

**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. 20084

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 Hornet SWD #1 well at a surface location 351 feet from the South line and 333 feet from the West line of Section 6, Township 26 South, Range 36 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 18,220' – 19,930'.
- (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 2,733 psi for this well, and it requests that a maximum pressure of 3,644 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 15, 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. 20084 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 Hornet SWD #1 well at a surface location 351 feet from the South line and 333 feet from the West line of Section 6, Township 26 South, Range 36 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. The target formation is the Silurian-Devonian formation at a depth of 18,220' – 19,930'. 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 6 miles west of Bennett, 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:** HORNET 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



10/09/2018

Date

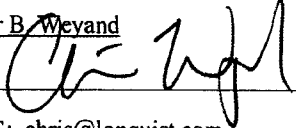
512-600-1764

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: 10/11/2018
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, LLCWELL NAME & NUMBER: HORNET SWD #1WELL LOCATION: 351 FSL & 333' FWL M 06 SECTION 26S TOWNSHIP 36E RANGE
FOOTAGE LOCATION UNIT LETTERWELLBORE SCHEMATICWELL CONSTRUCTION DATA
Surface CasingHole Size: 24.000" Casing Size: 20.000"
Cemented with: 960 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation1st Intermediate CasingHole Size: 17.500" Casing Size: 13.375"
Cemented with: 3.859 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation2nd Intermediate CasingHole Size: 12.250" Casing Size: 9.625"
Cemented with: 3.459 sx. or _____ ft³
Top of Cement: Surface Method Determined: Circulation

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 402 sx.

or _____ ft³

Top of Cement: 12,400'

Method Determined: Calculation

Total Depth: 19,930'

Injection Interval

18,220 feet to 19,930 feet

(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft. P-110. TCPC from 0' - 12,400' and 5,500", 17 lb/ft. P-110 TCPC from 12,400' - 18,195'
 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: 18,195'

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: 9,090'

Wolfcamp: 12,670'

Strawn: 13,695'



Hornet SWD
Lea County NM

Location - Sec 6, Twp 26S, R 36E
Drilling and Complete Cost -
\$11.0MM

TD
GL/KB

19,930
3,000

Directions to Site - Travel West 6.3 miles from Jal along NM 128; turn South and travel 3.2 miles to location. Lat/Long 32.10143, -103.32123

Geologic Tops (MD ft)

Section

Problems

Bit/BHA

Mud

Casing

Logging

Cement (HOLD)

Injection String

Rustler 867
Surface TD - 1150

Surface
Drill 24"
0' - 1190
Set and Cement
20" Casing

Loss Circulation
Hole Cleaning
Wellbore stability in the Red
Beds
Anhydrite in the Rustler

24" Tricone
9-5/8" x 8" MM
9 Jts: 8" DC
21 Jts: 5" HWDP
5" DP to surface

Spud Mud
MWc- 9.0

1190' of 20" K55 133ppf STC
Centralizers - bottom 2 joints and
every 3rd jt thereafter, Cement
basket at 200'

No Logs

Lead -499 sx of HES Extenda Cem,
13.7ppg, 4.5hrs TT
Tail - 461sx of Halcem 3hr TT
25% Excess
1000psi CSD after 10hrs

Top of Salt 1259

1st Intermediate
Drill 4050' of
17-1/2" Hole
1150' - 5200'
Set and Cement
13-3/8" Casing

Seepage Losses
Possible H2S
Anhydrite
Salt Sections

17-1/2" PDC
9-5/8" x 8" MM
9 Jts: 8" DC
21 Jts: 5" HWDP
5" DP to surface

5M A Section Casing Bowl
5200' of 13-3/8" 68# HCL80 BTC
Centralizers - bottom jt, every 3rd
joint in open hole and 2 jt inside the
surface casing

Mudlogger on
site by 1600'

Lead - 2012 sx of Neocem 12.9ppg,
5hr TT
Tail - 1847sx of Halcem, 14.8ppg
60% Excess
1000psi CSD after 10 hrs
Cement to Surface

ECP DV Tool - 5160
Bell Canyon 5272
Cherry Canyon - 6234
Brushy Canyon - 7670
DV Tool - 9000
Bone Spring - 9090

2nd Intermediate
Drill 7700' of
12-1/4" Hole
5200' - 12,900'
Set 9-5/8" Intermediate
Casing and Cement in 3
Stages

