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**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: Summit Midstream Permian LLCOGRID Number: Pending 373785 713887Well Name: Summit SWD #1API: NAPool: NA SWD: Devonian - SilurianPool Code: NA 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**2) NOTIFICATION REQUIRED TO:** Check those which apply.A. ☒ Offset operators or lease holdersB. ☐ Royalty, overriding royalty owners, revenue ownersC. ☒ Application requires published noticeD. ☐ Notification and/or concurrent approval by SLOE. ☒ Notification and/or concurrent approval by BLMF. ☒ Surface ownerG. ☒ For all of the above, proof of notification or publication is attached, and/or,H. ☐ No notice required**FOR OCD ONLY**☐ Notice Complete
☐ Application  
 Content  
 Complete

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

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

Alberto A. Gutierrez, RG

Consultant to SMP LLC

Print or Type Name

Signature

August 29, 2018

Date

505-842-8000

Phone Number

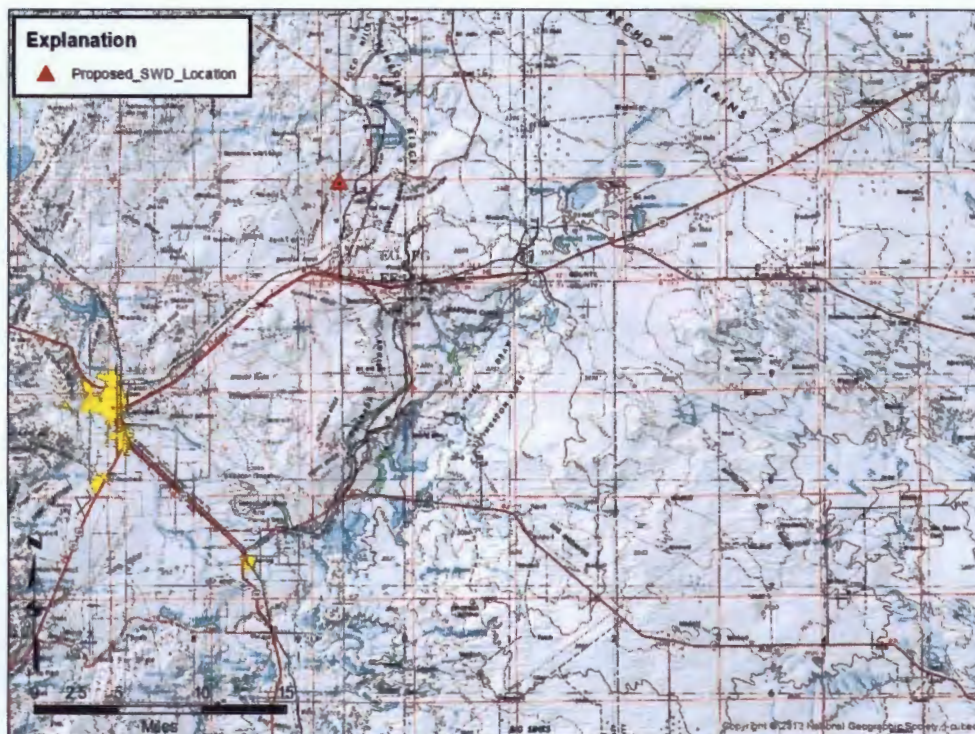
aag@geolex.com

e-mail Address



## **Proposed Summit Midstream SWD #1 Application for Administrative Authorization to Inject**

**500' FNL, 500' FWL Section 5, T20S, R30E, Eddy Co., New Mexico**



**August 27, 2018**

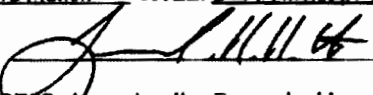
*Prepared for:*

**Summit Midstream Permian LLC  
1790 Hughes Landing Blvd, Suite 500  
The Woodlands TX 77380**

*Prepared by:*

**Geolex, Inc.  
500 Marquette Avenue, NW, #1350  
Albuquerque, New Mexico 87102**

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance X Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? \_\_\_\_\_ Yes X No
- II. OPERATOR: Summit Midstream Permian, LLC  
ADDRESS: 1790 Hughes Landing Blvd. Suite 500, The Woodlands, TX 77380  
CONTACT PARTY: Alberto A. Gutierrez, R.G. - GEOLEX, INC. PHONE: (505)-842-8000
- 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. **A CROSS REFERENCE TO THE APPLICABLE SECTIONS OR APPENDICES IN THE ATTACHED C108 APPLICATION FOR EACH ROMAN NUMERAL BELOW IS SPECIFIED BY SECTION AND/OR APPENDIX NUMBERS.**
- IV. Is this an expansion of an existing project? \_\_\_\_\_ Yes X No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_ N/A
- 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. **SECTIONS 5 and 6; APPENDICES A and B.**
- 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. **SECTION 5; APPENDIX A.**
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected; **SECTIONS 1, 2, and 3**
  2. Whether the system is open or closed; **SECTIONS 1, 2, 4 and 7**
  3. Proposed average and maximum injection pressure; **SECTIONS 1 and 3**
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, **SECTIONS 3 and 4**
  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.). **SECTIONS 3 and 4**
- \*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. **SECTIONS 4 and 5 and APPENDIX A**
- IX. Describe the proposed stimulation program, if any. N/A
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). **WELL NOT YET DRILLED**
- \*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. **SECTION 4.**
- 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. **SECTION 7**
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. **APPENDIX B**
- 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: Leonard Mallett TITLE: EVP, Chief Operations Officer Summit Midstream Permian, LLC  
SIGNATURE:  DATE: 8/23/2018  
E-MAIL ADDRESS: leonard.mallett@summitmidstream.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: **SEE ATTACHED APPLICATION**
- DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

### III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

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

**SWD #1: 500 FNL and 500 feet FWL of Section 5, T20S, R30E, Eddy County, New Mexico**

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined. **SEE SECTION 3 FOR PROPOSED WELL DESIGNS. FINAL DESIGNS WILL BE SUBMITTED WHEN PROPOSED WELL IS DRILLED AND COMPLETED.**

(3) A description of the tubing to be used including its size, lining material, and setting depth. **SECTION 3 AND FIGURE 3 FOR PROPOSED WELL DESIGN**

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used. **SECTION 3**

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. **SECTIONS 1 and 4**

(2) The injection interval and whether it is perforated or open-hole. **SECTION 3**

(3) State if the well was drilled for injection or, if not, the original purpose of the well. **N/A- WELL NOT YET DRILLED**

(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. **N/A**

(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. **SECTIONS 4 and 5; APPENDICES A and B**

### 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. **INDIVIDUAL NOTICES HAVE BEEN PROVIDED (APPENDIX B)**

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: **ATTACHED PROOF OF PUBLICATION – APPENDIX B**

(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.**

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**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.

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of Publication of Newspaper Notice



## 1.0 EXECUTIVE SUMMARY

On the behalf of Summit Midstream Permian LLC ("Summit") Geolex, Inc. (Geolex) has prepared and is hereby submitting a complete C-108 application for administrative approval to drill, complete, and operate a salt water disposal well (SWD #1) at 500' FNL, 500' FWL in Section 5, T20S, R30E approximately 18 miles Northwest of Carlsbad, New Mexico (Figure 1).

Summit will construct surface facilities at this location, and this new disposal well is proposed in order to properly dispose of saltwater from this Summit's activities (Figure2). Summit intends to inject up to 25,000 barrels per day (bpd) through the proposed well.

The proposed injection zone will be in the Devonian and Upper Silurian Wristen and Fusselman Formations, as well as the upper Ordovician Upper Montoya Formation, at depths of approximately 13,000 to 13,800 feet. Analysis of the reservoir characteristics of these units confirms that they act as excellent closed-system reservoirs that will accommodate Summit's saltwater disposal needs.

There are 64 recorded wells within two miles of the proposed Summit SWD #1. Of these 24 are active, 28 are plugged and abandoned, and 10 that are approved locations that are not drilled. None of these well are either completed or proposed to reach deeper than 12,390 feet, over 700 feet above the proposed injection zone.

Within the one half mile radius of review there a total of 10 wells, of which 4 are active, 2 are plugged and abandoned, and 4 that are approved locations that have not been drilled. None of these well are either completed or proposed to reach deeper than 12,180 feet, over 800 feet above the proposed injection zone.

The caprock above the injection zone contains approximately 70 feet of dense shale (Woodford Shale) and an additional 700 feet of low-permeability carbonates in the Osage and Barnett formations. Those formations will contain the injected water, and prevent any up migration.

The well will be constructed using a 4-string design to protect shallow fresh water, the Salado salt, the Capitan Aquifer, and deeper production zones. All casing segments will be cemented to the surface, and the well will be completed as an open-hole interval, from approximately 13,000 to 13,800 feet.

Based on the New Mexico Water Rights Database from the New Mexico Office of the State Engineer, there are no freshwater wells within the one-mile area of review for the proposed saltwater disposal well. The area surrounding the proposed injection site is arid with the only nearby body of surface water being a saline playa associated with the potash mine to the southeast.

All surface ownership and mineral leases in the one-mile circle of the well location are owned by the United States Government, administrated by the Bureau of Land Management (BLM). Production is leased by Cimarex Energy Co., COG Operating LLC, EOF Y Resources, Inc. and XTO Holdings, LLC.

In preparing this C-108 application, Geolex conducted a detailed examination of all of the elements required to be evaluated in order to prepare and obtain approval for this application for injection. The elements of this evaluation include:

- Identification and characterization of all hydrocarbon-producing zones of wells that surround and are present on the plant site.
- The depths of perforated pay intervals in those wells relative to the depth of the target injection zones (Devonian, Fusselman and Montoya).
- The past and current uses of the proposed intervals.
- The stratigraphic and structural setting of the targeted zones relative to any nearby active or plugged wells, and other wells penetrating the intervals.
- The identification of and sample notification letter that will be sent to all surface owners within a one-half mile radius of the proposed injection well.
- Identification and characterization of all plugged and operating wells penetrating the proposed injection zone within a one-half mile radius of the proposed injection well.
- The details of the proposed injection operation, including general well design and average and maximum daily rates of injection and injection pressures.
- Sources of injection fluid and compatibility with the formation fluid of the injection zone.
- Location and identification of any fresh water bearing zones in the area; the depth and quality of available groundwater in the vicinity of the proposed well, including a determination that there are no structures which could possibly communicate the disposal zone with any known sources of drinking water.

Based upon this detailed evaluation Summit has determined that the proposed SDW injection well is a safe and environmentally-sound project for the disposal of produced water.



## **2.0 INTRODUCTION AND ORGANIZATION OF C-108 APPLICATION**

The completed NMOCD Form C-108 is included before the Table of Contents of this document and references appropriate sections where data required to be submitted are included herein.

This application organizes and details all of the information required by NMOCD and NMOCC to evaluate and approve the submitted Form C-108 – Application for Authorization to Inject. This information is presented in the following categories:

- A detailed description of the location, construction, and operation of the proposed disposal well (Section 3.0)
- A summary of the regional and local geology, the hydrogeology, and the location of drinking water wells within the area of review (Section 4.0)
- The identification, location, status, production zones, and other relevant information on oil and gas wells within the area of review. (Section 5.0)
- The identification and required notification for operators and surface land owners that are located within the area of review (Section 6.0)
- An affirmative statement, based on analysis of geologic conditions at the site, that there is no hydraulic connection between the proposed injection zone and any known sources of drinking water (Section 7.0)

### **3.0 PROPOSED CONSTRUCTION AND OPERATION OF SUMMIT SWD #1**

#### **3.1 DESIGN OF SUMMIT SWD #1**

The SWD facilities and wells will be integrated components of the Summit Plant design. The preliminary well design for the new injection well is shown on Figure 3. This well will be made to accommodate injection of 25,000 bpd of saltwater. The tubing and cement details of the well design may be modified after review with BLM. Since the subsurface mineral rights are owned by the United States, all well designs and drilling operations and testing will be conducted in accordance with the regulations and guidance provided by the governing agency, the BLM.

The well will be advanced vertically to its anticipated total depth of approximately 13,800 feet. The injection zone (13,000 to 13,800 feet) will be completed as an open hole interval.

The four casing strings are detailed on the well injection data sheet and Figure 5 schematic. Surface casing (20") will be set in a competent bed above the salt, at approximately 475 feet. The first intermediate casing (13 3/8") will be set through the salt to approximately 1,600 feet in the Seven Rivers. To protect the Capitan Aquifer, 9 5/8" casing will be advanced to approximately 3,650 feet in the upper Delaware Group. The 7" production casing will be set in the upper Woodford Formation at approximately 12,875 feet. The final completion will be constructed as a 5 1/2" open hole interval, to a total depth of approximately 13,800 feet in the lower Montoya Formation.

Both intermediate segments will be logged using Dual Induction and Density-Neutron-Gamma Ray Porosity. The proposed open hole logging suite for the TD run consists of a Dual Induction, Density-Neutron-Gamma Ray Porosity and Fracture Matrix Identification (FMI) log in the lower Woodford (cap rock) and the Devonian, Fusselman and Montoya units

Sidewall cores will be collected from the tight Woodford caprock above the Devonian and in the Devonian and target reservoir units. Representative core samples will be analyzed in the laboratory to determine caprock and reservoir permeabilities and porosity.

All casing segment will be cemented to the surface. A casing integrity test (pressure test) will be performed to test the casing. Full 360-degree cement-bond logs will be performed for each casing segment as well.

Once the integrity of the cement jobs has been determined a temporary string of removable packer and tubing will be run, and injection tests (step tests) will be performed to determine the final injection pressures and volumes. Once the reservoirs have been tested, the final tubing string will include a permanent packer, approximately 12,850 feet of 3 1/2-inch premium thread tubing.

**3.2 CALCULATED MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP)**

The total volume of SW to be injected under this scenario will be approximately 25,000 barrels per day. Pressure reduction valves will be incorporated to assure that maximum allowable operating pressure allowed by NMOCD will not be exceeded.

The MAOP for the Summit SWD #1 is calculated using the following method approved by NMOCD as shown below:

$$IP_{max} = PG (D_{top}) \quad \text{where: } \begin{array}{l} IP_{max} = \text{maximum surface injection pressure (psig)} \\ PG = \text{pressure gradient of mixed injection fluid (psig/foot)} \\ D_{top} = \text{depth at top of perforated interval of injection zone (feet)} \end{array}$$

and  $PG = 0.2 + 0.433 (1.04 - SG_{sw})$  where:

$SG_{sw}$  = specific gravity of the disposed salt water (~1.04)

Therefore:

$$PG = 0.2 + 0.433 (1.04 - 1.04) = 0.2$$

$$IP_{max} = PG (D_{top}) = 0.2 \times 13,700 = 2,740 \text{ psig}$$

Summit requests a MAOP to 2,740 psig.

## **4.0 REGIONAL AND LOCAL GEOLOGY AND HYDROGEOLOGY**

### **4.1 GENERAL GEOLOGIC SETTING/SURFICIAL GEOLOGY**

The Summit Facility will be located in northwestern corner of Section 6, T20S, R30E in Eddy County, New Mexico, about 18 miles northeast of Carlsbad, New Mexico (Figure 1). The proposed disposal well is just to the east of this in Section 5, T20S, R30E in Eddy County, New Mexico.

### **4.2 BEDROCK GEOLOGY**

The Summit Facility and proposed well are located in the northern portion of the Delaware Basin, a sub-basin of the larger, encompassing Permian Basin, which covers a large area of southeastern New Mexico and west Texas ( Figure 4). The Permian Basin lies within the area of the larger, ancestral (pre-Mississippian) Tabosa Basin, which covered an area that included the entire present-day Permian Basin area and beyond. The Tabosa Basin was a shallow sub-tropical basin throughout the period between the Ordovician and early Mississippian (Osagean). The Permian Basin as we know it today began to take form during the Middle to Late Mississippian, with various segments (Delaware and Midland Basins, Central Basin Platform, North Platforms) arising from the ancestral Tabosa Basin. The Delaware Basin was subsequently deepened by periodic deformation during the Hercynian orogeny of the Pennsylvanian through Early Permian. Following the orogeny, the Delaware Basin was structurally stable and gradually was filled by large quantities of clastic sediments while carbonates were deposited on the surrounding shelves, and was further deepened by basin subsidence.

Figure 5 is a generalized stratigraphic column showing the formations that underlie the proposed well site. The entire lower Paleozoic interval (Ellenburger through Devonian) was periodically subjected to subaerial exposure and prolonged periods of karsting, most especially in the Fusselman and Devonian. The result of this exposure was development of systems of karst-related secondary porosity, which included solution-enlargement of fractures and vugs, and development of small cavities and caves. Particularly in the Fusselman, solution features from temporally-distinct karst events became interconnected with each successive episode, so there could be some degree of vertical continuity in parts of the Fusselman section that could lead to enhanced vertical and horizontal permeability.

In this immediate area of the Permian Basin, major tectonic activity was primarily confined to the lower Paleozoic section, where seismic data shows major faulting and ancillary fracturing affected rocks only as high up as the lower Woodford Shale. Faulting higher in the section that is related to the Hercynian orogeny is more prevalent closer to the Central Basin Platform margins and the northern margins of the Northwest Shelf.

The sub-Woodford Paleozoic rocks extend down to the Ordovician Ellenburger Formation, which sit on the basement over a veneer of Early Ordovician sandstones and granite wash. The Ellenburger is comprised of dolomites and limestones, and is up to several hundred feet thick. It is overlain by about 400 feet of Ordovician Simpson sandstones and tight limestones, in turn overlain by about 400 feet of Montoya cherty carbonates.

The Silurian Fusselman and Wristen, and Devonian Thirty-one Formations overlie the Montoya, and are comprised of interbedded dolomites and dolomitic limestones that are capped by the Woodford Shale. The Woodford shale is overlain by several hundred feet of Osagean limestone, which is overlain by

several hundred feet of shales and basinal limestones of the Upper Mississippian Chester Formation. The Pennsylvanian Morrow, Atoka, Strawn, and a starved section of Cisco-Canyon complete the pre-Permian section. Within this entire sequence, the Morrow is a major gas producing zone, with smaller contributions from the Atoka and Strawn. The proposed Silurian-Devonian injection zone does not produce economic hydrocarbons for more than 10 miles away from the well site.

#### **4.3 LITHOLOGIC AND RESERVOIR CHARACTERISTICS OF THE SILURO-DEVONIAN FORMATIONS**

The proposed injection interval includes the Devonian Thirty-one, and Silurian Wristen and Fusselman Formations, collectively referred to as the Siluro-Devonian. The injection interval also includes the Ordovician upper Montoya Formation. The proposed injection interval includes a number of intervals of dolomites and dolomitic limestones with moderate to high primary porosity, and secondary, solution-enlarged porosity that is related to karst events that periodically occurred throughout the section, most notably in the Fusselman Formation. These karst events produced solution cavities and enlarged fractures throughout the section, which can be substantial enough to provide additional permeability that is not readily apparent on well logs. The porous zones are separated by tight limestones and dolomites.

There are no producing zones within or below the Siluro-Devonian in the area of the proposed well, and the injection interval is separated from the nearest producing zone (Morrow) by 75 feet of Woodford shale, 500 feet of tight Osagean limestones, and 400 feet of tight Chesterian and Barnett shales and deep water limestones. It lies a minimum of 1,000 feet above the Precambrian basement.

#### **4.4 CHEMISTRY OF THE RESERVOIR FLUIDS**

Reservoir fluids were collected and analyzed from the Devonian interval at the DCP Midstream Zia AGI #2 (3002542207), located in Section 19, T19S, R 32E, approximately 11 miles northeast of the proposed WD #1. These analyses showed an average of TDS of 42,750 parts per million (ppm). The major ions were chloride (23,700 ppm) and sodium (15,140 ppm). The Devonian reservoir fluids will be compatible with produced waters from wells in this area.

#### **4.5 GROUNDWATER HYDROLOGY IN THE VICINITY OF THE PROPOSED INJECTION WELL**

A review of the State Engineer's files shows no reported water wells within one mile of the proposed Summit SWD #1 location. There is a saline disposal/evaporation pond, operated by Intrepid HB Potash, approximately one quarter mile south of the proposed SWD #1. Groundwater elevations in the drilling location are approximately 3,200 feet amsl, roughly equivalent to the surface elevation of the pond, or about 50 feet below the surface at the drilling site (Hydrological Assessment and Groundwater Modeling Report, HB in-Situ Solution Mining Project, February 2011, Figure 5-5, p. 5-10). Total dissolved solids in the shallow groundwater in the project area is highly variable, ranging from 5,000 to over 125,000 parts per million (Hydrological Assessment, Figure 4-9, p. 4-15). As described in Section 3.1, the surface casing will be extended to approximately 475 feet, effectively isolating the shallow ground water.

## **5.0 OIL AND GAS WELLS IN THE SUMMIT SWD#1 AREA OF REVIEW**

Within the two-mile radius area of review for the proposed SWD#1 saltwater disposal well, NMOCD records identify a total of 64 wells (28 plugged, 24 active). There are also 11 well applications approved and awaiting drilling. None of these wells, current or proposed, penetrates the proposed injection zone.

Relevant information for them is summarized in Table 1 below.

Appendix A provides the information on the identified wells. Figures A-1 and Table A-1 show the location of all wells within 2 miles, and Figures A-2 and Table A-2 show wells within one mile of the proposed SWD #1.

Within the one-mile area of review there are 23 wells (10 active, 7 plugged and abandoned, and 6 permitted but not drilled). None of these wells current or proposed penetrate the proposed injection zone. Diagrams of the plugged wells in the area of review with available records is also included in Appendix A. There are no available records of two of the plugged wells, 3001504651 and 3001504661. The locations and ages of these wells indicate that in all probability they were completed in the Yates Formation, at typical total depths of 2,000 feet or less.

**Table 1: Summary of Wells Within One Mile of Proposed Summit SWD #1**

API	OPERATOR	WELL NAME	PLUG_DATE	SPUD_DATE	DEPTH	TYPE	STATUS	DISTANCE (MI)
	SUMMIT MIDSTREAM	SWD #1				SWD	New	0.00
3001544011	COG OPERATING LLC	SOLUTION FEDERAL COM 004H				O	New	0.09
3001541242	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 004H		04-Sep-13	8378	O	Active	0.21
3001534068	COG OPERATING LLC	STRAIGHT JOE STATE COM 001		11-Apr-07	12180	G	Active	0.22
3001539332	CIMAREX ENERGY CO.	BURTON 6 FEDERAL COM 004H				O	New	0.29
3001543227	COG OPERATING LLC	SOLUTION FEDERAL COM 003H		02-Aug-15	8477	O	Active	0.33
3001510003	IKE LOVELADY INC	CONTINENTAL FED 5 001	28-Aug-63	11-Aug-63	1705	O	Plugged	0.40
3001541028	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 003H		11-Feb-13	8405	O	Active	0.40
3001504661	MARK WHELAN	RIGGS 001	01-Jan-01	02-Jan-00	NA	O	Plugged	0.41
3001539331	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 003H				O	New	0.47
3001544008	COG OPERATING LLC	SOLUTION FEDERAL COM 001H				O	New	0.51
3001541238	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 002H		25-Mar-14	8440	O	Active	0.66
3001504651	H & W FOGERTY	STOREY 001	01-Jan-01	02-Jan-00	NA	O	Plugged	0.67
3001538486	CIMAREX ENERGY CO. OF COLORADO	BURTON 6 FEDERAL 002E				O	New	0.81
3001542352	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 002H		28-Nov-14	10450	O	Active	0.81
3001526222	EASTLAND OIL CO	RONADERO FEDERAL 002	31-Mar-95	11/9/1989	8500	O	Plugged	0.85
3001528635	EOG Y RESOURCES, INC.	HANAGAN APL FEDERAL COM 001		31-Aug-95	12140	G	Active	0.86
3001540586	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 001H		29-Aug-12	8440	O	Active	0.90
3001538226	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 001		28-Oct-10	8411	O	Active	0.97
3001520390	H L BROWN JR	FEDERAL B 001	31-Mar-71	25-Feb-71	1687	O	Plugged	0.99
3001526403	EASTLAND OIL CO	RONADERO FEDERAL 004		28-Jun-90	4640	O	Active	0.99
3001504650	W H BLACK	KELLY 001	07-Jun-56	08-Jun-56	1795	O	Plugged	0.99
3001526503	FORTSON OIL CO	SYLVITE FEDERAL 001	31-Mar-94	09-Dec-90	12090	G	Plugged	1.00



## **6.0 IDENTIFICATION AND REQUIRED NOTIFICATION OF OPERATORS, SUBSURFACE LESSEES, AND SURFACE OWNERS WITHIN THE AREA OF REVIEW**

Geolex contracted Elkhorn Land & Title, LLC of Roswell, New Mexico to research land records in Eddy Counties to obtain a listing of all operators, oil, gas and mineral lessees, and surface owners within a one-mile radius of the proposed AGI well. Appendix B includes the results from that search.

Table B-1 summarizes the surface and mineral owners in the one-half mile area of review. This Table comprises the universe of persons that must be notified 20 days prior to the NMOCC hearing. The areas of leases are shown in Figure B-1. Appendix B also includes copies of individual Notice Letters and Certified Mail Receipts, and Copies of the newspaper notice and affidavit of publication.

## **7.0 AFFIRMATIVE STATEMENT OF LACK OF HYDRAULIC CONNECTION BETWEEN PROPOSED INJECTION ZONE AND KNOWN SOURCES OF DRINKING WATER**

As part of the work performed to support this application, a detailed investigation of the structure, stratigraphy and hydrogeology of the area surrounding the proposed Summit SWD #1 well has been performed. The investigation included the analysis of available geologic data and hydrogeologic data from wells and literature identified in Sections 3, 4 and 5 above including related appendices. Based on this investigation and analysis of these data, it is clear that there are no open fractures, faults or other structures which could potentially result in the communication of fluids between the proposed injection zone with any known sources of drinking water or oil or gas production in the vicinity as described above in Sections 4 and 5 of this application.

