

MM 05/15/2019
 MM 05/14/2019

RECEIVED:

REVIEWER:

TYPE:

APP NO:

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Geological & Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505

**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND
 REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Delaware Energy, LLC**OGRID Number:** 371195**Well Name:** Night Wrangler SWD #1**API:** Pending**Pool:** SWD; Devonian**Pool Code:** 96101

**SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION
 INDICATED BELOW**

1) TYPE OF APPLICATION: Check those which apply for [A]

A. Location - Spacing Unit - Simultaneous Dedication

☐ NSL☐ NSP (PROJECT AREA)☐ NSP (PRORATION UNIT)☐ SD

B. Check one only for [I] or [II]

[I] Commingling - Storage - Measurement

☐ DHC☐ CTB☐ PLC☐ PC☐ OLS☐ OLM

[II] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX☐ PMX☒ SWD☐ IPI☐ EOR☐ PPR**2) NOTIFICATION REQUIRED TO:** Check those which apply.A. ☒ Offset operators or lease holdersB. ☐ Royalty, overriding royalty owners, revenue ownersC. ☒ Application requires published noticeD. ☒ Notification and/or concurrent approval by SLOE. ☐ Notification and/or concurrent approval by BLMF. ☒ Surface ownerG. ☒ For all of the above, proof of notification or publication is attached, and/or,H. ☐ No notice required**FOR OCD ONLY**☐

Notice Complete

☐Application
Content
Complete

- 3) CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Sarah Presley

Print or Type Name

Signature

5/1/2019

Date

432-685-7005

Phone Number

s.presley@delawareenergy.com

e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance XXX Disposal _____ Storage
Application qualifies for administrative approval? XX Yes _____ No
- II. OPERATOR: Delaware Energy, LLC
ADDRESS: 405 North Marienfeld, Suite 250, Midland TX 79701
CONTACT PARTY: Mike McCurdy PHONE: 432-312-5251
- 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 XXXX No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Mike McCurdy TITLE: Vice-President
SIGNATURE:  DATE: 5/1/2019
E-MAIL ADDRESS: m.mccurdy@delawareenergy.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: Delaware Energy, LLCWELL NAME & NUMBER: Night Wrangler SWD # 1WELL LOCATION: 890' FSL & 640' FWL M 2 25S 35E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGEWELLBORE SCHEMATIC see attached wellbore sketchWELL CONSTRUCTION DATASurface CasingHole Size: 17-1/2" Casing Size: 13-3/8", 54.5#
Cemented with: 500 sx. or ft³
Top of Cement: surface Method Determined: Plan to CirculateIntermediate CasingHole Size: 12-1/4" Casing Size: 9-5/8", 47#, L-80
Cemented with: 2,500' sx. or ft³
Top of Cement: surface Method Determined: Plan to CirculateProduction CasingHole Size: 8-1/2" Casing Size: 7-5/8", 39#, P-110
Cemented with: 650 sx. or ft³
Top of Cement: Top of Liner Method Determined: Plan to Circulate
to liner topTotal Depth: 17,409'Injection Interval17,409' feet to 18,409'
(OPEN HOLE)

INJECTION WELL DATA SHEETTubing Size: 5.5" BTC x 5.5" Flush Joint Lining Material: Fiber GlassType of Packer: Weatherford Arrow Set IXPacker Setting Depth: 17,359'Other Type of Tubing/Casing Seal (if applicable): noneAdditional Data1. Is this a new well drilled for injection? XXXXXX Yes NoIf no, for what purpose was the well originally drilled? N/A2. Name of the Injection Formation: Devonian3. Name of Field or Pool (if applicable): SWD; Devonian4. 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. N/A

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

Below: none

Next Higher: Delaware 5,109' – 8,709'; Bone Springs 8,709' – 11,109'; Wolfcamp 11,109' – 12,864'; Strawn 12,864' – 13,134'; Atoka 13,134' – 14,634'; Morrow 14,634' – 16,734'

Additional Questions on C-108

VII.

1. Proposed average and maximum daily rate and volume of fluids to be injected;

Average 15,000-20,000 BWPB, Max 25,000 BWPB

2. Whether the system is open or closed;

Open System, Commercial SWD

3. Proposed average and maximum injection pressure;

Average 1,500-2,500 PSI, Max 3,482 PSI

4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,

Bone Spring, Delaware, and Wolfcamp produced water. No known incompatibility exists with these produced water types and the Devonian. Devonian formation is used as a disposal interval throughout the Delaware Basin for Wolfcamp, Bone Springs, and Delaware produced water. See attached water analysis from Bone Spring, Wolfcamp, and Delaware produced water.

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.).

See attached Lea County Devonian Water Samples

***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.**

The proposed disposal interval is in the Devonian formation 17,409'-18,409'. Devonian is an impermeable organic Shale at the very top (17,159 ft, Woodford Shale) 100ft thick followed by permeable lime, dolomite, and small amount of shale 1000ft thick. There are no fresh water zones underlying the proposed injection zone. Usable water depth is from surface to +/- 165', the water source is older alluvium (Quaternary). All the fresh water wells in the area have an average depth to water of 200ft per State Engineer.

IX. Describe the proposed stimulation program, if any.

60,000 gallons 20% HCL acid job with packer

X. Attach appropriate logging and test data on the well

Mud log will be filed after the well has been drilled. All cased hole and open hole Logs will be filed following drilling operations.

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.

Attached is a water sample taken from 32.122971, -103.373007

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.

Delaware Energy, L.L.C. has reviewed and examined available geologic and engineering data in the area of interest for the Night Wrangler SWD #1 and have found no evidence of faults or other hydrologic connections between Devonian disposal zone and the underground sources of drinking water.

Furthermore, there exist many impermeable intervals between the injection interval and the fresh ground water from the top of the Devonian Carbonate and the base of the ground water.

Mike McCurdy

Vice President

5/1/2019

Title

Date

III. WELL DATA

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

Night Wrangler SWD #1, Sec. 2-T25S-R35E, 890' FSL & 640' FWL, UL M, Lea County, New Mexico

(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.

Casing Size	Setting Depth	Sacks of Cement	Hole Size	Top of Cement	Determined
13-3/8"	500'	500	17-1/2"	Surface	CIRC
9-5/8"	11,109'	2500	12-1/4"	Surface	CIRC
7-5/8"	10,909'-17,409'	650	8-1/2"	Liner Top	CIRC & CBL

(3) A description of the tubing to be used including its size, lining material, and setting depth.

5-1/2" BTC X 5-1/2" Flush Joint, Internally Fiber Glass Coated Tubing set 50 to 100ft above open hole

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Weatherford Arrow Set 1X injection packer, nickel plated with on/off tool

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.

Devonian Formation

Pool Name: SWD (Devonian)

(2) The injection interval and whether it is perforated or open-hole.

17,409' to 18,409' (Open hole)

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

Well is a planned new drill for SWD

(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.

None, well is a planned new drill

(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.

Next Higher: Delaware 5,109' – 8,709'; Bone Springs 8,709' – 11,109'; Wolfcamp 11,109' – 12,864';
Strawn 12,864' – 13,134'; Atoka 13,134' – 14,634'; Morrow 14,634' – 16,734'

Next Lower: None

DISTRICT I

1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-8161 Fax: (575) 393-0720

DISTRICT II

811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-0720

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-8178 Fax: (505) 334-8170

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 and 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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 96101	Pool Name SWD; DEVONIAN
Property Code	Property Name NIGHT WRANGLER SWD	Well Number 1
OGRID No. 371195	Operator Name DELAWARE ENERGY	Elevation 3209'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	2	25 S	35 E		890	SOUTH	640	WEST	LEA

Bottom Hole Location If Different From Surface

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

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

N.: 425789.1 E.: 846588.2 (NAD83)	N.: 425812.9 E.: 849228.1 (NAD83)	N.: 425836.6 E.: 851867.8 (NAD83)
N.: 423111.4 E.: 846612.6 (NAD83)	N.: 423166.2 E.: 851899.9 (NAD83)	
N.: 420475.1 E.: 846634.2 (NAD83)	N.: 420508.0 E.: 848278.4 (NAD83)	N.: 420541.1 E.: 851931.6 (NAD83)

640'

890'

SURFACE LOCATION
Lat - N 32.154571°
Long - W 103.344786°
NADSPCE- N 421372.9
E 847266.9
(NAD-83)

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

Sarah Presley 5.1.19
Signature Date
Printed Name
s.presley@delawareenergy.com
Email Address

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

FEBRUARY 22 2019
Date Surveyed
Signature & Seal of Professional Surveyor
7977
Certificate of Professional Surveyor 7977
BASIN SURVEYS

0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

WO Num.: 34335

**SECTION 2, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.**

NIGHT WRANGLER SWD #1

ELEV. - 3209'

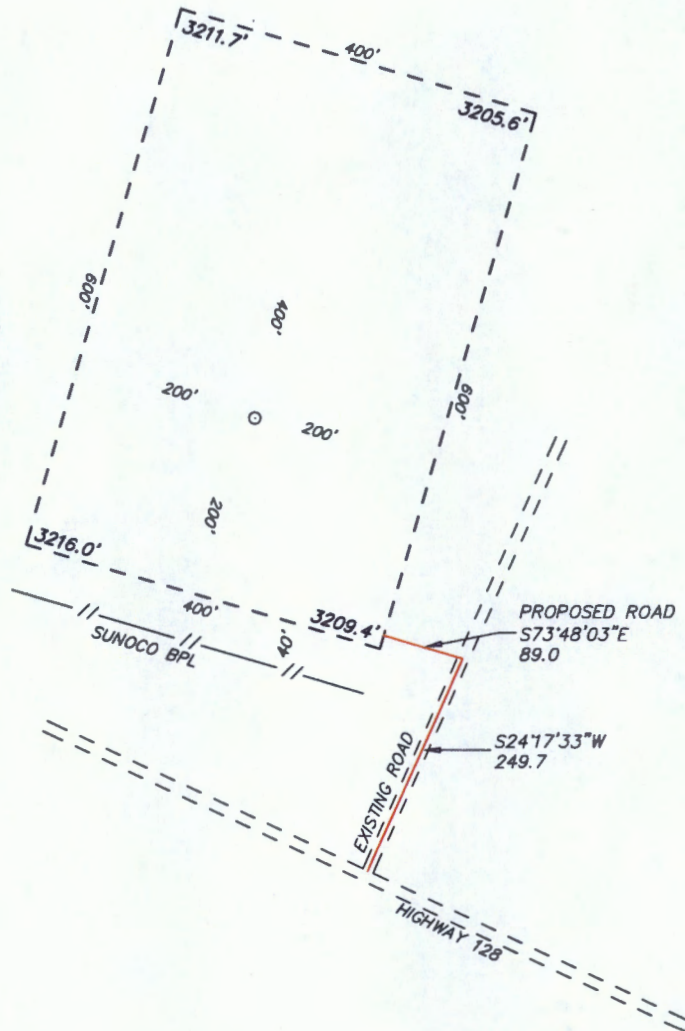
Lat - N 32.154571°

Long - W 103.344786°

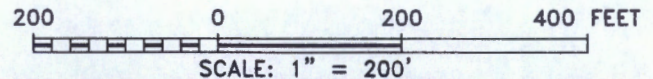
NMSPCE- N 421372.9

E 847266.9

(NAD-83)



JAL, NM IS ±9 MILES TO THE SOUTHEAST OF LOCATION.



DELAWARE ENERGY

REF: NIGHT WRANGLER SWD #1 / WELL PAD TOPO

THE NIGHT WRANGLER SWD #1 LOCATED 890' FROM
THE SOUTH LINE AND 640' FROM THE WEST LINE OF
SECTION 2, TOWNSHIP 25 SOUTH, RANGE 35 EAST.

N.M.P.M., LEA COUNTY, NEW MEXICO.



P.O. Box 1786 (575) 393-7316 - Office
1120 N. West County Rd. (575) 392-2206 - Fax
Hobbs, New Mexico 88241 basin-surveys.com

W.O. Number: 34335

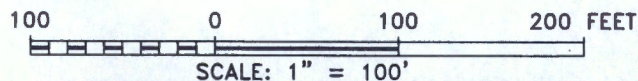
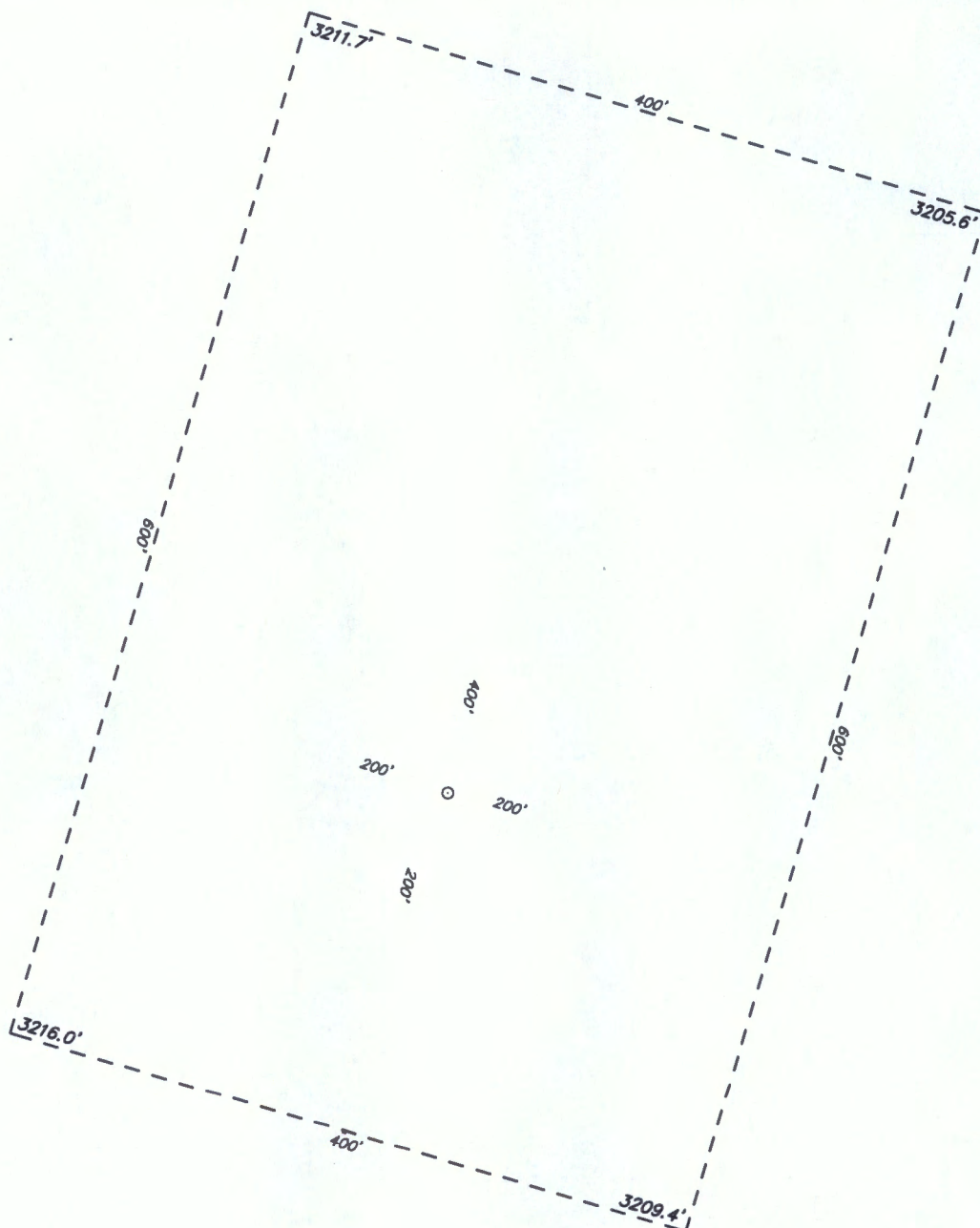
Drawn By: J GOAD

Date: 3-4-2019

Survey Date: 2-22-2019

Sheet 1 of 1 Sheets

**SECTION 2, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



DELAWARE ENERGY

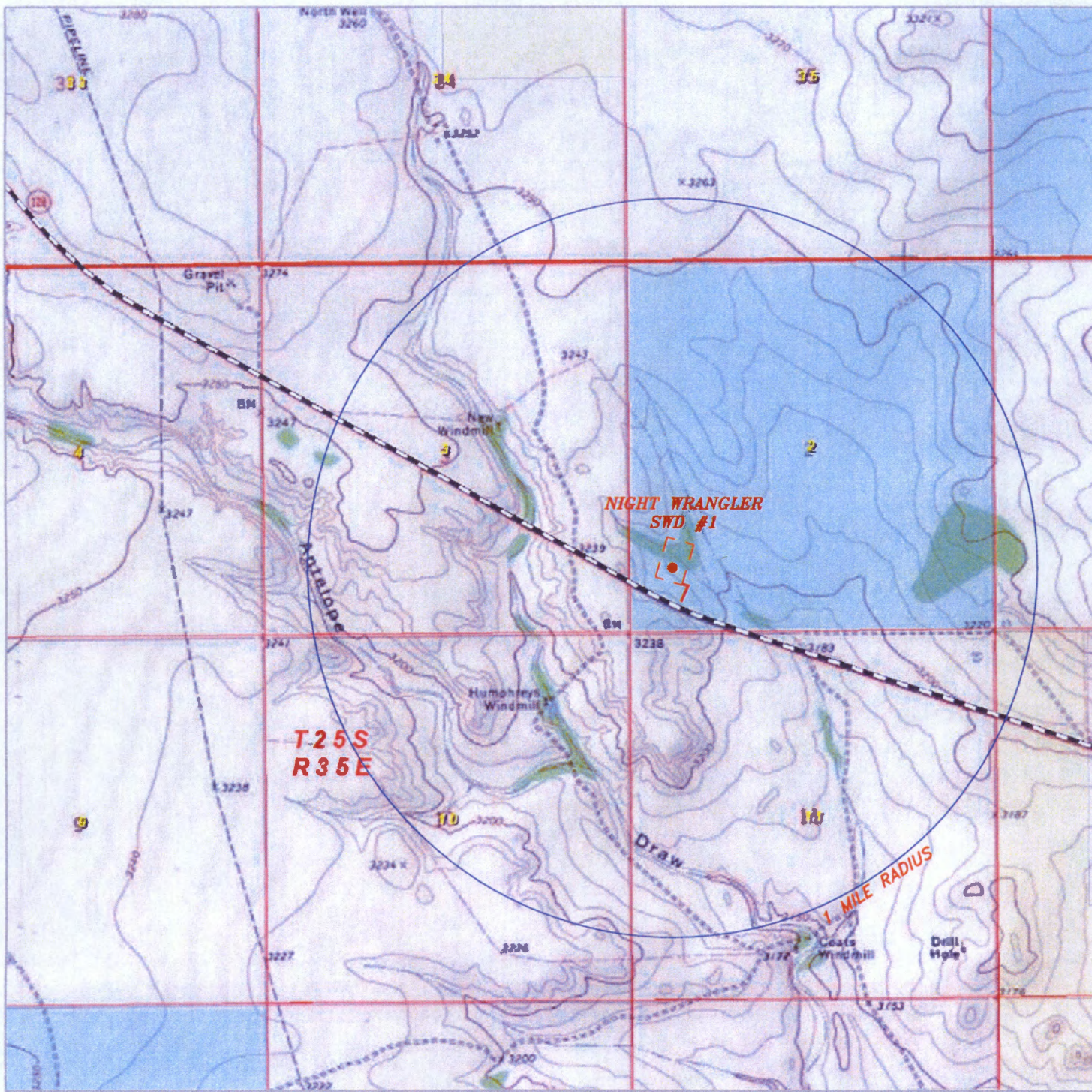
REF: NIGHT WRANGLER SWD #1 / WELL PAD TOPO

THE NIGHT WRANGLER SWD #1 LOCATED 890' FROM
THE SOUTH LINE AND 640' FROM THE WEST LINE OF
SECTION 2, TOWNSHIP 25 SOUTH, RANGE 35 EAST.

N.M.P.M., LEA COUNTY, NEW MEXICO.

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surveys

focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com



NIGHT WRANGLER SWD #1

Located 890' FSL and 640' FWL
 Section 2, Township 25 South, Range 35 East,
 N.M.P.M., Lea County, New Mexico.

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 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basin-surveys.com

0' 1000' 2000' 3000' 4000'
 SCALE: 1" = 2000'

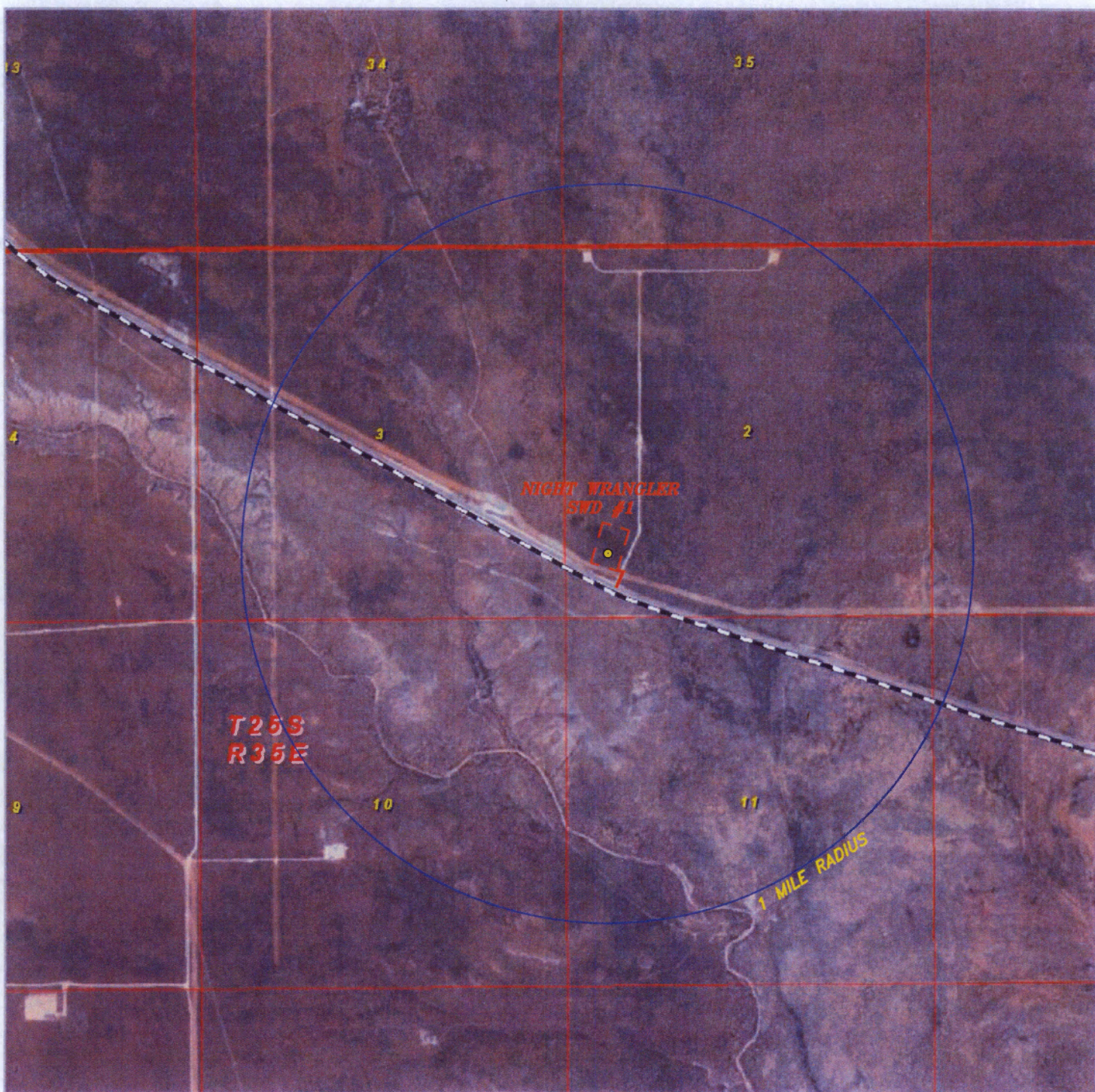
W.O. Number: JG 34335

Survey Date: 2-22-2019

YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



DELAWARE
ENERGY



NIGHT WRANGLER SWD #1

Located 890' FSL and 640' FWL
 Section 2, Township 25 South, Range 35 East,
 N.M.P.M., Lea County, New Mexico.

