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Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM0404441

6. If Indian, Allotee or Tribe Name
322487

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
BELLOQ 11-2 FED STATE COM
734H

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No.
30 015 46756

3a. Address
333 West Sheridan Avenue Oklahoma City OK 73102

3b. Phone No. *(include area code)*
(800)583-3866

10. Field and Pool, or Exploratory
SAND DUNES;BONE SPRING, SOUTH /

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface SESE / 500 FSL / 910 FEL / LAT 32.3130828 / LONG -103.7429714

At proposed prod. zone LOT 1 / 20 FNL / 330 FEL / LAT 32.3406702 / LONG -103.7411236

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 11 / T23S / R31E / NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
500 feet

16. No of acres in lease
1440

17. Spacing Unit dedicated to this well
640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
35 feet

19. Proposed Depth
12060 feet / 22340 feet

20. BLM/BIA Bond No. in file
FED: NMB000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3490 feet

22. Approximate date work will start*
12/01/2020

23. Estimated duration
45 days

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

| 25. Signature | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | Jenny Harms / Ph: (405)552-6560 | 10/30/2019 |

Title
Regulatory Compliance Professional

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | Cody Layton / Ph: (575)234-5959 | 02/12/2020 |

| Title | Office |
|---|---|
| Assistant Field Manager Lands & Minerals | CARLSBAD |

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

**Approval Date: 02/12/2020**

KS 2-21-20

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BUREAU OF LAND MANAGEMENT

# Operator Certification Data Report

02/14/2020

## Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are*

**NAME:** Jenny Harms **Signed on:** 10/24/2019

**Title:** Regulatory Compliance Professional

**Street Address:** 333 West Sheridan Avenue

**City:** Oklahoma City **State:** OK **Zip:** 73102

**Phone:** (405)552-6560

**Email address:** jennifer.harms@dvn.com

## Field Representative

**Representative Name:**

**Street Address:** 333 West Sheridan Avenue

**City:** Oklahoma City **State:** OK **Zip:** 73102

**Phone:** (405)552-6560

**Email address:** jennifer.harms@dvn.com

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BUREAU OF LAND MANAGEMENT

# Application Data Report

02/14/2020

**APD ID:** 10400050006 **Submission Date:** 10/30/2019

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

**Well Type:** OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

## Section 1 - General

**APD ID:** 10400050006 **Tie to previous NOS?** **Submission Date:** 10/30/2019

**BLM Office:** CARLSBAD **User:** Jenny Harms **Title:** Regulatory Compliance Professional

**Federal/Indian APD:** FED **Is the first lease penetrated for production Federal or Indian?** FED

**Lease number:** NMNM0404441 **Lease Acres:** 1440

**Surface access agreement in place?** **Allotted?** **Reservation:**

**Agreement in place?** NO **Federal or Indian agreement:**

**Agreement number:**

**Agreement name:**

**Keep application confidential?** YES

**Permitting Agent?** NO **APD Operator:** DEVON ENERGY PRODUCTION COMPANY LP

**Operator letter of designation:**

## Operator Info

**Operator Organization Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Operator Address:** 333 West Sheridan Avenue **Zip:** 73102

**Operator PO Box:**

**Operator City:** Oklahoma City **State:** OK

**Operator Phone:** (800)583-3866

**Operator Internet Address:**

## Section 2 - Well Information

**Well in Master Development Plan?** NO **Master Development Plan name:**

**Well in Master SUPO?** NO **Master SUPO name:**

**Well in Master Drilling Plan?** NO **Master Drilling Plan name:**

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H **Well API Number:**

**Field/Pool or Exploratory?** Field and Pool **Field Name:** SAND DUNES;BONE SPRING, SOUTH **Pool Name:** BONESPRING

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL,POTASH

**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** N **New surface disturbance?**

**Type of Well Pad:** MULTIPLE WELL **Multiple Well Pad Name:** BELLOQ 11 WELLPAD **Number:** 4

**Well Class:** HORIZONTAL **Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** INFILL

**Describe sub-type:**

**Distance to town:** **Distance to nearest well:** 35 FT **Distance to lease line:** 500 FT

**Reservoir well spacing assigned acres Measurement:** 640 Acres

**Well plat:** AA000145284_BELLOQ_11_2_FED_STATE_COM_734H_WL_P_R1_20191230062851.pdf

**Well work start Date:** 12/01/2020 **Duration:** 45 DAYS

## Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83 **Vertical Datum:** NAVD88

**Survey number:** 7503A **Reference Datum:** KELLY BUSHING

| Wellbore | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD | Will this well produce from this lease? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL Leg #1 | 500 | FSL | 910 | FEL | 23S | 31E | 11 | SESE | 32.3130828 | -103.7429714 | EDDY | NEW MEXI | NEW MEXI | F | NMNM 040444 | 3490 | 0 | 0 | Y |
| KOP Leg #1 | 50 | FSL | 330 | FEL | 23S | 31E | 11 | SESE | 32.3118501 | -103.741102 | EDDY | NEW MEXI | NEW MEXI | F | NMNM 040444 | -7997 | 11524 | 11487 | Y |
| PPP Leg #1-1 | 100 | FSL | 330 | FEL | 23S | 31E | 11 | SESE | 32.3119779 | -103.7410958 | EDDY | NEW MEXI | NEW MEXI | F | NMNM 040444 | -8231 | 11765 | 11721 | Y |

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

| Wellbore | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD | Will this well produce from this lease? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIT Leg #1 | 100 | FNL | 330 | FEL | 23S | 31E | 2 | 1 | 32.3404504 | -103.741123 | EDDY | NEW MEXI | NEW MEXI | S | STATE | -8570 | 22260 | 12060 | Y |
| BHL Leg #1 | 20 | FNL | 330 | FEL | 23S | 31E | 2 | 1 | 32.3406702 | -103.741236 | EDDY | NEW MEXI | NEW MEXI | S | STATE | -8570 | 22340 | 12060 | Y |

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# Drilling Plan Data Report

02/14/2020

**APD ID:** 10400050006 **Submission Date:** 10/30/2019

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

**Well Type:** OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|---|---|---|---|---|---|---|---|
| 570345 | UNKNOWN | 3454 | 0 | 0 | ALLUVIUM, OTHER : Surface | NONE | N |
| 570346 | RUSTLER | 2754 | 700 | 700 | SANDSTONE | NONE | N |
| 570350 | TOP SALT | 2379 | 1075 | 1075 | SALT | NONE | N |
| 570349 | LAMAR | -746 | 4200 | 4200 | SANDSTONE | NATURAL GAS, OIL | N |
| 570348 | BASE OF SALT | -746 | 4200 | 4200 | SALT | NONE | N |
| 570354 | BELL CANYON | -996 | 4450 | 4450 | SANDSTONE | NATURAL GAS, OIL | N |
| 570355 | CHERRY CANYON | -1896 | 5350 | 5350 | SANDSTONE | NATURAL GAS, OIL | N |
| 570356 | BRUSHY CANYON | -3146 | 6600 | 6600 | SANDSTONE | NATURAL GAS, OIL | N |
| 570357 | BONE SPRING LIME | -4821 | 8275 | 8275 | LIMESTONE | NATURAL GAS, OIL | N |
| 570347 | BONE SPRING | -5896 | 9350 | 9350 | SANDSTONE | NATURAL GAS, OIL | N |
| 570344 | BONE SPRING 2ND | -6446 | 9900 | 9900 | SANDSTONE | NATURAL GAS, OIL | N |
| 570358 | BONE SPRING LIME | -6996 | 10450 | 10450 | LIMESTONE | NATURAL GAS, OIL | N |
| 570352 | BONE SPRING 3RD | -7696 | 11150 | 11150 | SANDSTONE | NATURAL GAS | N |
| 570351 | WOLFCAMP | -8146 | 11600 | 11600 | SANDSTONE | NATURAL GAS, OIL | Y |
| 570353 | STRAWN | -9846 | 13300 | 13300 | LIMESTONE | NATURAL GAS, OIL | N |

## Section 2 - Blowout Prevention

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

**Pressure Rating (PSI):** 10M **Rating Depth:** 12060

**Equipment:** BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below surface casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

**Requesting Variance?** YES

**Variance request:** A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

**Testing Procedure:** A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

**Choke Diagram Attachment:**

10M_BOPE_CHK_DR_CLS_RKL_20191024070219.pdf

**BOP Diagram Attachment:**

10M_BOPE_CHK_DR_CLS_RKL_20191024070234.pdf

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**Pressure Rating (PSI):** 5M **Rating Depth:** 10450

**Equipment:** BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below surface casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

**Requesting Variance?** YES

**Variance request:** A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.

**Testing Procedure:** A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

**Choke Diagram Attachment:**

5M_BOPE__CK_20190627074356.pdf

**BOP Diagram Attachment:**

5M_BOPE__CK_20190627074405.pdf

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**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 725 | 0 | 725 | 3490 | 2765 | 725 | H-40 | 48 | OTHER - STC | 1.125 | 1 | BUOY | 1.6 | BUOY | 1.6 |
| 2 | INTERMEDIATE | 9.875 | 7.625 | NEW | API | N | 0 | 10450 | 0 | 10450 | -6965 | -6960 | 10450 | P-110 | 29.7 | OTHER - Flushmax III | 1.125 | 1 | BUOY | 1.6 | BUOY | 1.6 |
| 3 | PRODUCTION | 6.75 | 5.5 | NEW | API | N | 0 | 22340 | 0 | 12060 | -6965 | -8570 | 22340 | P-110 | 20 | OTHER - Vam SG | 1.125 | 1 | BUOY | 1.6 | BUOY | 1.6 |

**Casing Attachments**

**Casing ID:** 1 **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Surf_Csg_Ass_20190406163130.pdf

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

**Casing Attachments**

**Casing ID:** 2 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Int_Csg_Ass_20190406163257.pdf

**Casing ID:** 3 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Prod_Csg_Ass_20190406163405.pdf

## Section 4 - Cement

| String Type | Lead/Tail | Stage Tool | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Lead | | 0 | 725 | 563.2 | 1.44 | 13.2 | 811 | 50 | C | Class C + adds |
| INTERMEDIATE | Lead | | 0 | 6450 | 614 | 3.27 | 9 | 2007.7 | 30 | C | Class C + Adds |
| INTERMEDIATE | Tail | | 6450 | 10450 | 783 | 1.44 | 13.2 | 1127 | 30 | C | Class C + Adds |
| PRODUCTION | Lead | | 0 | 11524 | 356.4 | 3.27 | 9 | 1165.5 | 10 | TUNED | Class C + adds |

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

| String Type | Lead/Tail | Stage Tool | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRODUCTION | Tail | | 11524 | 22340 | 690.1 | 1.44 | 13.2 | 993.7 | 10 | H | Class C + adds |

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

**Describe the mud monitoring system utilized:** PVT/Pason/Visual Monitoring

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10450 | 12060 | OIL-BASED MUD | 10 | 10.5 | | | | 2 | | | |
| 725 | 10450 | OTHER : DBE / Cut Brine | 10 | 10.5 | | | | 2 | | | |
| 0 | 725 | OTHER : FW Gel | 8.5 | 9 | | | | | | | |

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** BELLOQ 11-2 FED STATE COM **Well Number:** 734H

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

Will run GRMWD from TD to from KOP. Cement bond logs will be run in vertical to determine top of cement. Stated logs run will be in the completion report and submitted to the BLM.

