

DATE <u>07/08/2013</u>	SUSPENSE	ENGINEER <u>PG</u>	LOGGED IN <u>07/09/2013</u>	TYPE <u>WFX</u>	APP NO <u>20131319055985</u>
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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 ☐ PP

Northeast Drinkard Unit 157
 30-025-40696
 previously approved as
 WFX-896

[D] Other: Specify _____

[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.

Brian Wood

Brian Wood

Consultant

7-6-13

Print or Type Name

Signature

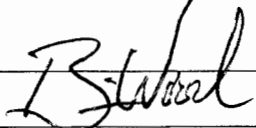
Title

Date

brian@permitswest.com

e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: XXX Secondary Recovery _____ Pressure Maintenance _____ Disposal _____ Storage _____
Application qualifies for administrative approval? _____ Yes _____ No
- II. OPERATOR: APACHE CORPORATION
ADDRESS: 303 VETERANS AIRPARK LANE, SUITE 3000, MIDLAND, TX 79705
CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? _____ Yes XXX No _____
If yes, give the Division order number authorizing the project: R-8541
- 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. NORTHEAST DRINKARD UNIT #157
- VII. Attach data on the proposed operation, including: 30-025-40696
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: BRIAN WOOD  TITLE: CONSULTANT
SIGNATURE: _____ DATE: JULY 5, 2013
E-MAIL ADDRESS: brian@permitswest.com
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

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.

INJECTION WELL DATA SHEET

OPERATOR: APACHE CORPORATIONWELL NAME & NUMBER: NORTHEAST DRINKARD UNIT #157WELL LOCATION: SHL: 1855' FNL & 1570' FEL G (LOT 7) 3 21 S 37 E

(FOOTAGE LOCATION)

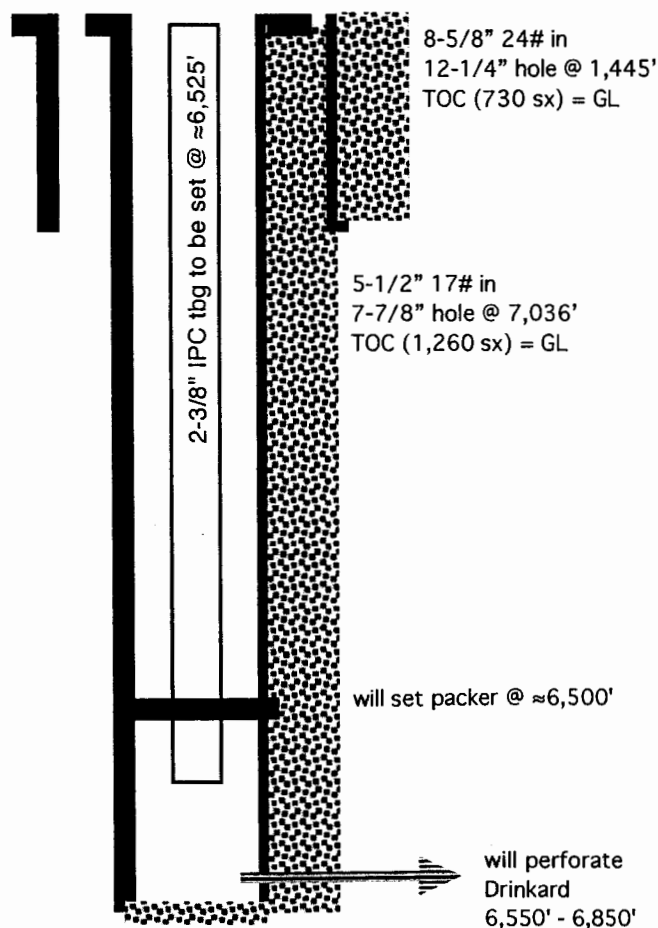
(BHL: 1980' FNL & 1400' FEL)

UNIT LETTER

SECTION

TOWNSHIP

RANGE

WELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingTD 7,036'
(not to scale)Hole Size: 12-1/4" Casing Size: 8-5/8"Cemented with: 730 sx. *or* 1,193 ft³Top of Cement: SURFACE Method Determined: CIRCULATED 157
SX TO SURFACEIntermediate Casing

Hole Size: _____ Casing Size: _____

Cemented with: _____ sx. *or* _____ ft³

Top of Cement: _____ Method Determined: _____

Production CasingHole Size: 7-7/8" Casing Size: 5-1/2"Cemented with: 1,260 sx. *or* 2,271 ft³Top of Cement: SURFACE Method Determined: CIRCULATED 140
SX TO SURFACETotal Depth: 7,036'Injection Interval6,550 feet to 6,850'

(Perforated or Open Hole; indicate which)

■■■■■■■■■■

INJECTION WELL DATA SHEETTubing Size: 2-3/8" J-55 4.7# Lining Material: INTERNAL PLASTIC COATType of Packer: LOCK STE INJECTIONPacker Setting Depth: ≈6,500'

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

Additional Data

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

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

2. Name of the Injection Formation: DRINKARD

3. Name of Field or Pool (if applicable): EUNICE; BLI-TU-DR, NORTH (POOL CODE 22900)

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

NO

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

OVER: TUBB (6,245'), BLINEBRY (5,755'), GRAYBURG (3,821')UNDER: ABO (6,868'), HARE SIMPSON (8,000')

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I. Well was previously approved on March 6, 2012 under Administrative Order WFX-896. Spud date was August 7, 2012. Well was not completed prior to WFX-896 expiration date. Purpose is to complete a directional water injection well to increase oil recovery. (The proposed BHL (211' southeast of SHL) is under a railroad.) The well will inject into the Drinkard, which is part of the Eunice; Blinbry-Tubb-Drinkard, North Pool (aka, Eunice; BLI-TU-DR, North and pool code number = 22900). The discovery well was the Gulf Vivian #1 in 1944. The well and zone are part of the Northeast Drinkard Unit (Unit Number 300160, Case Number 9231, Order Number R-8540) which was established in 1987 by Shell. The unit was subsequently operated by Altura, and now, Apache. This is an active water flood.

II. Operator: Apache Corporation (OGRID #873)
Operator phone number: (432) 818-1167
Operator address: 303 Veterans Airpark Lane, Suite 3000
Midland, TX 79705
Contact for Application: Brian Wood (Permits West, Inc.)
Phone: (505) 466-8120

III. A. (1) Lease: BLM lease NMNM-002512
Lease Size: 708.67 acres (see Exhibit A for C-102 and map)
Closest Lease Line: 576' (from BHL)
Lease Area: N2SE4, SESE, and Lots 1-4, 7, 8, 12, 15, & 16, Sec. 3;
Lot 1 Sec. 4; and W2NE4, SENE, & E2NW4 Sec. 10;
T. 21 S., R. 37 E.

Unit Size: 4,938 acres
Closest Unit Line: 1,855' (from SHL)
Unit Area: T. 21 S., R. 37 E.
Section 2: all
Section 3: all
Section 4: Lots 1, 8, 9, & 16
Section 10: all

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Section 11: SW4

Section 14: NW4

Section 15: all

Section 22: all

Section 23: all

- A. (2) Surface casing (8-5/8" and 24#) was set at 1445.5' in a 12-1/4" hole. Circulated 157 sacks to the surface. Lead with 530 sacks Class C mixed at 13.5 pounds per gallon and 1.75 cubic feet per sack. Tailed with 200 sacks Class C mixed at 14.8 pounds per gallon and 1.33 cubic feet per sack. See well bore profile on Form C-108 for more hole, casing, and cement details.

Production casing (5-1/2" and 17#) was set at 7,036' (TD) in a 7-7/8" hole. Circulated 140 sacks to the surface. Lead with 900 sacks 35:65 Poz mixed at 12.6 pounds per gallon and 2 cubic feet per sack. Tailed with 360 sacks 50:50 Poz mixed at 14.2 pounds per gallon and 1.31 cubic feet per sack. See well bore profile on Form C-108 for more hole, casing, and cement details.

Mechanical integrity of the casing was assured by hydraulically pressure testing to 2500 psi for 30 minutes.

- A. (3) Tubing specifications will be 2-3/8", J-55, 4.7#, and internally plastic coated. Setting depth will be \approx 6,525'. (Disposal interval will be \approx 6,550' to \approx 6,850'.)
- A. (4) A lock set injection packer will be set at \approx 6,500' (\approx 50' above the highest proposed perforation of \approx 6,550').
- B. (1) Injection zone is the grainstone and packstone member of the Drinkard limestone. The zone is part of the Eunice; Blinbry-Tubb-Drinkard,

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North Pool (NMOCD pool code number = 22900). Estimated fracture gradient is ≈ 0.56 psi per foot.

- B. (2) Injection interval will be $\approx 6,550'$ to $\approx 6,850'$. The well is a cased hole. See attached well profile for more perforation information.
- B. (3) Spud date was August 7, 2012. TD was reached August 14, 2012. The well has not yet been completed. It will be completed as a water injection well.
- B. (4) The well will be perforated from $\approx 6,550'$ to $\approx 6,850'$ with 2 shots per foot. Shot diameter = 0.40".
- B. (5) The next higher oil or gas zone is the Tubb. Its estimated bottom is at $\approx 6,525'$. Injection occurs in the Drinkard. Drinkard top is at $\approx 6,525'$. Injection interval in the Drinkard is $\approx 6,550'$ to $\approx 6,850'$. The Tubb is unitized with the Blinebry and Drinkard. The Blinebry above the Tubb is productive in Sections 2 and 3. The Blinebry is part of the Eunice; Blinebry-Tubb-Drinkard, North Pool (NMOCD pool code number = 22900). Grayburg, above the Blinebry, is productive in Section 3. The Grayburg is part of the Penrose Skelly; Grayburg (NMOCD pool code number = 50350).
The next lower oil or gas zone is the Wantz; Abo (Pool Code = 62700). Its top is at 6,868'. There are four Abo producers in Section 2 and six in Section 3. All ten Abo producing wells are operated by Apache. The Abo is not part of the Northeast Drinkard Unit. The Hare; Simpson is deeper than the Abo and is productive in Sections 2 and 3.

IV. This is not a horizontal or vertical expansion of an existing injection project. The case file for the unit approval (R-8540) includes a discussion of the Drinkard water flood. The water flood (R-8541) was approved at the same time in 1987.

There have been 16 water flood expansions (WFX) since then (WFX-583, -674, -722, -740, -752, -759, -774, -784, -881, -882, -896, -905, -906, -907, -

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910, and -911). Closest unit boundary is 1,855' north. There are 14 existing injection wells within a half-mile radius, all of which are in the unit. The injection wells are in all four directions (see Exhibit B).

V. Exhibit B shows all 56 existing wells (3 P & A + 16 water injection wells + 35 producing oil wells) within a 2,877'-radius, regardless of depth. A 2,877' radius is used to include a \geq half-mile radius from both the BHL and SHL.

Exhibit C shows all 517 existing wells (375 oil or gas producing wells + 86 injection or disposal wells + 52 P & A wells + 4 water wells) within a two-mile radius.