Hard Drilling in the Brushy
Canyon
Seepage to Complete Loss
Water Flows
Some Anhydrite
H2S possible
Production in the Bone Spring
and Wolfcamp

12-1/4" PDC
8" MM
9 Jts: 8" DC
8" Drilling Jars
21 Jts: 5" HWDP
5" DP to Surface

8.5 ppg OBM
High Vis
Sweeps
UBD/MPD
usig ADA

10M B Section
12900' of 9-5/8" 53.5# P110 BTC
Special Drift to 8.535"
Externally Coat Between DV Tools
DV tool at at 9000'
ECP DV Tool 15' Inside
Previous Casing

MWD GR
Triple combo
+ CBL of 13-
3/8" Casing

Lead 663sx Neocem 12.9 ppg Tail
510sx Halcem 14.8ppg
1000psi CSD after 10 hrs
Cement to Surface
Stage 3: 0% Excess
Lead 508sx Neocem 12.9 ppg Tail
590sx Halcem 14.8ppg
1000psi CSD after 10 hrs
Stage 2: 25% Excess
Lead 553sx Neocem 12.9 ppg Tail
635sx Halcem 14.8ppg. 1000psi
CSD after 10hrs
Stage 1: 25% Excess

3rd Int Liner Top - 12,400
Wolfcamp - 12670
2nd Int TD - 12,900

3rd Intermediate
Drill 5320' of
8-1/2" Hole
12900 - 18220'
Set 7-5/8" Liner and
Cement in Single Stage

High Pressure (up to 15ppg)
and wellbore instability
(fracturing) expected in the
Atoka
150 target radius
Hard Drilling in the Morrow
Clastic

8-1/2" PDC
6-3/4" MM
9 Jts: 6" DC
21 Jts: 5" HWDP
5" DP to Surface

12.5 ppg OBM
UBD/MPD
using ADA

5320' of 7-5/8" 39#
LS 140 - DTL (F14) FJ (Gas Tight)
VersaFlex Packer Hanger
Centralizers on and 1 jt above shoe
jt and then every 2nd jt.

MWD GR
Triple combo,
CBL of 9-5/8"
Casing

Lead 249sx Neocem 12.9 ppg Tail
101sx Halcem 14.8ppg. 1000psi
CSD after 10hrs
8hr TT
35% Excess
1000psi CSD after 10hrs

Devonian - 18,190

Injection Interval
Drill 1710' of 6-1/2" hole
18220' - 19930'

Chert is possible
Loss of Circulation is
expected
H2S encountered on the
Striker 3 well
BHT estimated at 280F

6-1/2" PDC
4-3/4" MM
9 Jts: 4-3/4" DC
4-3/4" Drilling Jars
18 Jts: 4" FH HWDP
4" FH DP to Surface

Fresh Water -
possible flows

Openhole completion

MWD GR

Displace with 3% KCl (or heavier
brine if necessary)

Fusselman - 19335

Montoya - 19,830'
TD - 19,930'

Montoya - 19,830'
TD - 19,930'

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TD - 19,930'

NGL Water Solutions Permian, LLC

Hornet SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Hornet SWD
Well No.	1
Location	S-06 T-26S R-36E
Footage Location	351' FSL & 333' FWL

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	LS-140
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,150'	5,200'	12,900'	12,400'-18,220'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	Neocem	Neocem, Neocem, Neocem	Neocem
Lead Cement Volume	499	2,012	Stage 1: 553 sx Stage 2: 508 sx Stage 3: 663 sx	117
Tail Cement	Halcem	Halcem	Versacem C, Halcem, Halcem	Halcem
Tail Cement Volume	461	1,847	Stage 1: 635 sx Stage 2: 590 sx Stage 3: 510 sx	285
Cement Excess	25%	60%	25%, 25%, 0%	35%
TOC	Surface	Surface	Surface	12,400'
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'-12,400'	12,400' -18,195'

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: 18,220' – 19,930'

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	9,090'
Wolfcamp	12,670'
Strawn	13,695'

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: 2,733 PSI (surface pressure)

Maximum Injection Pressure: 3,644 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 Bone Spring, Wolfcamp, and Strawn 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	867'
Delaware	5,216'
Bone Spring	9,090'
Wolfcamp	12,670'
Penn	13,220'
Strawn	13,695'
Atoka	14,338'
Morrow	15,174'
Mississippian	16,670'
Woodford	17,980'
Devonian	18,190'
Fusselman	19,335'
Montoya	19,830'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Hornet SWD #1 location, there are nine water wells. Total depth and depth to water were reported for four of these wells averaging 550 ft and 247 ft respectively. Water wells in the surrounding area have an average depth of 564 ft and an average water depth of 254 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

Attached is a map of all water wells that exist within one mile of the well location. If samples can be obtained, analysis results will be provided as soon as possible. Water Right Summaries from the New Mexico Office of the State Engineer are attached for water wells CP-01351POD1, CP-01170POD1, CP-01263POD3, and CP-01267POD1.