**List of open and cased hole logs run in the well:**

CALIPER,CEMENT BOND LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,MUD LOG/GEOLOGIC LITHOLOGY LOG,

**Coring operation description for the well:**

N/A

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6585 **Anticipated Surface Pressure:** 3931

**Anticipated Bottom Hole Temperature(F):** 169

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Belloq_11_2_Fed_State_Com_734H_H2S__20191230064851.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Devon_Belloq_11_2_Fed_State_Com_734H_Permit_Plan_2_20191230064930.pdf
Belloq_11_2_Fed_State_Com_734H_Permit_Plan_2_20191230064930.pdf
Devon_Belloq_11_2_Fed_State_Com__734H_Plot_Permit_Plan_2_20191230064930.pdf
Devon_Belloq_11_2_Fed_State_Com_734H_AC_Report_Permit_Plan_2_20191230064932.pdf

**Other proposed operations facets description:**

Multi-Bowl Verbiage 5M/10M
Multi-Bowl Wellhead 5M
Closed-Loop Design Plan
Gas Capture Plan
Spudder Rig

**Other proposed operations facets attachment:**

Spudder_Rig_Info_20190314132650.pdf
Clsd_Loop_20190314132649.pdf
5.5_20_P110_EC_VAMSG_20190510092825.pdf
7.625_29.70_P110_Flushmax_20190510092838.pdf

MB_Wellhd_5M_13.375_8.625_20190627093813.pdf
GasCapturePlan_BELLOQ_11_CTB_2_10_23_2019_20191024070726.pdf
MB_Wellhd_10M_13.375_7.625_5.5__Redacted_20191024070951.pdf
MB_Verb_10M_20191030133546.pdf

**Other Variance attachment:**

Co_flex_20190314132801.pdf

# WCDSC Permian NM

**Eddy County (NAD 83 NM Eastern)**
**Sec 11-T23S-R31E**
**Belloq 11-2 Fed State Com 734H**

**Wellbore #1**

**Plan: Permit Plan 2**

# Standard Planning Report - Geographic

**19 December, 2019**

| | | | |
|---|---|---|---|
| **Database:** | EDM r5000.141_Prod US | **Local Co-ordinate Reference:** | Well Belloq 11-2 Fed State Com 734H |
| **Company:** | WCDSC Permian NM | **TVD Reference:** | RKB @ 3514.90ft |
| **Project:** | Eddy County (NAD 83 NM Eastern) | **MD Reference:** | RKB @ 3514.90ft |
| **Site:** | Sec 11-T23S-R31E | **North Reference:** | Grid |
| **Well:** | Belloq 11-2 Fed State Com 734H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Permit Plan 2 | | |

| **Project** | Eddy County (NAD 83 NM Eastern) | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

| **Site** | Sec 11-T23S-R31E | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 488,170.26 usft | **Latitude:** | 32.340736 |
| **From:** | Map | **Easting:** | 719,281.88 usft | **Longitude:** | -103.757161 |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.31 ° |

| **Well** | Belloq 11-2 Fed State Com 734H | | | | |
|---|---|---|---|---|---|
| **Well Position** | **+N/-S** 0.00 ft | **Northing:** | 478,134.17 usft | **Latitude:** | 32.313083 |
| | **+E/-W** 0.00 ft | **Easting:** | 723,719.47 usft | **Longitude:** | -103.742972 |
| **Position Uncertainty** | 0.50 ft | **Wellhead Elevation:** | | **Ground Level:** | 3,489.90 ft |

| **Wellbore** | Wellbore #1 | | | |
|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2015 | 12/19/2019 | 6.77 | 60.08 | 47,714.63163231 |

| **Design** | Permit Plan 2 | | | |
|---|---|---|---|---|
| **Audit Notes:** | | | | |
| **Version:** | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.00 |

| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 2.94 |

**Plan Survey Tool Program** **Date** 12/19/2019

| | **Depth From (ft)** | **Depth To (ft)** | **Survey (Wellbore)** | **Tool Name** | **Remarks** |
|---|---|---|---|---|---|
| 1 | 0.00 | 22,340.35 | Permit Plan 2 (Wellbore #1) | MWD+HDGM<br>OWSG MWD + HDGM | |

**Plan Sections**

| **Measured Depth (ft)** | **Inclination (°)** | **Azimuth (°)** | **Vertical Depth (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Dogleg Rate (°/100usft)** | **Build Rate (°/100usft)** | **Turn Rate (°/100usft)** | **TFO (°)** | **Target** |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,500.00 | 0.00 | 0.00 | 3,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4,086.38 | 5.86 | 127.81 | 4,085.35 | -18.38 | 23.69 | 1.00 | 1.00 | 0.00 | 127.81 | |
| 10,782.83 | 5.86 | 127.81 | 10,746.76 | -437.75 | 564.21 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 11,173.74 | 0.00 | 0.00 | 11,137.00 | -450.00 | 580.00 | 1.50 | -1.50 | 0.00 | 180.00 | |
| 11,523.78 | 0.00 | 0.00 | 11,487.04 | -450.00 | 580.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 12,423.79 | 90.00 | 359.65 | 12,060.00 | 122.95 | 576.47 | 10.00 | 10.00 | 0.00 | 359.65 | PBHL - Belloq 11-2 Fe |
| 22,340.35 | 90.00 | 359.65 | 12,060.00 | 10,039.32 | 515.36 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL - Belloq 11-2 Fe |

| | | | |
|---|---|---|---|
| **Database:** | EDM r5000.141_Prod US | **Local Co-ordinate Reference:** | Well Belloq 11-2 Fed State Com 734H |
| **Company:** | WCDSC Permian NM | **TVD Reference:** | RKB @ 3514.90ft |
| **Project:** | Eddy County (NAD 83 NM Eastern) | **MD Reference:** | RKB @ 3514.90ft |
| **Site:** | Sec 11-T23S-R31E | **North Reference:** | Grid |
| **Well:** | Belloq 11-2 Fed State Com 734H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Permit Plan 2 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 800.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,000.00 | 0.00 | 0.00 | 1,000.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,400.00 | 0.00 | 0.00 | 1,400.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,500.00 | 0.00 | 0.00 | 1,500.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,600.00 | 0.00 | 0.00 | 1,600.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,700.00 | 0.00 | 0.00 | 1,700.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,800.00 | 0.00 | 0.00 | 1,800.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 1,900.00 | 0.00 | 0.00 | 1,900.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,000.00 | 0.00 | 0.00 | 2,000.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,100.00 | 0.00 | 0.00 | 2,100.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,200.00 | 0.00 | 0.00 | 2,200.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,300.00 | 0.00 | 0.00 | 2,300.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,400.00 | 0.00 | 0.00 | 2,400.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,500.00 | 0.00 | 0.00 | 2,500.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,600.00 | 0.00 | 0.00 | 2,600.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,700.00 | 0.00 | 0.00 | 2,700.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,800.00 | 0.00 | 0.00 | 2,800.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 2,900.00 | 0.00 | 0.00 | 2,900.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 3,000.00 | 0.00 | 0.00 | 3,000.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 3,100.00 | 0.00 | 0.00 | 3,100.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 3,200.00 | 0.00 | 0.00 | 3,200.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 3,300.00 | 0.00 | 0.00 | 3,300.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 3,400.00 | 0.00 | 0.00 | 3,400.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 3,500.00 | 0.00 | 0.00 | 3,500.00 | 0.00 | 0.00 | 478,134.17 | 723,719.47 | 32.313083 | -103.742972 |
| 3,600.00 | 1.00 | 127.81 | 3,600.00 | -0.53 | 0.69 | 478,133.64 | 723,720.16 | 32.313081 | -103.742969 |
| 3,700.00 | 2.00 | 127.81 | 3,699.96 | -2.14 | 2.76 | 478,132.03 | 723,722.22 | 32.313077 | -103.742963 |
| 3,800.00 | 3.00 | 127.81 | 3,799.86 | -4.81 | 6.20 | 478,129.36 | 723,725.67 | 32.313070 | -103.742952 |
| 3,900.00 | 4.00 | 127.81 | 3,899.68 | -8.56 | 11.03 | 478,125.62 | 723,730.49 | 32.313059 | -103.742936 |
| 4,000.00 | 5.00 | 127.81 | 3,999.37 | -13.37 | 17.23 | 478,120.81 | 723,736.69 | 32.313046 | -103.742916 |
| 4,086.38 | 5.86 | 127.81 | 4,085.35 | -18.38 | 23.69 | 478,115.79 | 723,743.15 | 32.313032 | -103.742895 |
| 4,100.00 | 5.86 | 127.81 | 4,098.91 | -19.23 | 24.79 | 478,114.94 | 723,744.25 | 32.313030 | -103.742892 |
| 4,200.00 | 5.86 | 127.81 | 4,198.38 | -25.49 | 32.86 | 478,108.68 | 723,752.32 | 32.313012 | -103.742866 |
| 4,300.00 | 5.86 | 127.81 | 4,297.86 | -31.76 | 40.93 | 478,102.42 | 723,760.40 | 32.312995 | -103.742840 |
| 4,400.00 | 5.86 | 127.81 | 4,397.34 | -38.02 | 49.00 | 478,096.15 | 723,768.47 | 32.312978 | -103.742814 |
| 4,500.00 | 5.86 | 127.81 | 4,496.81 | -44.28 | 57.07 | 478,089.89 | 723,776.54 | 32.312960 | -103.742788 |
| 4,600.00 | 5.86 | 127.81 | 4,596.29 | -50.54 | 65.14 | 478,083.63 | 723,784.61 | 32.312943 | -103.742762 |
| 4,700.00 | 5.86 | 127.81 | 4,695.77 | -56.81 | 73.22 | 478,077.36 | 723,792.68 | 32.312926 | -103.742736 |
| 4,800.00 | 5.86 | 127.81 | 4,795.24 | -63.07 | 81.29 | 478,071.10 | 723,800.75 | 32.312908 | -103.742710 |
| 4,900.00 | 5.86 | 127.81 | 4,894.72 | -69.33 | 89.36 | 478,064.84 | 723,808.83 | 32.312891 | -103.742684 |
| 5,000.00 | 5.86 | 127.81 | 4,994.20 | -75.59 | 97.43 | 478,058.58 | 723,816.90 | 32.312874 | -103.742658 |
| 5,100.00 | 5.86 | 127.81 | 5,093.67 | -81.86 | 105.50 | 478,052.31 | 723,824.97 | 32.312856 | -103.742632 |
| 5,200.00 | 5.86 | 127.81 | 5,193.15 | -88.12 | 113.58 | 478,046.05 | 723,833.04 | 32.312839 | -103.742606 |
| 5,300.00 | 5.86 | 127.81 | 5,292.63 | -94.38 | 121.65 | 478,039.79 | 723,841.11 | 32.312822 | -103.742580 |