I have reviewed this information, and affirm that is correct to the best of my knowledge.

James C. Hunter, R.G

Senior Geologist

Geolex, Inc.



Date: 2/15/2019

## FIGURES

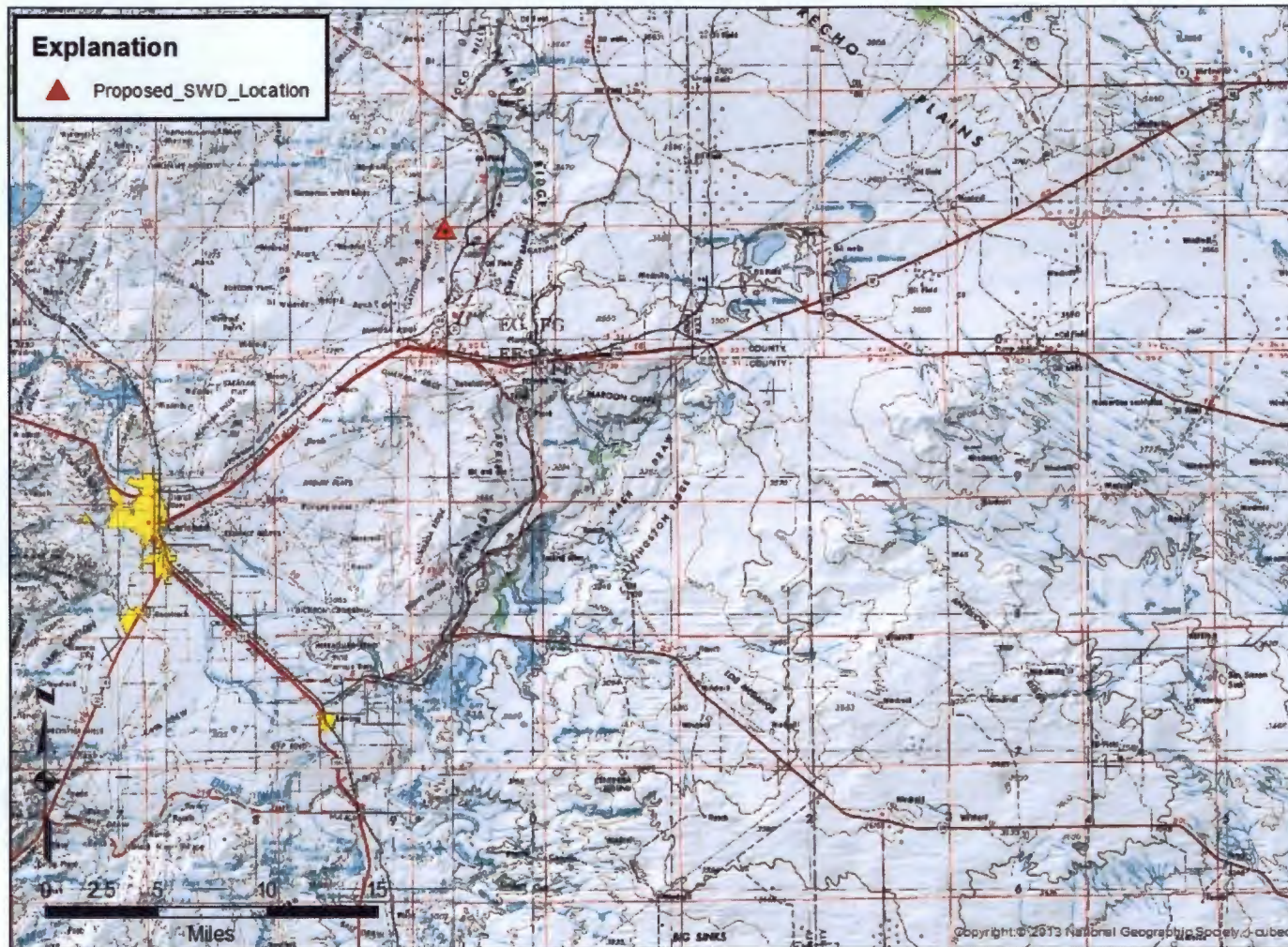


Figure 1: Location of the Proposed Summit SWD #1



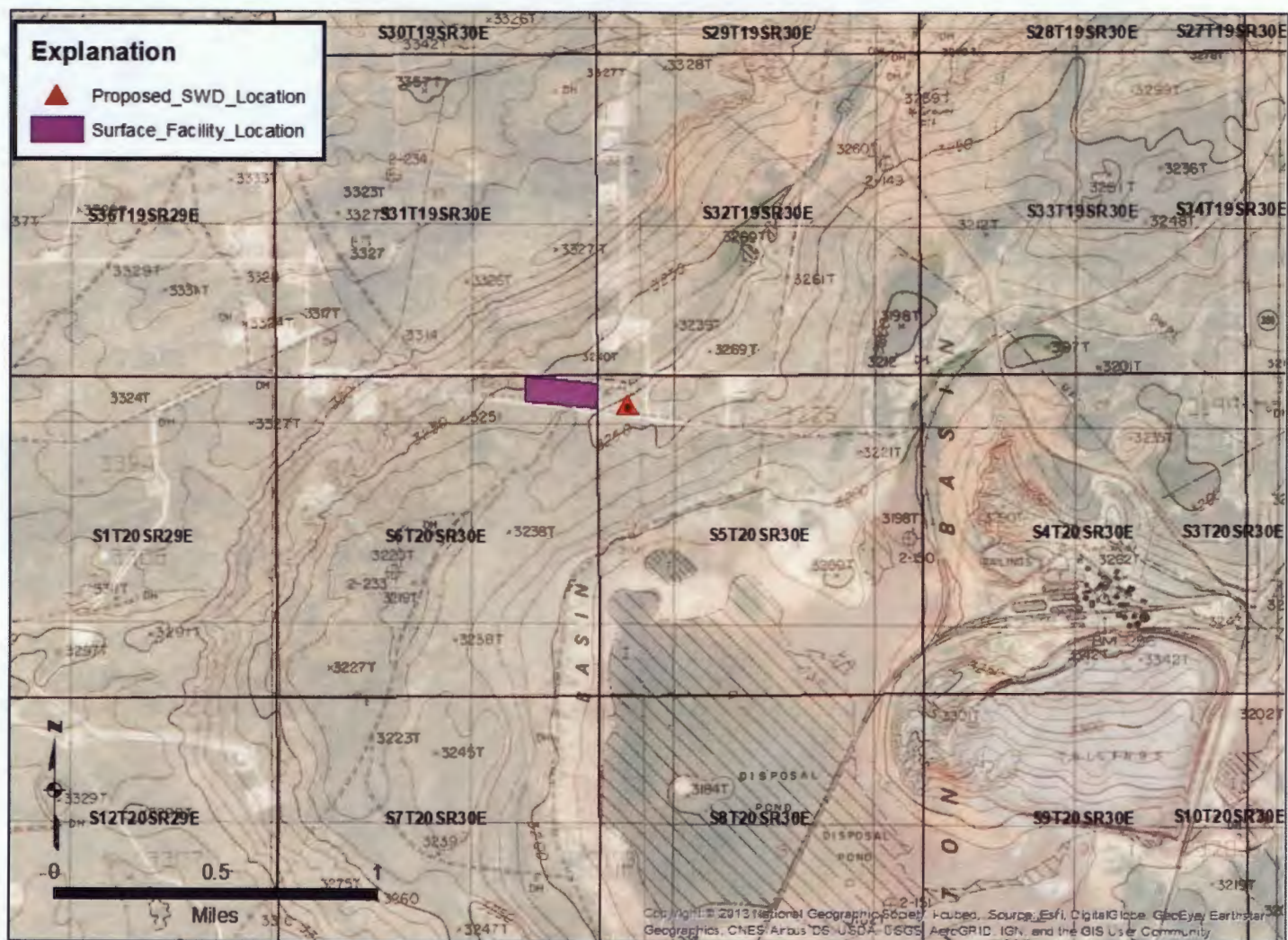


Figure 2: Detailed Locations of Proposed Summit Surface Facilities and SWD Well

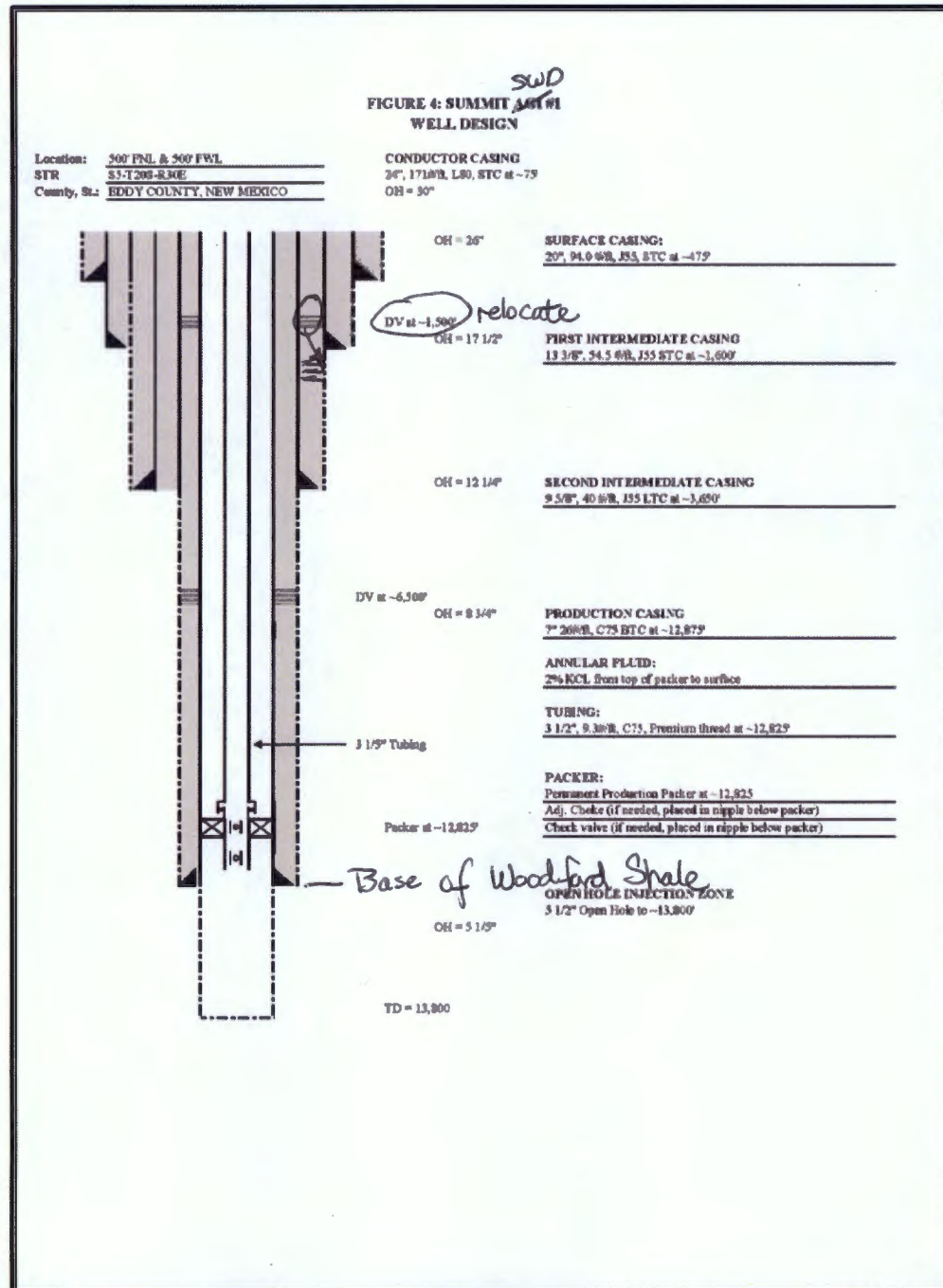


Figure 3: Schematic of Proposed Summit SWD #1

Estimated Tops – Proposed Summit SWD #1

<u>Formation</u>	<u>Vertical Depth to Top (ft)</u>
Rustler	129
Salado	454
Tansill	1382
Yates	1582
7 Rivers	1833
Capitan Reef	1930
Delaware	3506
Bone Springs	6143
Wolfcamp	9743
Strawn	10600
Atoka	10992
Morrow-clastics	11603
Chester	11954
Osage	12361
Woodford	12946
Base Woodford	13058
Wristen	13386
Fusselman	13476
Montoya	13885

production casing [shallower  
proposed  
shoe at 12,875?]

Add stipulation



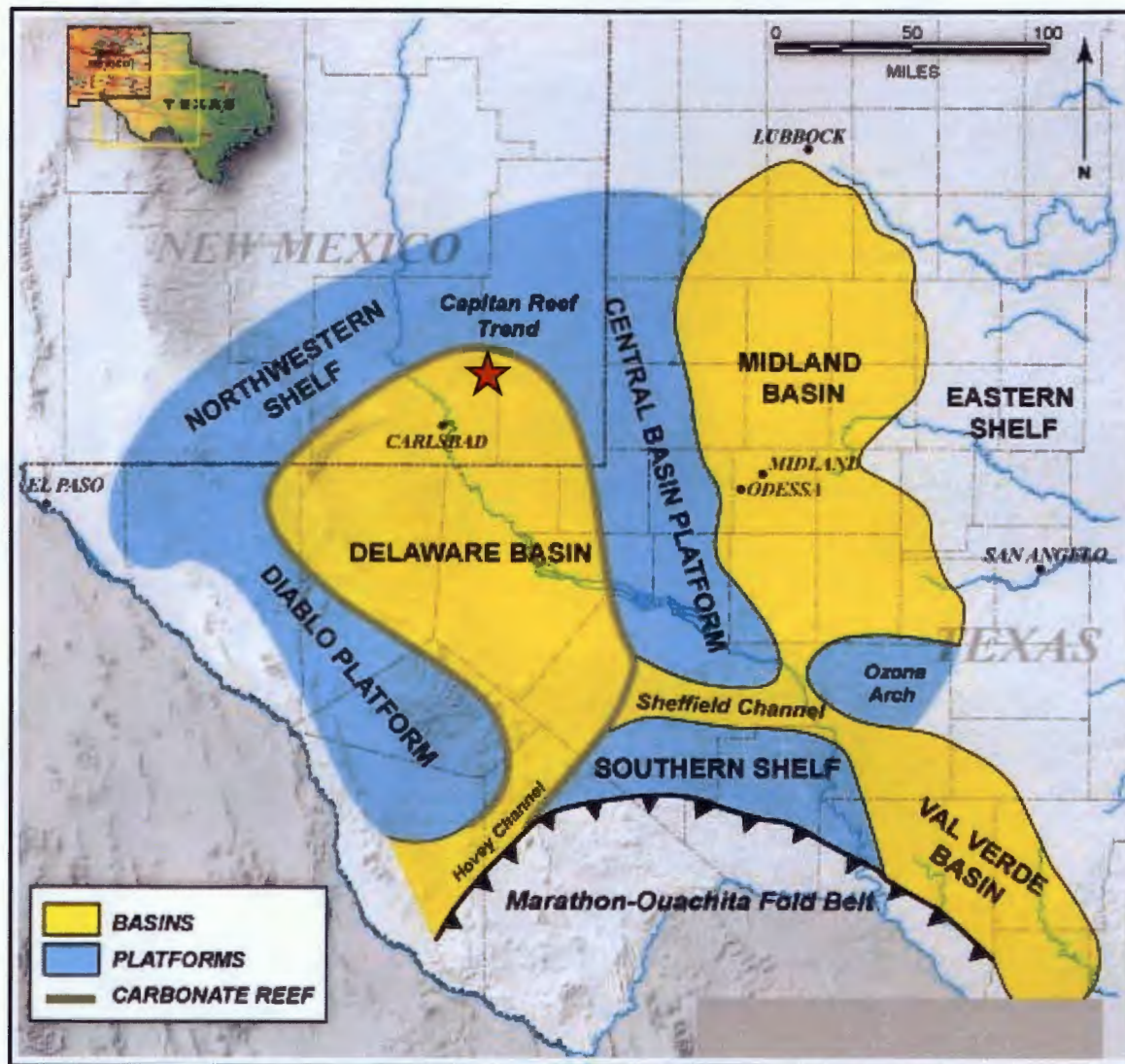


Figure 4: Structural Features of the Permian Basin During the Late Permian



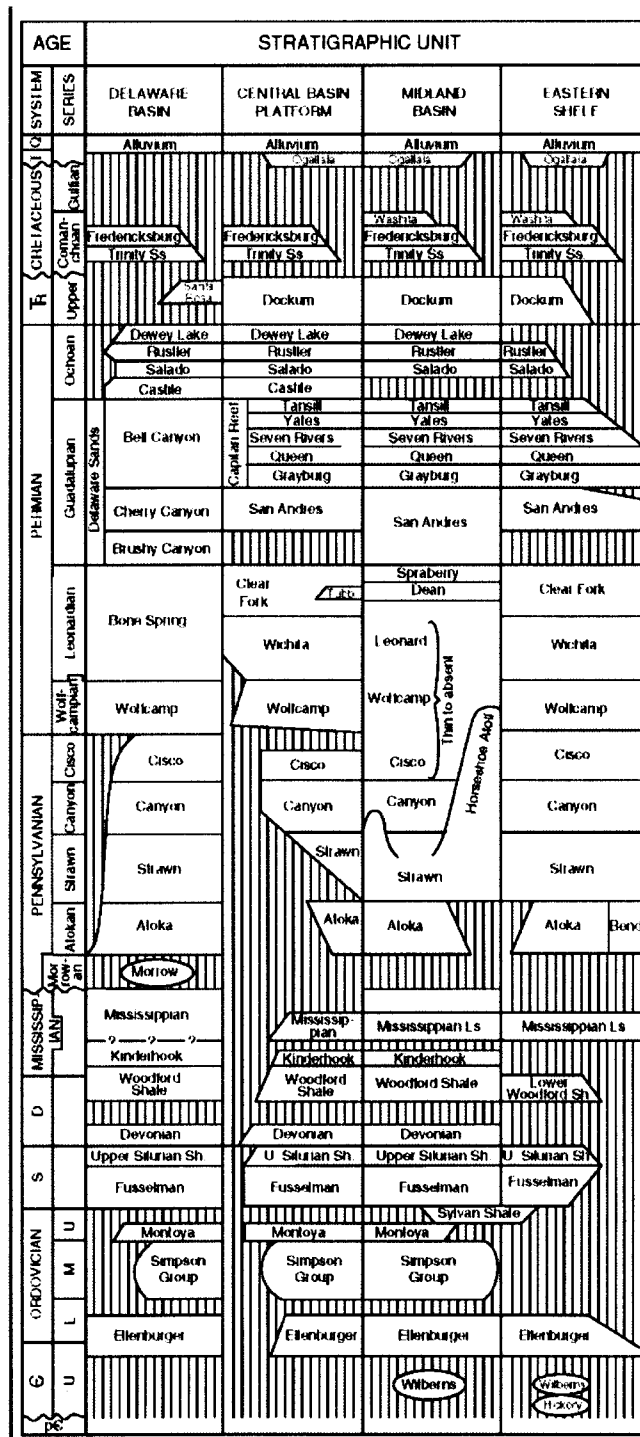


Figure 5: General Stratigraphic Column of Permian Basin

**Appendix A:**

**Information on Oil and Gas Wells within Two Mile of Proposed Summit SWD #1  
And Plugging Data for Plugged Wells Within One Mile of Proposed Summit SWD #1**

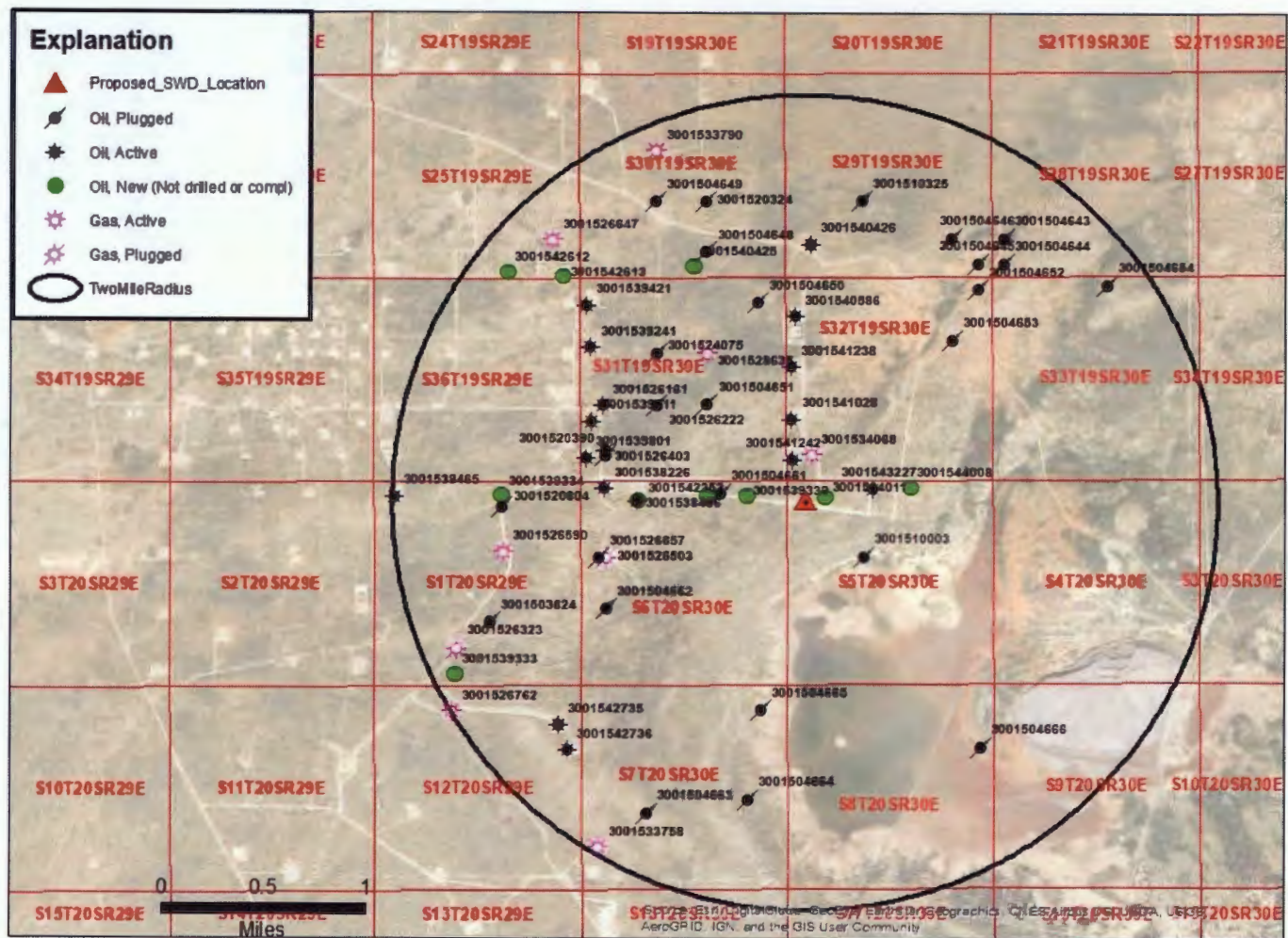
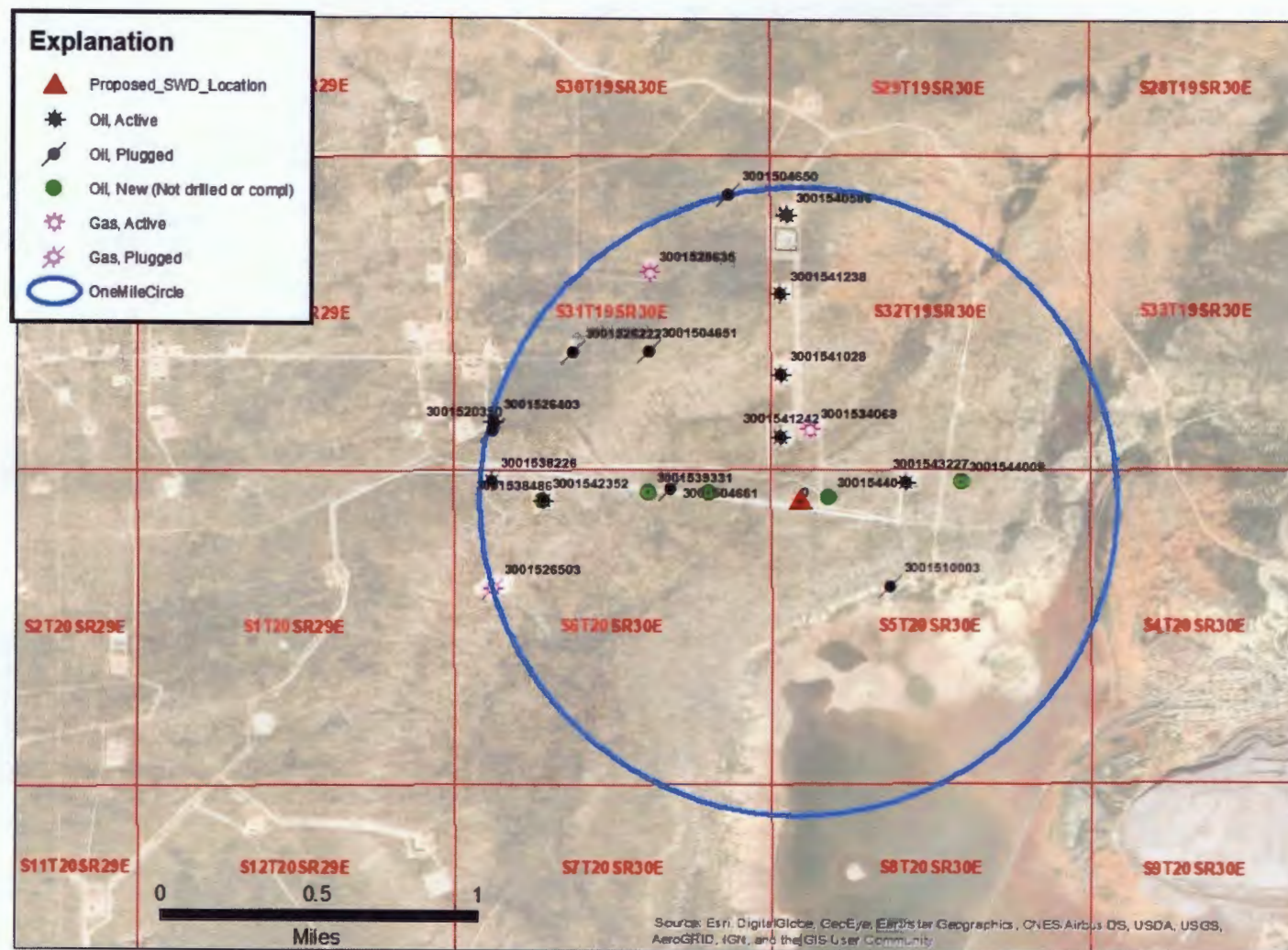


