

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON**
Do not use this form for proposals to drill or to re-enter an
abandoned well. Use form 3160-3 (APD) for such proposals.5. Lease Serial No.
415302

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
CORRAL CANYON FEDERAL COM 16H9. API Well No.
30-015-42928-00-X110. Field and Pool or Exploratory Area
CORRAL CANYON
WILLOW LAKE-BONE SPRING 9621711. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

XTO ENERGY INCORPORATED

Contact: STEPHANIE RABADUE

E-Mail: stephanie_rabadue@xtoenergy.com

3a. Address

500 W ILLINOIS STREET SUITE 100
MIDLAND, TX 79701

3b. Phone No. (include area code)

Ph: 432-620-6714

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

Sec 5 T25S R29E SESE 200FSL 710FEL
32.152345 N Lat, 103.999848 W Lon

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

XTO Energy, Inc respectfully requests the following changes to the original approved APD:

1. Well Name to: Corral Canyon Federal Com #16H
2. Producing Area: take points & bottom hole location
3. Field/Pool
3. Casing & Cement Design

An updated plat, drilling program and directional drill survey is attached.

AFMSS OIL CONSERVATION
ARTESIA DISTRICT

MAR 06 2017

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

RECEIVED

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #366769 verified by the BLM Well Information System For XTO ENERGY INCORPORATED, sent to the Carlsbad Committed to AFMSS for processing by DEBORAH MCKINNEY on 02/14/2017 (17DLM0868SE)	
Name (Printed/Typed) STEPHANIE RABADUE	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 02/10/2017
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By MUSTAFA HAQUE	Title PETROLEUM ENGINEER
Date 02/27/2017	
Conditions of approval, if any, are attached. Approval of this notice 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.	
Office Carlsbad	

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.

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

RuP 4.27.17

**PECOS DISTRICT
CONDITIONS OF APPROVAL**

BLM OIL CONSERVATION
ARTESIA DISTRICT
MAR 06 2017

OPERATOR'S NAME:	XTO Energy Inc
LEASE NO.:	NM15302
WELL NAME & NO.:	16H-Corral Canyon Federal
SURFACE HOLE FOOTAGE:	200'/S & 710'/E
BOTTOM HOLE FOOTAGE	200'/S & 990'/E, sec, 17-T25S-R29E
LOCATION:	Section 5, T. 25 S., R. 29 E., NMPM
COUNTY:	Eddy County, New Mexico

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All previous COAs still apply except for the following:

A. CASING

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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. **DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.**

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.

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

Risks:

Medium Cave/ Karst Occurrence

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

Possibility of lost circulation in the Rustler and in the Delaware.

1. The 13 3/8 inch surface casing shall be set at approximately 600 feet (in a competent bedrock; if salt is encountered, set casing at least 25 feet 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 is to include the lead cement slurry.
 - 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.

Formation below the 13-3/8" shoe to be tested according to Onshore Order

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

2. The minimum required fill of cement behind the 9 5/8 inch intermediate casing is:
 - ☒ Cement to surface. If cement does not circulate see A.1.a, c-d above. **If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.

Test to be done as a mud equivalency test using the mud weight necessary for the

pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to 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.

4. 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

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. **5M/10M 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.**

MHH 02272017

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
Corral Canyon Federal 16H
Projected TD: 18927' MD / 8597' TVD
SHL: 200' FSL & 710' FEL, SECTION 5, T25S, R29E
BHL: 200' FSL & 990' FEL, SECTION 17, T25S, R29E
Eddy County, NM

1. GEOLOGIC NAME OF SURFACE FORMATION:

A. Quaternary

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Formation	Well Depth (TVD)	Water / Oil / Gas
Rustler	253'	Water
Top of Salt	694'	
Base of Salt	2683'	
Delaware	2882'	Water
Brushy Canyon	5388'	Water/Oil/Gas
Basal Brushy Canyon	6388'	Water/Oil/Gas
Bone Spring	6616'	Water/Oil/Gas
1 st Bone Spring Ss	7570'	Water/Oil/Gas
2 nd Bone Spring Lm	7865'	Water/Oil/Gas
2 nd Bone Spring Ss	8389'	Water/Oil/Gas
2 nd Bone Spring "B"Ss	8513'	Water/Oil/Gas
2 nd Bone Spring "C"Ss	8564'	Water/Oil/Gas
Target/Land Curve	8597'	Water/Oil/Gas
3 rd Bone Spring	8645'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13-3/8" casing @ 670' (24' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9-5/8" casing at 2750' and circulating cement to surface. An 8-3/4" vertical and curve hole will be drilled and an 8-1/2" lateral hole will be drilled to MD/TD where 5-1/2" casing will be set at TD and cemented back at least 500' into the 9-5/8" casing shoe.

3. CASING PROGRAM:

SEE CoA

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' - 670' 600'	13-3/8"	48#	STC	H-40	New	5.64	2.41	10.01
12-1/4"	0' - 2750'	9-5/8"	36#	LTC	J-55	New	2.41	1.38	4.58
8-3/4" x 8-1/2"	0' - 18927'	5-1/2"	17#	BTC	CYP-110	New	1.12	1.74	1.70

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.

WELLHEAD:

- A. Starting Head: 13-3/8" SOW bottom x 13-5/8" 5,000 psi top flange
- B. Tubing Head: 13-5/8" 5,000 psi bottom flange x 7-1/16" 10,000 psi top flange

4. CEMENT PROGRAM:

- A. **Surface Casing:** 13-3/8", 48#, NEW H-40, STC casing to be set at $\pm 670'$.

20bbls FW, then 690 sx HalCem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sk, 6.39 gal/sx wtr)

***All volumes 100% excess in open hole. Cement to surface.

- B. **Intermediate Casing:** 9-5/8", 36#, NEW J-55, LTC casing to be set at $\pm 2750'$.

Lead: 20 bbls FW, then 570 sx EconoCem-C + 3 lbm/sk Kol-Seal + 0.25 lbm D-air 5000 (mixed at 11.9 ppg, 2.49 ft³/sk, 14.18 gal/sx wtr)

Tail: 235 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft³/sk, 6.34 gal/sx wtr)

***All volumes 100% excess in open hole. Cement to surface.

- C. **Production Casing:** 5-1/2", 17#, NEW CYP-110, BTC casing to be set at $\pm 18889'$.

Lead: 20 bbls FW, then 630 sx Tuned Light + 2 lbm/sk Kol-Seal + 0.3 lbm/sk CFR-3 (mixed at 10.8 ppg, 2.77 ft³/sk, 15.3 gal/sx wtr)

Tail: 3005 sx VersaCem - H + 3 lbm/sk Kol-Seal + 0.4% Halad 344 + 0.3% CFR-3 + 0.3% Super CBL + 0.25 lbm/sk D-air 5000 (mixed at 14.5 ppg, 1.22 ft³/sk, 5.33 gal/sx wtr)

***Lead planned with 50% excess in open hole, tail planned with 30% excess in open hole.
Planned top of cement 500' into intermediate casing shoe.

5. PRESSURE CONTROL EQUIPMENT: ~~PSEE~~ COA

The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. Max bottom hole pressure should not exceed 4292 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-5/8" 5M 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.

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.

6. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 670' 600'	17-1/2"	FW/Native	8.4 - 8.8	35 - 40	NC
670' 600' to 2750'	12-1/4"	Brine/Gel Sweeps	9.8 - 10.2	30 - 32	NC
2750' to 9111'	8-3/4"	FW / Cut Brine	8.6 - 9.4	29 - 32	NC - 20
9111' to 18927'	8-1/2"	Polymer-Water	9.2 - 9.6	55 - 65	12 - 20

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

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with brine solution. A 9.8ppg - 10.2ppg brine mud will be used while drilling through the salt formation. Cut brine will be used to drill the 8-3/4" section. A polymer water will be used to drill the 8-1/2" lateral. Pump speed will be recorded on a daily drilling report after mudding up. 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. Solids control equipment will be used to operate as a closed loop system.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 13-3/8" casing.

8. LOGGING, CORING AND TESTING PROGRAM:

Mud Logger: Mud Logging Unit (2 man) on below intermediate casing.

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

9. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

None anticipated. BHT of 175 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. 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.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 40 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

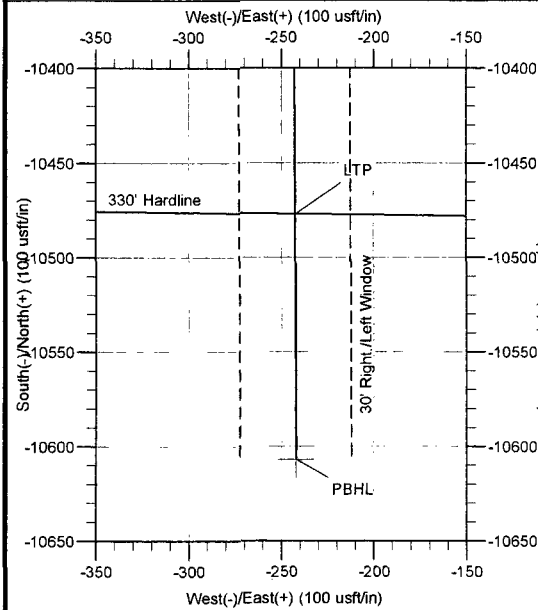


Company: XTO Energy
Site: Corral Canyon Federal
Well: 16H
Project: Eddy County, New Mexico (NAD 27)
Rig: 25' KB



ANNOTATIONS

MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Annotation
7849.73	0.00	0.00	7849.73	0.00	0.00	0.00	0.00	KOP, 8.00°/100' Build
8662.23	65.00	206.50	8498.83	-370.07	-184.51	374.18	413.52	Begin 8.00°/100' Build & Turn
9111.51	90.00	179.79	8597.00	-790.80	-277.61	796.92	848.27	Begin 90.00° Lateral
18927.57	90.00	179.79	8597.00	-10606.80	-241.90	10609.56	10664.34	PBHL



Azimuths to Grid North
True North: -0.18°
Magnetic North: 7.08°
Magnetic Field
Strength: 47975.9nT
Dip Angle: 59.92°
Date: 1/1/2017
Model: BGGM2016

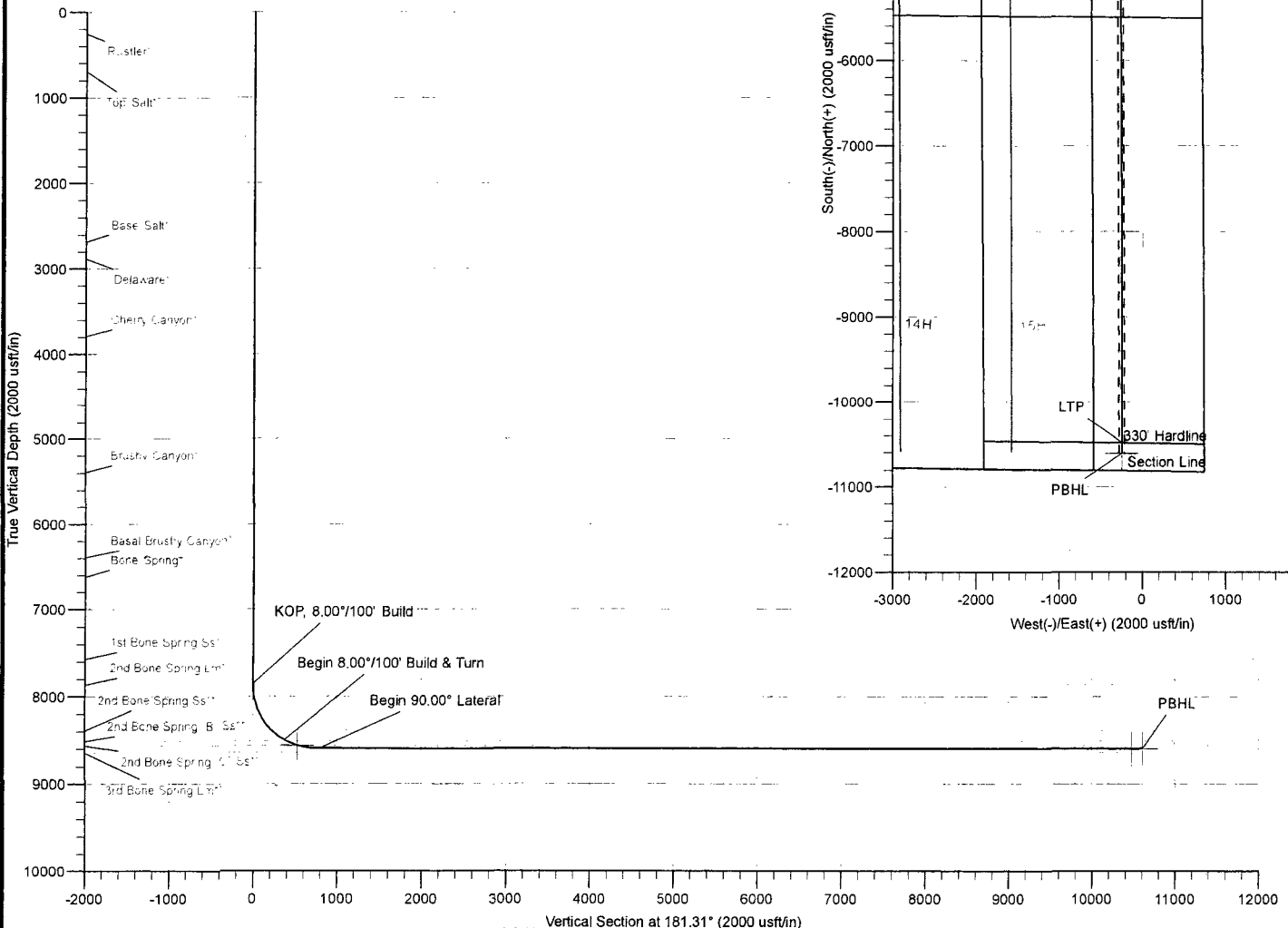
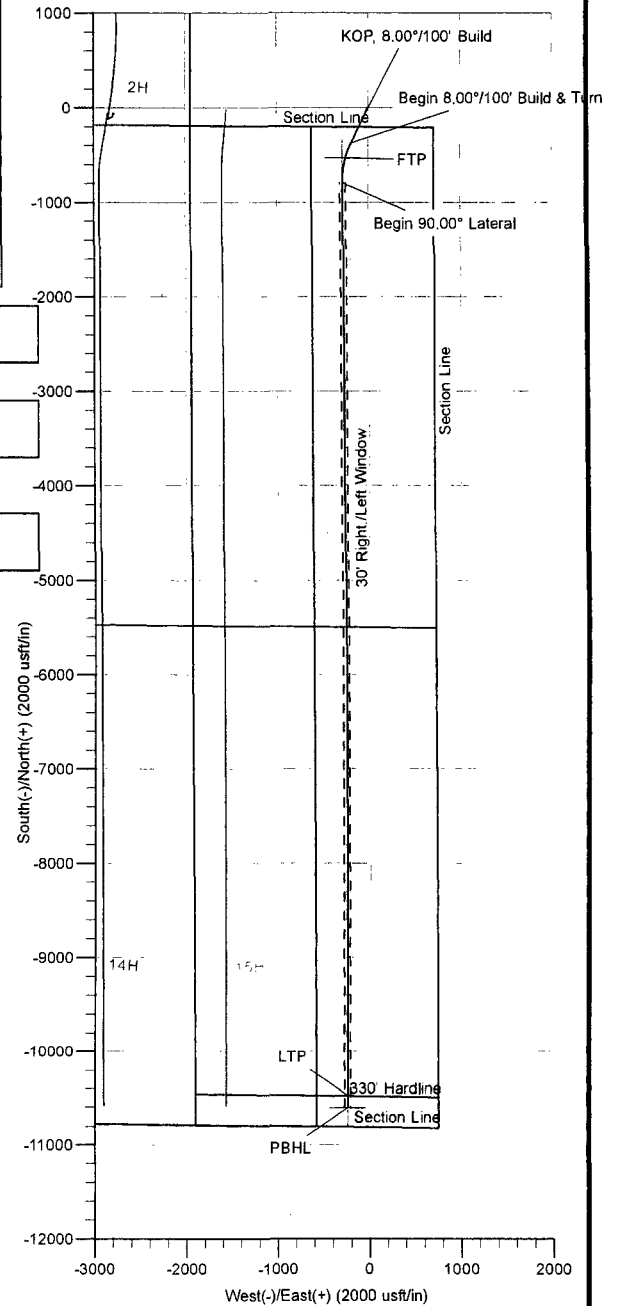
US State Plane 1927 (Exact solution)
New Mexico East 3001

Created By: VLS
Date: 15:19, November 30 2016
Plan: Design #1

Landing Point
X: 602930.09 Y: 418513.50

330° HL Crossing
X: 602965.40 Y: 408827.50

PBHL
X: 602965.80 Y: 408697.50



Vertical Section at 181.31° (2000 usf/in)

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 MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.



ARTESIA OIL CONSERVATION
ARTESIA DISTRICT
MAR 06 2017
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XTO Energy

**Eddy County, New Mexico (NAD 27)
Corral Canyon Federal
16H**

Wellbore #1

Plan: Design #1

Standard Planning Report

30 November, 2016



MS Energy Services
Planning Report



Database: 5000.1 Conroe DB
Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Corral Canyon Federal
Well: 16H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 16H
TVD Reference: Well @ 2972.00usft (25' KB)
MD Reference: Well @ 2972.00usft (25' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, New Mexico (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well 16H

Well Position +N/-S 419,304.30 usft **Northing:** 419,304.30 usft **Latitude:** 32° 9' 8.442 N
+E/-W 603,207.70 usft **Easting:** 603,207.70 usft **Longitude:** 103° 59' 59.452 W

Position Uncertainty 0.00 usft **Wellhead Elevation:** **Ground Level:** 2,947.00 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	1/1/2017	7.26	59.92	47,976

Design Design #1

Audit Notes:

Version: **Phase:** PROTOTYPE **Tie On Depth:** 0.00

Vertical Section:

Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
0.00	0.00	0.00	181.31

Plan Survey Tool Program **Date** 11/30/2016

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1 0.00	18,927.57	Design #1 (Wellbore #1)	MWD	
			OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,849.73	0.00	0.00	7,849.73	0.00	0.00	0.00	0.00	0.00	0.00	
8,662.23	65.00	206.50	8,498.83	-370.07	-184.51	8.00	8.00	0.00	206.50	
9,111.51	90.00	179.79	8,597.00	-790.80	-277.61	8.00	5.56	-5.94	-49.97	
18,927.57	90.00	179.79	8,597.00	-10,606.80	-241.90	0.00	0.00	0.00	0.00	PBHL v1 - Corral C.



MS Energy Services
Planning Report



Database: 5000.1 Conroe DB
Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Corral Canyon Federal
Well: 16H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 16H
TVD Reference: Well @ 2972.00usft (25' KB)
MD Reference: Well @ 2972.00usft (25' KB)
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)
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
253.00	0.00	0.00	253.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler*									
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
694.00	0.00	0.00	694.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt*									
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
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	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,683.00	0.00	0.00	2,683.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt*									
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,882.00	0.00	0.00	2,882.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware*									
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,788.00	0.00	0.00	3,788.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon*									
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00



MS Energy Services

Planning Report



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 Site: Corral Canyon Federal
 Well: 16H
 Wellbore: Wellbore #1
 Design: Design #1

Local Co-ordinate Reference: Well 16H
 TVD Reference: Well @ 2972.00usft (25' KB)
 MD Reference: Well @ 2972.00usft (25' KB)
 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)
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,388.00	0.00	0.00	5,388.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon*									
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,388.00	0.00	0.00	6,388.00	0.00	0.00	0.00	0.00	0.00	0.00
Basal Brushy Canyon*									
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,616.00	0.00	0.00	6,616.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spring*									
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,570.00	0.00	0.00	7,570.00	0.00	0.00	0.00	0.00	0.00	0.00
1st Bone Spring Ss*									
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,849.73	0.00	0.00	7,849.73	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 8.00°/100' Build									
7,865.00	1.22	206.50	7,865.00	-0.15	-0.07	0.15	8.00	8.00	0.00
2nd Bone Spring Lm*									
7,900.00	4.02	206.50	7,899.96	-1.58	-0.79	1.60	8.00	8.00	0.00
7,950.00	8.02	206.50	7,949.67	-6.27	-3.13	6.34	8.00	8.00	0.00
8,000.00	12.02	206.50	7,998.90	-14.06	-7.01	14.21	8.00	8.00	0.00
8,050.00	16.02	206.50	8,047.40	-24.90	-12.41	25.17	8.00	8.00	0.00
8,100.00	20.02	206.50	8,094.94	-38.74	-19.31	39.17	8.00	8.00	0.00
8,150.00	24.02	206.50	8,141.28	-55.51	-27.68	56.13	8.00	8.00	0.00



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Planning Report



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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)
8,200.00	28.02	206.50	8,186.20	-75.14	-37.46	75.97	8.00	8.00	0.00
8,250.00	32.02	206.50	8,229.49	-97.52	-48.62	98.60	8.00	8.00	0.00
8,300.00	36.02	206.50	8,270.92	-122.55	-61.10	123.91	8.00	8.00	0.00
8,350.00	40.02	206.50	8,310.30	-150.11	-74.84	151.78	8.00	8.00	0.00
8,400.00	44.02	206.50	8,347.44	-180.06	-89.77	182.06	8.00	8.00	0.00
8,450.00	48.02	206.50	8,382.15	-212.25	-105.82	214.61	8.00	8.00	0.00
8,460.33	48.85	206.50	8,389.00	-219.16	-109.27	221.60	8.00	8.00	0.00
2nd Bone Spring Ss**									
8,500.00	52.02	206.50	8,414.27	-246.53	-122.92	249.27	8.00	8.00	0.00
8,550.00	56.02	206.50	8,443.64	-282.74	-140.97	285.88	8.00	8.00	0.00
8,600.00	60.02	206.50	8,470.11	-320.68	-159.89	324.25	8.00	8.00	0.00
8,650.00	64.02	206.50	8,493.56	-360.19	-179.59	364.19	8.00	8.00	0.00
8,662.23	65.00	206.50	8,498.83	-370.07	-184.51	374.18	8.00	8.00	0.00
Begin 8.00°/100' Build & Turn									
8,696.94	66.80	204.19	8,513.00	-398.71	-198.07	403.12	8.00	5.20	-6.66
2nd Bone Spring "B" Ss**									
8,700.00	66.96	203.99	8,514.20	-401.28	-199.22	405.71	8.00	5.25	-6.56
8,750.00	69.62	200.77	8,532.69	-444.23	-216.89	449.05	8.00	5.32	-6.43
8,800.00	72.34	197.66	8,548.99	-488.85	-232.43	494.03	8.00	5.43	-6.21
8,850.00	75.10	194.65	8,563.01	-534.95	-245.77	540.41	8.00	5.53	-6.03
8,853.89	75.32	194.42	8,564.00	-538.58	-246.72	544.07	8.00	5.57	-5.94
2nd Bone Spring "C" Ss**									
8,900.00	77.90	191.71	8,574.68	-582.28	-256.85	587.98	8.00	5.61	-5.87
8,950.00	80.74	188.84	8,583.95	-630.61	-265.61	636.50	8.00	5.66	-5.75
9,000.00	83.59	186.01	8,590.77	-679.72	-272.00	685.75	8.00	5.71	-5.66
9,050.00	86.46	183.21	8,595.10	-729.36	-276.00	735.46	8.00	5.74	-5.60
9,100.00	89.34	180.43	8,596.94	-779.29	-277.59	785.42	8.00	5.76	-5.56
9,111.51	90.00	179.79	8,597.00	-790.80	-277.61	796.92	8.00	5.76	-5.55
Begin 90.00° Lateral									
9,200.00	90.00	179.79	8,597.00	-879.29	-277.29	885.39	0.00	0.00	0.00
9,300.00	90.00	179.79	8,597.00	-979.29	-276.92	985.35	0.00	0.00	0.00
9,400.00	90.00	179.79	8,597.00	-1,079.29	-276.56	1,085.32	0.00	0.00	0.00
9,500.00	90.00	179.79	8,597.00	-1,179.29	-276.20	1,185.28	0.00	0.00	0.00
9,600.00	90.00	179.79	8,597.00	-1,279.29	-275.83	1,285.25	0.00	0.00	0.00
9,700.00	90.00	179.79	8,597.00	-1,379.29	-275.47	1,385.21	0.00	0.00	0.00
9,800.00	90.00	179.79	8,597.00	-1,479.29	-275.10	1,485.18	0.00	0.00	0.00
9,900.00	90.00	179.79	8,597.00	-1,579.29	-274.74	1,585.14	0.00	0.00	0.00
10,000.00	90.00	179.79	8,597.00	-1,679.29	-274.38	1,685.11	0.00	0.00	0.00
10,100.00	90.00	179.79	8,597.00	-1,779.29	-274.01	1,785.07	0.00	0.00	0.00
10,200.00	90.00	179.79	8,597.00	-1,879.28	-273.65	1,885.04	0.00	0.00	0.00
10,300.00	90.00	179.79	8,597.00	-1,979.28	-273.29	1,985.00	0.00	0.00	0.00
10,400.00	90.00	179.79	8,597.00	-2,079.28	-272.92	2,084.97	0.00	0.00	0.00
10,500.00	90.00	179.79	8,597.00	-2,179.28	-272.56	2,184.93	0.00	0.00	0.00
10,600.00	90.00	179.79	8,597.00	-2,279.28	-272.19	2,284.90	0.00	0.00	0.00
10,700.00	90.00	179.79	8,597.00	-2,379.28	-271.83	2,384.86	0.00	0.00	0.00
10,800.00	90.00	179.79	8,597.00	-2,479.28	-271.47	2,484.83	0.00	0.00	0.00
10,900.00	90.00	179.79	8,597.00	-2,579.28	-271.10	2,584.79	0.00	0.00	0.00
11,000.00	90.00	179.79	8,597.00	-2,679.28	-270.74	2,684.76	0.00	0.00	0.00
11,100.00	90.00	179.79	8,597.00	-2,779.28	-270.38	2,784.72	0.00	0.00	0.00
11,200.00	90.00	179.79	8,597.00	-2,879.28	-270.01	2,884.69	0.00	0.00	0.00
11,300.00	90.00	179.79	8,597.00	-2,979.28	-269.65	2,984.65	0.00	0.00	0.00
11,400.00	90.00	179.79	8,597.00	-3,079.28	-269.28	3,084.62	0.00	0.00	0.00
11,500.00	90.00	179.79	8,597.00	-3,179.28	-268.92	3,184.58	0.00	0.00	0.00
11,600.00	90.00	179.79	8,597.00	-3,279.28	-268.56	3,284.55	0.00	0.00	0.00



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11,700.00	90.00	179.79	8,597.00	-3,379.27	-268.19	3,384.51	0.00	0.00	0.00
11,800.00	90.00	179.79	8,597.00	-3,479.27	-267.83	3,484.48	0.00	0.00	0.00
11,900.00	90.00	179.79	8,597.00	-3,579.27	-267.47	3,584.44	0.00	0.00	0.00
12,000.00	90.00	179.79	8,597.00	-3,679.27	-267.10	3,684.41	0.00	0.00	0.00
12,100.00	90.00	179.79	8,597.00	-3,779.27	-266.74	3,784.37	0.00	0.00	0.00
12,200.00	90.00	179.79	8,597.00	-3,879.27	-266.37	3,884.34	0.00	0.00	0.00
12,300.00	90.00	179.79	8,597.00	-3,979.27	-266.01	3,984.30	0.00	0.00	0.00
12,400.00	90.00	179.79	8,597.00	-4,079.27	-265.65	4,084.27	0.00	0.00	0.00
12,500.00	90.00	179.79	8,597.00	-4,179.27	-265.28	4,184.23	0.00	0.00	0.00
12,600.00	90.00	179.79	8,597.00	-4,279.27	-264.92	4,284.20	0.00	0.00	0.00
12,700.00	90.00	179.79	8,597.00	-4,379.27	-264.56	4,384.16	0.00	0.00	0.00
12,800.00	90.00	179.79	8,597.00	-4,479.27	-264.19	4,484.13	0.00	0.00	0.00
12,900.00	90.00	179.79	8,597.00	-4,579.27	-263.83	4,584.09	0.00	0.00	0.00
13,000.00	90.00	179.79	8,597.00	-4,679.27	-263.46	4,684.06	0.00	0.00	0.00
13,100.00	90.00	179.79	8,597.00	-4,779.27	-263.10	4,784.02	0.00	0.00	0.00
13,200.00	90.00	179.79	8,597.00	-4,879.26	-262.74	4,883.99	0.00	0.00	0.00
13,300.00	90.00	179.79	8,597.00	-4,979.26	-262.37	4,983.95	0.00	0.00	0.00
13,400.00	90.00	179.79	8,597.00	-5,079.26	-262.01	5,083.92	0.00	0.00	0.00
13,500.00	90.00	179.79	8,597.00	-5,179.26	-261.64	5,183.88	0.00	0.00	0.00
13,600.00	90.00	179.79	8,597.00	-5,279.26	-261.28	5,283.85	0.00	0.00	0.00
13,700.00	90.00	179.79	8,597.00	-5,379.26	-260.92	5,383.81	0.00	0.00	0.00
13,800.00	90.00	179.79	8,597.00	-5,479.26	-260.55	5,483.78	0.00	0.00	0.00
13,900.00	90.00	179.79	8,597.00	-5,579.26	-260.19	5,583.74	0.00	0.00	0.00
14,000.00	90.00	179.79	8,597.00	-5,679.26	-259.83	5,683.71	0.00	0.00	0.00
14,100.00	90.00	179.79	8,597.00	-5,779.26	-259.46	5,783.67	0.00	0.00	0.00
14,200.00	90.00	179.79	8,597.00	-5,879.26	-259.10	5,883.64	0.00	0.00	0.00
14,300.00	90.00	179.79	8,597.00	-5,979.26	-258.73	5,983.60	0.00	0.00	0.00
14,400.00	90.00	179.79	8,597.00	-6,079.26	-258.37	6,083.57	0.00	0.00	0.00
14,500.00	90.00	179.79	8,597.00	-6,179.26	-258.01	6,183.53	0.00	0.00	0.00
14,600.00	90.00	179.79	8,597.00	-6,279.26	-257.64	6,283.50	0.00	0.00	0.00
14,700.00	90.00	179.79	8,597.00	-6,379.26	-257.28	6,383.46	0.00	0.00	0.00
14,800.00	90.00	179.79	8,597.00	-6,479.25	-256.92	6,483.43	0.00	0.00	0.00
14,900.00	90.00	179.79	8,597.00	-6,579.25	-256.55	6,583.39	0.00	0.00	0.00
15,000.00	90.00	179.79	8,597.00	-6,679.25	-256.19	6,683.36	0.00	0.00	0.00
15,100.00	90.00	179.79	8,597.00	-6,779.25	-255.82	6,783.32	0.00	0.00	0.00
15,200.00	90.00	179.79	8,597.00	-6,879.25	-255.46	6,883.29	0.00	0.00	0.00
15,300.00	90.00	179.79	8,597.00	-6,979.25	-255.10	6,983.25	0.00	0.00	0.00
15,400.00	90.00	179.79	8,597.00	-7,079.25	-254.73	7,083.22	0.00	0.00	0.00
15,500.00	90.00	179.79	8,597.00	-7,179.25	-254.37	7,183.18	0.00	0.00	0.00
15,600.00	90.00	179.79	8,597.00	-7,279.25	-254.01	7,283.15	0.00	0.00	0.00
15,700.00	90.00	179.79	8,597.00	-7,379.25	-253.64	7,383.11	0.00	0.00	0.00
15,800.00	90.00	179.79	8,597.00	-7,479.25	-253.28	7,483.08	0.00	0.00	0.00
15,900.00	90.00	179.79	8,597.00	-7,579.25	-252.91	7,583.04	0.00	0.00	0.00
16,000.00	90.00	179.79	8,597.00	-7,679.25	-252.55	7,683.01	0.00	0.00	0.00
16,100.00	90.00	179.79	8,597.00	-7,779.25	-252.19	7,782.97	0.00	0.00	0.00
16,200.00	90.00	179.79	8,597.00	-7,879.25	-251.82	7,882.94	0.00	0.00	0.00
16,300.00	90.00	179.79	8,597.00	-7,979.24	-251.46	7,982.90	0.00	0.00	0.00
16,400.00	90.00	179.79	8,597.00	-8,079.24	-251.10	8,082.87	0.00	0.00	0.00
16,500.00	90.00	179.79	8,597.00	-8,179.24	-250.73	8,182.83	0.00	0.00	0.00
16,600.00	90.00	179.79	8,597.00	-8,279.24	-250.37	8,282.80	0.00	0.00	0.00
16,700.00	90.00	179.79	8,597.00	-8,379.24	-250.00	8,382.76	0.00	0.00	0.00
16,800.00	90.00	179.79	8,597.00	-8,479.24	-249.64	8,482.73	0.00	0.00	0.00
16,900.00	90.00	179.79	8,597.00	-8,579.24	-249.28	8,582.69	0.00	0.00	0.00
17,000.00	90.00	179.79	8,597.00	-8,679.24	-248.91	8,682.66	0.00	0.00	0.00



MS Energy Services
Planning Report



Database: 5000.1 Conroe DB
Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Corral Canyon Federal
Well: 16H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 16H
TVD Reference: Well @ 2972.00usft (25' KB)
MD Reference: Well @ 2972.00usft (25' KB)
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)
17,100.00	90.00	179.79	8,597.00	-8,779.24	-248.55	8,782.62	0.00	0.00	0.00
17,200.00	90.00	179.79	8,597.00	-8,879.24	-248.18	8,882.59	0.00	0.00	0.00
17,300.00	90.00	179.79	8,597.00	-8,979.24	-247.82	8,982.55	0.00	0.00	0.00
17,400.00	90.00	179.79	8,597.00	-9,079.24	-247.46	9,082.52	0.00	0.00	0.00
17,500.00	90.00	179.79	8,597.00	-9,179.24	-247.09	9,182.48	0.00	0.00	0.00
17,600.00	90.00	179.79	8,597.00	-9,279.24	-246.73	9,282.45	0.00	0.00	0.00
17,700.00	90.00	179.79	8,597.00	-9,379.24	-246.37	9,382.41	0.00	0.00	0.00
17,800.00	90.00	179.79	8,597.00	-9,479.23	-246.00	9,482.38	0.00	0.00	0.00
17,900.00	90.00	179.79	8,597.00	-9,579.23	-245.64	9,582.34	0.00	0.00	0.00
18,000.00	90.00	179.79	8,597.00	-9,679.23	-245.27	9,682.31	0.00	0.00	0.00
18,100.00	90.00	179.79	8,597.00	-9,779.23	-244.91	9,782.27	0.00	0.00	0.00
18,200.00	90.00	179.79	8,597.00	-9,879.23	-244.55	9,882.24	0.00	0.00	0.00
18,300.00	90.00	179.79	8,597.00	-9,979.23	-244.18	9,982.20	0.00	0.00	0.00
18,400.00	90.00	179.79	8,597.00	-10,079.23	-243.82	10,082.17	0.00	0.00	0.00
18,500.00	90.00	179.79	8,597.00	-10,179.23	-243.46	10,182.13	0.00	0.00	0.00
18,600.00	90.00	179.79	8,597.00	-10,279.23	-243.09	10,282.10	0.00	0.00	0.00
18,700.00	90.00	179.79	8,597.00	-10,379.23	-242.73	10,382.06	0.00	0.00	0.00
18,800.00	90.00	179.79	8,597.00	-10,479.23	-242.36	10,482.03	0.00	0.00	0.00
18,900.00	90.00	179.79	8,597.00	-10,579.23	-242.00	10,581.99	0.00	0.00	0.00
18,927.57	90.00	179.79	8,597.00	-10,606.80	-241.90	10,609.56	0.00	0.00	0.00

PBHL

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP v1 - Corral Canyc - plan misses target center by 33.33usft at 8850.79usft MD (8563.21 TVD, -535.69 N, -245.97 E) - Point	0.00	0.00	8,561.04	-527.90	-278.30	418,776.40	602,929.40	32° 9' 3.226 N	104° 0' 2.708 W
LTP v1 - Corral Canyc - plan misses target center by 0.07usft at 18797.57usft MD (8597.00 TVD, -10476.80 N, -242.37 E) - Point	0.00	0.00	8,597.00	-10,476.80	-242.30	408,827.50	602,965.40	32° 7' 24.767 N	104° 0' 2.647 W
PBHL v1 - Corral Can - plan hits target center - Point	0.00	0.00	8,597.00	-10,606.80	-241.90	408,697.50	602,965.80	32° 7' 23.480 N	104° 0' 2.647 W



MS Energy Services
Planning Report



Database: 5000.1 Conroe DB
Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Corral Canyon Federal
Well: 16H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 16H
TVD Reference: Well @ 2972.00usft (25' KB)
MD Reference: Well @ 2972.00usft (25' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
253.00	253.00	Rustler*			
694.00	694.00	Top Salt*			
2,683.00	2,683.00	Base Salt*			
2,882.00	2,882.00	Delaware*			
3,788.00	3,788.00	Cherry Canyon*			
5,388.00	5,388.00	Brushy Canyon*			
6,388.00	6,388.00	Basal Brushy Canyon*			
6,616.00	6,616.00	Bone Spring*			
7,570.00	7,570.00	1st Bone Spring Ss*			
7,865.00	7,865.00	2nd Bone Spring Lm*			
8,460.33	8,389.00	2nd Bone Spring Ss**			
8,696.94	8,513.00	2nd Bone Spring "B" Ss**			
8,853.89	8,564.00	2nd Bone Spring "C" Ss**			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,849.73	7,849.73	0.00	0.00	KOP, 8.00°/100' Build
8,662.23	8,498.83	-370.07	-184.51	Begin 8.00°/100' Build & Turn
9,111.51	8,597.00	-790.80	-277.61	Begin 90.00° Lateral
18,927.57	8,597.00	-10,606.80	-241.90	PBHL

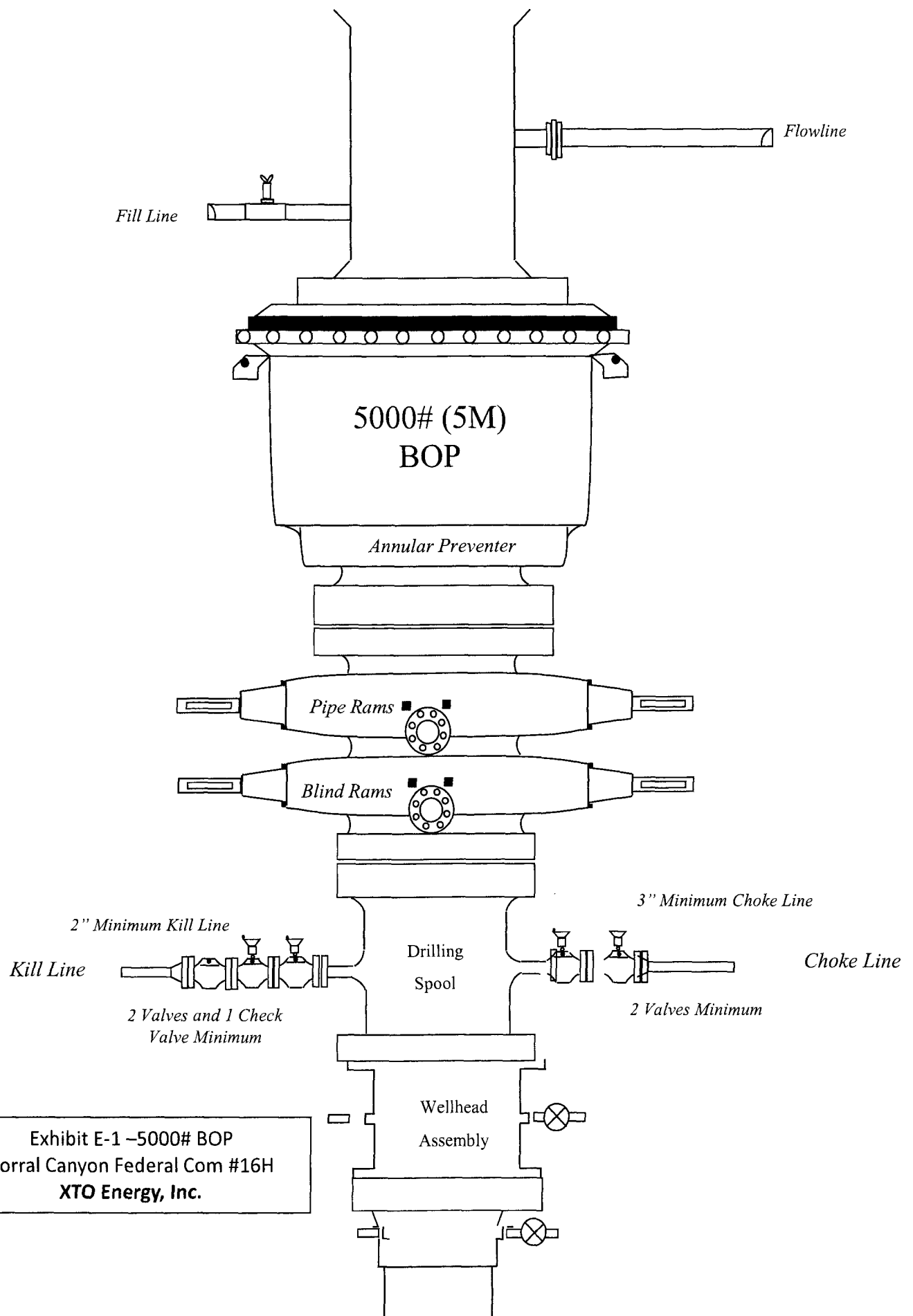


Exhibit E-1 -5000# BOP
Corral Canyon Federal Com #16H
XTO Energy, Inc.

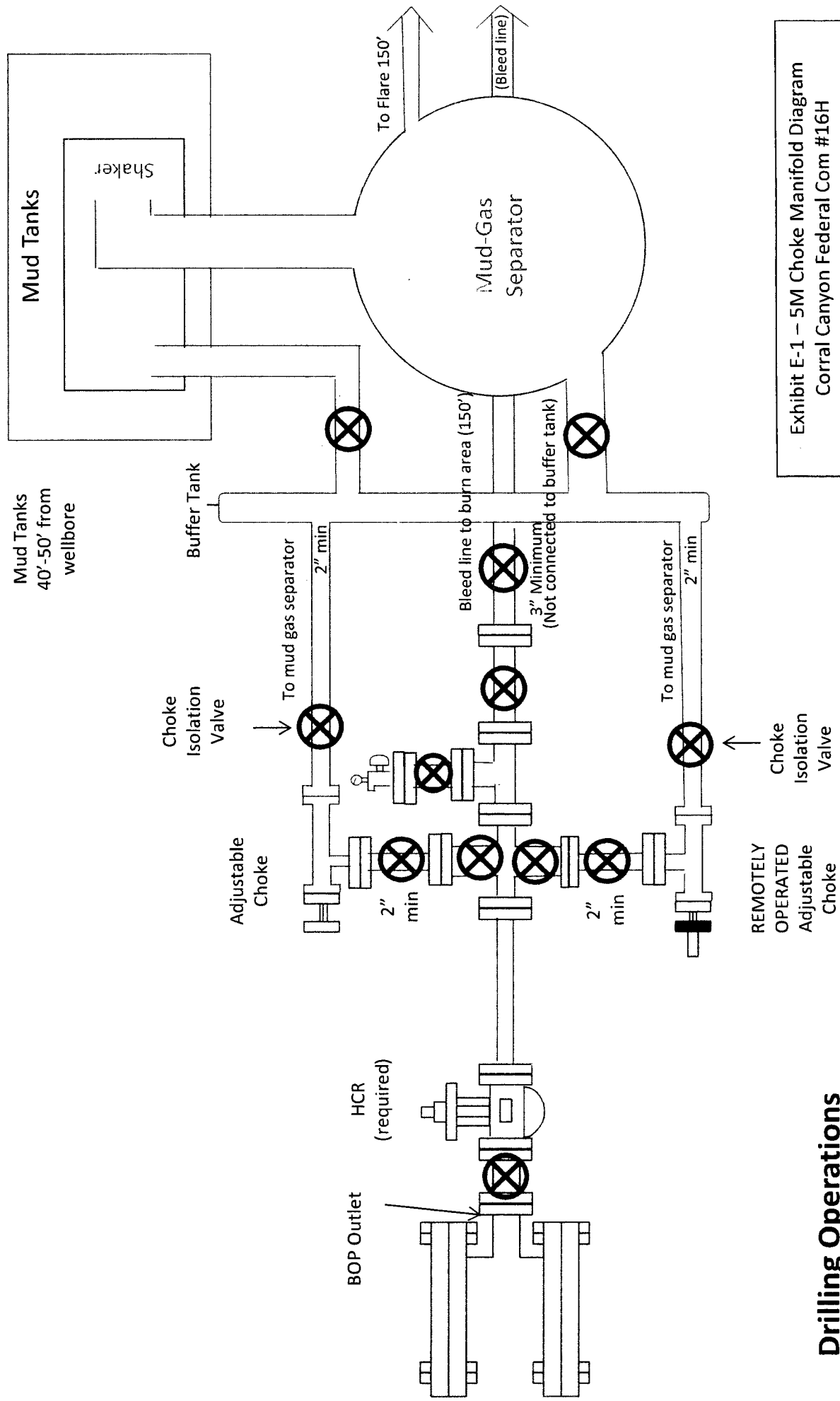


Exhibit E-1 – 5M Choke Manifold Diagram
 Corral Canyon Federal Com #16H
 XTO Energy, Inc..

Drilling Operations **Choke Manifold**



Haque, Mustafa <mhaque@blm.gov>

ASAP Request: Sundry Approval

Rabadue, Stephanie <Stephanie_Rabadue@xtoenergy.com>
To: "Haque, Mustafa" <mhaque@blm.gov>

Thu, Nov 3, 2016 at 12:25 PM

Hello again!

The casing specs for 5-1/2" 17# BTC CYP-110 are as follows:

Inside Diameter: 4.892

Collapse Resistance: 7,460

Internal Yield Psi: 10,640

Joint Strength: 620

If there's more that's needed, please let me know!

Thank you!

Stephanie Rabadue

Regulatory Analyst – Permian Division

432-620-6714

stephanie_rabadue@xtoenergy.com

From: Haque, Mustafa [mailto:mhaque@blm.gov]
Sent: Thursday, November 03, 2016 1:16 PM
To: Rabadue, Stephanie
Subject: Re: FW: ASAP Request: Sundry Approval

Also, can you please email me the casing spec for 5 1/2" 17# BTC CYP-110

[Quoted text hidden]



Haque, Mustafa <mhaque@blm.gov>

ASAP Request: Sundry Approval

Rabadue, Stephanie <Stephanie_Rabadue@xtoenergy.com>
To: "Haque, Mustafa" <mhaque@blm.gov>

Thu, Nov 3, 2016 at 12:34 PM

OD of the Coupling: 6.050

Yield Strength: 546

I'm sorry! My usual engineer over this is in Irving today so I'm having one that is unfamiliar with BLM standards give me the information!

I appreciate it, Mustafa!

Stephanie Rabadue

Regulatory Analyst – Permian Division

432-620-6714

stephanie_rabadue@xtoenergy.com

From: Haque, Mustafa [mailto:mhaque@blm.gov]

Sent: Thursday, November 03, 2016 1:30 PM

[Quoted text hidden]

[Quoted text hidden]