| | | | |
|---|---|---|---|
| **Database:** | EDM r5000.141_Prod US | **Local Co-ordinate Reference:** | Well Belloq 11-2 Fed State Com 734H |
| **Company:** | WCDSC Permian NM | **TVD Reference:** | RKB @ 3514.90ft |
| **Project:** | Eddy County (NAD 83 NM Eastern) | **MD Reference:** | RKB @ 3514.90ft |
| **Site:** | Sec 11-T23S-R31E | **North Reference:** | Grid |
| **Well:** | Belloq 11-2 Fed State Com 734H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Permit Plan 2 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 5,400.00 | 5.86 | 127.81 | 5,392.10 | -100.64 | 129.72 | 478,033.53 | 723,849.18 | 32.312804 | -103.742554 |
| 5,500.00 | 5.86 | 127.81 | 5,491.58 | -106.91 | 137.79 | 478,027.26 | 723,857.26 | 32.312787 | -103.742528 |
| 5,600.00 | 5.86 | 127.81 | 5,591.06 | -113.17 | 145.86 | 478,021.00 | 723,865.33 | 32.312770 | -103.742502 |
| 5,700.00 | 5.86 | 127.81 | 5,690.53 | -119.43 | 153.93 | 478,014.74 | 723,873.40 | 32.312752 | -103.742476 |
| 5,800.00 | 5.86 | 127.81 | 5,790.01 | -125.69 | 162.01 | 478,008.48 | 723,881.47 | 32.312735 | -103.742449 |
| 5,900.00 | 5.86 | 127.81 | 5,889.49 | -131.96 | 170.08 | 478,002.21 | 723,889.54 | 32.312718 | -103.742423 |
| 6,000.00 | 5.86 | 127.81 | 5,988.96 | -138.22 | 178.15 | 477,995.95 | 723,897.62 | 32.312700 | -103.742397 |
| 6,100.00 | 5.86 | 127.81 | 6,088.44 | -144.48 | 186.22 | 477,989.69 | 723,905.69 | 32.312683 | -103.742371 |
| 6,200.00 | 5.86 | 127.81 | 6,187.92 | -150.74 | 194.29 | 477,983.43 | 723,913.76 | 32.312666 | -103.742345 |
| 6,300.00 | 5.86 | 127.81 | 6,287.39 | -157.01 | 202.37 | 477,977.16 | 723,921.83 | 32.312648 | -103.742319 |
| 6,400.00 | 5.86 | 127.81 | 6,386.87 | -163.27 | 210.44 | 477,970.90 | 723,929.90 | 32.312631 | -103.742293 |
| 6,500.00 | 5.86 | 127.81 | 6,486.35 | -169.53 | 218.51 | 477,964.64 | 723,937.97 | 32.312614 | -103.742267 |
| 6,600.00 | 5.86 | 127.81 | 6,585.82 | -175.80 | 226.58 | 477,958.38 | 723,946.05 | 32.312596 | -103.742241 |
| 6,700.00 | 5.86 | 127.81 | 6,685.30 | -182.06 | 234.65 | 477,952.11 | 723,954.12 | 32.312579 | -103.742215 |
| 6,800.00 | 5.86 | 127.81 | 6,784.78 | -188.32 | 242.72 | 477,945.85 | 723,962.19 | 32.312562 | -103.742189 |
| 6,900.00 | 5.86 | 127.81 | 6,884.26 | -194.58 | 250.80 | 477,939.59 | 723,970.26 | 32.312544 | -103.742163 |
| 7,000.00 | 5.86 | 127.81 | 6,983.73 | -200.85 | 258.87 | 477,933.33 | 723,978.33 | 32.312527 | -103.742137 |
| 7,100.00 | 5.86 | 127.81 | 7,083.21 | -207.11 | 266.94 | 477,927.06 | 723,986.41 | 32.312510 | -103.742111 |
| 7,200.00 | 5.86 | 127.81 | 7,182.69 | -213.37 | 275.01 | 477,920.80 | 723,994.48 | 32.312492 | -103.742085 |
| 7,300.00 | 5.86 | 127.81 | 7,282.16 | -219.63 | 283.08 | 477,914.54 | 724,002.55 | 32.312475 | -103.742059 |
| 7,400.00 | 5.86 | 127.81 | 7,381.64 | -225.90 | 291.15 | 477,908.28 | 724,010.62 | 32.312458 | -103.742033 |
| 7,500.00 | 5.86 | 127.81 | 7,481.12 | -232.16 | 299.23 | 477,902.01 | 724,018.69 | 32.312440 | -103.742007 |
| 7,600.00 | 5.86 | 127.81 | 7,580.59 | -238.42 | 307.30 | 477,895.75 | 724,026.76 | 32.312423 | -103.741981 |
| 7,700.00 | 5.86 | 127.81 | 7,680.07 | -244.68 | 315.37 | 477,889.49 | 724,034.84 | 32.312406 | -103.741955 |
| 7,800.00 | 5.86 | 127.81 | 7,779.55 | -250.95 | 323.44 | 477,883.22 | 724,042.91 | 32.312388 | -103.741929 |
| 7,900.00 | 5.86 | 127.81 | 7,879.02 | -257.21 | 331.51 | 477,876.96 | 724,050.98 | 32.312371 | -103.741903 |
| 8,000.00 | 5.86 | 127.81 | 7,978.50 | -263.47 | 339.59 | 477,870.70 | 724,059.05 | 32.312354 | -103.741877 |
| 8,100.00 | 5.86 | 127.81 | 8,077.98 | -269.73 | 347.66 | 477,864.44 | 724,067.12 | 32.312336 | -103.741851 |
| 8,200.00 | 5.86 | 127.81 | 8,177.45 | -276.00 | 355.73 | 477,858.17 | 724,075.19 | 32.312319 | -103.741825 |
| 8,300.00 | 5.86 | 127.81 | 8,276.93 | -282.26 | 363.80 | 477,851.91 | 724,083.27 | 32.312302 | -103.741799 |
| 8,400.00 | 5.86 | 127.81 | 8,376.41 | -288.52 | 371.87 | 477,845.65 | 724,091.34 | 32.312284 | -103.741773 |
| 8,500.00 | 5.86 | 127.81 | 8,475.88 | -294.78 | 379.94 | 477,839.39 | 724,099.41 | 32.312267 | -103.741747 |
| 8,600.00 | 5.86 | 127.81 | 8,575.36 | -301.05 | 388.02 | 477,833.12 | 724,107.48 | 32.312250 | -103.741721 |
| 8,700.00 | 5.86 | 127.81 | 8,674.84 | -307.31 | 396.09 | 477,826.86 | 724,115.55 | 32.312232 | -103.741695 |
| 8,800.00 | 5.86 | 127.81 | 8,774.31 | -313.57 | 404.16 | 477,820.60 | 724,123.63 | 32.312215 | -103.741669 |
| 8,900.00 | 5.86 | 127.81 | 8,873.79 | -319.83 | 412.23 | 477,814.34 | 724,131.70 | 32.312198 | -103.741643 |
| 9,000.00 | 5.86 | 127.81 | 8,973.27 | -326.10 | 420.30 | 477,808.07 | 724,139.77 | 32.312180 | -103.741617 |
| 9,100.00 | 5.86 | 127.81 | 9,072.74 | -332.36 | 428.38 | 477,801.81 | 724,147.84 | 32.312163 | -103.741591 |
| 9,200.00 | 5.86 | 127.81 | 9,172.22 | -338.62 | 436.45 | 477,795.55 | 724,155.91 | 32.312146 | -103.741565 |
| 9,300.00 | 5.86 | 127.81 | 9,271.70 | -344.89 | 444.52 | 477,789.29 | 724,163.98 | 32.312128 | -103.741539 |
| 9,400.00 | 5.86 | 127.81 | 9,371.17 | -351.15 | 452.59 | 477,783.02 | 724,172.06 | 32.312111 | -103.741513 |
| 9,500.00 | 5.86 | 127.81 | 9,470.65 | -357.41 | 460.66 | 477,776.76 | 724,180.13 | 32.312094 | -103.741487 |
| 9,600.00 | 5.86 | 127.81 | 9,570.13 | -363.67 | 468.73 | 477,770.50 | 724,188.20 | 32.312076 | -103.741461 |
| 9,700.00 | 5.86 | 127.81 | 9,669.60 | -369.94 | 476.81 | 477,764.24 | 724,196.27 | 32.312059 | -103.741435 |
| 9,800.00 | 5.86 | 127.81 | 9,769.08 | -376.20 | 484.88 | 477,757.97 | 724,204.34 | 32.312042 | -103.741409 |
| 9,900.00 | 5.86 | 127.81 | 9,868.56 | -382.46 | 492.95 | 477,751.71 | 724,212.41 | 32.312024 | -103.741383 |
| 10,000.00 | 5.86 | 127.81 | 9,968.03 | -388.72 | 501.02 | 477,745.45 | 724,220.49 | 32.312007 | -103.741357 |
| 10,100.00 | 5.86 | 127.81 | 10,067.51 | -394.99 | 509.09 | 477,739.19 | 724,228.56 | 32.311990 | -103.741331 |
| 10,200.00 | 5.86 | 127.81 | 10,166.99 | -401.25 | 517.16 | 477,732.92 | 724,236.63 | 32.311972 | -103.741305 |
| 10,300.00 | 5.86 | 127.81 | 10,266.47 | -407.51 | 525.24 | 477,726.66 | 724,244.70 | 32.311955 | -103.741279 |
| 10,400.00 | 5.86 | 127.81 | 10,365.94 | -413.77 | 533.31 | 477,720.40 | 724,252.77 | 32.311938 | -103.741253 |
| 10,500.00 | 5.86 | 127.81 | 10,465.42 | -420.04 | 541.38 | 477,714.14 | 724,260.85 | 32.311920 | -103.741227 |
| 10,600.00 | 5.86 | 127.81 | 10,564.90 | -426.30 | 549.45 | 477,707.87 | 724,268.92 | 32.311903 | -103.741201 |
| 10,700.00 | 5.86 | 127.81 | 10,664.37 | -432.56 | 557.52 | 477,701.61 | 724,276.99 | 32.311885 | -103.741175 |
| 10,782.83 | 5.86 | 127.81 | 10,746.76 | -437.75 | 564.21 | 477,696.42 | 724,283.67 | 32.311871 | -103.741153 |

| | | | |
|---|---|---|---|
| **Database:** | EDM r5000.141_Prod US | **Local Co-ordinate Reference:** | Well Belloq 11-2 Fed State Com 734H |
| **Company:** | WCDSC Permian NM | **TVD Reference:** | RKB @ 3514.90ft |
| **Project:** | Eddy County (NAD 83 NM Eastern) | **MD Reference:** | RKB @ 3514.90ft |
| **Site:** | Sec 11-T23S-R31E | **North Reference:** | Grid |
| **Well:** | Belloq 11-2 Fed State Com 734H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Permit Plan 2 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 10,800.00 | 5.61 | 127.81 | 10,763.85 | -438.80 | 565.57 | 477,695.37 | 724,285.03 | 32.311868 | -103.741149 |
| 10,900.00 | 4.11 | 127.81 | 10,863.49 | -443.99 | 572.25 | 477,690.18 | 724,291.72 | 32.311854 | -103.741127 |
| 11,000.00 | 2.61 | 127.81 | 10,963.32 | -447.58 | 576.88 | 477,686.59 | 724,296.34 | 32.311844 | -103.741112 |
| 11,100.00 | 1.11 | 127.81 | 11,063.26 | -449.56 | 579.44 | 477,684.61 | 724,298.90 | 32.311838 | -103.741104 |
| 11,173.74 | 0.00 | 0.00 | 11,137.00 | -450.00 | 580.00 | 477,684.17 | 724,299.47 | 32.311837 | -103.741102 |
| 11,200.00 | 0.00 | 0.00 | 11,163.26 | -450.00 | 580.00 | 477,684.17 | 724,299.47 | 32.311837 | -103.741102 |
| 11,300.00 | 0.00 | 0.00 | 11,263.26 | -450.00 | 580.00 | 477,684.17 | 724,299.47 | 32.311837 | -103.741102 |
| 11,400.00 | 0.00 | 0.00 | 11,363.26 | -450.00 | 580.00 | 477,684.17 | 724,299.47 | 32.311837 | -103.741102 |
| 11,500.00 | 0.00 | 0.00 | 11,463.26 | -450.00 | 580.00 | 477,684.17 | 724,299.47 | 32.311837 | -103.741102 |
| 11,523.78 | 0.00 | 0.00 | 11,487.04 | -450.00 | 580.00 | 477,684.17 | 724,299.47 | 32.311837 | -103.741102 |
| **KOP @ 11524' MD, 50' FSL, 330' FEL** | | | | | | | | | |
| 11,600.00 | 7.62 | 359.65 | 11,563.03 | -444.94 | 579.97 | 477,689.23 | 724,299.43 | 32.311851 | -103.741102 |
| 11,700.00 | 17.62 | 359.65 | 11,660.49 | -423.12 | 579.83 | 477,711.06 | 724,299.30 | 32.311911 | -103.741102 |
| 11,765.00 | 24.12 | 359.65 | 11,721.19 | -399.97 | 579.69 | 477,734.20 | 724,299.16 | 32.311975 | -103.741102 |
| **FTP @ 11765' MD, 100' FSL, 330' FEL** | | | | | | | | | |
| 11,800.00 | 27.62 | 359.65 | 11,752.68 | -384.70 | 579.60 | 477,749.47 | 724,299.06 | 32.312017 | -103.741102 |
| 11,900.00 | 37.62 | 359.65 | 11,836.80 | -330.86 | 579.27 | 477,803.31 | 724,298.73 | 32.312165 | -103.741103 |
| 12,000.00 | 47.62 | 359.65 | 11,910.29 | -263.23 | 578.85 | 477,870.94 | 724,298.31 | 32.312351 | -103.741103 |
| 12,100.00 | 57.62 | 359.65 | 11,970.92 | -183.87 | 578.36 | 477,950.30 | 724,297.83 | 32.312569 | -103.741103 |
| 12,200.00 | 67.62 | 359.65 | 12,016.85 | -95.19 | 577.81 | 478,038.98 | 724,297.28 | 32.312813 | -103.741103 |
| 12,300.00 | 77.62 | 359.65 | 12,046.68 | 0.13 | 577.23 | 478,134.30 | 724,296.69 | 32.313075 | -103.741103 |
| 12,400.00 | 87.62 | 359.65 | 12,059.51 | 99.17 | 576.62 | 478,233.34 | 724,296.08 | 32.313347 | -103.741103 |
| 12,423.79 | 90.00 | 359.65 | 12,060.00 | 122.95 | 576.47 | 478,257.12 | 724,295.93 | 32.313412 | -103.741104 |
| 12,500.00 | 90.00 | 359.65 | 12,060.00 | 199.16 | 576.00 | 478,333.33 | 724,295.46 | 32.313622 | -103.741104 |
| 12,600.00 | 90.00 | 359.65 | 12,060.00 | 299.16 | 575.38 | 478,433.33 | 724,294.85 | 32.313897 | -103.741104 |
| 12,700.00 | 90.00 | 359.65 | 12,060.00 | 399.16 | 574.77 | 478,533.33 | 724,294.23 | 32.314171 | -103.741104 |
| 12,800.00 | 90.00 | 359.65 | 12,060.00 | 499.16 | 574.15 | 478,633.33 | 724,293.62 | 32.314446 | -103.741104 |
| 12,900.00 | 90.00 | 359.65 | 12,060.00 | 599.15 | 573.53 | 478,733.32 | 724,293.00 | 32.314721 | -103.741105 |
| 13,000.00 | 90.00 | 359.65 | 12,060.00 | 699.15 | 572.92 | 478,833.32 | 724,292.38 | 32.314996 | -103.741105 |
| 13,100.00 | 90.00 | 359.65 | 12,060.00 | 799.15 | 572.30 | 478,933.32 | 724,291.77 | 32.315271 | -103.741105 |
| 13,200.00 | 90.00 | 359.65 | 12,060.00 | 899.15 | 571.69 | 479,033.32 | 724,291.15 | 32.315546 | -103.741105 |
| 13,300.00 | 90.00 | 359.65 | 12,060.00 | 999.15 | 571.07 | 479,133.31 | 724,290.53 | 32.315821 | -103.741105 |
| 13,400.00 | 90.00 | 359.65 | 12,060.00 | 1,099.14 | 570.45 | 479,233.31 | 724,289.92 | 32.316096 | -103.741106 |
| 13,500.00 | 90.00 | 359.65 | 12,060.00 | 1,199.14 | 569.84 | 479,333.31 | 724,289.30 | 32.316370 | -103.741106 |
| 13,600.00 | 90.00 | 359.65 | 12,060.00 | 1,299.14 | 569.22 | 479,433.31 | 724,288.69 | 32.316645 | -103.741106 |
| 13,700.00 | 90.00 | 359.65 | 12,060.00 | 1,399.14 | 568.60 | 479,533.31 | 724,288.07 | 32.316920 | -103.741106 |
| 13,800.00 | 90.00 | 359.65 | 12,060.00 | 1,499.14 | 567.99 | 479,633.30 | 724,287.45 | 32.317195 | -103.741106 |
| 13,900.00 | 90.00 | 359.65 | 12,060.00 | 1,599.13 | 567.37 | 479,733.30 | 724,286.84 | 32.317470 | -103.741107 |
| 14,000.00 | 90.00 | 359.65 | 12,060.00 | 1,699.13 | 566.76 | 479,833.30 | 724,286.22 | 32.317745 | -103.741107 |
| 14,100.00 | 90.00 | 359.65 | 12,060.00 | 1,799.13 | 566.14 | 479,933.30 | 724,285.61 | 32.318020 | -103.741107 |
| 14,200.00 | 90.00 | 359.65 | 12,060.00 | 1,899.13 | 565.52 | 480,033.30 | 724,284.99 | 32.318295 | -103.741107 |
| 14,300.00 | 90.00 | 359.65 | 12,060.00 | 1,999.13 | 564.91 | 480,133.29 | 724,284.37 | 32.318569 | -103.741107 |
| 14,400.00 | 90.00 | 359.65 | 12,060.00 | 2,099.13 | 564.29 | 480,233.29 | 724,283.76 | 32.318844 | -103.741108 |
| 14,500.00 | 90.00 | 359.65 | 12,060.00 | 2,199.12 | 563.68 | 480,333.29 | 724,283.14 | 32.319119 | -103.741108 |
| 14,600.00 | 90.00 | 359.65 | 12,060.00 | 2,299.12 | 563.06 | 480,433.29 | 724,282.52 | 32.319394 | -103.741108 |
| 14,700.00 | 90.00 | 359.65 | 12,060.00 | 2,399.12 | 562.44 | 480,533.29 | 724,281.91 | 32.319669 | -103.741108 |
| 14,800.00 | 90.00 | 359.65 | 12,060.00 | 2,499.12 | 561.83 | 480,633.28 | 724,281.29 | 32.319944 | -103.741108 |
| 14,900.00 | 90.00 | 359.65 | 12,060.00 | 2,599.12 | 561.21 | 480,733.28 | 724,280.68 | 32.320219 | -103.741109 |
| 15,000.00 | 90.00 | 359.65 | 12,060.00 | 2,699.11 | 560.59 | 480,833.28 | 724,280.06 | 32.320494 | -103.741109 |
| 15,100.00 | 90.00 | 359.65 | 12,060.00 | 2,799.11 | 559.98 | 480,933.28 | 724,279.44 | 32.320768 | -103.741109 |
| 15,200.00 | 90.00 | 359.65 | 12,060.00 | 2,899.11 | 559.36 | 481,033.27 | 724,278.83 | 32.321043 | -103.741109 |
| 15,300.00 | 90.00 | 359.65 | 12,060.00 | 2,999.11 | 558.75 | 481,133.27 | 724,278.21 | 32.321318 | -103.741109 |
| 15,400.00 | 90.00 | 359.65 | 12,060.00 | 3,099.11 | 558.13 | 481,233.27 | 724,277.59 | 32.321593 | -103.741110 |
| 15,500.00 | 90.00 | 359.65 | 12,060.00 | 3,199.10 | 557.51 | 481,333.27 | 724,276.98 | 32.321868 | -103.741110 |