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

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: John C. Webb

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 HORNET 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
M	06	26S	36E	N/A	351'	SOUTH	333'	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	Pool Code
SWD; Silurian-Devonian	96101

Additional Well Information

¹¹ Work Type N	¹² Well Type SWD	¹³ Cable/Rotary R	¹⁴ Lease Type Private	¹⁵ Ground Level Elevation 3,000'
¹⁶ Multiple N	¹⁷ Proposed Depth 19,930'	¹⁸ Formation Siluro-Devonian	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 254'		Distance from nearest fresh water well 295'		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

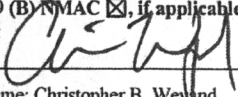
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	133 lb/ft	1,150'	960	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,200'	3,859	Surface
Production	12.25"	9.625"	53.5 lb/ft	12,900'	3,459	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	18,220'	402	12,400'
Tubing	N/A	7"	26 lb/ft	0' - 12,400'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	12,400' - 18,195'	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: 10/11/2018	OIL CONSERVATION DIVISION Approved By: _____ Title: _____ Approved Date: _____ Expiration Date: _____ Conditions of Approval Attached
Phone: (512) 600-1764	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
311 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

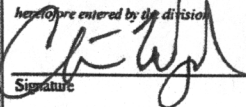
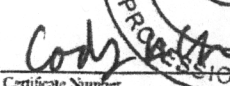
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District Office