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 (575) 392-2206 - Fax
 basinsurveys.com

0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

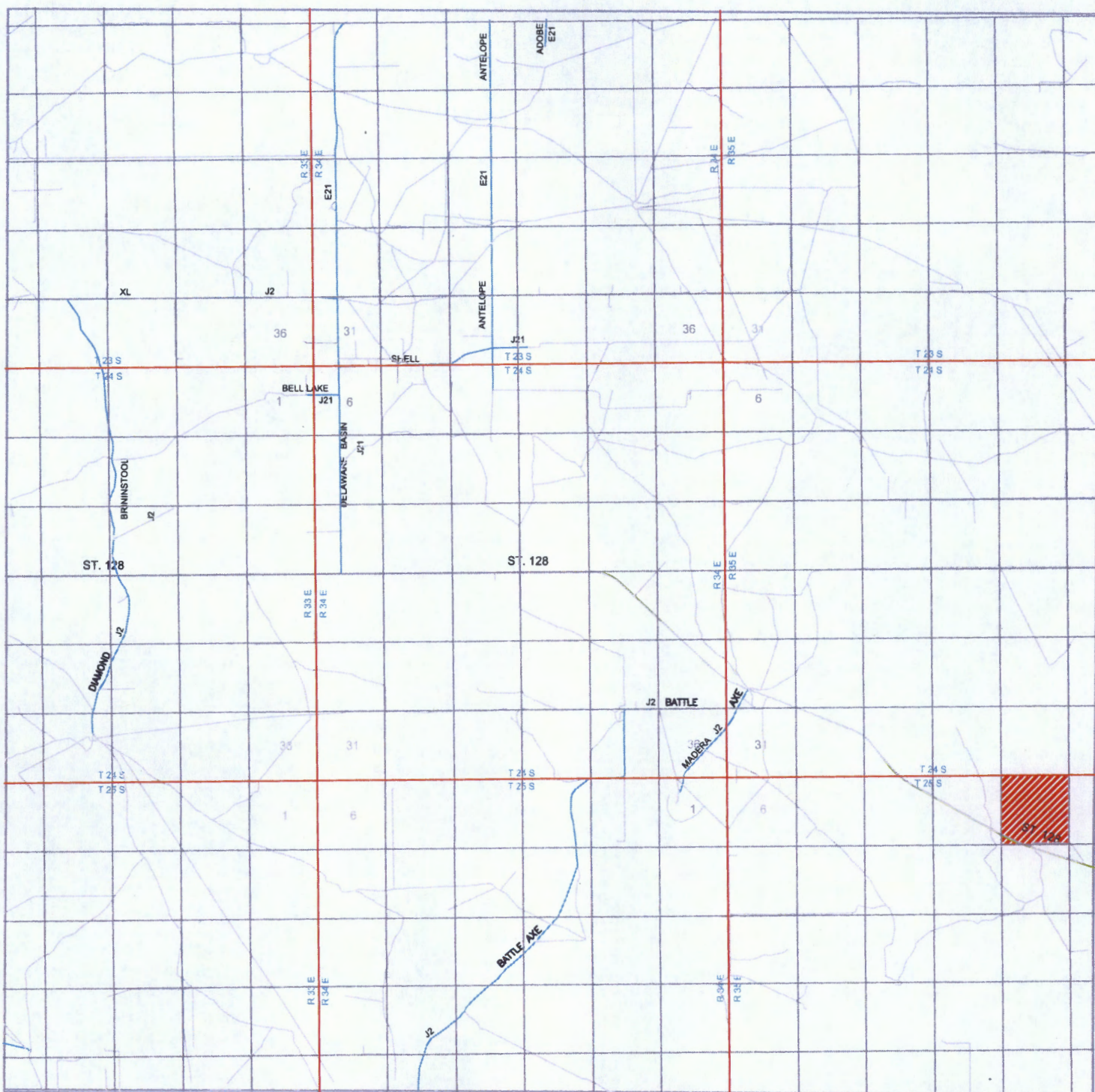
W.O. Number: JG 34335

Survey Date: 2-22-2019

YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



DELAWARE
ENERGY



NIGHT WRANGLER SWD #1

Located 890' FSL and 640' FWL
Section 2, Township 25 South, Range 35 East,
N.M.P.M., Lea County, New Mexico.

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0' 1000' 2000' 3000' 4000'

SCALE: 1" = 2000'