Exhibit D shows all leases (BLM, fee, and State) within a half-mile radius. Details on the leases within a half-mile radius are:

<u>Area</u>	<u>Lessor</u>	<u>Lease Number</u>	<u>Operator</u>
Lots 3 -6 & 13 Sec. 2	NMSLO	B1-1613-0002	Apache
Lot 12 Sec. 2	NMSLO	B0-9745-0004	Apache
Lots 1-4, 7, 8, 12, 15, & 16 Sec. 3	BLM	NMNM-002512	Apache
Lots 5, 6, 9 - 11, & 14 Sec. 3	fee	fee	Apache
S2SE4 Sec. 33*	BLM	NMLC-031695-B	ConocoPhillips
SWSW Sec. 34*	BLM	NMLC-063458	ConocoPhillips

*Tracts that are within the area of review, but outside the Northeast Drinkard Unit.

Exhibit E shows all lessors (BLM, fee, and state) within a two-mile radius. Note that the ranges are offset from the normal pattern (T. 20 S., R. 38 E. is north of T. 21 S., R. 37 E.).

VI. There are 61 approved wells within a 2,877' radius of the SHL or BHL. Fifty-five of the wells have been drilled. Forty-one of the drilled wells penetrated the Drinkard. The penetrators include 32 oil wells, 7 water injection wells, and 2 plugged wells. A table abstracting the 41 penetrating wells' construction details

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and history is in Exhibit F. Schematics of the plugged wells are also included in Exhibit F. The 61 approved wells and their distances from the 157 SHL are:

<u>OPERATOR</u>	<u>WELL</u>	<u>API #</u> <u>30-025-</u>	<u>LOCATION</u>	<u>ZONE(S)</u>	<u>STATUS</u>	<u>ID</u>	<u>DISTANCE</u> <u>FROM SHL</u>
Apache	NEDU 110	06495	1980 FN & 1980 FE 3-21s-37e	Eunice; Blinbry- Tubb-Drinkard, North	WIW	5976	443'
Apache	NEDU 154	39439	1310 FN & 1825 FE 3-21s-37e	EBTDN	OW	7025	596'
Apache	NEDU 131	34609	1253 FN & 1244 FE 3-21s-37e	EBTDN	OW	6990	669'
Apache	NEDU 165	39915	1800 FN & 125 FW 2-21s-37e	EBTDN	WIW	7054	730'
Apache	NEDU 111	26670	2232 FN & 2310 FE 3-21s-37e	EBTDN	WIW	6875	846'
Apache	NEDU 125	34425	2727 FN & 1511 FE 3-21s-37e	EBTDN	OW	6910	887'
Apache	NEDU 113	06496	1980 FN & 660 FE 3-21s-37e	EBTDN	WIW	6830	911'
Apache	NEDU 163	39914	2650 FN & 2030 FE 3-21s-37e	EBTDN	OW	7025	936'
Apache	NEDU 164	40526	1270 FN & 590 FE 3-21s-37e	EBTDN	OW	7030	1143'
Apache	NEDU 158	39440	2562 FN & 590 FE 3-21s-37e	EBTDN	OW	7020	1213'
Apache	NEDU 130	34617	1254 FN & 2625 FW 3-21s-37e	EBTDN	OW	6950	1217'
Apache	NEDU 109	06510	660 FN & 1980 FE 3-21s-37e	EBTDN	WIW	6025	1259'
Apache	NEDU 172	40847	3515 FN & 1425 FE 3-21s-37e	EBTDN	plan WIW	plan 7050	1448'

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<u>OPERATOR</u>	<u>WELL</u>	<u>API #</u> <u>30-025-</u>	<u>LOCATION</u>	<u>ZONE(S)</u>	<u>STATUS</u>	<u>ID</u>	<u>DISTANCE</u> <u>FROM SHL</u>
Apache	NEDU 208	06385	4620 FS & 1979 FE 3-21s-37e	EBTDN	OW	6707	1448'
Apache	NEDU 112	06509	660 FN & 660 FE 3-21-37e	EBTDN	WIW	6020	1484'
Apache	NEDU 124	34424	2879 FN & 2650 FE 3-21s-37e	EBTDN	OW	6910	1507'
Apache	NEDU 139	35610	330 FN & 1300 FE 3-21s-37e	EBTDN	OW	6990	1534'
Apache	NEDU 211	06381	4620 FS & 660 FE 3-21s-37e	EBTDN	WIW	6780	1655'
Apache	Taylor Glenn 14	35353	2310 FN & 2100 FW 3-21s-37e	Penrose Skelly; Grayburg	OW	4200	1657'
Apache	Taylor Glenn 5	06384	3546 FN & 1650 FE 3-21s-37e	Pen. Skel; Gray. Wantz;Abo	OW	8361	1709'
Apache	NEDU 108	24831	1980 FN & 1980 FW 3-21s-37e	EBTDN	P & A	6805	1715'
Apache	NEDU 107	20315	1585 FN & 1980 FW 3-21s-37e	EBTDN	WIW	6000	1729'
Apache	NEDU 174	40846	3220 FN & 2605 FW 3-21s-37e	EBTDN	plan WIW	plan 7000	1734'
Apache	NEDU 176	40848	1980 FN & 2465 FW 3-21s-37e	EBTDN	plan WIW	plan 7050	1734'
Apache	NEDU 132	34601	1339 FN & 130 FW 2-21s-37e	EBTDN	OW	6970	1764'
Apache	NEDU 126	34415	2500 FN & 130 FW 2-21s-37e	EBTDN	OW	6940	1820'
Apache	NEDU 138	35609	330 FN & 2619 FW 3-21s-37e	EBTDN	OW	6990	1859'

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<u>OPERATOR</u>	<u>WELL</u>	<u>API #</u> <u>30-025-</u>	<u>LOCATION</u>	<u>ZONE(S)</u>	<u>STATUS</u>	<u>ID</u>	<u>DISTANCE</u> <u>FROM SHL</u>
Apache	Taylor Glenn 4	06383	3376 FN & 764 FE 3-21s-37e	Hare; Simpson	OW	8119	1876'
Apache	Taylor Glenn 20	38687	3170 FN & 2310 FW 3-21s-37e	Penrose Skelly; Grayburg	OW	4530	1913'
Apache	NEDU 228	34427	3768 FN & 1493 FE 3-21s-37e	EBTDN	OW	6920	1931'
Apache	NEDU 173	40554	3785 FN & 1980 FE 3-21s-37e	EBTDN	OW	7050	1976'
Apache	NEDU 177	40903	900 FN & 1885 FW 3-21s-37e	EBTDN	OW	7100	2041'
Apache	NEDU 106	06410	660 FN & 1980 FW 3-21s-37e	EBTDN	WIW	6000	2085'
Apache	Taylor Glenn 3	06382	3546 FN & 330 FE 3-21s-37e	Wantz; Abo	OW	8224	2111'
Apache	NEDU 229	34429	3730 FN & 2594 FE 3-21s-37e	EBTDN	OW	6910	2153'
Apache	NEDU 206	06522	3226 FN & 1980 FW 3-21s-37e	EBTDN	WIW	8590	2199'
Apache	NEDU 171	40553	3865 FN & 660 FE 3-21s-37e	EBTDN	OW	7065	2215'
Apache	NEDU 166	39916	1350 FN & 600 FW 2-21s-37e	EBTDN	OW	7039	2220'
Apache	NEDU 115	06340	5940 FS & 660 FW 2-21s-37e	EBTDN	WIW	8620	2225'
Apache	NEDU 116	06346	5790 FS & 660 FW 2-21s-37e	EBTDN	P & A	6010	2237'
Apache	NEDU 167	39917	2545 FN & 660 FW 2-21s-37e	EBTDN	OW	7075	2336'

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<u>OPERATOR</u>	<u>WELL</u>	<u>API #</u> <u>30-025-</u>	<u>LOCATION</u>	<u>ZONE(S)</u>	<u>STATUS</u>	<u>ID</u>	<u>DISTANCE</u> <u>FROM SHL</u>
Apache	NEDU 153	40850	1980 FN & 1330 FW 3-21s-37e	EBTDN	plan WIW	plan 7000	2355'
Apache	NEDU 114	06344	906 FN & 660 FW 2-21s-37e	EBTDN	WIW	6896	2412'
Apache	State Section 2 11	06377	3376 FN & 330 FW 2-21s-37e	Wantz; Abo	P & A	8015	2446'
Apache	NEDU 140	35468	330 FN & 160 FW 2-21s-37e	EBTDN	OW	7000	2449'
Apache	Hawk B 3	39281	3630 FS & 890 FE 3-21s-37e	Penrose Skelly; no spud Grayburg	OW	4550	2473'
Apache	NEDU 128	34651	2483 FN & 1277 FW 3-21s-37e	EBTDN	OW	6930	2497'
Conoco	Warren Unit	07875	660 FS & 660 FE 33-20s-38e	Warren;	OW	6050	2512'
Phillips	Blinebry Tubb WF 15			Blinebry- Tubb Oil; Gas			
Apache	NEDU 129	34938	1100 FN & 1270 FW 3-21s-37e	EBTDN	OW	6980	2536'
Apache	NEDU 263	40849	3345 FN & 1620 FW 3-21s-37e	EBTDN	plan WIW	plan 7000	2539'
Apache	NEDU 175	40516	3785 FN & 1980 FW 3-21s-37e	EBTDN	OW	7050	2570'
Apache	NEDU 213	06368	4620 FS & 660 FW 2-21s-37e	EBTDN	OW	6760	2626'
Apache	NEDU 133	34600	1458 FN & 1098 FW 2-21s-37e	EBTDN	OW	6980	2690'
Apache	NEDU 168	39918	1970 FN & 1125 FW 2-21s-37e	EBTDN	WIW	7052	2695'

APACHE CORPORATION
NORTHEAST DRINKARD UNIT 157
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BHL: 1980' FNL & 1400' FEL
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<u>OPERATOR</u>	<u>WELL</u>	<u>API #</u> <u>30-025-</u>	<u>LOCATION</u>	<u>ZONE(S)</u>	<u>STATUS</u>	<u>ID</u>	<u>DISTANCE</u> <u>FROM SHL</u>
Apache	Taylor Glenn 15	35354	3448 FN & 1576 FW 3-21s-37e	Penrose Skelly; Grayburg	OW	4450	2714'
Apache	Taylor Glenn 13	35352	2310 FN & 990 FW 3-21s-37e	Penrose Skelly; Grayburg	OW	4450	2740'
Conoco Phillips	Warren Unit Blinebry Tubb WF 16	07876	660 FS & 1980 FE 33-20s-38e	Warren; Blinebry- Tubb Oil; Gas	WIW	6050	2788'
Apache	NEDU 143	35944	330 FN & 1330 FW 3-21s-37e	EBTDN	OW	6990	2812'
Apache	State Section 2 8	06374	3546 FN & 660 FW 2-21s-37e	Hare; Simpson	OW	8156	2813'
Apache	Hawk B 3	38960	990 FN & 990 FW 3-21s-37e	Penrose Skelly; Grayburg	OW	4550	2836'
Apache	NEDU 127	34426	2600 FN & 1200 FW 2-21s-37e	EBTDN	OW	6850	2877'
Conoco Phillips	Warren Unit Blinebry Tubb WF 14	07889	660 FS & 660 FW 34-20s-38e	Warren; Blinebry- Tubb Oil; Gas	WIW	6006	2887'

- VII. 1. Average injection rate will be ≈ 750 bwpd.
Maximum injection rate will be $\approx 1,000$ bwpd.
2. System is closed. The well is tied into the existing unit pipeline system. The system consists of a branched injection system with centrifugal injection pumps.
3. Average injection pressure will be $\approx 1,000$ psi
Maximum injection pressure will be $\approx 1,310$ psi ($= 0.2$ psi/foot $\times \approx 6,550'$ (highest perforation)).

APACHE CORPORATION
NORTHEAST DRINKARD UNIT 157
WATER INJECTION WELL APPLICATION
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4. Water source is water pumped from existing $\approx 4,000'$ deep San Andres water supply wells plus produced water from Blinbry, Tubb, and Drinkard zones. The source water and produced water are collected in separate skim tanks. The two water streams (source and produced) are commingled in a storage tank before being piped to the injection wells. Commingling began in the 1970s. A comparison of analyses from the discharge pump and San Andres follows. The complete analyses are in Exhibit G.

	<u>Injection Pump Discharge</u>	<u>San Andres 919-S</u>
Anion/Cation Ratio	1.0	N/A
Barium	0.1 mg/l	0.38 mg/l
Bicarbonate	671.0 mg/l	562.0 mg/l
Calcium	1,099.0 mg/l	608.0 mg/l
Carbon Dioxide	80.0 ppm	80.0 ppm
Chloride	10,086.0 mg/l	6,200.0 mg/l
Hydrogen Sulfide	90.0 ppm	408.0 ppm
Iron	0.3 mg/l	0.0 mg/l
Magnesium	439.0 mg/l	244.0 mg/l
Manganese	N/A	0.01 mg/l
pH	7.5	6.49
Potassium	115.0 mg/l	N/A
Sodium	5,799.5 mg/l	3,909.0 mg/l
Strontium	28.0 mg/l	19.0 mg/l
Sulfate	2,465.0 mg/l	1,750.0 mg/l
Total Dissolved Solids	20,702.9 mg/l	13,273.0 mg/l

5. The Drinkard currently produces in the unit. It is the goal of the project to increase production from the Drinkard. According to NMOCD records, at least 1,331 approved wells have targeted or will target the Drinkard in New Mexico.

APACHE CORPORATION
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VIII. The Unit is on the north end of a north-northwest to south-southeast trending anticline. It is part of the Penrose Skelly trend and parallels the west edge of the Central Basin Platform. Dips are $\approx 1^\circ$ to $\approx 2^\circ$. The Drinkard is $\approx 235'$ thick and consists of tan to dark gray limestone and dolomite. Core filling and replacement anhydrite are common in the limestone. Nodular anhydrite is common in the dolomite. The reservoir portion of the Drinkard consists of skeletal lime grindstone and lime packstone with some dolomitic packstone. Porosity is $\approx 11\%$. Permeability is ≈ 2.45 millidarcies.

There are or have been 159 Drinkard injection wells, 1 disposal well, and 1,171 Drinkard production wells in the state. Adjacent to the Northeast Drinkard Unit are three other Drinkard water floods (the Apache operated West Blinebry Drinkard and East Blinebry Drinkard Units and the Chevron operated Central Drinkard Unit). The Central Drinkard Unit has been under water flood since the 1960s.

Formation tops are:

Quaternary = 0'
Rustler = 1,360'
Yates = 2,700'
Queen = 3,491'
Grayburg = 3,821'
San Andres = 4,070'
Glorieta = 5,314'
Blinebry = 5,755'
Tubb = 6,245'
Drinkard = 6,525'
Abo = 6,868'
Total Depth = 7,025'

There are no water wells within a one-mile radius. This conclusion is based on November 17, 2011 and November 15, 2012 field inspections and a review of the State Engineer's records (Exhibit H). The closest water well is 5,926' southwest in Section 4 (Exhibit H). That water well, equipped with an electric pump, is 90' deep and probably produces from the Ogallala aquifer. Depth to

APACHE CORPORATION
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water is 75'. An analysis of that well's water is in Exhibit H. No existing underground drinking water sources are above or below the Drinkard within a one-mile radius.

There is >6,000' of vertical separation and the Rustler salt between the bottom of the only likely underground water source (Ogallala) and the top of the Drinkard.

Produced water has been injected or disposed into five zones above the Drinkard within T. 21 S., R. 37 E. and T. 20 S., R. 38 E. The five zones, from top to bottom, are the Grayburg, San Andres, Glorieta, Blinberry, and Tubb.

IX. The well will be stimulated with acid to clean out scale or fill.

X. Spectral gamma ray, spectral density/compensated neutron, dual laterolog/MSFL, and sonic logs will be performed.

XI. Based on a field inspection and a review of the State Engineer's records, there are no water wells within a one-mile radius.

XII. XII. Apache is not aware of any geologic or engineering data that may indicate the Drinkard is in hydrologic connection with any underground sources of water. This was attested to during sworn testimony (page 65, line 14, Order R-8540) presented in 1987. Closest Quaternary fault is over 75 miles west (Exhibit I). At least 160 injection or saltwater disposal wells have been drilled into the Drinkard in the New Mexico portion of the Permian Basin. Previously approved Drinkard water flood expansions in the unit include:

WFX-583 (April 9, 1989)
WFX-674 (July 27, 1995)
WFX-722 (September 30, 1997)

APACHE CORPORATION
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WFX-740 (October 13, 1998)
WFX-752 (July 6, 1999)
WFX-759 (May 8, 2000)
WFX-774 (June 7, 2001)
WFX-784 (October 29, 2002)
WFX-881 (March 14, 2011)
WFX-882 (March 16, 2011)
WFX-896 (March 6, 2012)
WFX-905 & WFX-906 (March 25, 2013)
WFX-907 (March 28, 2013)
WFX-910 & WFX-911 (May 31, 2013)

XIII. Notice (this application) has been sent (Exhibit J) to the surface owners, lessor (BLM), and all leasehold operators (only Apache and ConocoPhillips) within half of a mile. The surface owner at the SHL is Farm & Ranch Limited Partnership. The surface owner at the BHL is Permian Basin Railroads.

A legal ad (see Exhibit K) was published on May 22, 2013.

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, 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 30-025-40696	Pool Code 22900	Pool Name EUNICE; BLI-TU-DR, NORTH
Property Code 22503	Property Name NORTHEAST DRINKARD UNIT	Well Number 157
OGRID No. 873	Operator Name APACHE CORPORATION	Elevation 3488'

Surface Location

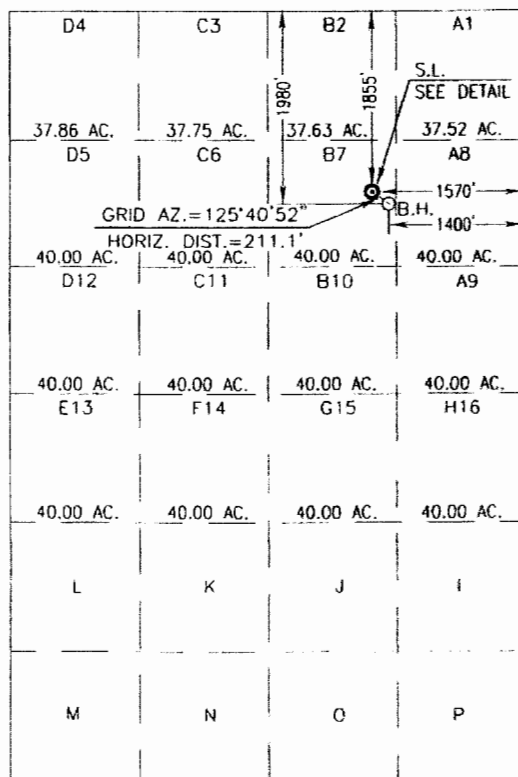
UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
7	3	21-S	37-E		1855	NORTH	1570	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
7	3	21-S	37-E		1980	NORTH	1400	EAST	LEA

Dedicated Acres 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



SCALE: 1"=2000'

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION

Y=553843.8 N

X=865691.5 E

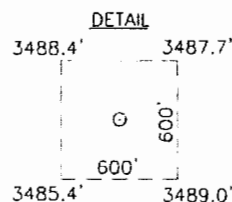
LAT.=32°51'7031" N
LONG.=103.146994" W

LAT.=32°31'02" N
LONG.=103°08'49" W

BOTTOM HOLE LOCATION

Y=553720.7 N

X=865863.0 E



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.

Signature _____ Date _____

Printed Name _____

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.