Figure A1: Wells Within Two Miles of Proposed Summit SWD #1

Table A1: Summary of Wells Within Two Miles of Proposed Summit SWD #1

API	OPERATOR	WELL NAME	PLUG DATE	TOWNSHIP	RANGE	SECTION	SPUD DATE	TVD DEPTH	WELL TYPE	COMPL STATUS	ELEVGL	LATITUDE	LONGITUDE	DISTANCE (MILES)
3001544011	SUMMIT MIDSTREAM	SWD #1		20.05	30.0E	5			SWD	New (Not drilled or compl)	3250			0.00
3001541242	COG OPERATING LLC	SOLUTION FEDERAL COM 004H		20.05	30E	5		0	O	New (Not drilled or compl)	3256	32.6083756	-103.9996584	0.09
3001534068	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 004H		19.05	30E	32	04-Sep-13	8378	O	Active	3247	32.6111414	-104.0022705	0.21
3001539332	COG OPERATING LLC	STRAIGHT JOE STATE COM 001		19.05	30E	32	11-Apr-07	12180	G	Active	3241	32.6114661	-104.0006732	0.22
3001543227	CIMAREX ENERGY CO.	BURTON 6 FEDERAL COM 004H		20.05	30E	6		0	O	New (Not drilled or compl)	3246	32.608584	-104.0061198	0.29
3001510003	COG OPERATING LLC	SOLUTION FEDERAL COM 003H		20.05	30E	5	02-Aug-15	8477	O	Active	3252	32.6090483	-103.9955502	0.33
3001541028	IKE LOVELADY INC	CONTINENTAL FED 5 001	02-Jan-00	20.05	30E	5	02-Jan-00	1705	O	Plugged	3315	32.6042007	-103.9963578	0.40
300154661	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 003H		19.05	30E	32	11-Feb-13	8405	O	Active	3277	32.6140281	-104.002266	0.40
3001539331	MARK WHELAN	RIGGS 001	01-Jan-01	20.05	30E	6	02-Jan-00	NA	O	Plugged	3315	32.6087548	-104.0082117	0.41
3001544008	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 003H		20.05	30E	6		0	O	New (Not drilled or compl)	3255	32.6086037	-104.0093501	0.47
3001541238	COG OPERATING LLC	SOLUTION FEDERAL COM 001H		20.05	30E	5		0	O	New (Not drilled or compl)	3248	32.609078	-103.9925373	0.51
3001504651	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 002H		19.05	30E	32	25-Mar-14	8440	O	Active	3318	32.6177497	-104.0022603	0.66
3001538486	H & W FOGERTY	STOREY 001	01-Jan-01	19.05	30E	31	02-Jan-00	NA	O	Plugged	3315	32.6151054	-104.0092825	0.67
3001542352	CIMAREX ENERGY CO. OF COLORADO	BURTON 6 FEDERAL 002E		20.05	30E	6		0	O	New (Not drilled or compl)	3294	32.6082373	-104.0150901	0.81
3001526222	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 002H		20.05	30E	6	28-Nov-14	10450	O	Active	3287	32.6082401	-104.0150933	0.81
3001528635	EASTLAND OIL CO	RONADERO FEDERAL 002	31-Mar-95	19.05	30E	31		8500	O	Plugged	3321	32.6151086	-104.0134143	0.85
3001540586	EOG Y RESOURCES, INC.	HANAGAN APL FEDERAL COM 001		19.05	30E	31	31-Aug-95	12140	G	Active	3319	32.6187327	-104.0092765	0.86
3001538226	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 001H		19.05	30E	32	29-Aug-12	8440	O	Active	3324	32.6133883	-104.0018957	0.90
3001520390	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 001		20.05	30E	6	28-Oct-10	8411	O	Active	3323	32.6091501	-104.0178365	0.97
3001526403	H L BROWN JR	FEDERAL B 001	02-Jan-00	19.05	30E	31	02-Jan-00	1687	O	Plugged	3315	32.6114827	-104.017728	0.99
3001540650	EASTLAND OIL CO	RONADERO FEDERAL 004		19.05	30E	31	28-Jun-90	4640	O	Active	3315	32.611895	-104.0177273	0.99
3001526503	W H BLACK	KELLY 001	02-Jan-00	19.05	30E	31	02-Jan-00	1795	O	Plugged	3315	32.6223585	-104.004963	0.99
3001524075	FORTSON OIL CO	SYLVITE FEDERAL 001	31-Mar-94	20.05	30E	6	09-Dec-90	12090	G	Plugged	3262	32.6042262	-104.0177415	1.00
3001526657	MORRIS R ANTWEIL	GULF FED 001	02-Jan-00	19.05	30E	31	02-Jan-00	1660	O	Plugged	3315	32.6187348	-104.0134056	1.01
3001504665	FORTSON OIL CO	SYLVITE FEDERAL 002	01-Apr-94	20.05	30E	6	13-Mar-91	4001	O	Plugged	3263	32.6042265	-104.0183712	1.04
3001539801	GROVER-MANN BRO	RIGGS 001	01-Jan-01	20.05	30E	7	02-Jan-00	NA	O	Plugged	3315	32.5933272	-104.0049897	1.05
3001526161	HENRY BLACK DRUG CO	STATE LOWE 002	02-Jan-00	19.05	30E	32	02-Jan-00	1675	O	Plugged	3315	32.6196018	-103.9888839	1.06
3001540425	CIMAREX ENERGY CO.	HANAGAN APL FEDERAL COM 003H		19.05	30E	31	02-Jan-14	8429	O	Active	3326	32.6113861	-104.0193998	1.08
3001504662	EASTLAND OIL CO	RONADERO FEDERAL 001		19.05	30E	31	11-Aug-89	5000	O	Active	3315	32.6151111	-104.0179177	1.08
3001539511	NEIL WILLS ET AL	CHASE 001	01-Jan-01	20.05	30E	6	02-Jan-00	NA	O	Plugged	3315	32.6005992	-104.0177488	1.10
3001540426	EOG Y RESOURCES, INC.	HANAGAN APL FEDERAL COM 002H		19.05	30E	31	05-Mar-12	8435	O	Active	3324	32.6139669	-104.018905	1.10
3001540425	EOG Y RESOURCES, INC.	ANTWEIL ANU FEDERAL 004H		19.05	30E	29	24-Jun-13	8496	O	Active	3335	32.6264997	-104.0005869	1.26
3001539241	EOG Y RESOURCES, INC.	ANTWEIL ANU FEDERAL 002H		19.05	30E	30		0	O	New (Not drilled or compl)	3335	32.6249886	-104.0103484	1.27
3001504648	EOG Y RESOURCES, INC.	NUCLEUS BGN FEDERAL COM 001H		19.05	30E	31	02-Apr-14	8411	O	Active	3333	32.6192655	-104.0188939	1.28
3001504652	JAMES G BROWN ASSOC	YATES FED 001	02-Jan-00	19.05	30E	30	02-Jan-00	1814	O	Plugged	3315	32.6259893	-104.0092656	1.31
3001539421	BLACK WH	STATE LOWE 001	02-Jan-00	19.05	30E	32	02-Jan-00	1832	O	Plugged	3315	32.6232247	-103.9867246	1.33
3001504645	EOG Y RESOURCES, INC.	FOCUS BDB FEDERAL 001H		19.05	30E	31	28-Apr-14	8404	O	Active	3332	32.6222614	-104.019214	1.42
3001520804	OXY USA INC	LANE FEDERAL 003	13-Nov-13	19.05	30E	29		1724	O	Plugged	3315	32.6250389	-103.9867222	1.43
3001504646	THE PETROLEUM CORPORATION OF DELAWARE	SUPERIOR FEDERAL 002	02-Jan-00	20.05	29E	1	02-Jan-00	1642	O	Plugged	3315	32.607885	-104.0263486	1.47
3001539334	YATES DRILLING COMPANY	LANE FED 004	02-Jan-00	19.05	30E	29	02-Jan-00	1715	O	Plugged	3315	32.6268584	-103.9888738	1.47
3001504666	CIMAREX ENERGY CO. OF COLORADO	SUPERIOR FEDERAL 012E		20.05	29E	1		0	O	New (Not drilled or compl)	3327	32.6086883	-104.0264492	1.47
3001526590	CIMAREX ENERGY CO. OF COLORADO	Cunningham 001	01-Jan-01	20.05	30E	8	02-Jan-00	NA	O	Plugged	3315	32.5906188	-103.986775	1.48
3001504664	CIMAREX ENERGY CO. OF COLORADO	SUPERIOR FEDERAL 009		20.05	29E	1	28-Dec-90	11892	G	Active	3315	32.604669	-104.0263545	1.49
3001510325	A J HARDENDORF	RIGGS 001	01-Jan-01	20.05	30E	7	02-Jan-00	NA	O	Plugged	3315	32.5869744	-104.0060985	1.49
3001504644	KERSEY & COMPANY	NEW MEXICO Y 001	02-Jan-00	19.05	30E	29	02-Jan-00	1795	O	Plugged	3315	32.6295979	-103.9963346	1.50
3001520324	MIDWEST REFINING CO	J R LANE 001	01-Jan-01	19.05	30E	28	02-Jan-00	NA	O	Plugged	3315	32.6250353	-103.9845681	1.51
3001504643	H L BROWN JR	YATES FED 001	02-Jan-00	19.05	30E	30	02-Jan-00	12115	O	Plugged	3315	32.6296175	-104.0092594	1.54
3001542613	W H BLACK	YATES 001	02-Jan-00	19.05	30E	28	02-Jan-00	1687	O	Plugged	3315	32.6268494	-103.9845656	1.61
3001542735	CHI OPERATING INC	PEACEKEEPER STATE COM 25 006H		19.05	29E	25		0	O	New (Not drilled or compl)	3337	32.6243533	-104.0212412	1.61
3001504649	COG OPERATING LLC	MOSSY FEDERAL 001H		20.05	29E	12	07-Dec-14	8424	O	Active	3267	32.5923987	-104.0217713	1.62
3001503624	FLYNN-WELCH-YATES	STORY 002	01-Jan-01	19.05	30E	30	02-Jan-00	NA	O	Plugged	3315	32.6296196	-104.0133768	1.63
3001542736	NEIL WILLS ET AL	McCLEAN 001	02-Jan-00	20.05	29E	1	02-Jan-00	1809	O	Plugged	3315	32.5997136	-104.0274935	1.64
3001504663	COG OPERATING LLC	MOSSY FEDERAL 002H		20.05	29E	12	09-Jan-15	8481	O	Active	3272	32.5905869	-104.0210699	1.68
3001526647	ANDERSON-PRICHARD OIL CO	Federal 7 001	02-Jan-00	20.05	30E	7	02-Jan-00	1625	O	Plugged	3315	32.5860768	-104.0145508	1.72
3001504654	EOG Y RESOURCES, INC.	WAYFARER AIY STATE 001		19.05	29E	25	28-Feb-91	12140	G	Active	3315	32.6269114	-104.0219989	1.77
3001542612	COMPTON RD	WM VANDERGRIF 001	01-Jan-01	19.05	30E	33	02-Jan-00	NA	O	Plugged	3315	32.6234333	-103.9759928	1.80
3001526323	CHI OPERATING INC	PEACEKEEPER STATE COM 25 005H		19.05	29E	25		0	O	New (Not drilled or compl)	3339	32.6246405	-104.025812	1.82
3001533790	CIMAREX ENERGY CO. OF COLORADO	SUPERIOR FEDERAL 008	13-Mar-14	20.05	29E	1	04-Apr-90	11908	G	Plugged	3298	32.5978978	-104.0301897	1.83
3001533758	CHI OPERATING INC	FREEWAY FEDERAL 001		19.05	30E	30	05-Jan-05	12115	G	Active	3344	32.6332501	-104.0133707	1.86
3001538465	CIMAREX ENERGY CO. OF COLORADO	SUPERIOR FEDERAL 011E		20.05	29E	1		0	O	New (Not drilled or compl)	3309	32.595998	-104.030465	1.90
3001526762	OWL SWD OPERATING, LLC	COLLINSOSCOPY FEDERAL 001		20.05	30E	7	18-Dec-04	12390	G	Active	3310	32.5836482	-104.0185352	1.97
3001526762	CIMAREX ENERGY CO. OF COLORADO	SUPERIOR FEDERAL 010H		20.05	29E	1	31-Mar-11	8337	O	Active	3323	32.608716	-104.035358	1.99
3001526762	EOG Y RESOURCES, INC.	SLINKARD UR FEDERAL COM 004		20.05	29E	12	12-Jun-91	12175	G	Active	3316	32.5933632	-104.0307017	2.00





**Figure A2: Wells Within One Mile of Proposed Summit SWD #1**

Table A2: Summary of Wells Within One Mile of Proposed Summit SWD #1

API	OPERATOR	WELL_NAME	PLUG_DATE	TOWNSHIP	RANGE	SECTION	SPUD_DATE	TVD_DEPTH	WELL_TYPE	COMPL_STATUS	ELEVSL	LATITUDE	LONGITUDE	DISTANCE (MILES)
	SUMMIT MIDSTREAM	SWD #1		20.0S	30.0E	5			SWD	New (Not drilled or compl)	3250			0.00
3001544011	COG OPERATING LLC	SOLUTION FEDERAL COM 004H		20.0S	30E	5			O	New (Not drilled or compl)	3256	32.6083756	-103.9996584	0.09
3001541242	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 004H		19.0S	30E	32	04-Sep-13	8378	O	Active	3247	32.6111414	-104.0022705	0.21
3001534068	COG OPERATING LLC	STRAIGHT JOE STATE COM 001		19.0S	30E	32	11-Apr-07	12180	G	Active	3241	32.6114661	-104.0006732	0.22
3001539332	CIMAREX ENERGY CO.	BURTON 6 FEDERAL COM 004H		20.0S	30E	6			O	New (Not drilled or compl)	3246	32.608584	-104.0061198	0.29
3001543227	COG OPERATING LLC	SOLUTION FEDERAL COM 003H		20.0S	30E	5	02-Aug-15	8477	O	Active	3252	32.6090483	-103.9955502	0.33
3001510003	IKE LOVELADY INC	CONTINENTAL FED 5 001	28-Aug-63	20.0S	30E	5	11-Aug-63	1705	O	Plugged	3315	32.6042007	-103.9963578	0.40
3001541028	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 003H		19.0S	30E	32	11-Feb-13	8405	O	Active	3277	32.6140281	-104.002266	0.40
3001504661	MARK WHELAN	RIGGS 001	01-Jan-01	20.0S	30E	6	02-Jan-00	NA	O	Plugged	3315	32.6087548	-104.0082117	0.41
3001539331	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 003H		20.0S	30E	6			O	New (Not drilled or compl)	3255	32.6086037	-104.0093501	0.47
3001544008	COG OPERATING LLC	SOLUTION FEDERAL COM 001H		20.0S	30E	5			O	New (Not drilled or compl)	3248	32.609078	-103.9925373	0.51
3001541238	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 002H		19.0S	30E	32	25-Mar-14	8440	O	Active	3318	32.6177497	-104.0022603	0.66
3001504651	H & W FOGERTY	STOREY 001	01-Jan-01	19.0S	30E	31	02-Jan-00	NA	O	Plugged	3315	32.6151054	-104.0092825	0.67
3001538486	CIMAREX ENERGY CO. OF COLORADO	BURTON 6 FEDERAL 002E		20.0S	30E	6			O	New (Not drilled or compl)	3294	32.6082373	-104.0150901	0.81
3001542352	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 002H		20.0S	30E	6	28-Nov-14	10450	O	Active	3287	32.6082401	-104.0150933	0.81
3001526222	EASTLAND OIL CO	RONADERO FEDERAL 002	31-Mar-95	19.0S	30E	31	11/9/1989	8500	O	Plugged	3321	32.6151086	-104.0134143	0.85
3001528635	EOG Y RESOURCES, INC.	HANAGAN APL FEDERAL COM 001		19.0S	30E	31	31-Aug-95	12140	G	Active	3319	32.6187327	-104.0092765	0.86
3001540586	COG OPERATING LLC	SHOELESS JOE 32 STATE COM 001H		19.0S	30E	32	29-Aug-12	8440	O	Active	3324	32.6213883	-104.0018957	0.90
3001538226	CIMAREX ENERGY CO.	BURTON 6 FEDERAL 001		20.0S	30E	6	28-Oct-10	8411	O	Active	3323	32.6091501	-104.0178365	0.97
3001520390	H L BROWN JR	FEDERAL B 001	31-Mar-71	19.0S	30E	31	25-Feb-71	1687	O	Plugged	3315	32.6114827	-104.017728	0.99
3001526403	EASTLAND OIL CO	RONADERO FEDERAL 004		19.0S	30E	31	28-Jun-90	4640	O	Active	3315	32.611895	-104.0177273	0.99
3001504650	W H BLACK	KELLY 001	07-Jun-56	19.0S	30E	31	08-Jun-56	1795	O	Plugged	3315	32.6223585	-104.004963	0.99
3001526503	FORTSON OIL CO	SYLVITE FEDERAL 001	31-Mar-94	20.0S	30E	6	09-Dec-90	12090	G	Plugged	3262	32.6042262	-104.0177415	1.00

## PLUGGING DIAGRAM Kelly 001 3001504650

Location: 660 FNL & 660' FEL  
STR S31-T219S-R30E  
County, St.: EDDY COUNTY, NEW MEXICO



10 sx to surface

Mudded 360' - 15'

20 sx 400' - 360'

8 5/8" 24 #/ft Casing to 405' set w/10 sx, Cut to 385"  
Cemented with 125 Sxs

Mudded 1400' - 400'

25 sx 1500'-1400'

P&A 8/30/63

8" Open hole to 1795'



U. S. LAND OFFICE Las CrucesSERIAL NUMBER LC 047260A

LEASE OR PERMIT TO PROSPECT

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

## LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company W. H. Blank et al Address Box 174, Midland, Texas  
 Lessor or Tract Federal Kelly Field Midland State New Mexico  
 Well No. 1 Sec. 31 T. 19S R. 30E Meridian NPM County El Paso  
 Location 640 ft. [S.] of W. Line and 640 ft. [E.] of E. Line of Section 31 Elevation 3321  
(Transfer from section to this well)

The information given herewith is a complete and correct record of the well and all work done thereon  
 so far as can be determined from all available records.

Date 6-9-56 Signed [Signature] Title Agent

The summary on this page is for the condition of the well at above date.

Commenced drilling 4-23, 1956 Finished drilling 5-15, 1956

## OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 1685 to 1700 (Show) No. 4, from \_\_\_\_\_ to \_\_\_\_\_  
 No. 2, from 1707 to 1712 (Show) No. 5, from \_\_\_\_\_ to \_\_\_\_\_  
 No. 3, from \_\_\_\_\_ to \_\_\_\_\_ No. 6, from \_\_\_\_\_ to \_\_\_\_\_

## IMPORTANT WATER SANDS

No. 1, from 193 to 205 No. 8, from \_\_\_\_\_ to \_\_\_\_\_  
 No. 2, from 1780 to 1795 (Salphur Water) from \_\_\_\_\_ to \_\_\_\_\_

## CASING RECORD

Run casing	Weight per foot	Threads per foot	Make	Amount	Kind of steel	Oil and pulled from	Illustrated	Purpose
8-5/8	24	8	405	T.P.	385			Conductor

## MUDDING AND CEMENTING RECORD

Run casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
8-5/8	405	10 Sacks	Pump		

## PLUGS AND ADAPTERS

Heaving plug—Material \_\_\_\_\_ Length \_\_\_\_\_ Depth set \_\_\_\_\_  
 Adapters—Material \_\_\_\_\_ Size \_\_\_\_\_

## SHOOTING RECORD

Run	Shot used	Explosive used	Quantity	Date	Depth shot	Depth charged out

## TOOLS USED

Rotary tools were used from \_\_\_\_\_ feet to \_\_\_\_\_ feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Cable tools were used from \_\_\_\_\_ feet to \_\_\_\_\_ feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet

## DATES

Put to producing \_\_\_\_\_, 19\_\_\_\_  
 The production for the first 24 hours was \_\_\_\_\_ barrels of fluid of which \_\_\_\_\_ % was oil; \_\_\_\_\_ %  
 emulsion; \_\_\_\_\_ % water; and \_\_\_\_\_ % sediment. Gravity, °Be. \_\_\_\_\_  
 If gas well, cu. ft. per 24 hours \_\_\_\_\_ Gallons gasoline per 1,000 cu. ft. of gas \_\_\_\_\_  
 Rock pressure, lbs. per sq. in. \_\_\_\_\_

## EMPLOYEES

Driller \_\_\_\_\_ Driller \_\_\_\_\_  
 Driller \_\_\_\_\_ Driller J. C. Glower (Contractor)

## FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	40	40	Red Bed
40	105	65	Gypsum & Red Bed
105	130	25	Gyp & Red Shale
130	160	30	Sandy Shale & Lime
160	180	20	Gray Shale
180	205	25	Lime
205	230	25	Blue Shale & Lime
230	290	60	Red Bed
290	360	70	Blue & Red Shale
360	373	13	Red Rock
373	405	32	Salt
405	410	5	Salt & Anhydrite
410	545	135	Salt
545	600	55	Anhydrite
600	1280	680	Salt (Bottom of salt)
1280	1295	15	Hard Lime
1295	1310	15	Anhydrite & Brown Lime
1310	1365	55	White Lime
1365	1400	35	Brown Lime
1400	1490	90	White Lime
1490	1470	20	Brown Lime
1470	1510	40	Gray Lime
1510	1585	75	Lime & Red Shale Break
1585	1600	15	Gray Lime
1600	1644	44	Dark Sandy Lime
1644	1700	56	Gray Lime

# FORMATION RECORD—Continued

FROM—	TO—	TOTAL FEET	FORMATION
1700	1750	50	Gray Limestone
1750	1760	10	Gray Limestone
1760	1775	15	Gray and
1775	1780	5	Limestone (Sulphur Water) T.S.
1780	1795	15	Limestone
CIVILIAN			
SHOOTING RECORD			
BLACK AND WHITE PHOTOGRAPH			
HISTORY OF OIL OR GAS WELL			

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of reworking, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "abandoned" or left in the well, give its size and location. If the well has been drilled, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or testing.

Well had small show of oil and gas from 1685' to 1700' - Tested for 2 hours - recovered 1 quart oil in 2 hours. Tested from 1707 to 1712 for 3 hours - recovered 1 gallon of oil cut with water 20%.

Drilling record: 25 sacks cement from 1500' to 1400' - Made hole from 1400 to 400 - 20 sacks cement from 400 to 365 - Made 365 to 15' - 10 sacks cement - 15' to surface. A pipe cemented in place extending 5' above surface.

## CIVILIAN - VIDE ON NOVEL

## LOG OF OIL OR GAS WELL

GEOGRAPHIC DIVISION

DEPARTMENT OF THE INTERIOR  
UNITED STATES

U.S. GEOLOGICAL SURVEY

WASHINGTON, D.C.

(SUBMIT IN TRIPPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office Las Cruces  
Lease No. LC 067260A  
Unit A

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF REDRILLING OR REPAIR
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT <input checked="" type="checkbox"/>
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY
NOTICE OF INTENTION TO ABANDON WELL	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

June 7, 1956

**Federal Kelly**  
Well No. 1 is located 660 ft. from N line and 660 ft. from E line of sec. 31  
NE 1/4 NE 1/4 31 19S 30E NMPM  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)  
Wildcat Eddy New Mexico  
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 3321 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudlogging jobs, cementing points, and all other important proposed work)

Well was plugged and abandoned as follows: 8 5/8" casing cut at 385' and pulled - Mudded hole from 1795' to 1500' - 25 sacks plug placed 1500' to 1400' - Mudded hole 1400' to 400' - 20 sacks plug placed 400' to 360' - Mudded hole 360' to 15' - 10 sack plug - 15' to surface - 4" pipe marker cemented in surface - protruding 5' above surface.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company W. H. Black  
Address Box 174  
Midland, Texas  
By [Signature]  
Title Agent

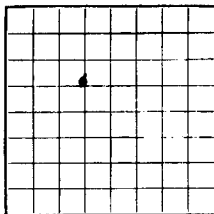
# PLUGGING DIAGRAM Continental Fed. 001 3001510003

Location: 1980' FNL & 1980' FWL  
STR S5-T20S-R30E  
County, St.: EDDY COUNTY, NEW MEXICO



8 5/8" 24 #/ft Casing to 381'  
Cemented with 125 Sxs

8" Open hole to 1705'  
Plugged w/ 25 cubic yards RediMix  
P&A 8/30/63



LOCATE WELL CORRECTLY

U. S. LAND OFFICE **Santa Fe, New Mexico**SERIAL NUMBER **MM 648620**LEASE OR PERMIT TO **PROSPECT**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

## LOG OF OIL OR GAS WELL

Company **J. M. LOVELL** Address **P. O. Box 344, Ocala, Texas**  
 Lessor or Tract **Continental-Federal 2"** Field **Windset** State **New Mexico**  
 Well No. **1** Sec. **5** T. **20N** R. **30E** Meridian **MM** County **May**  
 Location **1980** ft. **1207** of **N.** Line and **1980** ft. **1207** of **W.** Line of **Sec. 5** Elevation **3203'**  
(Denote flow relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon  
 so far as can be determined from all available records.

Signed

Date **September 2, 1963**Title **Production Superintendent**

The summary on this page is for the condition of the well at above date.

Commenced drilling **August 11**, 19 **63**. Finished drilling **August 28**, 19 **63**

## OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from ..... to ..... No. 4, from ..... to .....  
 No. 2, from ..... to ..... No. 5, from ..... to .....  
 No. 3, from ..... to ..... No. 6, from ..... to .....

## IMPORTANT WATER SANDS

No. 1, from ..... to ..... No. 3, from ..... to .....  
 No. 2, from ..... to ..... No. 4, from ..... to .....

## CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From	To	
<b>8 3/8</b>	<b>240</b>	<b>8</b>	<b>J-S</b>	<b>381</b>	<b>James Patt. Left in hole</b>				<b>Water shutoff</b>

## MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
<b>8 3/8</b>	<b>381'</b>	<b>225</b>	<b>Pump &amp; Plug</b>	<b>Water</b>	<b>None</b>
		<b>68 cu. ft. (Top job)</b>	<b>Gravity Pour</b>		

## PLUGS AND ADAPTERS

Hoaving plug—Material ..... Length ..... Depth set .....  
 Adapter—Material ..... Size .....

## SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth ejected out

## TOOLS USED

Rotary tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet  
 Cable tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet

## DATES

....., 19..... Put to producing ..... , 19.....

The production for the first 24 hours was ..... barrels of fluid of which ..... % was oil; ..... %  
 emulsion; ..... % water; and ..... % sediment. Gravity, "Bé. ....

If gas well, cu. ft. per 24 hours ..... Gallons gasoline per 1,000 cu. ft. of gas .....

Rock pressure, lbs. per sq. in. ....

## EMPLOYEES

**J. F. McAdams** ..... , Driller ..... , Driller  
 ..... , Driller ..... , Driller

## FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	63	63	Top Soil & Caliche
63	100	35	Sand
100	145	45	Shale
145	255	110	Shale & Sand
255	375	120	Shale & Anhydrite
375	395	20	Salt & Anhydrite
395	1280	885	Salt
1280	1330	50	Anhydrite
1330	1452	122	Gray Lime
1452	1690	238	Sand & Dolomite streaks
1690	1705	15	Lime
1705	-		T.D.

TOP: Salt 395'  
 (Base) 1282'  
 Gates 1452'

## U. S. GOVERNMENT PRINTING OFFICE 16-5804-2

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of feeding, together with the reasons for the work and the results. If there were any changes made in the feeding, state fully, and if any casting was "abandoned," so left in the well, give the date and location. If the well has been abandoned, give the date, place, position, and number of shafts. If pigs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

Spudded well 8/11/65 and drilled 10' hole w/casing to 361'.  
 Ran 361' 8 5/8" 2 1/2 J-5 Std Lbs Casing and cemented @ 361' w/125 sac cement. Did not  
 circulate. Ran 1" casing to 361' and cemented w/100 sac. Rechecked fill up. Ran  
 temperature survey and found top of cement @ 100'. Cemented outside of casing w/65  
 sac 15" "Ready-Mix" Cement. MCC 24 hours and tested casing to 1000 PSI for 30 mins.  
 Test ok.

Test ok.  
cu. ft. "Ready-Mixed" Cement. MCC 24 hours and tested casing to 1000 PSI for 30 mins.  
Drilled 8" hole to 1705'. On 24 hour cast well produced 300 gals. sulphur water w/  
show of oil.

Halted well dry and plugged hole from 1705' to surface w/ 25 yds. "Mudgy-mixed" cement.  
 (Calculated capacity - 15 yds).  
 Showed at 1705'. On 26 hour cement well produced 300 gals. sulphur water w/  
 about 400 gals.

Installed registration machine. Printed and shipped 8/30/43.

100 200 300 400 500 600

(SUBMIT IN TRIPLICATE)

Land Office Santa Fe, New MexicoLease No. NM 048620Unit 7UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYRECEIVED  
NOV 8 1963O. C. C.  
OFFICE

## SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
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NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL	X		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

November 4, 1963

Continental-Federal "5"

Well No. 1 is located 1980 ft. from N line and 1980 ft. from W line of sec. 5SE/4 NW/4

(1/4 Sec. and Sec. No.)

Sec. 520S

(Twp.)

30E

(Range)

NMPM

(Meridian)

Wildcat

(Field)

Eddy

(County or Subdivision)

New Mexico

(State or Territory)

The elevation of the derrick floor above sea level is 3203 ft.

## DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Drilled to 1705' in lime. Bailed hole dry. After 24 hours shut down, bailed  
300 gallons black sulphur water w/trace of oil.

Preparing to plug and abandon.

Permission to plug granted by Mr. Knauff in telephone conversation 8-28-63.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company I. W. LOVELADYAddress P. O. Box 3468Odessa, TexasBy R. L. HanningTitle Production Superintendent

**APPROVED**

(SUBMIT IN TRIPLICATE)

UNITED STATES

DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office Santa Fe, New Mexico

Lesse No. NM 048620

Unit

**RECEIVED**  
NOV 22 1963NOV 20 1963  
RONNIE E. SHOOK  
ACTING DISTRICT ENGINEER**SUNDRY NOTICES AND REPORTS ON WELLS**

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY
NOTICE OF INTENTION TO ABANDON WELL	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

September 3, 1963

Continental-Federal "5"

Well No. 1 is located 1980 ft. from [N] line and 1980 ft. from [W] line of sec. 5

SE/4 NW/4 Sec. 5

(1/4 Sec. and Sec. No.)

20S

(Twp.)

30E

(Range)

NMPM

(Meridian)

Wildcat

(Field)

Eddy

(County or Subdivision)

New Mexico

(State or Territory)

The elevation of the derrick floor above sea level is 3203 ft.

**DETAILS OF WORK**

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Drilled to 1705' in Lime. The Western Company ran Gamma Ray Neutron Log. Bailed 300 gals. sulphur water with show of oil. Plugged hole with 25 yards ready-mix concrete. Plugged to surface. Plugging completed 8-30-63.

Permission to plug granted by Mr. Knauff in telephone conversation 8-28-63. Plugging witnessed by Mr. Beekan.

Installed regulation marker.

(We will notify you as soon as location is ready for inspection.)

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company I. W. LOVELADY

Address P. O. Box 3468

Odessa, Texas

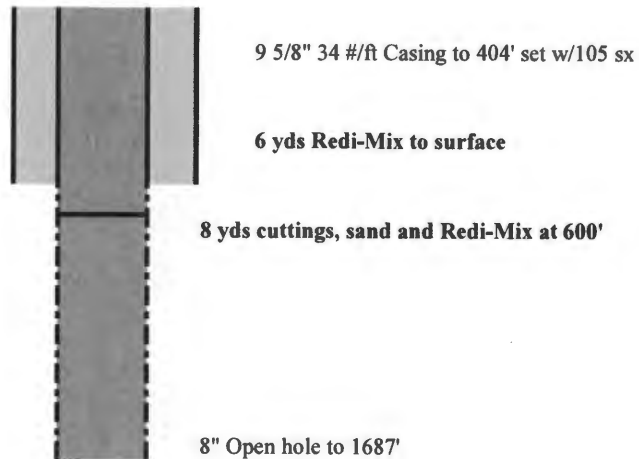
By

Title Office Manager



# PLUGGING DIAGRAM Brown Fed. 001 3001520390

Location: 660 FSL & 660' FWL  
STR S31-T19S-R30E  
County, St.: EDDY COUNTY, NEW MEXICO



P&A 3/31/71

N. M. O. C. C. CONF  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE

(See other in-  
structions on  
reverse side)Form approved.  
Budget Bureau No. 42-R355.5.

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input checked="" type="checkbox"/> Other _____		5. LEASE DESIGNATION AND SERIAL NO. <b>MM 0126258</b>	
b. TYPE OF COMPLETION: NEW WELL <input type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESER. <input type="checkbox"/> Other <b>Plugging</b>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR <b>H. L. Brown, Jr. ✓</b>		7. UNIT AGREEMENT NAME	
3. ADDRESS OF OPERATOR <b>309 Midland Tower, Midland, Texas 79701</b>		8. FARM OR LEASE NAME <b>Federal "B"</b>	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* <b>640' FWL &amp; 660' FSL, Section 31, T 19 S, R 30 E</b> At top prod. interval reported below  At total depth <b>Same</b>		9. WELL NO. <b>1</b>	
14. PERMIT NO.		10. FIELD AND POOL, OR WILDCAT <b>Wildcat</b>	
DATE ISSUED <b>2-24-71</b>		11. SEC. T., R., M., OR BLOCK AND SURVEY OR AREA <b>Section 31, T 19 S, R 30 E</b>	
15. DATE SPUNDED <b>2-25-71</b>		12. COUNTY OR TERRITORY <b>Eddy</b>	
16. DATE T.D. REACHED <b>3-30-71</b>		13. STATE <b>New Mexico</b>	
17. DATE COMPL. (Ready to prod.) <b>PDH 3-31-71</b>		18. ELEVATIONS (DF, REB, RT, GR, ETC.)* <b>3325' GL</b>	
19. ELEV. CASINGHEAD <b>3325'</b>		20. INTERVALS DRILLED BY <b>1687</b>	
21. PLUG BACK T.D., MD & TVD		22. IF MULTIPLE COMPL., HOW MANY*	
23. INTERVALS DRILLED BY <b>→</b>		24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* <b>None</b>	
25. TYPE ELECTRIC AND OTHER LOGS RUN <b>Casino Ray Neutron</b>		26. WAS DIRECTIONAL SURVEY MADE <b>No</b>	
27. WAS WELL CORED <b>No</b>		28. CASING RECORD (Report all strings set in well)	
CASING SIZE <b>9 5/8"</b>		WEIGHT, LB./FT. <b>36#</b>	
DEPTH SET (MD) <b>404'</b>		HOLE SIZE <b>12-1/2"</b>	
CEMENTING RECORD <b>150 SXS Regular Plus 4 yards Ready-Mix</b>		AMOUNT PULLED <b>none</b>	
29. LINER RECORD		30. TUBING RECORD	
SIZE <b>9 5/8"</b>		TOP (MD) <b>404'</b>	
BOTTOM (MD) <b>404'</b>		SACKS CEMENT*	
SCREEN (MD)		SIZE <b>9 5/8"</b>	
DEPTH SET (MD) <b>404'</b>		PACKER SET (MD)	
31. PREPARATION RECORD (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
APR 8 1971		DEPTH INTERVAL (MD)	
O. C. C.		AMOUNT AND KIND OF MATERIAL USED	
ARTESIA, OFFICE		APR 8 1971	
33. PRODUCTION		APR 8 1971	
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—else and type of pump)	
DATE OF TEST		HOURS TESTED	
CHOKE SIZE		PROD'N. FOR TEST PERIOD	
OIL—BBL.		GAS—MCF.	
WATER—BBL.		GAS-OIL RATIO	
FLOW. TUBING PRESS.		CASING PRESSURE	
CALCULATED 24-HOUR RATE		OIL—BBL.	
GAS—MCF.		WATER—BBL.	
OIL GRAVITY-API (CORR.)		34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)	
TEST WITNESSED BY		35. LIST OF ATTACHMENTS <b>Log, Form 9-331, Plugging Affidavit</b>	
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records		37. SIGNATURE <b>B. D. Baker</b>	
TITLE <b>Petroleum Engineer</b>		DATE <b>April 5, 1971</b>	

\*(See Instructions and Specs for Additional Data on Reverse Side)

## INSTRUCTIONS

**General:** This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

**Item 4:** If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

**Item 18:** Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

**Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

**Item 29: "Sacks Cement":** Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

**Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

### 37. SUMMARY OF POROUS ZONES:

SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORRED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Redbeds	0	80	
Redbeds & Gyp	80	140	
Gyp	140	290	
Red Shale	290	411	
Anhydrite & shale	411	440	
Salt & Anhydrite	440	640	
Heavy Potash & Salt	640	800	
Salt	800	900	
Salt & Anhydrite	900	1280	
Salt	1280	1300	
Hard Lime	1300	1320	
Lime	1320	1410	
Dolomite	1410	1455	
Sale & Dolomite	1455	1510	
Sale, Dolomite and Anhydrite	1510	1555	
Dolomite	1555	1605	
Dolomite & Sand	1605	1625	
Dolomite & Grey Sand	1625	1648	
Grey Sand	1648	1675	
Sand & Dolomite	1675	1687	

### 38.

### GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Top Anhydrite	395'	395'
Top Salt	408'	408'
Top Tensil	1285	1285
Top Yates	1418	1418
Top 7 Rivers	1640	1640

Form 5-331  
(May 1963)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN TRI-STATE\*  
(Other instructions on re-  
verse side)Form approved.  
Budget Bureau No. 42-B1424.

5. LEASE REGISTRATION AND SERIAL NO.

NM 0126258

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Federal "B"

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK. AND  
SURVEY OR AREA

Sect 31, T 19 S, R 30 E

12. COUNTY OR PARISH

Eddy

13. STATE

New Mexico

1. OIL WELL ☐ GAS WELL ☐ OTHER ☒ Dry Hole

2. NAME OF OPERATOR

H. L. Brown, Jr. ✓

3. ADDRESS OF OPERATOR

309 Midland, Tower, Midland, Texas 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

660' FWL &amp; 660' FSL, Section 31, T 19 S, R 30 E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, CR, etc.)

3325'

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data:

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐FRACTURE TREAT ☐SHOOT OR ACIDIZE ☐REPAIR WELL ☐(Other) ☐PULL OR ALTER CASING ☐MULTIPLE COMPLETE ☐ABANDON\* ☒CHANGE PLANS ☐

## SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐FRACTURE TREATMENT ☐SHOOTING OR ACIDIZING ☐(Other) ☐REPAIRING WELL ☐ALTERING CASING ☐ABANDONMENT\* ☐(NOTE: Report results of multiple completion on Well  
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and notes pertinent to this work.)\*

We propose to plug and abandon as follows:

Fill hole with 8 yards ready-mix.

Fill hole to 600' with cuttings &amp; sand

Fill hole from 600' to surface with 6 yards ready-mix.

Erect dry hole marker.

RECEIVED

APR 12 1971

O. E. O.  
ARTESIA, OFFICE

RECEIVED

APR - 9 1971

U. S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED S. D. Baker

TITLE Petroleum Engineer

DATE 3-30-71

(This space for Federal or State office use)

TITLE

DATE

APPROVED  
C. L. BEEKMAN  
APR 9 - 1971R. L. BEEKMAN  
ACTING DISTRICT ENGINEER

\*See Instructions on Reverse Side

ABBOTT BROTHERS  
WATER WELL CONTRACTORS  
P. O. BOX 637  
HOBBS, NEW MEXICO 88240

APRIL 1, 1971

Date plugged MARCH 31, 1971 Place LEA COUNTY  
Name of plugging Contractor ABBOTT BROS.  
Address BOX 637 Hobbs, N.M.  
Name of Well WED. E. #1 Company H.L. BROWN, JR.  
Address of Company 309 MIDLAND, TOWER MIDLAND, TEXAS  
Location of well Sec. 31, T 19 S, R 30 E LEA CO.  
Plugged from 1627 1' to approx. 1687 Quantity 14 vls ready  
Depth in feet 1627  
Steel Marker with discription on plate.

*Murphy Abbott*  
Contractor

*Ray L. Haines* April 2, 1971  
Notary Commission expires

Lea County, New Mex.

*biw bak*

RECEIVED

APR 2 1971

APR 2 1971

APR 2 1971

RECEIVED

APR - 6 1971

U. S. DEPARTMENT OF AGRICULTURE  
ARIZONA

Form 9-331  
(May 1963)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN TRIPLICATE\*  
(Other instructions on reverse side)Form approved.  
Budget Bureau No. 42-B1424.

5. LEASE DESIGNATION AND SERIAL NO.

NM 0126238

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

Federal "B"

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Sect 31, T 19 S, R 30 E

12. COUNTY OR PARISH

Eddy

13. STATE  
New Mexico

1.

OIL  
WELL ☐GAS  
WELL ☐

OTHER

Dry Hole

2. NAME OF OPERATOR

H. L. Brown, Jr.

3. ADDRESS OF OPERATOR

309 Midland Tower, Midland, Texas 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*

See also space 17 below.)

At surface

660' FSL &amp; 660' FWL, Section 31, T 19 S, R 30 E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

3325' GL

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐FRACTURE TREAT ☐SHOOT OR ACIDIZE ☐REPAIR WELL ☐(Other) ☐PULL OR ALTER CASING ☐MULTIPLE COMPLETE ☐ABANDON\* ☐CHANGE PLANS ☐

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐FRACTURE TREATMENT ☐SHOOTING OR ACIDIZING ☐(Other) ☐REPAIRING WELL ☐ALTERING CASING ☐ABANDONMENT\* ☒

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

3-31-71: TD 1687'. Put in 8 yards Ready-Mix, filled hole with cuttings and sand to 600'. Filled hole from 600' to surface with 6 yards Ready-Mix. Erected Dry Hole Marker. Well Plugged and Abandoned 3-31-71.

OBTAINED VERBAL PERMISSION TO PLUG FROM MR. JIM KNAUFF ON MARCH 30, 1971.

RECEIVED

SEP 29 1971

O. C. C.  
ARTESIA, OFFICE

RECEIVED

APR 6 1971

18. I hereby certify that the foregoing is true and correct.

SIGNED 9. D. Baker

TITLE Petroleum Engineer

DATE 4-5-71

(This space for Federal or State office use)

TITLE

DATE

APPROVED

CONDITIONS OF APPROVAL, IF ANY:

SEP 22 1971

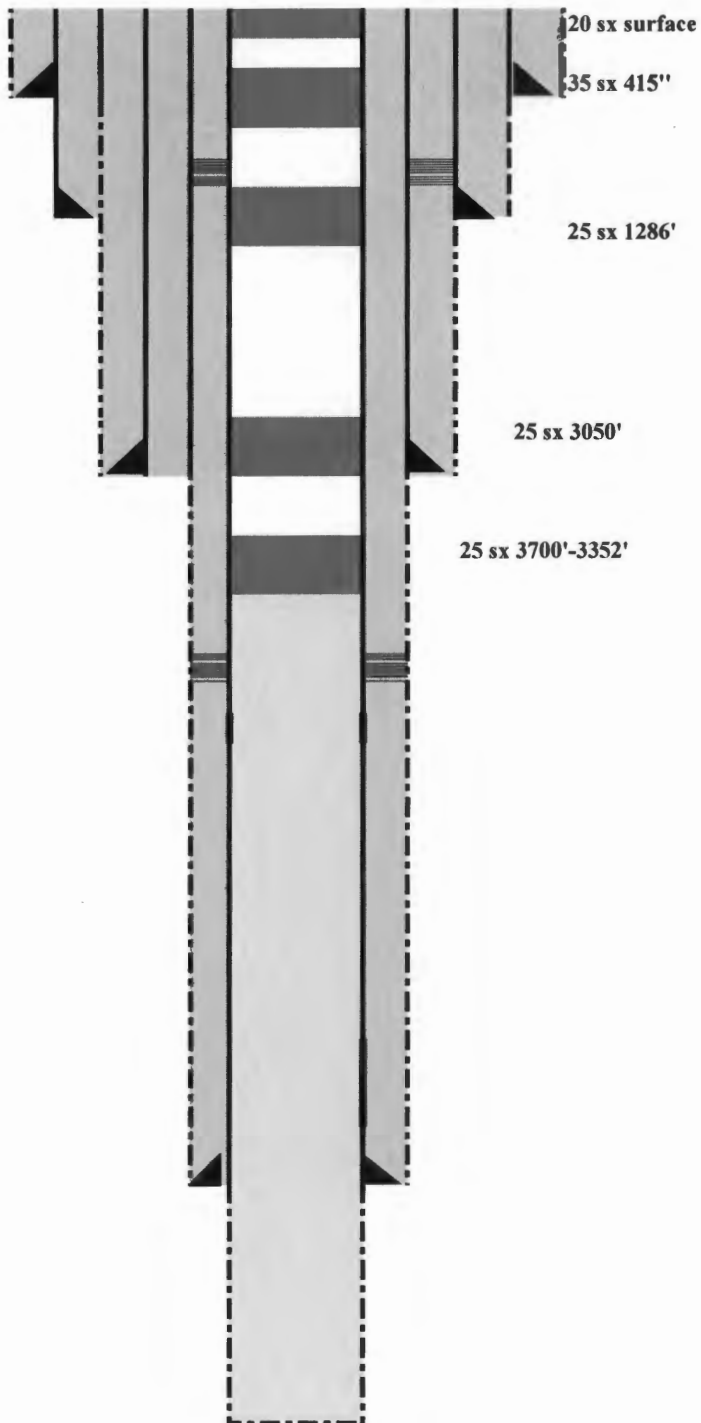
H. L. BECKMAN

ACTING DISTRICT ENGINEER

\*See Instructions on Reverse Side

**PLUGGING DIAGRAM Ronadero Fed. 002 3001526222**

**Location:** 1980' FSL & 1980' FWL  
**STR** S31-T19S-R30E  
**County, St.:** EDDY COUNTY, NEW MEXICO



OH = 20"

**SURFACE CASING:**

16", 75 #/ft at 356'

OH = 14 3/4"

**FIRST INTERMEDIATE CASING**

11 5/8", 47 #/ft, at 1286'

OH = 11"

**SECOND INTERMEDIATE CASING**

7 5/8", 24 #/ft, at 3310

OH = 6 1/2"

**PRODUCTION CASING**

4 1/2" 11.6#/ft at 6642

PLUGGED BACK TO ~3700

**OPEN HOLE**

4 1/2" Open Hole to 8500'

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY**

SUBMIT IN DUPLICATE

**RECEIVED**  
MAR 11 1990  
ARTEZIA, OFFICE

Form approved.  
Budget Bureau No. 42-R355.5

<b>WELL COMPLETION OR RECOMPLETION REPORT AND LOG</b>										5. LEASE DESIGNATION AND SERIAL NO. <b>NM 58815</b>	
1a. TYPE OF WELL: OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> Other <input type="checkbox"/>										6. IF INDIAN, ALLOTTED OR TRIBE NAME	
b. TYPE OF COMPLETION: NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> Other <input type="checkbox"/>										7. UNIT AGREEMENT NAME	
2. NAME OF OPERATOR <b>Fred Pool Drilling, Inc.</b>										8. FARM OR LEASE NAME <b>Ronadero Federal</b>	
3. ADDRESS OF OPERATOR <b>P.O. Box 1393, Roswell, N.M. 88201</b>										9. WELL NO. <b>2</b>	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface <b>1980' FSL and 1980' FWL</b> At top prod. interval reported below <b>At total depth</b>										10. FIELD AND POOL, OR WILDCAT <b>Parkway Delaware</b>	
14. PERMIT NO. <b>30-015-26222</b> DATE ISSUED <b>Oct. 1989</b>										11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA <b>Sec. 31, T19S-R30E</b>	
15. DATE SPUDDED <b>11-9-89</b>		16. DATE T.D. REACHED <b>12-4-89</b>		17. DATE COMPL. (Ready to prod.) <b>2-9-90</b>		18. ELEVATIONS (DF, RER, RT, GR, ETC.)* <b>3321' Gr</b>		19. ELEV. CASINGHEAD		12. COUNTY OR PARISH <b>Eddy</b>	
20. TOTAL DEPTH, MD & TVD <b>8500 ft.</b>		21. PLUG, BACK T.D., MD & TVD		22. IF MULTIPLE COMPL., HOW MANY*		23. INTERVALS DRILLED BY		24. ROTARY TOOLS		25. CABLE TOOLS	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* <b>3685-3694 Delaware</b>										25. WAS DIRECTIONAL SURVEY MADE <b>No</b>	
26. TYPE ELECTRIC AND OTHER LOGS RUN <b>CNL-FDC, DLL w/GR</b>										27. WAS WELL CORRED <b>NO</b>	
<b>CASING RECORD (Report all strings set in well)</b>											
CASING SIZE		WEIGHT, LB./FT.		DEPTH SET (MD)		HOLE SIZE (MD)		CEMENTING RECORD		AMOUNT PULLED	
16"		75#		365		20"		500 sx C1 C			
11 5/8		47#		1286'		14 3/4		600 sx HLC 250sx C1C			
7 5/8		24#		3310'		11"		860 sx hLC 150sx C1C			
4 1/2		11.6#		6642'		6 1/2		675 sx 50/50 POZ			
<b>29. LINER RECORD</b>						<b>30. TUBING RECORD</b>					
SIZE		TOP (MD)		BOTTOM (MD)		SACKS CEMENT*		SCREEN (MD)		SIZE	
										2 3/8	
										3615'	
										No	
31. PERFORATION RECORD (Interval, size and number) <b>3685-3694', 8 shots, .41"</b>						32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.					
DEPTH INTERVAL (MD)						AMOUNT AND KIND OF MATERIAL USED					
3685-3694						1500 gal 7 1/2% HCL and					
						8000 gal 70% foam W/ 16,000#					
						16/30 sand.					
<b>33. PRODUCTION</b>											
DATE FIRST PRODUCTION <b>2-9-90</b>		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) <b>Pump 16'x'2"x1 1/2" T.B.</b>						WELL STATUS (Producing or shut-in) <b>producing</b>			
DATE OF TEST <b>2-9-90</b>		HOURS TESTED <b>24</b>		CHOKE SIZE <b>NA</b>		PROD'N. FOR TEST PERIOD <b>35</b>		OIL—BBL. <b>35</b>		GAS—MCF. <b>20</b>	
FLOW, TUBING PRESS. <b>NA</b>		CASING PRESSURE <b>35 psi</b>		CALCULATED 24-HOUR RATE <b>35</b>		OIL—BBL. <b>35</b>		GAS—MCF. <b>20</b>		WATER—BBL. <b>50</b>	
										OIL GRAVITY-API (CORR.) <b>37</b>	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) <b>sold</b>										TEST WITNESSED BY <b>Fred Pool, III</b>	
35. LIST OF ATTACHMENTS <b>logs, deviation survey</b>											
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records											
SIGNED <i>Fred Pool</i>				TITLE <b>Vice President</b>				DATE <b>2-28-90</b>			

\*(See Instructions and Spaces for Additional Data on Reverse Side)



orm 3160-5  
June 1990)

UNIT STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

NM OIL CONS COMMISSION  
L 1st DD FORM APPROVED  
Artesia, NM 88201 No. 1004-0135  
Expires: March 31, 1993

CSP

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

THE EASTLAND OIL COMPANY

3. Address and Telephone No.

P.O. Drawer 3488 Midland, Tx. 79702 (915) 683-6293

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec. 31 T-19-S R-30-E 1980FSL 1980FWL Unit K

5. Lease Designation and Serial No.  
NM 58815

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.  
RONADERO FED. #2

9. API Well No.  
30-015-26222

10. Field and Pool, or Exploratory Area  
Parkway Delaware

11. County or Parish, State  
Eddy N.M.

CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

☐ Notice of Intent  
☒ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

☒ Abandonment  
☐ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☐ Other

☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If work is not yet started, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

- Started: 3/29/95
1. Spot 25 sks cement plug @ 3700, W.O.C., Tag cement top @3352
  2. Load hole w/mud
  3. Cut 4 1/2 casing @ 1408, pull out of hole - cut csg @2995' - was not free
  4. Spot 25 skscement plug @ 3050
  5. Spot 25 sks cement plug @ 4 1/2 sub, 1450, and 11 5/8 shoe 1336 W.O.C., tag cement top @ 1268
  6. Perforate 7 5/8 casing @ 365, pressured up on perforations to 800 psi, unable to pump into perforation. Called BLM, talked to Kathy, got approval to spot cement plug across perforations, spot 35 sks cement plug @ 415
  7. Spot 20 sks cement plug @ suface, set P&A marker
- Completed: 3/31/95

RECEIVED

JUN 1 1995

OIL CON. DIV.  
DIST. 2

Post ID-2  
6-7-95  
P&A

Approved as to plugging of the well bore  
Liability under bond is retained until  
surface restoration is completed.