W.O. Number: JG 34335

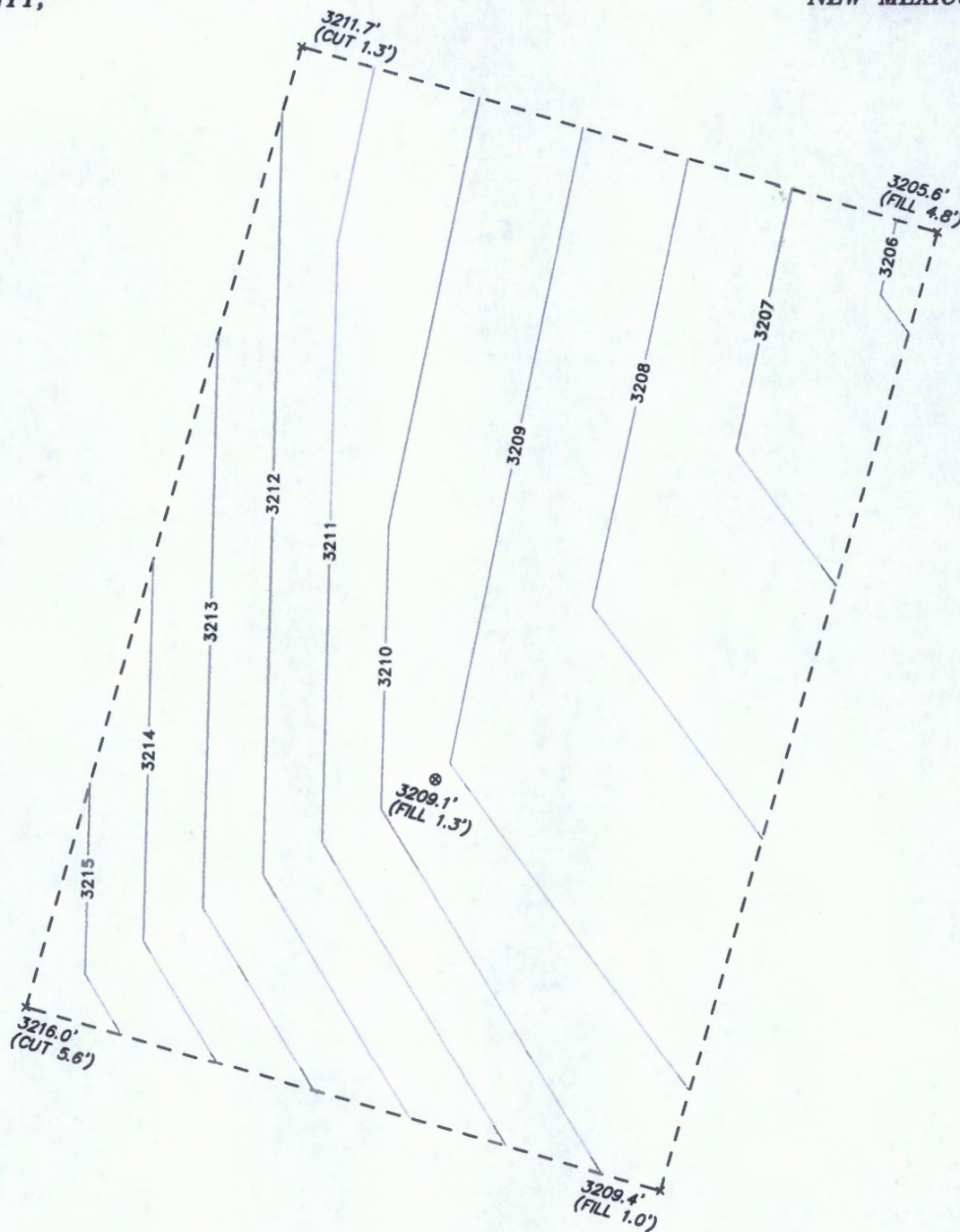
Survey Date: 2-22-2019

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND



DELAWARE
ENERGY

**SECTION 2, TOWNSHIP 25 SOUTH, RANGE 35 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



100 0 100 200 FEET
SCALE: 1" = 100'

DELAWARE ENERGY

REF: NIGHT WRANGLER SWD #1 / CUT & FILL

THE NIGHT WRANGLER SWD #1 LOCATED 890' FROM
THE SOUTH LINE AND 640' FROM THE WEST LINE OF
SECTION 2, TOWNSHIP 25 SOUTH, RANGE 35 EAST.

N.M.P.M., LEA COUNTY, NEW MEXICO.



P.O. Box 1786 (575) 393-7316 - Office
1120 N. West County Rd. (575) 392-2206 - Fax
Hobbs, New Mexico 88241 basin-surveys.com

W.O. Number: 34335 Drawn By: J GOAD Date: 3-4-2019 Survey Date: 2-22-2019 Sheet 1 of 1 Sheets

Water Analysis - Disposal Zone – DEVONIAN

NM WAIDS DATA

S-T-R	FIELD	FORMATION	TDS	CHLRD
24-23S-29E	REMUDA	DEVONIAN	64582	37500
24-23S-29E	REMUDA	DEVONIAN	56922	29000
06-23S-34E	BELL LAKE NORTH	DEVONIAN	71078	42200
34-23S-34E	ANTELOPE RIDGE	DEVONIAN	80187	47900

Water Analysis - Source Zone – BONE SPRING



Laboratory Analysis
Endurance
Jazzmaster 17 State #4H

Sample Date: 1/31/2014
Lea Co. NM

		Water Analysis Measurements		Cations (+)		Anions (-)	
				mg/L		mg/L	
Dissolved Solids (mg/L)	100	Ox in Water (ppm)	N/A	Sulfate (S ₄)	0	Carbonate (CO ₃)	0
Carbon Dissolved (mg/L)	69.18	Specific Gravity	1.130	Calcium (Ca)	18.440	Bicarbonate (HCO ₃)	16.00
Hydrogen Sulfide (mg/L)	0.0	Total Dissolved Solids (TDS)		Magnesium (Mg)	380	Chloride (mg/L)	118.570
pH	5.7	(mg/L) x 10 ⁻³	180.000	Sodium (Na)	34.770	Sulfate (SO ₄)	319
Temperature °F	73	Total Hardness (mg/L)	18.100	Iron (Fe)	3.00		
				Manganese (Mn)	0.00		

Water Analysis - Source Zone – DELAWARE

P. O. BOX 1488
 WASHINGTON, D.C. 20546
 PH. 202 576 2800

Martin Mayer Laboratories, Inc.

2000
© 2000
© 2000

RESULT OF WATER ANALYSES

TO Mr. Joe Seall LABORATORY NO. 99293
P. O. Box 21810, Midland, TX 79710 SAMPLE RECEIVED 9-18-92
RESULTS REPORTED 9-18-92

COMPANY Mexidian Oil Company LEASE Digger Lake #1
FIELD OR POOL Wildcat
SECTION _____ BLOCK _____ SURVEY _____ COUNTY Lee STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:

NO 1 Recovered water - taken from Digger Lake fl. 9-9-92
 NO 2 _____
 NO 3 _____
 NO 4 _____

REMARKS Delavarn

[illegible]



P.O. Box 3394, Midland, Texas 79702
Phone (432) 684-4233 Fax (432) 684-4277

Water Analysis

Code 214851

Client Information

Sample Information

**Delaware Energy
County:**

Lea

Lease/Well: Night Wrangler/SWD

Sample Point: Stock Tank

Date Sampled: 04/17/2019

Rep: Derrick Boutwell

Date Reported: 04/22/2019

Results

Cations

Ion	Concentration(mg/L)
Barium (as Ba)	0
Calcium (as Ca)	153
Iron (as Fe)	0
Sodium (as Na)	1160
Magnesium (as Mg)	243

Other Measurements

Measurement	Value
pH	8.09
SG	1.005
Turbidity	5
CO ₂	
Total Dissolved Solids	2999.000

Anions

Ion	Concentration(mg/L)
Chlorides (as Cl)	394
Sulfate (as SO ₄)	976
Carbonate (as CO ₃)	0
Bicarbonates (as HCO ₃)	73
Sulfide (as S ²⁻)	0

Scaling Indices

Temp(F)	CaCO ₃	CaSO ₄ *2H ₂ O	CaSO ₄	BaSO ₄
80	0.4676	0.0000	0.0000	-28.0518
120	0.8179	0.0000	0.0000	-28.2645
160	1.2306	0.0000	0.0000	-28.3916
200	1.6056	0.0000	0.0000	-28.4464
250	1.9457	0.0000	0.0000	-28.4076

Low = < 0.200, Moderate = 0.200-0.999, High = > 1.00

Comments

Coordinates 32.122971-103.373007.

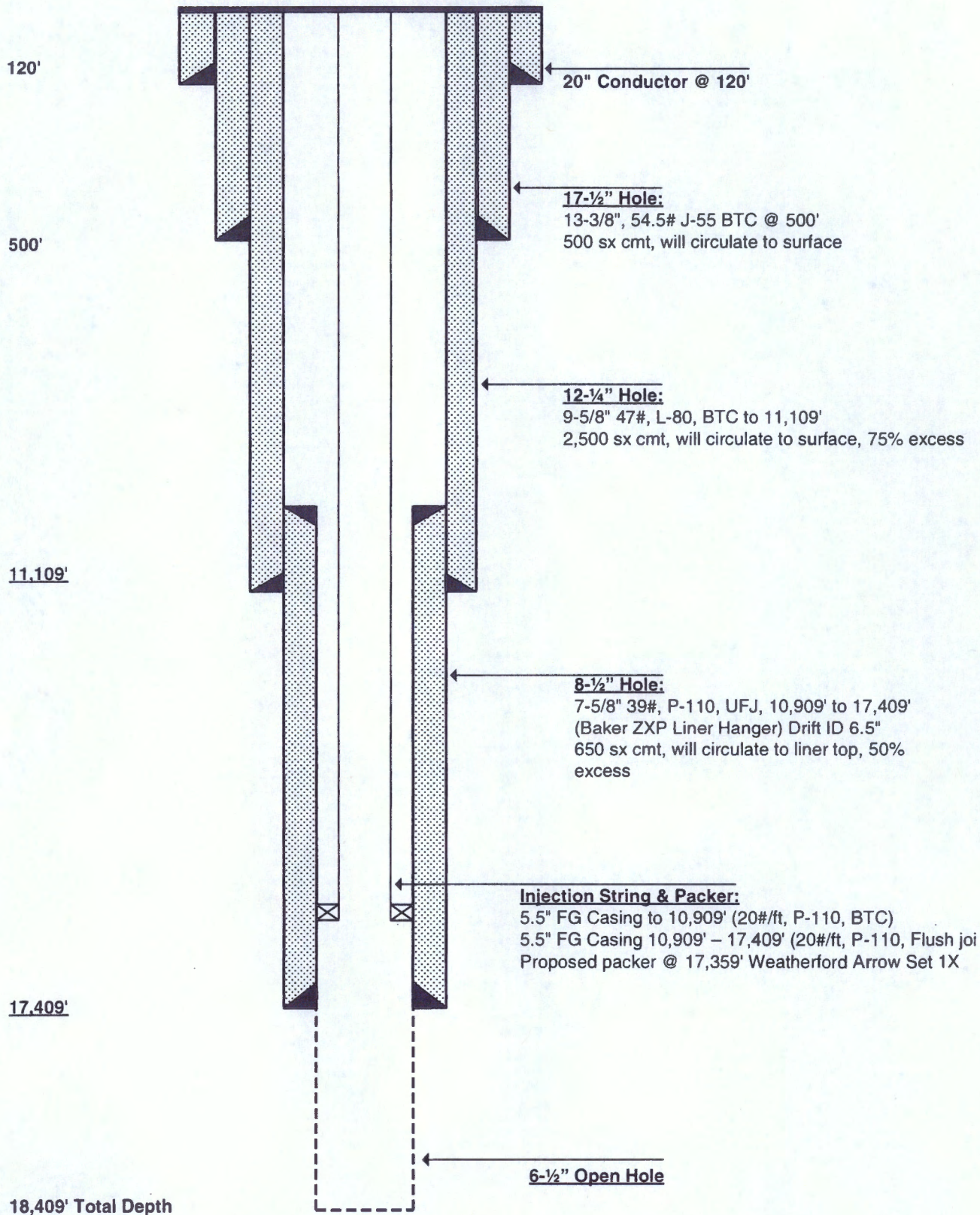


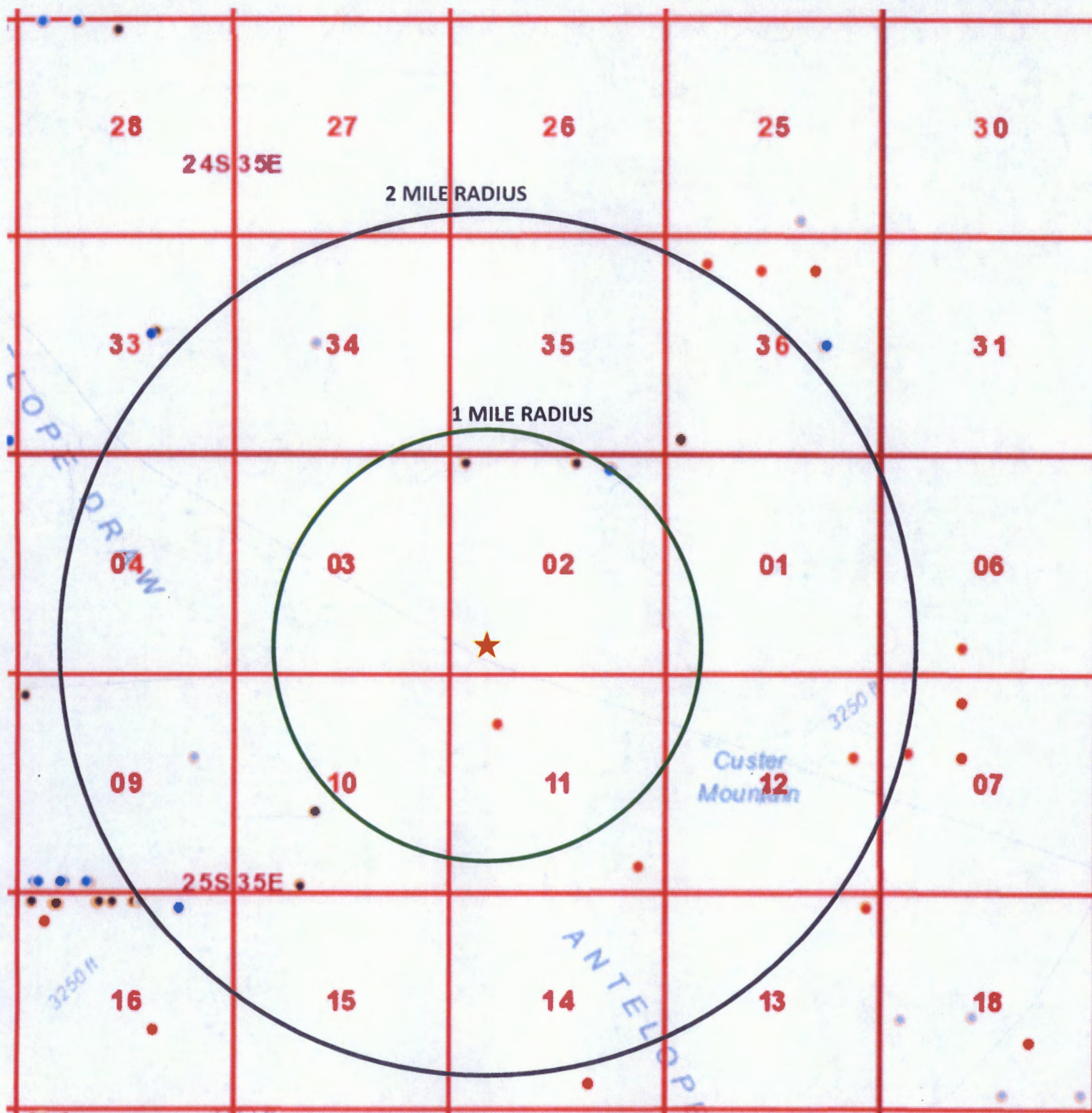
Night Wrangler SWD # 1

API # PENDING
890' FSL & 640' FWL, Sec. 2, T25S, R35E, UL "M"
LEA COUNTY, NEW MEXICO

ELEVATION:
GL: 3,209'

PROPOSED WELLBORE





WELLS - ONE MILE RADIUS

NO WELLS PENETRATE THE DEVONIAN FORMATION IN THE AOR

SECTION 2-T25S-R35E



Night Wrangler SWD #1
(Proposed Location)
Delaware Energy, LLC

★ Night Wrangler SWD #1
Sec. 2-T25S-R35E
Lea Co. NM

Night Wrangler SWD #1

LEASES – ONE MILE RADIUS

Section 1, T25S-R35E

Federal Lease (NMNM 045706)

- **Occidental Permian LP (Lessee)**
5 E Greenway Plaza #110
Houston, TX 77046-0521
- **Franklin Mountain Energy 2**
123 West Mills Ave. Suite 600
El Paso, TX 79901
- **Bureau of Land Management**
620 E Greene Street
Carlsbad, NM 88220

Section 2, T25S-R35E

State Leases (VB21213 & VB21173)

- **Franklin Mountain Energy 2 (Held & Lessee)**
123 West Mills Ave. Suite 600
El Paso, TX 79901

Section 3, T25S-R35E

Federal Lease (NMNM 101608)

- **COG Operating, LLC (Held & Lessee)**
600 W. Illinois
Midland, TX 79701
- **Tap Rock Resources**
602 Park Point Dr., Ste 200
Golden, CO 80401

Section 10, T25S-R35E

Federal Lease (NMNM 101608)

- **COG Operating, LLC (Held & Lessee)**
600 W. Illinois
Midland, TX 79701

- **Chief Capital (O&G) II, LLC**
8111 Westchester, Ste 900
Dallas, TX 75225

Section 11, T25S-R35E

Fee

- **Franklin Mountain Energy 2**
123 West Mills Ave. Suite 600
El Paso, TX 79901

Federal Lease (NMNM 101608)
- **COG Operating, LLC (Lessee)**
600 W. Illinois
Midland, TX 79701
- **Bone Spring Resources, LLC**
1621 Central Ave.
Cheyenne, WY 82001
- **DRG, LTD**
P.O.Box 90
Littleton, CO 80120
- **Chief Capital (O&G) II, LLC**
8111 Westchester, Ste 900
Dallas, TX 75225

Section 12, T25S-R35E

Fee

- **Franklin Mountain Energy 2**
123 West Mills Ave. Suite 600
El Paso, TX 79901
- **Bureau of Land Management**
620 E Greene Street
Carlsbad, NM 88220

Section 34, T24S-R35E

Fee

- **Tap Rock Resources**
602 Park Point Dr., Ste 200
Golden, CO 80401

Section 35, T24S-R35E

Fee

- **Tap Rock Resources**
602 Park Point Dr., Ste 200
Golden, CO 80401

Night Wrangler SWD #1
Location: 890' FSL & 640' FWL
Sec. 2, T-25-S, R-35-E

Estimated Pre-Drill Formation Tops

Top of Salt	759'
Base Salt	5,059'
Delaware Mountain Group	5,109'
Bone Spring/Abo	8,709'
Wolfcamp	11,109'
Strawn	12,864'
Atoka	13,134'
Morrow	14,634'
Barnett	16,434'
Mississippian	16,734'
Woodford	17,159'
Devonian	17,409'

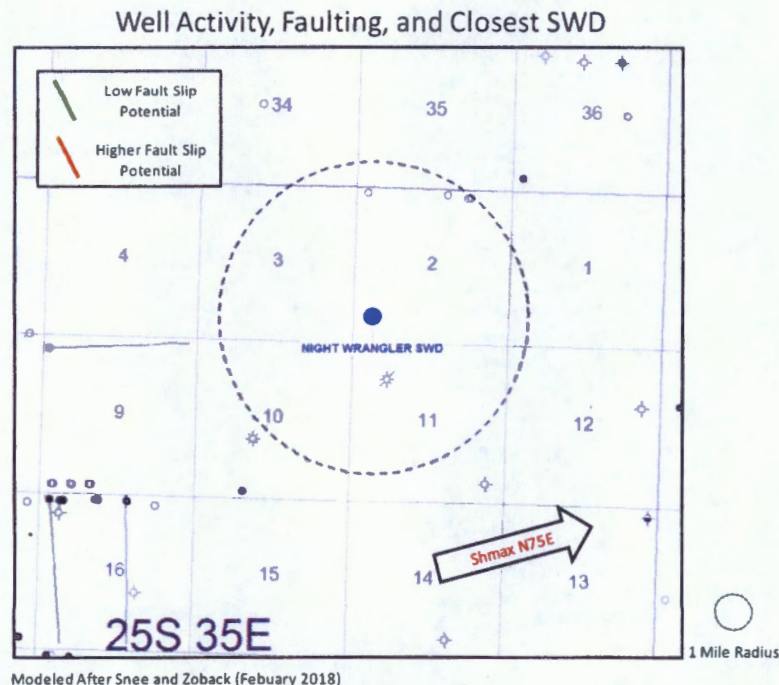
Statement Regarding Seismicity and Well Location (Night Wrangler SWD #1)

Historically, the area near the proposed Night Wrangler SWD #1 has not seen any major seismic activity. There have been two seismic events (as per public data available on the USGS database) in the area. All events are over 14 miles from the proposed SWD location. The most recent event was 17.2 miles northeast of the location on June 2, 2001 and measured 2.6, the closest event was 14.6 miles to the northwest and measured 2.9 on December 4, 1984.

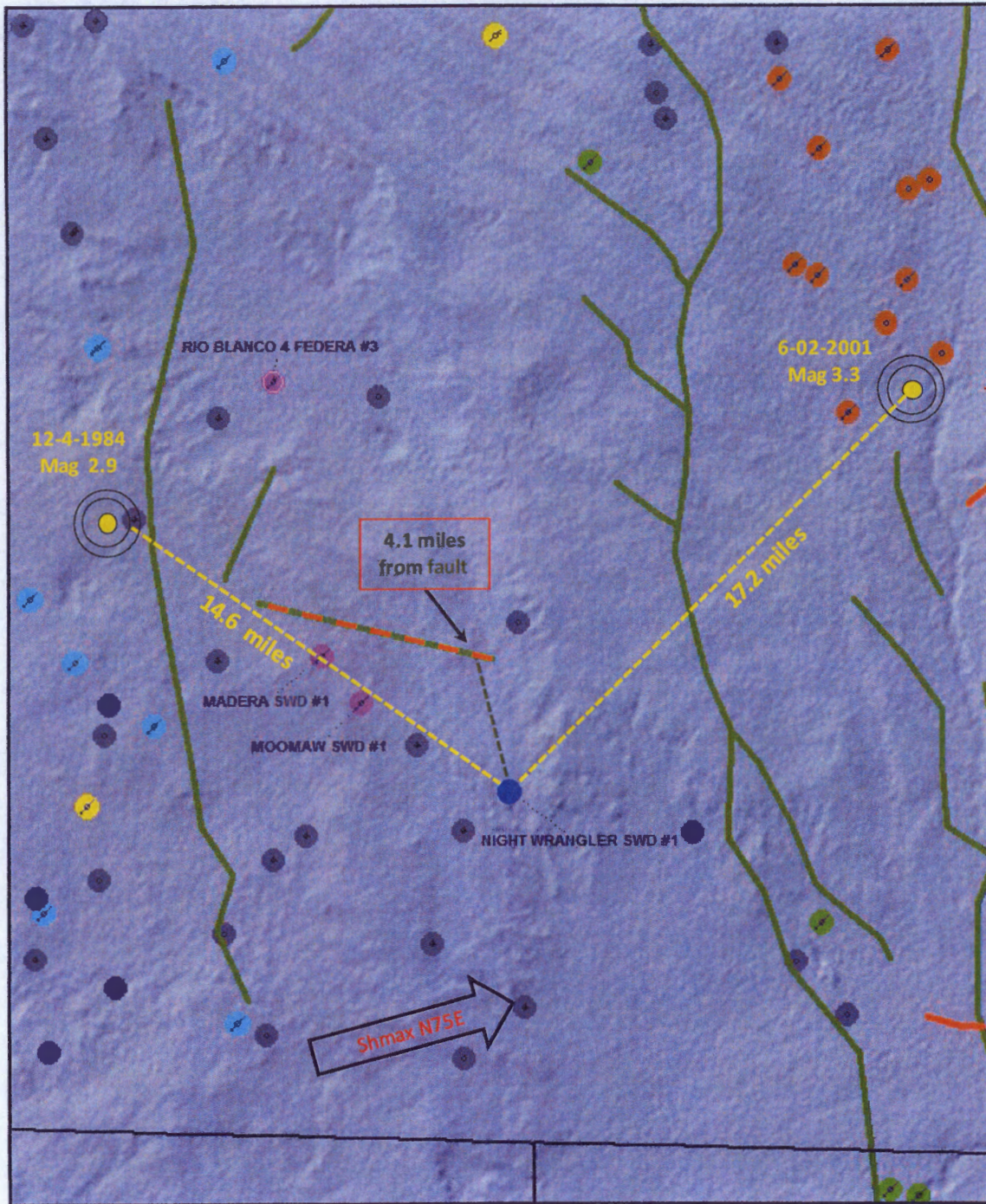
Delaware Energy does not own 2D or 3D seismic data near the proposed SWD location therefore the fault interpretations are based on data obtained from the USGS New Mexico Faults Database (2005) and other published data. Based on these sources the closest fault would be approximately 4.1 miles north of the location. A recent technical paper written by Snee and Zoback, "State of Stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity", was published in the February 2018 edition of The Leading Edge. The study evaluates the strike-slip probability of known faults using FSP analysis. The study predicts that the N-S trending faults in the area (green) should have a very low probability of being critically stressed resulting in an induced seismicity event. The W-E trending faults (orange) would have a higher probability of being critically stressed, resulting in potential slip, due to the relationship of the strike of the fault and the regional Shmax orientation (approx. N 75 deg E) in the area. The exact position of this fault relative to the proposed location, and depth of the target formation, is unknown. Risk of contact with the fault should be evaluated and modeled prior to drilling the well. It is uncertain whether the nearby seismic activity was associated with this fault, or another fault not documented in the public domain. Potential contact with the fault should be reduced due to the distance of the proposed SWD well from the fault (4.1 miles).

The proposed Night Wrangler SWD #1 is located well away from the nearest active Devonian SWD or other SWD wells (see map below). The well should meet current OCD and Industry recommended practices.

Kevin J. Schepel
Petrophysical Advisor
kevin.schepel@att.net
214-212-6540



Proximity to Historic Earthquake Activity and Faults



Modeled After Snee and Zoback (February 2018)

- Devonian SWD
- Morrow SWD
- Delaware SWD
- Yates SWD
- Proposed Location
- Permits
- San Andres SWD
- USGS Earthquake
- Low Fault Slip Potential
- Higher Fault Slip Potential

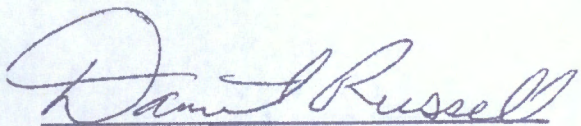
Data and Interpretation Disclosure - Although care has been taken to ensure that these data are up to date and accurate, this information and data is being providing as is. The data are what is believed to be the best public data available based on published documents, reports, and information available through the USGS. The user assumes all responsibility and risk for use of the data and interpretations. Users of the data agree not to misuse, add to without permission, or misrepresent the data provided in any way. In no event will the provider of this document be liable to any party for any direct, indirect, incidental, consequential, special or exemplary damages, or lost profit resulting from any use or misuse of this data. Additionally, provider is not liable for any inaccurate data. No person, entity, or user shall use the information in a manner that is in violation of any federal, state, or local law or regulation.

Affidavit of Publication

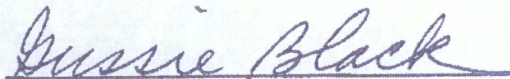
STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, 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).

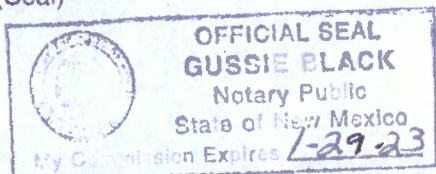
Beginning with the issue dated
March 20, 2019
and ending with the issue dated
March 20, 2019.


Publisher

Sworn and subscribed to before me this
20th day of March 2019.


Business Manager

My commission expires
January 29, 2023
(Seal)



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

LEGAL NOTICE MARCH 20, 2019

Delaware Energy, L.L.C., 405 N. Marienfeld St. Suite 200, Midland, TX 79701, has filed a form C-108 (Application for Authorization to Inject) with the Oil Conservation Division seeking administrative approval to drill the Night Wrangler SWD #1 as a Commercial Salt Water Disposal well.

The Night Wrangler SWD #1 is located at 890' FSL and 640' FWL, Unit Letter M, Section 2, Township 25 South, Range 35 East, Lea County, New Mexico. The well will dispose of water produced from oil and gas wells into the Devonian Formation from 17,409' to 18,409' at a maximum rate of 25,000 barrels of water per day at a maximum pressure of 3,482 psi.

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.

Additional information can be obtained by contacting Delaware Energy, L.L.C., at (432) 685-7005. #33909

67114908

00226059

MIKE MCCURDY
DELAWARE ENERGY
405 N. MARIENFELD, STE 250
MIDLAND, TX 79701

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Littleton, CO 80120

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 1625 N. French Dr.
 City, State, ZIP+4®
 Hobbs, NM 88240

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MAY 14 2019 PM03:23

Delaware Energy, LLC
Application for Injection/SWD
Night Wrangler SWD #1

UL M, Sec. 2, T-25-S, R-35-E, 890' FSL & 640' FWL, Lea Co., NM

May 1, 2019

Contents:

1. Administrative Application Checklist
2. Form C-108: Application for Authority to Inject
3. Form C-108 Additional Questions Answered
4. Form C-102
5. Chemical Analysis of Devonian Formation Water Sample
6. Chemical Analysis of Bone Spring Formation Water Sample
7. Chemical Analysis of Delaware Formation Water Sample
8. Planned wellbore diagram for the Night Wrangler SWD #1
9. ~~Tabular Data on All Wells of Public Record within the Area of Review which Penetrate the Proposed Injection Zone~~ (No applicable wells)
10. Map Identifying all Wells and Leases within Two Miles of Any Proposed Injection Well with a One Mile Radius Circle Drawn Around the Proposed Injection Well
11. Sample of Letter Sent with This Application Packet to Owner of Surface of the Land on Which the Well is to be Located and to each Leasehold Operator within One Mile of the Well Location
12. Formation Tops
13. Certified Mailers
14. Seismicity Assessment
15. Carlsbad Current-ARGUS Affidavit of publication

Delaware Energy, L.L.C.
405 N. Marienfeld, Suite 200
Midland, TX 79701
Office: (432) 685-7005

May 1, 2019

Surface Owner / Offset Operators

Re: Notification of Application for Authorization to Inject
Night Wrangler SWD #1 Well

Ladies and Gentlemen:

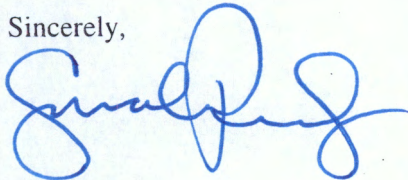
Delaware Energy, LLC is seeking administrative approval to utilize the proposed Night Wrangler SWD #1 as a commercial Salt Water Disposal well. As required by the New Mexico Oil Conservation Division Rules, we are notifying you of the following proposed salt water disposal well. This letter is a notice only. No action is required unless you have questions or objections.

<u>Well:</u>	Night Wrangler SWD #1
<u>Proposed Disposal Zone:</u>	Devonian Formation (from 17,409' - 18,409')
<u>Location:</u>	890' FSL & 640' FWL, UL M, Sec. 2, T25S, R35E, Lea Co., NM
<u>Applicants Name:</u>	Delaware Energy, L.L.C.
<u>Applicants Address:</u>	405 N. Marienfeld, Suite 200, Midland, TX 79701

This application for water disposal well will be filed with the New Mexico Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. And their phone number is 505-476-3460.

Please call Sarah Presley with Delaware Energy, LLC if you have any questions at 432-685-7005.

Sincerely,



Sarah Presley

DISTRIBUTION LIST

Surface Owner:

State of New Mexico
310 Old Santa Fe Trail
Santa Fe NM 87501

Offset Operators/Leasehold Owners:

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Cheyenne, WY 82001

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620 E Greene Street
Carlsbad, NM 88220

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600 W. Illinois
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Littleton, CO 80120

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El Paso, TX 79901

Occidental Permian LP
5 E Greenway Plaza #110
Houston, TX 77046-0521

Tap Rock Resources
602 Park Point Dr., Ste 200
Golden, CO 80401

State of New Mexico Oil Conservation Division
District I
1625 N. French Drive
Hobbs, NM 88240

State of New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

McMillan, Michael, EMNRD

From: Sarah Presley <s.presley@delawareenergy.com>
Sent: Wednesday, May 15, 2019 12:47 PM
To: McMillan, Michael, EMNRD
Subject: [EXT] RE: Night Wrangler SWD Well No. 1
Attachments: BLM Night Wrangler SWD1.pdf

Sorry about that Mike! I thought we had caught all the ones we needed the BLM to be notified on. Here is the receipt for the BLM

Thanks,

SP

From: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Sent: Wednesday, May 15, 2019 12:20 PM
To: Sarah Presley <s.presley@delawareenergy.com>
Subject: Night Wrangler SWD Well No. 1

Sarah:
Your application for the Night Wrangler SWD Well No. 1 has been suspended.

You did not notify BLM

Mike

Michael McMillan
1220 South St. Francis
Santa Fe, New Mexico
505-476-3448
Michael.mcmillan@state.nm.us

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Night Wrangler
SND #1

Postmark
Here

MAY 15 2019

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