

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

**January 23, 2019 Hearing**

**APPLICATION OF 3BEAR FIELD SERVICES, LLC  
FOR APPROVAL OF A SALT WATER DISPOSAL WELL,  
LEA COUNTY, NEW MEXICO**

**CASE NO. 20586**

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RECEIVED:	REVIEWER:	TYPE:	APP NO:
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ABOVE THIS LINE 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: **3Bear Field Services, LLC** OGRID Number: **372603**  
 Well Name: **Grama State SWD No. 2** API: \_\_\_\_\_  
 Pool: **SWD; Devonian-Silurian** Pool Code: **97869**

**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

<b>FOR OCD ONLY</b>
<input type="checkbox"/> Notice Complete
<input type="checkbox"/> Application Content Complete

**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 BUM Surface owner
- F.  Surface owner
- G.  For all of the above, proof of notification or publication is attached, and/or,
- H.  No notice required

**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.

**Ramona Hovey - Agent of 3Bear Field Service**      **May 21, 2019**  
 Print or Type Name      Date  
 (512) 600-1777      Phone Number  
 ramona@lonquist.com      ramona@lonquist.com

*Ramona Hovey*  
 Signature

**Application of 3Bear Field Services, LLC**  
**Case No. 20586**  
**EXHIBIT #1**



**APPLICATION FOR AUTHORIZATION TO INJECT**

I. PURPOSE: Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  Yes  No

II. OPERATOR: 3Bear Field Services, LLC

ADDRESS: 415 W. Wall St., Suite 1212

CONTACT PARTY: Kevin Burns

PHONE: 432-686-2973

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  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: Ramona Hovey TITLE: Consulting Engineer - Agent for 3Bear Field Service

SIGNATURE:  DATE: 5/21/2019

E-MAIL ADDRESS: ramona@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: 3Bear Field Services, LLC

WELL NAME & NUMBER: Grana State SWD No. 2

WELL LOCATION: 351' FNL & 215' FWL  
FOOTAGE LOCATION

UNIT LETTER: LOT 4

SECTION: 2 TOWNSHIP: 22S

RANGE: 34E

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 26.000" Casing Size: 20.000"

Cemented with 3,010 sacks. or ft<sup>3</sup>

Top of Cement: surface Method Determined: circulation

1<sup>st</sup> Intermediate Casing

Hole Size: 17.500" Casing Size: 13.375"

Cemented with 3,115 sacks. or ft<sup>3</sup>

Top of Cement: surface Method Determined: circulation

2<sup>nd</sup> Intermediate Casing

Hole Size: 12.250" Casing Size: 9.625"

Cemented with 2,530 sacks. or ft<sup>3</sup>

Top of Cement: surface Method Determined: circulation

Production Liner

Hole Size: 8.750" Casing Size: 7.625"

Cemented with 320 sacks. or ft<sup>3</sup>

Top of Cement: 10,800' Method Determined: calculation

Total Depth: 15,500'

Intection Interval

14,400 feet to 15,500 feet

(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 5.5" 20 lb/ft. HCL-80, BTC from 0' - 14,350'

Lining Material: Duoline

Type of Packer: 7-5/8" X 5-1/2" Permanent Packer with High Temperature Elastomer and Full Inconel 925 Trim

Packer Setting Depth: 14,350'

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?  
\_\_\_\_\_

2. Name of the Injection Formation: Devonian, Fusselman.

3. Name of Field or Pool (if applicable): SWD; Devonian-Silurian (Pool Code: 97869)

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:

Yates: 3,948'

Bone Spring: 8,328'

Wolfcamp: 11,143'

Strawn: 11,668'

Morrow: 12,513'





3Bear Field Services, LLC

Grama State SWD No. 2

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Grama State SWD
Well No.	2
Location	S-2 T-22S R-34E
Footage Location	351' FNL & 215' FWL

2.

a. Wellbore Description

Casing Information			
Type	Conductor	Surface	Liner
OD	20"	13.375"	7.625"
WT	0.438"	0.480"	0.500"
ID	19.124"	12.415"	6.625"
Drift ID	18.936"	12.259"	6.500"
COD	21"	14.375"	7.625"
Weight	94 lb/ft	68 lb/ft	39 lb/ft
Grade	J-55 BTC	J-55 BTC	P-110 UFJ
Hole Size	26"	17.5"	8.75"
Depth Set	1,750'	5,660'	10,950'-14,400'

b. Cementing Program

Cement Information				
Casing String	Conductor	Surface	Production	Liner
Lead Cement	Class C	Class C	Class H	
Lead Cement Volume	1,885 sks	Stage 1: 550 sks Stage 2: 2,030 sks	1,405 sks	
Lead Cement Density	12.8 ppg	Stage 1: 11.5 ppg Stage 2: 11.5 ppg	11.5 ppg	
Tail Cement	Class C	Class C	Class H	Class H
Tail Cement Volume	1,125 sks	Stage 1: 535 sks	1,125 sks	320 sks
Tail Cement Density	14.8 ppg	Stage 1: 14.8 ppg	14.8 ppg	14.5 ppg
Cement Excess	100%	Stage 1: 100% Stage: 200%	50%	10%
Total Sacks	3,010 sks	3,115 sks	2,530 sks	320 sks
TOC	Surface	Surface	Surface	10,800'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information	
OD	5.5"
WT	0.361"
ID	4.778"
Drift ID	4.653"
COD	6.050"
Weight	20 lb/ft
Grade	HCL-80 BTC
Depth Set	0-14,350'

Tubing will be lined with Duoline.

4. Packer Description

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

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman

2. Gross Injection Interval: 14,400'-15,500'

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
Yates	3,948'
Bone Spring	8,328'
Wolfcamp	11,143'
Strawn	11,668'
Morrow	12,513'

#### 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: 20,000 BPD

Maximum Volume: 25,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 2,160 PSI (surface pressure)

Maximum Injection Pressure: 2,880 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 Artesia formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Artesia, Bone Spring, Delaware, Grayburn/San Andreas, Morrow, Pennsylvanian, and Strawn formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.



### VIII. Geological Data

#### Devonian Formation Lithology:

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.

#### Fusselman Formation Lithology:

The Silurian/Ordovician Fusselman Formation is stratigraphically below the Wristen Group and is above and separated from the Montoya Formation by the Sylvan Shale. The Sylvan Shale is the lower confining layer for the proposed Grama State SWD No. 2 well. Fusselman facies include a laminated skeletal wackestone in the upper part and a buildup complex in the lower part composed of ooid and bryozoan grainstones. These grainstones can also be potentially prolific zones for disposal.

A. Injection Zone: Devonian-Silurian Formation

Formation	Depth
Rustler	1,678'
Yates	3,948'
Capitan Reef	4,338'
Delaware	5,560'
Cherry Canyon	5,818'
Bone Spring	8,328'
1 <sup>st</sup> Bone Spring Sandstone	9,438'
2 <sup>nd</sup> Bone Spring Sandstone	10,008'
3 <sup>rd</sup> Bone Spring Carbonate	10,288'
3 <sup>rd</sup> Bone Spring Sandstone	10,888'
Wolfcamp	11,143'
Pennsylvanian Shale	11,378'
Strawn	11,668'
Morrow	12,513'
Mississippian Lime	13,808'
Woodford	14,228'
Devonian	14,373'

B. Underground Sources of Drinking Water

One water well exists within the proposed well. The water well has a depth of 109 feet. Across the area, fresh water wells are usually drilled between 45' and 368' in depth. The Rustler is known to exist in this general area and may also be another USDW and will be protected by setting surface casing at 1,750'.

IX. Proposed Stimulation Program

No stimulation program planned.

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 the one (1) water well that exists within one-mile of the well location. Samples from the well were obtained and attached is a water sample report performed by Cardinal Laboratories. A Water Right Summary from the New Mexico Office of the State Engineer is attached for water well CP-00944-POD1.

Dillard LJ  
 1675 N. French Dr., Hobbs, NM 88240  
 Phone: (575) 393-6161 Fax: (575) 393-0720  
 Dillard LJ  
 811 S. First St., Artesia, NM 88210  
 Phone: (575) 748-1183 Fax: (575) 748-9720  
 Dillard LJ  
 1000 Rio Brazos Road, Aztec, NM 87410  
 Phone: (505) 334-6178 Fax: (505) 334-6170  
 Dillard LJ  
 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

Form C-101  
 Revised July 18, 2013

AMENDED REPORT

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

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

<sup>1</sup> Operator Name and Address 3BEAR FIELD SERVICES, LLC 415 W. WALL ST, STE 1212 MIDLAND, TX 79701		<sup>7</sup> CORID Number 372603
<sup>4</sup> Property Code		<sup>7</sup> APN Number
<sup>2</sup> Property Name GRAMA STATE SWD		<sup>6</sup> Well No. 2

**7. Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
LOT 4	2	22S	34E	4	351	NORTH	215	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; DEVONIAN-SILURIAN	Pool Code 97869
-------------------------------------	--------------------

**Additional Well Information**

<sup>11</sup> Well Type N	<sup>12</sup> Well Type SWD	<sup>13</sup> Cable/Retlay R	<sup>14</sup> Lease Type STATE	<sup>15</sup> Ground Level Elevation 3611'
<sup>16</sup> Multiple N	<sup>17</sup> Proposed Depth 15,500'	<sup>18</sup> Formation DEVONIAN-SILURIAN	<sup>19</sup> Contractor PATRIOT	<sup>20</sup> Spud Date 08/01/2019
Depth to Ground water		Distance to nearest fresh water well		
		Distance to nearest surface water		

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	26"	20"	94.0# J-55	1750'	3010	0
INT 1	17.5"	13.375"	68# J-55	5660'	3115	0
INT 2	12..25"	9.625"	40# P-110	11175	2530	0

**Casing/Cement Program: Additional Comments**

DV TOOL SET @ 3700' PLEASE SEE ADDITIONAL CASING INFO AND BOP INFO ON ATTACHED SHEET W/WBD

**22. Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer

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: *Jennifer Elrod*

Printed name: JENNIFER ELROD

Title: SR, REGULATORY ANALYST

E-mail Address: JELROD@CHISHOLMENERGY.COM

Date: 05/09/2019 Phone: 817-953-3728

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

OIL CONSERVATION DIVISION



District I  
1633 N. French Dr., Hobbs, NM 88240  
Phone: (575) 392-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 746-1343 Fax: (575) 746-9720  
District III  
1000 Rio Brazos Road, Alamo, NM 87410  
Phone: (505) 334-6718 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3100 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**

<sup>1</sup> API Number		<sup>1</sup> Pool Code		<sup>2</sup> Pool Name	
		97869		SWD; DEVONIAN-SILURIAN	
<sup>3</sup> Property Code		<sup>3</sup> Property Name		<sup>4</sup> Well Number	
		GRAMA STATE SWD		2	
<sup>5</sup> OGRID No.		<sup>5</sup> Operator Name		<sup>6</sup> Elevation	
372603		3BEAR FIELD SERVICES, LLC		3611'	

**Surface Location**

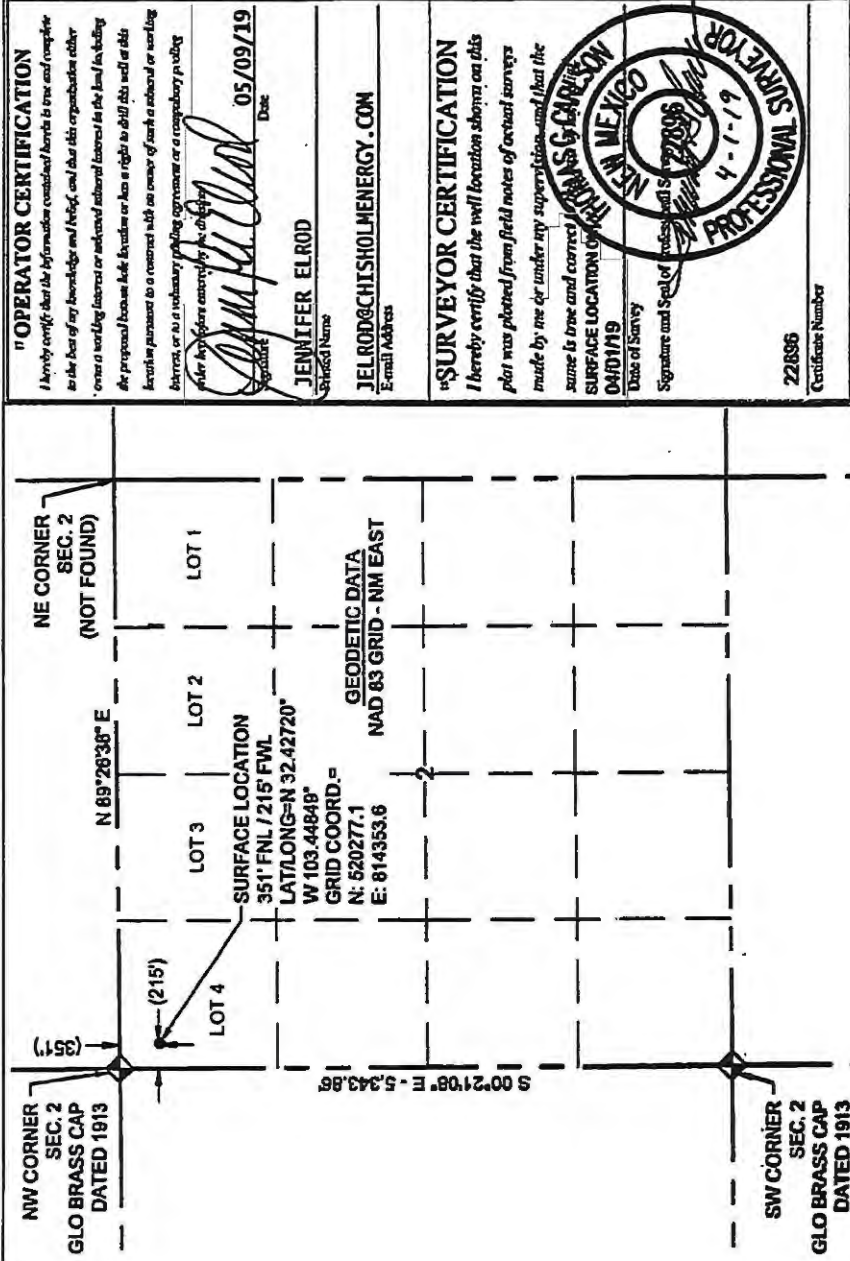
UL or lot no.	Section	Township	Range	Lot 1th	Feet from the	North/South line	Feet from the	East/West line	County
LOT 4	2	22S	34E		351	NORTH	215	WEST	LEA
UL or lot no.	Section	Township	Range	Lot 1th	Feet from the	North/South line	Feet from the	East/West line	County

**Bottom Hole Location If Different From Surface**

UL or lot no.	Section	Township	Range	Lot 1th	Feet from the	North/South line	Feet from the	East/West line	County

<sup>13</sup> Dedicated Acres    <sup>14</sup> Consolidation Code    <sup>15</sup> 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.



**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 representation either concerns a working interest or selected mineral interests in the land including the proposed because such location or also is right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or as a subsidiary pooling agreement or a compulsory pooling after approval according to the applicable provisions of the Oil and Gas Conservation Act.

*Jennifer Elrod*  
Signature  
JENNIFER ELROD  
Printed Name  
JELROD@CHESHOLMENERGY.COM  
E-mail Address  
05/09/19  
Date

**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.

THOMAS G. CARLSON  
SURFACE LOCATION OF  
04/01/19  
Date of Survey  
Signature and Seal of Professional Surveyor  
NEW MEXICO  
PROFESSIONAL SURVEYOR  
4-1-19  
22896  
Certificate Number

PROPOSED CASING AND CEMENT PROGRAM (CONTD)

TYPE	HOLE SIZE	CASING SIZE	CASING WEIGHT/FT	SETTING DEPTH	SACKS OF CEMENT	ESTIMATED TOC
LINER	8.75"	7.625"	39# P-110 FJ/HDL	10950'-14400'	320	10800
OPEN HOLE	6.125"	5.5" TBNG		14350'		

PROPOSED BLOWOUT PREVENTION PROGRAM			MAUFACTURER
TYPE	WORKING PRESSURE	TEST PRESSURE	
ANNULAR	2500	2500	TBD
DOUBLE RAM	5000	5000	TBD
SINGLE RAM	5000	5000	TBD

**Casing Program: Grama State SWD 2 - Minimum Pipe Requirements**

Open Hole Size (inches)	Casing Depth: From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	Anticipated Mud Weight (ppg)	Burst (psi)	Burst SF (1.125)	Collapse (psi)	Collapse SF (1.125)	Pipe Body Tension (lbs)	Joint Tension (lbs)	Air Weight (lbs)	Buoyant Weight (lbs)	Pipe Body Tension SF (1.8)	Joint Tension SF (1.8)	
Surface																				
20	0	1,600'	1,600'	20	94.0	J-55	BTC	New	8.8	2,110	2.88	520	1.42	1,480,000	1,402,000	150,400	130,175	11.37	10.77	
Intermediate 1																				
17.5	0	5,700'	5,700'	13 3/8"	68	J55	BTC	New	10.2	3,450	1.74	1,950	2.58	1,241,000	1,241,000	387,600	327,186	3.79	3.79	
Intermediate 2																				
12.25"	0	11,050'	11,050'	9 5/8"	40	P-110	BTC	New	9	7,910	1.53	3,470	2.01	1,260,000	1,266,000	442,000	381,211	3.31	3.32	
Production																				
8.75"	10800	14,675'	14,675'	7 5/8"	39	P-110	UFJ	New	12	12,640	1.38	11,080	1.21	1,231,000	1,231,000	151,125	123,413	9.97	9.97	

**Casing Design Criteria and Casing Loading Assumptions:**

Surface	Intermediate 1	Intermediate 2	Production
Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: Collapse A 1.125 design factor with 1/2 internal evacuation and collapse force equal to a mud gradient of: Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: Collapse A 1.125 design factor with 1/4 TVD internal evacuation and collapse force equal to a mud gradient of: Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: Collapse A 1.125 design factor with 1/3 TVD internal evacuation and collapse force equal to a mud gradient of: Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of: Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of: Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:
8.8 ppg 8.8 ppg 8.8 ppg	10.2 ppg 10.2 ppg 10.2 ppg	9 ppg 9 ppg 9 ppg	12 ppg 12 ppg 12 ppg





**CHISHOLM  
ENERGY**

**GEOLOGICAL PROGNOSIS**

Well Name: **Gramma 34 SWD 1**  
State: **New Mexico**  
County: **Lea**  
Section: **34**  
Township: **21S**  
Range: **34E**  
Field Name:

API No.: **30-025-**  
SL: **522 ft FEL & 220 ft FSL (32.4286359, -103.4503892 NAD 27)**

Approx LP:  
BHL:  
Surface Elevation: **3628 FT**  
KB Elevation: **3653 FT**  
PTD: **est.15500 FT**

Well Objective: **Devonian & Silurian**  
Target Line:

FORMATION	MD, ft	TVD, ft	TVDSS, ft	LITHOLOGY	RES OBJ/CONTENTS
Rustler		1678	1950	Anhy & Salt	
Yates		3948	-320	SS & SH	
Capitan Reef		4338	-710	Dol & LS	
Cherry Canyon		5818	-2190	SS, SLTST, & SH	
Bone Spring		8328	-4700	LS & SH	
1st Bone Spring SS		9438	-5810	SS, SLTST, & SH	
2nd Bone Spring SS		10008	-6380	SS, SLTST, & SH	
3rd Bone Spring CARB		10288	-6660	SS, SLTST, & SH	
3rd Bone Spring SS		10888	-7260	SS, SLTST, & SH	
Wolfcamp		11143	-7515	SLTST, LS, & SH	
Penn Shale		11378	-7750	SS & SH	
Strawn		11668	-8040	LS	
Morrow		12513	-8885	SS & SH	
Miss Lime		13808	-10180	LS	
Woodford		14228	-10600	SH	
Silurian		14373	-10745	SH	

Evaluation: **Quad Combo from TD to Intermediate casing.**

Geologist **SCP** Date: **1/31/2019**



# Patriot Drilling, LLC

## RIG NO. 5

**Annular Preventer**  
13-3/8" 5,000 PSI WP

**Ram Preventers**  
13-3/8" 5,000 PSI WP Double Ram  
13-3/8" 5,000 PSI WP Single Ram

Test the pipe rams, blind rams, floor valves (IBOP and/or upper Kelly valve), choke lines and manifold to 250 psi/5,000 psi with a test plug and a test pump.

Test the annular to 250 psi/2,500 psi with same as above.

**AFFIRMATIVE STATEMENT OF EXAMINATION OF GEOLOGIC AND ENGINEERING DATA**

Based on the available engineering, geologic, and seismic data, we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Grama State 2 SWD #1) and any underground sources of drinking water.

