

**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. _____

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 Asroc SWD #1 well at a surface location 2017 feet from the South line and 1420 feet from the East line of Section 6, Township 25 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 Silurian-Devonian formation at a depth of 17,020' to 18,890'.

(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 2,553 psi for this well, and it requests that a maximum pressure of 3,404 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 December 6, 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: Deana M. Bennett
Jennifer Bradfute
Deana Bennett
Post Office Box 2168
500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. ____: 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 Silurian-Devonian formation through the Asroc SWD #1 well at a surface location 2017 feet from the South line and 1420 feet from the East line of Section 6, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 17,020' to 18,890'. 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 19 miles west of Jal, New Mexico.

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:** ASROC 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 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.

CHRIS WEYAND

Print or Type Name

Signature

Date

11/17/2018

512-600-1764

Phone Number

CHRIS@LONQUIST.COM

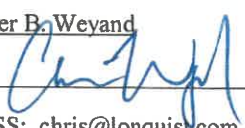
e-mail Address

EXHIBIT

tabbles

A

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: 11/1/2018
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: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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, LLCWELL NAME & NUMBER: ASROC SWD #1WELL LOCATION: 2,017' FSL & 1,420' FEL
FOOTAGE LOCATIONUNIT LETTER J SECTION 06 TOWNSHIP 25S RANGE 34EWELLBORE SCHEMATICWELL CONSTRUCTION DATA
Surface Casing

Hole Size: 24.000" Casing Size: 20.000"

Cemented with: 1,005 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"

Cemented with: 3,844 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"

Cemented with: 3,295 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 367 sx.

or _____ ft³

Top of Cement: 11,900'

Method Determined: Calculation

Total Depth: 18,890'

Injection Interval

17,020 feet to 18,890 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' - 17,020'
 Lining Material: Duoline

Type of Packer: 7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

Packer Setting Depth: 16,995'

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: 9,080'

Wolfcamp: 12,240'

Atoka: 14,040'

Morrow: 14,890'

NGL Water Solutions Permian, LLC

Asroc SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Asroc SWD
Well No.	1
Location	S-06 T-25S R-34E
Footage Location	2,017' FSL & 1,420' FEL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,200'	5,200'	12,400'	17,020'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	Neocem	Neocem, Neocem, Neocem	Neocem
Lead Cement Volume	499	1,997	Stage 1: 553 sx Stage 2: 508 sx Stage 3: 663 sx	227
Tail Cement	Halcem	Halcem	Versacem C, Halcem, Halcem	Halcem
Tail Cement Volume	506	1,847	Stage 1: 471 sx Stage 2: 590 sx Stage 3: 510 sx	140
Cement Excess	25%	60%	25%, 25%, 0%	35%
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"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-11,800'	11,800' -17,020'

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 925 trim

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 17,020' – 18,890'

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	9,080'
Wolfcamp	12,240'
Atoka	14,040'
Morrow	14,890'

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: 2,553 PSI (surface pressure)

Maximum Injection Pressure: 3,404 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Wolfcamp formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Delaware, Bone Spring, Wolfcamp, Strawn, Atoka, and Morrow 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 Anhydrite	1,153'
Delaware	5,245'
Bone Spring	9,080'
Wolfcamp	12,240'
Strawn	13,780'
Atoka	14,040'
Morrow	14,890'
Mississippian	15,660'
Woodford	16,803'
Devonian	16,980'
Fusselman	18,040'
Montoya	18,790'

B. Underground Sources of Drinking Water

No water wells exist within one mile of the proposed well location. Water wells in the surrounding area have an average total depth of 304 ft and an average water depth of 215 ft 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

No water wells exist within one mile of the well location.

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 Asroc SWD #1) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: _____

A handwritten signature in cursive script, appearing to read "John C. Webb", written over a horizontal line.

DATE: _____

Nov. 1, 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 Asroc 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
J	06	25S	34E	N/A	2017'	SOUTH	1420'	EAST	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 3,410'
¹⁶ Multiple N	¹⁷ Proposed Depth 18,890'	¹⁸ Formation Siluro-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 215'		Distance from nearest fresh water well > 1 mile		Distance to nearest surface water 1,370'

☐ 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"	133 lb/ft	1,200'	1,005	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	3,844	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,400'	3,295	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	11,900' - 17,020'	313	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' - 17,020'	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: 11/1/2018

Phone: (512) 600-1764

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

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

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

Form C-102
Revised August 1,
2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code 96101		³ Pool Name SWD; Silurian-Devonian	
⁴ Property Code		⁵ Property Name ASROC SWD			⁶ Well Number 1
⁷ OGRID No. 372338		⁸ Operator Name NGL WATER SOLUTIONS PERMIAN, LLC			⁹ Elevation 3410.00±

" Surface Location

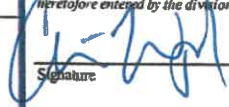
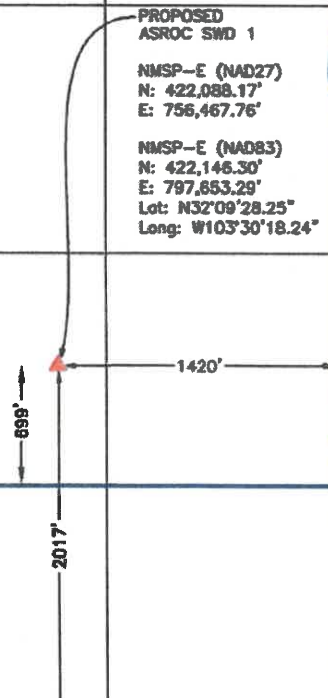
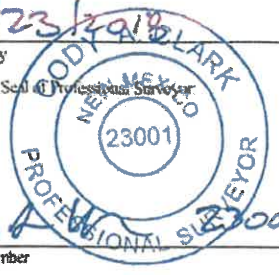
UL or lot no. J	Section 06	Township 25 S	Range 34 E	Lot Idn N/A	Feet from the 2017'	North/South line SOUTH	Feet from the 1420'	East/West line EAST	LEA	County
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" Bottom Hole Location If Different From Surface

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.
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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.

SECTION 06				¹⁶ PROPOSED ASROC SWD 1 NMSP-E (NAD27) N: 422,088.17' E: 756,467.76' NMSP-E (NAD83) N: 422,146.30' E: 797,653.29' Lot: N32°09'28.25" Long: W103°30'18.24"	¹⁷ OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order</i> Hereof entered by the division  Signature Chris Weyand Printed Name chris@lonquist.com E-mail Address 11/1/2018 Date
					¹⁸ SURVEYOR CERTIFICATION <i>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.</i> 10/23/2018 Date of Survey  Signature and Seal of Professional Surveyor Certificate Number 

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

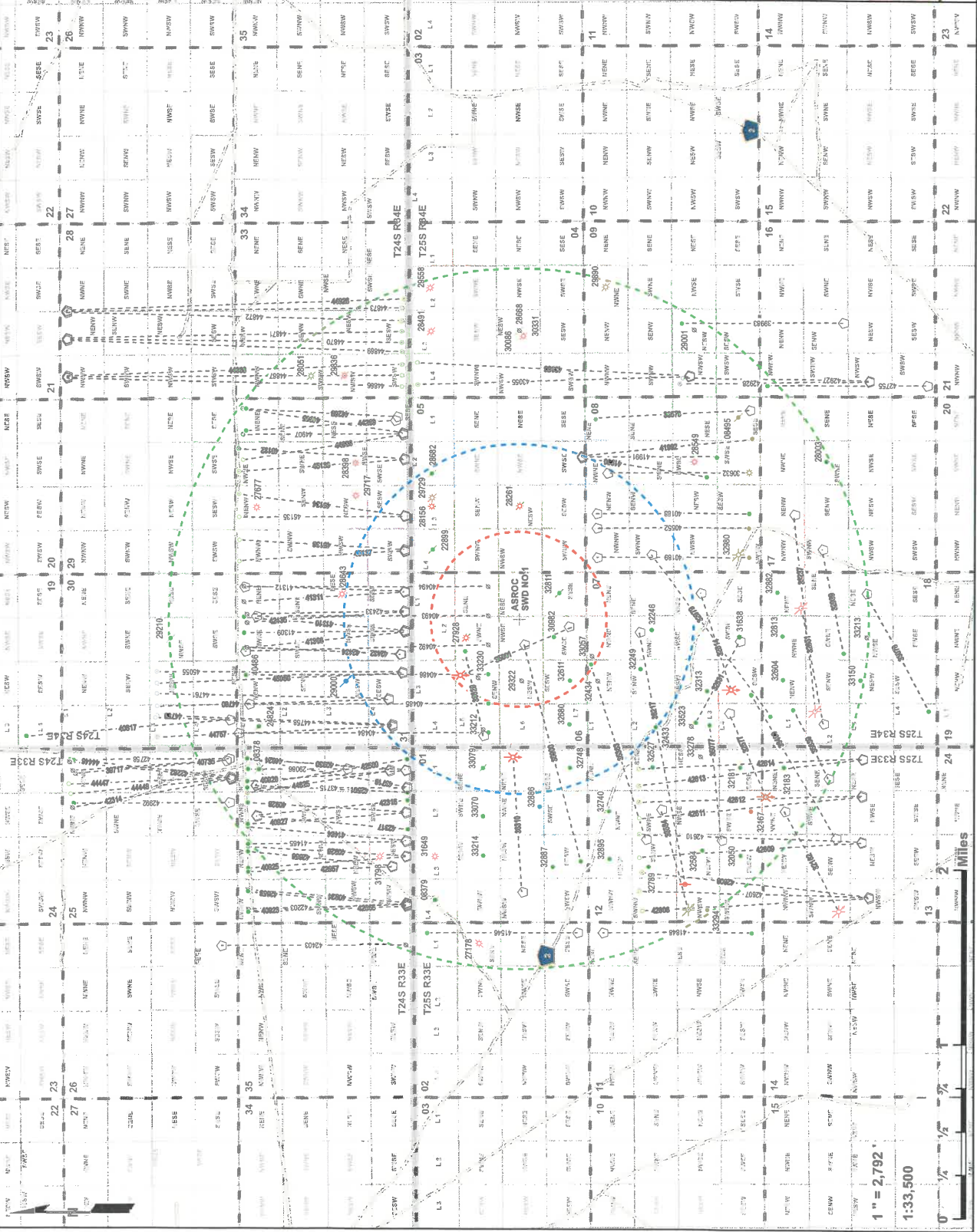
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)

Drawn by: AGS Date: 10/29/2018 Approved by: ELR

LONQUIST & CO. LLC
PETROLEUM
ENGINEERS
AUSTIN HOUSTON - WICHITA DENVER CALGARY

- Asroc SWD No. 1 SHL
1/2-Mile
1-Mile
2-Mile
QQ Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Borehole Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (122)
Active - Gas (6)
Active - Oil (29)
Active - SWD (1)
Cancelled/Abandoned Location - (10)
Plugged/Not Released - Gas (1)
Plugged/Not Released - Gas (12)
Plugged/Not Released - Injection (1)
Plugged/Not Released - Oil (9)
API (30-025-...) BHL Status-Type (Count)
Active - Gas (1)
Active - Oil (42)
Cancelled/Abandoned Location (17)
Exploited TA - Injection (1)
Plugged/Not Released - Oil (1)
Permitted - Oil (42)
Plugged/Not Released - Injection (2)
Approved TA - Injection (2)

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



Asroc SWD No. 1
1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
22899	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5359	32.1649704000	-103.498275800	1/1/1900
27928	DIAMOND 6 FEDERAL #001	G	P	EOG RESOURCES INC	15660	32.1622505000	-103.5068130000	12/31/1999
28156	DIAMOND 5 FEDERAL #001	G	A	EOG RESOURCES INC	15300	32.1649666000	-103.494010900	3/26/1983
28261	HALF 5 FEDERAL COM #001	G	P	EOG RESOURCES INC	15350	32.1577148000	-103.4940338000	7/23/1983
28682	DIAMOND 5 FEDERAL #002	O	P	EOG RESOURCES INC	5583	32.1649628000	-103.490821800	1/1/1900
29322	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.1577137546	-103.511035244	12/31/1999
29729	DIAMOND 5 FEDERAL #003	G	P	EOG RESOURCES INC	14100	32.1649628000	-103.493202200	12/31/1999
30632	DIAMOND 8 FEDERAL #001	G	A	EOG RESOURCES INC	9507	32.1504517000	-103.490867600	10/9/1989
30982	RED HILLS NORTH UNIT #601	O	A	EOG RESOURCES INC	15675	32.1550026000	-103.506843600	9/12/1990
32246	RED HILLS NORTH UNIT #702	O	A	EOG RESOURCES INC	12600	32.1468353000	-103.506202700	12/31/1999
32249	RED HILLS NORTH UNIT #707	O	A	EOG RESOURCES INC	12550	32.1477432000	-103.510002100	12/31/1999
32433	RED HILLS NORTH UNIT #704	O	A	EOG RESOURCES INC	12600	32.1465569000	-103.515663100	3/16/1994
32434	DIAMOND 7 FEDERAL #003	O	C	EOG RESOURCES INC	99999	32.1513637911	-103.511095060	12/31/1999
32611	RED HILLS NORTH UNIT #602	O	A	EOG RESOURCES INC	12600	32.1536789000	-103.511070300	9/28/1994
32680	RED HILLS NORTH UNIT #603	O	A	EOG RESOURCES INC	12600	32.1536789000	-103.5153351000	10/23/1994
32748	RED HILLS NORTH UNIT #102	O	A	EOG RESOURCES INC	12500	32.1536789000	-103.519599000	12/10/1994
32811	HALF 6 FEDERAL #004	O	P	EOG RESOURCES INC	12516	32.1545067000	-103.502578700	1/5/1995
32979	RED HILLS NORTH UNIT #709H	O	A	EOG RESOURCES INC	12265	32.1468353000	-103.498802200	6/14/1996
33057	DIAMOND 7 FEDERAL #005	O	C	EOG RESOURCES INC	0	32.1518306851	-103.508698775	12/31/1999
33079	HALLWOOD 1 FEDERAL #006	O	P	EOG RESOURCES INC	12550	32.1609382300	-103.519592300	10/10/1995
33212	DIAMOND 6 FEDERAL #002	O	C	EOG RESOURCES INC	0	32.1609324082	-103.515806669	12/31/1999
33230	DIAMOND 6 FEDERAL #003	O	C	EOG RESOURCES INC	0	32.16134006900	-103.51074743400	12/31/1999
35363	RED HILLS NORTH UNIT #212H	O	A	EOG RESOURCES INC	12285	32.1474800000	-103.526596100	3/12/2001
35900	RED HILLS NORTH UNIT #604H	O	A	EOG RESOURCES INC	12315	32.1574478000	-103.507545500	10/19/2002
35901	RED HILLS NORTH UNIT #606H	I	T	EOG RESOURCES INC	12310	32.1537361000	-103.505783100	6/5/2002
36217	RED HILLS NORTH UNIT #710H	I	E	EOG RESOURCES INC	12261	32.1478729000	-103.506370500	5/3/2003
36310	RED HILLS NORTH UNIT #106H	I	T	EOG RESOURCES INC	12276	32.1577988000	-103.531669600	8/25/2003
36628	DIAMOND 6 FEDERAL #002H	O	A	EOG RESOURCES INC	12286	32.16090770000	-103.51639560000	6/24/2004
40188	DIAMOND 8 FEDERAL COM #003H	O	A	EOG RESOURCES INC	9492	32.1513634000	-103.494796800	5/28/2012
40189	DIAMOND 8 FEDERAL COM #004H	O	A	EOG RESOURCES INC	9473	32.1513710000	-103.499061600	7/16/2012
40484	DIAMOND 31 FEDERAL COM #002	O	A	EOG RESOURCES INC	9504	32.18116760000	-103.51607510000	1/3/2013
40485	DIAMOND 31 FEDERAL COM #003H	O	A	EOG RESOURCES INC	9505	32.1802864000	-103.513229400	12/22/2012
40486	DIAMOND 31 FEDERAL COM #004H	O	A	EOG RESOURCES INC	9744	32.1805344000	-103.510391200	12/8/2012
40492	DILLON 31 FEDERAL COM #002C	O	C	EOG RESOURCES INC	0	32.17967990000	-103.508071900	12/31/1999
40493	DILLON 31 FEDERAL COM #003C	O	C	EOG RESOURCES INC	0	32.1806145000	-103.501800500	12/31/1999
40494	DILLON 31 FEDERAL COM #004C	O	C	EOG RESOURCES INC	9505	32.1513672000	-103.496215800	6/22/2012
40552	DIAMOND 8 FEDERAL COM #005H	O	A	EOG RESOURCES INC	9468	32.1673927000	-103.506271400	10/23/2013
41308	DILLON 31 #001H	O	A	EOG RESOURCES INC	9441	32.1673927000	-103.506172200	11/12/2013
41309	DILLON 31 #002H	O	A	EOG RESOURCES INC	9451	32.1673927000	-103.506073000	12/17/2013
41310	DILLON 31 #003H	O	A	EOG RESOURCES INC	0	32.1673889000	-103.502372700	12/31/1999
41311	DILLON 31 #004C	O	C	EOG RESOURCES INC	0	32.1673889000	-103.502273600	12/31/1999
41312	DILLON 31 #005C	O	C	EOG RESOURCES INC	0	32.1525650000	-103.48937990000	3/13/2015
41990	DIAMOND 5 FEDERAL COM #006H	O	A	EOG RESOURCES INC	9473	32.1525650000	-103.489280700	3/28/2015
41991	DIAMOND 5 FEDERAL COM #007H	O	A	EOG RESOURCES INC	9459	32.1525650000	-103.489189100	4/11/2015
41992	DIAMOND 5 FEDERAL COM #008H	O	A	EOG RESOURCES INC	9471	32.1525650000	-103.508434090	12/31/1999
42432	DILLON 31 #501C	O	C	EOG RESOURCES INC	0	32.1677181260	-103.508434090	12/31/1999

Asroc SWD No. 1 - 1 Mile Area of Review List
NM-OCDD (2018)

Astroc SWD No. 1
1 Mile Area of Review List

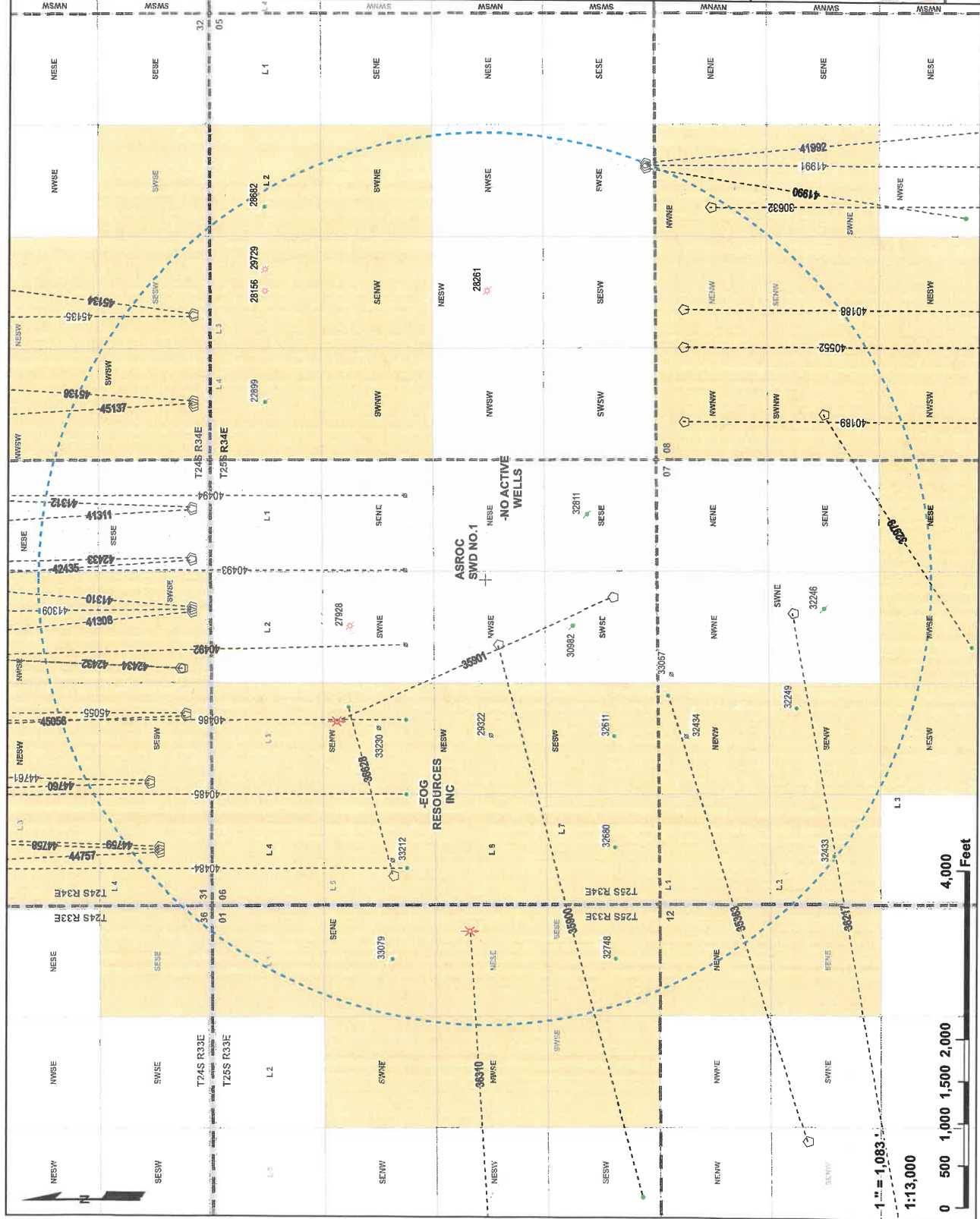
42433	DILLON 31 #502H	O	C	EOG RESOURCES INC	0	32.1674091130	-103.504202200	12/31/9999
42434	DILLON 31 #701C	O	C	EOG RESOURCES INC	0	32.1678005930	-103.508434150	12/31/9999
42435	DILLON 31 #702C	O	C	EOG RESOURCES INC	0	32.1674092060	-103.504299620	12/31/9999
44757	DIAMOND 31 FEDERAL COM #701H	O	N	EOG RESOURCES INC	0	32.1684966000	-103.515484300	6/11/2018
44758	DIAMOND 31 FEDERAL COM #702H	O	N	EOG RESOURCES INC	0	32.1684966000	-103.515371200	6/12/2018
44759	DIAMOND 31 FEDERAL COM #703H	O	N	EOG RESOURCES INC	0	32.1684966000	-103.515258100	12/31/9999
44760	DIAMOND 31 FEDERAL COM #704H	O	N	EOG RESOURCES INC	0	32.1688060000	-103.512842500	6/19/2018
44761	DIAMOND 31 FEDERAL COM #705H	O	N	EOG RESOURCES INC	0	32.1688060000	-103.512729400	6/21/2018
45055	DIAMOND 31 FEDERAL COM #707H	O	N	EOG RESOURCES INC	0	32.1676202000	-103.510152500	12/31/9999
45056	DIAMOND 31 FEDERAL COM #706H	O	N	EOG RESOURCES INC	0	32.1676202000	-103.510259100	12/31/9999
45134	COBALT 32 STATE #705H	O	N	EOG RESOURCES INC	0	32.1673370000	-103.494894500	12/31/9999
45135	COBALT 32 STATE #706H	O	N	EOG RESOURCES INC	0	32.1673371000	-103.495001100	12/31/9999
45136	COBALT 32 STATE #707H	O	N	EOG RESOURCES INC	0	32.1673400000	-103.498219700	12/31/9999
45137	COBALT 32 STATE #708H	O	N	EOG RESOURCES INC	0	32.1673400000	-103.498326300	12/31/9999
45245	COBALT 32 STATE #709H	O	N	EOG RESOURCES INC	0	32.1673387000	-103.498433100	12/31/9999

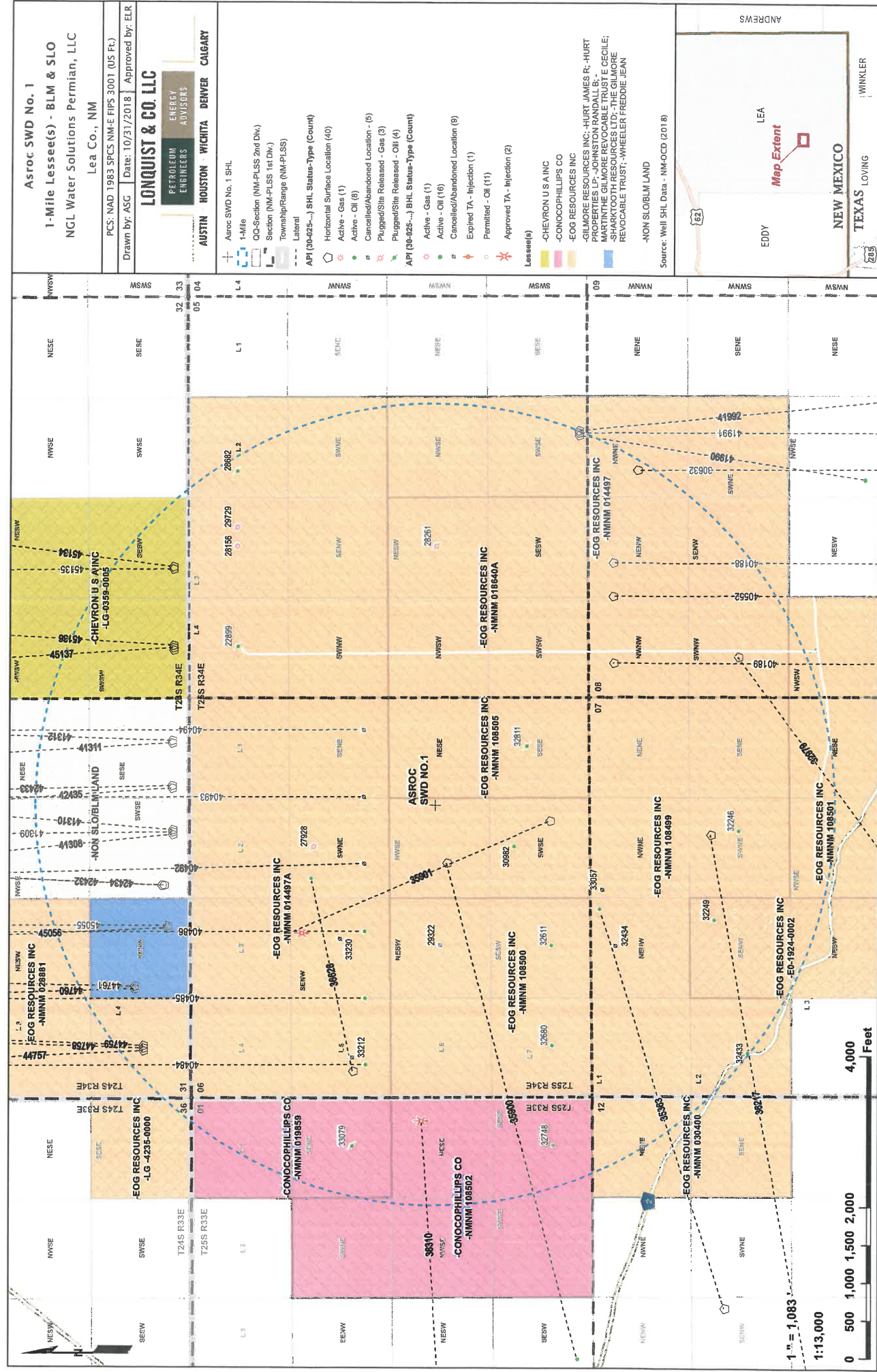
Asroc SWD No. 1
1-Mile Offset Operators - OCD
NGL Water Solutions Permian, LLC
Lea Co., NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US FL)
Drawn by: ASG Date: 10/31/2018 Approved by: ELR

LONGQUIST & CO. LLC
PETROLEUM
ENGINEERS
ENERGY
ADVISORS
AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

- Asroc SWD No. 1 SHL
- 1-Mile
 - QQ-Section (NM-PLSS 2nd Div.)
 - Section (NM-PLSS 1st Div.)
 - Township/Range (NM-PLSS)
 - Lateral
 - API (30-025-...) SHL Status-Type (Count)
 - Horizontal Surface Location (40)
 - Active - Gas (1)
 - Active - Oil (8)
 - Cancelled/Abandoned Location - (6)
 - Plugged/Released - Gas (3)
 - Plugged/Released - Oil (4)
 - API (30-025-...) SHL Status-Type (Count)
 - Active - Gas (1)
 - Active - Oil (16)
 - Cancelled/Abandoned Location (8)
 - Expired TA - Injection (1)
 - Permitted - Oil (11)
 - Approved TA - Injection (2)
 - Zone Temp Plugged - Gas (1)
- Offset Operators
- EOG RESOURCES INC
 - NO ACTIVE WELLS
- Source: Well SHL Data - NM-OCD (2018)





Asroc SWD #1: Offsetting Produced Water Analysis

wellname	api	section	township	range	unit	county	formation	ph	tds_mg/L	sodium_mg/L	calcium_mg/L	iron_mg/L	magnesium_mg/L	manganese_mg/L	chloride_mg/L	bicarbonate_mg/L	sulfate_mg/L	co2_mg/L
BELL LAKE UNIT #002	3002508489	30	23S	34E	N	LEA	DELAWARE		52115						32200	451	529	
BELL LAKE UNIT A #007	3002508367		1 24S	33E	A	LEA	DELAWARE		87686						53920	391	749	
BELL LAKE UNIT #009	3002520261	18	23S	34E	K	LEA	BONE SPRING		204652						130000	512	260	
CORLANDER AOC STATE #002	3002533574	1	23S	32E	H	LEA	BONE SPRING	5.2							167962	61.1	165	
THISTLE UNIT #071H	3002542425	27	23S	33E	A	Lea	BONE SPRING 1ST SAND	5.6	171476.3	55363.2	9140	40.4	1023	1.1	104576.4	244	560	770
BELL LAKE 19 STATE #002H	3002541515	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.2		47148	6419	15	854	0	86572	232	670	240
BELL LAKE 19 STATE #004H	3002541517	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.3		47537	6950	11	886	0	88389	171	650	210
SALADO DRAW 6 FEDERAL #001H	3002541293	6	26S	34E	M	Lea	BONE SPRING 3RD SAND	6.5	99612.7	34586.5	3244	10.3	417.7	0.39	59986.5	158.6	820	50
GAUCHO UNIT #011H	3002541184	17	22S	34E	O	Lea	BONE SPRING 3RD SAND	6.5		48879	6182	11	802	0.12	88836	122	1240	70
SNAPPING 2 STATE #014H	3001542688	2	26S	31E	P	EDDY	WOLFCAMP	7.3	81366.4	26319.4	2687.4	26.1	326.7		50281.2		399.7	100
BELLOQ 2 STATE #002H	3001542895	2	23S	31E	C	EDDY	WOLFCAMP	6.8	119471.8	37359.2	5659.1	22.4	746.1		73172.5		1035.5	250
PRONGHORN AHO FEDERAL #001	3002526496	6	23S	33E	G	LEA	STRAWN	5.5			20.1	0	12.2		35.5	61.1	48.8	
ANTELOPE RIDGE UNIT #002	3002520444	4	24S	34E	B	LEA	ATOKA		51475						31000	317	340	
CUSTER MOUNTAIN UNIT #001	3002520756	9	24S	35E	K	LEA	MORROW	6.7	282741						176800	161	650	