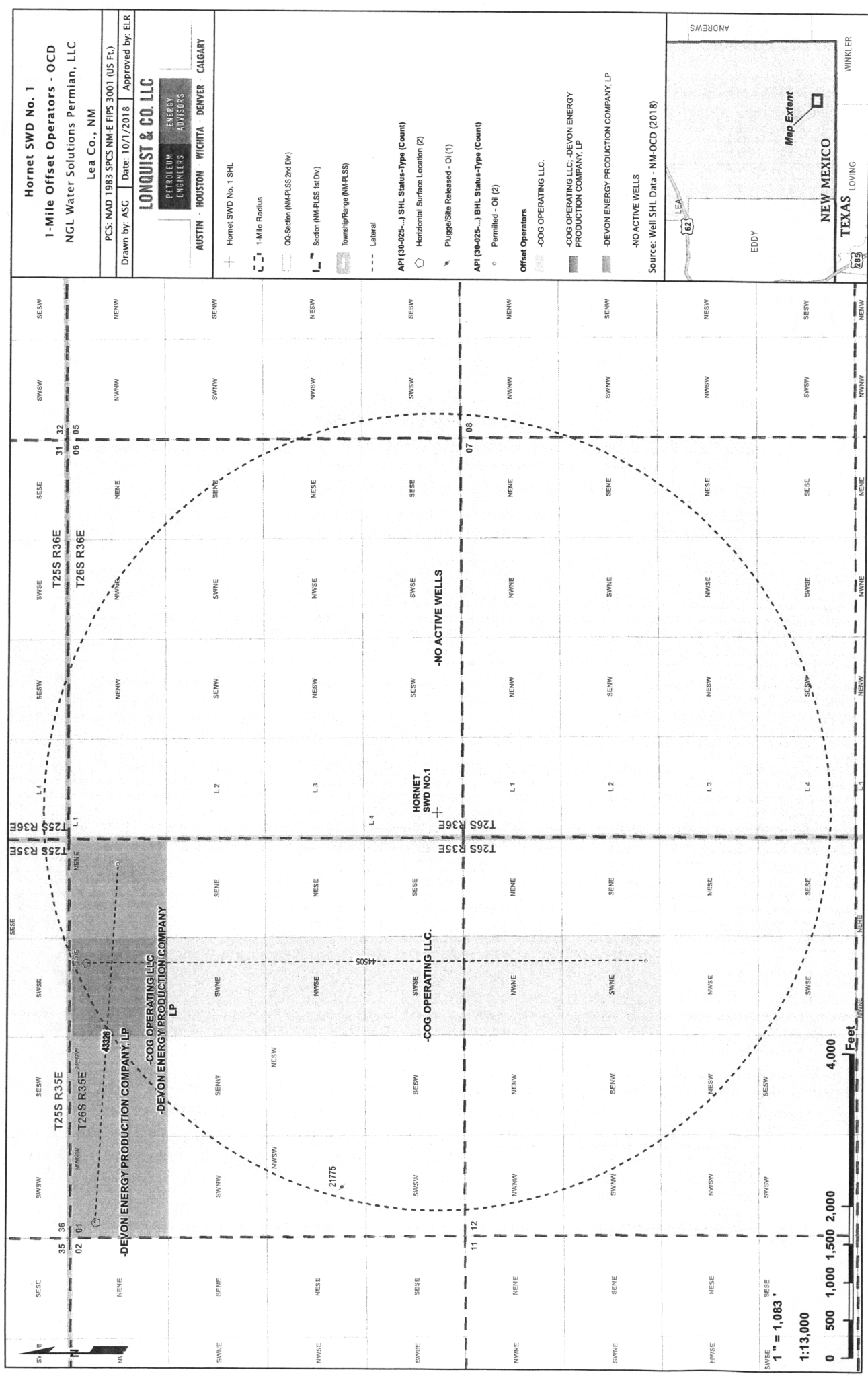
☐ AMENDED REPORT

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 HORNET SWD						⁶ Well Number 1	
⁷ OGRID No. 372338		⁸ Operator Name NGL WATER SOLUTIONS PERMIAN, LLC						⁹ Elevation 3000.00'±	
¹⁰ Surface Location									
UL or lot no. M	Section 06	Township 26 S	Range 36 E	Lot Idn N/A	Feet from the 351'	North/South line SOUTH	Feet from the 333'	East/West line WEST	County LEA
¹¹ 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.			

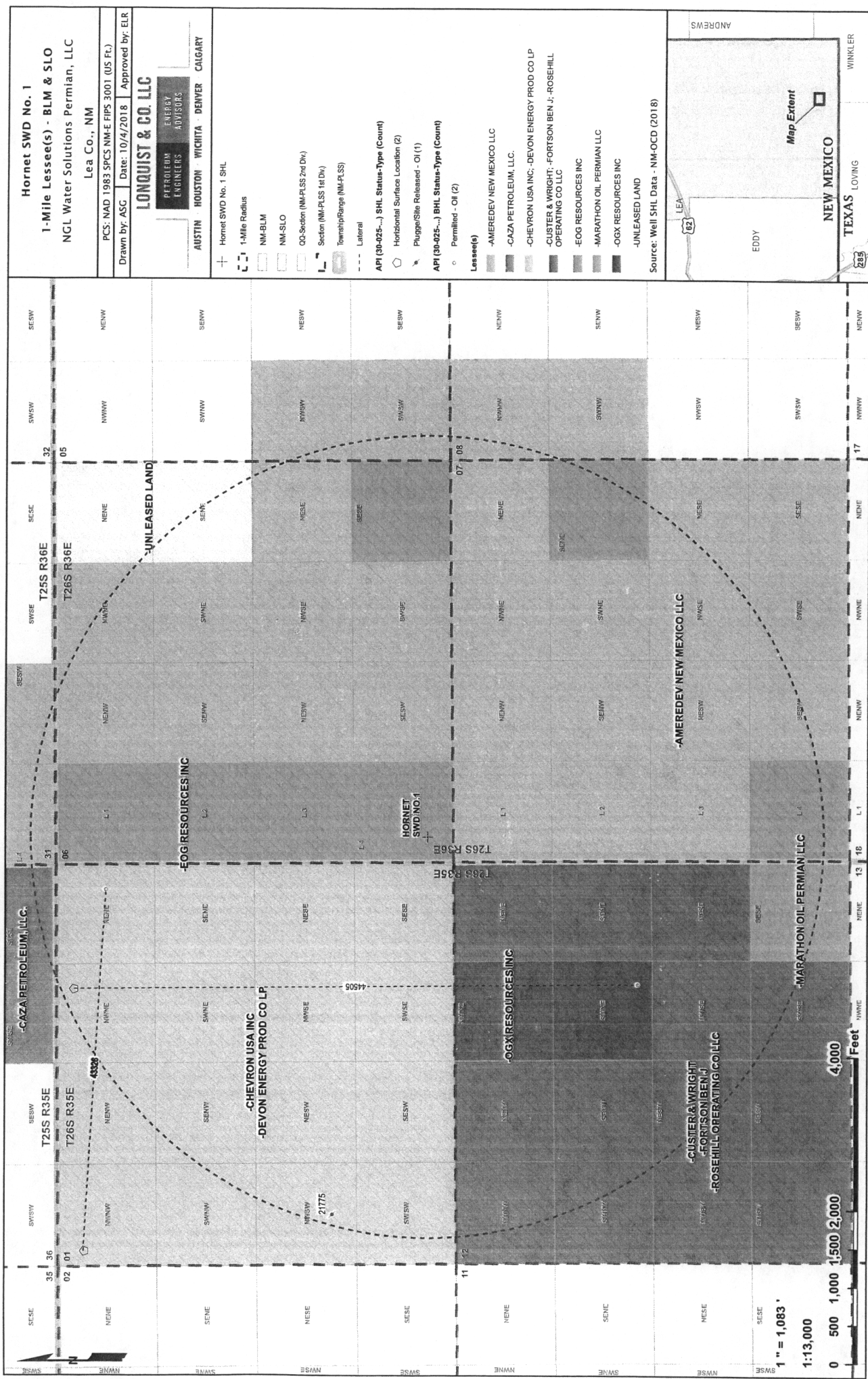
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

SECTION 06 PROPOSED HORNET SWD 1 NMSP-E (NAD27) N: 389,193.11' E: 816,641.96' NMSP-E (NAD83) N: 389,250.90' E: 857,829.90' Lat: N32°03'57.64" Long: W103°18'41.91"				¹⁷ 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 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 heretofore entered by the division.  10/11/2018 Signature Date Chris Weyand Printed Name chris@lonquist.com E-mail Address	
				¹⁸ 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. 9/18/2018 Date of Survey  23001 Signature and Seal of Professional Surveyor Certificate Number CODY A. CLARK NEW MEXICO 23001 PROFESSIONAL SURVEYOR	



Hornet 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
43326	PURPLE ACE 1 FEDERAL #001H	O	N	DEVON ENERGY PRODUCTION COMPANY, LP	0	32.07866610000	-103.32913510000	12/31/9999
44505	USHANKA FEDERAL COM #023H	O	N	COG OPERATING LLC	0	32.07899600000	-103.31804900000	12/31/9999
21775	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	5191	32.06959150000	-103.32768250000	1/1/1900



Hornet SWD No. 1

1-Mile Lessee(s) - BLM & SLO
NGL Water Solutions Permian, LLC
Lea Co., NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US FL)
Drawn by: ASG Date: 10/4/2018 Approved by: ELR

LONGQUEST & CO. LLC

PETROLEUM
ENGINEERS
ADVISORS

AUSTIN HOUSTON WICHITA DENVER CALGARY

Hornet SWD No. 1 SHL

1-Mile Radius

NM-BLM

NM-SLO

QQ-Section (NM-PLSS 2nd Div.)

Section (NM-PLSS 1st Div.)

TownshipRange (NM-PLSS)

Lateral

API (30-425-...) SHL Status-Type (Count)

Horizontal Surface Location (2)

Plugged/Sealed - Oil (1)

API (30-425-...) BHL Status-Type (Count)

Permitted - Oil (2)

Lessee(s)

-AMERDEV NEW MEXICO LLC

-CAZA PETROLEUM, LLC

-CHEVRON USA INC; DEVON ENERGY PROD CO LP

-CLUSTER & WRIGHT; FORTSON BEN J.; ROSEHILL

OPERATING CO LLC

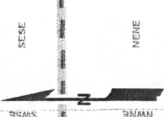
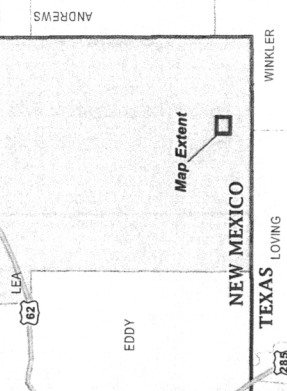
-EOG RESOURCES INC

-MARATHON OIL PERMIAN LLC

-OGX RESOURCES INC

-UNLEASED LAND

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



1" = 1,083'

1:13,000

0 500 1,000 1,500 2,000 Feet

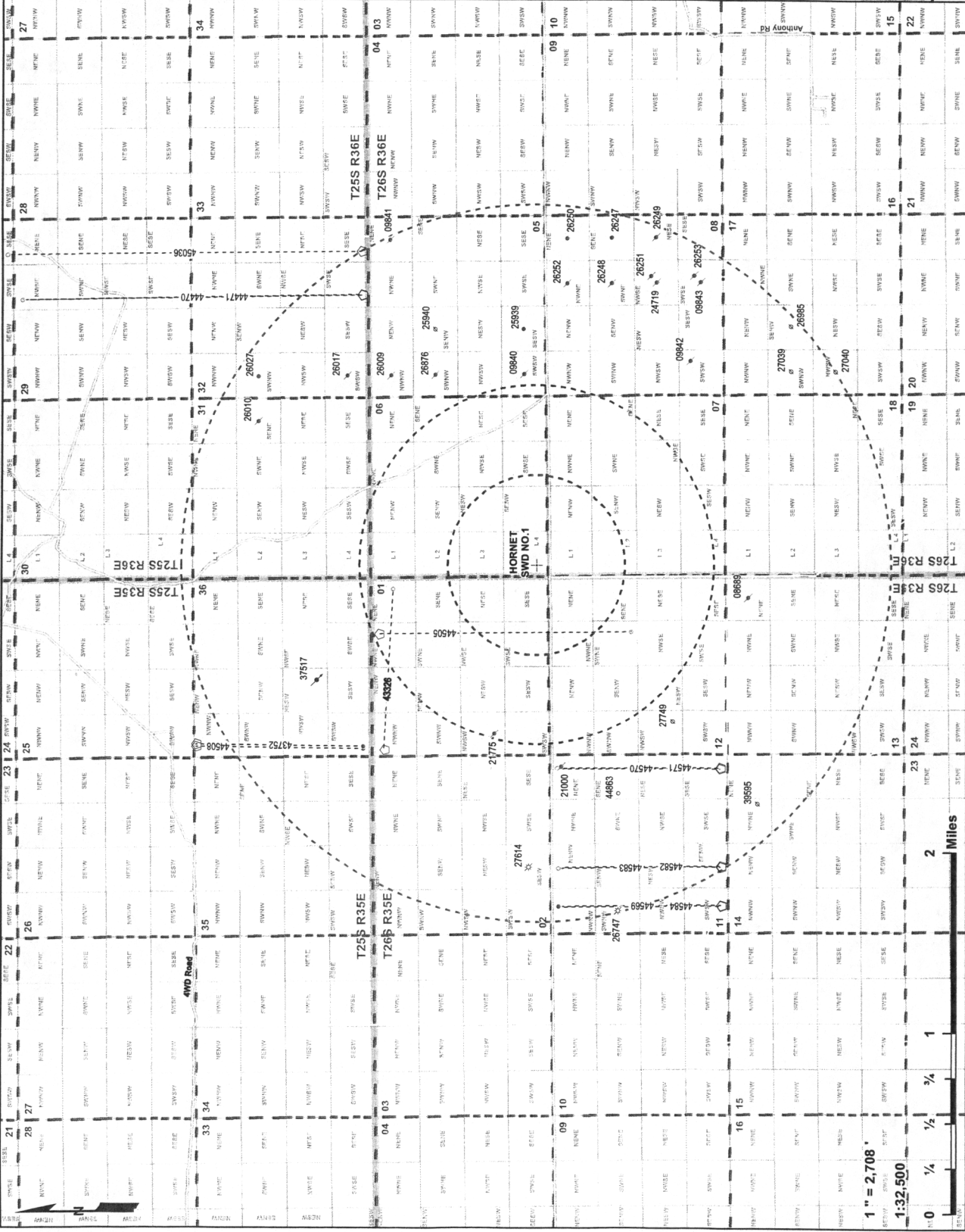
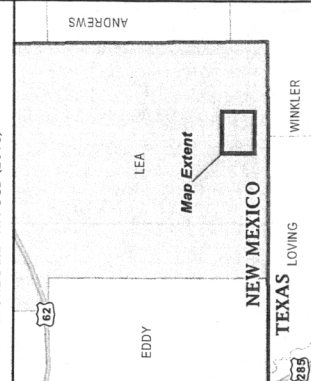
Hornet SWD No. 1
2 Mile Area of Review
NCL Water Solutions Permian, LLC
Lea Co., NM

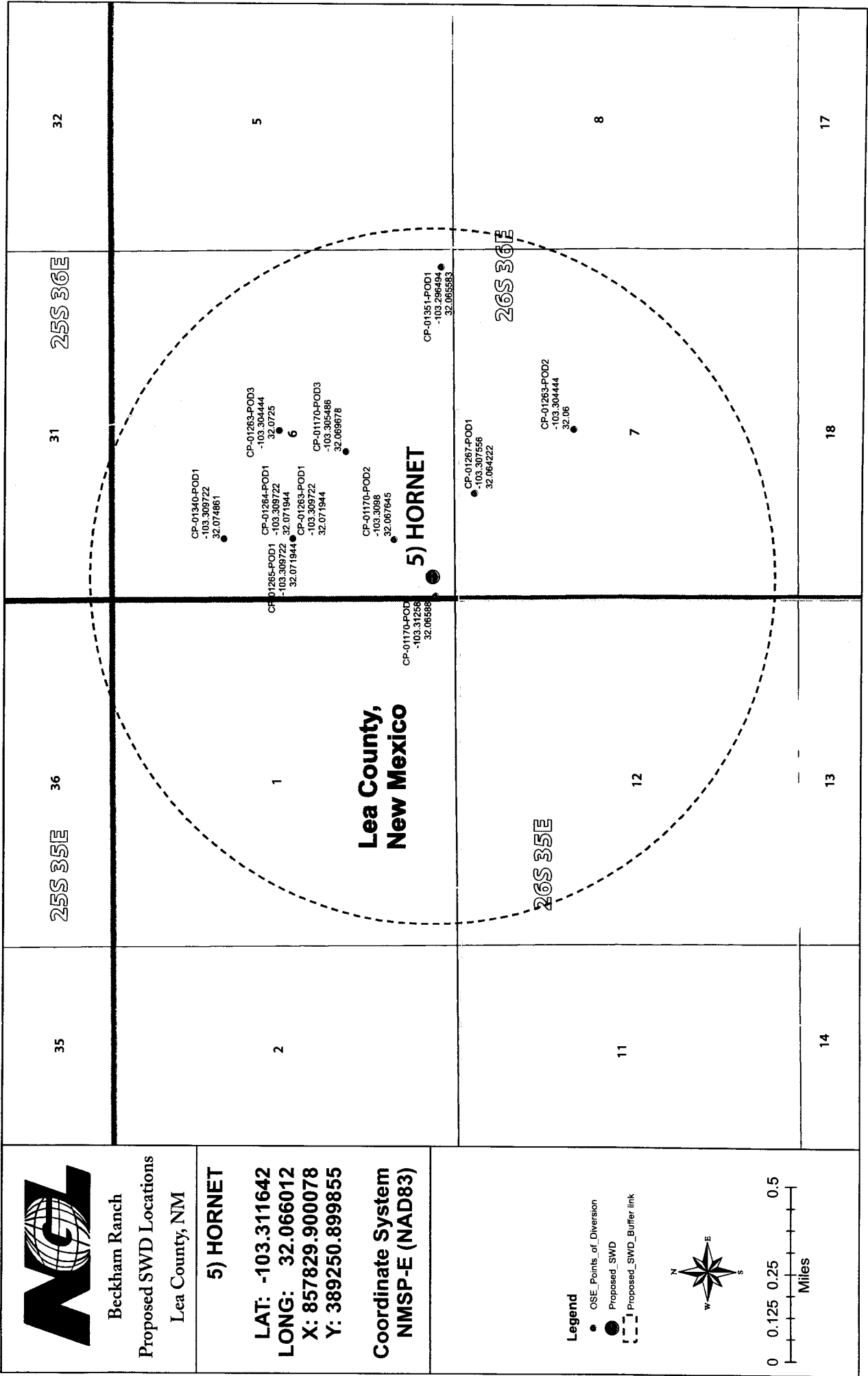
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG Date: 9/24/2018 Approved by: ELR

LONGQUEST & CO. LLC
PETROLEUM
ENGINEERS
ADVISORS
AUSTIN HOUSTON WICHITA DENVER CALGARY

Hornet SWD No. 1 SHL
1-Mile
1/2-Mile
2-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 (13)
Active - Oil (4)
Active - SWD (1)
Cancelled/Abandoned Location (6)
Permitted - SWD (1)
Plugged/Released - Gas (2)
Plugged/Released - Oil (17)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (3)
Permitted - Oil (10)
Source: Well SHL Data - NM-OCD (2018)





Hornet SWD #1: Offsetting Produced Water Analysis														
wellname	api	county	formation	ph	tds_mgl	sodium_mgl	calcium_mgl	iron_mgl	magnesium_mgl	manganese_mgl	chloride_mgl	bicarbonate_mgl	sulfate_mgl	co2_mgl
BELL LAKE UNIT #009	3002520263	LEA	BONE SPRING		204652						130000		512	260
THISTLE UNIT #073H	3002542425	Lea	BONE SPRING 1ST SAND	5.6	171476	55363.2		9140	40.4		1.1	104576.4	244	560
BELL LAKE 19 STATE #004H	3002541517	Lea	BONE SPRING 2ND SAND	6.3		76378	6238	11	834		0	131397	159	770
BELL LAKE 19 STATE #003H	3002541516	Lea	BONE SPRING 2ND SAND	6.7		59599	7326	11	942		0.69	108190	680	200
SALADO DRAW 6 FEDERAL #001H	3002541293	Lea	BONE SPRING 3RD SAND	6.7	95604	31066	3196	10	394		0.5	59071	183	0
SALADO DRAW 6 FEDERAL #001H	3002541293	Lea	BONE SPRING 3RD SAND	7			3289	0.3	474.5		0.38		219.6	300
PRONGHORN AHO FEDERAL #001	3002526496	LEA	STRAWN	5.5				0					61.1	48.8
SNAPPING 2 STATE #014H	3001542688	EDDY	WOLF CAMP	7.3	81366.4	26319.4	2687.4	26.1	326.7			35.5		399.7



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
	CP 01170 POD1	3 3 3	06	26S	36E	659282	3548984

Driller License: 1682

Driller Company: HUNGRY HORSE, LLC.

Driller Name: JOHN NORRIES

Drill Start Date: 10/21/2013

Drill Finish Date: 11/11/2013

Plug Date:

Log File Date: 12/12/2013

PCW Rcv Date: 02/26/2014

Source: Shallow

Pump Type: SUBMER

Pipe Discharge Size:

Estimated Yield: 250 GPM

Casing Size: 12.00

Depth Well: 500 feet

Depth Water: 280 feet

Water Bearing Stratifications:

Top Bottom Description

330 420 Sandstone/Gravel/Conglomerate

473 495 Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

0 500



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
	CP 01263 POD3	4	1	3	06 26S 36E	660038	3549729

Driller License: 1607

Driller Company: DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date: 06/24/2015

Drill Finish Date: 06/28/2015

Plug Date:

Log File Date: 07/13/2015

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 125 GPM

Casing Size: 10.00

Depth Well: 516 feet

Depth Water: 240 feet

Water Bearing Stratifications:

Top	Bottom	Description
195	254	Other/Unknown
350	384	Other/Unknown

Casing Perforations:

Top	Bottom
215	515



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
	CP 01267 POD1	3	4	3	06 26S 36E	659759	3548807

Driller License: 1682

Driller Company: HUNGRY HORSE, LLC.

Driller Name: JOHN NORRIES

Drill Start Date: 01/20/2014

Drill Finish Date: 02/03/2014

Plug Date:

Log File Date: 03/12/2014

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 12.00

Depth Well: 585 feet

Depth Water: 200 feet

Water Bearing Stratifications:

Top Bottom Description

200 297 Sandstone/Gravel/Conglomerate

375 468 Sandstone/Gravel/Conglomerate

518 580 Shale/Mudstone/Siltstone

Casing Perforations:

Top Bottom

0 585



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
	CP 01351 POD1	4 4 4	06	26S	36E	660801	3548974

Driller License: Driller Company:

Driller Name: MULLINS,JUSTIN

Drill Start Date: 12/17/2016

Drill Finish Date: 01/17/2017

Plug Date:

Log File Date: 03/27/2017

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 250 GPM

Casing Size: 8.00

Depth Well: 600 feet

Depth Water: 267 feet

Water Bearing Stratifications:

Top	Bottom	Description
-----	--------	-------------

118	600	Other/Unknown
-----	-----	---------------

Casing Perforations:

Top	Bottom
-----	--------

250	370
-----	-----

430	470
-----	-----

550	590
-----	-----