**NAME:** Steve Poe

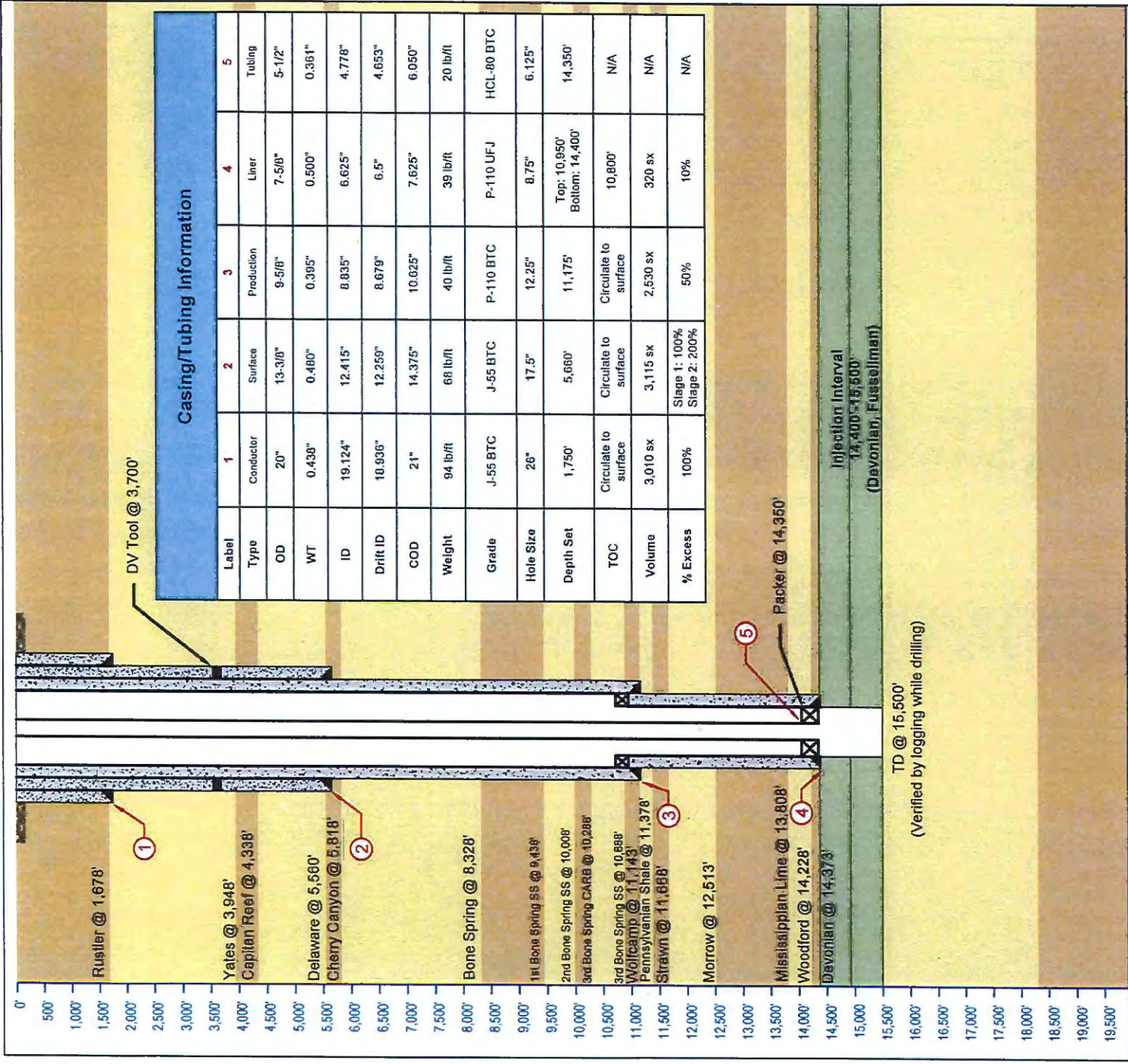
**TITLE:** Chief Geophysicist

**COMPANY:** Chisholm Energy Operating, LLC

**SIGNATURE:**



**Date:** 5-16-2019



Casing/Tubing Information					
Label	1	2	3	4	5
Type	Conductor	Surface	Production	Liner	Tubing
OD	20"	13-3/8"	9-5/8"	7-5/8"	5-1/2"
WT	0.438"	0.480"	0.395"	0.500"	0.361"
ID	19.124"	12.415"	8.835"	6.625"	4.778"
Drift ID	10.936"	12.259"	8.679"	6.5"	4.653"
COD	21"	14.375"	10.025"	7.625"	6.050"
Weight	94 lb/ft	68 lb/ft	40 lb/ft	39 lb/ft	20 lb/ft
Grade	J-55 BTC	J-55 BTC	P-110 BTC	P-110 UFJ	HCL-60 BTC
Hole Size	26"	17.5"	12.25"	8.75"	6.125"
Depth Set	1,750'	5,060'	11,175'	Top: 10,950' Bottom: 14,400'	14,350'
TOC	Circulate to surface	Circulate to surface	Circulate to surface	10,800'	N/A
Volume	3,010 sx	3,115 sx	2,530 sx	320 sx	N/A
% Excess	100%	Stage 1: 100% Stage 2: 200%	50%	10%	N/A

<b>LONQUIST &amp; CO. LLC</b> PETROLEUM ENGINEERS ENERGY ADVISORS HOUSTON   CALGARY AUSTIN   WICHITA   DENVER	3Bear Field Services, LLC	Gramma State SWD No. 2	
	Texas License F-9147 12912 Hill Country Blvd, Ste F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9816	Country: USA Location: Site: 351 FNL, 215 FWL API No: N/A NMOCD District No: 1 Drawn: TFM Rev No: 1	State/Province: New Mexico County/Parish: Lea Survey: S2-T22S-R34E Well Type/Status: SWD Date: 04/30/2019 Approved:



**Grama State SWD No. 2**  
**2 Mile Area of Review**  
**38 Bear Field Services LLC**  
 Lea County, NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US FL)  
 Drawn by: SJL Date: 5/7/2019 Approved by: CBW

**LONGQUEST & CO. LLC**

PERMITS  
 ENERGY  
 AND  
 ENVIRONMENTAL  
 SERVICES

ACTIVE - OIL (2) - GAS (8)  
 NEVER DRILLED - OIL (1)  
 CANCELED LOCATION (7)

Grama State SWD No. 2

- 1/2 Mile Radius
- 1 Mile Radius
- 2 Mile Radius
- QC-Section (NM-PLSS 2nd Div.)
- Section (NM-PLSS 1st Div.)
- Township/Range (NM-PLSS)
- Laterals

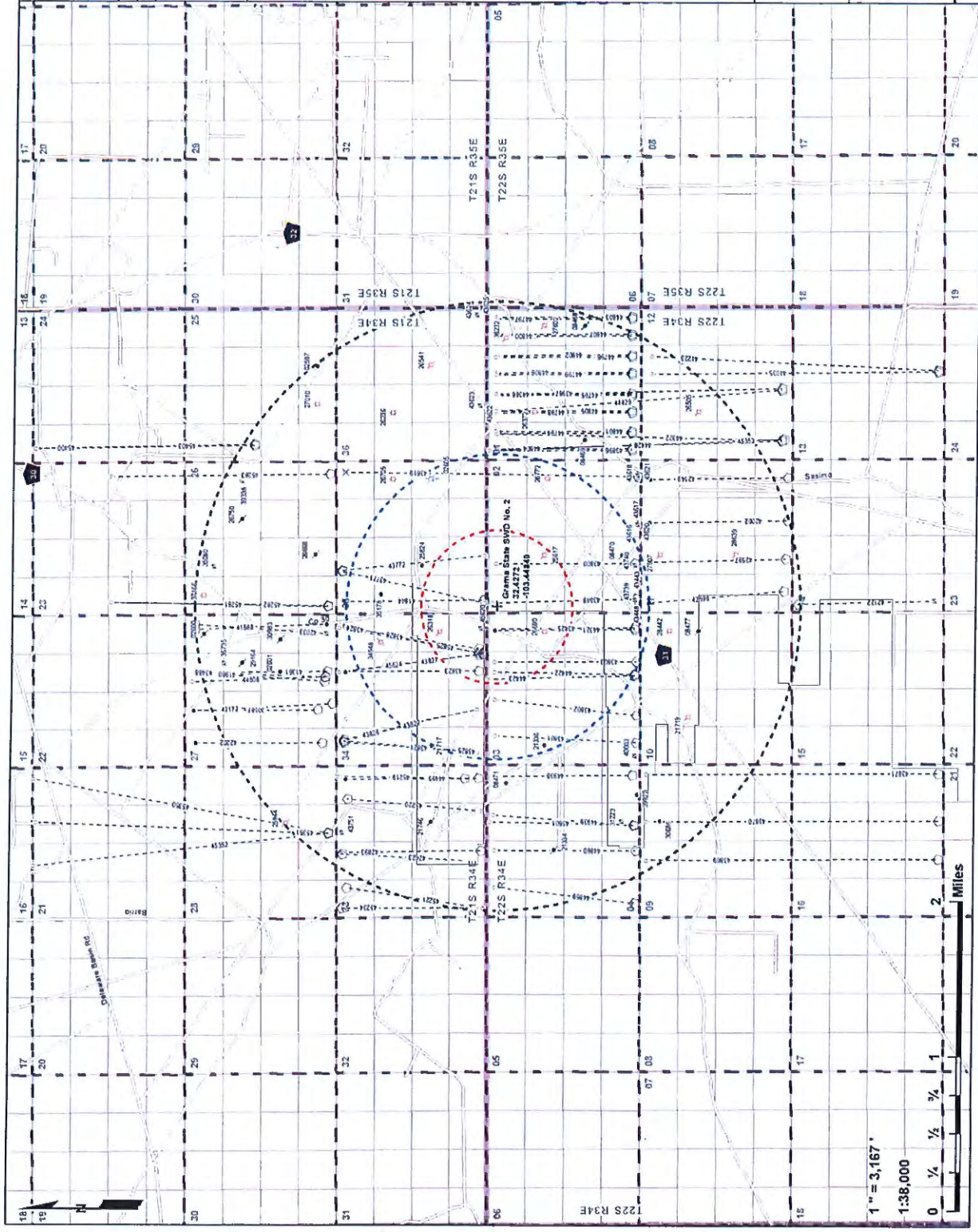
API (30-025-...) SHL Status - Type (Count)

- Horizontal Surface Location (83)
- Active - Oil (2)
- Active - Gas (8)
- Active - Miscellaneous (4)
- Approved TA - Salt Water Disposal (1)
- Plugged (Not Released) - Gas (1)
- Plugged (Site Released) - Oil (12)
- Plugged (Site Released) - Gas (10)
- Plugged (Site Released) - Miscellaneous (2)
- Canceled Location (20)

API (30-025-...) BHL Status - Type (Count)

- Active - Oil (19)
- Permitted - Oil (58)
- Permitted - Gas (1)
- Never Drilled - Oil (1)
- Canceled Location (7)

\*Well Data Source: NM-OCB, Drillinite (2/3/19)



1" = 3,167'  
 1:38,000





Granta State SWD No 2  
 1 Mile Area of Review List

API (EPA)-1	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	SPUD DATE	FIELD
0185	STATE AA 001	S	T	MARATHON OIL PERMAN LLC	4350	-103.45131649	-37.77359		[6090] SWD, WATES
0870	STATE BU 001	O	P	DE PERDUNIA LLC	4350	-103.45131649	-37.77359		[6090] SWD, WATES
21316	GRAMA RIDGE	M	A	ERSON GRAMA RIDGE STORAGE AND TRANSPORTATION	13197	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
25617	GETTY 25 STATE COM 001	O	P	ERSON ENERGY OPERATING COMPANY LP	13197	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
25824	GETTY 35 STATE COM 001	O	A	MARATHON OIL PERMAN LLC	13185	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
26130	LIANO 24 STATE 001	O	P	ERSON ENERGY OPERATING COMPANY LP	13185	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
26690	GRAMA RIDGE	G	A	ERSON ENERGY OPERATING COMPANY LP	13185	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
26777	SAMS SIMON 1 STATE 001	G	A	MARATHON OIL PERMAN LLC	13150	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
34048	GRAMA RIDGE EAST 34 STATE 001	G	H	CHISHOLM ENERGY OPERATING, LLC	33500	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
35178	BURQUINDY 2005 IV-P 001	O	C	ERSON ENERGY OPERATING COMPANY LP	33553	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
41844	BURQUINDY 2005 IV-P 002	O	C	ERSON ENERGY OPERATING COMPANY LP	33553	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43425	RAM 3 EPA STATE COM 001	O	A	ERSON ENERGY OPERATING COMPANY LP	11111	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43443	SQUEEZE STATE COM 001C	O	C	GAT EXPLORATION COMPANY LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43448	PULCKER RAPID STATE COM 001C	O	C	GAT EXPLORATION COMPANY LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43459	GRAMA RIDGE STATE COM 001C	O	C	MARATHON OIL PERMAN LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43759	PULCKER RAPID STATE COM 001B	O	C	CENTENNIAL RESOURCE PRODUCTION, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43760	SQUEEZE STATE COM 001B	O	C	CENTENNIAL RESOURCE PRODUCTION, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43771	BURQUINDY 2005 IV-P 003H	O	N	ERSON ENERGY OPERATING COMPANY LP	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43772	SQUEEZE STATE COM 001B	O	N	ERSON ENERGY OPERATING COMPANY LP	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43800	CHONG ENLIGHT STATE 001B	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43801	CHONG ENLIGHT STATE 001B	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43802	CHONG ENLIGHT STATE 001B	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43821	CHONG ENLIGHT STATE 001B	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43822	GRAMA RIDGE EAST 34 STATE 282 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43823	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43824	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	10343	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43825	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	10343	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43826	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	11321	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43827	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43828	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43829	PULCKER RAPID STATE COM 001B	O	N	CENTENNIAL RESOURCE PRODUCTION, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
43830	RAM 3 EPA STATE COM 001B	O	N	ERSON ENERGY OPERATING COMPANY LP	10242	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
44231	RAM 3 EPA STATE COM 001B	O	N	ERSON ENERGY OPERATING COMPANY LP	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
44232	RAM 3 EPA STATE COM 001B	O	N	ERSON ENERGY OPERATING COMPANY LP	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
44233	RAM 3 EPA STATE COM 001B	O	N	ERSON ENERGY OPERATING COMPANY LP	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
45224	GRAMA 34 STATE SWD 001C	S	C	ERSON ENERGY OPERATING COMPANY LP	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
45225	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)
45226	GRAMA RIDGE EAST 34 STATE COM 285 000H	O	N	CHISHOLM ENERGY OPERATING, LLC	0	-103.44110178	-37.77359		[17768] GRAMA RIDGE, MORROW, EAST (GAS)

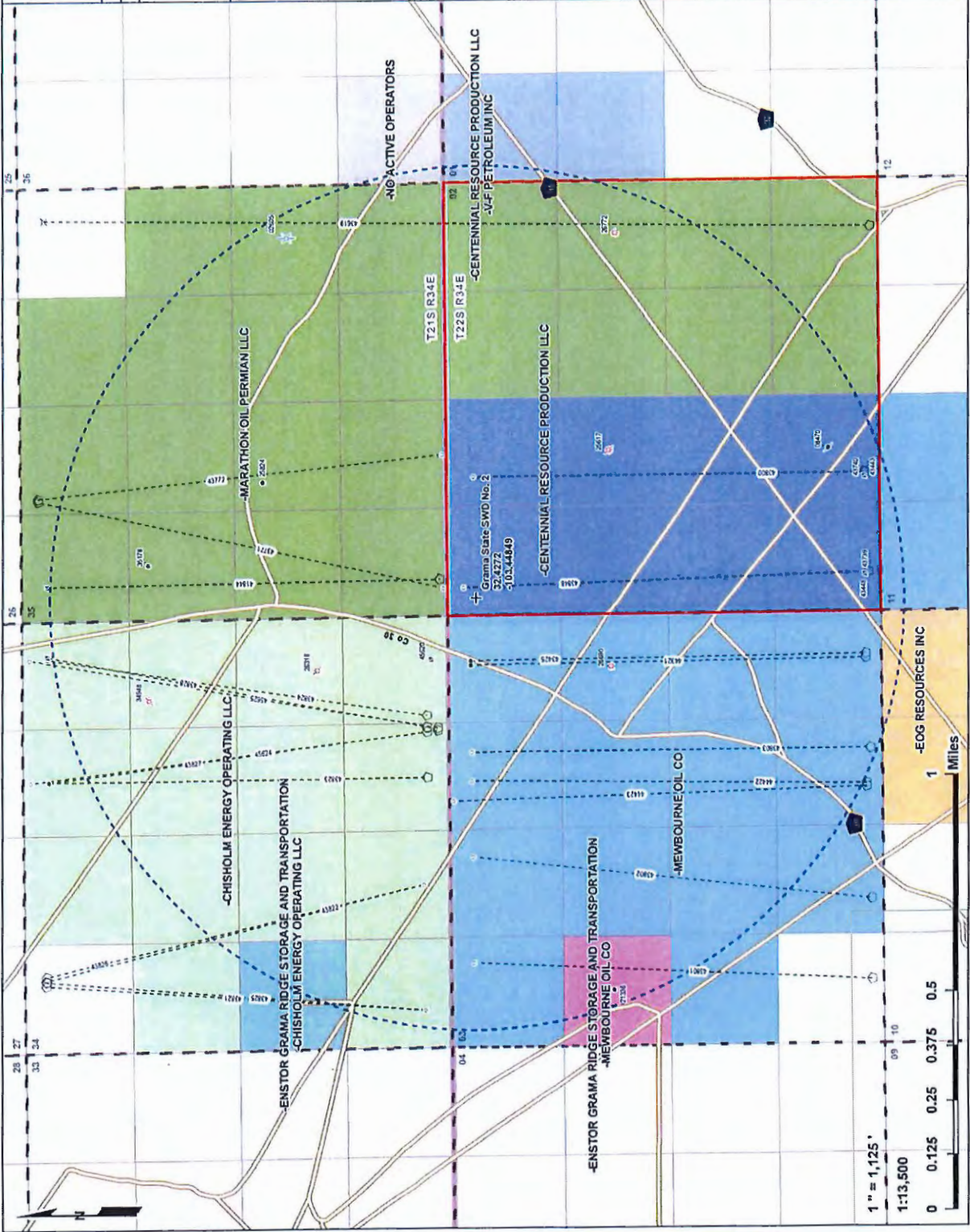
Granta State SWD No 2 - 1 Mile Area of Review List  
 NH-000 (2016)

**Grama State SWD No. 2**  
**1 Mile Offset Operators**  
**3 Bear Field Services LLC**  
 Lea County, NM

PCS: NAD 1983 SPCS NM-E FPS 3001 (US F.)  
 Drawn by: SJL Date: 5/8/2019 Approved by: CBW

**LONQUIST & CO LLC**  
 PETROLEUM SERVICES  
 ENERGY SERVICES  
 ENERGY SERVICES  
 ENERGY SERVICES

- Legend**
- 1 Mile Radius**
  - OO-Section (NM-PLSS 2nd Div)**
  - Section (NM-PLSS 1st Div)**
  - Township/Range (NM-PLSS)**
  - Surface Owner (MERCHANT LIVESTOCK)**
  - Laterals**
  - API (30-025-...) SHL Status - Type (Count)**
    - Horizontal Surface Location (23)
    - Active - Gas (2)
    - Active - Oil (2)
    - Active - Miscellaneous (1)
  - Approved TA - Salt Water Disposal (1)**
  - Plugged (Not Released) - Gas (1)**
  - Plugged (Site Released) - Oil (1)**
  - Plugged (Site Released) - Gas (2)**
  - Cancelled Location (5)**
  - API (30-025-...) BHL Status - Type (Count)**
    - Active - Oil (6)
    - Permitted - Oil (15)
    - Never Drilled - Oil (1)
    - Cancelled Location (3)
  - Operators**
    - CENTENNIAL RESOURCE PRODUCTION LLC
    - CENTENNIAL RESOURCE PRODUCTION LLC
    - PETROLEUM INC
    - CHISHOLM ENERGY OPERATING LLC
    - ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION
    - ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION
    - ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION
    - EGG RESOURCES INC
    - MARATHON OIL CO
    - MEWBOURNE OIL CO
    - MEWBOURNE OIL CO
    - NO ACTIVE OPERATORS





**Grama State SWD No. 2**  
**1 Mile Offset Lessees**  
**3Bear Field Services LLC**  
 Lea County, NM

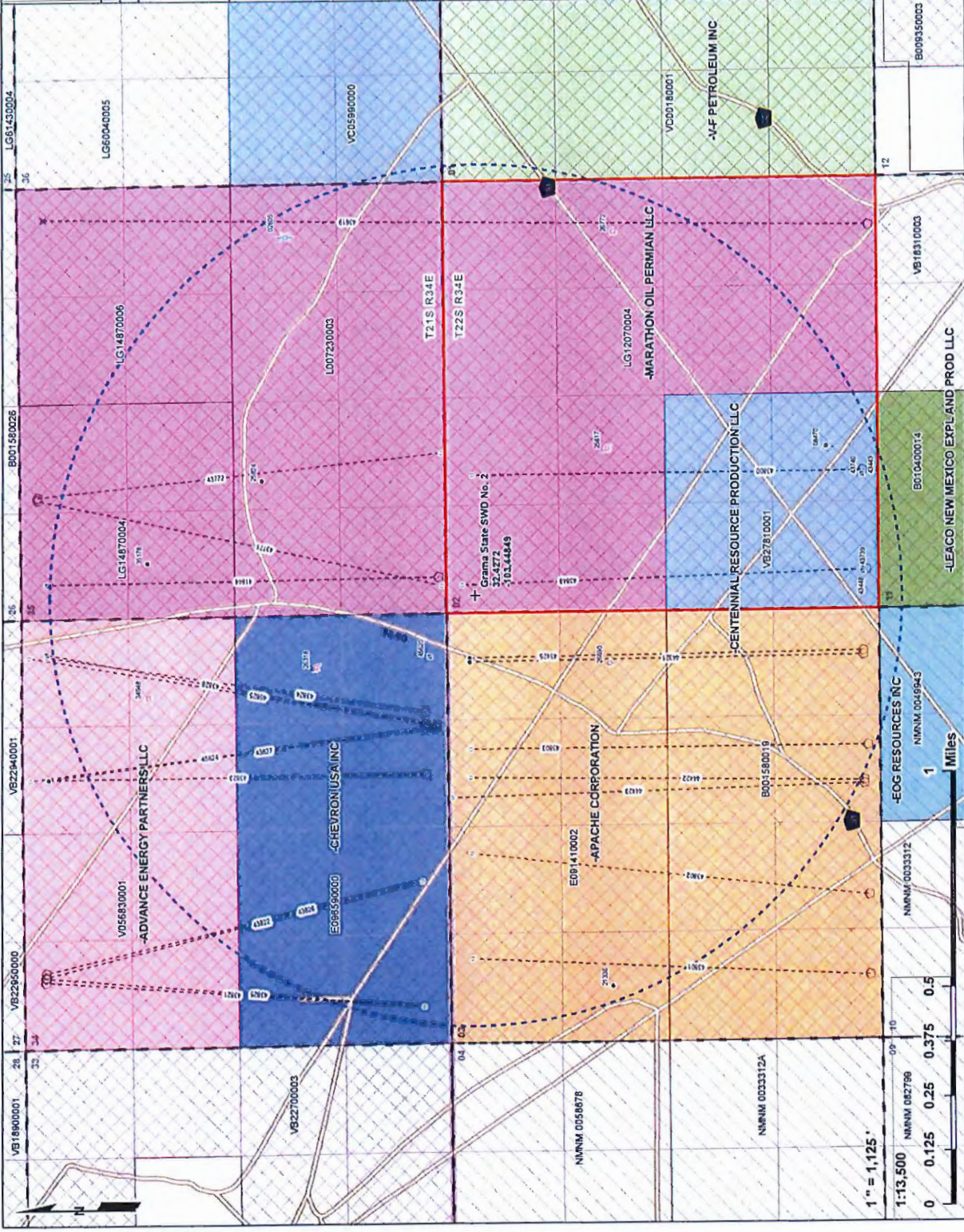
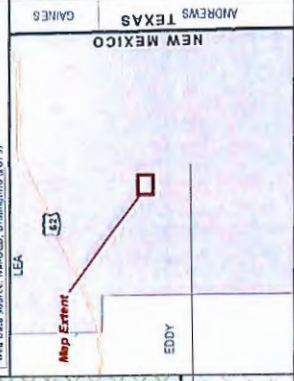
PCS: MAD 1983 SPCS NM-E FPS 3001 (US F.)  
 Drawn by: SJL Date: 5/8/2019 Approved by: CBW

**LONQUIST & CO LLC**

REGULATORY  
 PETROLEUM  
 SERVICES

ACTIVE - PRODUCTION • GASLIFT - REPAIRS  
 TEMP. - DRILLED COLUMNS • LATERALS • FRACTURES

- Grama State SWD No. 2**
- 1 Mile Radius
  - OO-Section (NM-PLSS 2nd Div.)
  - Section (NM-PLSS 1st Div.)
  - Township/Range (NM-PLSS)
  - Surface Owner (MERCHANT LIVESTOCK)
  - NM - BLM (O&G Leases)
  - NM - SLO (O&G Leases)
  - Laterals
- API (30-025-...) SHL Status - Type (Count)**
- Horizontal Surface Location (23)
  - Active - Oil (2)
  - Active - Gas (2)
  - Active - Miscellaneous (1)
  - Approved TA - Salt Water Disposal (1)
  - Plugged (Not Released) - Gas (1)
  - Plugged (Not Released) - Oil (1)
  - Plugged (Sites Released) - Gas (2)
  - Plugged (Sites Released) - Oil (1)
  - Cancelled Location (5)
- API (30-025-...) BHL Status - Type (Count)**
- Active - Oil (4)
  - Permitted - Oil (15)
  - Never Drilled - Oil (1)
  - Cancelled Location (2)
- Lessees**
- ADVANCE ENERGY PARTNERS LLC
  - APACHE CORPORATION
  - CENTENNIAL RESOURCE PRODUCTION LLC
  - CHEVRON USA INC
  - EOG RESOURCES INC
  - LEACO NEW MEXICO EXPLAND PROD LLC
  - MARATHON OIL PERMIAN LLC
  - VF PETROLEUM INC
- W&A Data Source: NM-O&G, DrillInfo (2019)**





Grma State SWD No. 2  
1 Mile Offset Operators and Lessees List

SUR	CO UNIT LETTER(S)	OPERATOR	MINERAL LESSEE	MINERAL OWNER	SURFACE OWNER	ADDRESS 1	ADDRESS 2
3421524E	A,B,C,E,F,G,H,I,J,K,L,M,N,O,P	CHISHOLM ENERGY OPERATING LLC	-	-	-	601 CHERRY STREET	FORT WORTH, TX 76102
	L	CHISHOLM ENERGY OPERATING LLC	-	-	-	601 CHERRY STREET	FORT WORTH, TX 76102
3521524E	B,C,D,E,F,G,H,I,J,K,L,M,N,O,P	ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	-	-	-	10775 RICHMOND AVE SUITE 1000	HOUSTON, TX 77042
3621524E	M	MARATHON OIL PERMIAN LLC	-	-	-	5535 SAN FELIPE ST	HOUSTON, TX 77056
1722524E	D,E	CENTENNIAL RESOURCE PRODUCTION LLC	CENTENNIAL RESOURCE PRODUCTION LLC	-	-	1081 17TH STREET SUITE 1000	DENVER, CO 80202
2222524E	A,B,C,H,I,O,P	NF PETROLEUM INC	-	-	-	1881 17TH STREET SUITE 1000	DENVER, CO 80202
3022524E	C,D,E,F,K,L,M	MARATHON OIL PERMIAN LLC	-	-	-	PO BOX 1819	MIDLAND, TX 79702
	A,B,C,D,F,G,H,I,J,K,L,N,O,P	CENTENNIAL RESOURCE PRODUCTION LLC	-	-	-	5535 SAN FELIPE ST	HOUSTON, TX 77056
1022524E	B	MEMBOURNE OIL CO	-	-	-	PO BOX 5270	DENVER, CO 80221
1122524E	A,B	ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	-	-	-	10775 RICHMOND AVE SUITE 1000	HOUSTON, TX 77042
1122524E	C,D	EGG RESOURCES INC	-	-	-	PO BOX 2287	MIDLAND, TX 79702
		MEMBOURNE OIL CO	-	-	-	PO BOX 5270	HOBBES, NM 88241
			-	-	-	PO BOX 1115	ELUNGE, NM 88231
			-	-	-		MERCHANT LIVESTOCK



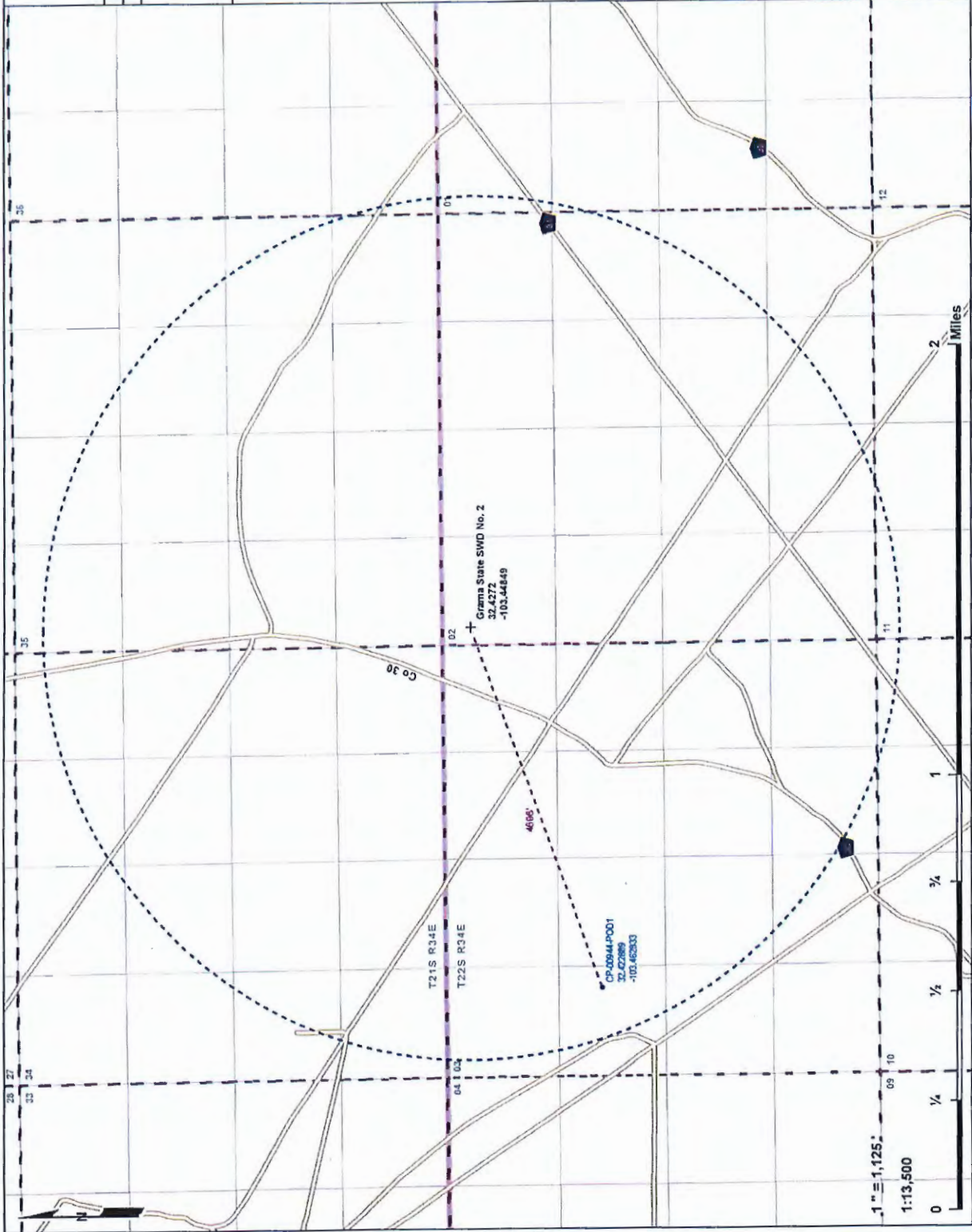
Well Name	API	Section	Township	Range	Unit	County	Formation	ph	hrs_mgl	sodium_mgl	calcium_mgl	iron_mgl	magnesium_mgl	manganese_mgl	chloride_mgl	bicarbonate_mgl	sulfate_mgl	co2_mgl	
WILSON G #001	3002520462	2 21S	34E	T	LEA	ARTESIA	305848								179100	158	7808		
WILSON G #001	3002520462	2 21S	34E	T	LEA	ARTESIA	145214								81910	1095	6570		
STATE BATTERY 4 #040	3002502545	13 21S	34E	N	LEA	ARTESIA	139555								6090	545	2598		
STATE BATTERY 4 #040	3002502545	13 21S	34E	N	LEA	ARTESIA	195957								9292	1151	2293		
HUNT APO STATE #001	3002527135	4 21S	34E	T	LEA	ARTESIA	294627	5.8	26316.8	98899.7	26316.8	27.37	5157.46		216575	74.018	403.41		
BERRY APN STATE #001	3002527250	5 21S	34E	L	LEA	BONE SPRING	6.2	19287.1	67071.2	12761.8	96.578	1372.31		132048	162.835	444.708			
BERRY APN STATE #001	3002527250	5 21S	34E	L	LEA	BONE SPRING	7.52	127888	49352.7	2925.18	0.9747	7927.56		82783.4	516.227	1390.57			
MONK 21 STATE COM #001H	3002540986	21 21S	34E	D	LEA	BONE SPRING 2ND SAND	2610881		67168.3	67168.3	39.2	4750.4		5.63	160263.9	122	425	70	
MONK 21 STATE COM #001H	3002541213	21 21S	34E	B	LEA	BONE SPRING 2ND SAND	7	184293.3	54225.2	13340.5	22.8	2309.9		1.98	112774.6	488	425	1300	
MONK 21 STATE COM #001H	3002540986	17 22S	34E	D	LEA	BONE SPRING 2ND SAND	6.6		67943	14246	65	1867		1.88	135000	207	439	550	
MONK 21 STATE COM #001H	3002541183	17 22S	34E	D	LEA	BONE SPRING 2ND SAND	6.4		54887	8497	28	1253		0.87	103000	183	700	100	
MOBIL LEA STATE #001	3002531696	2 20S	34E	K	LEA	DELAWARE	6.3	152064	51632.2	13149.5	5.525	560		0	79230	404.48	690.635		
MOBIL LEA STATE #001	3002531696	2 20S	34E	H	LEA	DELAWARE	5.5	296822	87727.9	45355	8.8125				102148	215237	293.75		
EUNICE MONUMENT SOUTH UNIT #388	3002504641	15 21S	36E	H	LEA	GRAVBURG/SAN ANDRES	8009								2980	2197	610		
EUNICE MONUMENT SOUTH UNIT #400	3002504653	15 21S	36E	L	LEA	GRAVBURG/SAN ANDRES	8822								6380	1360	18		
EUNICE MONUMENT SOUTH UNIT #370	3002504684	18 21S	36E	B	LEA	GRAVBURG/SAN ANDRES	11598								566	2161	525.2		
WILSON DEEP UNIT #001	3002520849	23 21S	34E	F	LEA	MORROW	12800								5252	480	2832		
WILSON DEEP UNIT #001	3002520849	23 21S	34E	L	LEA	PENNSYLVANIAN	10316								5991	300	415		
SOUTH WILSON DEEP UN #001	3002520849	18 19S	32E	H	LEA	STRAWN	147955								98600	300	140		
MIDDLETON A FEDERAL #001	3002508104	18 19S	32E	H	LEA	STRAWN	136947												

**Grama State SWD No. 2**  
**1 Mile Offset Water Wells**  
**3888 Field Services LLC**  
 Lea County, NM

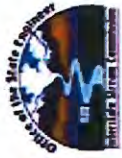
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft)  
 Drawn by: SJL Date: 5/7/2019 Approved by: CBW

**LONGHORN ENGINEERS**  
**LONGHORN ENGINEERS**  
 4500 N. MILLS BLVD. SUITE 1000 ALBUQUERQUE, NM 87110  
 WWW.LONGHORNENGINEERS.COM

- + Grama State SWD No. 2
- Water Well (1)
- 1 Mile Radius
- - - Distance Call
- CO-Section (NM-PLSS 2nd Div.)
- ▬ Section (NM-PLSS 1st Div.)
- ▭ Township/Range (NM-PLSS)







# New Mexico Office of the State Engineer

## Water Right Summary



WR File Number: CP 00964 Subbasin: CP Gross Reference:-  
Primary Purpose: SAN 72-12-1 SANITARY IN CONJUNCTION WITH A COMMERCIAL USE  
Primary Status: PMT PERMIT  
Total Acres: 0 Subfile: -  
Total Diversion: 1 Cause/Case: -  
Agent: ENSTOR GRAMA RIDGE TRANSPORTATION AND STORAGE LLC  
Contact: RON ROUTLEDGE

### Documents on File

Trn #	Doc	File/Act	Status	From/	To	Acres	Diversion	Consumptive
			1 2					
<a href="#">get images</a>	550914	72121_2007-05-10	PMT APR CP 00964	T				1

### Current Points of Diversion

Q Q Q (NAD83 UTM in meters)  
POD Number Well Tag Source 6416 4 SecTws Rng X Y Other Location Desc  
CP 00944 POD1 Shallow 3 1 03 22S 34E 644531 3588351



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

March 11, 2019

TYLER MOEHLMAN

Lonquist Field Services, LLC

3345 Bee Cave Road, Suite 201

Austin, TX 78746

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 03/04/19 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Total Haloacetic Acids (HAA-5)  
Method EPA 524.2 Total Trihalomethanes (TTHM)  
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)  
Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)  
Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager





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**Analytical Results For:**

Longquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
--	---	------------------------------

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
-----------	---------------	--------	--------------	---------------

CP-00944- POD 1	H900853-01	Water	01-Mar-19 14:17	04-Mar-19 15:40
-----------------	------------	-------	-----------------	-----------------

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Celey D. Keene, Lab Director/Quality Manager

\* = Accredited Analyte



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**Analytical Results For:**

Longquist Field Services, LLC  
3345 Bee Cave Road, Suite 201  
Austin TX, 78746

Project: WATER SAMPLES  
Project Number: GRAMA34 SWD#1 /32.422889-103  
Project Manager: TYLER MOEHLMAN  
Fax To: (512) 732-9816

Reported:  
11-Mar-19 10:18

**CP-00944- POD 1**  
**H900853-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
<b>Cardinal Laboratories</b>										
<b>Inorganic Compounds</b>										
Alkalinity, Bicarbonate	259		5.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Chloride*	64.0		4.00	mg/L	1	9030504	AC	05-Mar-19	4500-Cl-B	
Conductivity*	650		1.00	uS/cm	1	9030501	AC	05-Mar-19	120.1	
pH*	7.59		0.100	pH Units	1	9030501	AC	05-Mar-19	150.1	
Resistivity	15.4			Ohms/m	1	9030501	AC	05-Mar-19	120.1	
Specific Gravity @ 60° F	1.000		0.000	[blank]	1	9030509	AC	06-Mar-19	SM 2710F	
Sulfate*	77.3		10.0	mg/L	1	9030601	AC	06-Mar-19	375.4	
TDS*	245		5.00	mg/L	1	9030416	AC	07-Mar-19	160.1	
Alkalinity, Total*	212		4.00	mg/L	1	9030407	AC	05-Mar-19	310.1	
Sulfide, total	<0.0100		0.0100	mg/L	1	9030505	AC	05-Mar-19	376.2	

**Green Analytical Laboratories**

**Total Recoverable Metals by ICP (E200.7)**

Barium*	0.075		0.050	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Calcium*	58.4		0.100	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Iron*	<0.050		0.050	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Magnesium*	17.0		0.100	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Potassium*	3.45		1.00	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	
Sodium*	50.2		1.00	mg/L	1	B903037	AES	06-Mar-19	EPA200.7	

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Celey D. Keene, Lab Director/Quality Manager

\* = Accredited Analyte





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**Analytical Results For:**

Lonquist Field Services, LLC  
 3345 Bee Cave Road, Suite 201  
 Austin TX, 78746  
 Project: WATER SAMPLES  
 Project Number: GRAMA34 SWD#1 /32.422889-103  
 Project Manager: TYLER MOEHLMAN  
 Fax To: (512) 732-9816  
 Reported: 11-Mar-19 10:18

**Inorganic Compounds - Quality Control  
Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
<b>Batch 9030407 - General Prep - Wet Chem</b>								
Prepared: 04-Mar-19 Analyzed: 05-Mar-19								
<b>Blank (9030407-BLK1)</b>								
Alkalinity, Carbonate	ND	1.00	mg/L					
Alkalinity, Bicarbonate	5.00	5.00	mg/L					
Alkalinity, Total	4.00	4.00	mg/L					
<b>LCS (9030407-BS1)</b>								
Prepared: 04-Mar-19 Analyzed: 05-Mar-19								
Alkalinity, Carbonate	ND	2.50	mg/L			80-120		
Alkalinity, Bicarbonate	318	12.5	mg/L			80-120		
Alkalinity, Total	260	10.0	mg/L	250		104 80-120		
<b>LCS Dup (9030407-BSD1)</b>								
Prepared: 04-Mar-19 Analyzed: 05-Mar-19								
Alkalinity, Carbonate	ND	2.50	mg/L			80-120		20
Alkalinity, Bicarbonate	318	12.5	mg/L			80-120	0.00	20
Alkalinity, Total	260	10.0	mg/L	250		104 80-120	0.00	20
<b>Batch 9030416 - Filtration</b>								
Prepared: 05-Mar-19 Analyzed: 07-Mar-19								
<b>Blank (9030416-BLK1)</b>								
TDS	ND	5.00	mg/L					
<b>LCS (9030416-BS1)</b>								
Prepared: 05-Mar-19 Analyzed: 07-Mar-19								
TDS	509		mg/L	527		96.6 80-120		
<b>Duplicate (9030416-DUP1)</b>								
Source: H900795-01 Prepared: 05-Mar-19 Analyzed: 07-Mar-19								
TDS	94400	5.00	mg/L		95100		0.770	20
<b>Batch 9030501 - General Prep - Wet Chem</b>								
Prepared & Analyzed: 05-Mar-19								
<b>LCS (9030501-BS1)</b>								
Conductivity	50200		uS/cm	50000		100 80-120		
pH	7.04		pH Units	7.00		101 90-110		

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Celey D. Keene, Lab Director/Quality Manager





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Analytical Results For:

Lonquist Field Services, LLC  
 3345 Bee Cave Road, Suite 201  
 Austin TX, 78746

Project: WATER SAMPLES  
 Project Number: GRAMA34 SWD#1 /32.422889-103  
 Project Manager: TYLER MOEHLMAN  
 Fax To: (512) 732-9816

Reported:  
 11-Mar-19 10:18

Inorganic Compounds - Quality Control  
 Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
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Batch 9030501 - General Prep - Wet Chem

Source: H900828-01 Prepared & Analyzed: 05-Mar-19

Duplicate (9030501-DUP1)	1230	1.00	uS/cm	1240		0.648	20	
Conductivity	7.66	0.100	pH Units	7.64		0.261	20	
pH	8.12		Ohms/m	8.07		0.648	20	
Resistivity								

Batch 9030504 - General Prep - Wet Chem

Source: H900828-01 Prepared & Analyzed: 05-Mar-19

Blank (9030504-BLK1)	ND	4.00	mg/L					
Chloride								

LCS (9030504-BS1)

Source: H900828-01 Prepared & Analyzed: 05-Mar-19

Chloride	108	4.00	mg/L	100		108	80-120	
----------	-----	------	------	-----	--	-----	--------	--

LCS Dup (9030504-BSD1)

Source: H900828-01 Prepared & Analyzed: 05-Mar-19

Chloride	104	4.00	mg/L	100		104	80-120	3.77
----------	-----	------	------	-----	--	-----	--------	------

Batch 9030505 - General Prep - Wet Chem

Source: H900828-01 Prepared & Analyzed: 05-Mar-19

Blank (9030505-BLK1)	ND	0.0100	mg/L					
Sulfide, total								

Duplicate (9030505-DUP1)

Source: H900828-01 Prepared & Analyzed: 05-Mar-19

Sulfide, total	0.000900	0.0100	mg/L	0.000900		0.00	20	
----------------	----------	--------	------	----------	--	------	----	--

Batch 9030509 - General Prep - Wet Chem

Source: H900785-01 Prepared: 05-Mar-19 Analyzed: 06-Mar-19

Duplicate (9030509-DUP1)	1.079	0.000	[blank]	1.088		0.848	20	
Specific Gravity @ 60° F								

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*Coley D. Keene*

Coley D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Lonquist Field Services, LLC  
3345 Bee Cave Road, Suite 201  
Austin TX, 78746

Project: WATER SAMPLES  
Project Number: GRAMA34 SWD#1 /32.422889-103  
Project Manager: TYLER MOEHLMAN  
Fax To: (512) 732-9816

Reported:  
11-Mar-19 10:18

**Inorganic Compounds - Quality Control  
Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
<b>Batch 9030601 - General Prep - Wet Chem</b>								
<b>Blank (9030601-BLKI)</b>								
Sulfate	ND	10.0	mg/L					Prepared & Analyzed: 06-Mar-19
<b>LCS (9030601-BSI)</b>								
Sulfate	23.2	10.0	mg/L	20.0		116 80-120		Prepared & Analyzed: 06-Mar-19
<b>LCS Dup (9030601-BSD1)</b>								
Sulfate	23.1	10.0	mg/L	20.0		115 80-120 0.303 20		Prepared & Analyzed: 06-Mar-19

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**Analytical Results For:**

Longquist Field Services, LLC 3345 Bee Cave Road, Suite 201 Austin TX, 78746	Project: WATER SAMPLES Project Number: GRAMA34 SWD#1 /32.422889-103 Project Manager: TYLER MOEHLMAN Fax To: (512) 732-9816	Reported: 11-Mar-19 10:18
--	---	------------------------------

**Total Recoverable Metals by ICP (E200.7) - Quality Control**

**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	-------------	-----------	-------

**Batch B903037 - Total Rec. 200.7/200.8/200.2**

**Blank (B903037-BLKI)**

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Calcium	ND	0.100	mg/L					
Potassium	ND	1.00	mg/L					
Barium	ND	0.050	mg/L					
Magnesium	ND	0.100	mg/L					
Sodium	ND	1.00	mg/L					
Iron	ND	0.050	mg/L					

**LCS (B903037-BS1)**

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Sodium	3.29	1.00	mg/L	3.24		102	85-115	
Potassium	8.53	1.00	mg/L	8.00		107	85-115	
Magnesium	20.9	0.100	mg/L	20.0		105	85-115	
Iron	4.15	0.050	mg/L	4.00		104	85-115	
Calcium	4.21	0.100	mg/L	4.00		105	85-115	
Barium	2.05	0.050	mg/L	2.00		103	85-115	

**LCS Dup (B903037-BSD1)**

Prepared: 05-Mar-19 Analyzed: 07-Mar-19

Magnesium	20.6	0.100	mg/L	20.0		103	85-115	1.84	20
Potassium	8.47	1.00	mg/L	8.00		106	85-115	0.723	20
Calcium	4.13	0.100	mg/L	4.00		103	85-115	1.88	20
Sodium	3.22	1.00	mg/L	3.24		99.3	85-115	2.22	20
Barium	2.04	0.050	mg/L	2.00		102	85-115	0.785	20
Iron	4.10	0.050	mg/L	4.00		102	85-115	1.34	20

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager





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**Notes and Definitions**

- ND Analyte NOT DETECTED at or above the reporting limit
  - RPD Relative Percent Difference
  - \*\* Samples not received at proper temperature of 6°C or below.
  - \*\*\* Insufficient time to reach temperature.
  - Chloride by SM4500CH-B does not require samples be received at or below 6°C
- Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

34





**CARDINAL LABORATORIES  
SCALE INDEX WATER ANALYSIS REPORT**

Company : LONQUIST FIELD SERVICES Date Sampled : 03/04/19  
 Lease Name : GRAMA 34 SWD #1 Company Rep. : TYLER MOEHLMAN  
 Well Number : CP-00944-POD1 (H900853-01)  
 Location : 32.422889 -103.462833

**ANALYSIS**

- 1. pH 7.59
- 2. Specific Gravity @ 60/60 F. 1.0000
- 3. CaCO3 Saturation Index @ 80 F. -0.268  
 @ 140 F. +0.432 'Calcium Carbonate Scale Possible'

**Dissolved Gases**

- 4. Hydrogen Sulfide 0.000 PPM
- 5. Carbon Dioxide ND PPM
- 6. Dissolved Oxygen ND PPM

**Cations / Eq. Wt. = MEQ/L**

- 7. Calcium (Ca++) 58.40 / 20.1 = 2.91
- 8. Magnesium (Mg++) 17.00 / 12.2 = 1.39
- 9. Sodium (Na+) 50 / 23.0 = 3.33
- 10. Barium (Ba++) 0.075 / 68.7 = 0.00

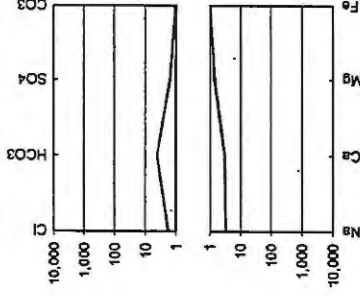
**Anions**

- 11. Hydroxyl (OH-) 0 / 17.0 = 0.00
- 12. Carbonate (CO3=) 0 / 30.0 = 0.00
- 13. Bicarbonate (HCO3-) 259 / 61.1 = 4.24
- 14. Sulfate (SO4=) 77 / 48.8 = 1.58
- 15. Chloride (Cl-) 64 / 35.5 = 1.80

**Other**

- 16. Total Iron (Fe) 0.000 / 18.2 = 0.00
- 17. Total Dissolved Solids 245
- 18. Total Hardness As CaCO3 216.0
- 19. Calcium Sulfate Solubility @ 90 F. 1,472
- 20. Resistivity (Measured) 15,400 Ohm/Meters @ 77 Degrees (F)

**Logarithmic Water Pattern**



**PROBABLE MINERAL COMPOSITION**

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	2.91	=	235
CaSO4	68.07	X	0.00	=	0
CaCl2	55.50	X	0.00	=	0
Mg(HCO3)2	73.17	X	1.33	=	98
MgSO4	60.19	X	0.00	=	0
MgCl2	47.62	X	0.06	=	3
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	1.58	=	113
NaCl	58.46	X	1.74	=	102

ND = Not Determined



# Affidavit of Publication

STATE OF NEW MEXICO  
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated  
May 05, 2019  
and ending with the issue dated  
May 05, 2019.

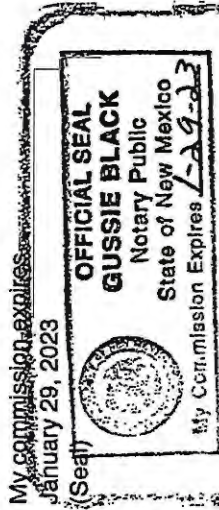


Publisher

Sworn and subscribed to before me this  
5th day of May 2019.



Business Manager



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

**LEGAL NOTICE**  
MAY 5, 2019

3Bear Field Services, LLC  
415 W. Wall St., Suite 1212  
Midland, Texas 79701  
Hilling, Form C-108  
(Application for Authorization  
to Inject) with the New  
Mexico Oil Conservation  
Division for administrative  
approval for its salt water  
disposal well Grains State 2  
SWD No. 7. The proposed  
well will be located at 351  
FWL & 215 FWL in Section  
2, Township 22S, Range  
34E, in Lea County, New  
Mexico. Disposal water will  
be sourced from area  
production and will be  
injected into the Osbornian  
Shurtan Formation  
(determined by offset log  
analysis) through an open  
hole completion between an  
interval of 14,400  
feet to a maximum depth of  
15,500 feet. The maximum  
surface injection pressure  
will not exceed 2,980 psi  
with a maximum rate of  
25,000 BOPD. Interested  
parties opposing the action  
must file objections by  
requestor hearing with the  
Oil Conservation Division  
1220 South St. Francis  
Drive, Santa Fe, New  
Mexico 87503. Written  
objections, additional information  
can be obtained from the  
applicant's agent, Lonquist &  
Co., LLC at (512) 600-1774  
#64113

67112661

00227955

LONQUIST & CO., LLC  
12912 HILL COUNTRY BLVD, STE F200  
AUSTIN, TX 78738

TRACT ID	COUNTY CLERK	MAILING ADDRESS	PHONE	TRACKING #	DATE SHIPPED	DATE RECEIVED
	OIL CONSERVATION DIVISION DISTRICT I	1825 N. FRENCH DR., HOBBS, NM 88240		USPS - 7018 3090 0002 2009 8926	5/21/2019	
	OIL CONSERVATION DIVISION DISTRICT IV	1220 S ST FRANCIS DR, SANTA FE NM 87505		FEDEX - 7757 7160 9591	5/21/2019	
	SURFACE LANDOWNER	MAILING ADDRESS				
	MERCHANT LIVESTOCK	PO BOX 1105, EUNICE, NM, 88231		USPS - 7018 3090 0002 2009 8933	5/21/2019	
	GOVERNMENT AGENCY	MAILING ADDRESS				
	BUREAU OF LAND MANAGEMENT	620 E. GREEN ST., CALSBAD, NM 88220		USPS - 7018 3090 0002 2009 8940	5/21/2019	
	NEW MEXICO STATE LAND OFFICE	310 OLD SANTA FE TRAIL, P.O. BOX 1148, SANTA FE, NM 87504-1148		USPS - 7018 3090 0002 2009 8957	5/21/2019	
	AFFECTED PARTIES	MAILING ADDRESS				
	CENTENNIAL RESOURCE PRODUCTION LLC	1001 17TH STREET SUITE 1800, DENVER, CO 80202		USPS - 7018 3090 0002 2009 8964	5/21/2019	
	CHISHOLM ENERGY OPERATING LLC	801 CHERRY STREET, FORT WORTH, TX 76102		USPS - 7018 3090 0002 2009 8971	5/21/2019	
	ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	10375 RICHMAN AVE. SUITE 3900, HOUSTON, TX 77042		USPS - 7018 3090 0002 2009 8988	5/21/2019	
	EGS RESOURCES INC	PO BOX 2267, MIDLAND, TX 79702		USPS - 7018 3090 0002 2009 9072	5/21/2019	
	MARATHON OIL PERMIAN LLC	5555 SAN FELIPE ST HOUSTON, TX 77056		USPS - 7018 3090 0002 2009 8985	5/21/2019	
	MEWROURNE OIL CO	PO BOX 5270 HOBBS, NM 88241		USPS - 7018 3090 0002 2009 9008	5/21/2019	
	V-F PETROLEUM INC	PO BOX 1889, MIDLAND, TX 79702		USPS - 7018 3090 0002 2009 9015	5/21/2019	

Notices were sent for the Grama State SWD No. 2 application by mailing them a copy of Form C-108 on 5/21/2019



Tyler F. Mochman  
 Petroleum Engineer / Lonsquist & Co., LLC  
 Agent for 3Bear Field Services, LLC

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

OIL CONSERVATION DIVISION  
 DISTRICT I  
 1625 N FRENCH DR  
 HOBBS NM 88240  
 2009 GRAMA STATE SWD #2

9590 9402 4809 8344 2910 49

PS Article Number (Transfer from service label)

701A 3090 0002 2009 8926

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature Restricted Delivery
  - Certified Mail®
  - Collect on Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

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 Domestic Mail Only**

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
  - Return Receipt (electronic) \$
  - Certified Mail Restricted Delivery \$
  - Adult Signature Required \$
  - Adult Signature Restricted Delivery \$

Postage

Total \$

Sent \$

Street \$

City: \$

Postmark  
 Here

OIL CONSERVATION DIVISION  
 DISTRICT I  
 1625 N FRENCH DR  
 HOBBS NM 88240  
 2009 GRAMA STATE SWD #2

PS Form 3800, April 2015 PSN 7530-02-000-8047

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

**CERTIFIED MAIL®**



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**MERCHANT LIVESTOCK**  
**PO BOX 1105**  
**EUNICE NM 88231**  
**2009 GRAMA STATE SWD #2**

9590 9402 4809 8344 2313 02

2. Article Number (transfer from service label)

7016 3090 0002 2009 8933

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  
 Agent  
 Addressee

B. Received by (Printed Name) \_\_\_\_\_  
 C. Date of Delivery \_\_\_\_\_

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

<input checked="" type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®
<input checked="" type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™
<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery
<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise
<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Return Receipt for Signature Confirmation™
<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation
<input type="checkbox"/> Insured Mail	<input type="checkbox"/> Signature Confirmation Restricted Delivery
<input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	

Domestic Return Receipt

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**OFFICIAL USE**

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ _____
<input type="checkbox"/> Return Receipt (electronic)	\$ _____
<input type="checkbox"/> Certified Mail Restricted Delivery	\$ _____
<input type="checkbox"/> Adult Signature Required	\$ _____
<input type="checkbox"/> Adult Signature Restricted Delivery	\$ _____

Postage

\$ \_\_\_\_\_

Total

\$ \_\_\_\_\_

Sen

\_\_\_\_\_

State

\_\_\_\_\_

City

\_\_\_\_\_

**MERCHANT LIVESTOCK**

**PO BOX 1105**

**EUNICE NM 88231**

**2009 GRAMA STATE SWD #2**

Postmark  
Here

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

**CERTIFIED MAIL®**

PS Form 3800, April 2015 PSN 7530-02-000-9337 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**BUREAU OF LAND MANAGEMENT**  
**620 E GREENE STREET**  
**CARLSBAD NM 88220**

**2009 GRAMA STATE SWD #2**

9590 9402 4809 8344 2979 25

Article Number/Transfer from service label

**7018 3090 0002 2009 8940**

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee

C. Date of Delivery

B. Received by (Printed Name)

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

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**OFFICIAL USE**

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
  - Return Receipt (electronic) \$
  - Certified Mail Restricted Delivery \$
  - Adult Signature Required \$
  - Adult Signature Restricted Delivery \$

Postage

Total P. \$  
 Sent To BUREAU OF LAND MANAGEMENT  
 Street 1 620 E GREENE STREET  
 City/ St CARLSBAD NM 88220  
 ZIP+4® 2009 GRAMA STATE SWD #2

Postmark  
 Here

7018 3090 0002 2009 8940  
 7018 3090 0002 2009 8940

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

PS Form 3800, April 2015 PSN 7530-02-000-9017 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front, if space permits.

**NEW MEXICO STATE LAND OFFICE**  
**310 OLD STANTA FE TRAIL**  
**PO BOX 1148**  
**SANTA FE NM 87405-1148**  
**2009 GRAMA STATE SWD #2**

9590 9402 4809 8344 2979 1b

**2. Article Number (Transfer from service label)**

7018 3090 0002 2009 8957

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

**A. Signature**

Agent  
 Addressee

**B. Received by (Printed Name)**

**C. Date of Delivery**

**D. Is delivery address different from item 1?  Yes  No**  
 If YES, enter delivery address below:

**3. Service Type**

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

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**OFFICIAL USE**

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
- Return Receipt (electronic) \$
- Certified Mail Restricted Delivery \$
- Adult Signature Required \$
- Adult Signature Restricted Delivery \$

Postage

Total Fx

Sent To

Street #

City, St.

Postmark  
Here

**NEW MEXICO STATE LAND OFFICE**  
**310 OLD STANTA FE TRAIL**  
**PO BOX 1148**  
**SANTA FE NM 87405-1148**  
**2009 GRAMA STATE SWD #2**

7018 3090 0002 2009 8957  
 7018 3090 0002 2009 8957

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

PS Form 3800, April 2015 PSN 7530-02-000-9017 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**CENTENNIAL RESOURCE PROD LLC**  
 1001 17TH STREET STE 1800  
 DENVER CO 80202

**2009 GRAMA STATE SWD #2**

9590 9402 4809 8344 2975 00

2. Article Number (transfer from service label)

7018 3090 0002 2009 8964

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Return Receipt for Signature Confirmation™
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

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**OFFICIAL USE**

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$

Postmark  
Here

7018 3090 0002 2009 8964  
 7018 3090 0002 2009 8964

**CENTENNIAL RESOURCE PROD LLC**  
 1001 17TH STREET STE 1800  
 DENVER CO 80202

**2009 GRAMA STATE SWD #2**

PS Form 3800, April 2015 PSN 7530-02-000-0017 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**CHISHOLM ENERGY OPERATING LLC**  
 801 CHERRY STREET  
 FT WORTH TX 76102

2009 GRAMA STATE SWD #2

9590 9402 4809 8344 2978 26

2 Article Number (Transfer from service label)

7018 3090 0002 2009 8971

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from Item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

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**OFFICIAL USE**

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
- Return Receipt (electronic) \$
- Certified Mail Restricted Delivery \$
- Adult Signature Required \$
- Adult Signature Restricted Delivery \$

Postage

Total P \$  
 Sent To \$  
 Street: \$  
 City: \$

**CHISHOLM ENERGY OPERATING LLC**  
 801 CHERRY STREET  
 FT WORTH TX 76102  
 2009 GRAMA STATE SWD #2

PS Form 3800, April 2015 PSN 7530-02-000-9347 See Reverse for Instructions

7018 3090 0002 2009 8971  
 7018 3090 0002 2009 8971

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.  
**CERTIFIED MAIL**



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**ENSTOR GRAMA RIDGE STORAGE  
AND TRANSPORTATION**  
10375 RICHMOND STE 1900  
HOUSTON TX 77042  
2009 GRAMA STATE SWD #2

9590 9402 4809 8344 2978 19

2. Article Number (Transfer from service label)

7018 3090 0002 2009 8988

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

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**OFFICIAL USE**

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$
- Return Receipt (electronic) \$
- Certified Mail Restricted Delivery \$
- Adult Signature Required \$
- Adult Signature Restricted Delivery \$

Postage

Total Pr

Sent To

Street #

City, St.

Postmark  
Here

**ENSTOR GRAMA RIDGE STORAGE  
AND TRANSPORTATION**  
10375 RICHMOND STE 1900  
HOUSTON TX 77042  
2009 GRAMA STATE SWD #2

PS Form 3800, April 2015 PSN 7530-02-000-9017

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.

7018 3090 0002 2009 8988  
9590 9402 4809 8344 2978 19



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

**EOG RESOURCES INC**  
**PO BOX 2267**  
**MIDLAND TX 79702**  
**2009 GRAMA STATE SWD#2**

9590 9402 4809 8344 2862 95

2. Article Number (Transfer from service label)  
**7018 3090 0002 2009 9022**

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee  
 B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

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**OFFICIAL USE**

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
  - Return Receipt (electronic) \$
  - Certified Mail Restricted Delivery \$
  - Adult Signature Required \$
  - Adult Signature Restricted Delivery \$

Postage

Total Po

Sent To

Street #

City, Sta

**EOG RESOURCES INC**  
**PO BOX 2267**  
**MIDLAND TX 79702**  
**2009 GRAMA STATE SWD#2**

Postmark  
 Here

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS. FOLD AT DOTTED LINE

**CERTIFIED MAIL®**

PS Form 3800, April 2015 PSN 7530-02-300-9047 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**MARATHON OIL PERMIAN LLC**  
**5555 SAN FELIPE ST**  
**HOUSTON TX 77056**

**2009 GRAMA STATE SWD #2**

3555U Y4U2 4809 8344 2862 64

2. Article Number (transfer from service label)

7018 3090 0002 2009 8995

PS Form 3811, July 2015 PSN 7530-02-000-9083

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

Agent  
 Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE

**CERTIFIED MAIL®**

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**OFFICIAL USE**

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postage

Total P

Sent To

Street

City St

**MARATHON OIL PERMIAN LLC**  
**5555 SAN FELIPE ST**  
**HOUSTON TX 77056**

**2009 GRAMA STATE SWD #2**

Postmark  
Here

PS Form 3800, April 2015 PSN 7530-02-000-9017 See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

MEWBOURNE OIL CO  
 PO BOX 5270  
 HOBBS NM 88241  
 2009 GRAMA STATE SWD #2

**2. Article Number (Transfer from service label)**

7016 3090 0002 2009 9008

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

<input checked="" type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®
<input checked="" type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™
<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery
<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise
<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™
<input type="checkbox"/> Insured Mail (over \$500)	<input type="checkbox"/> Signature Confirmation Restricted Delivery
<input type="checkbox"/> Insured Mail Restricted Delivery	<input type="checkbox"/> Restricted Delivery

Domestic Return Receipt

**U.S. Postal Service™**  
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*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

**Certified Mail Fee**

Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$
<b>Total</b>	\$

Postmark Here

7016 3090 0002 2009 9008  
 7016 3090 0002 2009 9008

MEWBOURNE OIL CO  
 PO BOX 5270  
 HOBBS NM 88241

2009 GRAMA STATE SWD #2

**CERTIFIED MAIL**  
 PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.

PS Form 3800, April 2015 PSN 7530-02-000-9037

See Reverse for Instructions



**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front, if space permits.

V-F PETROLEUM INC  
 PO BOX 1889  
 MIDLAND TX 79702  
 2009 GRAMA STATE SWD #2

9590 9402 4809 8344 2862 88

2 Article Number (Transfer from service label)

7018 3090 0002 2009 9015

PS Form 3811, July 2016 PSN 7530-02-000-8053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery/Restricted Delivery
  - Insured Mail
  - Insured Mail Restricted Delivery (over \$500)
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
*Domestic Mail Only*

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**OFFICIAL USE**

Certified Mail Fee

\$ \_\_\_\_\_

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy) \$ \_\_\_\_\_

Return Receipt (electronic) \$ \_\_\_\_\_

Certified Mail Restricted Delivery \$ \_\_\_\_\_

Adult Signature Required \$ \_\_\_\_\_

Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage

\$ \_\_\_\_\_

Total \$ \_\_\_\_\_

Sort \$ \_\_\_\_\_

Street \$ \_\_\_\_\_

City \$ \_\_\_\_\_

Postmark  
Here

V-F PETROLEUM INC  
 PO BOX 1889  
 MIDLAND TX 79702  
 2009 GRAMA STATE SWD #2

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.  
**CERTIFIED MAIL®**

7018 3090 0002 2009 9015  
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# LONQUIST & CO. LLC

AUSTIN  
HOUSTON

PETROLEUM  
ENGINEERS

WICHITA  
CALGARY

ENERGY  
ADVISORS

[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

BUREAU OF LAND MANAGEMENT  
620 E. GREEN ST., CARLSBAD, NM 88220

**Subject:** Grama State SWD No. 2 Authorization to Inject

**To Whom It May Concern:**

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for 3Bear Field Services LLC's Grama State SWD No. 2 well. Section XIV of Form C-108 requires that the surface land owner on which the well is located and each leasehold operator within a one-half mile radius of the proposed well location be furnished with the application. The notice of application has been extended to a one-mile radius

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Any questions should be directed towards 3Bear Field Services LLC's agent, Lonquist & Co., LLC.

Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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May 21, 2019

CENTENNIAL RESOURCE PRODUCTION LLC  
1001 17TH STREET SUITE 1800, DENVER, CO 80202

**Subject:** Grama State SWD No. 2 Authorization to Inject

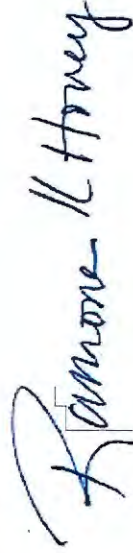
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
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(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)

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May 21, 2019

CHISHOLM ENERGY OPERATING LLC  
801 CHERRY STREET, FORT WORTH, TX 76102

**Subject:** Grama State SWD No. 2 Authorization to Inject

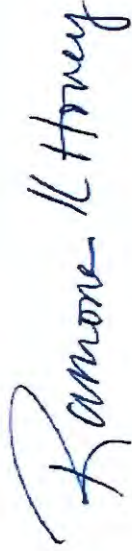
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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May 21, 2019

ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION  
10375 RICHMAN AVE SUITE 1900, HOUSTON, TX 77042

**Subject:** Grama State SWD No. 2 Authorization to Inject

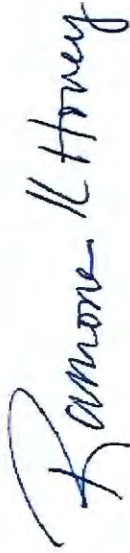
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)

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CALGARY

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[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

EOG RESOURCES INC  
PO BOX 2267, MIDLAND, TX 79702

**Subject:** Grama State SWD No. 2 Authorization to Inject

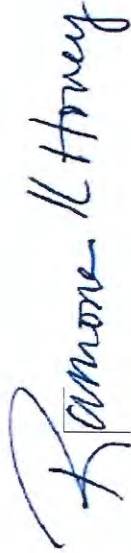
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Regards,



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Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



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May 21, 2019

MARATHON OIL PERMIAN LLC  
5555 SAN FELIPE ST HOUSTON, TX 77056

**Subject:** Grama State SWD No. 2 Authorization to Inject

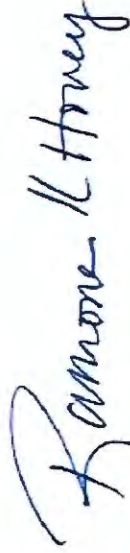
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Regards,



Ramona K. Hovey  
Sr. Petroleum Engineer  
Lonquist & Co., LLC

(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)

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May 21, 2019

MERCHANT LIVESTOCK  
PO BOX 1105, EUNICE, NM 88231

**Subject:** Grama State SWD No. 2 Authorization to Inject

**To Whom It May Concern:**

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Regards,



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Lonquist & Co., LLC

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[steve@lonquist.com](mailto:steve@lonquist.com)



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May 21, 2019

MEWBOURNE OIL CO  
PO BOX 5270 HOBBS, NM 88241

**Subject:** Grama State SWD No. 2 Authorization to Inject

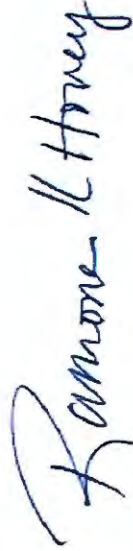
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Sr. Petroleum Engineer  
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May 21, 2019

NEW MEXICO STATE LAND OFFICE  
310 OLD SANTA FE TRAIL, P.O. BOX 1148, SANTA FE, NM 87504-1148

**Subject:** Grama State SWD No. 2 Authorization to Inject

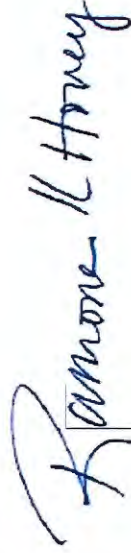
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[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

OIL CONSERVATION DIVISION DISTRICT I  
1625 N. FRENCH DR., HOBBS, NM 88240

**Subject:** Grama State SWD No. 2 Authorization to Inject

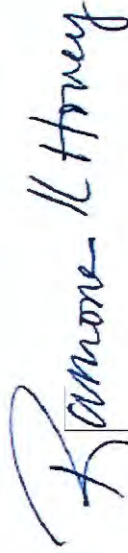
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[www.lonquist.com](http://www.lonquist.com)

May 21, 2019

V-F PETROLEUM INC  
PO BOX 1889, MIDLAND, TX 79702

**Subject:** Grama State SWD No. 2 Authorization to Inject

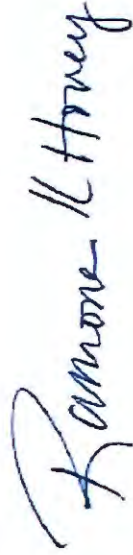
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(512) 600-1777  
[steve@lonquist.com](mailto:steve@lonquist.com)



APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  Yes  No

II. OPERATOR: 3Bear Field Services, LLC

ADDRESS: 415 W. Wall St., Suite 1212

CONTACT PARTY: Kevin Burns

PHONE: 432-686-2973

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  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: Ramona Hovey TITLE: Consulting Engineer - Agent for 3Bear Field Service

SIGNATURE:  DATE: 5/21/2019

E-MAIL ADDRESS: ramona@longquist.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: 3Bear Field Services, LLC

WELL NAME & NUMBER: Grana State SWD No. 2

WELL LOCATION: 351' FNL & 215' FWL  
FOOTAGE LOCATION

LOT 4  
UNIT LETTER

2  
SECTION

22S  
TOWNSHIP

34E  
RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 26.000"  
Cemented with 3,010 sacks.  
Top of Cement: surface

Casing Size: 20.00"  
or ft  
Method Determined: circulation

1<sup>st</sup> Intermediate Casing

Hole Size: 17.500"  
Cemented with 3,115 sacks.  
Top of Cement: surface

Casing Size: 13.375"  
or ft  
Method Determined: circulation

2<sup>nd</sup> Intermediate Casing

Hole Size: 12.250"  
Cemented with 2,530 sacks.  
Top of Cement: surface

Casing Size: 9.625"  
or ft  
Method Determined: circulation

Production Liner

Hole Size: 8.750"  
Cemented with 120 sacks.  
Top of Cement: 10.800'  
Total Depth: 15.500'

Casing Size: 7.625"  
or ft  
Method Determined: calculation

Injection Interval

14.400 feet to 15.500 feet  
(Open Hole)

INJECTION WELL DATA SHEET

Tubing Size: 5.5" 20 lb/ft, HCL-80, BTC from 0' - 14,350'

Lining Material: Duoline

Type of Packer: 7-5/8" X 5-1/2" Permanent Packer with High Temperature Elastomer and Full Inconel 925 Trim

Packer Setting Depth: 14,350'

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?  
\_\_\_\_\_

2. Name of the Injection Formation: Devonian, Fusselman.

3. Name of Field or Pool (if applicable): SWD, Devonian-Silurian (Pool Code: 97869)

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:

Yates: 3,948'

Bone Spring: 8,328'

Wolfcamp: 11,143'

Strawn: 11,668'

Morrow: 12,513'



District I  
1623 N. French Dr., Hobbs, NM 88240  
Phone: (505) 393-6101 Fax: (505) 393-0720  
District II  
911 S. First St., Artesia, NM 88210  
Phone: (505) 748-1283 Fax: (505) 748-9720  
District III  
1000 Rio Brazos Road, Artesia, NM 87410  
Phone: (505) 334-6118 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. Operation Name and Address 3BEAR FIELD SERVICES, LLC 415 W. WALL ST, STE 1212 MIDLAND, TX 79701		2. COORD Number 372603
4. Property Code	3. Property Name GRAMA STATE SWD	5. Well No. 2

**6. Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
LOT 4	2	22S	34E	4	351	NORTH	215	WEST	LEA

**7. Proposed Bottom Hole Location**

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

**8. Pool Information**

Pool Name SWD; DEVONIAN-SILURIAN	Pool Code 97869
-------------------------------------	--------------------

**Additional Well Information**

11. Well Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
N	SWD	R	STATE	3611'
N	Multiple	15,500'	16. Formation	17. Spud Date
			DEVONIAN-SILURIAN	PATRIOT
Depth to Ground water		Distance from nearest fresh water well		18. Contractor
				Distance to nearest surface water

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	26"	20"	94.0# J-55	1750'	3010	0
INT 1	17.5"	13.375"	68# J-55	5660'	3115	0
INT 2	12.25"	9.625"	40# P-110	11175'	2530	0

**Casing/Cement Program: Additional Comments**

DV TOOL SET @ 3700' PLEASE SEE ADDITIONAL CASING INFO AND BOP INFO ON ATTACHED SHEET WAWBD

**22. Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer

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: *Jennifer Elrod*

Printed name: JENNIFER ELROD

Title: SR. REGULATORY ANALYST

E-mail Address: JELROD@CHISHOLMENERGY.COM

Date: 05/09/2019 Phone: 817-953-3728

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

District I  
 1633 N. French Dr., Hobbs, NM 88240  
 Phone: (575) 393-6161 Fax: (575) 393-0720  
 District II  
 811 S. First St., Arredondo, NM 88210  
 Phone: (575) 748-1283 Fax: (575) 748-9720  
 District III  
 1000 Rio Grande 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) 476-3463

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

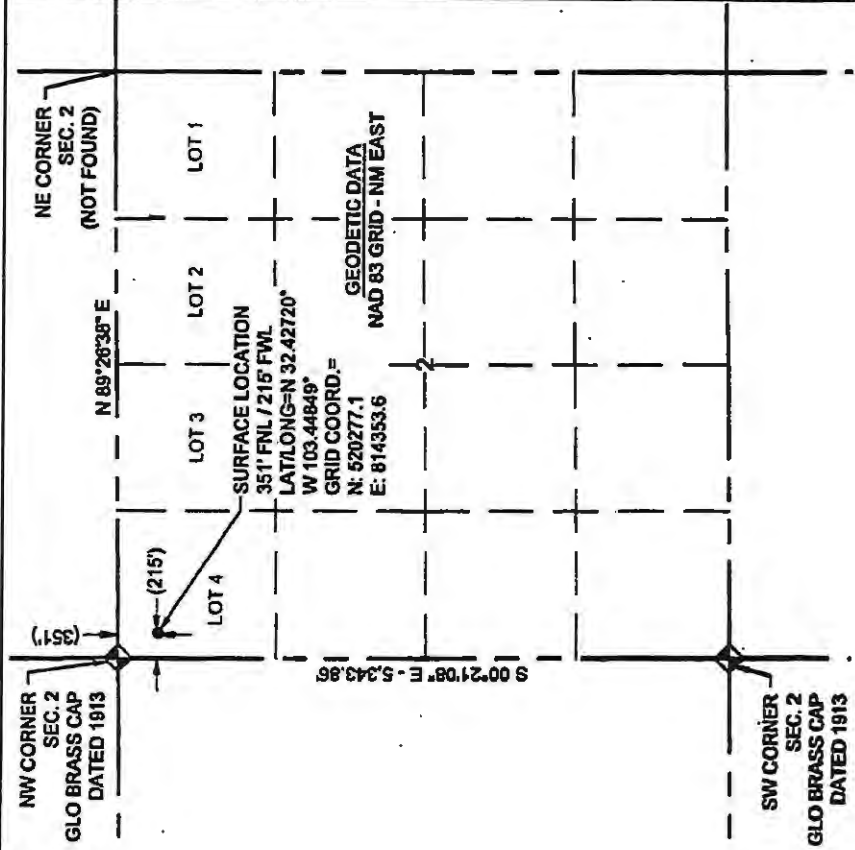
**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number	<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
	97869	SWD; DEVONIAN-SILURIAN
<sup>4</sup> Property Code	<sup>5</sup> Property Name	
	GRAMA STATE SWD	
<sup>7</sup> OGRID No.	<sup>6</sup> Well Number	
372603	2	
	<sup>8</sup> Operator Name	
	3BEAR FIELD SERVICES, LLC	
	<sup>9</sup> Elevation	
	3611'	

<sup>10</sup> Surface Location				
UL or lot no.	Section	Township	Range	Lot
LOT 4	2	22S	34E	351
				Feet from the North/South line
				NORTH
				Feet from the East/West line
				WEST
				215
				LEA

<sup>11</sup> Bottom Hole Location if Different From Surface				
UL or lot no.	Section	Township	Range	Lot
				Feet from the North/South line
				Feet from the East/West line
				County
				County

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.



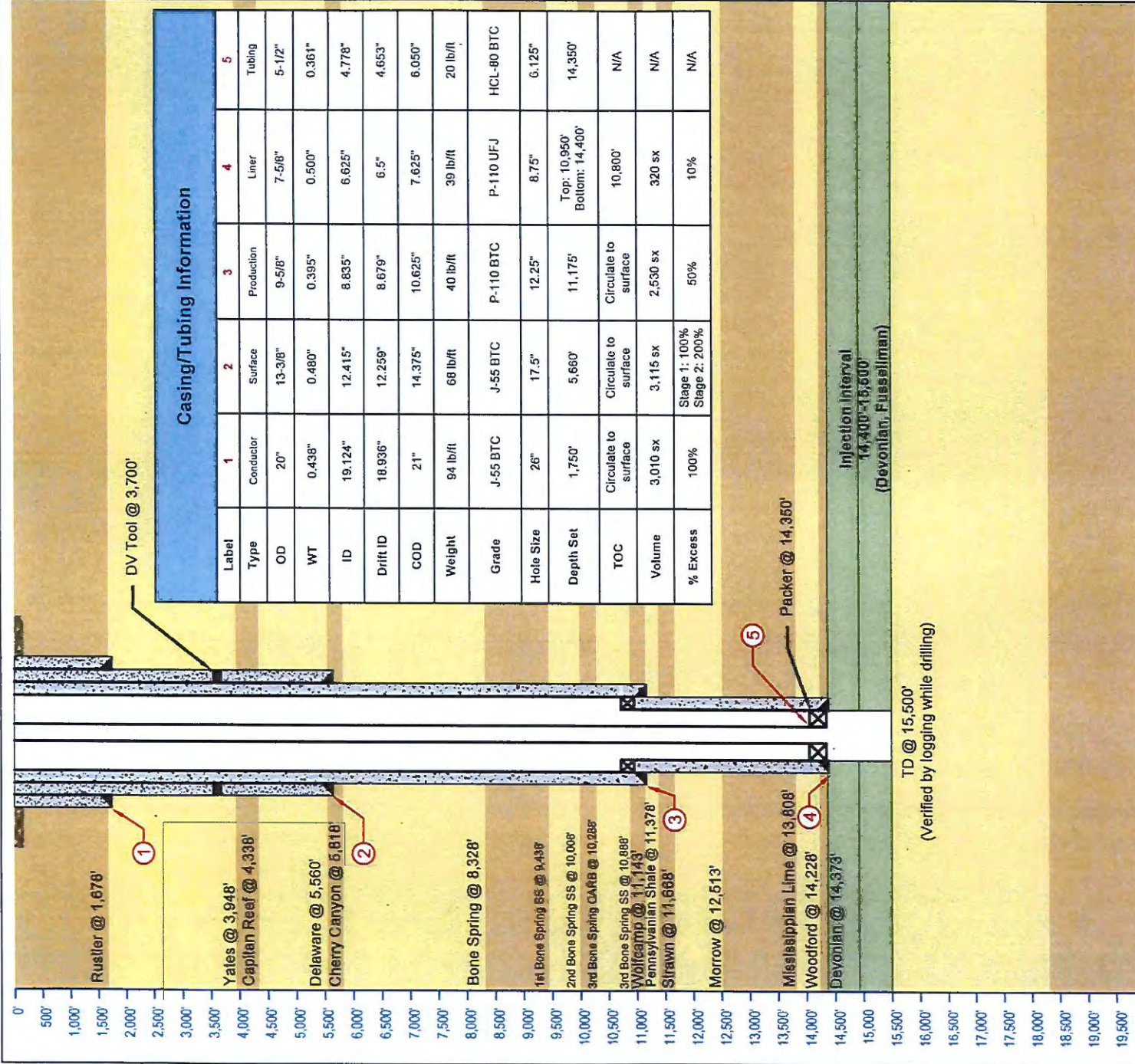
**11 OPERATOR CERTIFICATION**  
 I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or well, or has a right to drill this well or the personal business hole, location or has a right to drill this well or the location pursuant to a contract with an owner of such a interest or working interest, or is a voluntary pooling agreement or a compulsory pooling agreement entered into by the operator.

Operator: *Jennifer Elrod*  
 Date: 05/09/19  
 Signed Name: JENNIFER ELROD  
 E-mail Address: JELROD@CHISHOLMENERGY.COM

**12 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.

SURFACE LOCATION OF: 3BEAR FIELD SERVICES, LLC  
 Date of Survey: 04/01/19  
 Signature and Seal of Professional Surveyor: *Thomas G. Carlson*  
 NEW MEXICO PROFESSIONAL SURVEYOR 4-1-19  
 Certificate Number: 22886





**Casing/Tubing Information**

Label	1	2	3	4	5
Type	Conductor	Surface	Production	Liner	Tubing
OD	20"	13-3/8"	9-5/8"	7-5/8"	5-1/2"
WT	0.438"	0.480"	0.395"	0.500"	0.361"
ID	19.124"	12.415"	8.835"	6.625"	4.778"
Drift ID	18.936"	12.259"	8.679"	6.5"	4.653"
COD	21"	14.375"	10.625"	7.625"	6.050"
Weight	94 lb/ft	68 lb/ft	40 lb/ft	39 lb/ft	20 lb/ft
Grade	J-55 BTC	J-55 BTC	P-110 BTC	P-110 UFJ	HCL-80 BTC
Hole Size	26"	17.5"	12.25"	8.75"	6.125"
Depth Set	1,750'	5,660'	11,175'	Top: 10,950' Bottom: 14,400'	14,350'
TOC	Circulate to surface	Circulate to surface	Circulate to surface	10,800'	N/A
Volume	3,010 sx	3,115 sx	2,530 sx	320 sx	N/A
% Excess	100%	Stage 1: 100% Stage 2: 200%	50%	10%	N/A

<b>LONQUIST &amp; CO. LLC</b> PETROLEUM ENGINEERS ENERGY ADVISORS HOUSTON   CALGARY AUSTIN   WICHITA   DENVER	<b>3Bear Field Services, LLC</b>	<b>Grama State SWD No. 2</b>
Texas License F-9147 12912 Hill Country Blvd. Ste F-200 Austin, Texas 78738 Tel: 512.732.9812 Fax: 512.732.9816	Country: USA Location: Site: 351 FNL, 215 FWL API No: N/A NMOCD District No: 1 Drawn: TFM Rev No: 1	State/Province: New Mexico County/Parish: Lea Survey: S2-T22S-R34E Well Type/Status: SWD Date: 04/30/2019 Approved:
	Notes:	

**AFFIRMATIVE STATEMENT OF EXAMINATION OF GEOLOGIC AND ENGINEERING DATA**

Based on the available engineering, geologic, and seismic data, we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed Grana State 2 SWD #1) and any underground sources of drinking water.

**NAME:** Steve Poe

**TITLE:** Chief Geophysicist

**COMPANY:** Chisholm Energy Operating, LLC

**SIGNATURE:**



**Date:** 5-16-2019





3Bear Field Services, LLC

Grama State SWD No. 2

**FORM C-108 Supplemental Information**

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Grama State SWD
Well No.	2
Location	S-2 T-22S R-34E
Footage Location	351' FNL & 215' FWL

2.

a. Wellbore Description

Casing Information			
Type	Conductor	Surface	Liner
OD	20"	13.375"	7.625"
WT	0.438"	0.480"	0.500"
ID	19.124"	12.415"	6.625"
Drift ID	18.936"	12.259"	6.500"
COD	21"	14.375"	7.625"
Weight	94 lb/ft	68 lb/ft	39 lb/ft
Grade	J-55 BTC	J-55 BTC	P-110 UFJ
Hole Size	26"	17.5"	8.75"
Depth Set	1,750'	5,660'	10,950'-14,400'

b. Cementing Program

Cement Information				
Casing String	Conductor	Surface	Production	Liner
Lead Cement	Class C	Class C	Class H	
Lead Cement Volume	1,885 sks	Stage 1: 550 sks Stage 2: 2,030 sks	1,405 sks	
Lead Cement Density	12.8 ppg	Stage 1: 11.5 ppg Stage 2: 11.5 ppg	11.5 ppg	
Tail Cement	Class C	Class C	Class H	Class H
Tail Cement Volume	1,125 sks	Stage 1: 535 sks	1,125 sks	320 sks
Tail Cement Density	14.8 ppg	Stage 1: 14.8 ppg	14.8 ppg	14.5 ppg
Cement Excess	100%	Stage 1: 100% Stage: 200%	50%	10%
Total Sacks	3,010 sks	3,115 sks	2,530 sks	320 sks
TOC	Surface	Surface	Surface	10,800'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information	
OD	5.5"
WT	0.361"
ID	4.778"
Drift ID	4.653"
COD	6.050"
Weight	20 lb/ft
Grade	HCL-80 BTC
Depth Set	0-14,350'

Tubing will be lined with Duoline.

4. Packer Description

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

B. Completion Information



1. Injection Formation: Devonian, Silurian, Fusselman

2. Gross Injection Interval: 14,400'-15,500'

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
Yates	3,948'
Bone Spring	8,328'
Wolfcamp	11,143'
Strawn	11,668'
Morrow	12,513'

#### 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: 20,000 BPD

Maximum Volume: 25,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 2,160 PSI (surface pressure)

Maximum Injection Pressure: 2,880 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 Artesia formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Artesia, Bone Spring, Delaware, Grayburn/San Andreas, Morrow, Pennsylvania, and Strawn formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.

### VIII. Geological Data

#### Devonian Formation Lithology:

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.

#### Fusselman Formation Lithology:

The Silurian/Ordovician Fusselman Formation is stratigraphically below the Wristen Group and is above and separated from the Montoya Formation by the Sylvan Shale. The Sylvan Shale is the lower confining layer for the proposed Grama State SWD No. 2 well. Fusselman facies include a laminated skeletal wackestone in the upper part and a buildup complex in the lower part composed of ooid and bryozoan grainstones. These grainstones can also be potentially prolific zones for disposal.



A. Injection Zone: Devonian-Silurian Formation

Formation	Depth
Rustler	1,678'
Yates	3,948'
Capitan Reef	4,338'
Delaware	5,560'
Cherry Canyon	5,818'
Bone Spring	8,328'
1 <sup>st</sup> Bone Spring Sandstone	9,438'
2 <sup>nd</sup> Bone Spring Sandstone	10,008'
3 <sup>rd</sup> Bone Spring Carbonate	10,288'
3 <sup>rd</sup> Bone Spring Sandstone	10,888'
Wolfcamp	11,143'
Pennsylvanian Shale	11,378'
Strawn	11,668'
Morrow	12,513'
Mississippian Lime	13,808'
Woodford	14,228'
Devonian	14,373'

B. Underground Sources of Drinking Water

One water well exists within the proposed well. The water well has a depth of 109 feet. Across the area, fresh water wells are usually drilled between 45' and 368' in depth. The Rustler is known to exist in this general area and may also be another USDW and will be protected by setting surface casing at 1,750'.

IX. Proposed Stimulation Program

No stimulation program planned.

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 the one (1) water well that exists within one-mile of the well location. Samples from the well were obtained and attached is a water sample report performed by Cardinal Laboratories. A Water Right Summary from the New Mexico Office of the State Engineer is attached for water well CP-00944-POD1.

**Grama State SWD No. 2**  
**2 Mile Area of Review**  
**3Bear Field Services LLC**  
 Lea County, NM

PCSS: NAD 1983 SPCS NM-E FIPS 3001 (US FL)  
 Drawn by: SJL Date: 1/21/2020 Approved by: SLP

**LONQUIST & CO. LLC**

ENERGY SERVICES  
 40115405

AUSTIN • HOUSTON • DALLAS • WICKLIER  
 DENVER • CULLEGE STATION • GARLAND • CORPUS CHRISTI

Grama State SWD No. 2

1/2 Mile Radius

1 Mile Radius

2 Mile Radius

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

Section (NM-PLSS 1st Div.)

Township/Range (NM-PLSS)

Laterals

- API (30-025...) SHL Status - Type (Count)
- Horizontal Surface Location (71)
  - Active - Oil (2)
  - Active - Gas (8)
  - Active - Miscellaneous (4)
  - Approved TA - Salt Water Disposal (1)
  - Plugged (Not Released) - Gas (1)
  - Plugged (Site Released) - Oil (12)
  - Plugged (Site Released) - Gas (10)
  - Plugged (Site Released) - Miscellaneous (2)

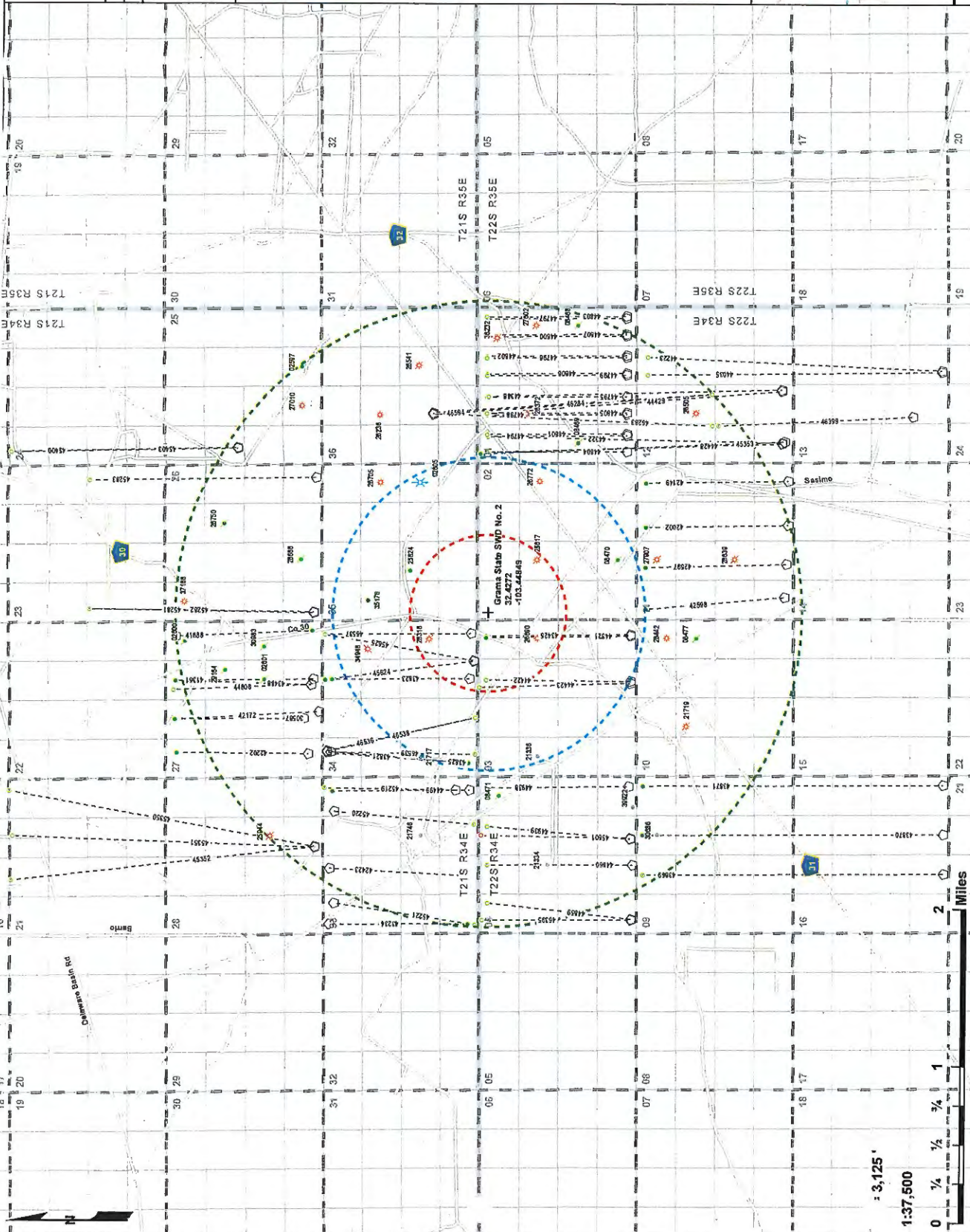
- API (30-025...) BHL Status - Type (Count)
- Active - Oil (21)
  - Permitted - Oil (49)
  - Permitted - Gas (1)

\*Well Data Source: NM-OCED, DrillingInfo (2020)



**EXHIBIT 1 - PAGE 19**

ANDREWS  
 WINKLER  
 NEW MEXICO  
 LOVING TEXAS



Scale: 1:37,500  
 0 1/4 1/2 1 2 Miles



Grampa Stems SWD No 2  
1 Mile Area of Review List

API (DD-225-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TWD (FC)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	SPUD DATE	FIELD
02625	STATE 1A #001	SALT WATER DISPOSAL	APPROVED TA	MARATHON OIL PERMAN LLC	4250	32.42197470	-103.48413540	10/7/1956	IN2559 SWD, YATES
08470	STATE B1 #001	OIL	PLUGGED (SITE RELEASED)	V.P. PETROLIUM INC	4062	32.42197470	-103.44221580	9/13/1956	IN2559 SWD, YATES, WEST
21336	GRM UNIT #001	MISCELLANEOUS	ACTIVE	ENTOR GRAMA RIDGE STORAGE AND TRANSPORTATION	13257	32.42197470	-103.46410270	6/1/1955	177680 GRAMA RIDGE, MORROW, NE
25517	GETTY 2 STATE COM #001	GAS	PLUGGED (SITE RELEASED)	DRYOM ENERGY OPERATING COMPANY LP	13351	32.42197470	-103.44221580	10/26/1977	177680 GRAMA RIDGE, MORROW, NE
25824	GETTY 25 STATE COM #001	GAS	ACTIVE	MARATHON OIL PERMAN LLC	13355	32.42197470	-103.44221580	3/15/1978	177680 GRAMA RIDGE, MORROW, NE
28518	LIANO 3 STATE COM #001	GAS	PLUGGED (SITE RELEASED)	EOG RESOURCES INC	13290	32.42197470	-103.45224920	3/16/1979	177680 GRAMA RIDGE, MORROW, NE
26972	SAN SINDI 2 STATE #001	GAS	ACTIVE	MEWBOURNE OIL CO	13210	32.42197470	-103.45224920	3/14/1980	177680 GRAMA RIDGE, MORROW, NE
34948	GRAMA RIDGE EAST 34 STATE #001	GAS	ACTIVE	MARATHON OIL PERMAN LLC	13300	32.42197470	-103.45224920	5/20/1980	177680 GRAMA RIDGE, MORROW, NE
35178	BURLINDEY 2005 JAP #001	OIL	ACTIVE	CHISHOLM ENERGY OPERATING, LLC	13359	32.42197470	-103.44639350	10/17/2000	177680 GRAMA RIDGE, MORROW, NE
43415	RAM 3 B3PA STATE COM #001	OIL	ACTIVE	MARATHON OIL PERMAN LLC	11111	32.42060070	-103.45007320	7/1/2018	177680 GRAMA RIDGE, MORROW, NE
43823	GRAMA RIDGE EAST 34 STATE COM #001	OIL	ACTIVE	MARATHON OIL PERMAN LLC	10943	32.42060070	-103.45007320	6/7/2018	177680 GRAMA RIDGE, MORROW, NE
43925	GRAMA RIDGE EAST 34 STATE COM #002	OIL	ACTIVE	CHISHOLM ENERGY OPERATING, LLC	11323	32.42197470	-103.44639350	4/2/2018	177680 GRAMA RIDGE, MORROW, NE
43921	RAM 3 B3PA STATE COM #002	OIL	ACTIVE	CHISHOLM ENERGY OPERATING, LLC	10247	32.42060070	-103.45007320	7/1/2018	177680 GRAMA RIDGE, MORROW, NE
44422	RAM 3 B308 STATE COM #001	OIL	NEW (NOT DRILLED)	MEWBOURNE OIL CO	0	32.42060070	-103.45007320		198553 CID CHISO, BONE SPRING
44423	GRAMA RIDGE EAST 34 STATE COM #001	OIL	NEW (NOT DRILLED)	MEWBOURNE OIL CO	0	32.42060070	-103.45007320		198553 CID CHISO, BONE SPRING
45824	GRAMA RIDGE EAST 34 STATE COM #004	OIL	ACTIVE	CHISHOLM ENERGY OPERATING, LLC	11149	32.42197470	-103.45224920	5/7/2019	177680 GRAMA RIDGE, MORROW, NE
46536	GRAMA RIDGE EAST 34 STATE COM #005	OIL	ACTIVE	CHISHOLM ENERGY OPERATING, LLC	11149	32.42197470	-103.45224920	4/5/2019	177680 GRAMA RIDGE, MORROW, NE
46537	GRAMA RIDGE EAST 34 STATE COM #006	OIL	NEW (NOT DRILLED)	CHISHOLM ENERGY OPERATING, LLC	0	32.42197470	-103.45224920		177680 GRAMA RIDGE, MORROW, NE
46538	GRAMA RIDGE EAST 34 STATE COM #007	OIL	NEW (NOT DRILLED)	CHISHOLM ENERGY OPERATING, LLC	0	32.42197470	-103.45224920		177680 GRAMA RIDGE, MORROW, NE
46539	GRAMA RIDGE EAST 34 STATE COM #008	OIL	NEW (NOT DRILLED)	CHISHOLM ENERGY OPERATING, LLC	0	32.42197470	-103.45224920		177680 GRAMA RIDGE, MORROW, NE









**BEATTY & WOZNIAK, P.C.**

ATTORNEYS AT LAW

500 DON GASPAR AVENUE  
SANTA FE, NEW MEXICO 87505-2626  
TELEPHONE (505) 983-8545  
FACSIMILE (505) 983-8547  
www.bwenergylaw.com

COLORADO  
NEW MEXICO  
NORTH DAKOTA  
UTAH  
WYOMING

CANDACE CALLAHAN

DIRECT: (505) 983-8764  
E-MAIL: CCALLAHAN@BWENERGYLAW.COM

June 19, 2019

VIA CERTIFIED MAIL-RETURN RECEIPT

To: AFFECTED PARTIES

Re: Application of 3Bear Field Services, LLC  
For Approval of a Salt Water Disposal Well,  
Lea County, New Mexico  
CASE NO. 20586

**Application of 3Bear Field  
Services, LLC  
Case No. 20586  
EXHIBIT #2**

Dear Ladies and Gentlemen:

This letter is to advise you that 3Bear Field Services, LLC has filed with the New Mexico Oil Conservation Division the enclosed Application for Approval of a Salt Water Disposal Well, to be located 351 feet from the north line and 215 feet from the west line (Lot 4, Unit D), Section 2, Township 22 South, Range 34 East, N.M.P.M., Lea County, New Mexico. The proposed injection disposal interval for the proposed **Grama State SWD No. 2** will be within the Devonian, Fusselman formation (SWD; Devonian-Silurian, Pool Code 97869) between 14,400 feet and 15,500 feet below the ground through an open hole completion. A copy of the accompanying C-108 is also enclosed.

This application is currently set for hearing before a Division Examiner at 8:15 a.m. on July 11, 2019 by order of the Director of the Oil Conservation Division. The hearing will be held in the Oil Conservation Division's Santa Fe Offices located at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. You are not required to attend this hearing, but as a party who may be affected by this application, we are notifying you of your right to appear at the hearing and participate in the case, including the right to present evidence either in support of or in opposition to the application. Failure to appear at that time and become a part of the record will preclude you from involvement in the case at a later date.

A party appearing in a Division case is required by Division Rule 19.15.4.13.B to file a Pre-Hearing Statement at least four days in advance of a scheduled hearing before the Division or Commission, but in no event later than 5:00 p.m. mountain time, on the Thursday preceding the scheduled hearing date, with a copy delivered to the undersigned. This statement must be filed with the Division's Santa Fe office at the above address and should include: the names of the party and its attorney; a concise statement of the case; the names of all witnesses the party will call to testify at the hearing; the approximate time the party will need to present its case; and identification of any procedural matters that need to be resolved prior to the hearing.

Very truly yours,

  
Candace Callahan

Attorney for 3Bear Field Services, LLC



Exhibit A

Merchant Livestock  
PO Box 1105  
Eunice, NM 88231

Centennial Resource Production LLC  
1001 17<sup>th</sup> Street Suite 1800  
Denver, CO 80202

Chisholm Energy Operating LLC  
801 Cherry Street  
FT Worth, TX 76102

Enstor Grama Ridge Storage and Transportation  
10375 Richmond Ave Suite 1900  
Houston, TX 77042

EOG Resources Inc.  
PO Box 2267  
Midland, TX 79702

Marathon Oil Permian LLC  
5555 San Felipe St  
Houston, TX 77056

Mewbourne Oil Co  
PO Box 5270  
Hobbs, NM 88241

V-F Petroleum Inc.  
PO Box 1889  
Midland, TX 79702

Bureau of Land Management  
620 E. Greene Street  
Carlsbad, NM 88220

New Mexico State Land Office  
310 Old Santa Fe Trail  
PO Box 1148  
Santa Fe, NM 87405-1148

Oil Conservation Division District I  
1625 N. French Dr.  
Hobbs, NM 88240

Oil Conservation Division District IV  
1220 S St. Francis Drive  
Santa Fe, NM 87505

BTA Oil Producers, LLC  
104 S. Pecos  
Midland, TX 79701

GMT Exploration Company, LLC  
1560 Broadway, Suite 2000  
Denver, CO 80202

Devon Energy  
333 West Sheridan Avenue  
Oklahoma City, OK 73102-5015

7018 2290 0001 8731 6935  
2018 0001 8731 6935  
2290 0622 8102

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 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
Postage \$

Postmark  
Here

Total Postage \$

2516-0016 S

Sent To Merchant Livestock  
Street and Apt. PO Box 1105  
City, State, ZIP Eunice, NM 88231

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Merchant Livestock  
PO Box 1105  
Eunice, NM 88231

2516-0016 S



9590 9402 3146 7166 1217 16

2. Article Number (Transfer from service label)

7018 2290 0001 8731 6935

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  Addressee  
*Mary Pearson*  
B. Received by (Printed Name) *Mary Pearson*  
C. Date of Delivery *6/26/19*

D. Is delivery address different from item 1?  Yes  
if YES, enter delivery address below:  No

3. Service Type  
 Adult Signature  
 Adult Signature Restricted Delivery  
 Certified Mail®  
 Certified Mail Restricted Delivery  
 Collect on Delivery  
 Collect on Delivery Restricted Delivery  
 Priority Mail Express®  
 Registered Mail™  
 Registered Mail Restricted Delivery  
 Return Receipt for Merchandise  
 Signature Confirmation™  
 Signature Confirmation Restricted Delivery

Domestic Return Receipt



**U.S. Postal Service™**  
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*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$
- Return Receipt (electronic) \$
- Certified Mail Restricted Delivery \$
- Adult Signature Required \$
- Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

Total Postage at

Sent To

2516-0016  
 Centennial Resource Production LLC  
 1001 17<sup>th</sup> Street Suite 1800  
 Denver, CO 80202

Street and Apt. #

City, State, ZIP+4

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

2469 1E29 1000 0622 8702

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
 Centennial Resource Production LLC  
 1001 17<sup>th</sup> Street Suite 1800  
 Denver, CO 80202



9590 9402 3146 7166 1217 23

2. Article Number (Transfer from service label)

7018 2290 0001 8731 6942 1111

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

**X**

Agent

Addressee

C. Date of Delivery

D. Is delivery address different from item 1?  Yes

If YES, enter delivery address below:  No

3. Service Type

- Adult Signature Restricted Delivery
- Certified Mail®
- Collect on Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Restricted Delivery

Domestic Return Receipt

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**OFFICIAL USE**

6559 1628 8732 6959  
 0002 0000 0290 0622 9102

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$ \_\_\_\_\_  
 Return Receipt (electronic) \$ \_\_\_\_\_  
 Certified Mail Restricted Delivery \$ \_\_\_\_\_  
 Adult Signature Required \$ \_\_\_\_\_  
 Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

Total Postage a

Sent To

2516-0016

Chisholm Energy Operating LLC  
 801 Cherry Street  
 FT Worth, TX 76102

Street and Apt.  
 City, State, ZIP+

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
 Chisholm Energy Operating LLC  
 801 Cherry Street  
 FT Worth, TX 76102



9590 9402 3146 7166 1217 30

2. Article Number (Transfer from service label)

7018 2290 0001 8731 6959

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

*Darlene Gates*

Agent  
 Addressee

B. Received by (Printed Name)

*Darlene Gates*

C. Date of Delivery

*copy*

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Insured Mail
- Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt



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**OFFICIAL USE**

7018 2290 0001 8731 7031

Certified Mail Fee \$

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$
- Return Receipt (electronic) \$
- Certified Mail Restricted Delivery \$
- Adult Signature Required \$
- Adult Signature Restricted Delivery \$

Postage \$

Total Post \$

Sent To **2516-0016**  
 Enstor Grama Ridge Storage and Transportation  
 10375 Richmond Ave Suite 1900  
 Street an Houston, TX 77042  
 City, State

Postmark  
Here

PS Form 3800, April 2015 PSN 7530-02-000-9053 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
 Enstor Grama Ridge Storage and Transportation  
 10375 Richmond Ave Suite 1900  
 Houston, TX 77042



9590 9402 3146 7166 1218 84

2. Article Number (Transfer from service label)

7018 2290 0001 8731 7031

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

Agent  
 Addressee

B. Received by (Printed Name)

*Tracey Schurco*

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below:  Yes  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Registered Mail
- Registered Mail Restricted Delivery
- Registered Mail Restricted Delivery Merchandise
- Return Receipt for Signature Confirmation™
- Signature Confirmation Restricted Delivery
- Signature Confirmation Restricted Delivery

Domestic Return Receipt



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**OFFICIAL USE**

9969 1628 1000 0622 8702

Certified Mail Fee \$

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
  - Return Receipt (electronic) \$
  - Certified Mail Restricted Delivery \$
  - Adult Signature Required \$
  - Adult Signature Restricted Delivery \$

Postmark  
Here

Postage \$

Total Postage and

Sent To \$

2516-0016

Street and Apt. No.  
 City, State, ZIP+4®  
 EOG Resources Inc.  
 PO Box 2267  
 Midland, TX 79702

PS Form 3800, April 2015 PSN 7530-02-000-9053 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
 EOG Resources Inc.  
 PO Box 2267  
 Midland, TX 79702

**COMPLETE THIS SECTION ON DELIVERY**

- A. Signature  Agent  Addressee  
**X** *[Signature]*
- B. Received by (Printed Name) *[Signature]* Date of Delivery *6-24-16*
- D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below:



9590 9402 3146 7166 1217 47

Article Number (transfer from service label)

7018 2290 0001 8731 6966

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Mail
  - Mail Restricted Delivery
  - Mail Restricted Delivery
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

**U.S. Postal Service™  
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**OFFICIAL USE**

0869 1628 1000 0001 8731 6980  
7012 2990 0622 8101

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_  
 Return Receipt (electronic) \$ \_\_\_\_\_  
 Certified Mail Restricted Delivery \$ \_\_\_\_\_  
 Adult Signature Required \$ \_\_\_\_\_  
 Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage

Total Postage

Sent To

Street and Ap

City, State, Zi

2516-0016

Marathon Oil Permian LLC

5555 San Felipe St

Houston, TX 77056

Postmark  
Here

PS Form 3800, April 2015 PSN 7530-02-000-9053 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
Marathon Oil Permian LLC  
5555 San Felipe St  
Houston, TX 77056



9590 9402 3146 7166 1217 54

9 Article Number (Transfer from service label)

7018 2290 0001 8731 6980

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

Agent  Addressee

B. Received by (Printed Name)

T. Ocampo

C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
If YES, enter delivery address below:  No

3. Service Type

- Adult Signature  
 Certified Mail®  
 Certified Mail Restricted Delivery  
 Collect on Delivery  
 Collect on Delivery Restricted Delivery  
 Registered Mail™  
 Registered Mail Restricted Delivery  
 Return Receipt for Merchandise  
 Signature Confirmation™  
 Restricted Delivery

Domestic Return Receipt



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**OFFICIAL USE**

7018 2290 0001 8731 6973

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
  - Return Receipt (electronic) \$
  - Certified Mail Restricted Delivery \$
  - Adult Signature Required \$
  - Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

Total Postage

Sent To

2516-0016

Mewbourne Oil Co  
PO Box 5270  
Hobbs, NM 88241

Street and Apt.  
City, State, Zip

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mewbourne Oil Co  
PO Box 5270  
Hobbs, NM 88241

2516-0016



9590 9402 3146 7166 1217 61

Article Number (Transfer from service label)

7018 2290 0001 8731 6973

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

Agent  
 Addressee

B. Received by (Printed Name)

*W. McLean*

C. Date of Delivery

*6-26-17*

D. Is delivery address different from item 1?  Yes

If YES, enter delivery address below:  No

3. Service Type

Adult Signature

Adult Signature Restricted Delivery

Certified Mail®

Certified Mail Restricted Delivery

Collect on Delivery

Collect on Delivery Restricted Delivery

Mail Restricted Delivery

Priority Mail Express®

Registered Mail™

Registered Mail Restricted Delivery

Return Receipt for Merchandise

Signature Confirmation™

Signature Confirmation Restricted Delivery

Domestic Return Receipt



2010 2290 0622 0101  
7010 2290 0001 0622 0101  
2669 7010 2290 0622 0101

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**OFFICIAL USE**

Certified Mail Fee \$ \_\_\_\_\_

Extra Services & Fees (check box, add fee as appropriate)

<input type="checkbox"/> Return Receipt (hardcopy)	\$ _____
<input type="checkbox"/> Return Receipt (electronic)	\$ _____
<input type="checkbox"/> Certified Mail Restricted Delivery	\$ _____
<input type="checkbox"/> Adult Signature Required	\$ _____
<input type="checkbox"/> Adult Signature Restricted Delivery	\$ _____

Postage \$ \_\_\_\_\_

Total Postage \$ \_\_\_\_\_

Sent To \$ \_\_\_\_\_

Street and Apt. \_\_\_\_\_

City, State, Zip \_\_\_\_\_

2516 -0016

V-F Petroleum Inc.  
PO Box 1889  
Midland, TX 79702

PS Form 3800, April 2015 PSN 7530-02-000-9053 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

■ Complete items 1, 2, and 3.  
■ Print your name and address on the reverse so that we can return the card to you.  
■ Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

V-F Petroleum Inc.  
PO Box 1889  
Midland, TX 79702

2516 -0016

2. Article Number (transfer from services label)

9590 9402 3146 7166 1217 78

7010 2290 0001 0622 0101

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
*Andy Oler*  Addressee

B. Received by (Printed Name) C. Date of Delivery  
*Andy Oler* *6/20/19*

D. Is delivery address different from item 1?  Yes  No  
If YES, enter delivery address below:

3. Service Type

<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®
<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail™
<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Registered Mail Restricted Delivery
<input type="checkbox"/> Collect on Delivery	<input checked="" type="checkbox"/> Return Receipt for Merchandise
<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation™
<input type="checkbox"/> 3rd Mail Restricted Delivery (\$5.00)	<input type="checkbox"/> Signature Confirmation Restricted Delivery

Domestic Return Receipt

**U.S. Postal Service™  
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Domestic Mail Only

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**OFFICIAL USE**

0402 7E20 7000 0622 0702

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_  
 Return Receipt (electronic) \$ \_\_\_\_\_  
 Certified Mail Restricted Delivery \$ \_\_\_\_\_  
 Adult Signature Required \$ \_\_\_\_\_  
 Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

Total Postage \$ \_\_\_\_\_

Sent To \$ \_\_\_\_\_

2516-0016

Bureau of Land Management  
620 E. Greene Street  
Carlsbad, NM 88220

Street and Ap

City, State, Zi

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
Bureau of Land Management  
620 E. Greene Street  
Carlsbad, NM 88220



9590 9402 3146 7166 1218 91

2. Article Number (Transfer from service label)

7018 2290 0001 8731 7048

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

- A. Signature  Agent  Addressee  
 B. Received by (Printed Name) Chase Leber C. Date of Delivery 4/21/16  
 D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below:

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Mail Restricted Delivery
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

Domestic Return Receipt



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**OFFICIAL USE**

0002 7000  
0001 8731 7000  
0000 0000  
2290 2222  
7018 7002

Certified Mail Fee

\$ Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ \_\_\_\_\_  
 Return Receipt (electronic) \$ \_\_\_\_\_  
 Certified Mail Restricted Delivery \$ \_\_\_\_\_  
 Adult Signature Required \$ \_\_\_\_\_  
 Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

\$ Total Postage

2516-0016

New Mexico State Land Office  
310 Old Santa Fe Trail  
PO Box 1148  
Santa Fe, NM 87405-1148

City, State, ZIP

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
New Mexico State Land Office  
310 Old Santa Fe Trail  
PO Box 1148  
Santa Fe, NM 87405-1148



9590 9402 3146 7166 1217 85

2. Article Number (Transfer from service label)

7018 2290 0001 8731 7000

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent  
 Addressed to Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Restricted Delivery
  - Priority Mail Express®
  - Registered Mail™
  - Registered Mail Restricted Delivery
  - Return Receipt for Merchandise
  - Signature Confirmation™
  - Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt



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**OFFICIAL USE**

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

Total Postage \$ 2516 -0016

Oil Conservation Division District I

1625 N. French Dr.

Hobbs, NM 88240

Sent To

Street and Apt.

City, State, ZIP

PS Form 3800, April 2015 PSN7530-02-000-9047

See Reverse for Instructions

2102 1228 1000 0622 8702

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516 -0016  
Oil Conservation Division District I  
1625 N. French Dr.  
Hobbs, NM 88240

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

Agent  
 Addressee  
 B. Received by (Printed Name)  
 C. Date of Delivery

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No



9590 9402 3146 7166 1217 92

2. Article Number (Transfer from service label)

7018 2290 0001 8731 7017

3. Service Type

- Adult Signature  
 Adult Signature Restricted Delivery  
 Certified Mail®  
 Certified Mail Restricted Delivery  
 Collect on Delivery  
 Collect on Delivery Restricted Delivery  
 Restricted Delivery

- Priority Mail Express®  
 Registered Mail™  
 Registered Mail Restricted Delivery  
 Return Receipt for Merchandise  
 Signature Confirmation™  
 Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN7530-02-000-9053

Domestic Return Receipt

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*Domestic Mail Only*

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**OFFICIAL USE**

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$
  - Return Receipt (electronic) \$
  - Certified Mail Restricted Delivery \$
  - Adult Signature Required \$
  - Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

\$ Total Postage a 2516-0016  
 Oil Conservation Division District IV  
 1220 S St. Francis Drive  
 Santa Fe, NM 87505

Sent To

Street and Apt. #

City, State, Zip

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

4202 1E2A 1000 0622 8702

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516-0016  
 Oil Conservation Division District IV  
 1220 S St. Francis Drive  
 Santa Fe, NM 87505



9590 9402 3146 7166 1218 08

2. Article Number (transfer from service label)

7018 2290 0001 8731 7024

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

*Stuhart*

Agent

Addressee

B. Received by (Printed Name)

*S. Mitz*

C. Date of Delivery

*06/01/17*

D. Is delivery address different from item 1?  Yes

If YES, enter delivery address below:  No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt



**U.S. Postal Service™**  
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*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

9590 9402 3146 7166 1219 07  
 7018 2290 0001 8731 7055

Certified Mail Fee

- Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) \$ \_\_\_\_\_
  - Return Receipt (electronic) \$ \_\_\_\_\_
  - Certified Mail Restricted Delivery \$ \_\_\_\_\_
  - Adult Signature Required \$ \_\_\_\_\_
  - Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postmark  
Here

Postage

\$ Total Postage 2516 -0016

\$ Sent To BTA Oil Producers, LLC  
 104 S. Pecos  
 Street and/or Midland, TX 79701  
 City, State, Z

PS Form 3800, April 2015 PSN 7530-02-000-9054 See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

2516 -0016

BTA Oil Producers, LLC  
 104 S. Pecos  
 Midland, TX 79701



9590 9402 3146 7166 1219 07

2. Article Number (Transfer from service label)

7018 2290 0001 8731 7055

PS Form 3811, July 2015 PSN 7630-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  Agent   
 Addressee  
 B. Received by (Printed Name) C. Date of Delivery  
 2516 -0016 6/22/14

D. Is delivery address different from item 1?  Yes  
 If YES, enter delivery address below:  No

3. Service Type
- Adult Signature
  - Adult Signature Restricted Delivery
  - Certified Mail®
  - Certified Mail Restricted Delivery
  - Collect on Delivery
  - Collect on Delivery Restricted Delivery
  - Registered Mail
  - Registered Mail Restricted Delivery

- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt



**U.S. Postal Service™  
CERTIFIED MAIL® RECEIPT**  
Domestic Mail Only

2902 7E28 T000 0622 8T02

For delivery information, visit our website at [www.usps.com](http://www.usps.com)®.

**OFFICIAL USE**

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$

Postmark  
Here

Postage

Total Postage at \$  
 Sent To \$  
 Street and Apt. #  
 City, State, Zip+  
 2516-0016  
 GMT Exploration Company, LLC  
 1560 Broadway, Suite 2000  
 Denver, CO 80202

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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 GMT Exploration Company, LLC  
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 Denver, CO 80202



9590 9402 3146 7166 1219 14

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 Oklahoma City, OK 73102-5015

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2516-0016  
 Devon Energy Corporation  
 333 West Sheridan Avenue  
 Oklahoma City, OK 73102-5015



9590 9402 3146 7166 1219 21

2. Article Number (Transfer from service label)

7010 2290 0001 8731 7079

PS Form 3811, July 2015 PSN 7530-02-000-9053

**COMPLETE THIS SECTION ON DELIVERY**

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 Addressee  
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Status of 3Bear Case No. 20586 Affected Parties Mailing

Recipient	Delivered	Receipt	Returned	Publish date:
1 Merchant Livestock	X	X		6/25/2019
2 Centennial Resource Production LLC	X	X		6/25/2019
3 Chisholm Energy Operating LLC	X	X		6/25/2019
Enstor Grama Ridge Storage and 4 Transportation	X	X		6/25/2019
5 EOG Resources Inc.	X	X		6/25/2019
6 Marathon Oil Permian LLC	X	X		6/25/2019
7 Mewbourne Oil Company	X	X		6/25/2019
8 V-F Petroleum	X	X		6/25/2019
9 Bureau of Land Management	X	X		6/25/2019
10 New Mexico State Land Office	X	X		6/25/2019
11 Oil Conservation Division District I	X	X		6/25/2019
12 Oil Conservation Division District IV	X	X		6/25/2019
13 BTA Oil Producers, LLC	X	X		6/25/2019
14 GMT Exploration Company, LLC	X	X		6/25/2019
15 Devon Energy Corporation	X	X		6/25/2019



# Affidavit of Publication

STATE OF NEW MEXICO  
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated


June 25, 2019

and ending with the issue dated

June 25, 2019.

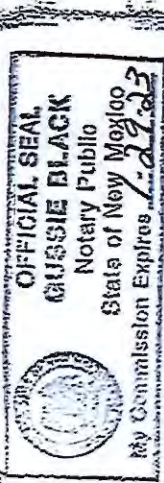
  
\_\_\_\_\_  
Publisher

Sworn and subscribed to before me this  
25th day of June 2019.

  
\_\_\_\_\_  
Business Manager

My commission expires

January 29, 2028  
(Seal)



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

## LEGAL NOTICE JUNE 26, 2019

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

The State of New Mexico through its Oil Conservation Division hereby gives notice pursuant to law and the Rules and Regulations of the Division of the following public hearing to be held at 8:15 a.m. on July 11, 2019 in the Oil Conservation Division's Hearing Room at 1220 South St. Francis, Santa Fe, New Mexico, before an examiner, duly appointed for the hearing. OOD Rule Subsection B of 18-154.13 NMAC requires parties who intend to present evidence at an adjudicatory hearing to file a pre-hearing statement no later than the Thursday before the hearing and serve a copy on opposing counsel of record. If the OOD does not receive a pre-hearing statement from the applicant by the close of business on the Thursday before the hearing, the hearing may be continued.

#### STATE OF NEW MEXICO TO:

All named parties and persons having any right, title interest or claim in the following cases and notice to the public (NOTE: All land descriptions herein refer to the New Mexico Principal Meridian whether or not so stated)  
TO: Merchant Livestock, Centennial Resource Production LLC, Chisholm Energy Operating LLC, Enstor Grama Ridge Storage and Transportation, EOG Resources Inc., Marathon Oil Permian LLC, Mewbourne Oil Co., V-F Petroleum Inc., Bureau of Land Management, New Mexico State Land Office, Oil Conservation Division District 1, Oil Conservation Division District IV, BTA Oil Producers, LLC, GMT Exploration Company, LLC, Devon Energy Corporation.

Case No. 20586: Application of 3Bear Field Services, LLC for Approval of a Salt Water Disposal Well, Lea County, New Mexico. Applicant in the above-styled cause seeks an order authorizing it to drill and operate an injection well for purposes of disposing of produced salt water to be named the Grama State SWD No. 2 (API pending), which will be located 361 feet from the north line and 21.6 feet from the west line (Lot 4, Unit D), Section 2, Township 22 South, Range 34 East, N.M.P.M., Lea County, New Mexico. Injection will be into the Devonian, Fusselman formation (SWD: Devonian-Silurian, Pool Code 97069) between 14,400 feet and 15,500 feet below the ground (through an open hole completion. Disposal fluid will be produced water from producing oil and gas wells in the area. Estimated average injection pressure is expected to be approximately 2,160 psi (surface pressure). The maximum injection pressure will be 2,000 psi (surface pressure). Additional information can be obtained by contacting Kevin Burris at 432-606-2973 or kburns@3bearllc.com. The subject well will be located approximately 20 miles southwest of Eunice, New Mexico, #34330

67112105

00229854

**Application of 3Bear Field  
Services, LLC  
Case No. 20586  
EXHIBIT #3**

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

APPLICATION OF 3BEAR FIELD SERVICES, LLC  
FOR APPROVAL OF A SALT WATER DISPOSAL WELL,  
LEA COUNTY, NEW MEXICO

EXHIBIT 4

CASE NO. 20586

AFFIDAVIT OF NOTICE

COUNTY OF SANTA FE     )  
  ) ss.  
STATE OF NEW MEXICO    )

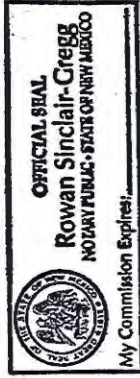
Candace Callahan, being duly sworn upon her oath, deposes and states:

1. I am over the age of 18 and have personal knowledge of the matters stated herein.
2. I am an attorney for 3Bear Field Services, LLC.
3. Applicant has conducted in good faith, diligent effort to find the names and correct addresses of the interest owners entitled to receive notice of the application filed herein.
4. Notice of the application was provided to the operators and interest owners, at their correct addresses, by certified mail. Copies of notice letters and documentation of notice are attached hereto.
5. Applicant has complied with the notice provisions of Form C-108 and Division Rules NMAC 19.15.4.9 and 19.15.4.12.C.

  
Candace Callahan

SUBSCRIBED AND SWORN TO before me this 11<sup>th</sup> day of Nov, 2019 by Candace Callahan.

My Commission Expires: 10/18/2022  
  
Notary Public



Application of 3Bear Field  
Services, LLC  
Case No. 20586  
EXHIBIT #4













**CURRICULUM VITAE**  
David Allen White, M.S.

**PERSONAL**

Name: David Allen White  
Birth date: October 11, 1981  
Birthplace: Oscoda, Michigan  
Citizenship: United States  
Languages: English

**SPECIALIZATION**

Acid gas injection (AGI) project management including well design, drilling and completion, disposal well permitting and regulatory compliance, induced-seismicity modeling, sedimentology and stratigraphy, sequence stratigraphy, geochemistry and geochemical lab analysis, geotechnical writing, graphics design and development, data analysis, ArcGIS analysis and map development.

**EDUCATION**

University of New Mexico, 2018  
M.S. Geology  
  
University of Tennessee, 2014  
B.S. Geology (Summa cum Laude)

**HONORS AND AWARDS**

Graduate Teaching Assistantship – University of New Mexico  
Alexander and Geraldine Wanek Graduate Scholarship – University of New Mexico  
Albert M. Kudo Outstanding Teaching Assistant – University of New Mexico  
Jerry Harbour Memorial Endowed Scholarship – University of New Mexico  
Geological Society of America Student Research Grant  
Graduate and Professional Student Association Grant – University of New Mexico  
Otto Kopp Undergraduate Research Award – University of Tennessee  
Jimmy Walls Award for Excellence in Introductory Geology – University of Tennessee

**ORGANIZATIONS**

American Institute of Professional Geologists  
Geological Society of America

**Application of 3Bear Field  
Services, LLC  
Case No. 20586  
EXHIBIT #8**



## PUBLICATIONS

- White, D.A., Elrick, M., Romaniello, S., and Zhang, F., 2018, Global seawater redox trends during the Late Devonian mass extinction detected using U isotopes of marine carbonates, *Earth and Planetary Science Letters*, v. 503, p. 68-77, doi:10.1016/j.epsl.2018.09.020.
- White, D.A., Elrick, M., Romaniello, S., and Zhang, F., 2017, Tracking global seawater redox trends during the Late Devonian extinction using U isotopes of Upper Devonian marine carbonates, *Geological Society of America Annual Meeting*, Seattle, Washington.
- White, D.A., Elrick, M., Romaniello, S., and Zhang, F., 2016, Multiple, short-lived ocean anoxic events across the Late Devonian mass extinction detected using uranium isotopes of marine carbonates, *Geological Society of America Annual Meeting*, Denver, Colorado.
- Elrick, M., White, D., Bartlett, R., and Romaniello, S., 2018, Do uranium isotopes of marine limestones provide evidence for seawater anoxia as a common driver for Phanerozoic mass extinctions?, *Goldschmidt Abstracts*, 2018.
- Elrick, M., White, D.A., Algeo, T.J., and Romaniello, S., 2018, Do uranium isotopes of marine limestones provide evidence for seawater anoxia as a common driver for Phanerozoic mass extinctions?, *Geological Society of America Abstracts with Programs*, v. 50, no. 6, doi: 10.1130/abs/2018-318936.
- Gutiérrez, A., and White, D.A., 2019, Updates on seismic analysis for AGI siting and injection data analysis for AGI well condition and reservoir monitoring, *Acid Gas Injection Symposium VIII*, Calgary, Alberta, Canada.

## EXPERIENCE

August 2018 – Present  
Geolex, Inc.® - Senior Geologist  
500 Marquette Avenue NW, Suite 1350  
Albuquerque, NM 87102

### Duties, Accomplishments, Responsibilities:

1. Served as project manager for the drilling and completion of an acid gas injection well in Winkler County, Texas. Responsibilities included providing general project oversight, on-site general supervision of daily activities, geological supervision, regulatory and safety compliance support, and project budget management.
2. Provide support duties associated with the drilling, completion, commissioning, and general operation of acid gas injection and saltwater disposal wells. These duties include on-site geological support and supervision, evaluation and interpretation of geologic data, post-installation regulatory compliance and testing, and acid gas injection well maintenance and operational support.

3. Completion of Induced-Seismicity Risk Assessments to support injection-permit applications. Assessments are based on a detailed review of seismic survey data to identify subsurface features and model-simulation results to predict the associated fault-slip probability for a proposed injection scenario.
4. Design and administer comprehensive training sessions for gas-processing plant operators on the general operation, monitoring, and maintenance of acid gas injection systems.
5. Geologic sequestration project planning including well design, geological assessment, procurement of injection equipment, and project budget management.
6. Permit application generation for acid gas injection and saltwater disposal wells through the following agencies: Bureau of Land Management, New Mexico Oil Conservation Division, and the Railroad Commission of Texas.
7. Utilization of ArcGIS software for geospatial analyses and map development.

**August 2014 – May 2017**  
**Graduate Teaching Assistant**  
**Department of Earth and Planetary Sciences**  
**Northrop Hall, 221 Yale Blvd NE**  
**University of New Mexico**  
**Albuquerque, NM 87131**

**Duties, Accomplishments, Responsibilities:**

1. Prepared lectures and designed classroom activities to engage and develop both students pursuing Earth and Planetary Science degrees, as well as those fulfilling general education requirements. Courses taught include Sedimentology & Stratigraphy, Earth History, Physical Geology, and Introductory Environmental Science.
2. Supervised and conducted laboratory activities and field exercises while maintaining a safe and productive environment.
3. Evaluated student performance and provided mentorship and guidance to ensure student success and educational growth.
4. Assisted in a summer field-methods course, which required the application of lecture content in the field while ensuring students understood and maintained safe fieldwork practices.



January 2013 – May 2014  
Research Lab Assistant and Departmental Tutor  
Department of Earth and Planetary Sciences  
University of Tennessee  
Knoxville, TN 37912

Duties, Accomplishments, Responsibilities:

1. Responsible for the preparation of samples for geochemical and isotopic analysis for faculty and graduate students at the University of Tennessee.
2. Conducted individualized tutoring sessions for students enrolled in Earth & Planetary Science courses.



NW/NW Section 2, Twp. 22S-34E  
Lea County, New Mexico

# INDUCED-SEISMICITY RISK ASSESSMENT

C-108 Application Supporting Material  
Grama State SWD #2

Presented in Hearing Before the  
New Mexico Oil Conservation Division  
Case # 20586

January 23, 2020



Prepared by:  
Geolex, Inc.®  
500 Marquette Ave. NW  
Albuquerque, NM 87102  
(505)842-8000

**GEOLEX**  
INCORPORATED



# SEISMIC REVIEW & FSP MODELING

- To evaluate the potential for injection-related seismic events, Geolex conducted an induced-seismicity risk assessment covering the area of the proposed Grama State SWD #2
- Components of Risk Assessment:
  1. Review and interpretation of licensed seismic survey data to identify subsurface features in the area of the proposed Grama State SWD #2 (courtesy of Chisholm Energy Holdings, LLC)
  2. Fault-slip probability modeling of an eight-well injection scenario over 30 years to evaluate the potential for induced-seismic events utilizing the Stanford Center for Induced and Triggered Seismicity's Fault Slip Potential (FSP) model

# SEISMIC REVIEW

- The structure on top of the Devonian (Woodford proxy) shows the well location offsetting a structural depression, 1.6 miles away from a well on a fault-bounded closure that tested wet in the Devonian.
- The only significant faults in the area are approximately 1.5 miles to the west (arrow) and area likely too far to be influenced by the proposed injection scenario

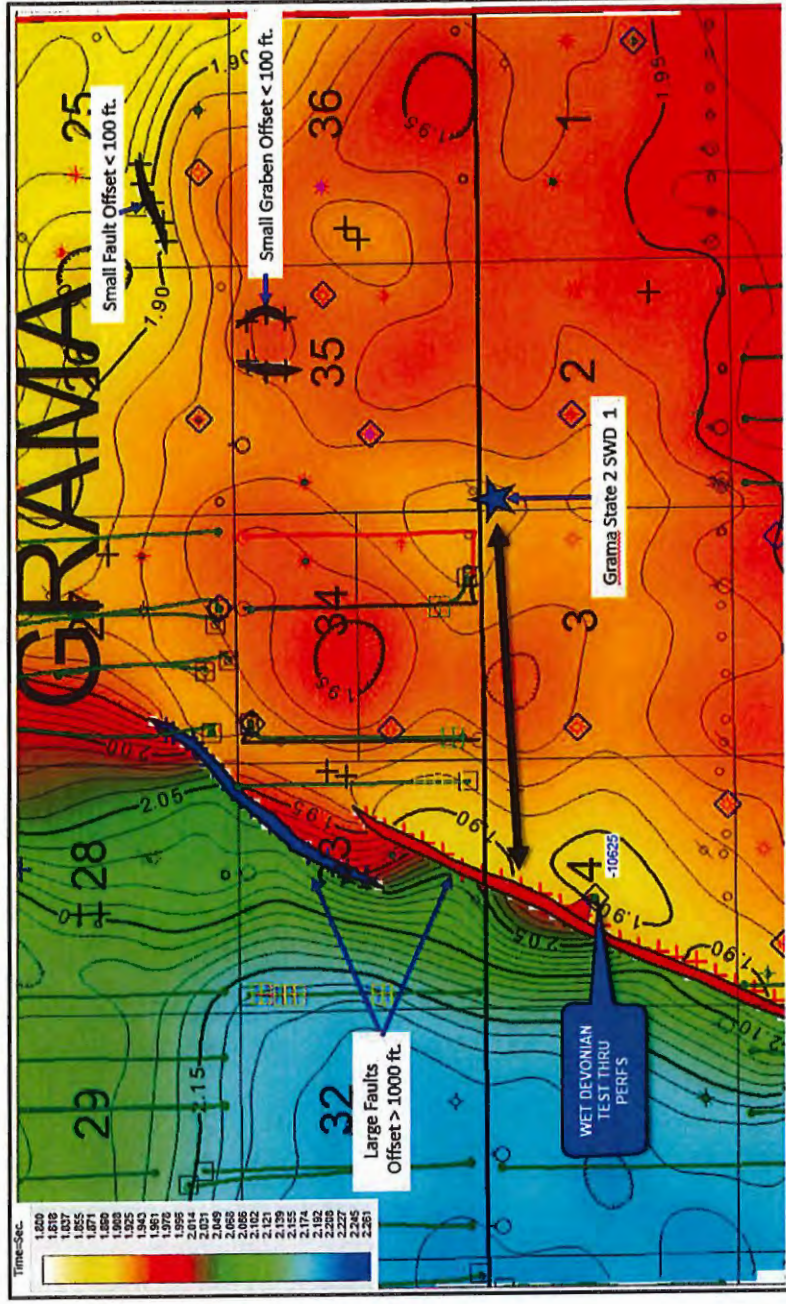


Figure 1. Woodford time structure map (Courtesy of Chisholm Energy Holdings, LLC)



# FAULTS IN VICINITY OF THE PROPOSED GRAMA STATE SWD #2

- Two Devonian faults (faults 1 & 2) exhibiting displacement >1,000 feet were identified approximately 1.5 miles west of the proposed location
- Induced-seismicity potential of the observed features (Faults 1-5) was modeled utilizing the Stanford FSP software
- Nearby SWD injection rates were considered in model simulations, however, all of these wells are located a far enough from observed faults and are not anticipated to contribute significantly to induced-seismicity potential

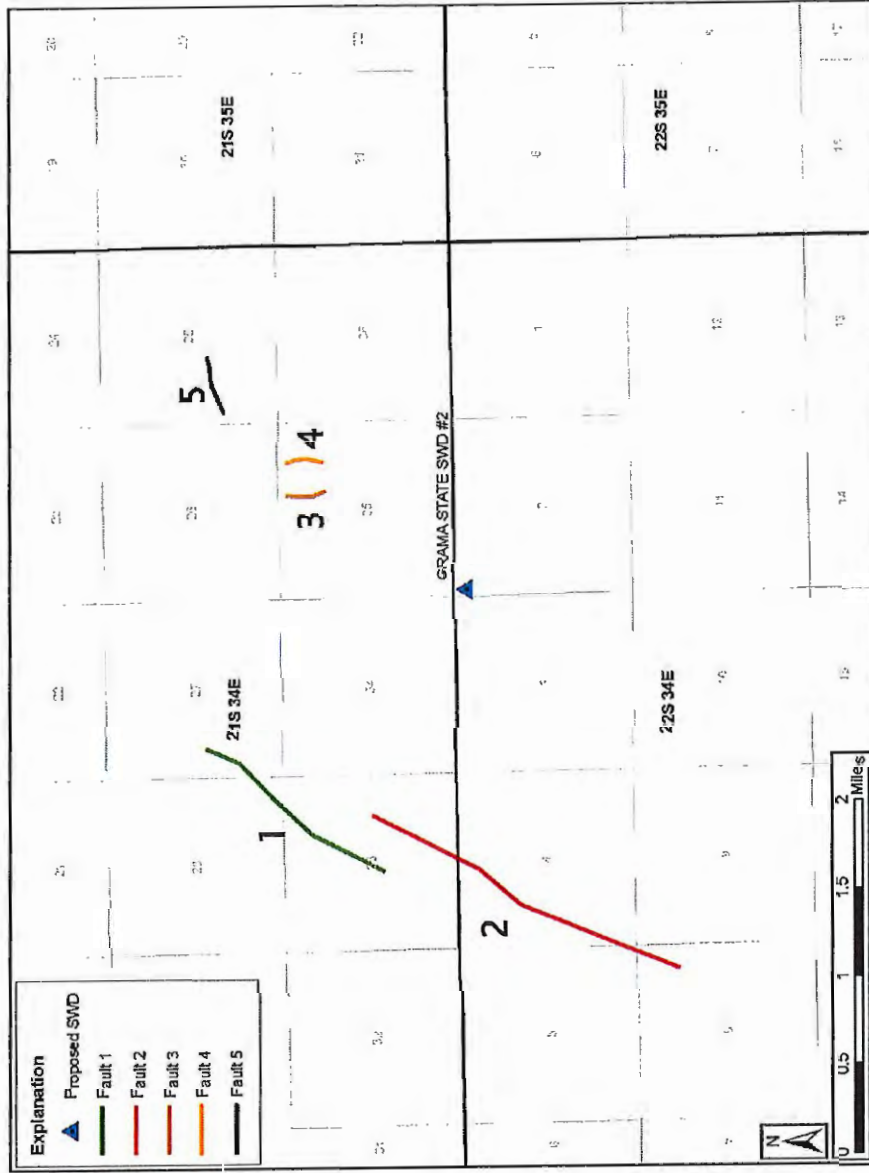


Figure 2. Faults identified in the area of the proposed Grama State SWD #2

# REQUIRED CONDITIONS TO INDUCE FAULT SLIP

- Faults in the area of review were divided into 15 fault segments to accurately characterize their non-linear expression
- The FSP model first utilizes input parameters describing fault geometry, orientation, and local stress conditions to calculate the required pressure increase to induce motion along each structural feature (Table 1 right)

FAULT #	SEGMENT #	ΔPRESSURE TO INDUCE SLIP (PSI)
1	1	2,115
	2	945
	3	997
	4	1,854
2	5	1,854
	6	1,053
	7	2,231
3	8	3,918
	9	4,695
	10	5,414
4	11	5,727
	12	4,947
	13	3,547
5	14	1,253
	15	1,195

Table 1. Fault segments and required pressure increase to induce fault slip (model determined)



# INJECTION WELLS IN VICINITY OF THE PROPOSED GRAMA STATE SWD #2

- Proposed Grama State SWD #2 is significantly isolated from other saltwater disposal wells in the general area
- Closest SWD well (Ojo Chiso SWD #1) is located approximately 3.3 miles south of the proposed SWD location
- All remaining SWD wells in the area are located 5–10 miles or further from the proposed Grama State SWD
- Nearest Devonian production located greater than 6 miles southwest from proposed SWD well

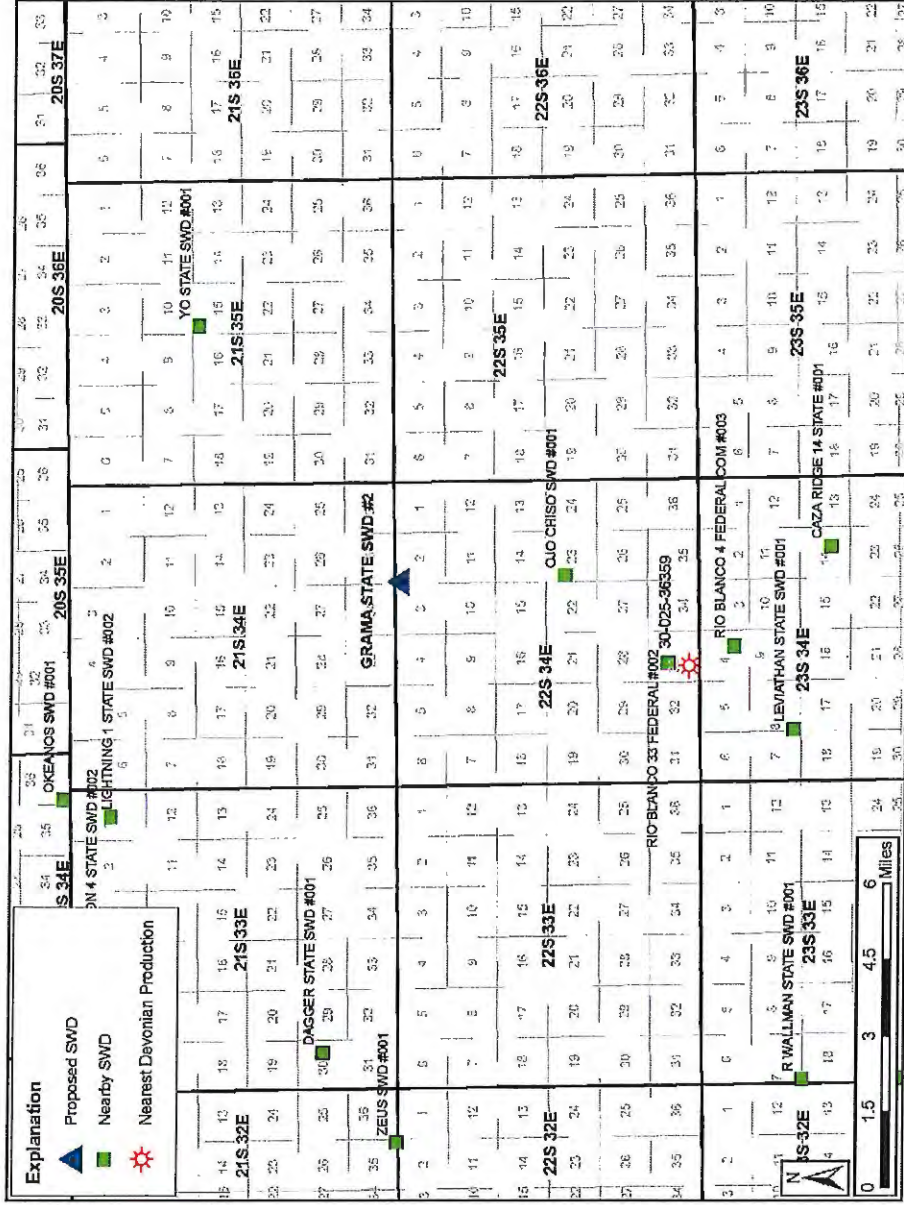


Figure 3. General location map showing faults and nearby injection wells in the area of Grama State SWD #2

# MODELED INJECTION SCENARIO

- Eight (8) active and proposed injection wells were included in the FSP model assessment (Table 2) to quantify the effect on reservoir pressure conditions after 30 years of injection
- Simulated injection volumes reflect maximum anticipated rates reported in the C-108 injection application for each well included in the injection scenario
- Model simulation conducted under maximum injection rate conditions provides a conservative estimate of fault-slip probability

MODEL WELL NUMBER	API	WELL NAME	MODELED INJECTION RATE (BPD)	START YEAR	END YEAR
1	TBD	Grama State SWD #2	25000	2020	2050
2	30-025-24459	Ojo Chiso SWD #1	15000	2017	2050
3	30-025-36360	Rio Blanco 33 FED #2	20000	2015	2050
4	30-025-38162	Yo State SWD #1	21000	2017	2050
5	30-025-36425	Rio Blanco 4 FED #3	10000*	2013	2050
6	30-025-43474	Lightning 1 State SWD #2	25000	2017	2050
7	30-025-44189	Okeanos SWD #1	25000	2020	2050
8	30-025-45815	Dagger State SWD #1	25000	2020	2050

Table 2. Nearby active and proposed injection wells included in model simulation



# MODELED INJECTION SCENARIO

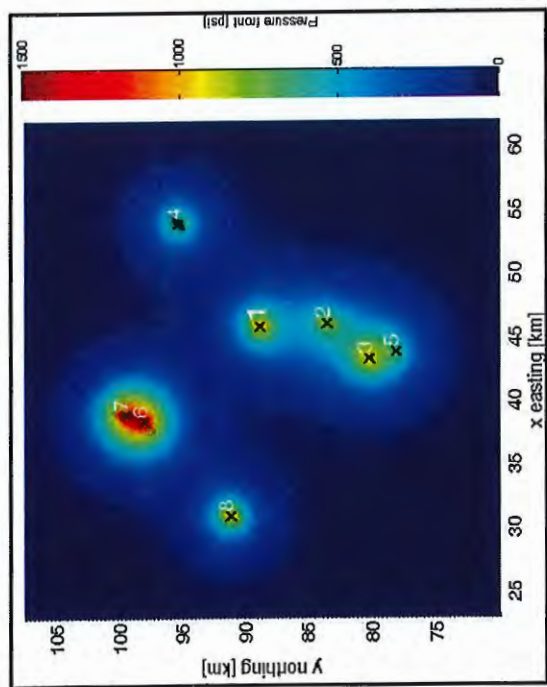


Figure 4. Resultant pressure conditions at year 2050

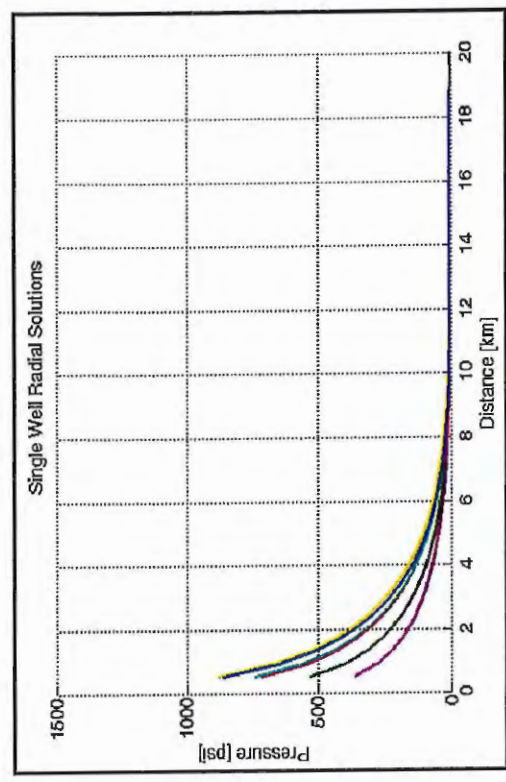
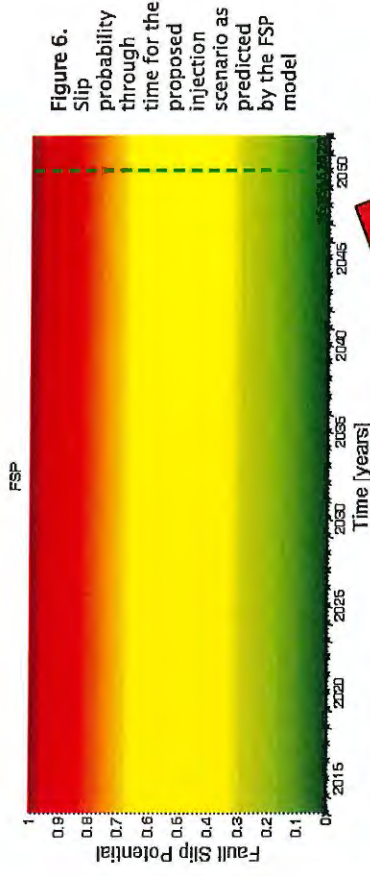


Figure 5 . Model calculated radial pressure solutions for each well

- Proposed Grama State SWD #2 is located such that there is minimal overlap of resultant pressure fronts after 30 years of injection operations
- Resultant pressure conditions reflect maximum allowable injection rates, whereas SWD injection rates often decline over time

# FAULT SLIP POTENTIAL

- Model predicts **ZERO PROBABILITY** for induced-seismic events along all observed structural features in the area of the proposed Grama State SWD #2
- Resultant pressure conditions after 30 years of injection at the maximum allowable rate are significantly lower than model-calculated pressure required to induce fault motion
- In summary, operation of the proposed Grama State SWD #2, under the conditions described herein, is not anticipated to significantly increase the risk of induced-seismic events



FAULT #	SEGMENT T #	ΔPRESSURE TO INDUCE SLIP (PSI)	ACTUAL ΔPRESSURE (PSI)	FSP (Year 2050)
1	1	2,115	322	0.00
	2	945	337	0.00
	3	997	336	0.00
	4	1,854	337	0.00
2	5	1,854	389	0.00
	6	1,053	346	0.00
	7	2,231	296	0.00
3	8	3,918	466	0.00
	9	4,695	491	0.00
	10	5,414	515	0.00
4	11	5,727	433	0.00
	12	4,947	446	0.00
	13	3,547	467	0.00
5	14	1,253	282	0.00
	15	1,195	304	0.00

Table 3. Summary of required pressure increase to induce fault slip and model-derived actual pressure change along faults



# SUPPLEMENTAL – MODEL INPUT PARAMETERS

- ▶ Model input parameters were determined based on nearby well data and standard and published values
- ▶ Model simulations were completed utilizing deterministic and probabilistic solutions
- ▶ For probabilistic model solutions, input parameters were allowed to vary by 10%
- ▶ In all simulations completed, the model predicted **ZERO PROBABILITY** of slip over the modeled 30-year injection period

Modeled Parameter	Input Value	UOM	Source
<i>Stress</i>			
Vertical Stress Gradient	1.05	psi ft <sup>-1</sup>	Nearby well estimate
Max Horizontal Stress Direction	N75E	Deg.	Lund Snee & Zoback, 2018
Reference Depth	14,500	ft	Nearby well evaluation
Initial Res. Pressure Gradient	0.43	psi ft <sup>-1</sup>	Lund Snee & Zoback, 2018
A <sub>0</sub> Parameter	0.6	-	Lund Snee & Zoback, 2018
Reference Friction Coefficient (μ)	0.6	-	Standard Value
<i>Hydrologic</i>			
Aquifer Thickness	700	ft	Nearby well evaluation
Porosity	3	%	Nearby well evaluation
Permeability	10	mD	Nearby well evaluation
<i>Material properties</i>			
Density (Water)	1,040	kg m <sup>-3</sup>	Standard Value
Dynamic Viscosity (Water)	0.0008	Pa.s	Standard Value
Fluid Compressibility (water)	3.6 x 10 <sup>-10</sup>	Pa <sup>-1</sup>	Standard Value
Rock Compressibility	1.08 x 10 <sup>-9</sup>	Pa <sup>-1</sup>	Standard Value

# SUPPLEMENTAL - INJECTION RATES

MODEL WELL NUMBER	API	WELL NAME	MODELED INJECTION RATE (BPD)	ACTUAL INJECTION RATE (BPD)	START YEAR	END YEAR
1	TBD	Grama State SWD #2	25,000	-	2020	2050
2	30-025-24459	Ojo Chiso SWD #1	15,000	5,121	2017	2050
3	30-025-36360	Rio Blanco 33 FED #2	20,000	1,945	2015	2050
4	30-025-38162	Yo State SWD #1	21,000	1,713	2017	2050
5	30-025-36425	Rio Blanco 4 FED #3	10,000*	2,942	2013	2050
6	30-025-43474	Lightning 1 State SWD #2	25,000	7,644	2017	2050
7	30-025-44189	Okeanos SWD #1	25,000	13,419	2020	2050
8	30-025-45815	Dagger State SWD #1	25,000	-	2020	2050





CHISHOLM  
ENERGY

October 23, 2019

Oil Conservation Division  
Attn: Mr. Phillip Goetze  
1220 South St. Francis Drive  
Santa Fe, NM 87505

RE:

Case 20586: Application of 3Bear Field Services, LLC for a Devonian-Silurian SWD  
Grama State 2 SWD #1  
Section 2, Township 22S, Range 34E  
Lea County, NM

Dear Mr. Goetze:

Chisholm Energy Operating, LLC supports the applications of 3Bear Field Services, LLC to secure a salt water disposal (SWD) permit for their proposed Grama State 2 SWD #1, located in Lea County, New Mexico.

3Bear has built an extensive Lea County produced water gathering / disposal and recycling system that is very critical and cost effective for Chisholm and many other oil and gas operators in the area to make the most efficient use of water in the State of New Mexico. Chisholm has additional development drilling planned in this area for the foreseeable future but will require additional disposal capacity. We therefore ask that Oil Conservation Division to expedite the approval of the Grama State 2 SWD application in order to prevent the loss of reserves related to the incremental cost of trucking produced water to a commercial salt water disposal well.

Please contact me if you have any questions.

Very truly yours,

Brad Grandstaff  
Vice President of Operations  
972-977-9221  
[bgrandstaff@chisholmenergy.com](mailto:bgrandstaff@chisholmenergy.com)

**Application of 3Bear Field  
Services, LLC**

**Case No. 20586**

**EXHIBIT #10 Support Letters**



October 21, 2019

Oil Conservation Division  
Attn: Mr. Phillip Goetze  
1220 South St. Francis Drive  
Santa Fe, NM 87505

RE: Case 20586: Application of 3Bear Field Services, LLC for a Devonian-Silurian SWD  
Grama State 2 SWD #1  
Section 2, Township 22S, Range 34E  
Lea County, NIM

Dear Mr. Goetze:

Mewbourne Oil Company supports the application of 3Bear Field Services, LLC to secure a salt water disposal (SWD) permit for their proposed Grama State 2 SWD #1, located in Lea County, New Mexico.

3Bear has built an extensive Lea County produced water gathering / disposal and recycling system that is very convenient and cost effective for many oil and gas operators in the area. Mewbourne has additional development drilling planned in this area but additional disposal capacity is necessary. We therefore ask the Oil Conservation Division to expedite the approval of the Grama State 2 SWD application in order to prevent the loss of reserves related to the incremental cost of trucking produced water to a commercial salt water disposal well.

Please contact me if you have any questions.

Very truly yours,

A handwritten signature in black ink that reads "Tim R. Harrington".

Tim Harrington  
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