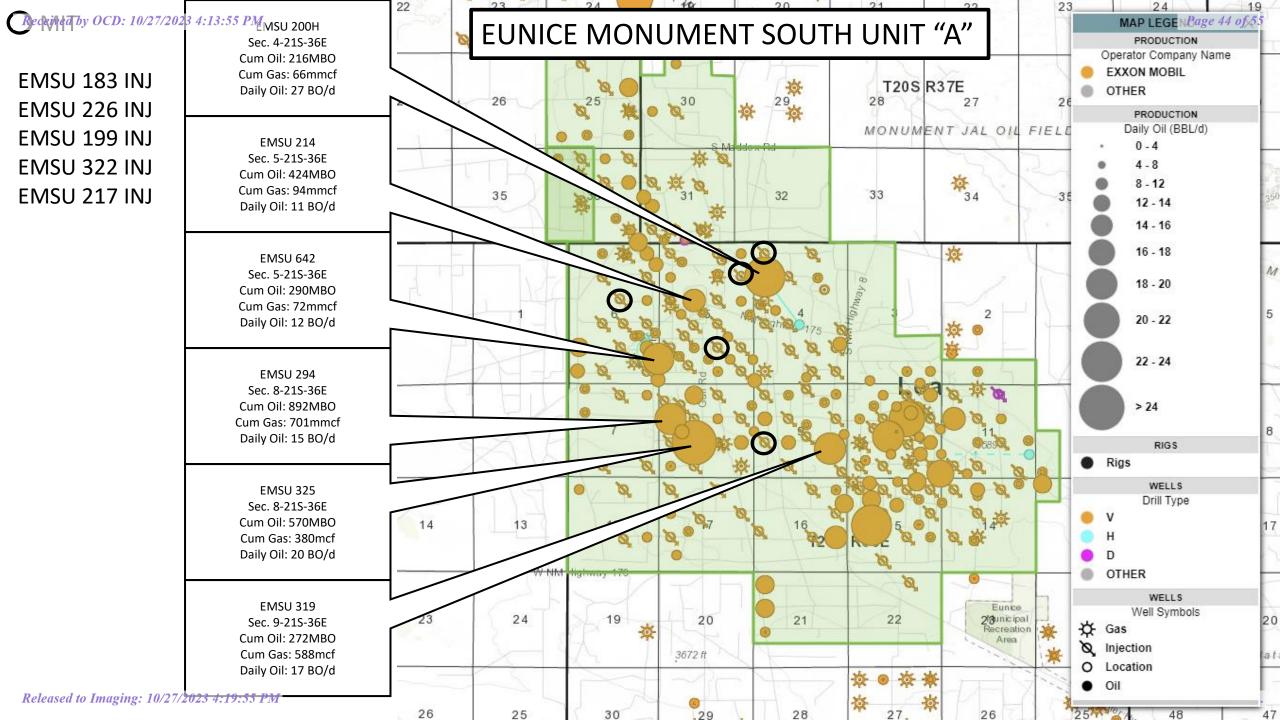
BEFORE THE OIL CONSERVATION DIVISION

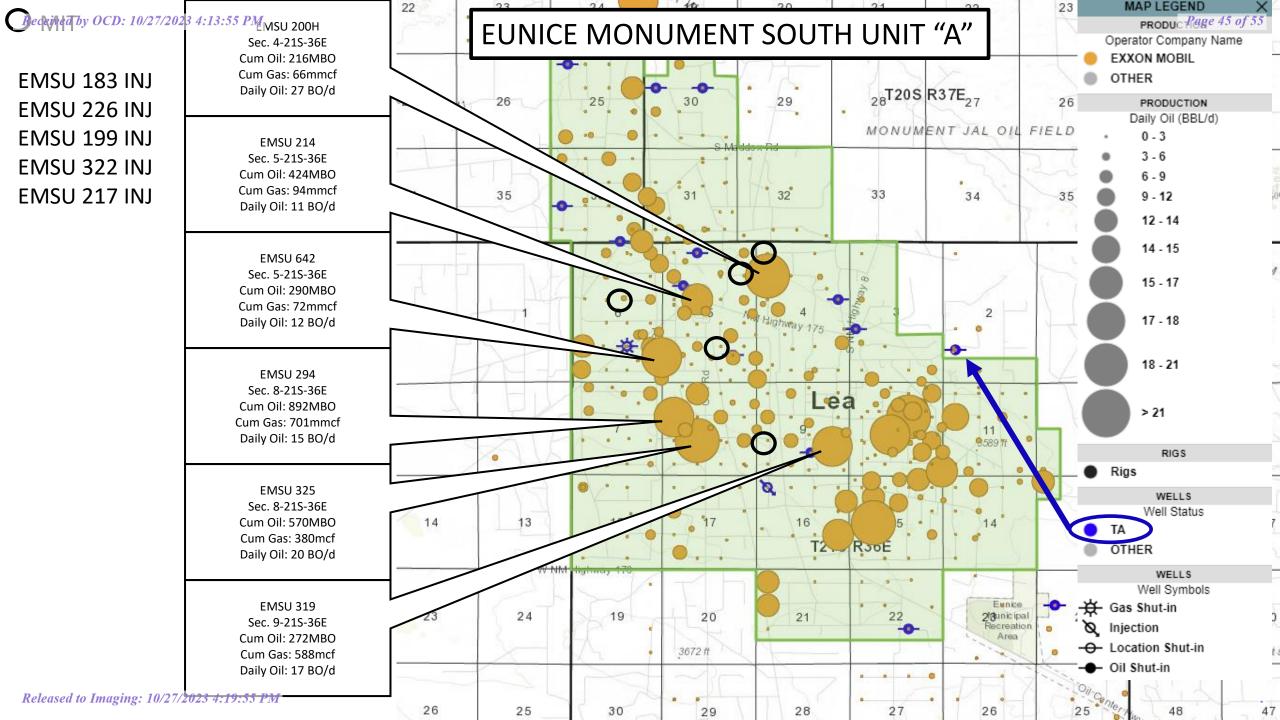
Santa Fe, New Mexico Exhibit No. B-21

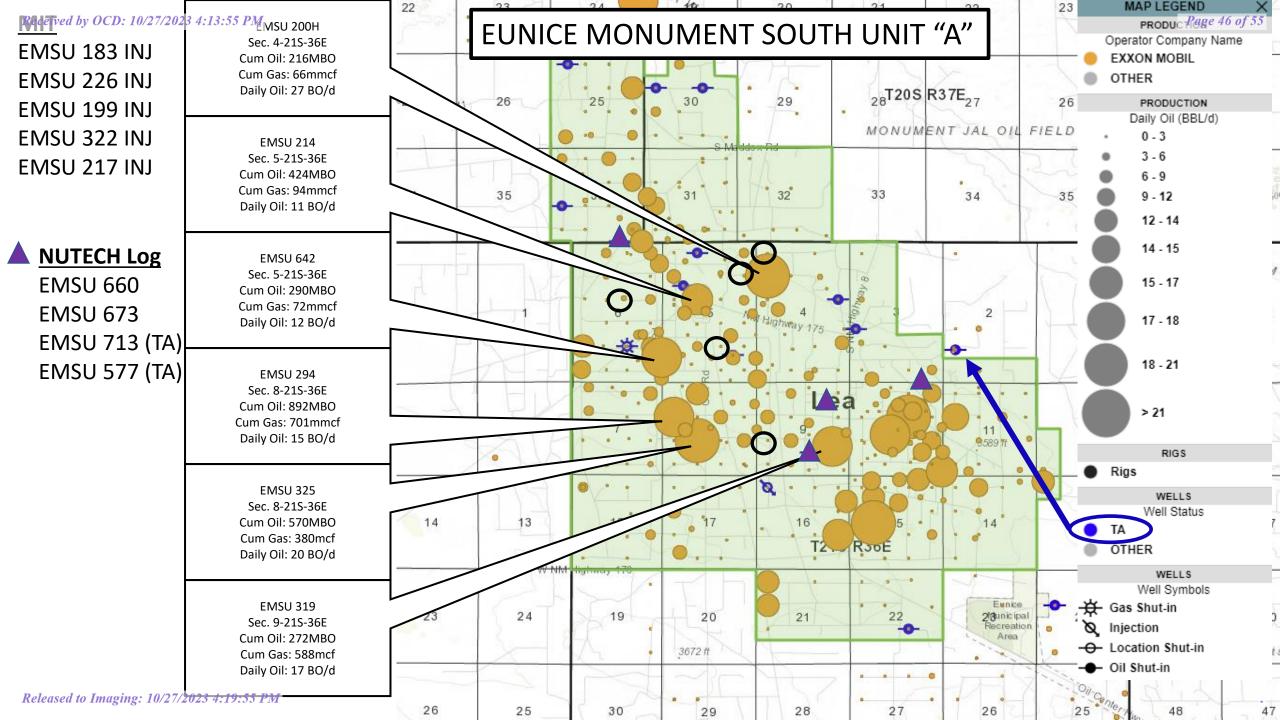
Submitted by: Goodnight Midstream Permian, LLC Hearing Date: November 2, 2023 Case Nos. 23614-23617



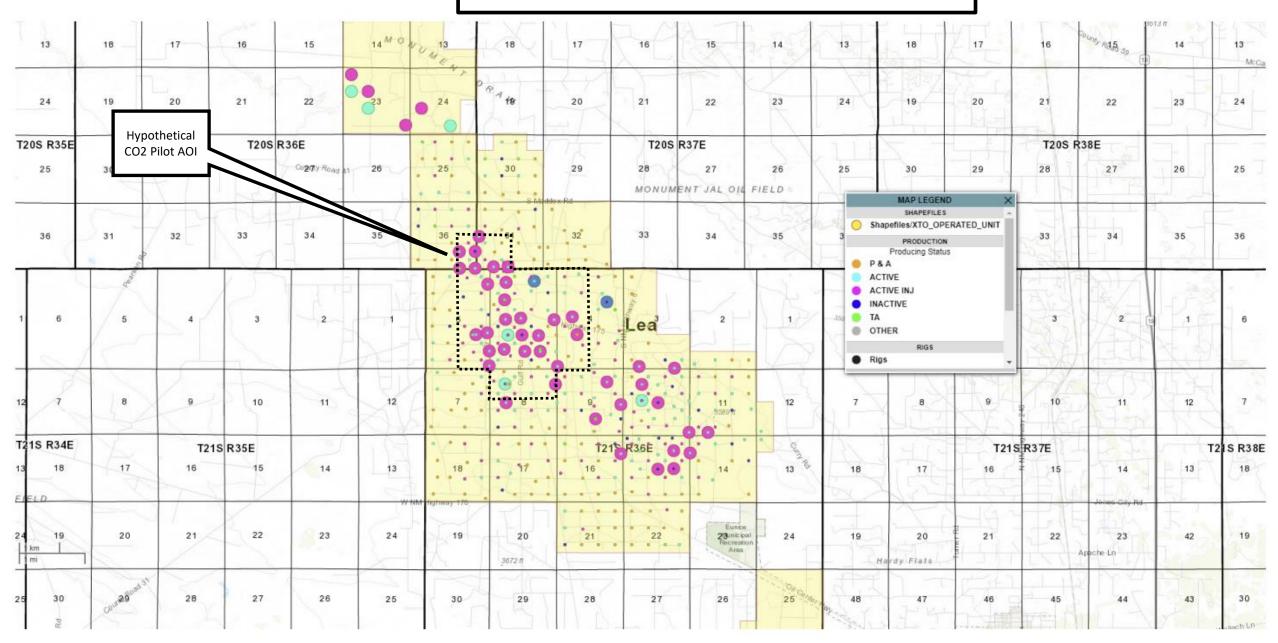


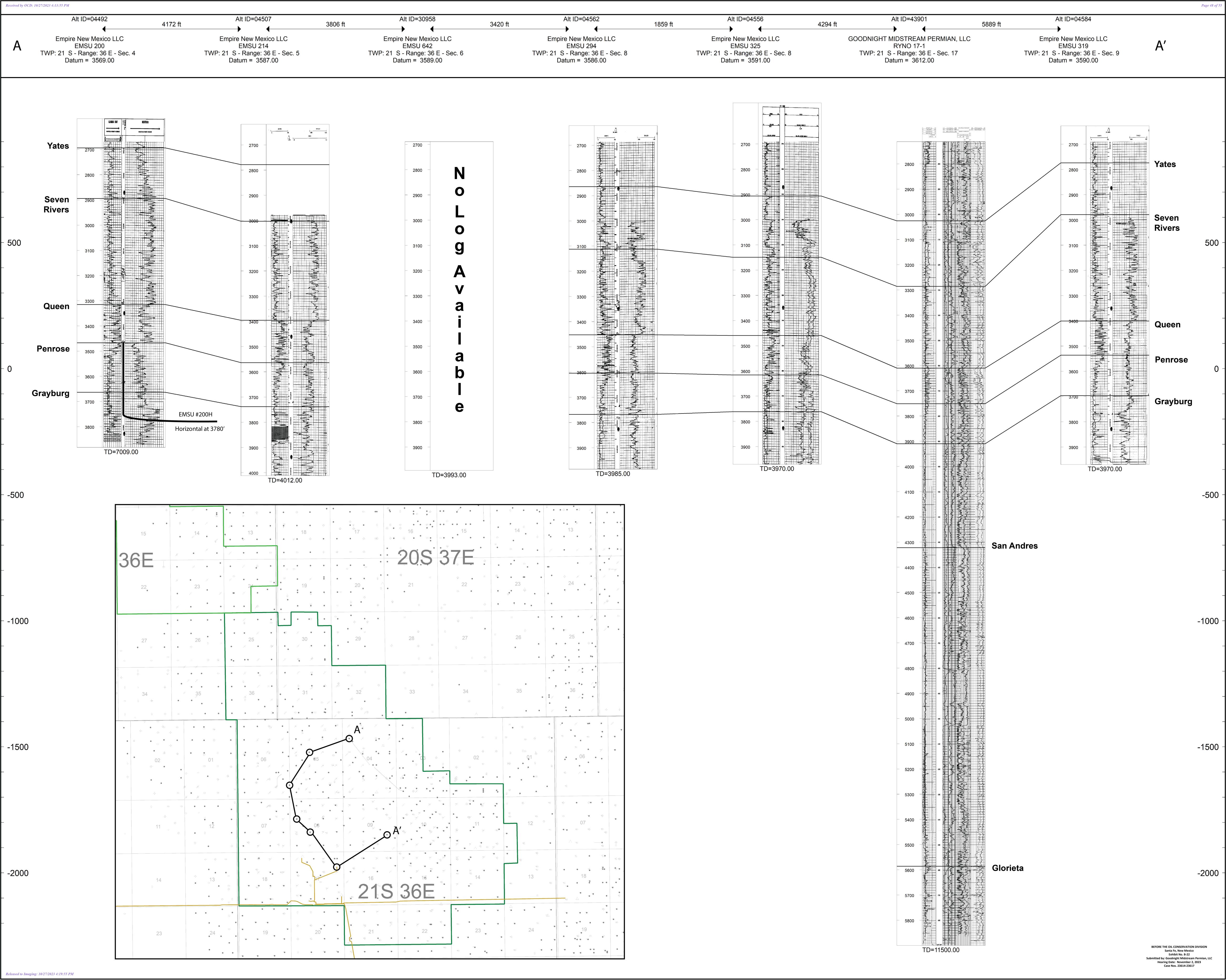






LOG DATA COVERAGE





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

APPLICATIONS OF GOODNIGHT MIDSTREAM PERMIAN, LLC FOR APPROVAL OF A SALTWATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO.

CASE NOS. 23614-23617

AFFIDAVIT

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

Adam G. Rankin, attorney in fact and authorized representative of the Applicant herein, being first duly sworn, upon oath, states

- 1. The above-referenced applications and notice of the hearing on these applications were sent by certified mail to the affected parties on the date set forth in the letter attached hereto.
- 2. The spreadsheet attached hereto contains the names of the parties to whom notice was provided.
- 3. The spreadsheet attached hereto contains the information provided by the United States Postal Service on the status of the delivery of this notice as of October 26, 2023.

Adam G. Rankin

SUBSCRIBED AND SWORN to before me this 26th day of October, 2023 by Adam G.

Rankin.

My Commission Expires:

STATE OF NEW MEXICO NOTARY PUBLIC KARI D PEREZ

Notary Public

COMMISSION # 1138272 COMMISSION EXPIRES 06/28/2026



Fax: (505) 983-6043 agrankin@hollandhart.com

June 16, 2023

VIA CERTIFIED MAIL CERTIFIED RECEIPT REQUESTED

TO: Empire New Mexico LLC

Re: Application of Goodnight Midstream Permian, LLC for Approval of a

Saltwater Disposal Well, Lea County, New Mexico.

Doc Gooden SWD #1 Well

Ladies & Gentlemen:

This letter is to advise you that Goodnight Midstream Permian, LLC has filed the enclosed application with the New Mexico Oil Conservation Division. A hearing has been requested before a Division Examiner on July 6, 2023, and the status of the hearing can be monitored through the Division's website at https://www.emnrd.nm.gov/ocd/.

Due to the remodeling of the state building where the New Mexico Oil Conservation Division is located, hearings will be conducted remotely beginning at 8:15 a.m. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: https://www.emnrd.nm.gov/ocd/hearing-info/.

You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date. Parties appearing in cases are required to file a Pre-hearing Statement four business days in advance of a scheduled hearing that complies with the provisions of NMAC 19.15.4.13.B.

If you have any questions about this matter please contact Nate Alleman at Ace Energy Advisors at (918) 237-0559 or nate.alleman@aceadvisors.com.

Sincerely.

Adam G. Rankin

ATTORNEY FOR GOODNIGHT MIDSTREAM PERMIAN, LLC

Location 110 North Guadalupe, Suite 1 Santa Fe, NM 87501-1849 Mailing Address
P.O. Box 2208
Santa Fe, NM 87504-2208

Contact p: 505.988.4421 | f: 595.983.6043 www.hollandhart.com

Holland & Hart LLP Anchorage Aspen Billings Boise Boulder Cheyenne Denver Jackson Hole Las Vegas Reno Salt Lake City Santa Fe Washinaton, D.C.



Fax: (505) 9836043 agrankin@hollandhart.com

June 16, 2023

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TO: Empire New Mexico LLC

Re: Application of Goodnight Midstream Permian, LLC for Approval of a

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Hernandez SWD #1 Well

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Sincerely.

Adam G. Rankin

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PERMIAN, LLC

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Fax: (505) 9836043 agrankin@hollandhart.com

June 16, 2023

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TO: Empire New Mexico LLC

Re: Application of Goodnight Midstream Permian, LLC for Approval of a

Saltwater Disposal Well, Lea County, New Mexico.

Hodges SWD #1 Well

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Sincerely.

Adam G. Rankin

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Fax: (505) 9836043 agrankin@hollandhart.com

June 16, 2023

<u>VIA CERTIFIED MAIL</u> CERTIFIED RECEIPT REQUESTED

TO: Empire New Mexico LLC

Re: Application of Goodnight Midstream Permian, LLC for Approval of a Salt

Water Disposal Well, Lea County, New Mexico.

Seaver SWD #1 Well

Ladies & Gentlemen:

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Sincerely.

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Goodnight - Doc Gooden, Hernandez, Hodges and Seavers SWD #1 wells Case nos. 23614-23617 - Postal Delivery Report

Tracking Number	Recipient	Status
921489019403831938759	Empire New Mexico LLC 2200 S Utice Pl Suite 150 Tulsa OK 74114	In-Transit