| | | | |
|---|---|---|---|
| **Database:** | EDM r5000.141_Prod US | **Local Co-ordinate Reference:** | Well Belloq 11-2 Fed State Com 734H |
| **Company:** | WCDSC Permian NM | **TVD Reference:** | RKB @ 3514.90ft |
| **Project:** | Eddy County (NAD 83 NM Eastern) | **MD Reference:** | RKB @ 3514.90ft |
| **Site:** | Sec 11-T23S-R31E | **North Reference:** | Grid |
| **Well:** | Belloq 11-2 Fed State Com 734H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Permit Plan 2 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 15,600.00 | 90.00 | 359.65 | 12,060.00 | 3,299.10 | 556.90 | 481,433.27 | 724,276.36 | 32.322143 | -103.741110 |
| 15,700.00 | 90.00 | 359.65 | 12,060.00 | 3,399.10 | 556.28 | 481,533.26 | 724,275.75 | 32.322418 | -103.741110 |
| 15,800.00 | 90.00 | 359.65 | 12,060.00 | 3,499.10 | 555.66 | 481,633.26 | 724,275.13 | 32.322693 | -103.741110 |
| 15,900.00 | 90.00 | 359.65 | 12,060.00 | 3,599.10 | 555.05 | 481,733.26 | 724,274.51 | 32.322967 | -103.741111 |
| 16,000.00 | 90.00 | 359.65 | 12,060.00 | 3,699.09 | 554.43 | 481,833.26 | 724,273.90 | 32.323242 | -103.741111 |
| 16,100.00 | 90.00 | 359.65 | 12,060.00 | 3,799.09 | 553.82 | 481,933.26 | 724,273.28 | 32.323517 | -103.741111 |
| 16,200.00 | 90.00 | 359.65 | 12,060.00 | 3,899.09 | 553.20 | 482,033.25 | 724,272.66 | 32.323792 | -103.741111 |
| 16,300.00 | 90.00 | 359.65 | 12,060.00 | 3,999.09 | 552.58 | 482,133.25 | 724,272.05 | 32.324067 | -103.741112 |
| 16,400.00 | 90.00 | 359.65 | 12,060.00 | 4,099.09 | 551.97 | 482,233.25 | 724,271.43 | 32.324342 | -103.741112 |
| 16,500.00 | 90.00 | 359.65 | 12,060.00 | 4,199.09 | 551.35 | 482,333.25 | 724,270.82 | 32.324617 | -103.741112 |
| 16,600.00 | 90.00 | 359.65 | 12,060.00 | 4,299.08 | 550.73 | 482,433.25 | 724,270.20 | 32.324892 | -103.741112 |
| 16,700.00 | 90.00 | 359.65 | 12,060.00 | 4,399.08 | 550.12 | 482,533.24 | 724,269.58 | 32.325166 | -103.741112 |
| 16,800.00 | 90.00 | 359.65 | 12,060.00 | 4,499.08 | 549.50 | 482,633.24 | 724,268.97 | 32.325441 | -103.741113 |
| 16,900.00 | 90.00 | 359.65 | 12,060.00 | 4,599.08 | 548.89 | 482,733.24 | 724,268.35 | 32.325716 | -103.741113 |
| 17,000.00 | 90.00 | 359.65 | 12,060.00 | 4,699.08 | 548.27 | 482,833.24 | 724,267.73 | 32.325991 | -103.741113 |
| 17,079.00 | 90.00 | 359.65 | 12,060.00 | 4,778.07 | 547.78 | 482,912.24 | 724,267.25 | 32.326208 | -103.741113 |
| **Cross section @ 17079' MD, 0' FSL, 330' FEL** | | | | | | | | | |
| 17,100.00 | 90.00 | 359.65 | 12,060.00 | 4,799.07 | 547.65 | 482,933.24 | 724,267.12 | 32.326266 | -103.741113 |
| 17,200.00 | 90.00 | 359.65 | 12,060.00 | 4,899.07 | 547.04 | 483,033.23 | 724,266.50 | 32.326541 | -103.741113 |
| 17,300.00 | 90.00 | 359.65 | 12,060.00 | 4,999.07 | 546.42 | 483,133.23 | 724,265.89 | 32.326816 | -103.741114 |
| 17,400.00 | 90.00 | 359.65 | 12,060.00 | 5,099.07 | 545.80 | 483,233.23 | 724,265.27 | 32.327091 | -103.741114 |
| 17,500.00 | 90.00 | 359.65 | 12,060.00 | 5,199.07 | 545.19 | 483,333.23 | 724,264.65 | 32.327365 | -103.741114 |
| 17,600.00 | 90.00 | 359.65 | 12,060.00 | 5,299.06 | 544.57 | 483,433.22 | 724,264.04 | 32.327640 | -103.741114 |
| 17,700.00 | 90.00 | 359.65 | 12,060.00 | 5,399.06 | 543.96 | 483,533.22 | 724,263.42 | 32.327915 | -103.741114 |
| 17,800.00 | 90.00 | 359.65 | 12,060.00 | 5,499.06 | 543.34 | 483,633.22 | 724,262.80 | 32.328190 | -103.741115 |
| 17,900.00 | 90.00 | 359.65 | 12,060.00 | 5,599.06 | 542.72 | 483,733.22 | 724,262.19 | 32.328465 | -103.741115 |
| 18,000.00 | 90.00 | 359.65 | 12,060.00 | 5,699.06 | 542.11 | 483,833.22 | 724,261.57 | 32.328740 | -103.741115 |
| 18,100.00 | 90.00 | 359.65 | 12,060.00 | 5,799.06 | 541.49 | 483,933.21 | 724,260.96 | 32.329015 | -103.741115 |
| 18,200.00 | 90.00 | 359.65 | 12,060.00 | 5,899.05 | 540.87 | 484,033.21 | 724,260.34 | 32.329290 | -103.741115 |
| 18,300.00 | 90.00 | 359.65 | 12,060.00 | 5,999.05 | 540.26 | 484,133.21 | 724,259.72 | 32.329564 | -103.741116 |
| 18,400.00 | 90.00 | 359.65 | 12,060.00 | 6,099.05 | 539.64 | 484,233.21 | 724,259.11 | 32.329839 | -103.741116 |
| 18,500.00 | 90.00 | 359.65 | 12,060.00 | 6,199.05 | 539.03 | 484,333.21 | 724,258.49 | 32.330114 | -103.741116 |
| 18,600.00 | 90.00 | 359.65 | 12,060.00 | 6,299.05 | 538.41 | 484,433.20 | 724,257.88 | 32.330389 | -103.741116 |
| 18,700.00 | 90.00 | 359.65 | 12,060.00 | 6,399.04 | 537.79 | 484,533.20 | 724,257.26 | 32.330664 | -103.741116 |
| 18,800.00 | 90.00 | 359.65 | 12,060.00 | 6,499.04 | 537.18 | 484,633.20 | 724,256.64 | 32.330939 | -103.741117 |
| 18,900.00 | 90.00 | 359.65 | 12,060.00 | 6,599.04 | 536.56 | 484,733.20 | 724,256.03 | 32.331214 | -103.741117 |
| 19,000.00 | 90.00 | 359.65 | 12,060.00 | 6,699.04 | 535.95 | 484,833.20 | 724,255.41 | 32.331489 | -103.741117 |
| 19,100.00 | 90.00 | 359.65 | 12,060.00 | 6,799.04 | 535.33 | 484,933.19 | 724,254.79 | 32.331763 | -103.741117 |
| 19,200.00 | 90.00 | 359.65 | 12,060.00 | 6,899.03 | 534.71 | 485,033.19 | 724,254.18 | 32.332038 | -103.741117 |
| 19,300.00 | 90.00 | 359.65 | 12,060.00 | 6,999.03 | 534.10 | 485,133.19 | 724,253.56 | 32.332313 | -103.741118 |
| 19,400.00 | 90.00 | 359.65 | 12,060.00 | 7,099.03 | 533.48 | 485,233.19 | 724,252.95 | 32.332588 | -103.741118 |
| 19,500.00 | 90.00 | 359.65 | 12,060.00 | 7,199.03 | 532.86 | 485,333.18 | 724,252.33 | 32.332863 | -103.741118 |
| 19,600.00 | 90.00 | 359.65 | 12,060.00 | 7,299.03 | 532.25 | 485,433.18 | 724,251.71 | 32.333138 | -103.741118 |
| 19,700.00 | 90.00 | 359.65 | 12,060.00 | 7,399.02 | 531.63 | 485,533.18 | 724,251.10 | 32.333413 | -103.741118 |
| 19,800.00 | 90.00 | 359.65 | 12,060.00 | 7,499.02 | 531.02 | 485,633.18 | 724,250.48 | 32.333688 | -103.741119 |
| 19,900.00 | 90.00 | 359.65 | 12,060.00 | 7,599.02 | 530.40 | 485,733.18 | 724,249.86 | 32.333962 | -103.741119 |
| 20,000.00 | 90.00 | 359.65 | 12,060.00 | 7,699.02 | 529.78 | 485,833.17 | 724,249.25 | 32.334237 | -103.741119 |
| 20,100.00 | 90.00 | 359.65 | 12,060.00 | 7,799.02 | 529.17 | 485,933.17 | 724,248.63 | 32.334512 | -103.741119 |
| 20,200.00 | 90.00 | 359.65 | 12,060.00 | 7,899.02 | 528.55 | 486,033.17 | 724,248.02 | 32.334787 | -103.741120 |
| 20,300.00 | 90.00 | 359.65 | 12,060.00 | 7,999.01 | 527.93 | 486,133.17 | 724,247.40 | 32.335062 | -103.741120 |
| 20,400.00 | 90.00 | 359.65 | 12,060.00 | 8,099.01 | 527.32 | 486,233.17 | 724,246.78 | 32.335337 | -103.741120 |
| 20,500.00 | 90.00 | 359.65 | 12,060.00 | 8,199.01 | 526.70 | 486,333.16 | 724,246.17 | 32.335612 | -103.741120 |
| 20,600.00 | 90.00 | 359.65 | 12,060.00 | 8,299.01 | 526.09 | 486,433.16 | 724,245.55 | 32.335887 | -103.741120 |
| 20,700.00 | 90.00 | 359.65 | 12,060.00 | 8,399.01 | 525.47 | 486,533.16 | 724,244.93 | 32.336161 | -103.741121 |

| | | | |
|---|---|---|---|
| **Database:** | EDM r5000.141_Prod US | **Local Co-ordinate Reference:** | Well Belloq 11-2 Fed State Com 734H |
| **Company:** | WCDSC Permian NM | **TVD Reference:** | RKB @ 3514.90ft |
| **Project:** | Eddy County (NAD 83 NM Eastern) | **MD Reference:** | RKB @ 3514.90ft |
| **Site:** | Sec 11-T23S-R31E | **North Reference:** | Grid |
| **Well:** | Belloq 11-2 Fed State Com 734H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Permit Plan 2 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 20,800.00 | 90.00 | 359.65 | 12,060.00 | 8,499.00 | 524.85 | 486,633.16 | 724,244.32 | 32.336436 | -103.741121 |
| 20,900.00 | 90.00 | 359.65 | 12,060.00 | 8,599.00 | 524.24 | 486,733.16 | 724,243.70 | 32.336711 | -103.741121 |
| 21,000.00 | 90.00 | 359.65 | 12,060.00 | 8,699.00 | 523.62 | 486,833.15 | 724,243.09 | 32.336986 | -103.741121 |
| 21,100.00 | 90.00 | 359.65 | 12,060.00 | 8,799.00 | 523.00 | 486,933.15 | 724,242.47 | 32.337261 | -103.741121 |
| 21,200.00 | 90.00 | 359.65 | 12,060.00 | 8,899.00 | 522.39 | 487,033.15 | 724,241.85 | 32.337536 | -103.741122 |
| 21,300.00 | 90.00 | 359.65 | 12,060.00 | 8,998.99 | 521.77 | 487,133.15 | 724,241.24 | 32.337811 | -103.741122 |
| 21,400.00 | 90.00 | 359.65 | 12,060.00 | 9,098.99 | 521.16 | 487,233.15 | 724,240.62 | 32.338086 | -103.741122 |
| 21,500.00 | 90.00 | 359.65 | 12,060.00 | 9,198.99 | 520.54 | 487,333.14 | 724,240.00 | 32.338360 | -103.741122 |
| 21,600.00 | 90.00 | 359.65 | 12,060.00 | 9,298.99 | 519.92 | 487,433.14 | 724,239.39 | 32.338635 | -103.741122 |
| 21,700.00 | 90.00 | 359.65 | 12,060.00 | 9,398.99 | 519.31 | 487,533.14 | 724,238.77 | 32.338910 | -103.741123 |
| 21,800.00 | 90.00 | 359.65 | 12,060.00 | 9,498.98 | 518.69 | 487,633.14 | 724,238.16 | 32.339185 | -103.741123 |
| 21,900.00 | 90.00 | 359.65 | 12,060.00 | 9,598.98 | 518.07 | 487,733.13 | 724,237.54 | 32.339460 | -103.741123 |
| 22,000.00 | 90.00 | 359.65 | 12,060.00 | 9,698.98 | 517.46 | 487,833.13 | 724,236.92 | 32.339735 | -103.741123 |
| 22,100.00 | 90.00 | 359.65 | 12,060.00 | 9,798.98 | 516.84 | 487,933.13 | 724,236.31 | 32.340010 | -103.741123 |
| 22,200.00 | 90.00 | 359.65 | 12,060.00 | 9,898.98 | 516.23 | 488,033.13 | 724,235.69 | 32.340285 | -103.741124 |
| 22,260.00 | 90.00 | 359.65 | 12,060.00 | 9,958.98 | 515.86 | 488,093.13 | 724,235.32 | 32.340449 | -103.741124 |
| **LTP @ 22260' MD, 100' FNL, 330' FEL** | | | | | | | | | |
| 22,300.00 | 90.00 | 359.65 | 12,060.00 | 9,998.98 | 515.61 | 488,133.13 | 724,235.07 | 32.340559 | -103.741124 |
| 22,340.34 | 90.00 | 359.65 | 12,060.00 | 10,039.31 | 515.36 | 488,173.47 | 724,234.83 | 32.340670 | -103.741124 |
| **PBHL; 20' FNL, 330' FEL** | | | | | | | | | |
| 22,340.35 | 90.00 | 359.65 | 12,060.00 | 10,039.32 | 515.36 | 488,173.47 | 724,234.83 | 32.340670 | -103.741124 |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL - Belloq 11-2 Fed | 0.00 | 0.00 | 0.00 | 10,039.32 | 515.36 | 488,173.47 | 724,234.83 | 32.340670 | -103.741124 |
| - plan misses target center by 10052.54ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) | | | | | | | | | |
| - Point | | | | | | | | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 11,523.78 | 11,487.04 | -450.00 | 580.00 | KOP @ 11524' MD, 50' FSL, 330' FEL |
| 11,765.00 | 11,721.19 | -399.97 | 579.69 | FTP @ 11765' MD, 100' FSL, 330' FEL |
| 17,079.00 | 12,060.00 | 4,778.07 | 547.78 | Cross section @ 17079' MD, 0' FSL, 330' FEL |
| 22,260.00 | 12,060.00 | 9,958.98 | 515.86 | LTP @ 22260' MD, 100' FNL, 330' FEL |
| 22,340.34 | 12,060.00 | 10,039.31 | 515.36 | PBHL; 20' FNL, 330' FEL |

**1. Geologic Formations**

| | | | |
|---|---|---|---|
| TVD of target | 12060 | Pilot hole depth | N/A |
| MD at TD: | 22340 | Deepest expected fresh water | |

**Basin**

| Formation | Depth (TVD) from KB | Water/Mineral Bearing/Target Zone? | Hazards* |
|---|---|---|---|
| Rustler | 700 | | |
| Salt | 1075 | | |
| Base of Salt | 4200 | | |
| Lamar | 4200 | | |
| Bell Canyon | 4450 | | |
| Cherry Canyon | 5350 | | |
| Brushy Canyon | 6600 | | |
| Bone Spring 1st lime | 8275 | | |
| Bone Spring 1st sand | 9350 | | |
| Bone Spring 2nd sand | 9900 | | |
| 3rd Bone Spring lime | 10450 | | |
| 3rd Bone Spring sand | 11150 | | |
| Wolfcamp | 11600 | | |
| Strawn | 13300 | | |
| | | | |
| | | | |
| | | | |
| | | | |

*H2S, water flows, loss of circulation, abnormal pressures, etc.

**2. Casing Program (Primary Design)**

| Hole Size | Casing Interval | | Csg. Size | Wt (PPF) | Grade | Conn | Min SF Collapse | Min SF Burst | Min SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| | From | To | | | | | | | |
| 17 1/2 | 0 | 725 TVD | 13 3/8 | 48.0 | H40 | STC | 1.125 | 1.25 | 1.6 |
| 9 7/8 | 0 | 10450 TVD | 7 5/8 | 29.7 | P110 | Flushmax III | 1.125 | 1.25 | 1.6 |
| 6 3/4 | 0 | TD | 5 1/2 | 20.0 | P110 | Vam SG | 1.125 | 1.25 | 1.6 |
| | | | | BLM Minimum Safety Factor | | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.

• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.

• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

**Casing Program (Alternative Design)**

| Hole Size | Casing Interval | | Csg. Size | Wt (PPF) | Grade | Conn | Min SF Collapse | Min SF Burst | Min SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| | From | To | | | | | | | |
| 17 1/2 | 0 | 725 TVD | 13 3/8 | 48.0 | H40 | STC | 1.125 | 1.25 | 1.6 |
| 9 7/8 | 0 | 10450 TVD | 8 5/8 | 32.0 | P110 | TLW | 1.125 | 1.25 | 1.6 |
| 7 7/8 | 0 | TD | 5 1/2 | 17.0 | P110 | BTC | 1.125 | 1.25 | 1.6 |
| | | | | BLM Minimum Safety Factor | | | 1.125 | 1 | 1.6 Dry<br>1.8 Wet |

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.
• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.
• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
•Variance requested to drill 10.625" hole instead of 9.875" for intermediate 1, the 8.625" connection will change from TLW to BTC.
• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

| | Y or N |
|---|---|
| Is casing new? If used, attach certification as required in Onshore Order #1 | Y |
| Does casing meet API specifications? If no, attach casing specficition sheet. | Y |
| Is premium or uncommon casing planned? If yes attach casing specification sheet. | N |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y |
| Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing? | Y |
| | |
| Is well located within Capitan Reef? | N |
| If yes, does production casing cement tie back a minimum of 50' above the Reef? | |
| Is well within the designated 4 string boundary. | |
| | |
| Is well located in SOPA but not in R-111-P? | N |
| If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing? | |
| | |
| Is well located in R-111-P and SOPA? | N |
| If yes, are the first three strings cemented to surface? | |
| Is 2nd string set 100' to 600' below the base of salt? | |
| | |
| Is well located in high Cave/Karst? | N |
| If yes, are there two strings cemented to surface? | |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? | |
| | |
| Is well located in critical Cave/Karst? | N |
| If yes, are there three strings cemented to surface? | |

**3. Cementing Program (Primary Design)**

| Casing | # Sks | TOC | Wt. (lb/gal) | Yld (ft3/sack) | Slurry Description |
|---|---|---|---|---|---|
| Surface | 563 | Surf | 13.2 | 1.44 | Lead: Class C Cement + additives |
| Int 1 | 614 | Surf | 9 | 3.27 | Lead: Class C Cement + additives |
| | 783 | 4000' above shoe | 13.2 | 1.44 | Tail: Class H / C + additives |
| Int 1 Two Stage w/ DV @ TVD of Delaware | 817 | Surf | 9 | 3.27 | 1st stage Lead: Class C Cement + additives |
| | 93 | 500' above shoe | 13.2 | 1.44 | 1st stage Tail: Class H / C + additives |
| | 390 | Surf | 9 | 3.27 | 2nd stage Lead: Class C Cement + additives |
| | 93 | 500' above DV | 13.2 | 1.44 | 2nd stage Tail: Class H / C + additives |
| Int 1 Intermediate Squeeze | As Needed | Surf | 9 | 1.44 | Squeeze Lead: Class C Cement + additives |
| | 614 | Surf | 9 | 3.27 | Lead: Class C Cement + additives |
| | 783 | 4000' above shoe | 13.2 | 1.44 | Tail: Class H / C + additives |
| Production | 356 | 0 | 9.0 | 3.3 | Lead: Class H /C + additives |
| | 690 | 11524 | 13.2 | 1.4 | Tail: Class H / C + additives |

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

| Casing String | % Excess |
|---|---|
| Surface | 50% |
| Intermediate 1 | 30% |
| Intermediate 1 (Two Stage) | 25% |
| Prod | 10% |

**3. Cementing Program (Alternative Design)**

| Casing | # Sks | TOC | Wt. ppg | Yld (ft3/sack) | Slurry Description |
|---|---|---|---|---|---|
| Surface | 563 | Surf | 13.2 | 1.44 | Lead: Class C Cement + additives |
| Int 1 | 393 | Surf | 9 | 3.27 | Lead: Class C Cement + additives |
| | 465 | 4000' above shoe | 13.2 | 1.44 | Tail: Class H / C + additives |
| Int 1 Two Stage w DV @ ~4500 | 480 | Surf | 9 | 3.27 | 1st stage Lead: Class C Cement + additives |
| | 55 | 500' above shoe | 13.2 | 1.44 | 1st stage Tail: Class H / C + additives |
| | 261 | Surf | 9 | 3.27 | 2nd stage Lead: Class C Cement + additives |
| | 55 | 500' above DV | 13.2 | 1.44 | 2nd stage Tail: Class H / C + additives |
| Int 1 Intermediate Squeeze | As Needed | Surf | 13.2 | 1.44 | Squeeze Lead: Class C Cement + additives |
| | 393 | Surf | 9 | 3.27 | Lead: Class C Cement + additives |
| | 465 | 4000' above shoe | 13.2 | 1.44 | Tail: Class H / C + additives |
| Int 1 (10.625" Hole Size) | 583 | Surf | 9 | 3.27 | Lead: Class C Cement + additives |
| | 768 | 4000' above shoe | 13.2 | 1.44 | Tail: Class H / C + additives |
| Production | 672 | 0 | 9.0 | 3.3 | Lead: Class H /C + additives |
| | 1432 | 11524 | 13.2 | 1.4 | Tail: Class H / C + additives |

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

| Casing String | % Excess |
|---|---|
| Surface | 50% |
| Intermediate 1 | 30% |
| Intermediate 1 (Two Stage) | 25% |
| Prod | 10% |

**4. Pressure Control Equipment (Three String Design)**

| BOP installed and tested before drilling which hole? | Size? | Min. Required WP | Type | ✓ | Tested to: |
|---|---|---|---|---|---|
| Int 1 | 13-58" | 5M | Annular | X | 50% of rated working pressure |
| | | | Blind Ram | X | 5M |
| | | | Pipe Ram | | |
| | | | Double Ram | X | |
| | | | Other* | | |
| Production | 13-5/8" | 10M | Annular (5M) | X | 100% of rated working pressure |
| | | | Blind Ram | X | 10M |
| | | | Pipe Ram | | |
| | | | Double Ram | X | |
| | | | Other* | | |
| | | | Annular (5M) | | |
| | | | Blind Ram | | |
| | | | Pipe Ram | | |
| | | | Double Ram | | |
| | | | Other* | | |

| | |
|---|---|
| N | A variance is requested for the use of a diverter on the surface casing. See attached for schematic. |
| Y | A variance is requested to run a 5 M annular on a 10M system |

**5. Mud Program (Three String Design)**

| Section | Type | Weight (ppg) |
|---|---|---|
| Surface | FW Gel | 8.5-9 |
| Intermediate | DBE / Cut Brine | 10-10.5 |
| Production | OBM | 10-10.5 |

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

| | |
|---|---|
| What will be used to monitor the loss or gain of fluid? | PVT/Pason/Visual Monitoring |

**6. Logging and Testing Procedures**

| Logging, Coring and Testing | |
|---|---|
| X | Will run GR/CNL from TD to surface (horizontal well - vertical portion of hole). Stated logs run will be in the Completion Rpeort and sbumitted to the BLM. |
| | No logs are planned based on well control or offset log information. |
| | Drill stem test? If yes, explain. |
| | Coring? If yes, explain. |

| Additional logs planned | | Interval |
|---|---|---|
| | Resistivity | Int. shoe to KOP |
| | Density | Int. shoe to KOP |
| X | CBL | Production casing |
| X | Mud log | Intermediate shoe to TD |
| | PEX | |

**7. Drilling Conditions**

| Condition | Specfiy what type and where? |
|---|---|
| BH pressure at deepest TVD | 6585 |
| Abnormal temperature | No |

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

| Hydrogren Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM. | |
|---|---|
| N | H2S is present |
| Y | H2S plan attached. |

**8. Other facets of operation**

Is this a walking operation? Potentially

1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1 Spudder rig will move in and batch drill surface hole.
    a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.,
2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pa.
6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7 Drilling operations will be performed with drilling rig. A that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
_____ Other, describe

# Devon Energy

WELL DETAILS: Belloq 11-2 Fed State Com 734H

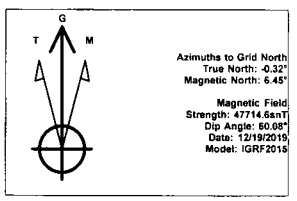
RKB @ 3514.90ft
3489.90

| Northing | Easting | Latitude | Longitude |
|---|---|---|---|
| 478134.17 | 723719.47 | 32.313083 | -103.742971 |

SECTION DETAILS Permit Plan 2

| | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | VSect | Annotation |
|---|---|---|---|---|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 3500.00 | 0.00 | 0.00 | 3500.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 4086.38 | 5.86 | 127.81 | 4085.35 | -18.38 | 23.69 | 1.00 | -17.14 | |
| | 10782.82 | 5.86 | 127.81 | 10746.76 | -437.75 | 564.21 | 0.00 | -408.25 | |
| 5 | 11173.74 | 0.00 | 0.00 | 11137.00 | -450.00 | 580.00 | 1.50 | -419.67 | |
| 6 | 11523.78 | 0.00 | 0.00 | 11487.04 | -450.00 | 580.00 | 0.00 | -419.67 | KOP @ 11524' MD, 50' FSL, 330' FEL |
| 7 | 12423.79 | 90.00 | 359.65 | 12060.00 | 122.95 | 576.47 | 10.00 | 152.34 | |
| 8 | 22340.35 | 90.00 | 359.65 | 12060.00 | 10039.32 | 515.36 | 0.00 | 10052.54 | PBHL; 20' FNL, 330' FEL |

devon



devon

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

# Hydrogen Sulfide ($H_2S$) Contingency Plan

## For

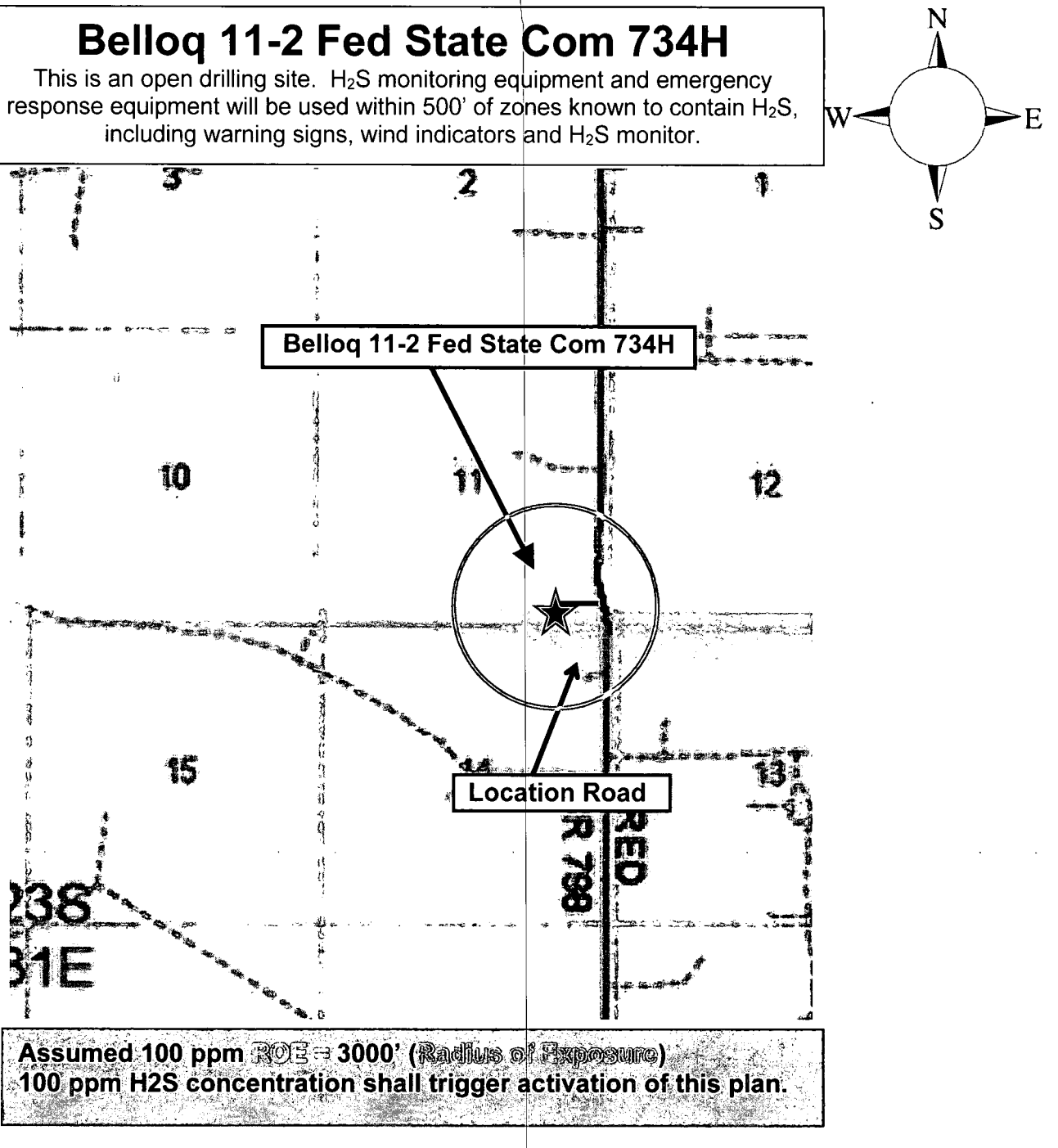
## Belloq 11-2 Fed State Com 734H

Sec-11 T-23S R-31E
500' FSL & 910' FEL
LAT. = 32.3130828' N (NAD83)
LONG = 103.7429714' W

Eddy County NM

# Belloq 11-2 Fed State Com 734H

This is an open drilling site. $H_2S$ monitoring equipment and emergency response equipment will be used within 500' of zones known to contain $H_2S$, including warning signs, wind indicators and $H_2S$ monitor.




**Assumed 100 ppm ROE = 3000' (Radius of Exposure)**
**100 ppm H2S concentration shall trigger activation of this plan.**

**Escape**

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

## Assumed 100 ppm ROE = 3000'
## 100 ppm $H_2S$ concentration shall trigger activation of this plan.

**Emergency Procedures**

**In the event of a release of gas containing $H_2S$, the first responder(s) must**

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with $H_2S$ monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of $H_2S$, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide ($SO_2$). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

**Characteristics of $H_2S$ and $SO_2$**

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulfide | $H_2S$ | 1.189 Air = 1 | 10 ppm | 100 ppm/hr | 600 ppm |
| Sulfur Dioxide | $SO_2$ | 2.21 Air = 1 | 2 ppm | N/A | 1000 ppm |

## Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with

the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

## Hydrogen Sulfide Drilling Operation Plan

## I. HYDROGEN SULFIDE ($H_2S$) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide ($H_2S$)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of $H_2S$ detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of $H_2S$ metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the $H_2S$ Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable $H_2S$ zone (within 3 days or 500 feet) and weekly $H_2S$ and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific $H_2S$ Drilling Operations Plan and the Public Protection Plan.

## II. HYDROGEN SULFIDE TRAINING

Note: All $H_2S$ safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain $H_2S$.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **$H_2S$ detection and monitoring equipment:**

   Portable $H_2S$ monitors positioned on location for best coverage and response. These units have warning lights which activate when $H_2S$ levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of $H_2S$ circulated to surface. Proper mud weight, safe drilling practices and the use of $H_2S$ scavengers will minimize hazards when penetrating $H_2S$ bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be $H_2S$ trim.

   B. All elastomers used for packing and seals shall be $H_2S$ trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an $H_2S$ environment will use the closed chamber method of testing.

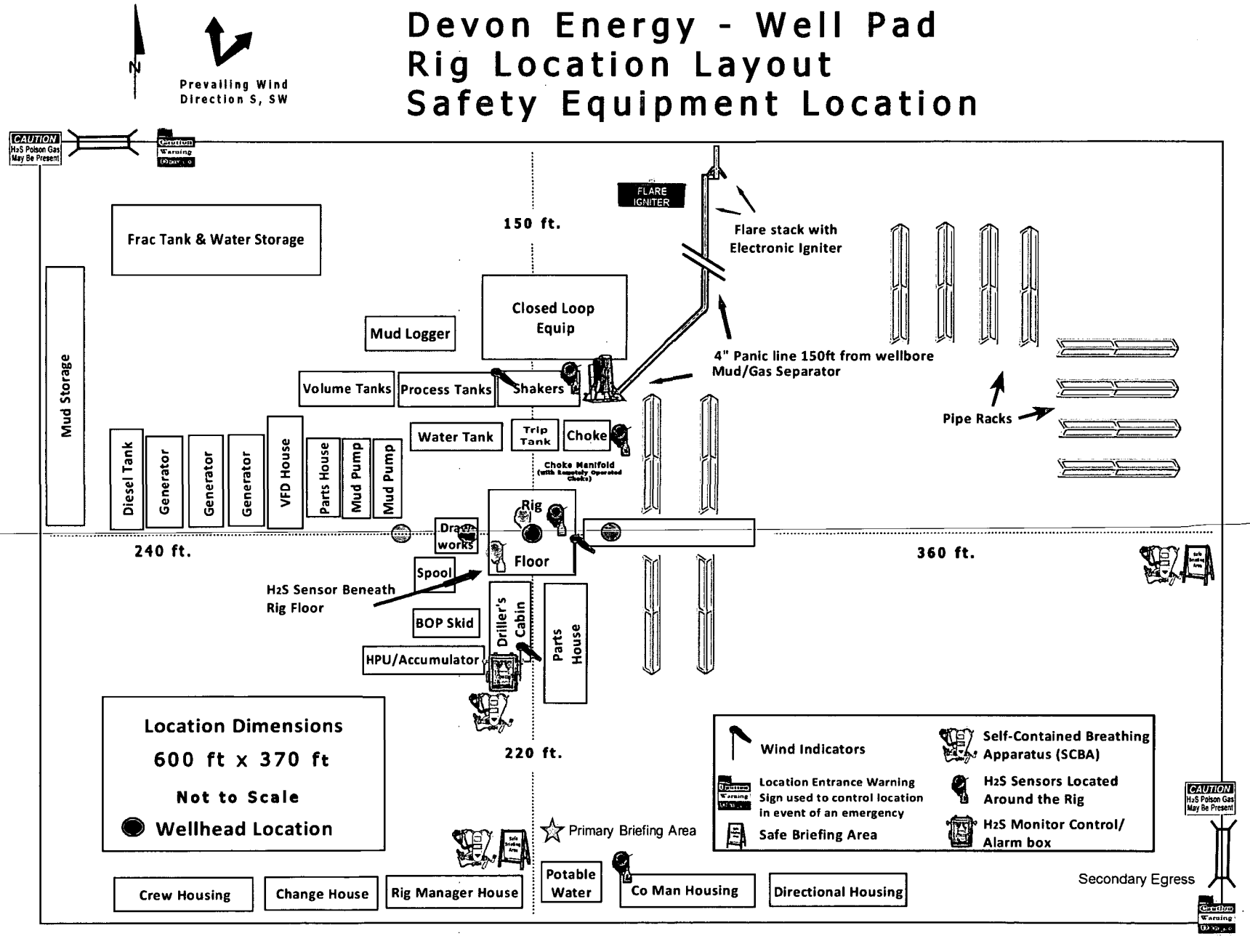
   B. There will be no drill stem testing.

| Devon Energy Corp. Company Call List | | | |
|---|---|---|---|
| Drilling Supervisor – Basin – Mark Kramer | | | 405-823-4796 |
| | | | |
| EHS Professional – Laura Wright | | | 405-439-8129 |
| | | | |
| **Agency Call List** | | | |
| | | | |
| **Lea County (575)** | **Hobbs** | | |
| | Lea County Communication Authority | | 393-3981 |
| | State Police | | 392-5588 |
| | City Police | | 397-9265 |
| | Sheriff's Office | | 393-2515 |
| | **Ambulance** | | **911** |
| | Fire Department | | 397-9308 |
| | LEPC (Local Emergency Planning Committee) | | 393-2870 |
| | NMOCD | | 393-6161 |
| | US Bureau of Land Management | | 393-3612 |
| | | | |
| **Eddy County (575)** | **Carlsbad** | | |
| | State Police | | 885-3137 |
| | City Police | | 885-2111 |
| | Sheriff's Office | | 887-7551 |
| | **Ambulance** | | **911** |
| | Fire Department | | 885-3125 |
| | LEPC (Local Emergency Planning Committee) | | 887-3798 |
| | US Bureau of Land Management | | 887-6544 |
| | NM Emergency Response Commission (Santa Fe) | | (505) 476-9600 |
| | 24 HR | | (505) 827-9126 |
| | National Emergency Response Center | | (800) 424-8802 |
| | National Pollution Control Center: Direct | | (703) 872-6000 |
| | For Oil Spills | | (800) 280-7118 |
| | **Emergency Services** | | |
| | Wild Well Control | | (281) 784-4700 |
| | Cudd Pressure Control | (915) 699-0139 | (915) 563-3356 |
| | Halliburton | | (575) 746-2757 |
| | B. J. Services | | (575) 746-3569 |
| ***Give GPS position:*** | Native Air – Emergency Helicopter – Hobbs (NM and TX) | | (800)642-7828 |
| | Flight For Life - Lubbock, TX | | (806) 743-9911 |
| | Aerocare - Lubbock, TX | | (806) 747-8923 |
| | Med Flight Air Amb - Albuquerque, NM | | (575) 842-4433 |
| | Lifeguard Air Med Svc. Albuquerque, NM | | (800) 222-1222 |
| | Poison Control (24/7) | | (575) 272-3115 |
| | Oil & Gas Pipeline 24 Hour Service | | (800) 364-4366 |
| | NOAA – Website - www.nhc.noaa.gov | | |
| | | | |

Prepared in conjunction with
Dave Small

SHARP
communications and consulting

# Devon Energy - Well Pad
# Rig Location Layout
# Safety Equipment Location



# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | **Devon Energy Production Company LP** |
| **LEASE NO.:** | **NMNM0404441** |
| **WELL NAME & NO.:** | Belloq 11-2 Fed State Com #734H |
| **SURFACE HOLE FOOTAGE:** | 500'/S & 910'/E |
| **BOTTOM HOLE FOOTAGE** | 20'/N & 330'/E |
| **LOCATION:** | Section 11, T.23 S., R.31 E., NMPM |
| **COUNTY:** | Eddy County, New Mexico |

COA

| | | | |
|---|---|---|---|
| H2S | ○ Yes | ◉ No | |
| Potash | ○ None | ○ Secretary | ◉ R-111-P |
| Cave/Karst Potential | ◉ Low | ○ Medium | ○ High |
| Cave/Karst Potential | ○ Critical | | |
| Variance | ○ None | ◉ Flex Hose | ○ Other |
| Wellhead | ○ Conventional | ◉ Multibowl | ○ Both |
| Other | ☐ 4 String Area | ☐ Capitan Reef | ☐ WIPP |
| Other | ☑ Fluid Filled | ☑ Cement Squeeze | ☐ Pilot Hole |
| Special Requirements | ☐ Water Disposal | ☑ COM | ☐ Unit |

## A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

## B. CASING

**Primary Casing Design:**

1. The **13-3/8** inch surface casing shall be set at approximately **820** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after

completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing shall be set at approximately **4470** feet is:

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

**Option 2:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

❖ In R111 Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

**Operator has proposed to pump down 13-3/8" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

**(Single Stage):**

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

**Calculated 12.24%. There is less than a 25% excess of cement. More cement may be required.**

**Alternate Casing Design:**

4. The **13-3/8** inch surface casing shall be set at approximately **820** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

   e. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

   f. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

   g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

   h. If cement falls back, remedial cementing will be done prior to drilling out that string.

   **Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

5. The minimum required fill of cement behind the **8-5/8** inch intermediate casing shall be set at approximately **4470** feet is:

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

**Option 2:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

d. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

❖ In R111 Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

**Operator has proposed to pump down 13-3/8" X 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.**

**Operator is approved to drill a 10.625 inch hole instead of a 9.875 inch hole for the intermediate with a BTC connection.**

6. The minimum required fill of cement behind the **5-1/2** inch production casing is:

**(Single Stage):**

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

**Calculated 8.59%. There is less than a 25% excess of cement. More cement may be required.**

## C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

c. Manufacturer representative shall install the test plug for the initial BOP test.

d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

## D. SPECIAL REQUIREMENT (S)

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

# GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.

- BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

c. Manufacturer representative shall install the test plug for the initial BOP test.
d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

# PECOS DISTRICT
# SURFACE USE
# CONDITIONS OF APPROVAL

**Belloq 11 West**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Belloq 11** | **FED STATE** | | **732H** | **Well Pad 1** | | | | |
| Surface | 150 | FSL, | 1990 | FWL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 2310 | FWL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED** | | **332H** | **Well Pad 1** | | | | |
| Surface | 150 | FSL, | 1960 | FWL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 2210 | FWL, | Section 11 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED** | | **712H** | **Well Pad 1** | | | | |
| Surface | 150 | FSL, | 1930 | FWL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 1650 | FWL, | Section 11 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED STATE** | | **611H** | **Well Pad 2** | | | | |
| Surface | 150 | FSL, | 560 | FWL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 890 | FWL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED STATE** | | **711H** | **Well Pad 2** | | | | |
| Surface | 150 | FSL, | 530 | FWL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 330 | FWL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED STATE** | | **731H** | **Well Pad 2** | | | | |
| Surface | 150 | FSL, | 590 | FWL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 990 | FWL, | Section 2 | T23S | R31E | Eddy County |

**Belloq 11 East**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Belloq 11** | **FED-State** | | **613H** | **Well Pad 3** | | | | |
| Surface | 350 | FSL, | 2210 | FEL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 1750 | FEL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED-State** | | **713H** | **Well Pad 3** | | | | |
| Surface | 350 | FSL, | 2240 | FEL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 2310 | FEL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED-State** | | **733H** | **Well Pad 3** | | | | |
| Surface | 350 | FSL, | 2180 | FEL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 1650 | FEL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED-State** | | **334H** | **Well Pad 4** | | | | |
| Surface | 350 | FSL, | 780 | FEL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 430 | FEL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED-State** | | **714H** | **Well Pad 4** | | | | |
| Surface | 350 | FSL, | 810 | FEL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 990 | FEL, | Section 2 | T23S | R31E | Eddy County |
| **Belloq 11** | **FED-State** | | **734H** | **Well Pad 4** | | | | |



**Approval Date: 02/12/2020**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Surface | 350 | FSL, | 750 | FEL, | Section 11 | T23S | R31E | Eddy County |
| Bottom Hole | 20 | FNL, | 330 | FEL, | Section 2 | T23S | R31E | Eddy County |

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

## I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

# V. SPECIAL REQUIREMENT(S)

**Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken**: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Ground-level Abandoned Well Marker to avoid raptor perching**: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

***Livestock Watering Requirement***

Devon must contact the allotment holder prior to construction to identify the location of the pipeline. Devon must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, Devon is responsible for repairing the pipeline immediately. Devon must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, Devon shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. Devon is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

Wildlife Corridors

Two 330 x 1,400-foot protected wildlife corridors would be designated within the Uber North Drill Island 11-14. One corridor would be located along the west section edge (0' FWL extending 330' east) and the second corridor would be located 1645' FEL extending 330' west. This area would encompass the draw (riparian habitat) and dunes within the drill island area. No oil and gas development or construction activities would be allowed within this corridor.

Escape Ramps

Devon would need to construct and maintain escape ramps according to the following criteria:

- Earthen escape ramps would be required to be constructed to sufficiently support livestock at no more than a 30-degree slope and spaced no more than 500 feet apart.
- If trench is left open under an 8-hour time period, it would not be required to have an escape ramp; however, before the trench is backfilled, Lucid would inspect the trench for wildlife and remove any species that are trapped at a distance of at least 100 yards away from the trench.

During the onsite examination, Devon worked with the BLM to locate the proposed pads off of dune features and out of riparian habitat identified within the drill island area. Devon would be required to keep all oil and gas development and construction activities out of these areas.

Wildlife Corridors

Two 330 x 1,400-foot protected wildlife corridors would be designated within the Uber North Drill Island 11-14. One corridor would be located along the west section edge (0' FWL extending 330' east) and the second corridor would be located 1645' FEL extending 330' west. This area would encompass the draw (riparian habitat) and dunes within the drill island area. No oil and gas development or construction activities would be allowed within this corridor.

Raptor Nest Mitigation

- A BLM Wildlife Biologist must be contacted by the operator prior to construction activities to determine if the raptor nest is active.
- Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.
- Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db. measured at 30 ft. from the source of the noise.

Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

***Permitted Exceptions for Drilling in the Designated Potash Area***

1. Drilling within the Designated Potash Area. It is the intent of the Department of the Interior to administer oil and gas operations throughout the Designated Potash Area in a manner which promotes safe, orderly co-development of oil, gas, and potash resources. It is the policy of the Department of the Interior to deny approval of most applications for permits to drill oil and gas wells from surface locations within the Designated Potash Area. Three exceptions to this policy will be permitted if the drilling will occur under the following conditions from:

    a. A Drilling Island associated with a Development Area established under this Order or a Drilling Island established under a prior Order;

b. A Barren Area and the Authorized Officer determines that such operations will not adversely affect active or planned potash mining operations in the immediate vicinity of the proposed drill-site; or

c. A Drilling Island, not covered by (a) above or single well site established under this Order by the approval and in the sole discretion of the Authorized Officer, provided that such site was jointly recommended to the Authorized Officer by the oil and gas lessee(s) and the nearest potash lessee(s).

***Development Areas***

2. When processing an application for permit to drill (APD) an oil or gas well in the Designated Potash Area that complies with regulatory requirements, the Authorized Officer will determine whether to establish a Development Area in connection with the application, and if so, will determine the boundaries of the Development Area and the location within the Development Area of one or more Drilling Islands from which drilling will be permitted. The BLM may also designate a Development Area outside of the APD process based on information in its possession, and may modify the boundaries of a Development Area. Existing wells may be included within the boundaries of a Development Area. A Development Area may include Federal oil and gas leases and other Federal and non-Federal lands.

    a. After designating or modifying a Development Area, the BLM will issue a Notice to Lessees, consistent with its authorities under 43 CFR Subpart 3105 and part 3180, information lessees that future drilling on lands under an oil and gas lease within that Development Area will:

        i. occur, under most circumstances, from a Barren Area or A Drilling Island within the Development Area; and

        ii. be managed under a unit or communitization agreement, generally by a single operator, consistent with BLM regulations and this Order. Unit and communitization agreements will be negotiated among lessees. The BLM will consider whether a specific plan of development is necessary or advisable for a particular Drilling Island.

    b. The Authorized Officer reserves the right to approve an operator or successor operator of a Development Area and/or a Drilling Island, if applicable, to ensure that the operator has the resources to operate and extract the oil and gas resources consistent with the requirements of this Order and all applicable laws and regulations, and has provided financial assurance in the amount required by the Authorized Officer.

    c. The Authorized Officer will determine the appropriate designation of a Development Area in terms of location, shape and size. In most cases, a single Drilling Island will be established for each Development Area. In establishing the location, shape and size of a Development Area and an associated Drilling Island, the Authorized Officer will consider:

        i. the appropriate location, shape, and size of a Development Area and associated Drillings Island to allow effective extraction of oil and gas resources while managing the impact on potash resources;

        ii. the application of available oil and gas drilling and production technology in the Permian Basin;

iii. the applicable geology of the Designated Potash Area and optimal locations to minimize loss of potash ore while considering co-development of both resources;

iv. any long term exploration and/or mining plans provided by the potash industry;

v. whether a Barren Area may be the most appropriate area for a Drilling Island;

vi. the requirements of this Order; and

vii. any other relevant factors

d. As the Authorized Officer establishes a Development Area, the Authorized Officer will more strictly apply the factors listed in Section 6.e.(2)(d), especially the appropriate application of the available oil and gas drilling and production technology in the Permian Basin, when closer to current traditional (non-solution) potash mining operations. Greater flexibility in the application of the factors listed in Section 6.e(2)(d) will be applied further from current and near-term traditional (non-solution) potash mining operations. No Drilling Islands will be established within one mile of any area where approved potash mining operations will be conducted within 3 years consistent with the 3-year mine plan referenced above (Section 6.d.(8)) without the consent of the affected potash lessee(s).

e. The Authorized Officer may establish a Development Area associated with a well or wells drilled from a Barren Area as appropriate and necessary.

f. As part of the consideration for establishing Development Areas and Drilling Islands, the BLM will consider input from the potash lessees and the oil and gas lessees or mineral right owner who would be potentially subject to a unitization agreement supporting the Development Are, provided that the input is given timely.

***Buffer Zones***

3. Buffer Zones of ¼ mile for oil wells and ½ mile for gas wells are hereby established. These Buffer Zones will stay in effect until such time as revised distances are adopted by the BLM Director or other BLM official, as delegated. However, the Authorized Officer may adjust the Buffer Zones in an individual case, when the facts and circumstances demonstrate that such adjustment would enhance conservation and would not compromise safety. The Director will base revised Buffer Zones on science, engineering, and new technology and will consider comments and reports from the Joint Industry Technical Committee and other interested parties in adopting any revisions.

***Unitization and Communitization***

4. To more properly conserve the potash, oil and gas resources in the Designated Potash Area and to adequately protect the rights of all parties in interest, including the United States, it is the policy of the Department of the Interior that all Federal oil and gas leases within a Development Area should be unitized or subject to an approved communitization agreement unless there is a compelling reason for another operating system. The Authorized Officer will make full use of his/her authorities wherever necessary or advisable to require unitization and/or communitization pursuant to the regulations in 43 CFR Subparts 3105 and 3180. The Authorized Officer will use his/her discretion to the fullest extent possible to assure that any communitization agreement and any unit plan of operations hereafter approved or prescribed within the Designated Potash Area will

adhere to the provisions of this Order. The Authorized Officer will work with Federal lessees, and with the State Of New Mexico as provided below, to include non-Federal mineral rights owners in unit or communitization agreements to the extent possible.

5. Coordination with the State of New Mexico.

    a. If the effective operation of any Development Area requires that the New Mexico Oil Conservation Division (NMOCD) revise the State's mandatory well spacing requirements, the BLM will participate as needed in such a process. The BLM may adopt the NMOCD spacing requirements and require lessees to enter into communitization agreements based on those requirements.

    b. The BLM will cooperate with the NMOCD in the implementation of that agency's rules and regulations.

    c. In taking any action under Section 6.e. of this Order, the Authorized Officer will take into consideration the applicable rules and regulations of the NMOCD.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Uber North Drill Island (See Potash Memo and Map in attached file for Drill Island description).

# VI. CONSTRUCTION

## A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

## B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

## C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

## D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

## E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

## F. EXCLOSURE FENCING (CELLARS & PITS)

**Exclosure Fencing**
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

## G. ON LEASE ACCESS ROADS

**Road Width**
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**
Ditching shall be required on both sides of the road.

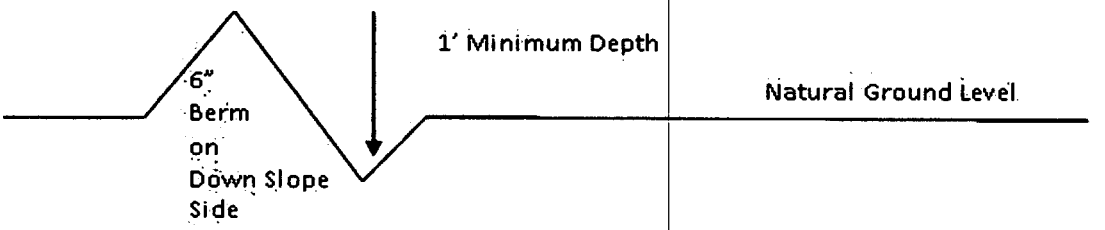
**Turnouts**
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**




All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

**Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

**Cattle guards**

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

**Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

**Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

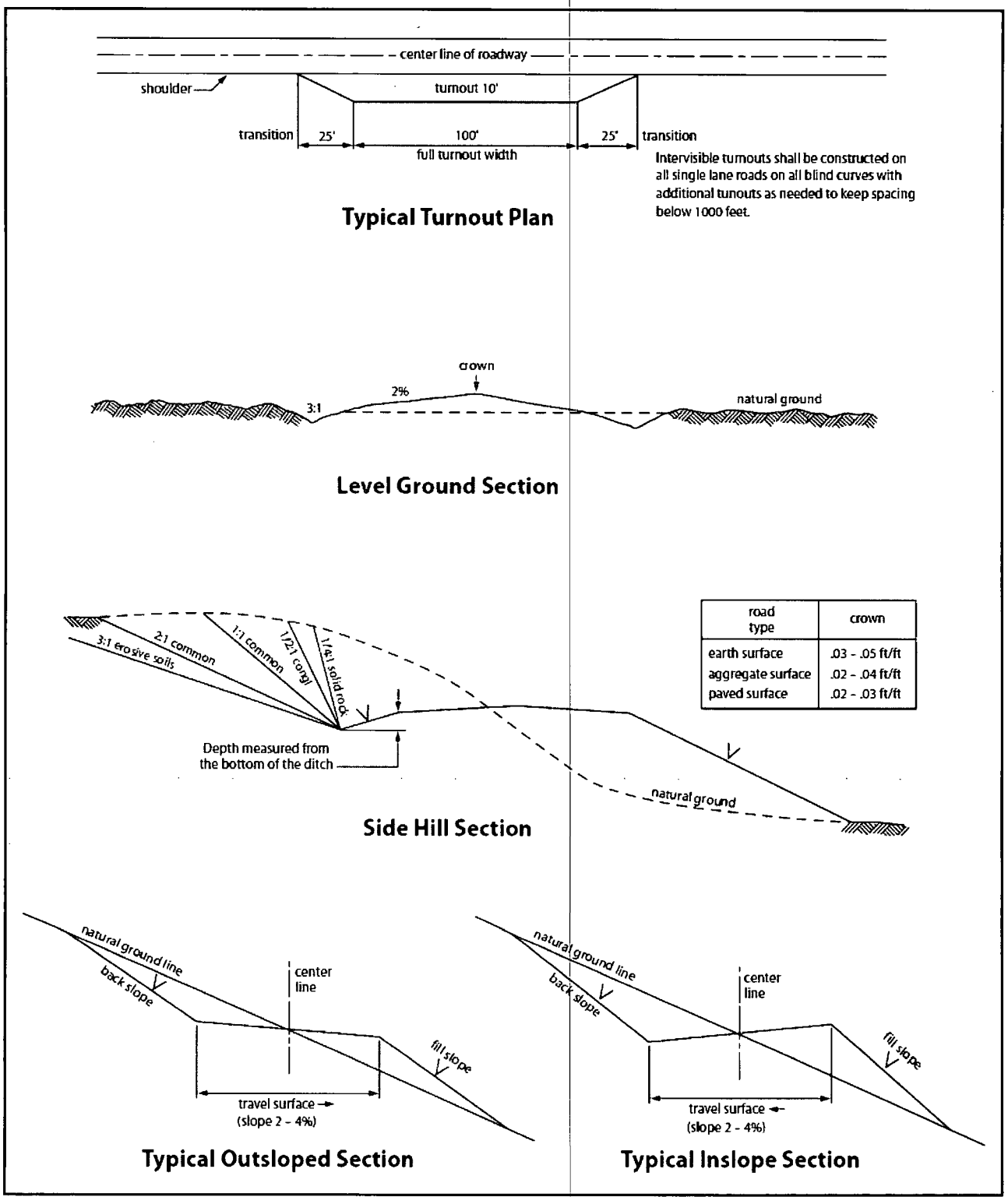



Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

# VII. PRODUCTION (POST DRILLING)

## A. WELL STRUCTURES & FACILITIES

**Placement of Production Facilities**
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

**Exclosure Netting (Open-top Tanks)**
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

**Chemical and Fuel Secondary Containment and Exclosure Screening**
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

**Open-Vent Exhaust Stack Exclosures**
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

**Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

**Painting Requirement**
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES

A copy of the application (Grant/Sundry Notice) and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statues.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to

the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil of other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, Munsell Soil Color Chart Number 5Y 4/2.

8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

10. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site and access roads must undergo "final" reclamation so that the character and productivity of the land are restored. Earthwork for final reclamation must be completed within six (6) months of the abandonment of the site. All pads and facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1 ( ) seed mixture 3

( ) seed mixture 2 ( ) seed mixture 4

(X) seed mixture 2/LPC ( ) Aplomado Falcon Mixture

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - The operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps

16. The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an

impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

17. Open-Vent Exhaust Stack Exclosures – The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

18. Containment Structures - Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

19. Special Stipulations:

**Lesser Prairie-Chicken**

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from permanent engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

## B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the

Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

| | |
|---|---|
| ( ) seed mixture 1 | ( ) seed mixture 3 |
| ( ) seed mixture 2 | ( ) seed mixture 4 |
| (X) seed mixture 2/LPC | ( ) Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

**Lesser Prairie-Chicken**

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

## C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to

any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

**Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken**: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials

Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

## VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Below Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

| Species | lb/acre |
|---|---|
| Plains Bristlegrass | 5lbs/A |
| Sand Bluestem | 5lbs/A |
| Little Bluestem | 3lbs/A |
| Big Bluestem | 6lbs/A |
| Plains Coreopsis | 2lbs/A |
| Sand Dropseed | 1lbs/A |

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed