

Form 3160-3  
(June 2015)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM0000506A
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No. POKER LAKE / NMNM 071016X
2. Name of Operator XTO PERMIAN OPERATING LLC		8. Lease Name and Well No. POKER LAKE UNIT 16 TWR 102H
3a. Address 6401 Holiday Hill Road, Bldg 5, Midland, TX 79707	3b. Phone No. (include area code) (432) 682-8873	9. API Well No. 30-015-47221
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNW / 522 FNL / 700 FWL / LAT 32.20857 / LONG -103.78903 At proposed prod. zone SWSW / 200 FSL / 1254 FWL / LAT 32.181601 / LONG -103.787202		10. Field and Pool, or Exploratory PURPLE SAGE WOLFCAMP GAS/null
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area SEC 21/T24S/R31E/NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 feet		12. County or Parish EDDY
16. No of acres in lease 1845.12		13. State NM
17. Spacing Unit dedicated to this well 640.0		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet		20. BLM/BIA Bond No. in file FED: COB000050
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3515 feet		22. Approximate date work will start* 07/01/2020
		23. Estimated duration 30 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.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

25. Signature (Electronic Submission)	Name (Printed/Typed) KELLY KARDOS / Ph: (432) 682-8873	Date 03/08/2020
Title Regulatory Coordinator		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959	Date 06/23/2020
Title Assistant Field Manager Lands & Minerals		
Office Carlsbad Field Office		

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.



Entered 6/25/2020 - JAG

(Continued on page 2)

\*(Instructions on page 2)

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

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

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office  
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015- 47221	<sup>2</sup> Pool Code 98220	<sup>3</sup> Pool Name PURPLE SAGE; WOLFCAMP
<sup>4</sup> Property Code 328301	<sup>5</sup> Property Name POKER LAKE UNIT 16 TWR	<sup>6</sup> Well Number 102H
<sup>7</sup> OGRID No. 373075	<sup>8</sup> Operator Name XTO PERMIAN OPERATING, LLC.	<sup>9</sup> Elevation 3,515'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	21	24 S	31 E		552	NORTH	700	WEST	EDDY

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	28	24 S	31 E		200	SOUTH	1,254	WEST	EDDY

<sup>12</sup> Dedicated Acres 640	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
--------------------------------------	-------------------------------	----------------------------------	-------------------------

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

	<p><b>SHL (NAD83 NME)</b> Y = 440,038.3 X = 709,683.0 LAT. = 32.208570 °N LONG. = 103.789030 °W</p> <p><b>FTP (NAD83 NME)</b> Y = 440,263.3 X = 710,235.7 LAT. = 32.209181 °N LONG. = 103.787239 °W</p> <p><b>SHL (NAD27 NME)</b> Y = 439,979.4 X = 668,499.1 LAT. = 32.208447 °N LONG. = 103.788546 °W</p> <p><b>FTP (NAD27 NME)</b> Y = 440,204.4 X = 669,051.8 LAT. = 32.209057 °N LONG. = 103.786756 °W</p> <p><b>CORNER COORDINATES (NAD27 NME)</b> A - Y = 440,527.5 N , X = 667,795.7 E B - Y = 440,534.7 N , X = 669,115.6 E C - Y = 437,888.9 N , X = 667,812.2 E D - Y = 437,895.9 N , X = 669,132.0 E E - Y = 435,246.0 N , X = 667,828.1 E F - Y = 435,253.7 N , X = 669,148.1 E G - Y = 432,604.9 N , X = 667,844.7 E H - Y = 432,612.7 N , X = 669,164.9 E I - Y = 429,963.8 N , X = 667,861.2 E J - Y = 429,971.7 N , X = 669,181.7 E</p>	<p><b>LTP (NAD83 NME)</b> Y = 430,359.9 X = 710,297.4 LAT. = 32.181958 °N LONG. = 103.787203 °W</p> <p><b>BHL (NAD83 NME)</b> Y = 430,229.9 X = 710,298.3 LAT. = 32.181601 °N LONG. = 103.787202 °W</p> <p><b>LTP (NAD27 NME)</b> Y = 430,301.3 X = 669,113.1 LAT. = 32.181834 °N LONG. = 103.786720 °W</p> <p><b>BHL (NAD27 NME)</b> Y = 430,171.3 X = 669,113.9 LAT. = 32.181477 °N LONG. = 103.786720 °W</p>	<p><b><sup>17</sup> OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Kelly Kardos</i> 1-13-20 Signature Date Kelly Kardos Printed Name kelly_kardos@xtoenergy.com E-mail Address</p>
	<p><b><sup>18</sup> SURVEYOR CERTIFICATION</b> I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>1-6-2020 Date of Survey Signature and Seal of Professional Surveyor:  MARK DILLON HARP 23786 Certificate Number AR 2019030736</p>		

Intent ☒ As Drilled ☐

API #		
Operator Name: XTO PERMIAN OPERATING, LLC	Property Name: POKER LAKE UNIT 16 TWR	Well Number 102H

Kick Off Point (KOP)

UL D	Section 21	Township 24S	Range 31E	Lot	Feet 522	From N/S NORTH	Feet 700	From E/W WEST	County EDDY
Latitude 32.208570					Longitude -103.789030				NAD 83

First Take Point (FTP)

UL D	Section 21	Township 24S	Range 31E	Lot	Feet 330	From N/S NORTH	Feet 1254	From E/W WEST	County EDDY
Latitude 32.209181					Longitude -103.787239				NAD 83

Last Take Point (LTP)

UL M	Section 28	Township 24S	Range 31E	Lot	Feet 330	From N/S SOUTH	Feet 1254	From E/W WEST	County EDDY
Latitude 32.181958					Longitude -103.787203				NAD 83

Is this well the defining well for the Horizontal Spacing Unit? ☐ N

Is this well an infill well? ☐ Y

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name: XTO PERMIAN OPERATING, LLC	Property Name: POKER LAKE UNIT 16 TWR	Well Number 161H

KZ 06/29/2018

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME: XTO Permian Operating LLC  
LEASE NO.: NMNM0000506A  
LOCATION: Section 21, T.24 S., R.31 E., NMPM  
COUNTY: Eddy County, New Mexico

**Well Pad 1**

Poker Lake Unit 16 TWR 161H

Surface Hole Location: 492' FNL & 400' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 330' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 121H

Surface Hole Location: 522' FNL & 400' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 330' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 101H

Surface Hole Location: 532' FNL & 400' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 638' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 152H

Surface Hole Location: 492' FNL & 700' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 990' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 122H

Surface Hole Location: 522' FNL & 700' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 946' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 102H

Surface Hole Location: 532' FNL & 700' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 1254' FWL, Section 28, T. 24 S, R 31 E.

**Well Pad 2 & Pad 3**

Poker Lake Unit 16 TWR 163H

Surface Hole Location: 485' FNL & 2040' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 1650' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 123H

Surface Hole Location: 515' FNL & 2040' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 1562' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 103H

Surface Hole Location: 544' FNL & 2040' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 1870' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 154H

Surface Hole Location: 485' FNL & 2290' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 2310' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 124H

Surface Hole Location: 515' FNL & 2290' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 2178' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 104H

Surface Hole Location: 545' FNL & 2290' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 2486' FWL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 165H

Surface Hole Location: 485' FNL & 2590' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 2310' FEL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 125H

Surface Hole Location: 515' FNL & 2590' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 2486' FEL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 105H

Surface Hole Location: 545' FNL & 2590' FWL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 2178' FEL, Section 28, T. 24 S, R 31 E.

#### **Well Pad 4**

Poker Lake Unit 16 TWR 167H

Surface Hole Location: 490' FNL & 1950' FEL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 990' FEL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 127H

Surface Hole Location: 520' FNL & 1950' FEL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 1254' FEL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 107H

Surface Hole Location: 550' FNL & 1950' FEL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 946' FEL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 158H

Surface Hole Location: 490' FNL & 1650' FEL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 331' FEL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 128H

Surface Hole Location: 520' FNL & 1650' FEL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 638' FEL, Section 28, T. 24 S, R 31 E.

Poker Lake Unit 16 TWR 108H

Surface Hole Location: 550' FNL & 1650' FEL, Section 21, T. 24 S., R. 31 E.

Bottom Hole Location: 200' FSL & 331' FEL, Section 28, T. 24 S, R 31 E.

## **TABLE OF CONTENTS**

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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Hydrology
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Surface Pipelines
  - Buried Pipelines
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

## **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.

## **I. 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.)

## **II. 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.

## **III. 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.

## **IV. 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 leaks 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.

**Timing Limitation Exceptions:**

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

**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.

**Hydrology:**

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

**TANK BATTERY:**

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

**BURIED/SURFACE LINE(S):**

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and



vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

**ELECTRIC LINE(S):**

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

**Range:**

**TEMPORARY FENCE CROSSING REQUIREMENT**

Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. A wire gate would be installed in the fence opening during infrastructure installation to prevent livestock from crossing the fence. The gate would be in place during construction inactivity. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

**CATTLE GUARD REQUIREMENT**

Where entry is granted across a fence line for an access road, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access 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. Once the road is abandoned, the fence would be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

## **V. 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**

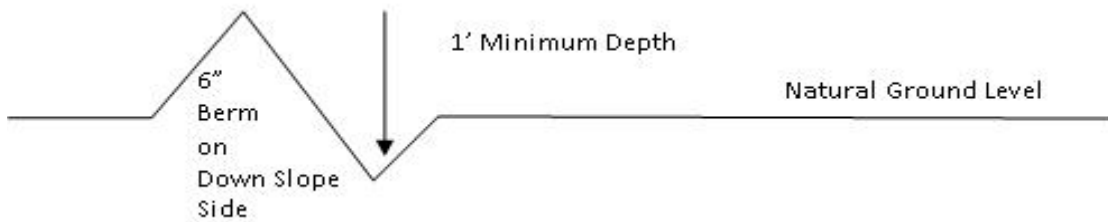
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and inslaping, 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:

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

#### **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.

## **VI. 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).

### **B. SURFACE PIPELINES**

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review 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. 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. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard 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 in particular, 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. 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 activity of 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 provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing
  - (2) Earth-disturbing and earth-moving work
  - (3) Blasting
  - (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, 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, salt water, 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/she 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 Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of **30** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.



8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 6 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. 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.

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. Excluding the pipe, all above-ground structures not subject to safety requirement 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" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. 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. Signs will be maintained in a legible condition for the life of the pipeline.

14. 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. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. 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 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.

16. 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, powerline 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.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

### **C. BURIED 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 30 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.

- |  |  |
|--|--|
| <input type="checkbox"/> seed mixture 1            | <input type="checkbox"/> seed mixture 3          |
| <input checked="" type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4          |
| <input type="checkbox"/> seed mixture 2/LPC        | <input type="checkbox"/> 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:

**D. OVERHEAD 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.

## **VII. 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).

## **VIII. 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).

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 2, for Sandy Sites

The 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 will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will 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). The 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. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

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



## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>XTO Permian Operating, LLC</b>
<b>LEASE NO.:</b>	<b>NMNM-0000506A</b>
<b>WELL NAME &amp; NO.:</b>	<b>Poker Lake Unit 16 TWR 102H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>0552' FNL &amp; 0700' FWL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>0200' FSL &amp; 1254' FWL Sec. 28, T.24 S., R.31 E.</b>
<b>LOCATION:</b>	<b>Section 21, T.24 S., R.31 E., NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input checked="" type="checkbox"/> Unit

**Possibility of water flows in the Salado and Castile.**

**Possibility of lost circulation in the Red Beds, Rustler, and Delaware.**

**Abnormal pressure may be encountered in the 3rd Bone Spring and all subsequent formations.**

### 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

1. The **13-3/8** inch surface casing shall be set at approximately **830** 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 **8 hours** 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 **9-5/8** inch intermediate casing is:

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.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification. **Excess calculates to 20% - Additional cement will 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)**

### **Unit Wells**

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

### **Commercial Well Determination**

A commercial well determination shall be submitted after production has been established for at least six months.

## 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

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 2<sup>nd</sup> 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 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 integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. 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.
4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
5. 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.
6. 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.

## 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.
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. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer.
  - c. 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.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. 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.

- f. 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.
- g. 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.

**JAM 06102020**

APD ID: 10400054937

Submission Date: 03/08/2020

Highlighted data  
reflects the most  
recent changes

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: POKER LAKE UNIT 16 TWR

Well Number: 102H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
683138	PERMIAN	3515	0	0	OTHER : Quaternary	NONE	N
683129	RUSTLER	2884	631	631	SILTSTONE	USEABLE WATER	N
683130	TOP SALT	2530	985	985	SALT	OTHER : Produced Water	N
683131	BASE OF SALT	-666	4181	4181	SALT	OTHER : Produced Water	N
683127	DELAWARE	-880	4395	4395	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
683128	BONE SPRING	-4710	8225	8225	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
683126	BONE SPRING 1ST	-5770	9285	9285	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
683125	BONE SPRING 2ND	-6480	9995	9995	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
683144	BONE SPRING 3RD	-7605	11120	11120	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
683146	WOLFCAMP	-8070	11585	11585	SHALE	NATURAL GAS, OIL, OTHER : Produced Water	Y

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 11675

**Equipment:** Once the permanent WH is installed on the 13-3/8 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8 minimum 5M Hydril and a 13-5/8 minimum 5M 3-Ram BOP. MASP should not exceed 4291 psi.

**Requesting Variance?** YES

**Variance request:** In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M). Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 psi. A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors. Permanent Wellhead – GE RSH Multibowl System

A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 5M top flange B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange • Wellhead will be installed by manufacturer's representatives. • Manufacturer will monitor welding process to ensure appropriate temperature of seal. • Operator will test the 9-5/8" casing per Onshore Order 2.



**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 16 TWR

**Well Number:** 102H

Wellhead manufacturer representative may not be present for BOP test plug installation XTO requests a variance to be able to batch drill this well if necessary. In doing so, XTO will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE recommendations, XTO will contact the BLM on each rig skid on the pad. Once surface and intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.

**Testing Procedure:** All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 70% of the working pressure. When nipping up on the 13-3/8", 5M bradenhead and flange, the BOP test will be limited to 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

**Choke Diagram Attachment:**

PLU\_16\_TWR\_5MCM\_20200306132131.pdf

PLU\_16\_TWR\_10MCM\_20200306132155.pdf

**BOP Diagram Attachment:**

PLU\_16\_TWR\_5MBOP\_20200306132224.pdf

PLU\_16\_TWR\_5M10MBOP\_20200306132242.pdf

## 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 length MD	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	830	0	830	3515	2685	830	J-55	68	BUTT	5.19	1.25	BUOY	18.94	DRY	18.94
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	10435	0	10435	3370	-6920	10435	HCL-80	40	BUTT	1.38	1.26	DRY	2.19	DRY	2.19
3	PRODUCTION	8.75	5.5	NEW	API	N	0	22087	0	11675	3370	-8160	22087	P-110	20	BUTT	1.62	1.18	DRY	2.06	DRY	2.06

## Casing Attachments

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 16 TWR

**Well Number:** 102H

#### Casing Attachments

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

PLU\_16\_TWR\_102H\_Csg\_20200308092824.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

PLU\_16\_TWR\_102H\_Csg\_20200308092851.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

PLU\_16\_TWR\_102H\_Csg\_20200308092921.pdf

---

## Section 4 - Cement

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 16 TWR

**Well Number:** 102H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	830	390	1.87	12.8	729.3	100	Halcem-C	2% CaCl
SURFACE	Tail				300	1.35	14.8	405	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead	4335	0	1043 5	920	3.45	11	3174	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				470	1.32	14.8	620.4	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead		4335	1043 5	620	3.45	11	2139	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				410	1.32	14.8	541.2	100	Halcem-C	2% CaCl
PRODUCTION	Lead		0	2208 7	70	1.88	11.5	131.6	20	Halcem-C	2% CaCl
PRODUCTION	Tail				2610	1.33	13.2	3471. 3	20	VersaCem	none

### 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:** The necessary mud products for weight addition and fluid loss control will be on location at all times.

**Describe the mud monitoring system utilized:** A Pason or Totco will be used to detect changes in loss or gain of mud volume.

### 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
1043 5	1167 5	OTHER : FW / Cut Brine / Poly /	11	11.8							A mud test will be performed every 24 hours to determine:

**Operator Name:** XTO PERMIAN OPERATING LLC**Well Name:** POKER LAKE UNIT 16 TWR**Well Number:** 102H

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
		OBM									density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
0	830	OTHER : FW/Native	8.4	8.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
830	1043.5	OTHER : FW / Cut Brine / Direct Emulsion	8.8	9.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system

## Section 6 - Test, Logging, Coring

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

Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from kick-off point to intermediate casing shoe.

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

CEMENT BOND LOG,COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,MUD LOG/GEOLOGIC LITHOLOGY LOG,MUD LOG/GEOLOGICAL LITHOLOGY LOG,

### Coring operation description for the well:

No coring will take place on this well.

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 16 TWR

**Well Number:** 102H

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6859

**Anticipated Surface Pressure:** 4290

**Anticipated Bottom Hole Temperature(F):** 165

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

**Describe:**

Potential loss of circulation through the Capitan Reef.

**Contingency Plans geohazards description:**

The necessary mud products for weight addition and fluid loss control will be on location at all times. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

**Contingency Plans geohazards attachment:**

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

**Hydrogen sulfide drilling operations plan:**

PLU\_16\_TWR\_H2S\_Dia\_Pad\_1E\_20200304122122.pdf

PLU\_16\_TWR\_H2S\_Dia\_Pad\_1W\_20200304122138.pdf

PLU\_16\_TWR\_H2S\_Plan\_20200304122105.pdf

## Section 8 - Other Information

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

PLU\_16\_TWR\_102H\_DD\_20200308093139.pdf

**Other proposed operations facets description:**

The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 830' (155' above the salt) and circulating cement back to surface. A 12-1/4 inch vertical hole will be drilled to 10435' and 9-5/8 inch casing ran and cemented 200' into the 13-3/8 inch casing. An 8-3/4 inch / 8-1/2 inch curve and lateral hole will be drilled to MD/TD and 5-1/2 casing will be set at TD and cemented back 300' into the 9-5/8 inch casing shoe.

XTO requests to utilize centralizers after KOP and only a minimum of one every 4th joint.

9-5/8" Collapse analyzed using 50% evacuation based on regional experience.

5-1/2 tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

**Other proposed operations facets attachment:**

PLU\_16\_TWR\_GCPE\_20200304122649.pdf

PLU\_16\_TWR\_GCPW\_20200304122702.pdf

**Other Variance attachment:**

PLU\_16\_TWR\_FH\_20200304122358.pdf

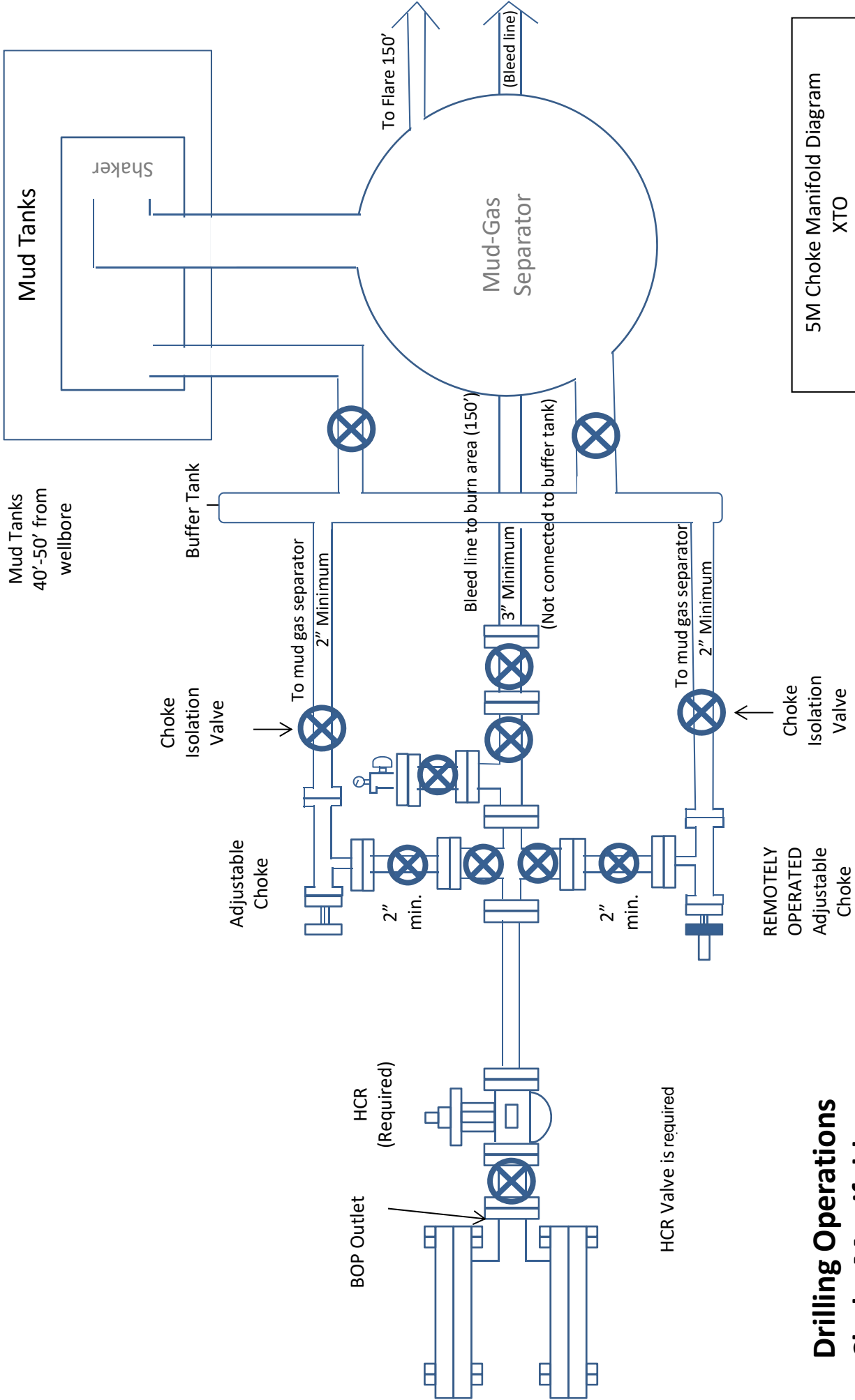
PLU\_16\_TWR\_MBD\_20200304122432.pdf

PLU\_16\_TWR\_WWC\_20200304122416.pdf

**Operator Name:** XTO PERMIAN OPERATING LLC

**Well Name:** POKER LAKE UNIT 16 TWR

**Well Number:** 102H

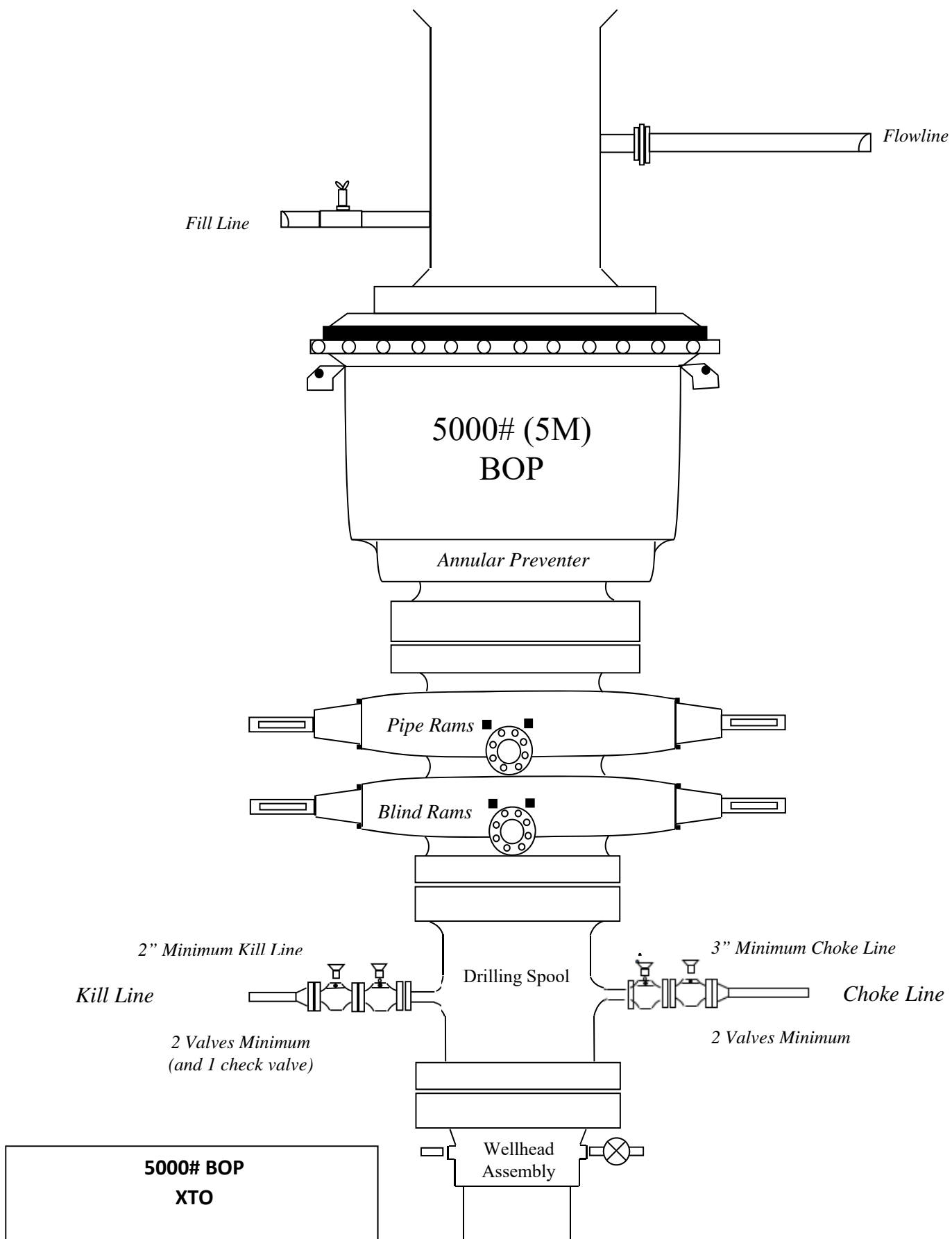


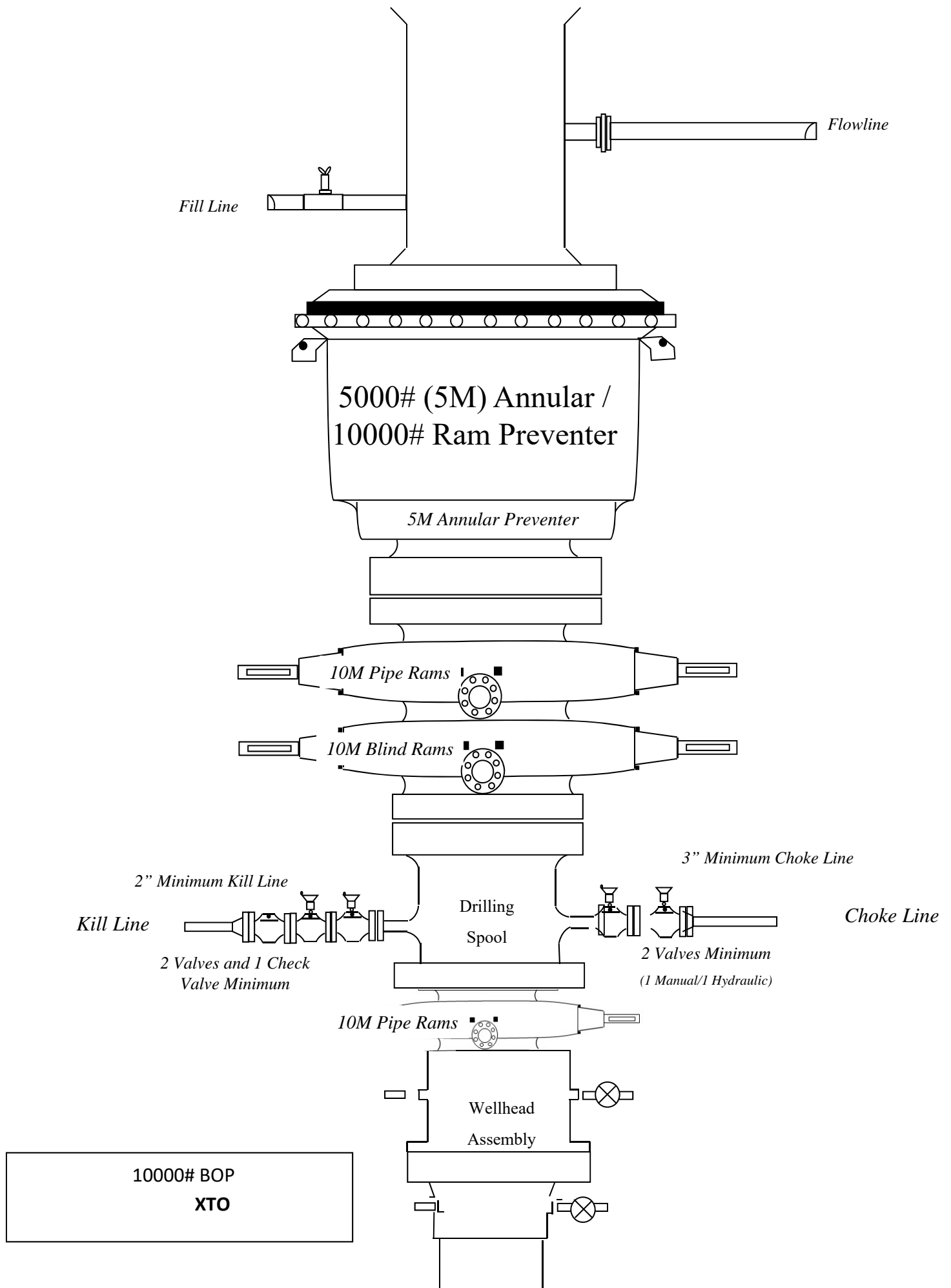
5M Choke Manifold Diagram  
XTO

# Drilling Operations Choke Manifold 5M Service









## Casing Assumption Worksheet

*The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 830' (155' above the salt) and circulating cement back to surface. A 12-1/4 inch vertical hole will be drilled to 10435' and 9-5/8 inch casing ran and cemented 200' into the 13-3/8 inch casing. An 8-3/4 inch / 8-1/2 inch curve and lateral hole will be drilled to MD/TD and 5-1/2 casing will be set at TD and cemented back 300' into the 9-5/8 inch casing shoe.*

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 830'	13-3/8"	68	BTC	J-55	New	1.25	5.19	18.94
12-1/4"	0' – 10435'	9-5/8"	40	BTC	HCL-80	New	1.26	1.38	2.19
8-3/4-8-1/2"	0' – 22087'	5-1/2"	20	BTC	P-110	New	1.18	1.62	2.06

**XTO requests to utilize centralizers after KOP and only a minimum of one every 4th joint.**

9-5/8" Collapse analyzed using 50% evacuation based on regional experience.

5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

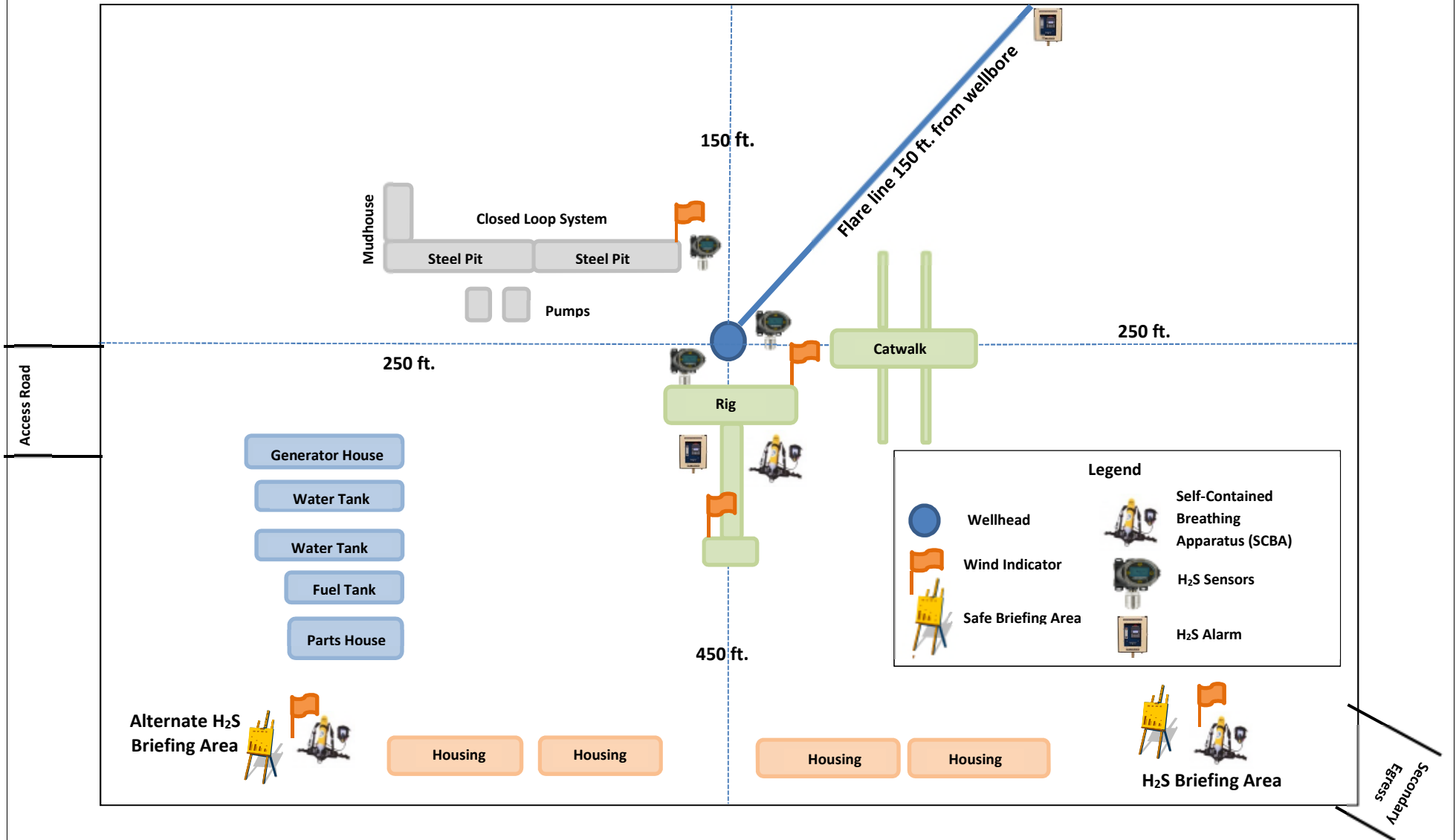
### Permanent Wellhead – GE RSH Multibowl System

- A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 5M top flange
- B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
  - Wellhead will be installed by manufacturer's representatives.
  - Manufacturer will monitor welding process to ensure appropriate temperature of seal.
  - Operator will test the 9-5/8" casing per Onshore Order 2.

↑  
E

Prevailing Winds  
Direction SW

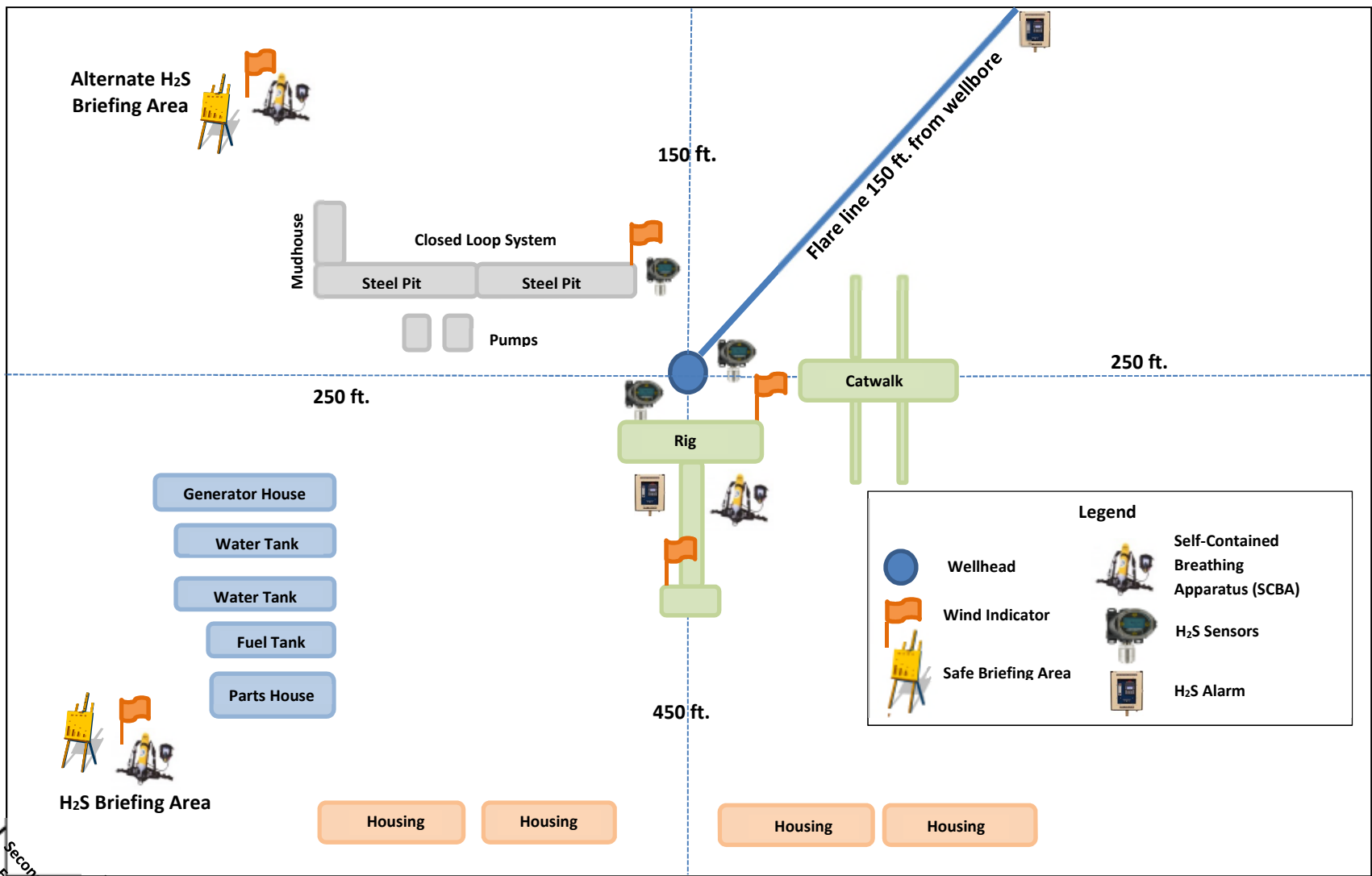
## H<sub>2</sub>S Briefing Areas and Alarm Locations





Prevailing Winds  
Direction SW

# H<sub>2</sub>S Briefing Areas and Alarm Locations





## **HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN**

**Assumed 100 ppm ROE = 3000'**

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, 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<sub>2</sub>S 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
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o 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<sub>2</sub>). 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 this is an ignition of the gas.

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

### **Contacting Authorities**

All XTO location 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 including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

## **CARLSBAD OFFICE – EDDY & LEA COUNTIES**

3104 E. Greene St., Carlsbad, NM 88220  
Carlsbad, NM

575-887-7329

### **XTO PERSONNEL:**

Kendall Decker, Drilling Manager	903-521-6477
Milton Turman, Drilling Superintendent	817-524-5107
Jeff Raines, Construction Foreman	432-557-3159
Toady Sanders, EH & S Manager	903-520-1601
Wes McSpadden, Production Foreman	575-441-1147

### **SHERIFF DEPARTMENTS:**

Eddy County	575-887-7551
Lea County	575-396-3611

### **NEW MEXICO STATE POLICE:**

575-392-5588

### **FIRE DEPARTMENTS:**

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

### **HOSPITALS:**

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

### **AGENT NOTIFICATIONS:**

#### **For Lea County:**

Bureau of Land Management – Hobbs	575-393-3612
New Mexico Oil Conservation Division – Hobbs	575-393-6161

#### **For Eddy County:**

Bureau of Land Management - Carlsbad	575-234-5972
New Mexico Oil Conservation Division - Artesia	575-748-1283



## **XTO Energy**

**Eddy County, NM (NAD-27)**

**Poker Lake Unit 16 TWR**

**102H**

**Wellbore #1**

**Plan: PERMIT**

## **Standard Planning Report**

**08 January, 2020**





Project: Eddy County, NM (NAD-27)  
Site: Poker Lake Unit 16 TWR  
Well: 102H  
Wellbore: Wellbore #1  
Design: PERMIT

PROJECT DETAILS: Eddy County, NM (NAD-27)  
Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: New Mexico East 3001  
System Datum: Mean Sea Level

WELL DETAILS: 102H

		Rig Name:		RKB=30' @ 3545.00usft			
		Ground Level:		3515.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
0.00	0.00	439979.40	668499.10	32.208447	-103.788546		

DESIGN TARGET DETAILS

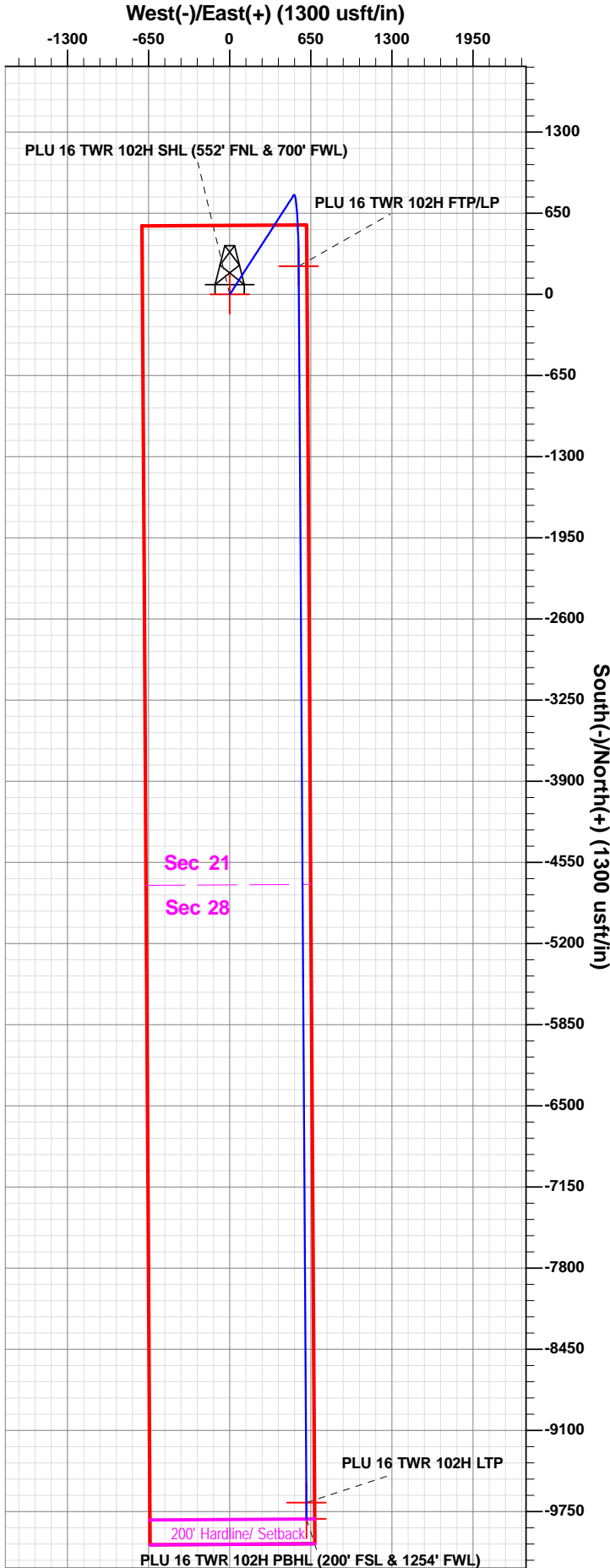
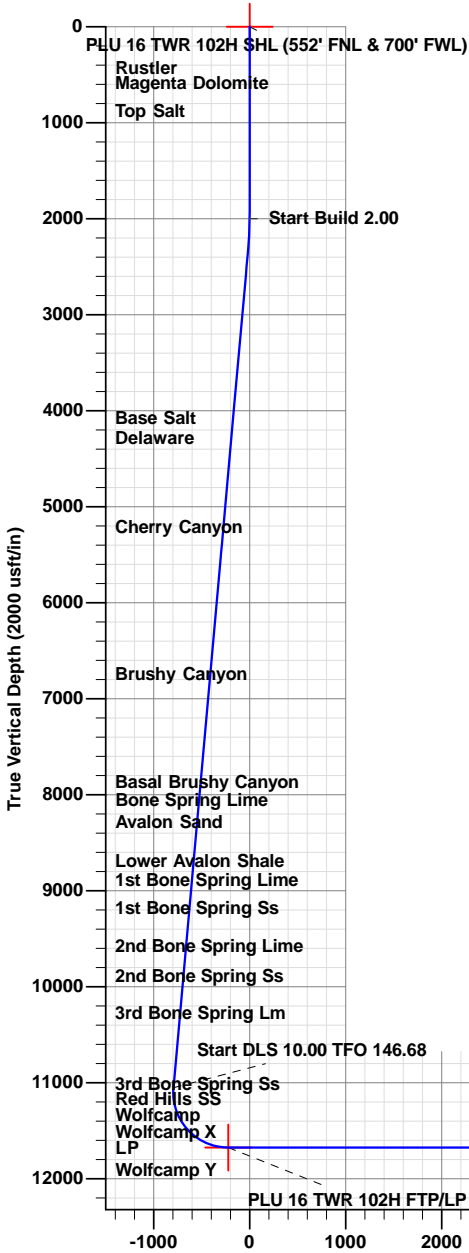
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PLU 16 TWR 102H SHL (552' FNL & 700' FWL)	0.00	0.00	0.00	439979.40	668499.10	32.208447	-103.788546	Point
PLU 16 TWR 102H FTP/LP	11675.00	225.01	552.73	440204.40	669051.80	32.209057	-103.786755	Point
PLU 16 TWR 102H LTP	11675.00	-9678.67	614.04	430301.30	669113.10	32.181834	-103.786720	Point
PLU 16 TWR 102H PBHL (200' FSL & 1254' FWL)	11675.00	-9808.67	614.84	430171.30	669113.90	32.181477	-103.786720	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2303.52	6.07	32.82	2302.95	13.50	8.71	2.00	32.82	-13.45
4	11102.28	6.07	32.82	11052.38	795.49	512.97	0.00	0.00	-792.34
5	12053.07	90.00	179.65	11675.00	225.01	552.73	10.00	146.68	-221.63
6	21956.94	90.00	179.65	11675.00	-9678.67	614.03	0.00	0.00	9682.24
7	22086.95	90.00	179.65	11675.00	-9808.67	614.84	0.00	0.00	9812.25

FORMATION TOP DETAILS

TVDPath	Formation
635.00	Rustler
695.00	Magenta Dolomite
985.00	Top Salt
4185.00	Base Salt
4395.00	Delaware
5320.00	Cherry Canyon
6845.00	Brushy Canyon
7970.00	Basal Brushy Canyon
8225.00	Bone Spring Lime
8295.00	Avalon Sand
8320.00	Upper Avalon Shale
8795.00	Lower Avalon Shale
8995.00	1st Bone Spring Lime
9285.00	1st Bone Spring Ss
9685.00	2nd Bone Spring Lime
9995.00	2nd Bone Spring Ss
10385.00	3rd Bone Spring Lm
11120.00	3rd Bone Spring Ss
11495.00	Red Hills SS
11585.00	Wolfcamp
11595.00	Wolfcamp X
11675.00	LP
11675.00	Wolfcamp Y



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by Prototype are at the sole risk and responsibility of the user.

Plan: PERMIT (102H/Wellbore #1)

Created By: Matthew May Date: 17:55, January 08 2020



# Prototype Well Planning LLC

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well 102H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB=30' @ 3545.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB=30' @ 3545.00usft
<b>Site:</b>	Poker Lake Unit 16 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	102H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PERMIT		

<b>Project</b>	Eddy County, NM (NAD-27)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		Using geodetic scale factor

Site		Poker Lake Unit 16 TWR			
Site Position:		Northing:	440,007.40 usft	Latitude:	32.208528
From:	Map	Easting:	668,199.10 usft	Longitude:	-103.789516
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.29 °

Well	102H					
Well Position	+N/-S	-28.00 usft	Northing:	439,979.40 usft	Latitude:	32.208447
	+E/-W	300.02 usft	Easting:	668,499.10 usft	Longitude:	-103.788546
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,515.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	1/8/2020	6.78	59.98	47,642

<b>Design</b>	PERMIT			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	179.65

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,303.52	6.07	32.82	2,302.95	13.50	8.71	2.00	2.00	0.00	32.82	
11,102.28	6.07	32.82	11,052.38	795.49	512.97	0.00	0.00	0.00	0.00	
12,053.07	90.00	179.65	11,675.00	225.01	552.73	10.00	8.83	15.44	146.68	PLU 16 TWR 102H F
21,956.94	90.00	179.65	11,675.00	-9,678.67	614.03	0.00	0.00	0.00	0.00	PLU 16 TWR 102H L
22,086.95	90.00	179.65	11,675.00	-9,808.67	614.84	0.00	0.00	0.00	0.00	PLU 16 TWR 102H P



# Prototype Well Planning LLC

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well 102H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB=30' @ 3545.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB=30' @ 3545.00usft
<b>Site:</b>	Poker Lake Unit 16 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	102H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
635.00	0.00	0.00	635.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Rustler</b>									
695.00	0.00	0.00	695.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Magenta Dolomite</b>									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
985.00	0.00	0.00	985.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Top Salt</b>									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	2.00	32.82	2,099.98	1.47	0.95	-1.46	2.00	2.00	0.00
2,200.00	4.00	32.82	2,199.84	5.86	3.78	-5.84	2.00	2.00	0.00
2,303.52	6.07	32.82	2,302.95	13.50	8.71	-13.45	2.00	2.00	0.00
2,400.00	6.07	32.82	2,398.89	22.07	14.24	-21.99	0.00	0.00	0.00
2,500.00	6.07	32.82	2,498.33	30.96	19.97	-30.84	0.00	0.00	0.00
2,600.00	6.07	32.82	2,597.77	39.85	25.70	-39.69	0.00	0.00	0.00
2,700.00	6.07	32.82	2,697.21	48.74	31.43	-48.54	0.00	0.00	0.00
2,800.00	6.07	32.82	2,796.65	57.62	37.16	-57.40	0.00	0.00	0.00
2,900.00	6.07	32.82	2,896.09	66.51	42.89	-66.25	0.00	0.00	0.00
3,000.00	6.07	32.82	2,995.53	75.40	48.62	-75.10	0.00	0.00	0.00
3,100.00	6.07	32.82	3,094.97	84.29	54.35	-83.95	0.00	0.00	0.00
3,200.00	6.07	32.82	3,194.41	93.17	60.08	-92.81	0.00	0.00	0.00
3,300.00	6.07	32.82	3,293.84	102.06	65.82	-101.66	0.00	0.00	0.00
3,400.00	6.07	32.82	3,393.28	110.95	71.55	-110.51	0.00	0.00	0.00
3,500.00	6.07	32.82	3,492.72	119.84	77.28	-119.36	0.00	0.00	0.00
3,600.00	6.07	32.82	3,592.16	128.72	83.01	-128.21	0.00	0.00	0.00
3,700.00	6.07	32.82	3,691.60	137.61	88.74	-137.07	0.00	0.00	0.00
3,800.00	6.07	32.82	3,791.04	146.50	94.47	-145.92	0.00	0.00	0.00
3,900.00	6.07	32.82	3,890.48	155.39	100.20	-154.77	0.00	0.00	0.00
4,000.00	6.07	32.82	3,989.92	164.27	105.93	-163.62	0.00	0.00	0.00
4,100.00	6.07	32.82	4,089.36	173.16	111.66	-172.48	0.00	0.00	0.00
4,196.18	6.07	32.82	4,185.00	181.71	117.18	-180.99	0.00	0.00	0.00
<b>Base Salt</b>									
4,200.00	6.07	32.82	4,188.80	182.05	117.40	-181.33	0.00	0.00	0.00
4,300.00	6.07	32.82	4,288.24	190.94	123.13	-190.18	0.00	0.00	0.00
4,400.00	6.07	32.82	4,387.68	199.82	128.86	-199.03	0.00	0.00	0.00
4,407.36	6.07	32.82	4,395.00	200.48	129.28	-199.69	0.00	0.00	0.00



# Prototype Well Planning LLC

## Planning Report

**Database:** EDM 5000.1 Single User Db  
**Company:** XTO Energy  
**Project:** Eddy County, NM (NAD-27)  
**Site:** Poker Lake Unit 16 TWR  
**Well:** 102H  
**Wellbore:** Wellbore #1  
**Design:** PERMIT

**Local Co-ordinate Reference:** Well 102H  
**TVD Reference:** RKB=30' @ 3545.00usft  
**MD Reference:** RKB=30' @ 3545.00usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Delaware									
4,500.00	6.07	32.82	4,487.12	208.71	134.59	-207.89	0.00	0.00	0.00
4,600.00	6.07	32.82	4,586.56	217.60	140.32	-216.74	0.00	0.00	0.00
4,700.00	6.07	32.82	4,685.99	226.49	146.05	-225.59	0.00	0.00	0.00
4,800.00	6.07	32.82	4,785.43	235.37	151.78	-234.44	0.00	0.00	0.00
4,900.00	6.07	32.82	4,884.87	244.26	157.51	-243.29	0.00	0.00	0.00
5,000.00	6.07	32.82	4,984.31	253.15	163.24	-252.15	0.00	0.00	0.00
5,100.00	6.07	32.82	5,083.75	262.04	168.98	-261.00	0.00	0.00	0.00
5,200.00	6.07	32.82	5,183.19	270.92	174.71	-269.85	0.00	0.00	0.00
5,300.00	6.07	32.82	5,282.63	279.81	180.44	-278.70	0.00	0.00	0.00
5,337.58	6.07	32.82	5,320.00	283.15	182.59	-282.03	0.00	0.00	0.00
Cherry Canyon									
5,400.00	6.07	32.82	5,382.07	288.70	186.17	-287.56	0.00	0.00	0.00
5,500.00	6.07	32.82	5,481.51	297.59	191.90	-296.41	0.00	0.00	0.00
5,600.00	6.07	32.82	5,580.95	306.47	197.63	-305.26	0.00	0.00	0.00
5,700.00	6.07	32.82	5,680.39	315.36	203.36	-314.11	0.00	0.00	0.00
5,800.00	6.07	32.82	5,779.83	324.25	209.09	-322.97	0.00	0.00	0.00
5,900.00	6.07	32.82	5,879.27	333.14	214.82	-331.82	0.00	0.00	0.00
6,000.00	6.07	32.82	5,978.71	342.02	220.56	-340.67	0.00	0.00	0.00
6,100.00	6.07	32.82	6,078.14	350.91	226.29	-349.52	0.00	0.00	0.00
6,200.00	6.07	32.82	6,177.58	359.80	232.02	-358.37	0.00	0.00	0.00
6,300.00	6.07	32.82	6,277.02	368.69	237.75	-367.23	0.00	0.00	0.00
6,400.00	6.07	32.82	6,376.46	377.57	243.48	-376.08	0.00	0.00	0.00
6,500.00	6.07	32.82	6,475.90	386.46	249.21	-384.93	0.00	0.00	0.00
6,600.00	6.07	32.82	6,575.34	395.35	254.94	-393.78	0.00	0.00	0.00
6,700.00	6.07	32.82	6,674.78	404.24	260.67	-402.64	0.00	0.00	0.00
6,800.00	6.07	32.82	6,774.22	413.12	266.40	-411.49	0.00	0.00	0.00
6,871.18	6.07	32.82	6,845.00	419.45	270.48	-417.79	0.00	0.00	0.00
Brushy Canyon									
6,900.00	6.07	32.82	6,873.66	422.01	272.14	-420.34	0.00	0.00	0.00
7,000.00	6.07	32.82	6,973.10	430.90	277.87	-429.19	0.00	0.00	0.00
7,100.00	6.07	32.82	7,072.54	439.79	283.60	-438.04	0.00	0.00	0.00
7,200.00	6.07	32.82	7,171.98	448.67	289.33	-446.90	0.00	0.00	0.00
7,300.00	6.07	32.82	7,271.42	457.56	295.06	-455.75	0.00	0.00	0.00
7,400.00	6.07	32.82	7,370.85	466.45	300.79	-464.60	0.00	0.00	0.00
7,500.00	6.07	32.82	7,470.29	475.34	306.52	-473.45	0.00	0.00	0.00
7,600.00	6.07	32.82	7,569.73	484.22	312.25	-482.31	0.00	0.00	0.00
7,700.00	6.07	32.82	7,669.17	493.11	317.98	-491.16	0.00	0.00	0.00
7,800.00	6.07	32.82	7,768.61	502.00	323.72	-500.01	0.00	0.00	0.00
7,900.00	6.07	32.82	7,868.05	510.89	329.45	-508.86	0.00	0.00	0.00
8,000.00	6.07	32.82	7,967.49	519.77	335.18	-517.72	0.00	0.00	0.00
8,002.52	6.07	32.82	7,970.00	520.00	335.32	-517.94	0.00	0.00	0.00
Basal Brushy Canyon									
8,100.00	6.07	32.82	8,066.93	528.66	340.91	-526.57	0.00	0.00	0.00
8,200.00	6.07	32.82	8,166.37	537.55	346.64	-535.42	0.00	0.00	0.00
8,258.96	6.07	32.82	8,225.00	542.79	350.02	-540.64	0.00	0.00	0.00
Bone Spring Lime									
8,300.00	6.07	32.82	8,265.81	546.43	352.37	-544.27	0.00	0.00	0.00
8,329.36	6.07	32.82	8,295.00	549.04	354.05	-546.87	0.00	0.00	0.00
Avalon Sand									
8,354.50	6.07	32.82	8,320.00	551.28	355.49	-549.10	0.00	0.00	0.00
Upper Avalon Shale									
8,400.00	6.07	32.82	8,365.25	555.32	358.10	-553.12	0.00	0.00	0.00



# Prototype Well Planning LLC

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well 102H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB=30' @ 3545.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB=30' @ 3545.00usft
<b>Site:</b>	Poker Lake Unit 16 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	102H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,500.00	6.07	32.82	8,464.69	564.21	363.83	-561.98	0.00	0.00	0.00
8,600.00	6.07	32.82	8,564.13	573.10	369.56	-570.83	0.00	0.00	0.00
8,700.00	6.07	32.82	8,663.57	581.98	375.30	-579.68	0.00	0.00	0.00
8,800.00	6.07	32.82	8,763.00	590.87	381.03	-588.53	0.00	0.00	0.00
8,832.18	6.07	32.82	8,795.00	593.73	382.87	-591.38	0.00	0.00	0.00
<b>Lower Avalon Shale</b>									
8,900.00	6.07	32.82	8,862.44	599.76	386.76	-597.39	0.00	0.00	0.00
9,000.00	6.07	32.82	8,961.88	608.65	392.49	-606.24	0.00	0.00	0.00
9,033.30	6.07	32.82	8,995.00	611.61	394.40	-609.19	0.00	0.00	0.00
<b>1st Bone Spring Lime</b>									
9,100.00	6.07	32.82	9,061.32	617.53	398.22	-615.09	0.00	0.00	0.00
9,200.00	6.07	32.82	9,160.76	626.42	403.95	-623.94	0.00	0.00	0.00
9,300.00	6.07	32.82	9,260.20	635.31	409.68	-632.80	0.00	0.00	0.00
9,324.94	6.07	32.82	9,285.00	637.53	411.11	-635.00	0.00	0.00	0.00
<b>1st Bone Spring Ss</b>									
9,400.00	6.07	32.82	9,359.64	644.20	415.41	-641.65	0.00	0.00	0.00
9,500.00	6.07	32.82	9,459.08	653.08	421.14	-650.50	0.00	0.00	0.00
9,600.00	6.07	32.82	9,558.52	661.97	426.88	-659.35	0.00	0.00	0.00
9,700.00	6.07	32.82	9,657.96	670.86	432.61	-668.20	0.00	0.00	0.00
9,727.19	6.07	32.82	9,685.00	673.28	434.16	-670.61	0.00	0.00	0.00
<b>2nd Bone Spring Lime</b>									
9,800.00	6.07	32.82	9,757.40	679.75	438.34	-677.06	0.00	0.00	0.00
9,900.00	6.07	32.82	9,856.84	688.63	444.07	-685.91	0.00	0.00	0.00
10,000.00	6.07	32.82	9,956.28	697.52	449.80	-694.76	0.00	0.00	0.00
10,038.94	6.07	32.82	9,995.00	700.98	452.03	-698.21	0.00	0.00	0.00
<b>2nd Bone Spring Ss</b>									
10,100.00	6.07	32.82	10,055.72	706.41	455.53	-703.61	0.00	0.00	0.00
10,200.00	6.07	32.82	10,155.15	715.30	461.26	-712.47	0.00	0.00	0.00
10,300.00	6.07	32.82	10,254.59	724.18	466.99	-721.32	0.00	0.00	0.00
10,400.00	6.07	32.82	10,354.03	733.07	472.72	-730.17	0.00	0.00	0.00
10,431.14	6.07	32.82	10,385.00	735.84	474.51	-732.93	0.00	0.00	0.00
<b>3rd Bone Spring Lm</b>									
10,500.00	6.07	32.82	10,453.47	741.96	478.46	-739.02	0.00	0.00	0.00
10,600.00	6.07	32.82	10,552.91	750.85	484.19	-747.87	0.00	0.00	0.00
10,700.00	6.07	32.82	10,652.35	759.73	489.92	-756.73	0.00	0.00	0.00
10,800.00	6.07	32.82	10,751.79	768.62	495.65	-765.58	0.00	0.00	0.00
10,900.00	6.07	32.82	10,851.23	777.51	501.38	-774.43	0.00	0.00	0.00
11,000.00	6.07	32.82	10,950.67	786.40	507.11	-783.28	0.00	0.00	0.00
11,102.28	6.07	32.82	11,052.38	795.49	512.97	-792.34	0.00	0.00	0.00
11,150.00	3.34	84.38	11,099.95	797.74	515.73	-794.58	10.00	-5.71	108.06
11,170.09	3.74	116.74	11,120.00	797.51	516.89	-794.33	10.00	1.97	161.08
<b>3rd Bone Spring Ss</b>									
11,200.00	5.75	144.36	11,149.81	795.85	518.64	-792.67	10.00	6.73	92.36
11,250.00	10.24	160.86	11,199.32	789.61	521.56	-786.41	10.00	8.98	33.00
11,300.00	15.06	167.15	11,248.09	779.07	524.46	-775.85	10.00	9.63	12.58
11,350.00	19.96	170.43	11,295.76	764.31	527.33	-761.08	10.00	9.81	6.54
11,400.00	24.90	172.45	11,341.97	745.45	530.13	-742.20	10.00	9.88	4.04
11,450.00	29.86	173.83	11,386.35	722.62	532.86	-719.35	10.00	9.92	2.77
11,500.00	34.83	174.85	11,428.58	696.01	535.48	-692.72	10.00	9.94	2.04
11,550.00	39.81	175.64	11,468.33	665.81	537.98	-662.51	10.00	9.95	1.59
11,585.67	43.36	176.11	11,495.00	642.20	539.68	-638.89	10.00	9.96	1.32
<b>Red Hills SS</b>									
11,600.00	44.79	176.29	11,505.30	632.25	540.34	-628.94	10.00	9.97	1.20



# Prototype Well Planning LLC

## Planning Report

**Database:** EDM 5000.1 Single User Db  
**Company:** XTO Energy  
**Project:** Eddy County, NM (NAD-27)  
**Site:** Poker Lake Unit 16 TWR  
**Well:** 102H  
**Wellbore:** Wellbore #1  
**Design:** PERMIT

**Local Co-ordinate Reference:** Well 102H  
**TVD Reference:** RKB=30' @ 3545.00usft  
**MD Reference:** RKB=30' @ 3545.00usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,650.00	49.78	176.82	11,539.21	595.59	542.54	-592.27	10.00	9.97	1.08
11,700.00	54.76	177.29	11,569.79	556.11	544.56	-552.77	10.00	9.97	0.93
11,727.28	57.48	177.52	11,585.00	533.49	545.59	-530.14	10.00	9.98	0.84
<b>Wolfcamp</b>									
11,746.39	59.39	177.67	11,595.00	517.22	546.27	-513.88	10.00	9.98	0.80
<b>Wolfcamp X</b>									
11,750.00	59.75	177.70	11,596.83	514.11	546.39	-510.76	10.00	9.98	0.78
11,800.00	64.74	178.07	11,620.11	469.91	548.02	-466.55	10.00	9.98	0.74
11,850.00	69.73	178.41	11,639.45	423.84	549.43	-420.47	10.00	9.98	0.68
11,900.00	74.72	178.73	11,654.71	376.26	550.62	-372.89	10.00	9.98	0.64
11,950.00	79.71	179.04	11,665.77	327.52	551.56	-324.14	10.00	9.98	0.61
12,000.00	84.70	179.34	11,672.55	278.00	552.26	-274.62	10.00	9.98	0.59
12,053.07	90.00	179.65	11,675.00	225.01	552.73	-221.63	10.00	9.98	0.58
<b>LP - Wolfcamp Y</b>									
12,100.00	90.00	179.65	11,675.00	178.08	553.02	-174.70	0.00	0.00	0.00
12,200.00	90.00	179.65	11,675.00	78.08	553.64	-74.70	0.00	0.00	0.00
12,300.00	90.00	179.65	11,675.00	-21.92	554.26	25.30	0.00	0.00	0.00
12,400.00	90.00	179.65	11,675.00	-121.91	554.88	125.30	0.00	0.00	0.00
12,500.00	90.00	179.65	11,675.00	-221.91	555.50	225.30	0.00	0.00	0.00
12,600.00	90.00	179.65	11,675.00	-321.91	556.12	325.30	0.00	0.00	0.00
12,700.00	90.00	179.65	11,675.00	-421.91	556.74	425.30	0.00	0.00	0.00
12,800.00	90.00	179.65	11,675.00	-521.91	557.36	525.30	0.00	0.00	0.00
12,900.00	90.00	179.65	11,675.00	-621.90	557.97	625.30	0.00	0.00	0.00
13,000.00	90.00	179.65	11,675.00	-721.90	558.59	725.30	0.00	0.00	0.00
13,100.00	90.00	179.65	11,675.00	-821.90	559.21	825.30	0.00	0.00	0.00
13,200.00	90.00	179.65	11,675.00	-921.90	559.83	925.30	0.00	0.00	0.00
13,300.00	90.00	179.65	11,675.00	-1,021.90	560.45	1,025.30	0.00	0.00	0.00
13,400.00	90.00	179.65	11,675.00	-1,121.89	561.07	1,125.30	0.00	0.00	0.00
13,500.00	90.00	179.65	11,675.00	-1,221.89	561.69	1,225.30	0.00	0.00	0.00
13,600.00	90.00	179.65	11,675.00	-1,321.89	562.31	1,325.30	0.00	0.00	0.00
13,700.00	90.00	179.65	11,675.00	-1,421.89	562.93	1,425.30	0.00	0.00	0.00
13,800.00	90.00	179.65	11,675.00	-1,521.89	563.54	1,525.30	0.00	0.00	0.00
13,900.00	90.00	179.65	11,675.00	-1,621.88	564.16	1,625.30	0.00	0.00	0.00
14,000.00	90.00	179.65	11,675.00	-1,721.88	564.78	1,725.30	0.00	0.00	0.00
14,100.00	90.00	179.65	11,675.00	-1,821.88	565.40	1,825.30	0.00	0.00	0.00
14,200.00	90.00	179.65	11,675.00	-1,921.88	566.02	1,925.30	0.00	0.00	0.00
14,300.00	90.00	179.65	11,675.00	-2,021.88	566.64	2,025.30	0.00	0.00	0.00
14,400.00	90.00	179.65	11,675.00	-2,121.87	567.26	2,125.30	0.00	0.00	0.00
14,500.00	90.00	179.65	11,675.00	-2,221.87	567.88	2,225.30	0.00	0.00	0.00
14,600.00	90.00	179.65	11,675.00	-2,321.87	568.50	2,325.30	0.00	0.00	0.00
14,700.00	90.00	179.65	11,675.00	-2,421.87	569.12	2,425.30	0.00	0.00	0.00
14,800.00	90.00	179.65	11,675.00	-2,521.87	569.73	2,525.30	0.00	0.00	0.00
14,900.00	90.00	179.65	11,675.00	-2,621.87	570.35	2,625.30	0.00	0.00	0.00
15,000.00	90.00	179.65	11,675.00	-2,721.86	570.97	2,725.30	0.00	0.00	0.00
15,100.00	90.00	179.65	11,675.00	-2,821.86	571.59	2,825.30	0.00	0.00	0.00
15,200.00	90.00	179.65	11,675.00	-2,921.86	572.21	2,925.30	0.00	0.00	0.00
15,300.00	90.00	179.65	11,675.00	-3,021.86	572.83	3,025.30	0.00	0.00	0.00
15,400.00	90.00	179.65	11,675.00	-3,121.86	573.45	3,125.30	0.00	0.00	0.00
15,500.00	90.00	179.65	11,675.00	-3,221.85	574.07	3,225.30	0.00	0.00	0.00
15,600.00	90.00	179.65	11,675.00	-3,321.85	574.69	3,325.30	0.00	0.00	0.00
15,700.00	90.00	179.65	11,675.00	-3,421.85	575.30	3,425.30	0.00	0.00	0.00
15,800.00	90.00	179.65	11,675.00	-3,521.85	575.92	3,525.30	0.00	0.00	0.00
15,900.00	90.00	179.65	11,675.00	-3,621.85	576.54	3,625.30	0.00	0.00	0.00



# Prototype Well Planning LLC

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well 102H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB=30' @ 3545.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB=30' @ 3545.00usft
<b>Site:</b>	Poker Lake Unit 16 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	102H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PERMIT		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,000.00	90.00	179.65	11,675.00	-3,721.84	577.16	3,725.30	0.00	0.00	0.00	
16,100.00	90.00	179.65	11,675.00	-3,821.84	577.78	3,825.30	0.00	0.00	0.00	
16,200.00	90.00	179.65	11,675.00	-3,921.84	578.40	3,925.30	0.00	0.00	0.00	
16,300.00	90.00	179.65	11,675.00	-4,021.84	579.02	4,025.30	0.00	0.00	0.00	
16,400.00	90.00	179.65	11,675.00	-4,121.84	579.64	4,125.30	0.00	0.00	0.00	
16,500.00	90.00	179.65	11,675.00	-4,221.83	580.26	4,225.30	0.00	0.00	0.00	
16,600.00	90.00	179.65	11,675.00	-4,321.83	580.88	4,325.30	0.00	0.00	0.00	
16,700.00	90.00	179.65	11,675.00	-4,421.83	581.49	4,425.30	0.00	0.00	0.00	
16,800.00	90.00	179.65	11,675.00	-4,521.83	582.11	4,525.30	0.00	0.00	0.00	
16,900.00	90.00	179.65	11,675.00	-4,621.83	582.73	4,625.30	0.00	0.00	0.00	
17,000.00	90.00	179.65	11,675.00	-4,721.83	583.35	4,725.30	0.00	0.00	0.00	
17,100.00	90.00	179.65	11,675.00	-4,821.82	583.97	4,825.30	0.00	0.00	0.00	
17,200.00	90.00	179.65	11,675.00	-4,921.82	584.59	4,925.30	0.00	0.00	0.00	
17,300.00	90.00	179.65	11,675.00	-5,021.82	585.21	5,025.30	0.00	0.00	0.00	
17,400.00	90.00	179.65	11,675.00	-5,121.82	585.83	5,125.30	0.00	0.00	0.00	
17,500.00	90.00	179.65	11,675.00	-5,221.82	586.45	5,225.30	0.00	0.00	0.00	
17,600.00	90.00	179.65	11,675.00	-5,321.81	587.06	5,325.30	0.00	0.00	0.00	
17,700.00	90.00	179.65	11,675.00	-5,421.81	587.68	5,425.30	0.00	0.00	0.00	
17,800.00	90.00	179.65	11,675.00	-5,521.81	588.30	5,525.30	0.00	0.00	0.00	
17,900.00	90.00	179.65	11,675.00	-5,621.81	588.92	5,625.30	0.00	0.00	0.00	
18,000.00	90.00	179.65	11,675.00	-5,721.81	589.54	5,725.30	0.00	0.00	0.00	
18,100.00	90.00	179.65	11,675.00	-5,821.80	590.16	5,825.30	0.00	0.00	0.00	
18,200.00	90.00	179.65	11,675.00	-5,921.80	590.78	5,925.30	0.00	0.00	0.00	
18,300.00	90.00	179.65	11,675.00	-6,021.80	591.40	6,025.30	0.00	0.00	0.00	
18,400.00	90.00	179.65	11,675.00	-6,121.80	592.02	6,125.30	0.00	0.00	0.00	
18,500.00	90.00	179.65	11,675.00	-6,221.80	592.63	6,225.30	0.00	0.00	0.00	
18,600.00	90.00	179.65	11,675.00	-6,321.79	593.25	6,325.30	0.00	0.00	0.00	
18,700.00	90.00	179.65	11,675.00	-6,421.79	593.87	6,425.30	0.00	0.00	0.00	
18,800.00	90.00	179.65	11,675.00	-6,521.79	594.49	6,525.30	0.00	0.00	0.00	
18,900.00	90.00	179.65	11,675.00	-6,621.79	595.11	6,625.30	0.00	0.00	0.00	
19,000.00	90.00	179.65	11,675.00	-6,721.79	595.73	6,725.30	0.00	0.00	0.00	
19,100.00	90.00	179.65	11,675.00	-6,821.78	596.35	6,825.30	0.00	0.00	0.00	
19,200.00	90.00	179.65	11,675.00	-6,921.78	596.97	6,925.30	0.00	0.00	0.00	
19,300.00	90.00	179.65	11,675.00	-7,021.78	597.59	7,025.30	0.00	0.00	0.00	
19,400.00	90.00	179.65	11,675.00	-7,121.78	598.21	7,125.30	0.00	0.00	0.00	
19,500.00	90.00	179.65	11,675.00	-7,221.78	598.82	7,225.30	0.00	0.00	0.00	
19,600.00	90.00	179.65	11,675.00	-7,321.78	599.44	7,325.30	0.00	0.00	0.00	
19,700.00	90.00	179.65	11,675.00	-7,421.77	600.06	7,425.30	0.00	0.00	0.00	
19,800.00	90.00	179.65	11,675.00	-7,521.77	600.68	7,525.30	0.00	0.00	0.00	
19,900.00	90.00	179.65	11,675.00	-7,621.77	601.30	7,625.30	0.00	0.00	0.00	
20,000.00	90.00	179.65	11,675.00	-7,721.77	601.92	7,725.30	0.00	0.00	0.00	
20,100.00	90.00	179.65	11,675.00	-7,821.77	602.54	7,825.30	0.00	0.00	0.00	
20,200.00	90.00	179.65	11,675.00	-7,921.76	603.16	7,925.30	0.00	0.00	0.00	
20,300.00	90.00	179.65	11,675.00	-8,021.76	603.78	8,025.30	0.00	0.00	0.00	
20,400.00	90.00	179.65	11,675.00	-8,121.76	604.39	8,125.30	0.00	0.00	0.00	
20,500.00	90.00	179.65	11,675.00	-8,221.76	605.01	8,225.30	0.00	0.00	0.00	
20,600.00	90.00	179.65	11,675.00	-8,321.76	605.63	8,325.30	0.00	0.00	0.00	
20,700.00	90.00	179.65	11,675.00	-8,421.75	606.25	8,425.30	0.00	0.00	0.00	
20,800.00	90.00	179.65	11,675.00	-8,521.75	606.87	8,525.30	0.00	0.00	0.00	
20,900.00	90.00	179.65	11,675.00	-8,621.75	607.49	8,625.30	0.00	0.00	0.00	
21,000.00	90.00	179.65	11,675.00	-8,721.75	608.11	8,725.30	0.00	0.00	0.00	
21,100.00	90.00	179.65	11,675.00	-8,821.75	608.73	8,825.30	0.00	0.00	0.00	
21,200.00	90.00	179.65	11,675.00	-8,921.74	609.35	8,925.30	0.00	0.00	0.00	
21,300.00	90.00	179.65	11,675.00	-9,021.74	609.97	9,025.30	0.00	0.00	0.00	





# Prototype Well Planning LLC

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well 102H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB=30' @ 3545.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB=30' @ 3545.00usft
<b>Site:</b>	Poker Lake Unit 16 TWR	<b>North Reference:</b>	Grid
<b>Well:</b>	102H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
21,400.00	90.00	179.65	11,675.00	-9,121.74	610.58	9,125.30	0.00	0.00	0.00
21,500.00	90.00	179.65	11,675.00	-9,221.74	611.20	9,225.30	0.00	0.00	0.00
21,600.00	90.00	179.65	11,675.00	-9,321.74	611.82	9,325.30	0.00	0.00	0.00
21,700.00	90.00	179.65	11,675.00	-9,421.74	612.44	9,425.30	0.00	0.00	0.00
21,800.00	90.00	179.65	11,675.00	-9,521.73	613.06	9,525.30	0.00	0.00	0.00
21,900.00	90.00	179.65	11,675.00	-9,621.73	613.68	9,625.30	0.00	0.00	0.00
21,956.94	90.00	179.65	11,675.00	-9,678.67	614.03	9,682.24	0.00	0.00	0.00
22,000.00	90.00	179.65	11,675.00	-9,721.73	614.30	9,725.30	0.00	0.00	0.00
22,086.95	90.00	179.65	11,675.00	-9,808.67	614.84	9,812.25	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PLU 16 TWR 102H SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	439,979.40	668,499.10	32.208447	-103.788546
PLU 16 TWR 102H LTP - plan hits target center - Point	0.00	0.00	11,675.00	-9,678.67	614.04	430,301.30	669,113.10	32.181834	-103.786720
PLU 16 TWR 102H FTP - plan hits target center - Point	0.00	0.00	11,675.00	225.01	552.73	440,204.40	669,051.80	32.209058	-103.786756
PLU 16 TWR 102H PBH - plan hits target center - Point	0.00	0.00	11,675.00	-9,808.67	614.84	430,171.30	669,113.90	32.181477	-103.786720





Prototype Well Planning LLC  
Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 102H
Company:	XTO Energy	TVD Reference:	RKB=30' @ 3545.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB=30' @ 3545.00usft
Site:	Poker Lake Unit 16 TWR	North Reference:	Grid
Well:	102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
635.00	636.00	Rustler				
695.00	696.00	Magenta Dolomite				
985.00	986.00	Top Salt				
4,196.18	4,186.00	Base Salt				
4,407.36	4,396.00	Delaware				
5,337.58	5,321.00	Cherry Canyon				
6,871.18	6,846.00	Brushy Canyon				
8,002.52	7,971.00	Basal Brushy Canyon				
8,258.96	8,226.00	Bone Spring Lime				
8,329.36	8,296.00	Avalon Sand				
8,354.50	8,321.00	Upper Avalon Shale				
8,832.18	8,796.00	Lower Avalon Shale				
9,033.30	8,996.00	1st Bone Spring Lime				
9,324.94	9,286.00	1st Bone Spring Ss				
9,727.19	9,686.00	2nd Bone Spring Lime				
10,038.94	9,996.00	2nd Bone Spring Ss				
10,431.14	10,386.00	3rd Bone Spring Lm				
11,170.09	11,121.00	3rd Bone Spring Ss				
11,585.67	11,496.00	Red Hills SS				
11,727.28	11,586.00	Wolfcamp				
11,746.39	11,596.00	Wolfcamp X				
12,053.07	11,676.00	LP				
12,053.07	11,676.00	Wolfcamp Y				

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

## GAS CAPTURE PLAN

Date: 01/15/2020

☒ Original Operator & OGRID No.: XTO Permian Operating [373075]  
☐ Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

### Well(s)/Production Facility – Name of facility: Poker Lake Unit 16 TWR East

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Poker Lake Unit 16 TWR 161H		D-21-24S-31E	492' FNL & 400' FWL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 121H		D-21-24S-31E	522' FNL & 400' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 101H		D-21-24S-31E	552' FNL & 400' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 152H		D-21-24S-31E	492' FNL & 700' FWL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 122H		D-21-24S-31E	522' FNL & 700' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 102H		D-21-24S-31E	552' FNL & 700' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 163H		C-21-24S-31E	485' FNL & 2040' FWL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 123H		C-21-24S-31E	515' FNL & 2040' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 103H		C-21-24S-31E	544' FNL & 2040' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 154H		C-21-24S-31E	485' FNL & 2290' FWL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 124H		C-21-24S-31E	515' FNL & 2290' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 104H		C-21-24S-31E	545' FNL & 2290' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 165H		C-21-24S-31E	485' FNL & 2590' FWL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 125H		C-21-24S-31E	515' FNL & 2590' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 105H		C-21-24S-31E	545' FNL & 2590' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 156H		B-21-24S-31E	485' FNL & 2437' FEL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 126H		B-21-24S-31E	515' FNL & 2437' FEL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 106H		B-21-24S-31E	545' FNL & 2437' FEL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 167H		B-21-24S-31E	490' FNL & 1950' FEL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 127H		B-21-24S-31E	520' FNL & 1950' FEL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 107H		B-21-24S-31E	550' FNL & 1950' FEL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 158H		A-21-24S-31E	490' FNL & 1650' FEL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 128H		A-21-24S-31E	520' FNL & 1650' FEL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 108H		A-21-24S-31E	550' FNL & 1650' FEL	2800	Flared/Sold	

### **Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Lucid and will be connected to Lucid low/high pressure gathering system located in Eddy County, New Mexico. It will require 271.84' of pipeline to connect the facility to low/high pressure gathering system. XTO provides (periodically) to Lucid a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, XTO and Lucid have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Red Hills Plant, Sec. 13, T24S, R33E or Roadrunner, Sec. 32, T32S, R28E, Eddy County. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

### **Flowback Strategy**

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Lucid system at that time. Based on current information, it is XTO's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### **Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

## GAS CAPTURE PLAN

Date: 01/15/2020

☒ Original

Operator & OGRID No.: XTO Permian Operating [373075]

☐ Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

### Well(s)/Production Facility – Name of facility: Poker Lake Unit 16 TWR West

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Poker Lake Unit 16 TWR 161H		D-21-24S-31E	492' FNL & 400' FWL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 121H		D-21-24S-31E	522' FNL & 400' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 101H		D-21-24S-31E	552' FNL & 400' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 152H		D-21-24S-31E	492' FNL & 700' FWL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 122H		D-21-24S-31E	522' FNL & 700' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 102H		D-21-24S-31E	552' FNL & 700' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 163H		C-21-24S-31E	485' FNL & 2040' FWL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 123H		C-21-24S-31E	515' FNL & 2040' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 103H		C-21-24S-31E	544' FNL & 2040' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 154H		C-21-24S-31E	485' FNL & 2290' FWL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 124H		C-21-24S-31E	515' FNL & 2290' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 104H		C-21-24S-31E	545' FNL & 2290' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 165H		C-21-24S-31E	485' FNL & 2590' FWL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 125H		C-21-24S-31E	515' FNL & 2590' FWL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 105H		C-21-24S-31E	545' FNL & 2590' FWL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 156H		B-21-24S-31E	485' FNL & 2437' FEL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 126H		B-21-24S-31E	515' FNL & 2437' FEL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 106H		B-21-24S-31E	545' FNL & 2437' FEL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 167H		B-21-24S-31E	490' FNL & 1950' FEL	4800	Flared/Sold	
Poker Lake Unit 16 TWR 127H		B-21-24S-31E	520' FNL & 1950' FEL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 107H		B-21-24S-31E	550' FNL & 1950' FEL	2800	Flared/Sold	
Poker Lake Unit 16 TWR 158H		A-21-24S-31E	490' FNL & 1650' FEL	4300	Flared/Sold	
Poker Lake Unit 16 TWR 128H		A-21-24S-31E	520' FNL & 1650' FEL	3000	Flared/Sold	
Poker Lake Unit 16 TWR 108H		A-21-24S-31E	550' FNL & 1650' FEL	2800	Flared/Sold	

### **Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Lucid and will be connected to Lucid low/high pressure gathering system located in Eddy County, New Mexico. It will require 734.14' of pipeline to connect the facility to low/high pressure gathering system. XTO provides (periodically) to Lucid a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, XTO and Lucid have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Red Hills Plant, Sec. 13, T24S, R33E or Roadrunner, Sec. 32, T32S, R28E, Eddy County. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

### **Flowback Strategy**

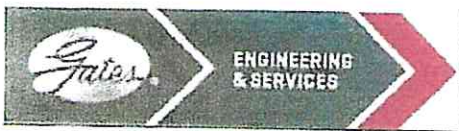
After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Lucid system at that time. Based on current information, it is XTO's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### **Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines



GATES E & S NORTH AMERICA, INC  
DU-TEX  
134 44TH STREET  
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807  
FAX: 361-887-0812  
EMAIL: crpe&s@gates.com  
WEB: www.gates.com

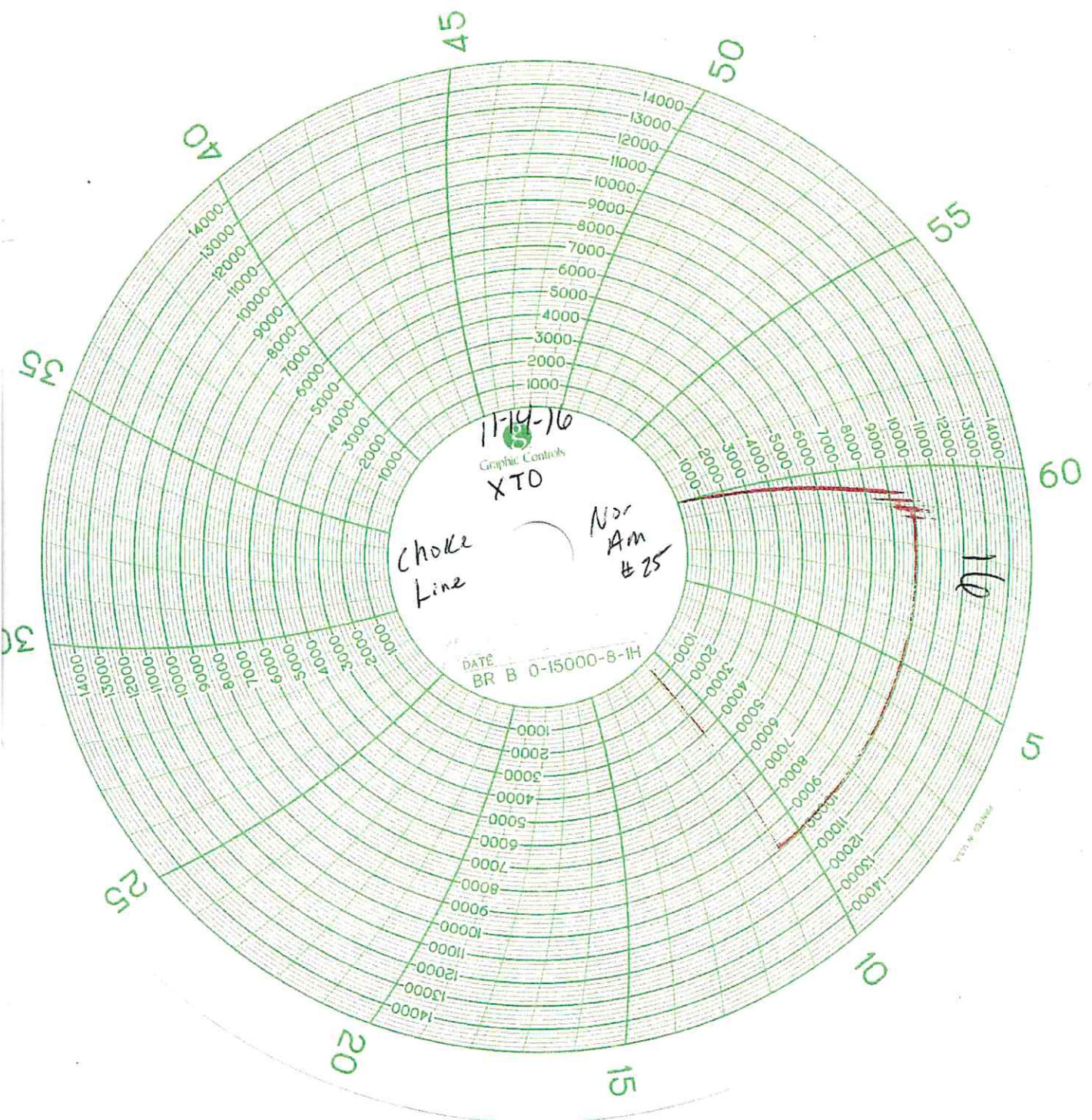
### GRADE D PRESSURE TEST CERTIFICATE

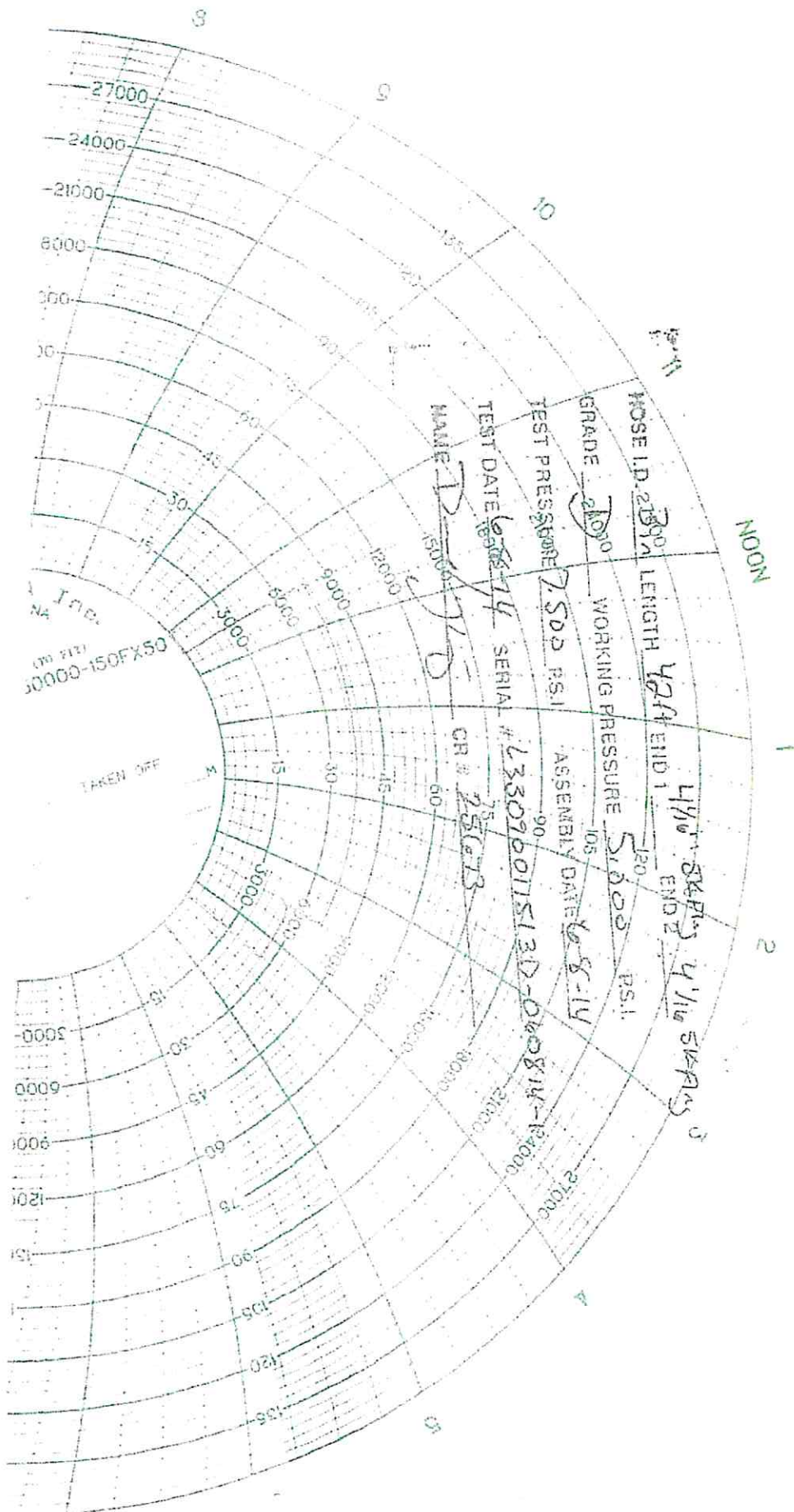
Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA
Product Description:	FD3.042.0R41/16.5KFLGE/E LE		
End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011513D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality:	QUALITY	Technical Supervisor :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :		Signature :	



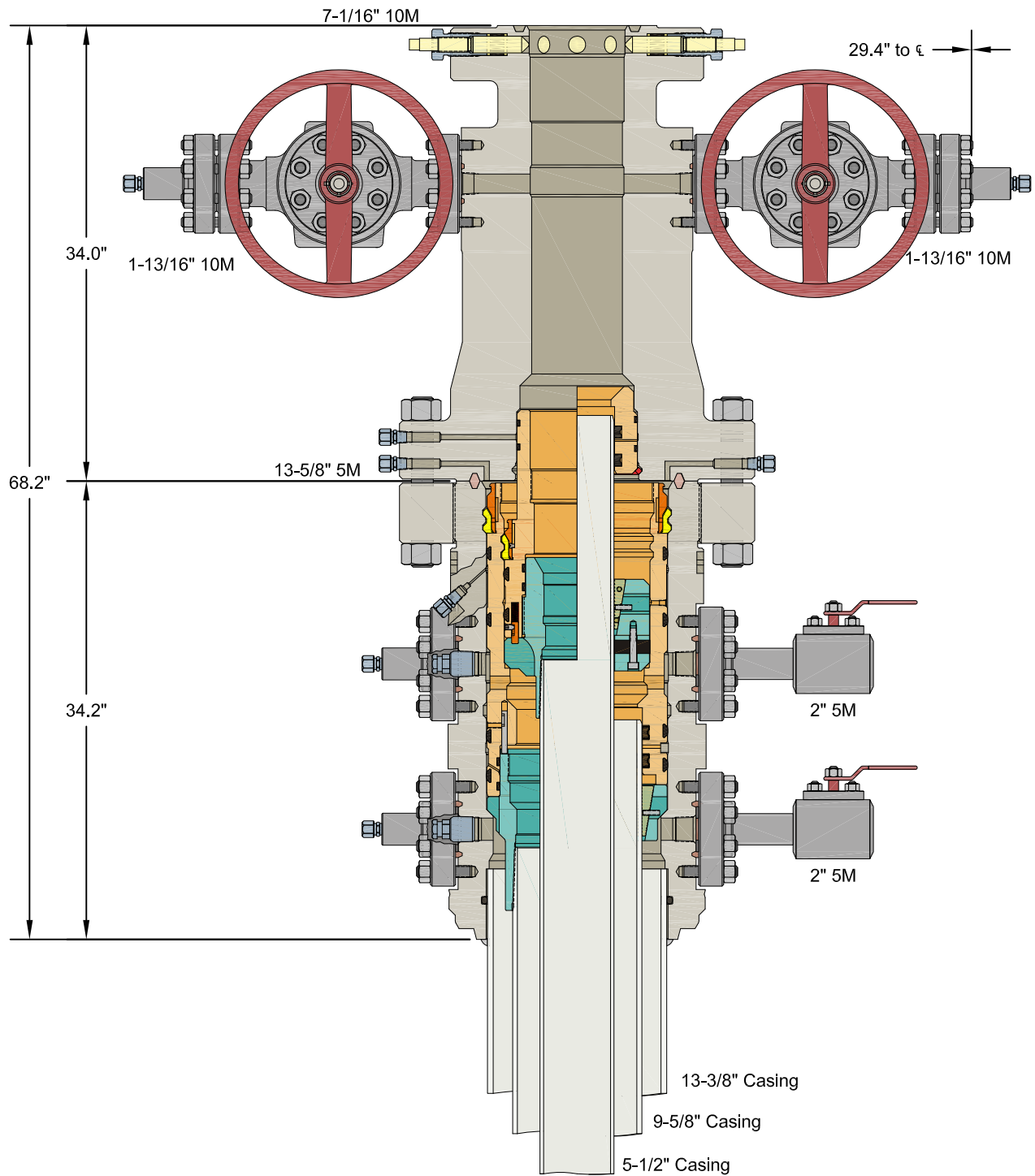








GE Oil & Gas



ALL DIMENSIONS ARE APPROXIMATE

This drawing is the property of GE Oil & Gas Pressure Control LP and is considered confidential. Unless otherwise approved in writing, neither it nor its contents may be used, copied, transmitted or reproduced except for the sole purpose of GE Oil & Gas Pressure Control LP.

XTO ENERGY, INC.

13-3/8" x 9-5/8" x 5-1/2" 10M RSH-2 Wellhead  
Assembly, With T-EBS-F Tubing Head

DRAWN

VJK

16FEB17

APPRV

KN

16FEB17

FOR REFERENCE ONLY

DRAWING NO.

10012842

## 10,000 PSI Annular BOP Variance Request

XTO Energy/XTO Permian Op. request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOPL).

### 1. Component and Preventer Compatibility Tables

The tables below outline the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

8-1/2" Production Hole Section 10M psi Requirement					
Component	OD	Primary Preventer	RWP	Alternate Preventer(s)	RWP
Drillpipe	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
HWDP	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Jars	6.500"	Annular	5M	-	-
DCs and MWD tools	6.500"-8.000"	Annular	5M	-	-
Mud Motor	6.750"-8.000"	Annular	5M	-	-
Production Casing	5-1/2"	Annular	5M	-	-
Open-Hole	-	Blind Rams	10M	-	-

## **2. Well Control Procedures**

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the XTO Energy/Permian Operating drilling supervisor's office on location and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

### General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan

9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

#### General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full-opening safety valve & close
3. Space out drill string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

#### General Procedure While Running Production Casing

1. Sound alarm (alert crew)
2. Stab crossover and full-opening safety valve and close
3. Space out string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

### General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams (HCR & choke will already be in the closed position)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
6. Regroup and identify forward plan

### General Procedures While Pulling BHA Through Stack

1. PRIOR to pulling last joint of drillpipe through stack:
  - a. Perform flow check. If flowing, continue to (b).
  - b. Sound alarm (alert crew)
  - c. Stab full-opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper variable bore rams
  - e. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP & SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combination immediately available:
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full-opening safety valve and close
  - c. Space out drill string with upset just beneath the upper variable bore rams
  - d. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP & SICP

- ii. Pit gain
  - iii. Time
- h. Regroup and identify forward plan
- 3. With BHA in the stack and NO compatible ram preventer and pipe combination immediately available:
  - a. Sound alarm (alert crew)
  - b. If possible, pull string clear of the stack and follow "Open Hole" procedure.
  - c. If impossible to pull string clear of the stack:
  - d. Stab crossover, make up one joint/stand of drillpipe and full-opening safety valve and close
  - e. Space out drill string with tooljoint just beneath the upper variable bore ram
  - f. Shut-in using upper variable bore ram (HCR & choke will already be in the closed position)
  - g. Confirm shut-in
  - h. Notify toolpusher/company representative
  - i. Read and record the following:
    - i. SIDPP & SICP
    - ii. Pit gain
    - iii. Time
  - j. Regroup and identify forward plan