APR 20 11 14 AM '95  
C&M  
AND

RECEIVED

I hereby certify that the foregoing is true and correct

Signed Joe G. Lara

Title PRODUCTION SUPERINTENDENT

Date 4/19/95

(This space for Federal or State office use)

(ORIG. S&D.) JOE G. LARA

PETROLEUM ENGINEER

Approved by  
Conditions of approval, if any:

Title

Date

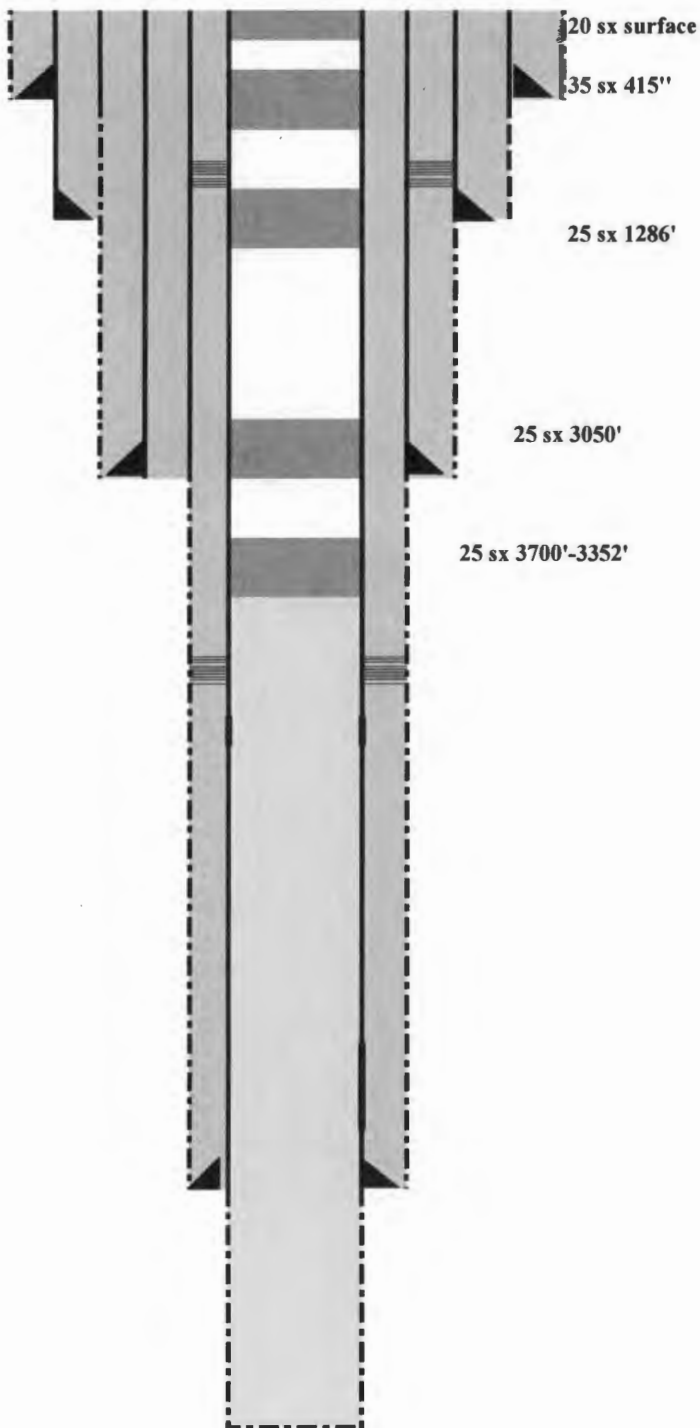
5/30/95

\* 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instruction on Reverse Side

**PLUGGING DIAGRAM Ronadero Fed. 002 3001526222**

**Location:** 1980' FSL & 1980' FWL  
**STR** S31-T19S-R30E  
**County, St.:** EDDY COUNTY, NEW MEXICO



OH = 20"  
**SURFACE CASING:**  
16", 75 #/ft at 356'

OH = 14 3/4"  
**FIRST INTERMEDIATE CASING**  
11 5/8", 47 #/ft, at 1286'

OH = 11"  
**SECOND INTERMEDIATE CASING**  
7 5/8", 24 #/ft, at 3310

OH = 6 1/2"  
**PRODUCTION CASING**  
4 1/2" 11.6 #/ft at 6642  
PLUGGED BACK TO ~3700

**OPEN HOLE**  
4 1/2" Open Hole to 8500'

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY**

SUBMIT IN DUPLICATE

Form approved.  
Budget Bureau No. 42-R355.5**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other ☐

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other ☐

2. NAME OF OPERATOR  
**Fred Pool Drilling, Inc.**

3. ADDRESS OF OPERATOR  
**P.O. Box 1393, Roswell, N.M. 88201**

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*  
At surface  
**1980' FSL and 1980' FWL**  
At top prod. interval reported below  
At total depth

5. LEASE DESIGNATION AND SERIAL NO.  
**NM 58815**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME  
**Ronadero Federal**

9. WELL NO.  
**2**

10. FIELD AND POOL, OR WILDCAT  
**Parkway Delaware**

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA  
**Sec. 31, T19S-R30E**

14. PERMIT NO. **30-015-26222** DATE ISSUED **Oct. 1989**

12. COUNTY OR PARISH **Eddy** 13. STATE **N.M.**

15. DATE SPUDDED **11-9-89** 16. DATE T.D. REACHED **12-4-89** 17. DATE COMPL. (Ready to prod.) **2-9-90**

18. ELEVATIONS (DF, RER, RT, OR, ETC.)\* **3321' Gr**

19. HST. CASINGHEAD

20. TOTAL DEPTH, MD & TVD **8500 ft.** 21. PLUG, BACK T.D., MD & TVD 22. IF MULTIPLE COMPL., HOW MANY\*

23. INTERVALS DRILLED BY **X** ROTARY TOOLS CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\*  
**3685-3694 Delaware**

25. WAS DIRECTIONAL SURVEY MADE  
**No**

26. TYPE ELECTRIC AND OTHER LOGS RUN  
**CNL-FDC, DLL w/GR**

27. WAS WELL CORRED  
**NO**

**CASING RECORD (Report all strings set in well)**

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE (MD)	AMOUNT PULLED
16"	75#	365	20"	500 sx C1 C
11 5/8	47#	1286'	14 3/4	600 sx HLC 250sx C1C
7 5/8	24#	3310'	11"	860 sx hLC 150sx C1C
4 1/2	11.6#	6642'	6 1/2	675 sx 50/50 POZ

**29. LINER RECORD**

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
2 3/8				3615'

**30. TUBING RECORD**

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8	3615'	No

31. PERFORATION RECORD (Interval, size and number)  
**3685-3694', 8 shots, .41"**

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
3685-3694	1500 gal 7 1/2% HCL and 8000 gal 70% foam W/ 16,000# 16/30 sand.

33. PRODUCTION

DATE FIRST PRODUCTION **2-9-90** PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) **Pump 16'x'2"x1 1/2" T.B.** WELL STATUS (Producing or shut-in) **producing**

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BSL.	GAS—MCF.	WATER—BSL.	GAS-OIL RATIO
2-9-90	24	NA	→	35	20	50	571

FLOW, TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BSL.	GAS—MCF.	WATER—BSL.	OIL GRAVITY-API (CORR.)
NA	35 psi	→	35	20	50	37

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) **sold** TEST WITNESSED BY **Fred Pool, III**

35. LIST OF ATTACHMENTS  
**logs, deviation survey**

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED *Fred Pool* TITLE **Vice President** DATE **2-28-90**

\*(See Instructions and Spaces for Additional Data on Reverse Side)

orm 3160-5  
June 1990)

UNIT STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

NM OIL CONS COMMISSION  
L 101 DD FORM APPROVED  
Artesia, NM 88001 No 1004-0135  
Expires: March 31, 1993

CVF

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

THE EASTLAND OIL COMPANY

3. Address and Telephone No.

P.O. Drawer 3488 Midland, Tx. 79702 (915) 683-6293

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec. 31 T-19-S R-30-E 1980FSL 1980FWL Unit K

5. Lease Designation and Serial No.  
NM 58815

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.  
RONADERO FED. #2

9. API Well No.  
30-015-26222

10. Field and Pool, or Exploratory Area  
Parkway Delaware

11. County or Parish, State  
Eddy N.M.

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

☐ Notice of Intent  
☒ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

☒ Abandonment  
☐ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☐ Other

☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any operations, and give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

- started: 3/20/95
1. Spot 25 sks cement plug @ 3700, W.O.C., Tag cement top @3352
  2. Load hole w/mud
  3. Cut 4 1/2 casing @ 1408, pull out of hole - cut csg @2995' - was not free
  4. Spot 25 skscement plug @ 3050
  5. Spot 25 sks cement plug @ 4 1/2 sub, 1450, and 11 5/8 shoe 1336 W.O.C., tag cement top @ 1268
  6. Perforate 7 5/8 casing @ 365, pressured up on perforations to 800 psi, unable to pump into perforation. Called BLM, talked to Kathy, got approval to spot cement plug across perforations, spot 35 sks cement plug @ 415
  7. Spot 20 sks cement plug @ suface, set P&A marker
- completed: 3/31/95

RECEIVED

JUN 1 1995

OIL CON. DIV.  
DIST. 2

Post ID-2  
6-7-95  
P+P

Approved as to plugging of the well bore  
Liability under bond is retained until  
surface restoration is completed.

APR 20 11 14 AM '95

RECEIVED

I hereby certify that the foregoing is true and correct

Signed Joe G. Lara

Title PRODUCTION SUPERINTENDENT

Date 4/19/95

(This space for Federal or State office use)

(ORIG. SSB.) JOE G. LARA

PETROLEUM ENGINEER

Approved by  
Conditions of approval, if any:

Title

Date

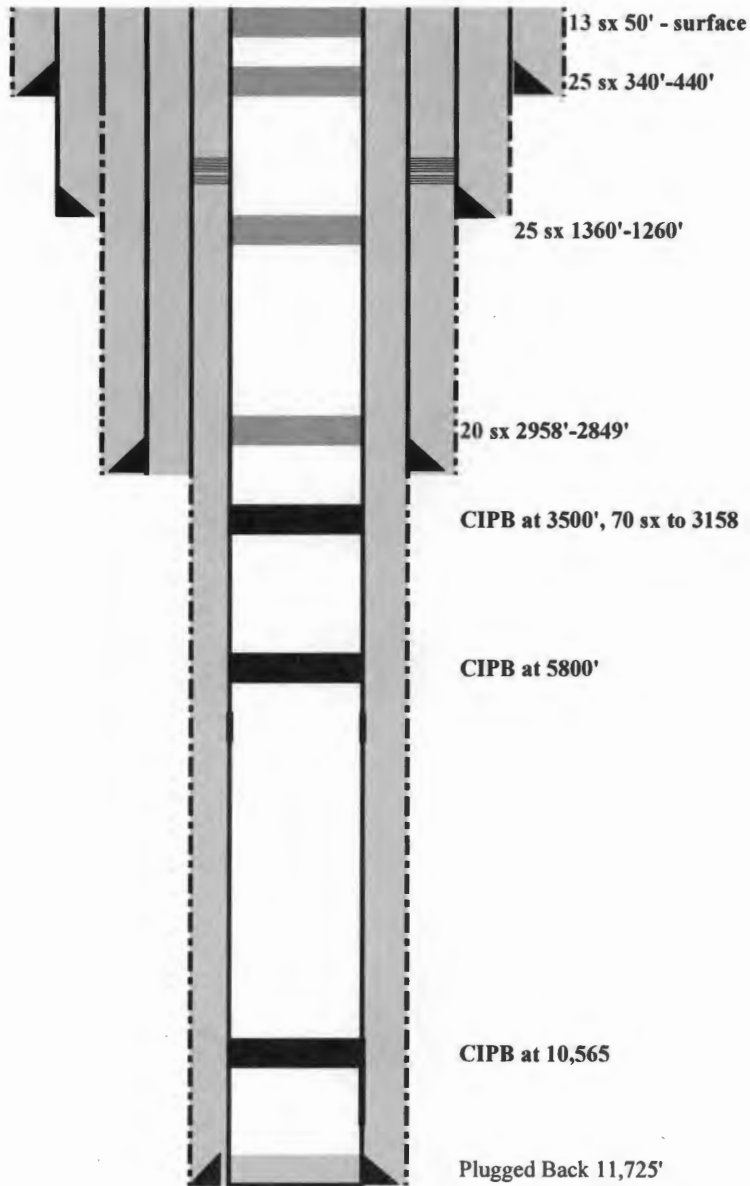
5/30/95

18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instruction on Reverse Side

**PLUGGING DIAGRAM** Sylvite Fed. 001 3001526503

**Location:** 1980' FSL & 660' FWL  
**STR** S6-T20S-R30E  
**County, St.:** EDDY COUNTY, NEW MEXICO



OH = 26"

**SURFACE CASING:**

20", 94 #/ft at 387'

OH = 17 1/2"

**FIRST INTERMEDIATE CASING**

13 3/8", 48 #/ft, at 1310'

OH = 12 1/4"

**SECOND INTERMEDIATE CASING**

8 5/8", 32 #/ft, at 3280'

OH = 7 7/8"

**PRODUCTION CASING**

5 1/2" 17#/ft at 12090'



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0137  
Expires August 31, 1985

dst

WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other RE-ENTRY

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. LVSVR. ☐ Other MAY 22 1991

2. NAME OF OPERATOR

Fortson Oil Company

3. ADDRESS OF OPERATOR

301 Commerce Street, Suite 3301, Ft. Worth, TX 76102

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*

At surface 1980' FNL, SW/4 NW/4, Unit Letter "E"

At top prod. interval reported below 660' FNL SAME

At total depth SAME

14. PERMIT NO.

DATE ISSUED

15. DATE SPUDDED

12-9-90

16. DATE T.D. REACHED

1-18-91

17. DATE COMPL. (Ready to prod.)

3-26-91

18. ELEVATIONS (DE, RKB, RT, CR, ETC.)\*

3262 GR

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD

12,090'

21. PLUG BACK T.D., MD & TVD

11,990'

22. IF MULTIPLE COMPL., HOW MANY\*

23. INTERVALS DRILLED BY

ROTARY TOOLS

CABLE TOOLS

All

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\*

10,616'-10,756' (Strawn)

25. WAS DIRECTIONAL SURVEY MADE

No

26. TYPE ELECTRIC AND OTHER LOGS RUN

CNL/FDL; LDT/CNL; DLL/RXO

27. WAS WELL CORED

No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	94	387	26	Total 1375 sacks	none
13 3/8"	48 & 54.50	1310	17 1/2	Total 1120 sacks	none
8 5/8"	32	3208	12 1/4	Total 1275 sacks	none
5 1/2"	17	12,090	7 7/8	1st stage 750, 2nd stage 500	D. V. Tool

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2 3/8	10,547'	10,542.40

30. TUBING RECORD at 4458.61

31. PERFORATION RECORD (Interval, size and number)

10,719-10,722' (7, 0.5" holes)  
10,748-10,756' (17, 0.5" holes)  
10,616-10,634' (38, 0.5" holes)  
10,642-10,652' (22, 0.5" holes)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
10,719-10,756'	250 gallons 15% CRA
	200 gal MOD202 & 4000gal same w/CO2
10,616-10,652'	250 gallons 10% MSA acid. 2000 MOD 202 with Nitrogen.

33.\* PRODUCTION

DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)				WELL STATUS (Producing or shut-in)	
3-26-91		Flowing				Producing	
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
4-29-91	24	32/64	→	96	109	10	1135/1
FLOW, TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
100	NA	→	96	109	10	46°	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

Sold

TEST WITNESSED BY

Gray's Pumping Service

35. LIST OF ATTACHMENTS

Logs, DST information Deviation Survey

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all

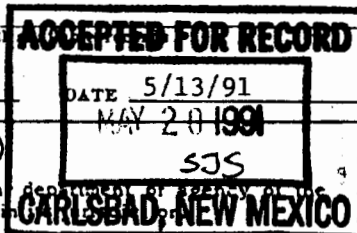
SIGNED

*James P. Stewart*

TITLE Agent

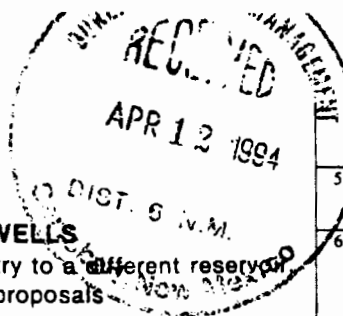
\*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to an official of the United States any false, fictitious or fraudulent statements or representations as to any matter within



NM OCK  
Artesia

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT



~~RECEIVED~~ dlf

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a ~~different reservoir~~  
Use "APPLICATION FOR PERMIT—" for such proposals

**SUBMIT IN TRIPLICATE**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Fortson Oil Company

3. Address and Telephone No.

301 Commerce St., Suite 3301 Fort Worth, TX 76102

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1980' FNL & 660' FWL of Sec. 6, T20S, R30E  
GR 3262' TD 12,090' PB Depth 11,725'

5. Lease Designation and Serial No.

NM 84721 ✓

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No. ✓

Sylvite Federal No. 1

9. API Well No. ✓

30-015-26503

10. Field and Pool, or Exploratory Area

Burton Flat, Strawn

11. County or Parish, State

Eddy Co., NM.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☐ Notice of Intent  
☐ Subsequent Report  
☒ Final Abandonment Notice

TYPE OF ACTION

- ☒ Abandonment  
☐ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☐ Other

- ☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

3/31/94 Plugged well.  
Plug #1 70 sx C1 C Set CIBP @ 3500'. Spot plug 3500-3158'.  
Plug #2 20 sx C1 C Spot plug 2958-2849'.  
Plug #3 25 sx C1 C Spot plug 1360-1260'.  
Plug #4 25 sx C1 C. Spot plug 340-440'.  
Plug #5 13 sx C1 C. Spot plug 50' - surface.

Cut off 5-1/2" csg 2- below surface @ 2910' & LD same. Cut off 13-3/8" & 8-5/8" weld on plate & dry hole marker.

Final ID-2  
-6-3-94  
B4A

Surface restoration is completed.

14. I hereby certify that the foregoing is true and correct.

Signed

*[Signature]*

Title Operations Engineer

Date 4/06/94

(This space for Federal or State office use)

Approved by

*[Signature]* LARA

Title

PETROLEUM ENGINEER

Date

4/26/94

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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1992

C. C. D.

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well  
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator  
Fortson Oil Company

3. Address and Telephone No.  
301 Commerce St., Suite 3301 Ft. Worth, TX 76102-4133

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec. 6, T-20-S, R-30-E  
1980' FNL & 660' FWL SW/4 NW/4 Unit Letter E

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

5. Lease Designation and Serial No.

NM 84721

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Sylvite Federal #1

9. API Well No.

3001526503

10. Field and Pool, or Exploratory Area

E. Burton Flat *STRAWH*

11. County or Parish, State

Eddy, New Mexico

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☐ Notice of Intent  
☐ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment  
☒ Recompletion  
☒ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☐ Other \_\_\_\_\_
- ☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

On July 31, 1992 a CIBP was set at 5800' with 35' of cement dumped on top. New PBTD 5765' K.B. Spotted 250 gallons Acetic Acid from 3570' - 3314'. Set CIBP at 5550' with 35' cement on top. New PBTD 5515' K.B. Perforated the Delaware formation 3548' - 3576' with (92 holes) phased 120 degree with 0.45" FHD. Broke down formation. 78 barrels load water to recover. Swabbed back all load and recovered 180 barrels over load. On August 6, 1992 the well was fracture treated with 29,700 gallons of 35# Guar based gel plus 3% diesel with 42,000# 20/40 mesh Ottawa sand. 766 barrels of load to recover. Recovered all load and 308 barrels over load. The well was placed on the pump August 14, 1992. Last pumping gauge September 2, 1992 the well pumped 14 barrels of oil and 173.87 barrels of water.

14. I hereby certify that the foregoing is true and correct

Signed *Sheryl R. Jones*

Title Agent for Fortson Oil Company

Date 9/2/92

(This space for Federal or State office use)

Approved by \_\_\_\_\_  
Conditions of approval, if any:

Title

5

Date

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

APR 17 1992

C. C. D.

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Fortson Oil Company

3. Address and Telephone No.

301 Commerce St., Suite 3301 Ft. Worth, TX 76102-4133

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec. 6, T-20-S, R-30-E  
1980' FNL & 660' FWL SW/4 NW/4 Unit Letter E

FORM APPROVED  
Budget Bureau No. 1004-0133  
Expires: March 31, 1993

5. Lease Designation and Serial No.

NM 84721

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Sylvite Federal #1

9. API Well No.

3001526503

10. Field and Pool, or Exploratory Area

E. Burton Flat *Straw*

11. County or Parish, State

Eddy, New Mexico

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☐ Notice of Intent  
☐ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment  
☒ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☐ Other  
☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Field operations began July 15, 1992 to recomplate the above captioned well in the Delaware. A CIBP was set at 10,565' with 35' of cement on top. PBTD 10,530' K.B. Perforated 4 squeeze holes at 6100' - 6101'. Set cement retainer at 6050' K.B. Halliburton pumped into perforations at 3 BPM, 2000 psig. Mixed and pumped 50 sacks Class "H" with 0.5% Halad 9, and 50 sacks Class "H" neat. Squeezed with 87 sacks in formation at 950 psig. Reversed out 0.5 barrels cement, left 35' cement on top of retainer. Waited on cement 4.5 hours. On July 17, 1992 Schlumberger perforated 4 holes at 5600' - 5601'. Pumped in at 2 BPM at 1200 psig. Set cement retainer at 5545'. Mixed and pumped 50 sacks Class "H" cement with 0.5% Halad-9 and 50 sacks Class "H" Neat. Squeezed with 92 sacks in formation at 1050 psig, reversed out 0.5 barrels cement. Drilled out cement to 6000', tested casing to 2500 psig. PBTD 6050'. Spotted 250 gallons 10% Acetic acid on July 20, 1992. Dumped 35' of cement on retainer at 6050'. Perforated with 4" Premium Charge Casing gun from 5869' to 5903' 2 SPF (69 holes). Put spot acid away. Swabbed back and recovered 3 barrels over load. On July 23, 1992 Rigged up and performed "Pipeline Fracture Treatment". Treated with 20,000 gallons 35# cross linked gel pad and 3864 gallons 35# Linear gel with 26,920# of 20/40 sand, flushed with 4494 gallons 35# Linear gel. Had 785 barrels of load to recover. On July 30, 1992 had recovered 116 barrels over load with no show of oil.

14. I hereby certify that the foregoing is true and correct

Signed

*Sheryl S. Jones*

Title Agent for Fortson Oil Company

Date 9/2/92

(This space for Federal or State office use)

Approved by

Conditions of approval, if any:

Title

Date

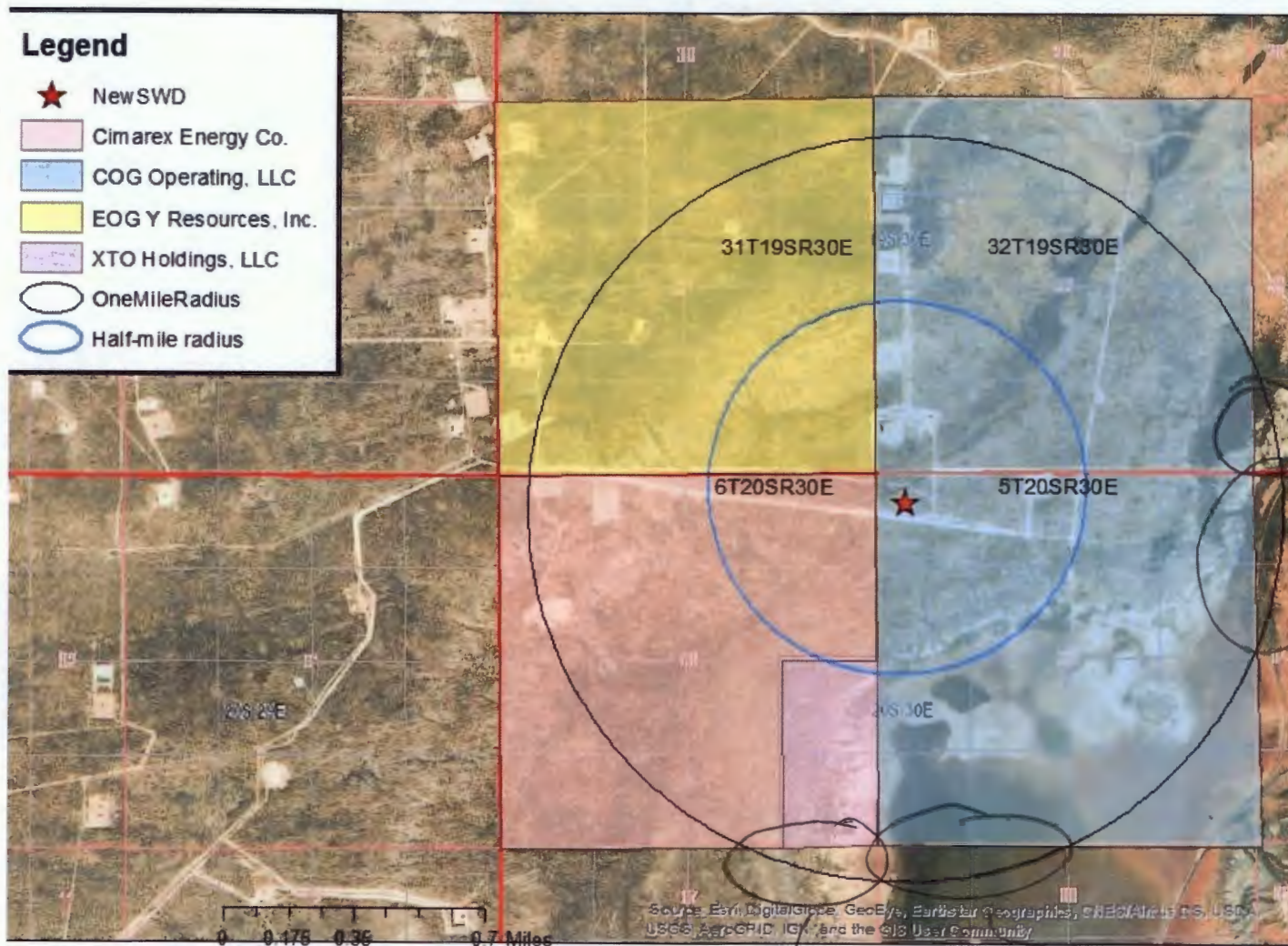
## **Appendix B:**

**Identification of Operators, Surface Owners, Lessees, and other Interested Parties for Notices; Copies of Notice Letters and Certified Mail Receipts, and Copies of Draft Public Notices**

**Table B-1: Summary of Lease and Surface Owners**

<b>AREA</b>	<b>WORKING INTEREST OWNERS</b>	<b>SURFACE OWNERS</b>
Lots 1, 2, S2NE4 (NE4), Sec. 6-T20S-R30E, N.M.P.M., Eddy Co., NM	Cimarex Energy Co.	United States of America
Federal Lease No.: NMNM 124659	600 N. Marienfeld St., Suite 600	Bureau of Land Management
Posting Date: 7/30/2018 (County); 8/02/2018 (Federal)	Midland, Texas 79701	P.O. Box 27115
	(432) 571-7800	Santa Fe, NM 87502-0115
		(505) 954-2000
NE4SE4, Sec. 6-T20S-R30E, N.M.P.M., Eddy Co., NM	XTO Holdings, LLC	United States of America
Federal Lease No.: NMNM 0302720	810 Houston Street	Bureau of Land Management
Posting Date: 7/30/2018 (County); 8/02/2018 (Federal)	Fort Worth, Texas 76012	P.O. Box 27115
	(817) 870-2800	Santa Fe, NM 87502-0115
		(505) 954-2000
S2, Sec. 31-T19S-R30E, N.M.P.M., Eddy Co., NM	EOG Y Resources, Inc.	United States of America
	105 South 4th Street	Bureau of Land Management
	Artesia, NM 88210	P.O. Box 27115
	(575) 748-1471	Santa Fe, NM 87502-0115
		(505) 954-2000
S2, Sec. 32-T19S-R30E, N.M.P.M., Eddy Co., NM	COG Operating LLC	United States of America
	600 W. Illinois Avenue	Bureau of Land Management
	Midland, TX 79701	P.O. Box 27115
	(432) 683-7443	Santa Fe, NM 87502-0115
		(505) 954-2000
W2, W2E2, Sec. 5-T20S-R30E, N.M.P.M., Eddy Co., NM	COG Operating LLC	United States of America
	600 W. Illinois Avenue	Bureau of Land Management
	Midland, TX 79701	P.O. Box 27115
	(432) 683-7443	Santa Fe, NM 87502-0115
		(505) 954-2000





**Figure B1: Leases Within One Mile of Proposed Summit SWD #1**



# ELKHORN LAND & TITLE, LLC

400 N. Pennsylvania Ave., Suite 1220

P.O. Box 38

Roswell, New Mexico 88202

Office: (575) 627-3477

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

Fax: (866) 912-8990

## **NAMES LIST**

**Lots 1, 2, S2NE4 (NE4), Sec. 6-T20S-R30E, N.M.P.M., Eddy Co., NM**

**Federal Lease No.: NMNM 124659**

**Posting Date: 7/30/2018 (County); 8/02/2018 (Federal)**

### **Working Interest Owners:**

Cimarex Energy Co.  
600 N. Marienfeld St., Suite 600  
Midland, Texas 79701  
(432) 571-7800

### **Surface Owners:**

United States of America  
Bureau of Land Management  
P.O. Box 27115  
Santa Fe, NM 87502-0115  
(505) 954-2000



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Fax: (866) 912-8990

## **NAMES LIST**

**NE4SE4, Sec. 6-T20S-R30E, N.M.P.M., Eddy Co., NM**

**Federal Lease No.: NMNM 0302720**

**Posting Date: 7/30/2018 (County); 8/02/2018 (Federal)**

### **Working Interest Owners:**

XTO Holdings, LLC  
810 Houston Street  
Fort Worth, Texas 76012  
(817) 870-2800

### **Surface Owners:**

United States of America  
Bureau of Land Management  
P.O. Box 27115  
Santa Fe, NM 87502-0115  
(505) 954-2000



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Roswell, New Mexico 88202

---

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Fax: (866) 912-8990

## **NAMES LIST**

**S2, Sec. 31-T19S-R30E, N.M.P.M., Eddy Co., NM**

### **Operator of Record (Bone Spring):**

EOG Y Resources, Inc.

105 South 4<sup>th</sup> Street

Artesia, NM 88210

(575) 748-1471



# ELKHORN LAND & TITLE, LLC

400 N. Pennsylvania Ave., Suite 1220  
P.O. Box 38  
Roswell, New Mexico 88202

---

Office: (575) 627-3477

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Fax: (866) 912-8990

## **NAMES LIST**

**S2, Sec. 32-T19S-R30E, N.M.P.M., Eddy Co., NM**

**Operator of Record (Morrow):**

COG Operating LLC  
600 W. Illinois Avenue  
Midland, TX 79701  
(432) 683-7443



# ELKHORN LAND & TITLE, LLC

400 N. Pennsylvania Ave., Suite 1220  
P.O. Box 38  
Roswell, New Mexico 88202

---

Office: (575) 627-3477

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

Fax: (866) 912-8990

## **Names List**

**W2, W2E2, Sec. 5-T20S-R30E, N.M.P.M., Eddy Co., NM**

### **Operator of Record (Bone Spring):**

COG Operating LLC  
600 W. Illinois Avenue  
Midland, TX 79701  
(432) 683-7443



AUG 02 2018

NM 124659

T.20 South - R.30 East  
Section 06:LOTS  
1-7,S2NE,SENW,E2SW,W2SE

Competitive Lease  
5/31/2020

**Lessee :**

Cimarex Energy Co. of Colorado  
1700 Lincoln St., Ste. 1800  
Denver, CO 80203

**RUN SHEET:**

Competitive lease NM 124659 issued 6/1/10 to Doug J. Schutz for 10 yrs.  
with 12.5% royalty to the USA.

Assign. of record title dated 5/24/10 from Doug J. Schutz and Giomar  
Schutz to Cimarex Energy Co. 100% as to all lands, no overriding royalty  
reserved.

**OPERATING RIGHTS:**

Lessee	100%
--------	------

**OVERRIDING ROYALTY:**

None filed of record.

12.5 % ROYALTY TO THE USA

Notes:

Form 3100-11  
(October 2008)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Serial Number  
NMNM 124659

OFFER TO LEASE AND LEASE FOR OIL AND GAS

The undersigned (page 2) offers to lease all or any of the lands in item 2 that are available for lease pursuant to the Mineral Lands Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.), the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351-359), the Attorney General's Opinion of April 2, 1941 (40 Op. Atty. Gen 41), or the Combined Hydrocarbon Leasing Act of 1981 (95 Stat 1070).

READ INSTRUCTIONS BEFORE COMPLETING

1. Name SCHUTZ DOUG J  
Street PO BOX 973  
City, State, Zip Code SANTA FE, NM 87504

2. This application/offer/lease is for: (Check Only One) ☒ PUBLIC DOMAIN LANDS ☐ ACQUIRED LANDS (percent U.S. interest \_\_\_\_\_)

Surface managing agency if other than Bureau of Land Management (BLM): \_\_\_\_\_ Unit/Project \_\_\_\_\_

Legal description of land requested: \*Parcel No.: \_\_\_\_\_ \*Sale Date (mm/dd/yyyy): \_\_\_\_\_

\*See Item 2 in Instructions below prior to completing Parcel Number and Sale Date.

T. \_\_\_\_\_ R. \_\_\_\_\_ Meridian \_\_\_\_\_ State \_\_\_\_\_ County \_\_\_\_\_

Amount remitted: Filing fee \$ \_\_\_\_\_ Rental fee \$ \_\_\_\_\_ Total acres applied for \_\_\_\_\_  
Total \$ \_\_\_\_\_

DO NOT WRITE BELOW THIS LINE

3. Land included in lease:

T. 0200S R. 0300E Meridian NMPM State NM County Eddy  
Sec. 006 LOTS 1-7;  
006 S2NE,SESW,E2SW,W2SE;

Total acres in lease 558.280  
Rental received \$ 838.500

This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described in item 3 together with the right to build and maintain necessary improvements thereupon for the term indicated below, subject to renewal or extension in accordance with the appropriate leasing authority. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.

NOTE: This lease is issued to the high bidder pursuant to his/her duly executed bid form submitted under 43 CFR 3120 and is subject to the provisions of that bid and those specified on this form.

Type and primary term:

☐ Noncompetitive lease (ten years)

☒ Competitive lease (ten years)

☐ Other \_\_\_\_\_

EFFECTIVE DATE OF LEASE

THE UNITED STATES OF AMERICA  
by Rose Ann Ortiz  
(BLM)

LAND LAW EXAMINER, FLUIDS ADJUDICATION TEAM  
(Title)

MAY 21 2010  
(Date)

JUN 1 2010

(Continued on page 2)

4. (a) Undersigned certifies that (1) offeror is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States or of any State or Territory thereof; (2) all parties holding an interest in the offer are in compliance with 43 CFR 3100 and the leasing authorities; (3) offeror's chargeable interests, direct and indirect, in each public domain and acquired lands separately in the same State, do not exceed 246,080 acres in oil and gas leases (of which up to 200,000 acres may be in oil and gas options or 300,000 acres in leases in each leasing District in Alaska of which up to 200,000 acres may be in options); (4) offeror is not considered a minor under the laws of the State in which the lands covered by this offer are located; (5) offeror is in compliance with qualifications concerning Federal coal lease holdings provided in sec. 2(a)(2)(A) of the Mineral Leasing Act; (6) offeror is in compliance with reclamation requirements for all Federal oil and gas lease holdings as required by sec. 17(g) of the Mineral Leasing Act; and (7) offeror is not in violation of sec. 41 of the Act. (b) Undersigned agrees that signature to this offer constitutes acceptance of this lease, including all terms conditions, and stipulations of which offeror has been given notice, and any amendment or separate lease that may include any land described in this offer open to leasing at the time this offer was filed but omitted for any reason from this lease. The offeror further agrees that this offer cannot be withdrawn, either in whole or in part unless the withdrawal is received by the proper BLM State Office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed on behalf of the United States.

This offer will be rejected and will afford offeror no priority if it is not properly completed and executed in accordance with the regulations, or if it is not accompanied by the required payments.

Duly executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

(Signature of Lessee or Attorney-in-fact)

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 make it a crime for any person knowingly and willfully to make to any department or Agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

#### LEASE TERMS

Sec. 1. Rentals--Rentals must be paid to proper office of lessor in advance of each lease year. Annual rental rates per acre or fraction thereof are:

- (a) Noncompetitive lease, \$1.50 for the first 5 years; thereafter \$2.00;
- (b) Competitive lease, \$1.50; for the first 5 years; thereafter \$2.00;
- (c) Other, see attachment, or

as specified in regulations at the time this lease is issued.

If this lease or a portion thereof is committed to an approved cooperative or unit plan which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties must be paid on the production allocated to this lease. However, annual rentals must continue to be due at the rate specified in (a), (b), or (c) rentals for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) must automatically terminate this lease by operation of law. Rentals may be waived, reduced, or suspended by the Secretary upon a sufficient showing by lessee.

Sec. 2. Royalties--Royalties must be paid to proper office of lessor. Royalties must be computed in accordance with regulations on production removed or sold. Royalty rates are:

- (a) Noncompetitive lease, 12 1/2%;
- (b) Competitive lease, 12 1/2 %;
- (c) Other, see attachment; or

as specified in regulations at the time this lease is issued.

Lessor reserves the right to specify whether royalty is to be paid in value or in kind, and the right to establish reasonable minimum values on products after giving lessee notice and an opportunity to be heard. When paid in value, royalties must be due and payable on the last day of the month following the month in which production occurred. When paid in kind, production must be delivered, unless otherwise agreed to by lessor, in merchantable condition on the premises where produced without cost to lessor. Lessee must not be required to hold such production in storage beyond the last day of the month following the month in which production occurred, nor must lessee be held liable for loss or destruction of royalty oil or other products in storage from causes beyond the reasonable control of lessee.

Minimum royalty in lieu of rental of not less than the rental which otherwise would be required for that lease year must be payable at the end of each lease year beginning on or after a discovery in paying quantities. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced, for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

An interest charge will be assessed on late royalty payments or underpayments in accordance with the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA) (30 U.S.C. 1701). Lessee must be liable for royalty payments on oil and gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator, or due to the failure to comply with any rule, regulation, order, or citation issued under FOGRMA or the leasing authority.

(Continued on page 3)

(Form 3100-11, page 2)

Sec. 3. Bonds - A bond must be filed and maintained for lease operations as required under regulations.

Sec. 4. Diligence, rate of development, unitization, and drainage - Lessee must exercise reasonable diligence in developing and producing, and must prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands. Lessee must drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

Sec. 5. Documents, evidence, and inspection - Lessee must file with proper office of lessor, not later than 30 days after effective date thereof, any contract or evidence of other arrangement for sale or disposal of production. At such times and in such form as lessor may prescribe, lessee must furnish detailed statements showing amounts and quality of all products removed and sold, proceeds therefrom, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plat and schematic diagrams showing development work and improvements, and reports with respect to parties in interest, expenditures, and depreciation costs. In the form prescribed by lessor, lessee must keep a daily drilling record, a log, information on well surveys and tests, and a record of subsurface investigations and furnish copies to lessor when required. Lessee must keep open at all reasonable times for inspection by any representative of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessor must maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that supports costs claimed as manufacturing, preparation, and/or transportation costs. All such records must be maintained in lessee's accounting offices for future audit by lessor. Lessee must maintain required records for 6 years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section will be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

Sec. 6. Conduct of operations - Lessee must conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee must take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses must be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee must contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee must immediately contact lessor. Lessee must cease any operations that would result in the destruction of such species or objects.

Sec. 7. Mining operations - To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor reserves the right to deny approval of such operations.

Sec. 8. Extraction of helium - Lessor reserves the option of extracting or having extracted helium from gas production in a manner specified and by means provided by lessor at no expense or loss to lessor or owner of the gas. Lessee must include in any contract of sale of gas the provisions of this section.

Sec. 9. Damages to property - Lessee must pay lessor for damage to lessor's improvements, and must save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

Sec. 10. Protection of diverse interests and equal opportunity - Lessee must pay, when due, all taxes legally assessed and levied under laws of the State or the United States; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the United States; maintain a safe working environment in accordance with standard industry practices; and take measures necessary to protect the health and safety of the public.

Lessor reserves the right to ensure that production is sold at reasonable prices and to prevent monopoly. If lessee operates a pipeline, or owns controlling interest in a pipeline or a company operating a pipeline, which may be operated accessible to oil derived from these leased lands, lessee must comply with section 28 of the Mineral Leasing Act of 1920.

Lessee must comply with Executive Order No. 11246 of September 24, 1963, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee nor lessee's subcontractors must maintain segregated facilities.

Sec. 11. Transfer of lease interests and relinquishment of lease - As required by regulations, lessee must file with lessor any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which will be effective as of the date of filing, subject to the continued obligation of the lessee and surety to pay all accrued rentals and royalties.

Sec. 12. Delivery of premises - At such time as all or portions of this lease are returned to lessor, lessee must place affected wells in condition for suspension or abandonment, reclaim the land as specified by lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells.

Sec. 13. Proceedings in case of default - If lessee fails to comply with any provisions of this lease, and the noncompliance continues for 30 days after written notice thereof, this lease will be subject to cancellation unless or until the leasehold contains a well capable of production of oil or gas in paying quantities, or the lease is committed to an approved cooperative or unit plan or communitization agreement which contains a well capable of production of unitized substances in paying quantities. This provision will not be construed to prevent the exercise by lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver will not prevent later cancellation for the same default occurring at any other time. Lessee will be subject to applicable provisions and penalties of FOGFMA (30 U.S.C. 1701).

Sec. 14. Heirs and successors-in-interest - Each obligation of this lease will extend to and be binding upon, and every benefit hereof will inure to the heirs, executors, administrators, successors, beneficiaries, or assignees of the respective parties hereto.

A. General:

1. Page 1 of this form is to be completed only by parties filing for a noncompetitive lease. The BLM will complete page 1 if the form for all other types of leases.
2. Entries must be typed or printed plainly in ink. Offeror must sign item 4 in ink.
3. An original and two copies of this offer must be prepared and filed in the proper BLM State Office. See regulations at 43 CFR 1821.2-1 for office locations.
4. If more space is needed, additional sheets must be attached to each copy of the form submitted.

B. Special:

Item 1 - Enter offeror's name and billing address.

Item 2 - Identify the mineral status and, if acquired lands, percentage of Federal ownership of applied for minerals. Indicate the agency controlling the surface of the land and the name of the land or project which the land is a part. The state offer may not include both Public

Domain and Acquired lands. Offeror also may provide other information that will assist in establishing title for minerals. The description of land must conform to 43 CFR 3119. A single parcel number and Sale Date will be the only acceptable description during the period from the first day following the end of a competitive process until the end of that same month, using the parcel number on the List of Lands Available for Competitive Nominations or the Notice of Competitive Lease Sale, whichever is appropriate.

Payments: The amount remitted must include the filing fee and the first year's rental at the rate of \$1.50 per acre or fraction thereof. The full rental based on the total acreage applied for must accompany an offer even if the mineral interest of the United States is less than 100 percent. The filing fee will be retained as a service charge even if the offer is completely rejected or withdrawn. To protect priority, it is important that the rental submitted be sufficient to cover all the land requested. If the land requested includes less or irregular quarter-quarter sections, the exact area of which is not known to the offeror, rental should be submitted on the basis of each such lot or quarter-quarter section containing 40 acres. If the offer is withdrawn or rejected in whole or in part before a lease is made, the rental remitted for the past withdrawn or rejected will be returned.

Item 3 - This space will be completed by the United States.

NOTICES

The Privacy Act of 1974 and the regulations in 43 CFR 2.48(d) provide that you be furnished with the following information in connection with information required by this oil and gas lease offer.

AUTHORITY: 30 U.S.C. 181 et seq.; 30 U.S.C 351-359.

PRINCIPAL PURPOSE: The information is to be used to process oil and gas offers and leases.

ROUTINE USES: (1) The adjudication of the lessee's rights to the land or resources. (2) Documentation for public information in support of notations made on land status records for the management, disposal, and use of public lands and resources. (3) Transfer to appropriate Federal agencies when consent or concurrence is required prior to granting a right in public lands or resources. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: If all the information is not provided, the offer may be rejected. See regulations at 43 CFR 3100.

NM-11 LN

**SPECIAL CULTURAL RESOURCE**  
**LEASE NOTICE**

All development activities proposed under the authority of this lease are subject to compliance with Section 106 of the NHPA and Executive Order 13007. The lease area may contain historic properties, traditional cultural properties (TCP's), and/or sacred sites currently unknown to the BLM that were not identified in the Resource Management Plan or during the lease parcel review process. Depending on the nature of the lease developments being proposed and the cultural resources potentially affected, compliance with Section 106 of the National Historic Preservation Act and Executive Order 13007 could require intensive cultural resource inventories, Native American consultation, and mitigation measures to avoid adverse effects—the costs for which will be borne by the lessee. The BLM may require modifications to or disapprove proposed activities that are likely to adversely affect TCP's or sacred sites for which no mitigation measures are possible. This could result in extended time frames for processing authorizations for development activities, as well as changes in the ways in which developments are implemented.

SENM-LN-1

**LEASE NOTICE**  
**POTENTIAL CAVE OR KARST OCCURRENCE AREA**

All or portion of the lease are located in a potential cave or karst occurrence area. Within this area, caves or karst features such as sinkholes, passages, and large rooms may be encountered from the surface to a depth of as much as 2,000 feet, within surface areas ranging from a few acres to hundreds of acres. Due to the sensitive nature of the cave or karst systems of this area, special protective measures may be developed during environmental analyses and be required as part of approvals for drilling or other operations on this lease. These measures could include: changes in drilling operations; special casing and cementing programs; modifications in surface activities; or other reasonable measures to mitigate impacts to cave or karst values. These measures may be imposed in accordance with 43 CFR 3101.1-2; 43 CFR 3162.5-1; Onshore Oil and Gas Order No. 1; and Section 6 of the lease terms.



SENM-S-1

**POTASH STIPULATION**

Stipulations to be made part of any oil and gas lease involving lands described in Secretarial Order, 51 Federal Register 39425 (October 28, 1986).

The lessee further agrees that:

- (1) Drilling for oil and gas shall be permitted only in the event that the lessee establishes to the satisfaction of the Authorized Officer, Bureau of Land Management, that such drilling will not interfere with the mining and recovery of potash deposits, or the interest of the United States will best be served by permitting such drilling.
- (2) No wells shall be drilled for oil or gas at a location which, in the opinion of the Authorized Officer, would result in undue waste of potash deposits or constitute a hazard to or unduly interfere with mining operations being conducted for the extraction of potash deposits.
- (3) When it is determined by the Authorized Officer, that unitization is necessary for orderly oil and gas development and proper protection of potash deposits, no well shall be drilled for oil or gas except pursuant to a unit plan approved by the Authorized Officer.
- (4) The drilling or the abandonment of any well on said lease shall be done in accordance with applicable oil and gas operating regulations (43 CFR 3160), including such requirements as the Authorized Officer may prescribe as necessary to prevent the infiltration of oil, gas or water into formations containing potash deposits or into mines or workings being utilized in the extraction of such deposits.

On the land(s) described below:

All Lands in Lease

**SENM-S-17**

**CONTROLLED SURFACE USE**  
**SLOPES OR FRAGILE SOILS**

**Surface occupancy or use is subject to the following special operating constraints:**

**Surface disturbance will not be allowed on slopes over 30 percent. Exceptions will be considered for authorized mineral material extraction sites and designated OHV areas, for the installation of projects designed to enhance or protect renewable natural resources, or if a plan of operating and development which provides for adequate mitigation of impacts was approved by the Authorized Officer. Occupancy or use of fragile soils will be considered on a case-by-case basis.**

**On the lands described below:**

**All Lands in Lease.**

**For the purpose of: Protecting Slopes or Fragile Soils**

SENM-S-21

**CONTROLLED SURFACE USE**  
**CAVES AND KARST**

Surface occupancy or use is subject to the following special operating constraints:

Surface disturbance will not be allowed within up to 200 meters of known cave entrances, passages or aspects of significant caves, or significant karst features. Waiver of this requirement will be considered for projects that enhance or protect renewable natural resource values, or when an approved plan of operations ensures the protection of cave and karst resources.

Note: No wells below the base of the Delaware Formation –  
Sec. 06: Lot 6, SENW,S2NE

For the purpose of: Protecting Caves and Karst Features

Form 3000-2  
(August 2007)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**COMPETITIVE OIL AND GAS OR  
GEOTHERMAL RESOURCES LEASE RIN**  
30 U.S.C. 181 et seq.; 30 U.S.C. 351-35  
30 U.S.C. 1001-1025; 42 U.S.C. 8508 **NMNM 124659**

State

N.M.

Date of Sale

4-21-2010

PARCEL NUMBER	AMOUNT OF BID (see instructions below)	
	TOTAL BID	PAYMENT SUBMITTED WITH BID
THE BID IS FOR (check one): <input type="checkbox"/> Oil and Gas Parcel Number <u>201004009</u>	<u>\$1,788,800.00</u>	<u>\$1,789,783.50</u>
<input type="checkbox"/> Geothermal Parcel Number _____ Name of Known Geothermal Resource Area (KGRA) _____		

The appropriate regulations applicable to this bid are: (1) for oil and gas leases—43 CFR 3120; (2) for National Petroleum Reserve-Alaska (NPR-A) leases—43 CFR 3132; and (3) for Geothermal resources leases—43 CFR 3220. (See details concerning lease qualifications on next page.)

I CERTIFY THAT I have read and am in compliance with; and not in violation of the lessee qualification requirements under the applicable regulations for this bid.

I CERTIFY THAT this bid is not in violation of 18 U.S.C. 1860 which prohibits unlawful combination or intimidation of bidders. I further certify that this bid was arrived at independently and is tendered without collusion with any other bidder for the purpose of restricting competition.

**IMPORTANT NOTICE:** Execution of this form where the offer is the high bid, constitutes a binding lease offer including all applicable terms and conditions. Failure to comply with the applicable laws and regulations under which this bid is made will result in rejection of the bid and forfeiture of all monies submitted.

Doug J. Schutz  
Print or Type Name of Lessee

P.O. Box 973  
Address of Lessee

Santa Fe N.M. 87504  
City State Zip

[Signature]  
Signature of Lessee or Bidder

**INSTRUCTIONS FOR OIL AND GAS BID**  
(Except NPR-A)

1. Separate bid for each parcel is required. Identify parcel by the parcel number assigned in the *Notice of Competitive Lease Sale*.
2. Bid must be accompanied by the national minimum acceptable bid, the first year's rental and the administrative fee. The remittance must be in the form specified in 43 CFR 3103.1-1. The remainder of the bonus bid, if any, must be submitted to the proper Bureau of Land Management (BLM) office within 10 working days after the last day of the oral auction. Failure to submit the remainder of the bonus bid within 10 working days will result in rejection of the bid offer and forfeiture of all monies paid.
3. If the bidder is not the sole party in interest in the lease for which the bid is submitted, all other parties in interest may be required to furnish evidence of their qualifications upon written request by the BLM.
4. This bid may be executed (signed) before the oral auction. If signed before the oral auction, this form cannot be modified without being executed again.
5. In view of the above requirement (4), the bidder may wish to leave the AMOUNT OF BID section blank so that final bid amount may be either completed by the bidder or the BLM at the oral auction.

**INSTRUCTIONS**

**INSTRUCTIONS FOR GEOTHERMAL OR  
NPR-A OIL AND GAS BID**

1. Separate bid for each parcel is required. Identify the parcel by the number assigned to a tract.
2. Bid must be accompanied by one-fifth of the total amount of the bid. The remittance must be in the form specified in 43 CFR 3220.4 for a Geothermal Resources bid and 3132.2 for a NPR-A lease bid.
3. Mark the envelope "Bid for Geothermal Resources Lease" in (Name of KGRA) or "Bid for NPR-A Lease," as appropriate. Be sure correct parcel number of tract on which the bid is submitted and date of bid opening are noted plainly on envelope. No bid may be modified or withdrawn unless such modification or withdrawal is received prior to time fixed for opening of bids.
4. Mail or deliver bid to the proper BLM office or place indicated in the *Notice of Competitive Lease Sale*.
5. If the bidder is not the sole party in interest in the lease for which bid is submitted, all other parties in interest may be required to furnish evidence of their qualifications upon written request by the BLM.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

Form 3000-3  
BL (May 2008)  
SANTAFE  
RECEIVED

NOV 03 2010

PAID  
RECEIPT# 224211

ORIGINAL

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
ASSIGNMENT OF RECORD TITLE INTEREST IN A  
LEASE FOR OIL AND GAS OR GEOTHERMAL RESOURCES

Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.)  
Act for Acquired Lands of 1947 (30 U.S.C. 351 - 359)  
Geothermal Steam Act of 1970 (30 U.S.C. 1001 - 1025)  
Department of the Interior Appropriations Act, Fiscal Year 1981 (42 U.S.C. 6508)

FORM APPROVED  
OMB NO. 1004-0034  
Expires: April 30, 2009

Lease Serial No.  
NM 124659

Lease Effective Date  
(Anniversary Date)  
06/01/2010

New Serial No.

Type or print plainly in ink and sign in ink.

PART A: ASSIGNMENT

1. Assignee\* Cimarex Energy Co.  
Street 600 N. Marlenfeld, Suite 600  
City, State, Zip Code Midland, Texas 79701

1a. Assignor Doug J. Schertz and Glenora Schertz (wife)

\*If more than one assignee, check here ☐ and list the name(s) and address(es) of all additional assignees on page 2 of this form or on a separate attached sheet of paper.

This record title assignment is for: (Check one) ☒ Oil and Gas Lease, or ☐ Geothermal Lease

Interest conveyed: (Check one or both, as appropriate) ☒ Record Title, ☐ Overriding Royalty, payment out of production or other similar interests or payments

2. This assignment conveys the following interest:

Land Description	Percent of Interest			Percent of Overriding Royalty Similar Interests	
	Owned	Conveyed	Retained	Reserved	Previously reserved or conveyed
a	b	c	d	e	f
T. 20 South - R. 30 East Section 06: Lots 1-7, S2NE, S2NW, E2SW, W2SE ✓	100%	100%	-0-	-0-	-0-

FOR BLM USE ONLY - DO NOT WRITE BELOW THIS LINE

UNITED STATES OF AMERICA

This assignment is approved solely for administrative purposes. Approval does not warrant that either party to this assignment holds legal or equitable title to this lease.

☒ Assignment approved for above described lands;

☐ Assignment approved for attached land description

Assignment approved effective

DEC 01 2010

☐ Assignment approved for land description indicated on reverse of this form

By

Maria Vargas

Bureau of Land Management (BLM)

LAND LAW EXAMINER

FLUIDS ADJUDICATION TEAM DEC 29 2010

(Title)

(Date)

(Continued on page 2)

Part A (Continued): ADDITIONAL SPACE for terms and addresses of additional assignees in Item No. 1, if needed, or for Land Description in Item No. 2, if needed.

## PART B - CERTIFICATION AND REQUEST FOR APPROVAL

1. The Assignor certifies as owner if an interest in the above designated lease that he/she hereby assigns to the above assignee(s) the rights specified above.
2. Assignee certifies as follows: (a) Assignee is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States or of any State or territory thereof. For the assignment of NFR-A leases, assignee is a citizen, national, or resident alien of the United States or association of such citizens, nationals, resident aliens or private, public or municipal corporations; (b) Assignee is not considered a minor under the laws of the State in which the lands covered by this assignment are located; (c) Assignee's chargeable interests, direct and indirect, in each public domain and acquired lands separately in the same State, do not exceed 246,080 acres in oil and gas leases (of which up to 200,000 acres may be in oil and gas options), or 300,000 acres in leases in each leasing District in Alaska of which up to 200,000 acres may be in options, if this is an oil and gas lease issued in accordance with the Mineral Leasing Act of 1920, or 51,200 acres in any one State if this is a geothermal lease; (d) All parties holding an interest in the assignment are otherwise in compliance with the regulations (43 CFR Group 3100 or 3200) and the authorizing Acts; (e) Assignee is in compliance with reclamation requirements for all Federal oil and gas lease holdings as required by sec. 17(g) of the Mineral Leasing Act; and (f) Assignee is not in violation of sec. 41 of the Mineral Leasing Act.
3. Assignee's signature to this assignment constitutes acceptance of all applicable terms, conditions, stipulations and restrictions pertaining to the lease described herein.

For geothermal assignments, an overriding royalty may not be less than one-fourth (1/4) of one percent of the value of output, nor greater than 50 percent of the rate of royalty due to the United States when this assignment is added to all previously created overriding royalties (43 CFR 3241).

I certify that the statements made herein by me are true, complete, and correct to the best of my knowledge and belief and are made in good faith.

Executed this 24th day of May 20 10 Executed this 26<sup>th</sup> day of May 20 10

Name of Assignor as shown on current lease Deug J. Schutz

(Please type or print)

Assignor

or

Attorney-in-fact [Signature] (Signature)

P.O. Box 973

(Assignor's Address)

Santa Fe

(City)

NM

(State)

87504-0973

(Zip Code)

Assignee

or

Attorney-in-fact [Signature] (Signature)

Title 18 U.S.C. Sec. 1001 makes it a crime for any person knowingly and willfully to make to any Department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 3)

(Form 3000-3, page 2)

August 24, 2018

Alberto A. Gutiérrez, C.P.G.

United States of America  
Bureau of Land Management  
PO Box 27115  
Santa Fe, NM 87502-0115

VIA CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

RE: SUMMIT MIDSTREAM PERMIAN LLC PROPOSED SUMMIT SWD #1

This letter is to advise you that Summit Midstream Permian LLC ("Summit") will file the enclosed C-108 application on August 31, 2018 with the New Mexico Oil Conservation Commission seeking administrative authorization to drill a Salt Water Disposal (SWD) located in Section 5, Township 20 South, Range 30 East, NMPM, Eddy County, New Mexico. Summit plans to inject up to 25,000 barrels per day of produced water at a maximum pressure of 2,740 psig into this well in the Wristen, Fusselman and Montoya Formations, approximately 12,875 to 13,800 feet below the surface.

If you have any questions concerning this application, you may contact Mr. Alberto Gutierrez at (505) 842-8000 at Geolex, Inc.; 500 Marquette Avenue NW, Suite 1350; Albuquerque, New Mexico 87102.

Sincerely,  
Geolex, Inc.



Alberto A. Gutiérrez, C.P.G.  
President  
Consultant to Summit Midstream

Enclosure: C-108 Application for Authority to Inject

G:\18-013 & 18-018 Summit SWD\Reports\Summit BLM Notice Letter.docx



August 24, 2018

Alberto A. Gutiérrez, C.P.G.

Cimarex Energy Company  
600 N. Marienfield St. Suite 600  
Midland TX 79701

VIA CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

RE: SUMMIT MIDSTREAM PERMIAN LLC PROPOSED SUMMIT SWD #1

This letter is to advise you that Summit Midstream Permian LLC ("Summit") will file the enclosed C-108 application on August 31, 2018 with the New Mexico Oil Conservation Commission seeking administrative authorization to drill a Salt Water Disposal (SWD) located in Section 5, Township 20 South, Range 30 East, NMPM, Eddy County, New Mexico. Summit plans to inject up to 25,000 barrels per day of produced water at a maximum pressure of 2,740 psig into this well in the Wristen, Fusselman and Montoya Formations, approximately 12,875 to 13,800 feet below the surface.

If you have any questions concerning this application, you may contact Mr. Alberto Gutierrez at (505) 842-8000 at Geolex, Inc.; 500 Marquette Avenue NW, Suite 1350; Albuquerque, New Mexico 87102.

Sincerely,  
Geolex, Inc.



Alberto A. Gutiérrez, C.P.G.  
President  
Consultant to Summit Midstream

Enclosure: C-108 Application for Authority to Inject

G:\18-013 & 18-018 Summit SWD\Reports\Summit Cimarex Notice Letter.docx

August 24, 2018

COG Operating LLC  
600 W. Illinois Avenue  
Midland TX 79701

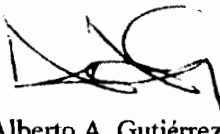
VIA CERTIFIED MAIL  
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President  
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G:\18-013 & 18-018 Summit SWD\Reports\Summit COG Notice Letter.docx

August 24, 2018

EOG Y Resources Inc.  
105 South 4<sup>th</sup> Street  
Artesia, New Mexico 88210

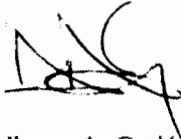
**VIA CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

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President  
Consultant to Summit Midstream

Enclosure: C-108 Application for Authority to Inject

G:\18-013 & 18-018 Summit SWD\Reports\Summit EOG Y Notice Letter.docx

August 24, 2018

XTO Holdings, LLC  
810 Houston Street  
Fort Worth, TX 76012

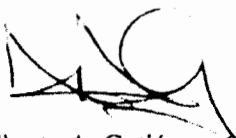
VIA CERTIFIED MAIL  
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President  
Consultant to Summit Midstream

Enclosure: C-108 Application for Authority to Inject

G:\18-013 & 18-018 Summit SWD\Reports\Summit XTO Notice Letter.docx

***Application of Summit Midstream Permian, LLC for authority to inject, Eddy County, New Mexico.*** Summit Midstream Permian, LLC LP (Summit) requests administrative approval from the NM Oil Conservation Commission to inject produced water into its proposed Summit Midstream SWD#1 well. This well will be located 500'FNL, 500'FWL in Section 5, Township 20 South, Range 30 East, NMPM, Eddy County, New Mexico. Summit plans to inject up to 25,000 barrels per day (bpd) of produced water at a maximum pressure of 2,740 psig into the injection zone located in the Devonian, Fusselman and Montoya Formations, approximately 12,875 to 13,800 feet below the surface. . Any enquiries regarding this application should be directed to Summit Midstream Permian, LLC's consultant, Alberto Gutierrez, Geolex Inc. 500 Marquette Ave. NW #1350, Albuquerque, NM 87102 (505) 842-8000. Interested parties must file objections or request for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days of the date of this notice.

To be published in the Carlsbad Current Argus on Thursday August 23, 2018

CARLSBAD  
**CURRENT-ARGUS**

**AFFIDAVIT OF PUBLICATION**

**Ad No.  
0001259088**

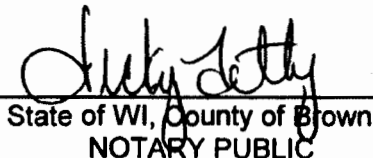
GEOLEX, INC.  
500 MARQUETTE AVE. NW #1350  
ALBUQUERQUE NM 87102

I, a legal clerk of the **Carlsbad Current-Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

08/23/18

  
Legal Clerk

Subscribed and sworn before me this  
23th of August 2018.

  
State of WI, County of Brown  
NOTARY PUBLIC

  
My Commission Expires

**Application of Summit Midstream Permian, LLC for authority to inject, Eddy County, New Mexico.**  
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Ad#:0001259088  
P O : Summit Revised  
# of Affidavits :0.00

7016 1970 0000 8250 9108

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

Domestic Mail Only

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MIDLAND, TX 79701

Certified Mail Fee \$3.45  
 Extra Services & Fees (check box, add fee):  
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☐ Return Receipt (electronic) \$0.00  
☐ Certified Mail Restricted Delivery \$0.00  
☐ Adult Signature Required \$0.00  
☐ Adult Signature Restricted Delivery \$0.00

Postage \$2.47  
 Total Postage and Fees \$8.67

Sent To **CIMAREX ENERGY COMPANY 18-013**  
 Street and Apt. No., or PO Box No.  
**600 N. MARLENFIELD ST. SUITE 600**  
 City, State, ZIP+4®  
**MIDLAND, TX 79701**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7016 1970 0000 8250 9115

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Postage \$2.47  
 Total Postage and Fees \$8.67

Sent To **COE Operating LLC 18-013**  
 Street and Apt. No., or PO Box No.  
**600 W. Illinois Ave.**  
 City, State, ZIP+4®  
**MIDLAND TX 79701**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7016 1970 0000 8250 9122

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

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ARTESIA, NM 88210

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☐ Certified Mail Restricted Delivery \$0.00  
☐ Adult Signature Required \$0.00  
☐ Adult Signature Restricted Delivery \$0.00

Postage \$2.47  
 Total Postage and Fees \$8.67

Sent To **EOG Resources, Inc. 18-013**  
 Street and Apt. No., or PO Box No.  
**105 So. 4th St.**  
 City, State, ZIP+4®  
**Artesia NM 88210**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7016 1970 0000 8250 9092

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

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SANTA FE, NM 87502

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 Extra Services & Fees (check box, add fee):  
☐ Return Receipt (hardcopy) \$0.00  
☐ Return Receipt (electronic) \$0.00  
☐ Certified Mail Restricted Delivery \$0.00  
☐ Adult Signature Required \$0.00  
☐ Adult Signature Restricted Delivery \$0.00

Postage \$2.47  
 Total Postage and Fees \$8.67

Sent To **U.S.A. Bureau of Land Mgt. 18-013**  
 Street and Apt. No., or PO Box No.  
**PO Box 27115**  
 City, State, ZIP+4®  
**Santa Fe NM 87502-0115**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

7016 1970 0000 8250 9139

# U.S. Postal Service™ CERTIFIED MAIL® RECEIPT

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ARLINGTON, TX 76012

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 Extra Services & Fees (check box, add fee):  
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☐ Return Receipt (electronic) \$0.00  
☐ Certified Mail Restricted Delivery \$0.00  
☐ Adult Signature Required \$0.00  
☐ Adult Signature Restricted Delivery \$0.00

Postage \$2.47  
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Sent To **XTO HOLDINGS, LLC 18-013**  
 Street and Apt. No., or PO Box No.  
**810 HOUSTON ST.**  
 City, State, ZIP+4®  
**FORT WORTH, TX 76012**

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions



August 24, 2018

Mr. Phillip Goetz  
Engineering Bureau  
New Mexico Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

VIA FEDERAL EXPRESS

RE: SUBMITTAL OF C-108 FOR SUMMIT MIDSTREAM PERMIAN LLC PROPOSED SWD #1

Dear Mr. Goetz:

Enclosed for your review is the C-108 (Application for Authorization to Inject) on the proposed Summit Midstream Permian LLC's proposed SWD #1 well in Section 5, Township 20 South, Range 30 East in Eddy County, New Mexico.

The proposed injection zone will be in the Devonian and Upper Silurian Wristen and Fusselman Formations, as well as the upper Ordovician Upper Montoya Formation, at depths of approximately 13,000 to 13,800 feet.

As we discussed in our meeting on Wednesday, August 22, 2018, we have expanded the Area of Review from one half mile to one mile. We hope that this change will expedite the evaluation of our application.

Please contact me or Mr. James C. Hunter RG at 505-842-8000 if you have any questions regarding this submittal.

Sincerely,  
Geolex, Inc.



Alberto A. Gutiérrez, R.G.

cc: Mr. Greg Haneiko, Summit Midstream Permian LLC

G:\18-013 & 18-018 Summit SWD\Correspondence\Goetz001.ltr.docx



# FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V17]

DATE RECORD: First Rec: 08/27/19 Admin Complete: 08/27/19 or Suspended: — Add. Request/Reply: 02/14/19 / 02/15/19  
 ORDER TYPE: WFX / PMX / SWD Number: 1976 Order Date: 03/05/19 Legacy Permits/Orders: 02/21/19

Well No. 1 Well Name(s): Summit SWD  
 API: 30-015-Pending Spud Date: TBD New or Old (EPA): New (UIC Class II Primacy 03/07/1982)  
 Footages 500' FNL / 500' FWL Lot 4 or Unit D Sec 5 Tsp 20S Rge 30E County Eddy  
 General Location: 19 miles NE of Carlsbad; 1 mi S Curry Comb Rd Pool: SWD; Devonian-Silurian Pool No.: 97869  
 BLM 100K Map: Artesia/Hobbs Operator: Summit Midstream Permian LLC OGRID: 373785 Contact: Geolux / J. Hunter  
 COMPLIANCE RULE 5.9: Total Wells: 2 (both SWD) Inactive: 0 Fincl Assur: Baskets Compl. Order? 16 IS 5.9 OK? Yes Date: 03/05/19  
 WELL FILE REVIEWED ☒ Current Status: No APD

WELL DIAGRAMS: NEW: Proposed ☐ or RE-ENTER: Before Conv. ☐ After Conv. ☐ Logs in Imaging: —  
 Planned Rehab Work to Well: \* Well location within BLM drilling island [Deep solutions]

Well Construction Details		Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement St or Cf	Cement Top and Determination Method
Planned <input checked="" type="checkbox"/> or Existing <u>Surface</u>		<u>26/20</u>	<u>0 to 475</u>	<u>Est. not provided</u>	<u>Cir. to surface</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Interm Prod</u>		<u>17 1/2 / 13 3/8</u>	<u>0 to 1600</u>	<u>Est. not provided</u>	<u>Cir. to surface</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Interm Prod</u>		<u>12 1/4 / 9 5/8</u>	<u>0 to</u>	<u>DNV 1500</u>	<u>Est. not provided</u>
Planned <input checked="" type="checkbox"/> or Existing <u>Prod/Liner</u>		<u>8 3/4 / 7</u>	<u>0 to 12875</u>	<u>DNV 650</u>	<u>Est. not provided</u>
Planned <input type="checkbox"/> or Existing <u>Liner</u>		<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Planned <input checked="" type="checkbox"/> or Existing <u>OH / PERF</u>		<u>5 1/2</u>	<u>12875 to 13800</u>	<u>Inj Length</u>	<u>—</u>

Injection Lithostratigraphic Units	Depths (ft)	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.		<u>Mississippian</u>	<u>12301</u>
Confining Unit: Litho. Struc. Por.	<u>±82</u>	<u>Woodford</u>	<u>12946</u>
Proposed Inj Interval TOP:	<u>(12875)</u>	<u>(12875) vs. (12946)</u>	<u>13086</u>
Proposed Inj Interval BOTTOM:	<u>13800</u>	<u>Devonian &amp; Silurian</u>	<u>12476</u>
Confining Unit: Litho. Struc. Por.	<u>±83</u>	<u>Montoya</u>	<u>13085</u>
Adjacent Unit: Litho. Struc. Por.		<u>Ellenburger</u>	<u>—</u>

Completion/Operation Details:	
Drilled TD <u>—</u>	PBTD <u>—</u>
NEW TD <u>13800</u>	NEW PBTD <u>—</u>
NEW Open Hole <input checked="" type="checkbox"/> or NEW Perfs <input type="checkbox"/>	
Tubing Size <u>3 1/2</u> in.	Inter Coated? <u>Yes</u>
Proposed Packer Depth <u>12825</u> ft	
Min. Packer Depth <u>12775</u> (100-ft limit)	
Proposed Max. Surface Press. <u>2740</u> psi	
Admin. Inj. Press. <u>2575</u> (0.2 psi per ft)	

### AOR: Hydrologic and Geologic Information

POTASH: R-111-P Yes\* Noticed? Yes BLM Sec Ord # WIPP 16 Noticed? NR Salt/Salado T: 454 B: 1382 NW: Cliff House fm

USDW: Aquifer(s) Rustler / Capitan Max Depth 454' (1930-3586) (Top of Salado) HYDRO AFFIRM STATEMENT By Qualified Person ☒

NMOSE Basin: Capitan CAPITAN REEF: thru ✓ adj NA No. GW Wells in 1-Mile Radius? 0 FW Analysis? —

Disposal Fluid: Formation Source(s) Bone Spring Analysis? [Anthill] On Lease ☐ Operator Only ☐ or Commercial ☒

Disposal Interval: Inject Rate (Avg/Max BWPD): 2000/25000 Protectable Waters? No Source: Historical System: Closed or Open

HC Potential: Producing Interval? 16 Formerly Producing? No Method: Logs/DST/P&A/Other [Mudlog] 2-Mi Radius Pool Map ☐

AOR Wells: 1/2-M ✓ or ONE-M ✓ RADIUS MAP/WELL LIST: Total Penetrating Wells: 0 AOR Hor: — AOR SWDs: —

Penetrating Wells: No. Active Wells 0 No. Corrective? — on which well(s)? — Diagrams? —

Penetrating Wells: No. P&A Wells 0 No. Corrective? — on which well(s)? — Diagrams? —

Induced-Seismicity Risk Assess: analysis submitted NA historical/catalog review — fault-slip model — probability —

NOTICE: 1/2-M ✓ or ONE-M —: Newspaper Date 8/23/18 Mineral Owner\* BLM Surface Owner BLM N. Date 8/24/18

RULE 26.7(A): Identified Tracts? Yes Affected Persons\*: COG / Cimarex / EOG / XTO N. Date 8/24/18

\* new definition as of 12/28/2018 [any the mineral estate of United States or state of New Mexico; SWD operators within the notice radius]

Order Conditions: Issues: DV tool location; cmt inside Woodford shale; correlations  
 Additional COAs: Change depths for DV tool / shoe prod; Cmt notice/CBL; mudlog with picks; BH pressure

# Township 20 South Range 30 East of the New Mexico Principal Meridian, New Mexico

County: Eddy - 015

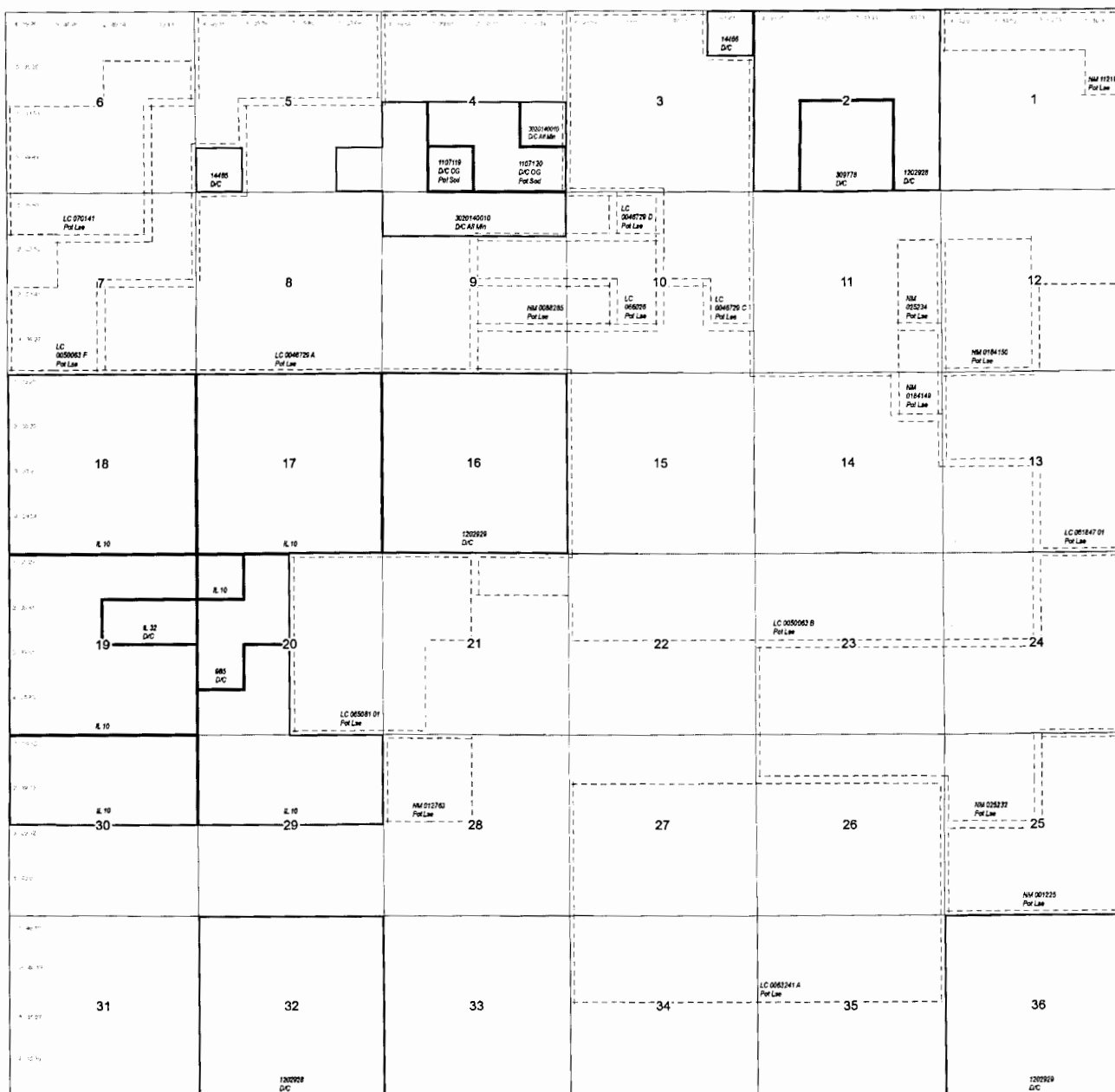
BLM Field Office: Carlsbad

BUREAU OF LAND MANAGEMENT  
STATUS OF PUBLIC DOMAIN  
LAND AND MINERALS

## POT Plat

T20S R30E

Entire Township included  
EO Wd NM 1 Pot Res 6 (3/11/1926)  
Designated Pot Area 10/7/1975  
CI of Public Lands NM 0560202 (CI No 30-06-01)



*Drilling Island: Deep Solutions*

*- BS well nearby  
30-015-44011*

NOTE: The Serial Numbers displayed are in the Bureau's LR2000 system format.  
- If there is a zero in the 7th position (from the right), the serial number has a "prefix" zero;  
example NM 0012345.  
- If there is not a zero in the 7th position (from the right) then the serial number does not have a "prefix" zero;  
example NM 012345.

T 20 S  
R 30 E  
NMPM

0 0.25 0.5 1 Mile

1 inch = 30 chains  
1 : 23,760

### CAVEAT STATEMENT

This plat is the Bureau's Record of Title, and should be used only as a graphic display of the township survey data. Records hereon do not reflect title changes which may have been affected by lateral movements of rivers or other bodies of water. Refer to the cadastral surveys for official survey information.

**County:** Eddy - 015

BLM Field Office: Carlsbad

BUREAU OF LAND MANAGEMENT  
STATUS OF PUBLIC DOMAIN  
LAND AND MINERALS

## T20S R30E

Entire Township included  
NM 057354, EO Wdl NM 1 Pot Res 6 (3/11/1926)

Designated Pot Area 10/7/1975

CI of Public Lands NM 0560202 (CI No 30-06-01)

NOL's  
USGS Memo 12/10/1970  
Sec 3: Lots 2-4, S2N2, S2  
Memo 8/7/1971  
Sec 5: Lots 1-4, S2N2, N2SW, SE5W, SE  
Memo 6/20/1972  
Sec 24: E2SE  
Memo 5/8/1973  
Sec 6: Lot 6, S2NE, E2SW, W2SE  
Sec 7: Lot 1, NENW  
Memo 8/8/1974  
Sec 7: Lots 3-4, NENE, S2NE, SENW, E2SW, SE  
Sec 10: NWNNW

UNITIZATION AGREEMENTS  
NM 068294X  
Big Eddy UA

NOTE: Serial Numbers displayed are in the Bureau's LR2000 system format. A zero in the 7<sup>th</sup> position (from the right), is a "prefix" zero; Ex. NM 0012345. Six digit serial numbers have no "prefix" zero, Ex. NM 012345.

Revised Date: 11/27/2018

T 20 S  
R 30 I  
NMPM

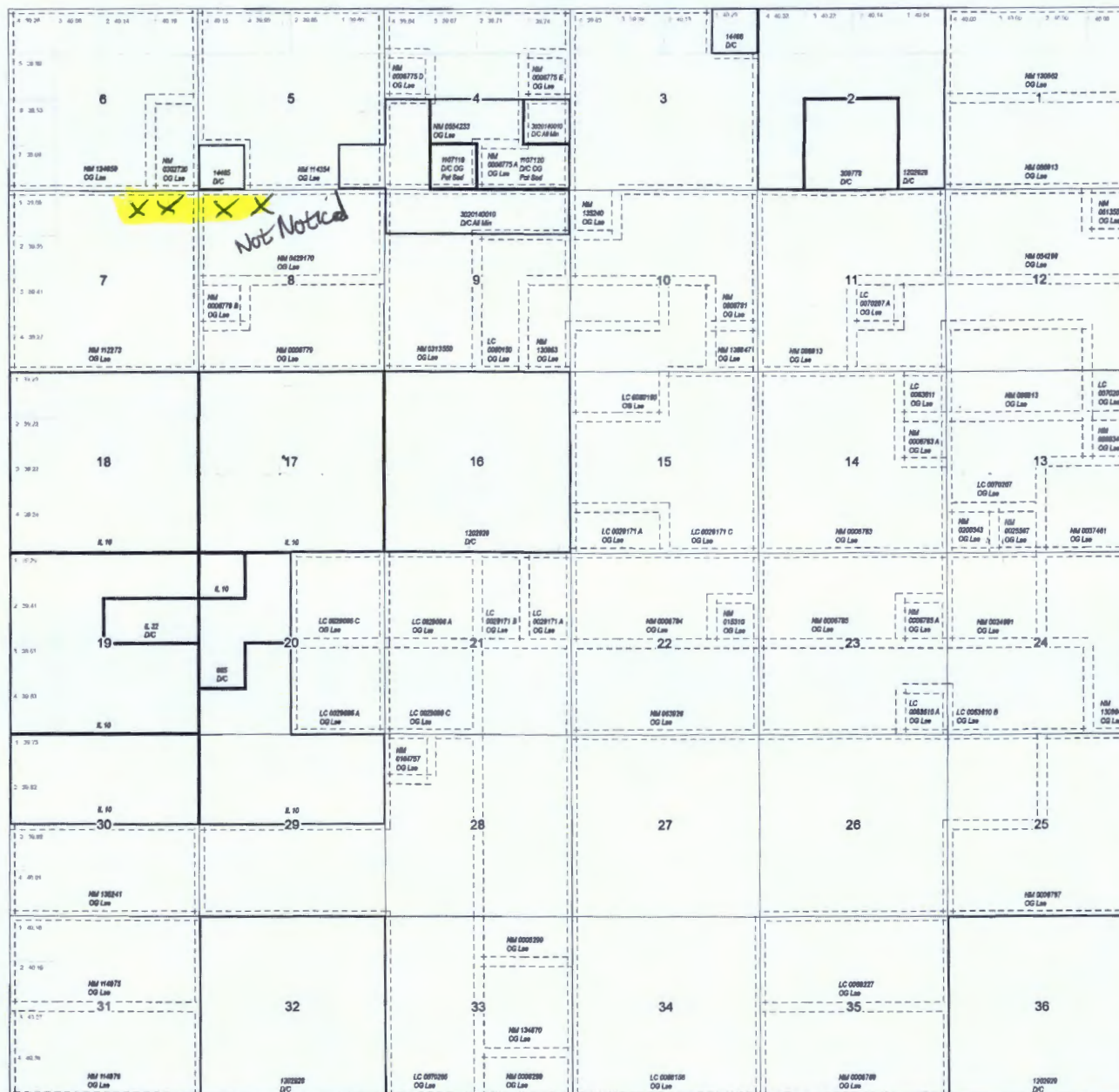


Figure 1 is a line graph showing the effect of the concentration of the initiator on the rate of polymerization. The x-axis is labeled "Concentration of the initiator" and ranges from 0 to 1. The y-axis is labeled "Rate of polymerization" and ranges from 0 to 1. Five curves are shown, labeled 1 through 5. Curve 1 is the highest, followed by 2, 3, 4, and 5. All curves show a peak in the rate of polymerization at a concentration of approximately 0.5.

1 inch = 30 chains  
1:23,780

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**County:** Eddy - 015

BUREAU OF LAND MANAGEMENT  
STATUS OF PUBLIC DOMAIN  
LAND AND MINERALS

## T19S R30E

Entire Township Included  
NM 057354, EO Wdl NM 1 Pot Res 6 (3/11/1926)

Designated Pot Area SO 10/7/1975

CI of Public Lands NM 0560202 (CI No 30-06-01)

## UNITIZATION AGREEMENTS

Culwin Queen UA  
NM 070930X  
No Hackberry Yates UA  
NM 070995X  
Benson/Delaware UA  
NM 126412X

## COMMUNITIZATION AGREEMENTS

COMMON  
NM 072600  
NM 094463  
NM 105316  
NM 106839  
NM 107701  
NM 119887  
NM 127209  
NM 128649  
NM 128994  
NM 130778  
NM 130779  
NM 133063  
NM 133230  
NM 134722  
NM 134727  
NM 134729  
NM 135355  
NM 136198  
NM 136398  
NM 137157  
NM 137336  
NM 137633

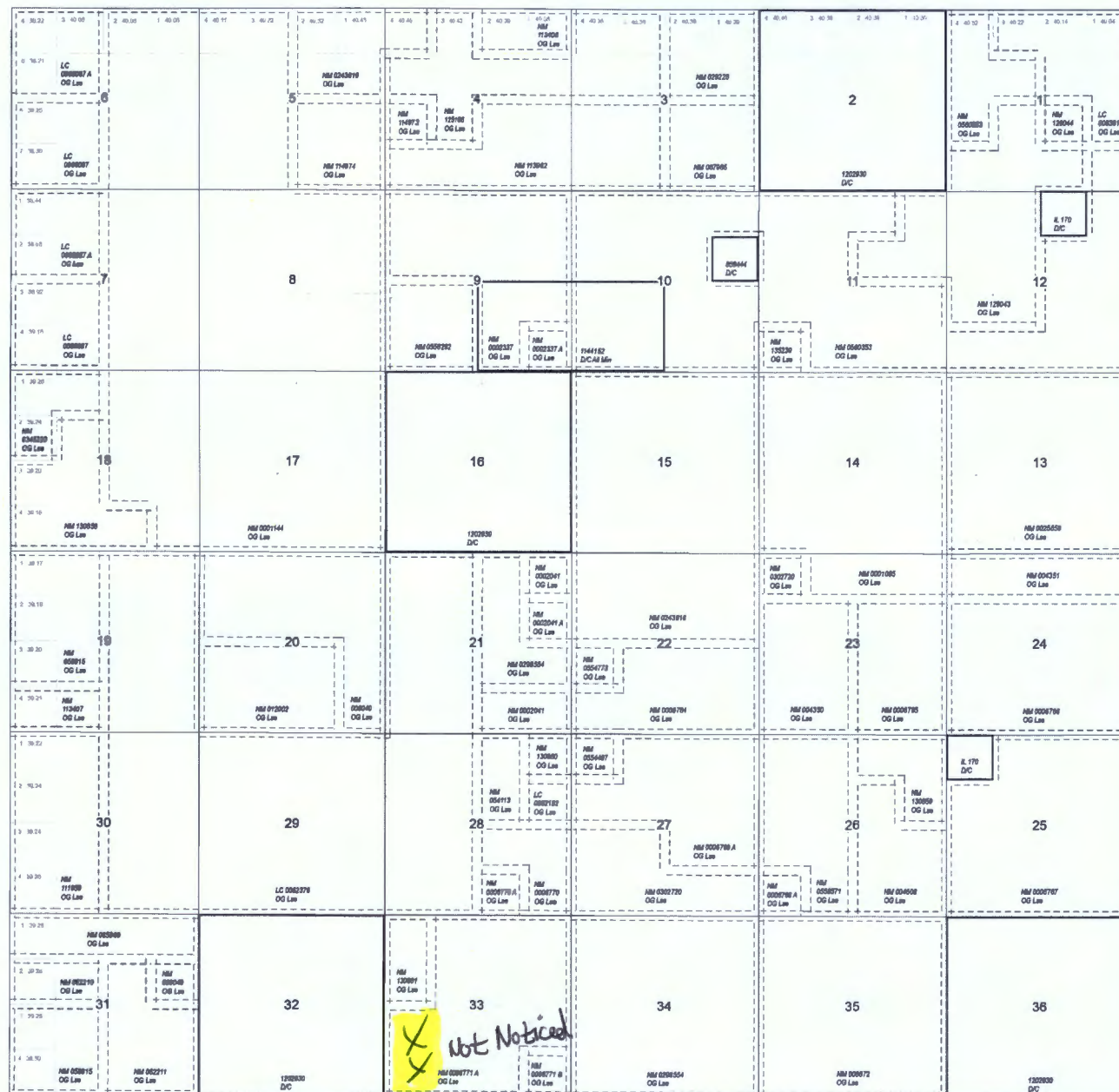
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For Index to Segregated Tracts, see survey plat.

Revised Date: 11/15/2017

T 19 S  
R 30 E  
NMPM



1 inch = 30 chains  
1:23,780

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## Goetze, Phillip, EMNRD

---

**From:** James C. Hunter {Geolex} <JCH@Geolex.com>  
**Sent:** Friday, February 15, 2019 9:23 AM  
**To:** Goetze, Phillip, EMNRD  
**Cc:** aag@Geolex.com  
**Subject:** [EXT] RE: Summit Midstream Permian LLC's C-108 Application for SWD #1  
**Attachments:** Summit\_SWD#1\_GroundWaterCertification.pdf

Good morning Phillip,

In regard to your 3 points:

1. I have contacted Summit and should receive the information on SW sources today, and analyses if available. I will forward this to you ASAP.
2. A copy of the signed Affirmation is attached.
3. The system will be "closed" and operated only by Summit personnel.

Thanks for your comments. Let me know if you need any further information.

jch

**James C. Hunter, RG**

Geolex, Incorporated® -- 505-842-8000 x102 -- 505-239-8830 Cell

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**From:** Goetze, Phillip, EMNRD [mailto:Phillip.Goetze@state.nm.us]  
**Sent:** Thursday, February 14, 2019 2:02 PM  
**To:** James C. Hunter {Geolex} <JCH@Geolex.com>  
**Subject:** RE: Summit Midstream Permian LLC's C-108 Application for SWD #1

James:

In review of the application for the Summit SWD, I need three items:

1. Though Page 2 states that sources of disposal fluids is discussed in the application, I cannot find this information. I note that this SWD well will be part of a facility. Am I looking at produced water from as part of a process? If so, what are the original sources – Wolfcamp – Bone Spring? Possible analytical results from Go-Tech/ WAIDS/in-house data would be good. Help please.
2. Please take a copy of the Page 10 with the Affirmative Statement and add a signature/name of the qualified individual that made the evaluation and opinion. As with all injection applications, I cannot ask "Geolex" to take the stand and provide testimony as to how the opinion was formulated. Need a person. Send it via PDF and I will include it in the application.
3. I am assuming that this is a "closed" system; not available for access as would a commercial well with a wellhead or battery tank available to multiple clients (open). Please verify.

When you can. Please call if you need more clarification. Thanks. PRG

Phillip Goetze, PG  
Engineering Bureau, Oil Conservation Division, NM EMNRD  
1220 South St. Francis Drive, Santa Fe, NM 87505  
Direct: 505.476.3466  
E-mail: [phillip.goetze@state.nm.us](mailto:phillip.goetze@state.nm.us)

**From:** James C. Hunter {Geolex} <[JCH@Geolex.com](mailto:JCH@Geolex.com)>  
**Sent:** Friday, August 24, 2018 12:54 PM  
**To:** Goetze, Phillip, EMNRD <[Phillip.Goetze@state.nm.us](mailto:Phillip.Goetze@state.nm.us)>  
**Cc:** [aag@Geolex.com](mailto:aag@Geolex.com); 'Greg Haneiko' <[greg.haneiko@summitmidstream.com](mailto:greg.haneiko@summitmidstream.com)>  
**Subject:** Summit Midstream Permian LLC's C-108 Application for SWD #1

Dear Mr. Goetze,

Attached is a copy of the C-108 application for Summit Midstream Permian LLC's proposed SWD #1, to be drilled at 500' FNL, 500' FWL in Section 5, T20S, R30E approximately 18 miles Northwest of Carlsbad, New Mexico.

The proposed injection zone will be in the Devonian and Upper Silurian Wristen and Fusselman Formations, as well as the upper Ordovician Upper Montoya Formation, at depths of approximately 13,000 to 13,800 feet.

A hard copy of the application is being sent to your office via Federal Express for Monday delivery.

Please contact me if you have any questions or comments regarding this submittal.

Thanks,

James C. Hunter, RG  
Geolex, Incorporated®  
500 Marquette Avenue, NW Suite 1350  
Albuquerque, NM 87102  
505-842-8000 x102 - 505-239-8830 Cell

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**Goetze, Phillip, EMNRD**

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**From:** James C. Hunter {Geolex} <JCH@Geolex.com>  
**Sent:** Thursday, February 21, 2019 12:29 PM  
**To:** Goetze, Phillip, EMNRD  
**Cc:** aag@Geolex.com; 'Greg Haneiko'  
**Subject:** [EXT] RE: Summit Midstream Permian LLC's C-108 Application for SWD #1

Philip,

Greg Haneiko of Summit has informed me that the produced water will be from the 1st and 2nd Bone Springs.

Let us know if you need any additional information.

Thanks

**James C. Hunter, RG**

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North Permian Basin Region  
P.O. Box 740  
Sundown, TX 79372-0740  
(806) 229-8121  
Lab Team Leader - Sheila Hernandez  
(432) 495-7240

## Water Analysis Report by Baker Petrolite

Company:	YATES PETROLEUM INC	Sales RDT:	33514.1
Region:	PERMIAN BASIN	Account Manager:	TONY HERNANDEZ (575) 910-7135
Area:	ARTESIA, NM	Sample #:	633649
Lease/Platform:	ANTHILL AAK ST.	Analysis ID #:	123792
Entity (or well #):	2 H	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	SEPARATOR		

Summary		Analysis of Sample 633649 @ 75 °F					
Sampling Date:	08/10/12	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	08/29/12	Chloride:	107910.0	3043.75	Sodium:	56217.6	2445.33
Analyst:	JENNIFER HARDELL	Bicarbonate:	122.0	2.	Magnesium:	1291.0	106.2
TDS (mg/l or g/m3):	179229	Carbonate:	0.0	0.	Calcium:	9736.0	485.83
Density (g/cm3, tonne/m3):	1.126	Sulfate:	1982.0	41.27	Strontium:	404.0	9.22
Anion/Cation Ratio:	1	Phosphate:			Barium:	0.4	0.01
		Borate:			Iron:	35.0	1.26
		Silicate:			Potassium:	1530.0	39.13
					Aluminum:		
Carbon Dioxide:	250 PPM	Hydrogen Sulfide:		0	Chromium:		
Oxygen:		pH at time of sampling:		6.7	Copper:		
Comments:		pH at time of analysis:			Lead:		
		pH used in Calculation:		6.7	Manganese:	1.000	0.04
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> *2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>		CO <sub>2</sub> Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.45	5.89	0.18	359.55	0.19	301.79	0.48	163.86	0.58	0.29	0.16
100	0	0.52	7.07	0.11	242.26	0.19	301.49	0.46	159.15	0.39	0.00	0.2
120	0	0.58	8.25	0.06	133.51	0.22	332.73	0.45	157.08	0.22	0.00	0.25
140	0	0.64	9.73	0.02	35.66	0.27	387.26	0.45	157.38	0.07	0.00	0.3

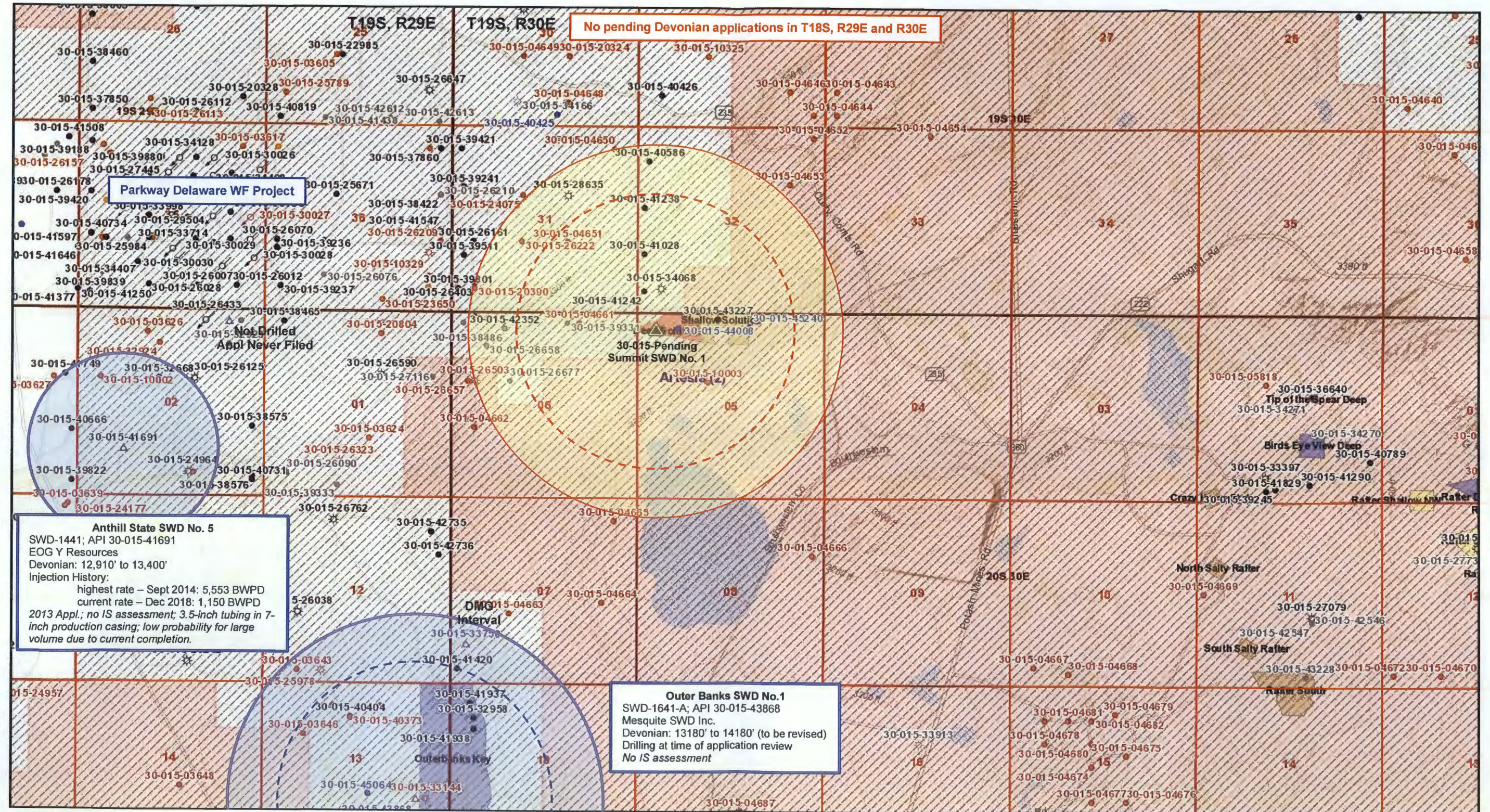
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO<sub>2</sub> pressure is actually the calculated CO<sub>2</sub> fugacity. It is usually nearly the same as the CO<sub>2</sub> partial pressure.



**Pending Application for High-Volume Devonian Disposal Well  
C-108 Applications for Summit SWD Well No. 1 – Summit Midstream Permian LLC**



**Summit SWD No. 1; Summit Midstream Permian LLC**  
API 30-015-Pending; Application No. pPRG1824351127; 500' FNL – 500' FWL; Sec. 5, T19S, R30E, NMPM

PREPERATION: PRG; 2/14/2019