EXHIBIT A

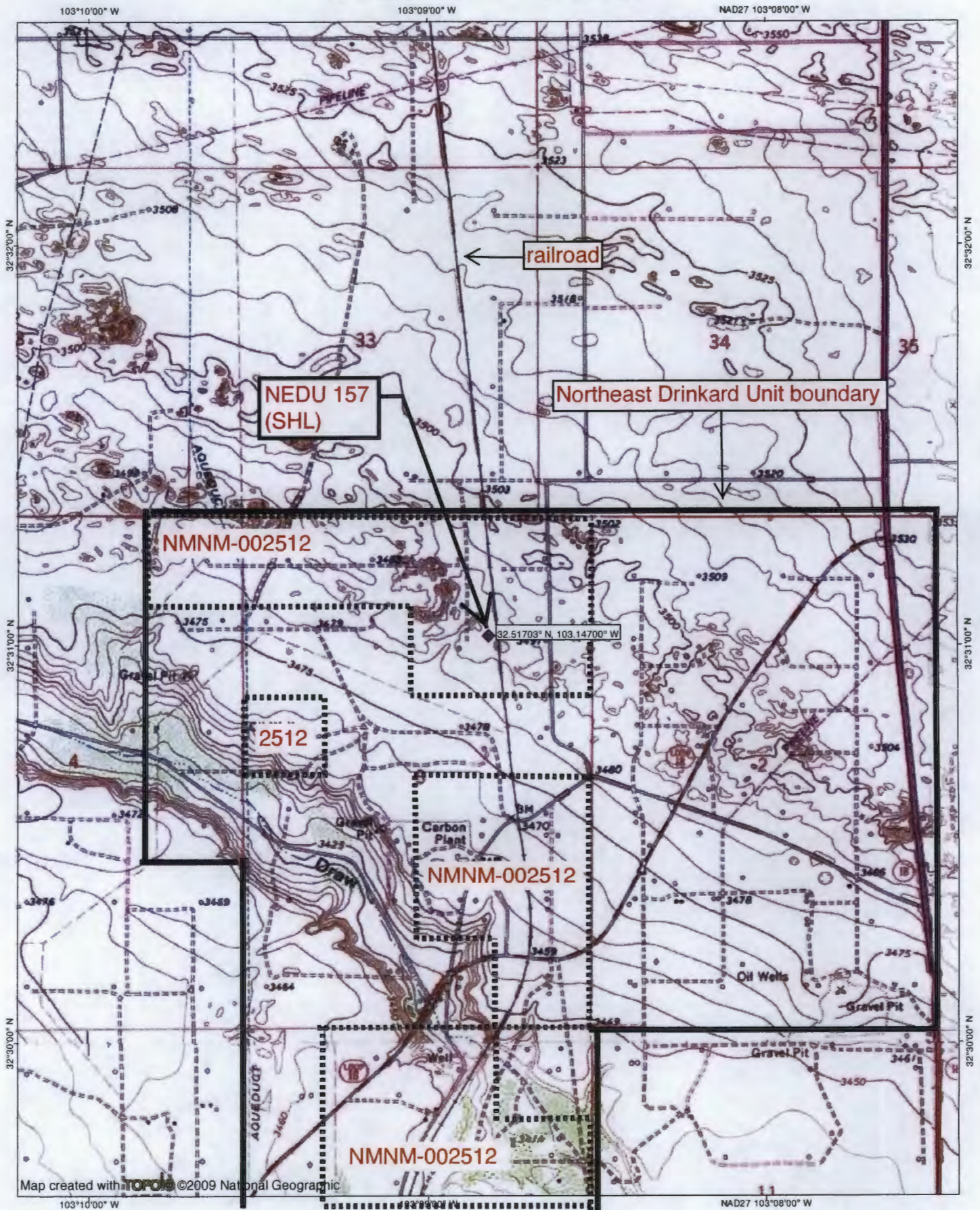
SEPTEMBER 4, 2010

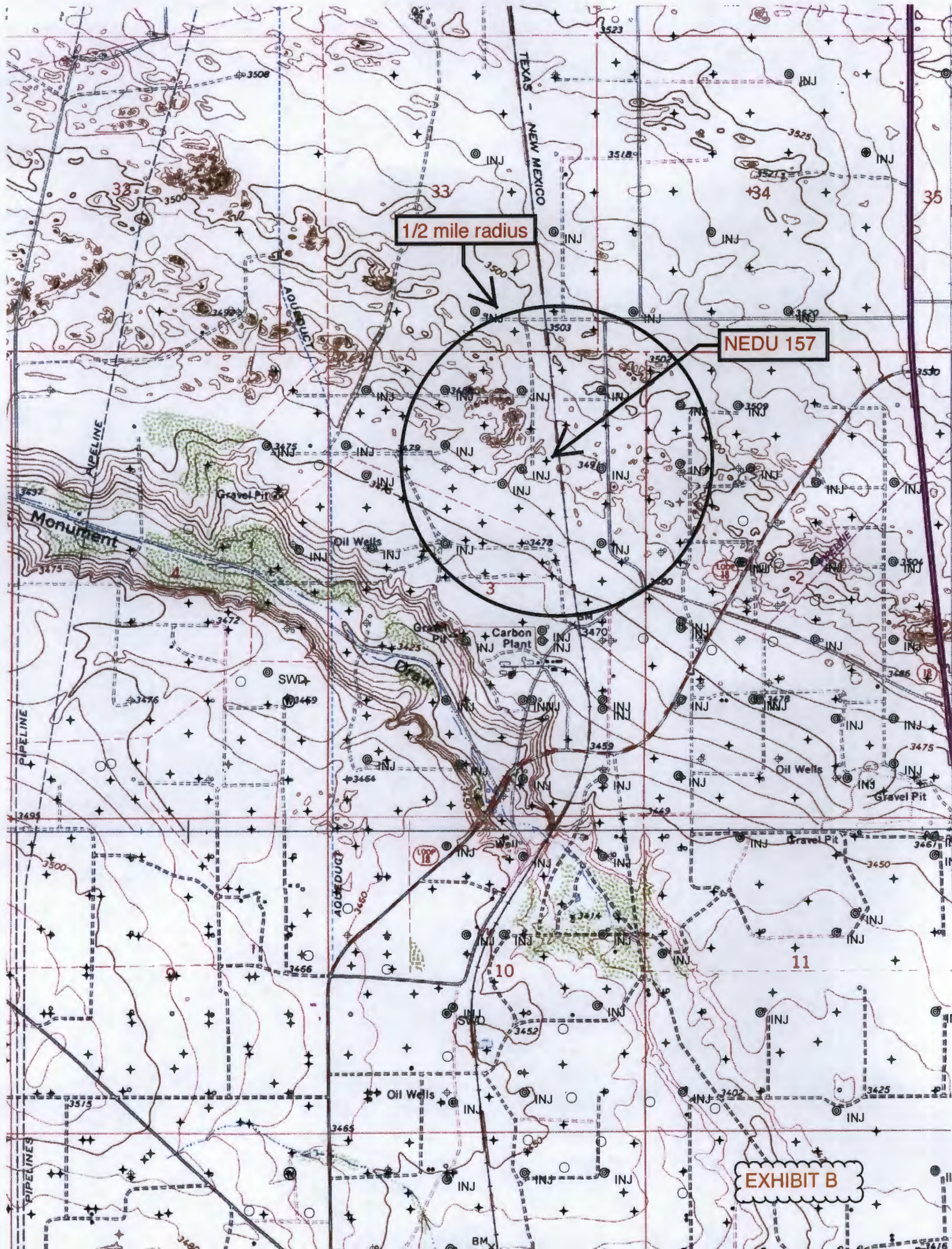
Date Surveyed Rev: 10/12/10 DSS

Signature & Seal of
Professional Surveyor

Ronald J. Eidson 11/30/2011
10.13/1516

Certificate No. GARY G. EIDSON 12841
RONALD J. EIDSON 3239



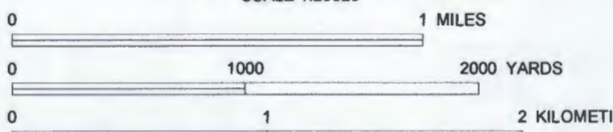


2 mile radius

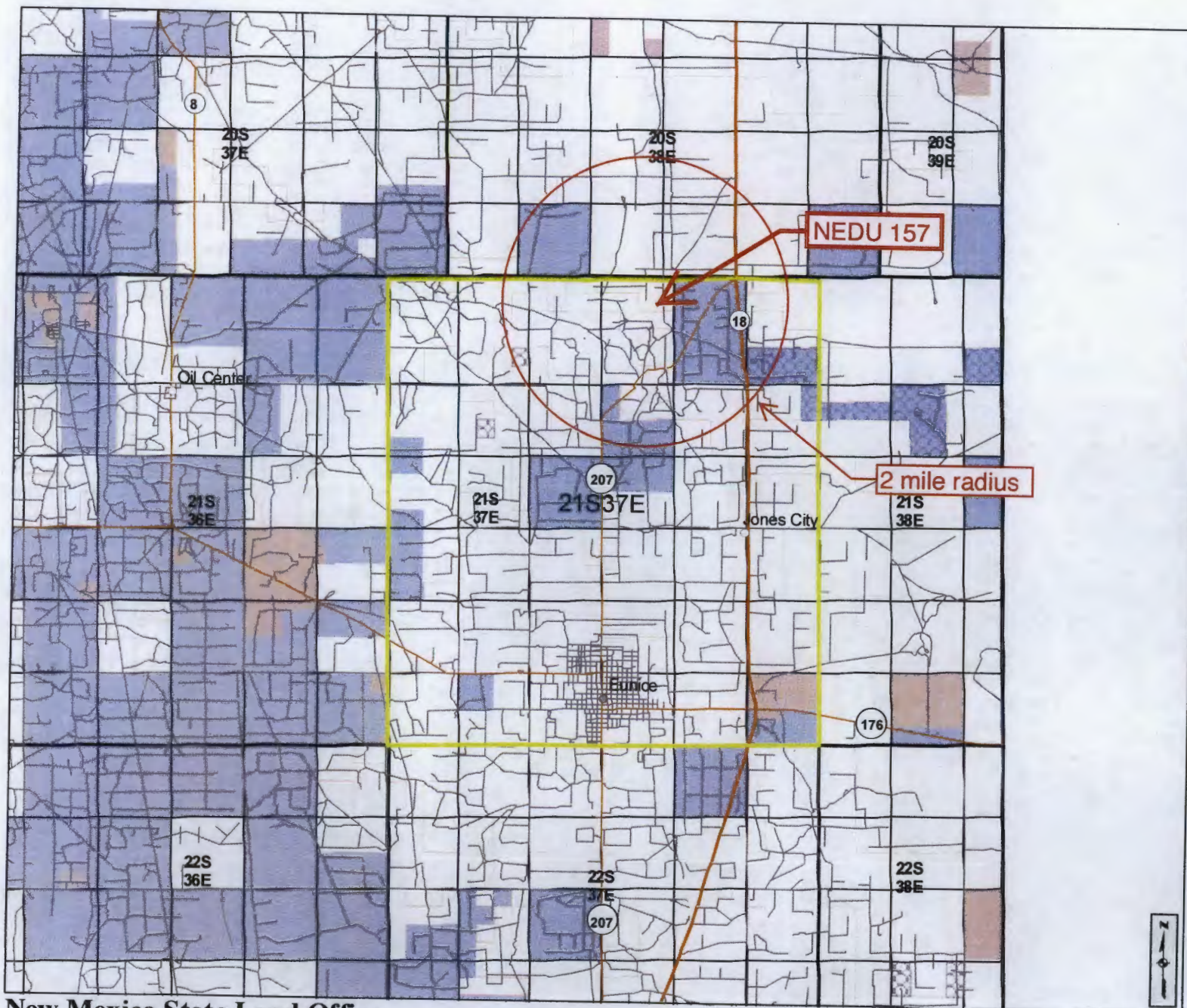
NEDU 157

EXHIBIT C

SCALE 1:29629







Point Locations

- County Seat
- ▲ SLO District Offices
- City, Town or Village
- ★ Volcanic Vents
- Highway Mileposts

NMOCD Oil and Gas Wells

- Oil
- Injection
- ★ Carbon Dioxide
- Miscellaneous
- ⊙ Gas
- ◆ Water
- ◇ DA or PA
- △ Salt Water Disposal

Federal Minerals

- All Minerals
- Coal Only
- Oil and Gas Only
- Oil, Gas and Coal Only
- Other Minerals

State Trust Lands

- Surface Estate
- Subsurface Estate
- Both Estates

NMSLO Leasing

- Option Agreement
- Commercial Lease
- Minerals Lease
- Oil and Gas Lease
- Agricultural Lease
- Not Available for Oil and Gas Leasing
- Restriction Influences Oil and Gas Leasing

Other Boundaries

- Continental Divide
- State Boundary
- County Boundaries
- Oil and Gas Unit Boundary
- Participating Areas in Units
- Geologic Regions
- Potash Enclave (NMOCD R-11 I-P)

For detailed legend of the Geologic Map of New Mexico, please see <http://geoinfo.nmt.edu>

New Mexico State Land Office Oil, Gas, and Minerals

0 0.3750.75 1.5 2.25 3 Miles

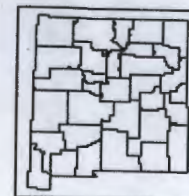
Universal Transverse Mercator Projection, Zone 13
1983 North American Datum

EXHIBIT E

The New Mexico State Land Office assumes no responsibility or liability for, or in connection with, the accuracy, reliability or use of the information provided here, in State Land Office data layers or any other data layer.

Land Office Geographic Information Center
logc@slo.state.nm.us

Created On: 1/27/2012 1:30:53 PM



www.nmstatelands.org

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 154	10/25/11	7025	EBTDN	OW	12.25	8.625	1409	720 sx Class C	GL	circ. 154 sx
30-025-39439					7.785	5.5	7025	1340 Class C	GL	circ. 152 sx
B 3-21s-37e										
NEDU 131	7/10/99	6990	EBTDN	OW	12.25	8.625	1365	460 Class C	GL	circ. 109 sx
30-025-34609					7.785	5.5	6990	1525 sx Poz C & H	GL	circ. 125 sx
A 3-21s-37e										
NEDU 165	11/15/10	7054	EBTDN	WIW	12.25	8.625	1461	720 sx Class C	GL	visual
30-025-39915					7.785	5.5	7054	1135 sx Class C	98'	CBL
D 2-21s-37e										
NEDU 111	4/18/80	6875	EBTDN	WIW	12.25	8.625	1395	674 sx Class C	GL	circ. 75 sx
30-025-26670					7.785	5.5	6875	2782 sx Class C	GL	circ. 170 sx
G 3-21s-37e										
NEDU 125	11/14/98	6910	EBTDN	OW	11	8.625	1300	410 sx PBCZ	GL	circ. 120 sx
30-025-34425					7.785	5.5	6910	900 sx Class C & 475 sx 50/50 poz premium	GL	circ. 86 sx
J 3-21s-37e										
NEDU 113	4/15/58	6830	EBTDN	WIW	17.5	13.375	211	250 sx	GL	visual
30-025-06496					12.25	9.625	3029	1210 sx	820	temp. survey
H 3-21s-37e					8.75	7	6829	770 sx	3038	temp. survey
NEDU 163	11/30/10	7025	EBTDN	OW	12.25	8.625	1380	675 Class C	GL	circ. 180 sx
30-025-39914					7.875	5.5	7025	850 sx Class	GL	circ. 106 sx
B 3-21s-37e										

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 164	7/30/12	7030	EBTDN	OW	12.25	8.625	1445	780 sx Class C	GL	circulated
30-025-40526					7.785	5.5	7030	1235 sx Class C	GL	circulated
A 3-21s-37e										
NEDU 158	11/7/10	7020	EBTDN	OW	12.25	8.625	1419	720 sx Class C	GL	circ. 170 sx
30-025-39440					7.785	5.5	7020	1250 sx Class C	GL	circ. 124 sx
A 3-21s-37e										
NEDU 130	6/25/99	6950	EBTDN	OW	12.25	8.625	1365	460 sx Class C	GL	circ. 27 sx
30-025-34617					7.785	5.5	6950	900 sx 35/65 poz C & 500 sx 50/50 poz H	GL	circ. 220 sx
F 3-21s-37e										
NEDU 172	No Spud	TBD	EBTDN	OW	11	8.625	1372	500	GL	TBD
30-025-40847					7.875	5.5	7050	1000	GL	TBD
J 3-21s-37e										
NEDU 208	7/27/52	6707	EBTDN	OW	17	13.375	225	250 sx neat	not reported	
30-025-06385					11	8.625	3147	1700 sx 4% & 300 sx neat	GL	circ. 280 sx
J 3-21s-37e					7.785	5.5	6660	300 sx 4% & 300 sx neat	GL	circ. 25 sx
NEDU 124	10/31/98	6910	EBTDN	OW	11	8.625	1309	410 sx PBCZ	GL	circ. 76 sx
30-025-34424					7.785	5.5	6910	925 Sx Class C & 500 sx 50/50 poz	GL	circ. 86 sx
K 3-21s-37e										

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 139	8/2/01	6990	EBTDN	OW	17.25	8.625	1400	460 sx	GL	visual
30-025-35610					7.785	5.5	6990	1375 sx	GL	visual
A 3-21s-37e										
NEDU 211	1/4/50	6780	EBTDN	WIW	17.5	13.375	222	300 sx regular	GL	circ. 260 sx
30-025-06381					11	8.625	2920	2200 sx	not reported	
I 3-21s-37e					7.785	5.5	6665	600 sx regular		
Taylor Glenn 5	5/14/52	8361	Penrose Skelly; Grayburg	OW	17.25	13.375	225	250 sx neat	GL	circ. 90 sx
30-025-06384			Wantz; Abo (now squeezed off)		11	8.625	3147	1800 sx 4% & 400 sx neat	GL	circ. 400 sx
J 3-21s-37e					7.785	5.5	8355	550 sx 4% & 300 sx neat	2943	top of liner
NEDU 108	10/19/74	6805	EBTDN	P & A	12.25	8.625	1361	500 sx light & 100 sx Class C	GL	visual
30-025-24831					7.785	5.5	6805	1025 sx 50-50 poz Class C	2328	calculated
C 3-21s-37e										
NEDU 174	No Spud	7000	EBTDN	WIW	11	8.625	1338	490	GL	TBD
30-025-40846					7.785	5.5	7000	1000	GL	TBD
C 3-21s-37e										

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 176	No Spud	TBD	EBTDN	OW	11	8.625	1355	490	GL	TBD
30-025-40848					7.875	5.5	7050	1000	GL	
C 3-21s-37e										
NEDU 132	5/29/99	6970	EBTDN	OW	12.25	8.625	1323	380 sx	GL	circ. 92 sx
30-025-34601					7.785	5.5	6970	1250 sx	GL	circ. 25 sx
E 2-21s-37e										
NEDU 126	8/15/98	6940	EBTDN	OW	11	8.625	1396	410 sx PBCZ	GL	circ. 106 sx
30-025-34415					7.785	5.5	6940	850 sx Class C & 350 sx 50/50 poz	GL	ciirc. 50 sx
E 2-21s-37e										
NEDU 138	7/18/01	6990	EBTDN	OW	12.25	8.625	1400	325 sx 35/65 poz C & 135 sx Class C	GL	circ. 47 sx
30-025-35609					7.785	5.5	6990	975 sx 35/65 poz C & 525 sx 50/50 poz H	GL	circ. 85 sx
C 3-21s-37e										
Taylor Glenn 4	3/10/52	8119	Hare; Simpson	OW	17.25	13.375	200	250 sx neat	GL	circ. 50 sx
30-025-06383					11	8.625	3147	1800 sx 4% & 400 sx neat	GL	circ. 300 sx
A 3-21s-37e					7.785	5.5	8115	500 sx 4% & 300 sx regular & 75 sx perlite	GL	circ. 75 sx

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 228	10/18/98	6920	EBTDN	OW	11	8.625	1365	410 sx PBCZ	GL	circ. 98 sx
30-025-34427					7.785	5.5	6900	775 sx Class C & 425 sx 50/50 poz premium	180	CBL
J 3-21s-37e										
NEDU 173	8/16/12	7050	EBTDN	OW	12.25	8.625	1352	700 sx Class C	GL	circulated
30-025-40554					7.785	5.5	7050	1220 sx Class C		
B 3-21s-37e										
NEDU 177	2/14/13	7100	EBTDN	OW	11	8.625	1397	500 sx Class C	GL	circulated
30-025-40903					7.785	5.5	7100	1000 sx Class C	GL	
C 3-21s-37e										
Taylor Glenn 3	11/11/51	8224	Wantz; Abo	OW	17.5	13.375	219	250 sx neat	not reported	
30-025-06382					11	8.625	3150	1700 sx 4% & 300 sx neat	GL	circ. 350 sx
A 3-21s-37e					7.785	5.5	8102	500 sx 4% & 70 sx strata-crete & 300 sx neat	GL	circ. 10 sx
NEDU 229	11/1/98	6910	EBTDN	OW	11	8.625	1309	410 sx PBCZ	GL	circ. 126 sx
30-025-34429					7.785	5.5	6910	850 sx Class C & 475 sx 50/50 poz premium	GL	circ. 170 sx
J 3-21s-37e										

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 206			EBTDN	WIW	17	13.375	301	250 sx	no report	
30-025-06522					11	8.625	3879	4300 sx	no report	
K 3-21s-37e					7.785	5.5	8060	675 sx	no report	
NEDU 171	7/9/12	7065	EBTDN	OW	12.25	8.625	1421	700 sx Class C		
30-025-40553					7.785	5.5	7065	1375 sx Class C	no report	
I 3-21s-37e										
NEDU 166	12/19/10	7039	EBTDN	OW	12.25	8.625	1502	680 sx Class C	GL	circ. 88 sx
30-025-39916					7.785	5.5	7039	1225 sx Class C	GL	circ. 55 sx
D 2-21s-37e										
NEDU 115	1/17/50	8620	EBTDN	WIW	17.5	13.375	152	165 sx Halliburton	GL	not reported
30-025-06340					12	9.625	3005	1600 sx 3%	GL	not reported
E 2-21s-37e					7.785	5.5	8519	550 sx Halliburton	4255	temperature survey
NEDU 167	12/9/10	7075	EBTDN	OW	12.25	8.625	1511	700 sx Class C	GL	ciirc. 32 sx
30-025-39917					7.785	5.5	7075	1315 sx Class C	GL	circ.25 sx
D 2-21s-37e										
NEDU 153	No Spud	TBD	EBTDN	OW	11	8.625	1336	490	GL	TBD
30-025-40850					7.875	5.5	7000	1000	GL	TBD
C 3-21s-37e										

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 114	10/29/74	6896	EBTDN	WIW	17.25	13.375	208	240 sx Halliburton	GL	visual
30-025-06344					11	8.625	3008	1750 sx Halliburton	GL	visual
D 2-21s-37e					7.785	5.5	6030	225 sx Halliburton	4780	temperature survey
					4.75	3.5	6896	100 sx Class C	no report	
State Section 2 #11	1/12/52	8015	Wantz, Abo	P & A	17.25	13.375	211	250 sx	GL	visual
30-025-06377					11	8.725	3140	2000 sx	GL	visual
D 2-21s-37e					7.785	5.5	8014	850 sx	3400	no report
NEDU 140	4/23/01	7000	EBTDN	OW	12.25	8.625	1398	460 sx Class C	GL	circ. 81 sx
30-025-35468					7.785	5.5	7000	875 sx 35/65 poz C & 500 sx 50/50 poz H	GL	circ. 75 sx
D 2-21s-37e										
NEDU 128	7/25/99	6930	EBTDN	OW	12.25	8.625	1336	460 sx Class C	GL	circ. 100 sx
30-025-34651					7.785	5.5	6930	1000 sx 35/65 poz C & 500 sx 50/50 poz H	GL	circ. 129 sx
E 3-21s-37e										
NEDU 129	7/28/00	6980	EBTDN	OW	12.25	8.625	1321	460 sx	GL	circ. 87 sx
30-025-34938					7.875	5.5	6980	1275 sx	GL	circ. 110 sx
D 3-21s-37e										

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
NEDU 263	No Spud	TBD	EBTDN	OW	11	8.625	1330	490 sx	GL	TBD
30-025-40849					7.875	5.5	7000	1000 sx	GL	
C 3-21s-37e										
NEDU 175	8/24/12	7050	EBTDN	OW	12.25	8.625	1371	700 sx Class C	GL	no data
30-025-40516					7.875	5.5	7050	1150 sx Class C	GL	no data
C 3-21s-37e										
NEDU 213	10/27/49	6760	EBTDN	OW	17.5	13.375	213	300 sx regular	GL	circ. 30 sx
30-025-06368					11	8.625	2926	2200 sx	GL	circ. 200 sx
D 2-21s-37e					7.875	5.5	6651	600 sx	no report	
NEDU 133	6/12/99	6980	EBTDN	OW	12.25	8.625	1333	460 sx Class C	GL	circ. 109 sx
30-025-34600					7.875	5.5	6980	1660 sx poz C & H	GL	circ.162 sx
E 2-21s-37e										
NEDU 168	11/22/10	7052	EBTDN	WIW	12.25	8.625	1500	720 sx Class C	GL	circ. 93 sx
30-025-39918					7.785	5.5	7052	1340 sx Class C	GL	circ. 171 sx
D 2-21s-37e										
NEDU 143	8/8/02	6990	EBTDN	OW	12.25	8.625	1259	600 sx Class C	GL	circ. 114 sx
30-025-35944					7.875	5.5	6990	1450 sx Class C	GL	circ. 119 sx
C 3-21s-37e										

EXHIBIT F

WELL	SPUD	TD	POOL	WELL TYPE	HOLE O.D.	CASING O.D.	SET @	CEMENT	TOC	HOW DETERMINED
State Section 2 #8	9/16/51	8156	Hare; Simpson	OW	17.25	13.375	219	250 sx regular	GL	circ. (no quantity reported)
30-025-06374					11	8.625	3149	2000 sx 4% & regular	GL	circ. (no quantity reported)
L 2-21s-37e					7.875	5.5	8018	875 sx	no report	
NEDU 127	8/29/98	6850	EBTDN	OW	11	8.625	1390	410 sx pbcz	GL	circ. 78 sx
30-025-34426					7.785	5.5	6980	1200 sx Class C & poz	GL	circ. 90 sx
L 2-21s-37e										

EXHIBIT F



LEASE NAME	North East Drinkard Unit
WELL #	108
API #	30-025-24831
COUNTY	Lea, NM

CURRENT WELLBORE SKETCH

1980 FNL & 1980 FWL
3-21s-37e
spud 10-19-74
P&A 2-20-09

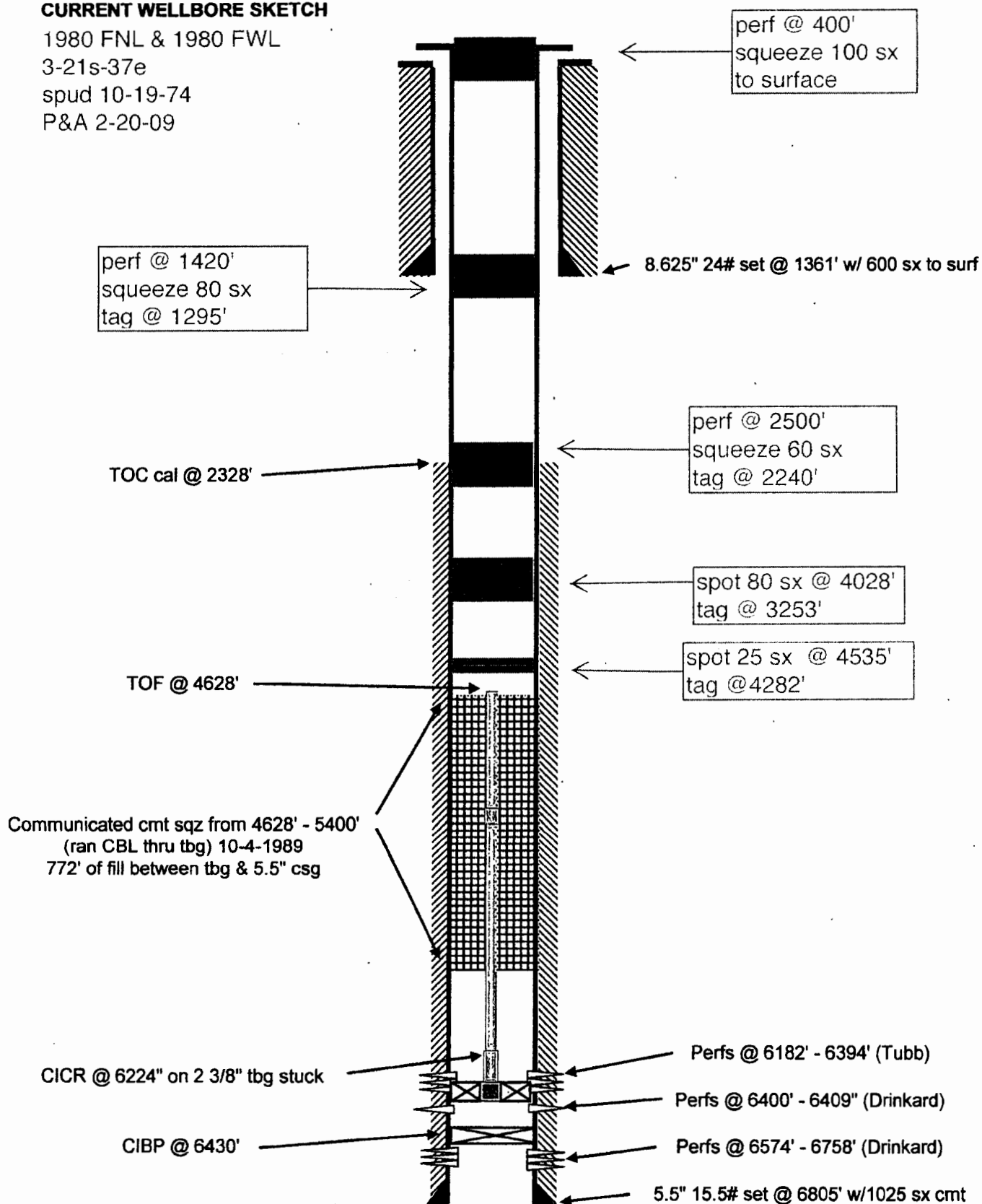


EXHIBIT F

Apache's
 State Section 2 #11
 API 30-025-06377
 3376 FSL & 330 FWL 2-21s-37e
 Spud 1-12-52 (as oil well) and Plug 4-10-02 (as oil well)

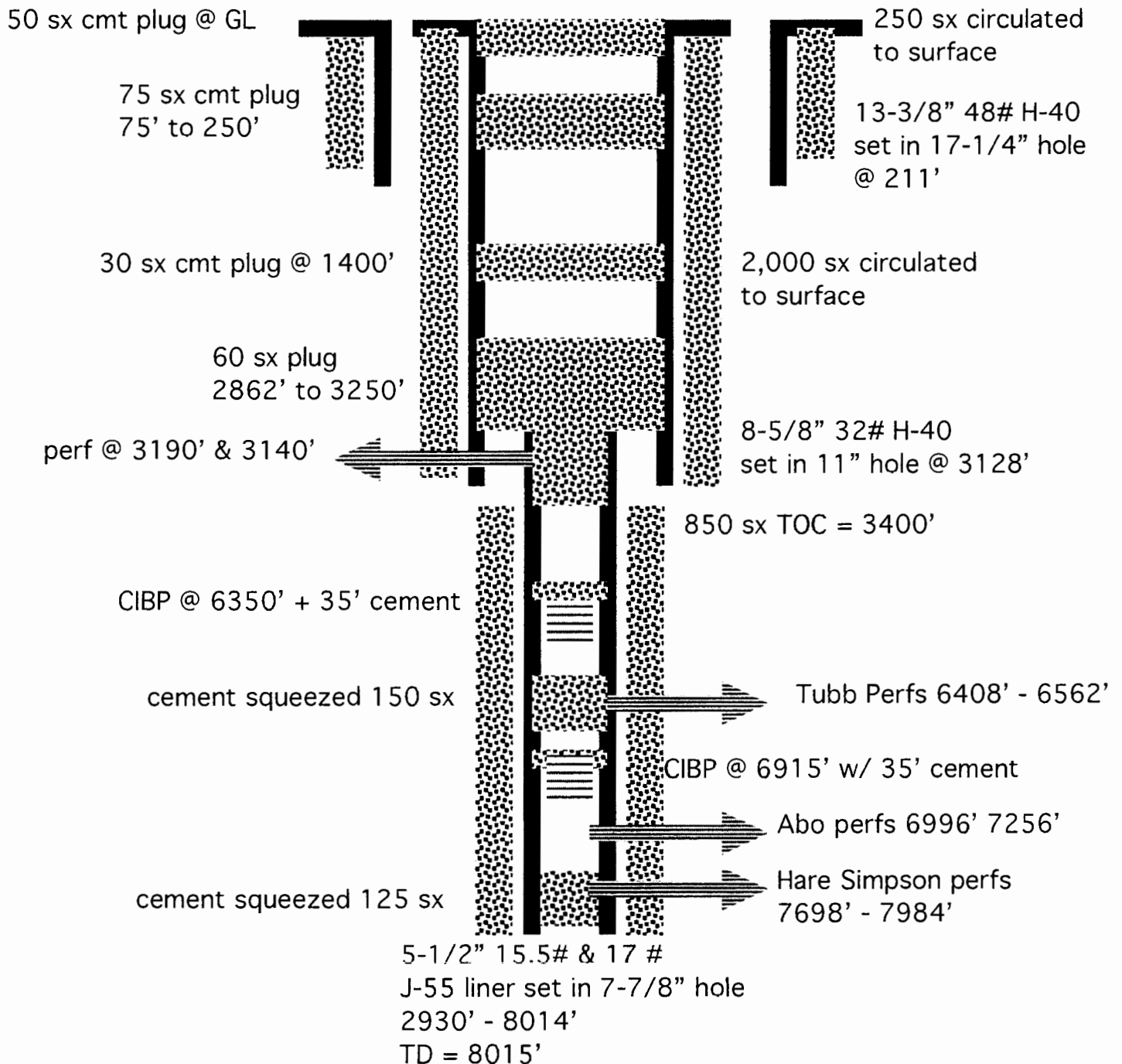


EXHIBIT F

(not to scale)



from WFX-784

South Permian Basin Region

10520 West I-20 East

Odessa, TX 79765

(915) 468-9191

Lab Team Leader - Sheila Hernandez

(915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	APACHE CORPORATION	Sales RDT:	33102
Region:	PERMIAN BASIN	Account Manager:	MIKE EDWARDS (505) 910-9517
Area:	EUNICE, NM	Sample #:	223099
Lease/Platform:	NORTHEAST DRINKARD UNIT	Analysis ID #:	28971
Entity (or well #):	WATER INJECTION STATION	Analysis Cost	\$40.00
Formation:	UNKNOWN		
Sample Point:	INJECTION PUMP DISCHARGE		

Summary		Analysis of Sample 223099 @ 75 °F					
Sampling Date:	10/3/02	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	10/4/02	Chloride:	10086.0	284.49	Sodium:	5799.5	252.26
Analyst:	SHEILA HERNANDEZ	Bicarbonate:	871.0	11.	Magnesium:	439.0	36.11
TDS (mg/l or g/m3):	20702.9	Carbonate:	0.0	0.	Calcium:	1099.0	54.84
Density (g/cm3, tonne/m3):	1.015	Sulfate:	2465.0	51.32	Strontium:	28.0	0.64
Anion/Cation Ratio:	1.000000	Phosphate:			Barium:	0.1	0.
		Borate:			Iron:	0.3	0.01
		Silicate:			Potassium:	115.0	2.94
Carbon Dioxide:	80 PPM	Hydrogen Sulfide:		90 PPM	Aluminum:		
Oxygen:		pH at time of sampling:		7.5	Chromium:		
Comments:		pH at time of analysis:			Copper:		
		pH used in Calculation:		7.5	Lead:		
					Manganese:		
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.18	75.54	-0.08	0.00	-0.14	0.00	0.07	2.75	0.75	0.00	0.21
100	0	1.25	85.15	-0.08	0.00	-0.08	0.00	0.07	3.09	0.60	0.00	0.3
120	0	1.33	95.11	-0.10	0.00	-0.02	0.00	0.09	3.78	0.47	0.00	0.42
140	0	1.41	105.41	-0.10	0.00	0.08	128.07	0.11	4.46	0.38	0.00	0.56

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

EXHIBIT G

UNICHEM

A Division of BJ Services Company

Lab Test No. 23748

Apache

Sample Date: 3/10/99

Water Analysis

Listed below please find water analysis report from: NEDU

#919-S

Specific Gravity: 1.009
 Total Dissolved Solids: 13273
 pH: 6.49
 Conductivity (umhos):
 Ionic Strength: 0.265

WFX-774 application indicates
 this is San Andres source water

Cations: mg/l

Calcium (Ca++): 608
 Magnesium (Mg++): 244
 Sodium (Na+): 3909
 Iron (Fe++): 0.00
 Dissolved Iron (Fe++):
 Barium (Ba++): 0.38
 Strontium (Sr): 19
 Manganese (Mn++): 0.01
 Resistivity:

Anions:

Bicarbonate (HCO3-): 562
 Carbonate (CO3--):
 Hydroxide (OH-): 0
 Sulfate (SO4--): 1750
 Chloride (Cl-): 6200

Gases: ppm

Carbon Dioxide (CO2): 80.00
 Hydrogen Sulfide (H2S): 408.00
 Oxygen (O2):

Scale Index (positive value indicates scale tendency) a blank indicates some tests were not run

Temperature	CaCO3 SI	CaSO4 SI
86F 30.0C	-0.14	-17.28
104F 40.0C	0.09	-17.28
122F 50.0C	0.35	-17.28
140F 60.0C	0.57	-16.80
168F 70.0C	0.87	-15.02
176F 80.0C	1.20	-15.51

Comments:

cc: Jerry White
 Jay Brown

P.O. Box 61427 • Midland, TX 79711 • 4312 S. County Rd. 1208, Midland, TX 79765
 Office: (915) 563-0241 • Fax: (915) 563-0243

010/2002 0420\$

UNICHEM LAB

MAR 25 1999 15:26 915 563 0243

APR-05-1999 15:15

3942740

96%

EXHIBIT G



New Mexico Office of the State Engineer

Currently Active Points of Diversion

(with Ownership Information)

(acre ft per annum)					(quarters are 1=NW 2=NE 3=SW 4=SE)					(quarters are smallest to largest)			(NAD83 UTM in meters)		
File Nbr	Sub	basin	Use	Diversion	Owner	County	POD Number	Grant	Source	6416 4	Sec	Tws	Rng	X	Y Distance
0552			STK	3	MILLARD DECK	LE	CP 00552	closest water well is 5,926' from SHL	Shallow	2	4	04	21S 37E	672700	3598022* 1807
0553			STK	3	MILLARD DECK	LE	CP 00553		Shallow	2	4	04	21S 37E	672700	3598022* 1807
01037			EXP	0	MCNEILL RANCH	LE	CP 01037 POD1			2	2	2	10 21S 37E	674322	3597345 1953

Record Count: 3

UTM NAD83 Radius Search (in meters):

Easting (X): 674005.38

Northing (Y): 3599272.76

Radius: 2000

Sorted by: Distance

EXHIBIT H

All location was derived from PLSS - see Help

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

EXHIBIT H

NEDU 157

fresh water well

approximate base
of Ogallala aquifer

outside of Ogallala



Analytical ReportLab Order **1211780**Date Reported: **11/28/2012****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Permits West**Client Sample ID:** A NEDU SWD Wind#1**Project:** Apache-NEDU SWD**Collection Date:** 11/15/2012 6:02:00 PM**Lab ID:** 1211780-001**Matrix:** AQUEOUS**Received Date:** 11/19/2012 1:36:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 1664A						Analyst: JAL
N-Hexane Extractable Material	6.9	5.0		mg/L	1	11/26/2012

EXHIBIT H

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1211780

Date Reported: 11/28/2012

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Permits West**Client Sample ID:** A NEDU SWD Wind #2**Project:** Apache-NEDU SWD**Collection Date:** 11/15/2012 6:02:00 PM**Lab ID:** 1211780-002**Matrix:** AQUEOUS**Received Date:** 11/19/2012 1:36:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: JML
Total Dissolved Solids	1520	20.0		mg/L	1	11/21/2012 1:57:00 PM

EXHIBIT H

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1211780

28-Nov-12

Client: Permits West
Project: Apache-NEDU SWD

Sample ID	MB-4953	SampType:	MBLK	TestCode:	EPA Method 1664A					
Client ID:	PBW	Batch ID:	4953	RunNo:	7100					
Prep Date:	11/26/2012	Analysis Date:	11/26/2012	SeqNo:	205931	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	5.0								

Sample ID	LCS-4953	SampType:	LCS	TestCode:	EPA Method 1664A					
Client ID:	LCSW	Batch ID:	4953	RunNo:	7100					
Prep Date:	11/26/2012	Analysis Date:	11/26/2012	SeqNo:	205932	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	34	5.0	40.00	0	84.8	78	114			

Sample ID	MB-4953	SampType:	MBLK	TestCode:	EPA Method 1664A					
Client ID:	PBW	Batch ID:	4953	RunNo:	7101					
Prep Date:	11/26/2012	Analysis Date:	11/27/2012	SeqNo:	205949	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silica Gel Treated N-Hexane Extrac	ND	5.0								

Sample ID	LCS-4953	SampType:	LCS	TestCode:	EPA Method 1664A					
Client ID:	LCSW	Batch ID:	4953	RunNo:	7101					
Prep Date:	11/26/2012	Analysis Date:	11/27/2012	SeqNo:	205950	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silica Gel Treated N-Hexane Extrac	13	5.0	20.00	0	66.5	64	132			

EXHIBIT H

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1211780

28-Nov-12

Client: Permits West
Project: Apache-NEDU SWD

Sample ID	MB-4917	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	4917	RunNo:	7074					
Prep Date:	11/20/2012	Analysis Date:	11/21/2012	SeqNo:	204919	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-4917	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	4917	RunNo:	7074					
Prep Date:	11/20/2012	Analysis Date:	11/21/2012	SeqNo:	204920	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	996	20.0	1000	0	99.6	80	120			

Sample ID	1211677-002AMS	SampType:	MS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	BatchQC	Batch ID:	4917	RunNo:	7074					
Prep Date:	11/20/2012	Analysis Date:	11/21/2012	SeqNo:	204932	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1050	20.0	1000	36.00	101	80	120			

Sample ID	1211677-002AMSD	SampType:	MSD	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	BatchQC	Batch ID:	4917	RunNo:	7074					
Prep Date:	11/20/2012	Analysis Date:	11/21/2012	SeqNo:	204933	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1060	20.0	1000	36.00	103	80	120	1.42	5	

EXHIBIT H

Qualifiers:

- | | |
|--|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| P Sample pH greater than 2 | R RPD outside accepted recovery limits |



Geologic Hazards Science Center

EHP Quaternary Faults

Search for fault:

Select a state or region map:

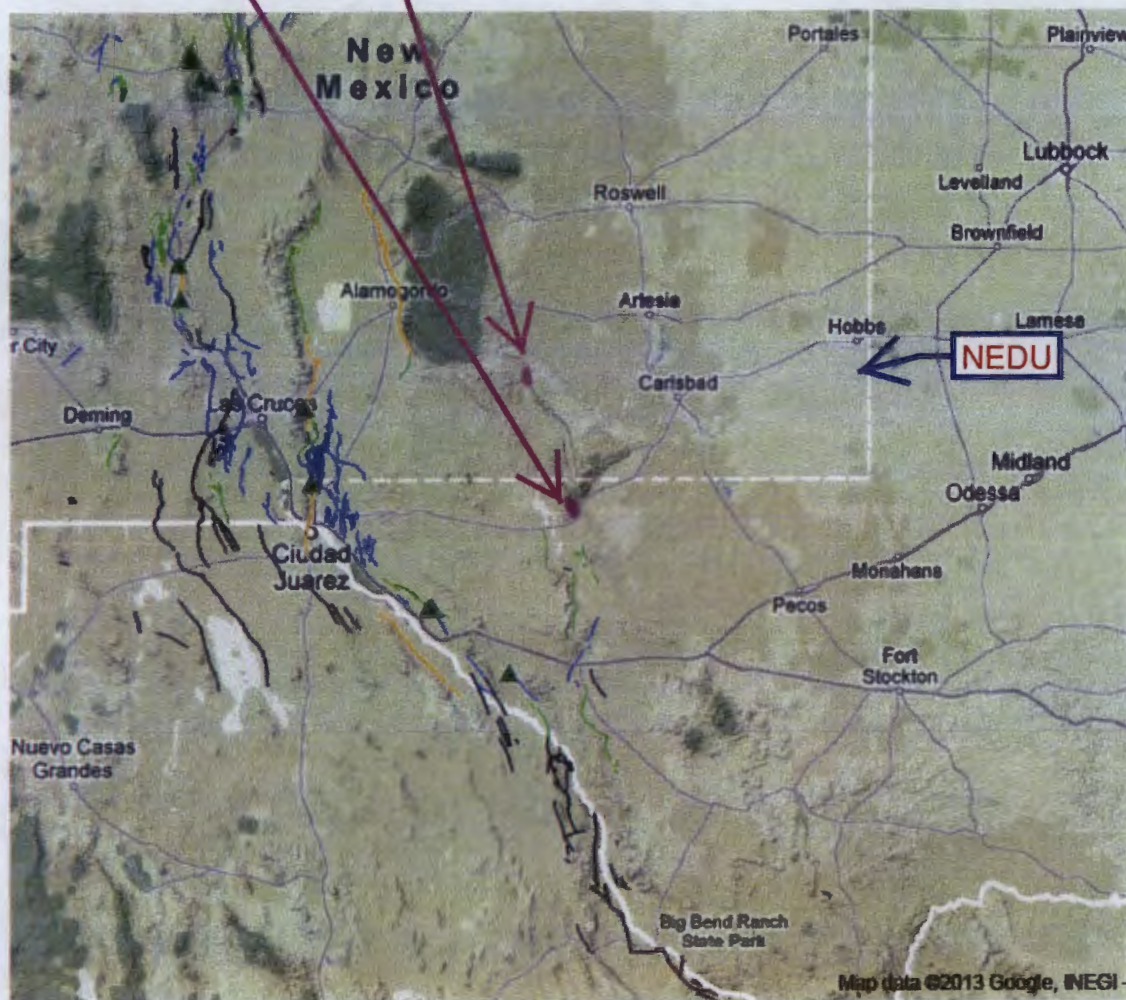


EXHIBIT I

July 5, 2013

Todd Cecil, Vice President
Real Estate Development
Permian Basin Railways
2534 Rim Oak
San Antonio, TX 78232

Dear Mr. Cecil:

Apache Corporation is applying (see attached application) to complete its Northeast Drinkard Unit #157 well as a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposed water injection well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Northeast Drinkard Unit #157 (BLM lease NMNM-002512) ID = 7,036'
Proposed Injection Zone: Drinkard (from 6,550' to 6,850')
SHL: 1855' FNL & 1570' FWL BHL: 1980 FNL & 1400 FEL
both Sec. 3, T. 21 S., R. 37 E., Lea County, NM
Approximate Location: ~5 air miles north of Eunice, NM
Applicant Name: Apache Corporation (432) 818-1167
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a saltwater injection well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

Brian Wood

Brian Wood

7011 3500 0002 1605 1590

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For delivery information visit our website at www.usps.com			
OFFICIAL USE			
Sent To	Postage	Certified Fee	Return Receipt Fee (Endorsement Required)
Permian RR	\$ 1.72	3.10	2.55
Street, Apt. No., or PO Box No.			
City, State, ZIP+4			
Total Postage & Fees	\$ 7.37		
Postmark Here JUL - 6 2013			
DECOS MAIL 87552			

EXHIBIT J

July 5, 2013

Robert McCasland
Farm & Ranch Limited Partnership
P. O. Box 206
Eunice, NM 88231

Dear Mr. McCasland:

Apache Corporation is applying (see attached application) to complete its Northeast Drinkard Unit #157 well as a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposed water injection well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Northeast Drinkard Unit #157 (BLM lease NMNM-002512) ID = 7,036'
Proposed Injection Zone: Drinkard (from 6,550' to 6,850')
SHL: 1855' FNL & 1570' FWL BHL: 1980 FNL & 1400 FEL
both Sec. 3, T. 21 S., R. 37 E., Lea County, NM
Approximate Location: ~5 air miles north of Eunice, NM
Applicant Name: Apache Corporation (432) 818-1167
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submittal Information: Application for a saltwater injection well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

R. Wood

R. Wood

7011 3500 0002 1605 1606

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For delivery information visit our website at www.usps.com			
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Total Postage & Fees	\$ 7.37		
Postmark Here JUL - 6 2013			
DECOS MAIL 87552			

July 5, 2013

Tom Scarborough
ConocoPhillips Company
P. O. Box 2197
Houston, TX 77252

Dear Mr. Scarborough:

Apache Corporation is applying (see attached application) to complete its Northeast Drinkard Unit #157 well as a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposed water injection well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Northeast Drinkard Unit #157 (BLM lease NMNM-002512) ID = 7,036'
Proposed Injection Zone: Drinkard (from 6,550' to 6,850')
SHL: 1855' FNL & 1570' FWL BHL: 1980 FNL & 1400 FEL
both Sec. 3, T. 21 S., R. 37 E., Lea County, NM
Approximate Location: ≈5 air miles north of Eunice, NM
Applicant Name: Apache Corporation (432) 818-1167
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submission Information: Application for a saltwater injection well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

Brian Wood
Brian Wood

7011 3500 0002 1605 1583

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EXHIBIT J

July 5, 2013

BLM
620 E. Greene St.
Carlsbad, NM 88220

Apache Corporation is applying (see attached application) to complete its Northeast Drinkard Unit #157 well as a water injection well. As required by NM Oil Conservation Division Rules, I am notifying you of the following proposed water injection well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Northeast Drinkard Unit #157 (BLM lease NMNM-002512) ID = 7,036'
Proposed Injection Zone: Drinkard (from 6,550' to 6,850')
SHL: 1855' FNL & 1570' FWL BHL: 1980 FNL & 1400 FEL
both Sec. 3, T. 21 S., R. 37 E., Lea County, NM
Approximate Location: ≈5 air miles north of Eunice, NM
Applicant Name: Apache Corporation (432) 818-1167
Applicant's Address: 303 Veterans Airpark Lane, #3000, Midland, TX 79705

Submission Information: Application for a saltwater injection well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,

Brian Wood
Brian Wood

7013 0600 0001 8711 9998

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Affidavit of Publication

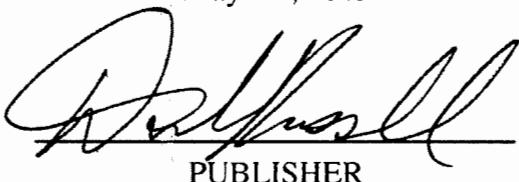
State of New Mexico,
County of Lea.

I, DANIEL RUSSELL
PUBLISHER

of the Hobbs News-Sun, a
newspaper published at Hobbs, New
Mexico, do solemnly swear that the
clipping attached hereto was
published in the regular and entire
issue of said newspaper, and not a
supplement thereof for a period

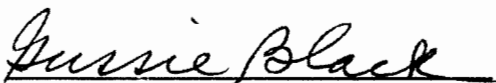
of 1 issue(s).

Beginning with the issue dated
May 22, 2013
and ending with the issue dated
May 22, 2013



PUBLISHER

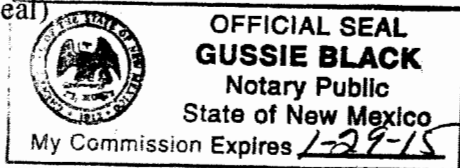
Sworn and subscribed to before me
this 22nd day of
May, 2013



Notary Public

My commission expires
January 29, 2015

(Seal)



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

Legal Notice May 22, 2013

Apache Corporation is
applying to complete the
Northeast Drinkard Unit 157
well as a water injection
well. Surface hole location is
at 1855 FNL & 1570 FEL,
Sec. 3, T. 21 S., R. 37 E.,
Lea County, NM. Bottom
hole location is 1980 FNL &
1400 FEL 3-21s-37e. This is
5 miles north of Eunice, NM.
It will inject water into the
Drinkard (maximum injection
pressure = 7,310 psi) from
6,560' to 6,860'. Injection
will be at a maximum rate of
1,000 bwpd. Interested
parties must file objections
or requests for hearing with
the NM Oil Conservation
Division, 1220 South Saint
Francis Dr., Santa Fe, NM
87505 within 15 days.
Additional information can
be obtained by contacting:
Brian Wood, Permits West,
Inc., 37 Verano Loop, Santa
Fe, NM 87508. Phone
number is (505) 468-8120.
#28166

02108485

00114801

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

EXHIBIT K

Injection Permit Checklist: Received 07/08/13 First Email Date: _____ Final Reply Date: _____ Suspended?: _____

Issued Permit: Type: WFX/PMX/SWD Number: 896-A Permit Date: Aug 1 2013 Legacy Permits or Orders: R-8541

Well No. 157 Well Name(s): Northeast Drinkard Unit WFX-896 approved for RDV #157 on March 6, 2012/exp. 1-year

API: 30-0 25-40696 Spud Date: 8/7/2012 New/Old: (N) (UIC CI II Primacy March 7, 1982)

Footages 1855 FNL/1570 FEL Lot 7 Unit - Sec 3 Tsp 21S Rge 37E County Lea

General Location: North of Eunice Pool: Eunice, Blinney Tubb-Drinkard Pool No.: 22900

Operator: Apache Corporation OGRID: 873 Contact: Brian Wood/Permits/Wat

COMPLIANCE RULE 5.9: Inactive Wells: 5 Total Wells: 2806 Fincl Assur: Yes Compl. Order? No IS 5.9 OK? Yes

Well File Reviewed: ✓ Current Status: Well completed but waiting on admin. order for injection

Planned Rehab Work to Well: NA - new well

Well Diagrams: Proposed X Before Conversion _____ After Conversion _____ Are Elogs in Imaging?: Not yet

Well Construction Details:	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Stage Tool	Cement (Sx) or Cf	Cement Top and Determination Method
Planned ___ or Existing ___ Cond	—	—	—	—	—
Planned ___ or Existing ___ Surface	<u>12 1/4 / 8 5/8</u>	<u>0 to 1445</u>	—	<u>730</u>	<u>Circulate to surf.</u>
Planned ___ or Existing ___ Interm	<u>7 7/8 / 5 1/2</u>	<u>0 to 6850</u>	—	<u>1260</u>	<u>Circulate to surf.</u>
Planned ___ or Existing ___ LongSt	—	—	—	—	—
Planned ___ or Existing ___ Liner	—	—	—	—	—
Planned ___ or Existing ___ OH / PERF	<u>7 7/8 / 5 1/2</u>	<u>6550 to 6850</u>	—	—	—

Injection Strat Column:	Depths (ft)	Injection or Confining Formations	Tops?
Above Top of Inject Formation	—	—	—
Above Top of Inject Formation	—	—	—
Proposed Interval TOP:	<u>6550</u>	<u>6550 / Drinkard</u>	—
Proposed Interval BOTTOM:	<u>6850</u>	<u>Drinkard</u>	—
Below Bottom of Inject Formation	—	—	—
Below Bottom of Inject Formation	—	—	—

Completion/Ops Details:			
Drilled TD	<u>7036</u>	PBTD	—
Open Hole	—	or	Perfs <u>X</u>
Tubing Size	<u>2 3/8</u>	Inter Coated?	<u>Yes</u>
Proposed Packer Depth	<u>6500</u>		
Min Packer Depth	<u>6450</u>	(100-ft limit)	
Proposed Max. Surface Press	<u>1000</u>		
Calc. Injt Press	<u>1310</u>	(0.2 psi per ft)	
Calc. FPP	—	(0.65 psi per ft)	

AOR: Hydrologic and Geologic Information

POTASH: R-111-P No Noticed? NA BLM Sec Ord No WIPP No Noticed? NA SALADO: T: — B: — CLIFF HOUSE NA

Fresh Water: Max Depth: 200 FW Formation Ogallala Wells? 3 wells Analysis? Yes Hydrologic Affirm Statement Yes

Disposal Fluid: Formation Source(s) Dr - BI - TU / some On Lease X Only from Operator or Commercial

Disposal Interval: Injection Rate (AVE/MAX): 750/1000 Protectable Waters: No CAPITAN REEF: thru NO adjacent

H/C Potential: Producing Interval? Formerly Producing Method: E Log / Mudlog / DST / Depleted / Other NA

AOR Wells: 1/2-M Radius Map? Yes Well List? Yes Total No. Wells 41 Penetrating Interval: 41

Penetrating Wells: No. Active Wells 31 Num Repairs? 0 on which well(s)? _____ Diagrams? N

Penetrating Wells: No. P&A Wells 2 Num Repairs? 0 on which well(s)? _____ Diagrams? N

NOTICE: Newspaper Date 05/22/13 Mineral Owner BLM Surface Owner BLM Permian Basin N. Date 07/06/13

RULE 26.7(A): Identified Tracts? ✓ Affected Persons: Permian Basin / McClusland / Conoco Phillips N. Date 07/06/13

Permit Conditions:

Same as previous order - no additional requirements

Issues: