

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

APPLICATION OF NGL WATER
SOLUTIONS PERMIAN, LLC
TO APPROVE SALT WATER
DISPOSAL WELL IN LEA
COUNTY, NEW MEXICO.

CASE NO. 16508

APPLICATION

NGL Water Solutions Permian, LLC ("NGL"), OGRID No. 372338, through its undersigned attorneys, hereby makes this application to the Oil Conservation Division pursuant to the provisions of N.M. Stat. Ann. § 70-2-12, for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, NGL states as follows:

- (1) NGL proposes to drill the Patriot SWD #1 well at a surface location 682 feet from the North line and 655 feet from the West line of Section 31, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.
- (2) NGL seeks authority to inject salt water into the Siluro-Devonian formation at a depth of 16,500' – 18,170'.
- (3) NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.
- (4) NGL anticipates using an average pressure of 2,475 psi for this well, and it requests that a maximum pressure of 3,300 psi be approved for the well.
- (5) A proposed C-108 for the subject well is attached hereto in Attachment A.

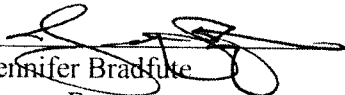
(6) The granting of this application will avoid the drilling of unnecessary wells, will prevent waste, and will protect correlative rights.

WHEREFORE, NGL requests that this application be set for hearing before an Examiner of the Oil Conservation Division on November 1, 2018; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: _____


Jennifer Bradfute

Deana Bennett

Post Office Box 2168

Bank of America Centre

500 Fourth Street NW, Suite 1000

Albuquerque, New Mexico 87103-2168

Telephone: 505.848.1800

Attorneys for Applicant

CASE NO. 16508: Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Siluro-Devonian formation through the Patriot SWD #1 well at a surface location 682 feet from the North line and 655 feet from the West line of Section 31, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. The target injection interval is the Siluro-Devonian formation at a depth of 16,500' – 18,170'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 20 miles west of Jal, New Mexico.

13201154000

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:
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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: NGL WATER SOLUTIONS PERMIAN LLC

OGRID Number: 372338

Well Name: PATRIOT SWD #1

API: TBD

Pool: SWD; SILURIAN-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 holders

B. ☐ Royalty, overriding royalty owners, revenue owners

C. ☒ Application requires published notice

D. ☒ Notification and/or concurrent approval by SLO

E. ☒ Notification and/or concurrent approval by BLM

F. ☒ Surface owner

G. ☐ 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.

CHRIS WEYAND

Print or Type Name

Signature

09/25/2018

Date

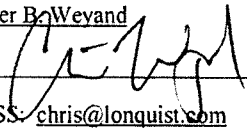
512-600-1764

Phone Number

CHRIS@LONQUIST.COM

e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
Application qualifies for administrative approval? X Yes No
- II. OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC
ADDRESS: 1509 W WALL ST // STE 306 // MIDLAND, TX 79701
CONTACT PARTY: SARAH JORDAN PHONE: (432) 685-0005 x1989
- 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 X 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: Christopher B. Weyand TITLE: Consulting Engineer
SIGNATURE:  DATE: 9/24/2018
E-MAIL ADDRESS: chris@lonquist.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: NGL WATER SOLUTIONS PERMIAN, LLC

WELL NAME & NUMBER: PATRIOT SWD #1

WELL LOCATION: 682 FNL & 655' FWL D 31 24S 34E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 24.000" Casing Size: 20.000"
Cemented with: 1,602 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation
1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"
Cemented with: 3,113 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation
2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"
Cemented with: 3,268 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Cemented with: 318 sx.

Top of Cement: 11,900'

Total Depth: 18,170'

Casing Size: 7.625"

or _____ ft³

Method Determined: Calculation

Injection Interval

16,500 feet to 18,170 feet

(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0' - 11,800' and 5,500", 17 lb/ft, P-110 TCPC from 11,800' - 16,480'
 Lining Material: Duoline

Type of Packer: 7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Incone

Packer Setting Depth: 16,480'

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

Additional Data

1. Is this a new well drilled for injection? X Yes No
 If no, for what purpose was the well originally drilled? N/A
2. Name of the Injection Formation: Devonian, Silurian, Fusselman and Montoya (Top 100')
3. Name of Field or Pool (if applicable): SWD; Silurian-Devonian
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, new drill.
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
Bone Spring: 9,248'
Wolfcamp: 12,194'
Atoka: 13,942'
Morrow: 14,338'

[illegible]

NGL Water Solutions Permian, LLC

Patriot SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Patriot SWD
Well No.	1
Location	S-31 T-24S R-34E
Footage Location	682' FNL & 655' FWL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.438"	0.480"	0.545"	0.500"
ID	19.124"	12.415"	8.535"	6.625"
Drift ID	18.937"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	94 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	J-55	L80	HCL-80	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,200'	5,200'	12,400'	16,500'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	C	C	H,H,C	H
Lead Cement Volume	685	1,659	Stage 1: 553 sks Stage 2: 779 sks Stage 3: 773 sks	81
Tail Cement	C	C	H,H,C	H
Tail Cement Volume	917	1,454	Stage 1: 471 sks Stage 2: 295 sks Stage 3: 397 sks	237
Cement Excess	25%	15%	25%, 25%, 0%	10%
TOC	Surface	Surface	Surface	11,900'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.767"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-11,800'	11,800'- 16,480'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 16,500' – 18,170'

Completion Type: Open Hole

3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Bone Spring	8,208'
Wolfcamp	11,618'
Atoka	13,942'
Morrow	14,238'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

Average Volume: 40,000 BPD

Maximum Volume: 50,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 2,475 PSI (surface pressure)

Maximum Injection Pressure: 3,300 PSI (surface pressure)

4. The injection fluid is to be locally produced water. Attached are produced water sample analyses taken from the closest wells that feature samples from the Atoka, Delaware, Bone Spring, and Wolfcamp formations. It is expected that source water will come primarily from Bone Spring and Wolfcamp formations.
5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler	1,190'
Salado	1,726'
Delaware	5,251'
Bone Spring	9,248'
Wolfcamp	12,194'
Strawn	13,681'
Atoka	13,942'
Morrow	14,338'
Mississippian Lime	15,998'
Woodford	16,368'
Devonian	16,480'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Patriot SWD #1 location, there are two water wells, but the depths of those wells were not recorded. Water wells in the greater surrounding area had a depth average of 358 ft and a water depth average of 235 ft. These wells are generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

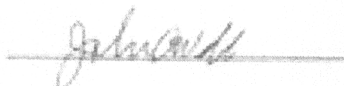
There are two water wells that exist within one mile of the well location, but neither well is active, so samples could not be obtained. A map and Water Right Summaries from the New Mexico Office of the State Engineer are attached for wells C-03602 POD2 and C-03600 POD2.

XII. Affirmative Statement of Examination of Geologic and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Patriot SWD #1) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: 

DATE: 9/24/2018

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 and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address NGL WATER SOLUTIONS PERMIAN, LLC 1509 W WALL ST, STE 306 MIDLAND, TX 79701		² OGRID Number 372338 ³ API Number TBD
⁴ Property Code	⁵ Property Name PATRIOT SWD	⁶ Well No. 1

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
D	31	24S	34E	N/A	682'	NORTH	655'	WEST	LEA

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
-	-	-	-	-	-	-	-	-	-

⁹ Pool Information

Pool Name SWD, Silurian-Devonian	Pool Code 96101
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Additional Well Information

¹¹ Work Type N	¹² Well Type SWD	¹³ Cable/Rotary R	¹⁴ Lease Type Private	¹⁵ Ground Level Elevation 3,495'
¹⁶ Multiple N	¹⁷ Proposed Depth 18,170'	¹⁸ Formation Siluro-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 235'		Distance from nearest fresh water well 5,126'		Distance to nearest surface water > 1 mile

☐ We will be using a closed-loop system in lieu of lined pits

²¹ Proposed Casing and Cement Program

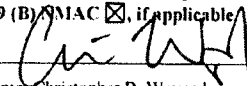
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	94 lb/ft	1,200'	1,602	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	3,113	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,400'	3,268	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	16,500'	318	11,900'
Tubing	N/A	7"	26 lb/ft	0' - 11,800'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	11,800' - 16,480'	N/A	N/A

Casing/Cement Program: Additional Comments

See attached schematic.

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic Blinds, Pipe	10,000 psi	8,000 psi	TBD - Schaffer/Cameron

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒ if applicable. Signature:  Printed name: Christopher B. Weyand Title: Consulting Engineer E-mail Address: chris@lonquist.com Date: 9/20/2018	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">OIL CONSERVATION DIVISION</th> </tr> <tr> <td colspan="2" style="height: 40px; vertical-align: bottom;">Approved By</td> </tr> <tr> <td colspan="2" style="height: 40px; vertical-align: bottom;">Title</td> </tr> <tr> <td style="width: 50%;">Approved Date</td> <td style="width: 50%;">Expiration Date</td> </tr> <tr> <td colspan="2" style="height: 40px; vertical-align: bottom;">Conditions of Approval Attached</td> </tr> </table>	OIL CONSERVATION DIVISION		Approved By		Title		Approved Date	Expiration Date	Conditions of Approval Attached	
OIL CONSERVATION DIVISION											
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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-10
Revised August 1
201
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code 96101	³ Pool Name SWD; Silurian-Devonian
⁴ Property Code	⁵ Property Name PATRIOT SWD		⁶ Well Number 1
⁷ OGRID No. 372338	⁸ Operator Name NGL WATER SOLUTIONS <i>Permian LLC</i>		⁹ Elevation 3495.00'±

" Surface Location

UL or lot no. D	Section 31	Township 24 S	Range 34 E	Lot Idn N/A	Feet from the 682'	North/South line NORTH	Feet from the 655'	East/West line WEST	LEA	County
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" 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
¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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.

	PROPOSED PATRIOT SWD 1 NMSP-E (NAD27) N: 429,990.75' E: 753,359.27' NMSP-E (NAD83) N: 430,049.09' E: 794,544.38' Lot: N32°10'46.69" Long: W103°30'53.70"	SECTION 31	"OPERATOR CERTIFICATION" I hereby certify that the information contained herein is true and complete the best of my knowledge and belief, and that this organization either owns working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest or to a voluntary pooling agreement or a compulsory pooling order hereafter entered by the division. Signature Date 9/24/2018 Chris Weyand Printed Name chris@lonquist.com E-mail Address
	SECTION 31		"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. 8/17/18 Date of Survey Signature and Seal of Professional Surveyor Certificate Number

Patriot SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co., NM

PCS: NAD 1983 SPCS NM-E FPS 3001 (US FL)
 Drawn by: ASG Date: 9/12/2018 Approved by: ELR

LONQUIST & CO. LLC

**PETROLEUM
ENGINEERS
ADVISORS**
 AUSTIN HOUSTON WICHITA DENVER CALGARY

- +

Patriot SWD No. 1 SHL

1 Mile

1/2 Mile

2 Mile
- OO Section (NMP LSS 2nd Dn)

Section (NMP LSS 1st Dn)

Township/Range (NMP LSS)

Lateral
- API (28-225-...) SHL Status-Type Count

Horizontal Surface Location (102)

Active - Gas (10)

Active - Oil (10)

Active - SWD (3)

Cancelled/Abandoned Location (9)

Plugged/Well Released - Gas (1)

Plugged/Well Released - Gas (7)

Plugged/Well Released - Oil (10)

API (28-225-...) SHL Status-Type Count

Active - Oil (54)

Cancelled/Abandoned Location (19)

Permitted - Oil (26)

7A Injection (2)

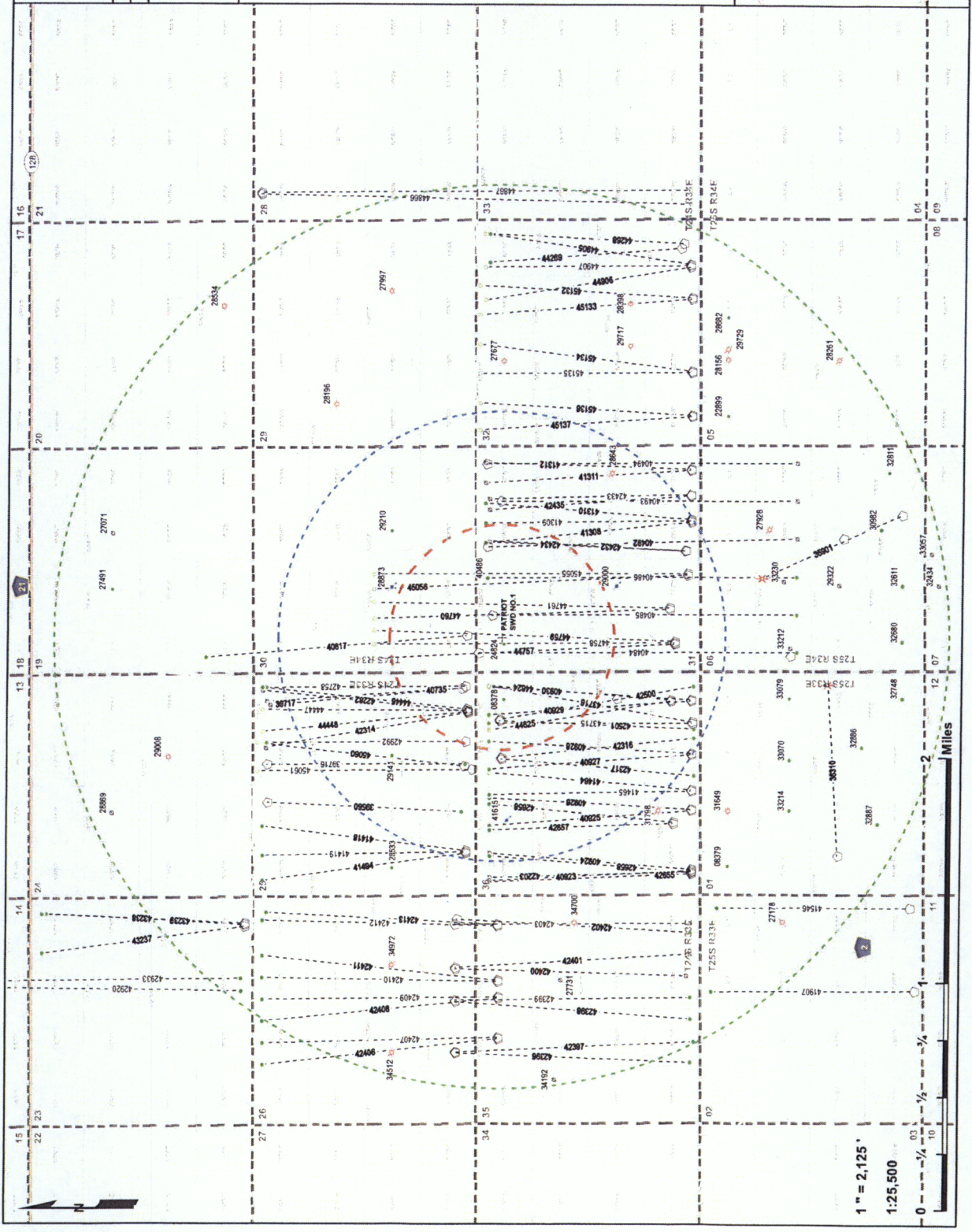
Source: Well SHL Data - NM-OCD (2018)

ANDREWS
 EDDY
 LEA
 NEW MEXICO
 TEXAS
 LOVING
 WINKLER
 REEVES

Map Extent

1" = 2,125'
 1:25,500

0 1/4 1/2 3/4 1 1 1/4 1 1/2 1 3/4 2 Miles



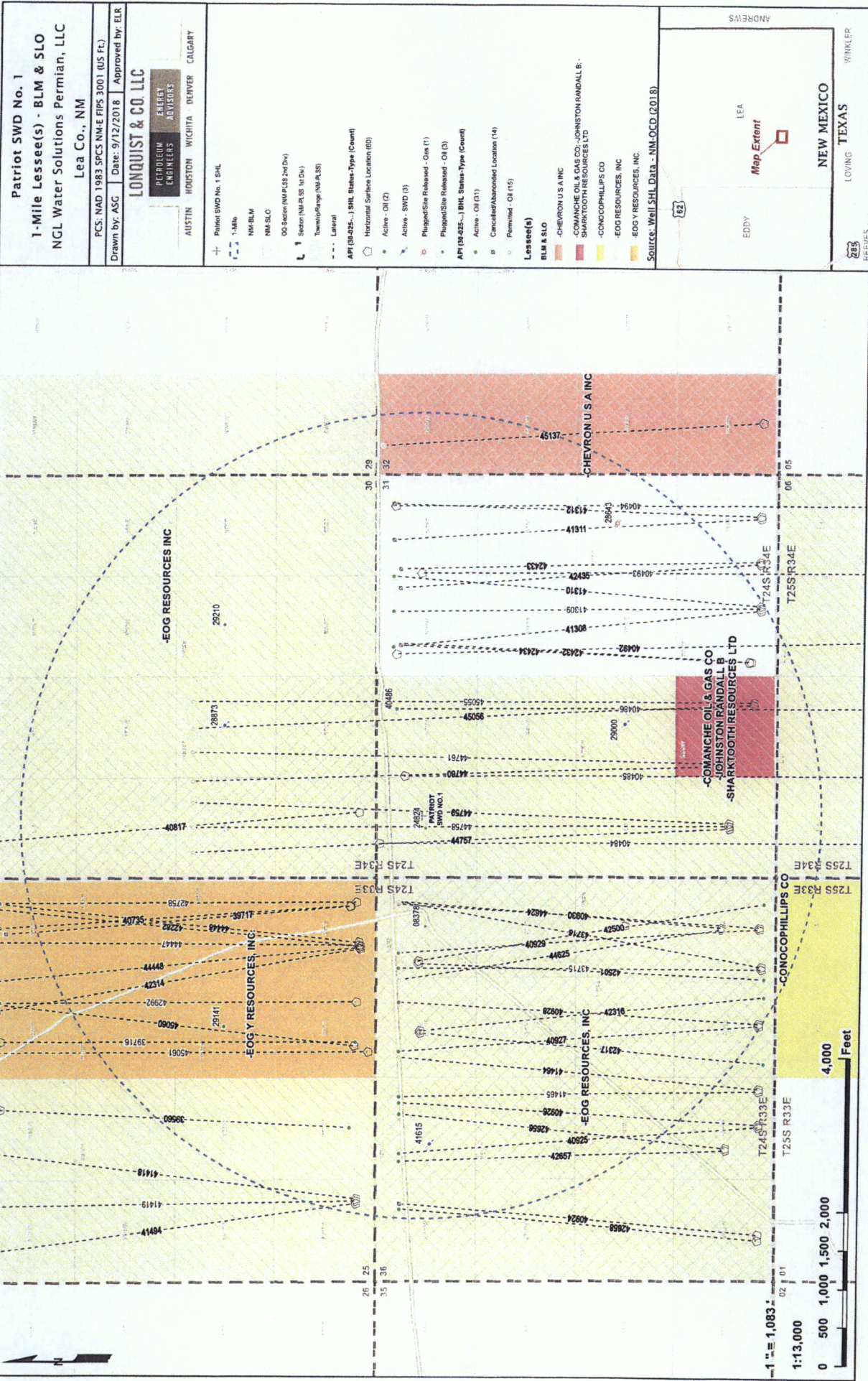
Patriot SWD No. 1
1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVL (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
41418	FALCON 25 FEDERAL #002H	O	A	EOG RESOURCES INC	9730	-103.53115840000	-103.53115840000	2/18/2014
40492	DILLON 31 FEDERAL COM #002C	O	C	EOG RESOURCES INC	0	32.18058780000	-103.50807190000	12/31/9999
40486	DIAMOND 31 FEDERAL COM #004H	O	A	EOG RESOURCES INC	9744	32.18053440000	-103.51039120000	12/8/2012
39560	FALCON 25 FEDERAL #001	O	A	EOG RESOURCES INC	9444	32.19492720000	-103.52741240000	11/30/2009
40817	VANGUARD 30 STATE COM #001H	O	A	EOG RESOURCES INC	9296	32.18190770000	-103.51476290000	11/29/2012
42433	DILLON 31 #502H	O	C	EOG RESOURCES INC	0	32.16740911300	-103.50420220000	12/31/9999
42500	DRAGON 36 STATE #501H	O	A	EOG RESOURCES INC	11168	32.17978200000	-103.52110920000	4/23/2015
42317	DRAGON 36 STATE #702H	O	A	EOG RESOURCES INC	12562	32.17972038020	-103.52417804000	2/8/2015
41465	DRAGON 36 STATE #009H	O	A	EOG RESOURCES INC	9460	32.16740420000	-103.52670290000	12/11/2014
41464	HAWK 25 FEDERAL #001H	O	A	EOG RESOURCES INC	9453	32.18201070000	-103.53135680000	1/8/2014
42434	DILLON 31 #701C	O	C	EOG RESOURCES INC	0	32.16780059300	-103.50843415000	12/31/9999
42501	DRAGON 36 STATE #502H	O	A	EOG RESOURCES INC	11189	32.17978200000	-103.52120620000	5/11/2015
29086	DIAMOND 36 STATE #001H	O	A	EOG RESOURCES INC	12467	32.17237400000	-103.51959230000	1/2/1985
28873	VACA RIDGE 30 FEDERAL #001	S	A	EOG RESOURCES INC	15505	32.18674850000	-103.51106260000	9/12/1984
28643	DILLION 31 #001	G	P	EOG RESOURCES INC	15275	32.17250440000	-103.50254060000	12/31/9999
29000	DIAMOND 31 FEDERAL SWD #001	S	A	EOG RESOURCES INC	15360	32.17233600000	-103.51106260000	10/15/1984
42657	DRAGON 36 STATE #704H	O	A	EOG RESOURCES INC	12500	32.16860019800	-103.52917319000	8/19/2015
40485	DIAMOND 31 FEDERAL COM #003H	O	A	EOG RESOURCES INC	9505	32.18028640000	-103.51322940000	12/22/2012
42432	DILLON 31 #501C	O	C	EOG RESOURCES INC	0	32.16718126000	-103.50843409000	12/31/9999
42435	DILLON 31 #702C	O	C	EOG RESOURCES INC	0	32.16740920600	-103.50429962000	12/31/9999
42658	DRAGON 36 STATE #705H	O	A	EOG RESOURCES INC	12495	32.16741996000	-103.53292130000	8/7/2015
40925	DRAGON 36 STATE #003H	O	A	EOG RESOURCES INC	9464	32.16740420000	-103.52819820000	12/24/2014
40928	DRAGON 36 STATE #006H	O	A	EOG RESOURCES INC	9422	32.16740040000	-103.52381130000	4/3/2014
40926	DRAGON 36 STATE #004H	O	A	EOG RESOURCES INC	9460	32.16740420000	-103.52809910000	1/8/2015
40929	DRAGON 36 STATE #007H	O	A	EOG RESOURCES INC	9417	32.16739650000	-103.51976780000	3/28/2014
40927	DRAGON 36 STATE #005H	O	A	EOG RESOURCES INC	9426	32.16740040000	-103.52391050000	3/16/2014
40930	DRAGON 36 STATE #008H	O	A	EOG RESOURCES INC	9425	32.16739650000	-103.51967620000	4/15/2014
44760	DIAMOND 31 FEDERAL COM #704H	O	N	EOG RESOURCES INC	0	32.16880600000	-103.51284250000	6/19/2018
40493	DILLON 31 FEDERAL COM #003C	O	C	EOG RESOURCES INC	0	32.17967990000	-103.50464630000	12/31/9999
41419	HAWK 25 FEDERAL #002H	O	A	EOG RESOURCES INC	9453	32.18201070000	-103.53125760000	1/30/2014
44759	DIAMOND 31 FEDERAL COM #703H	O	N	EOG RESOURCES INC	0	32.16849660000	-103.51525810000	12/31/9999
42656	DRAGON 36 STATE #703H	O	A	EOG RESOURCES INC	12475	32.16860013200	-103.52907576100	7/26/2015
40484	DIAMOND 31 FEDERAL COM #002	O	A	EOG RESOURCES INC	9504	32.18116760000	-103.51607510000	1/3/2013
45056	DIAMOND 31 FEDERAL COM #706H	O	N	EOG RESOURCES INC	0	32.16762020000	-103.51025910000	12/31/9999
45060	RED RAIDER 25 STATE #704H	O	N	EOG RESOURCES INC	0	32.18208400000	-103.52471840000	12/31/9999
45055	DIAMOND 31 FEDERAL COM #707H	O	N	EOG RESOURCES INC	0	32.16762020000	-103.51025910000	12/31/9999
45061	RED RAIDER 25 STATE #705H	O	N	EOG RESOURCES INC	0	32.18158930000	-103.52498210000	12/31/9999
40494	DILLON 31 FEDERAL COM #004C	O	C	EOG RESOURCES INC	0	32.18061450000	-103.50180050000	12/31/9999
41464	DRAGON 36 STATE #010H	O	N	EOG RESOURCES INC	0	32.16740420000	-103.52660370000	12/26/2014
41615	DRAGON 36 STATE SWD #011	S	A	EOG RESOURCES INC	7850	32.17934040000	-103.52886960000	6/10/2014
41309	DILLON 31 #002H	O	A	EOG RESOURCES INC	9441	32.16739270000	-103.50617220000	11/12/2013
41312	DILLON 31 #005C	O	C	EOG RESOURCES INC	0	32.16738890000	-103.50227360000	12/31/9999
44448	RED RAIDER 25 STATE COM #703H	O	N	EOG RESOURCES INC	0	32.18189600000	-103.52051500000	12/31/9999
40492	DIAMOND 31 FEDERAL COM #705H	O	N	EOG RESOURCES INC	0	32.16875180000	-103.51978430000	8/6/2018
40492	DIAMOND 31 FEDERAL COM #702H	O	N	EOG RESOURCES INC	0	32.16880600000	-103.51272940000	6/21/2018
40492	DIAMOND 31 FEDERAL COM #702H	O	N	EOG RESOURCES INC	0	32.16849660	-103.51537120	6/12/2018

Patriot SWD No. 1 - 1 Mile Area of Review List
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**Patriot SWD No. 1
1 Mile Area of Review List**

40492	DRAGON 36 STATE #002C	O	C	EOG RESOURCES INC	0	32,167,40800	-103,532,67670	12/31/9999
40492	RED RAIDER 25 STATE #701H	O	A	EOG RESOURCES INC	12,316	32,181,91450	-103,520,30290	3/14/2018
40492	DILLON 31 #004C	O	C	EOG RESOURCES INC	0	32,167,38890	-103,502,37270	12/31/9999
40492	DRAGON 36 STATE #701H	O	A	EOG RESOURCES INC	12,557	32,179,72025	-103,524,08038	1/14/2015
40492	RED RAIDER 25 STATE #702H	O	N	EOG RESOURCES INC	0	32,181,90530	-103,520,40910	3/11/2018
45137	COBALT 32 STATE #708H	O	N	EOG RESOURCES INC	0	32,167,34000	-103,498,32630	12/31/9999
41310	DILLON 31 #003H	O	A	EOG RESOURCES INC	9,451	32,167,39270	-103,506,07300	12/7/2013
44757	DIAMOND 31 FEDERAL COM #701H	O	N	EOG RESOURCES INC	0	32,168,49660	-103,515,48430	6/11/2018
41308	DILLON 31 #001H	O	A	EOG RESOURCES INC	9,468	32,167,39270	-103,506,77140	10/23/2013
44624	DRAGON 36 STATE #301H	O	N	EOG RESOURCES INC	0	32,168,75170	-103,519,67830	8/4/2018
42758	RED RAIDER BKS STATE #005H	O	A	COG OPERATING LLC	9,331	32,181,98970	-103,518,57200	9/21/2015
42822	RED RAIDER BKS STATE #003C	O	C	COG OPERATING LLC	0	32,181,85402	-103,520,46662	12/31/9999
42314	RED RAIDER BKS STATE #004C	O	C	EOG Y RESOURCES, INC.	0	32,181,85416	-103,520,56406	12/31/9999
39717	RED RAIDER BKS STATE #003C	O	C	EOG Y RESOURCES, INC.	0	32,182,21724	-103,518,73867	12/31/9999
40735	RED RAIDER BKS STATE #003C	O	C	EOG Y RESOURCES, INC.	0	32,182,20898	-103,518,72893	12/31/9999
08378	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5,348	32,179,49300	-103,519,59230	10/8/1959
29141	RED RAIDER BKS STATE #001	O	A	COG OPERATING LLC	15,360	32,186,75610	-103,523,86470	3/29/1985
24824	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5,340	32,179,48910	-103,515,42660	1/1/1900
42992	RED RAIDER BKS STATE #004H	O	A	COG OPERATING LLC	9,342	32,181,99740	-103,528,3770	1/21/2017
39716	RED RAIDER BKS STATE #002H	O	A	COG OPERATING LLC	9,455	32,194,92340	-103,524,51320	4/1/2010
29210	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	15,480	32,186,74850	-103,506,82070	1/1/1900
43715	DRAGON 36 STATE #707H	O	A	EOG RESOURCES INC	12,509	32,167,32330	-103,521,49010	7/19/2017
43716	DRAGON 36 STATE #708H	O	A	EOG RESOURCES INC	12,329	32,167,32330	-103,521,37700	8/12/2017







New Mexico Office of the State Engineer Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)					
		(quarters are smallest to largest)		(NAD83 UTM in meters)			
Well Tag	POD Number	Q64	Q16	Q4	Sec Tws Rng	X	Y
	C 03600 POD2	4	4	1	25 24S 33E	638824	3562329
Driller License: 1186		Driller Company: ENVIRO-DRILL, INC.					
Driller Name: RODNEY HAMMER							
Drill Start Date: 01/07/2013	Drill Finish Date: 01/08/2013	Plug Date:					
Log File Date: 01/30/2013	PCW Rcv Date:	Source: Shallow					
Pump Type:	Pipe Discharge Size:	Estimated Yield:					
Casing Size:	Depth Well:	Depth Water:					

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New Mexico Office of the State Engineer Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 03602 POD2	4	4	1	25	24S	33E	638824	3562329

Driller License: 1186

Driller Company: ENVIRO-DRILL, INC.

Driller Name: RODNEY HAMMER

Drill Start Date: 01/15/2013

Drill Finish Date: 01/15/2013

Plug Date:

Log File Date: 01/30/2013

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well:

Depth Water:

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