

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD

SUNDRY NOTICES AND REPORTS ON WELLS Artesia
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 20185. Lease Serial No.
NMNM030453

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM71016X8. Well Name and No.
POKER LAKE UNIT 13 DTD 122H9. API Well No.
30-015-4582010. Field and Pool or Exploratory Area
PURPLE SAGE WOLFCAMP11. 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 PERMIAN OPERATING LLC

Contact: KELLY KARDOS

E-Mail: kelly_kardos@xtoenergy.com

3a. Address

6401 HOLIDAY HILL RD BLDG 5
MIDLAND, TX 79707

3b. Phone No. (include area code)

Ph: 432-620-4374

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

Sec 24 T24S R30E Mer NMP NWNW 150FNL 285FWL

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 Permian Operating, LLC requests permission to make the following changes to the original APD:

Change the BHL fr/2440'FNL & 990'FWL in Sec. 36-T24S-R30E to 200'FSL & 1320'FWL in Sec. 25-T24S-R30E.

Change the casing design from a 3-string design to a 4-string design per the attached drilling program.

Request to batch drill was approved with WIS: 466284 sundry.

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 21 2019

RECEIVED

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Electronic Submission #474952 verified by the BLM Well Information System
For XTO PERMIAN/OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by CANDY VIGIL on 07/24/2019 ()

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

APPROVED

Signature

(Electronic Submission)

Date 07/24/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE AUG 6 2019

Approved By

Title

BUREAU OF LAND MANAGEMENT

Date

ROSWELL FIELD OFFICE

Office

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.

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)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

RWP 10-29-19

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-102

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

AUG 21 2019

Revised August 1, 2011

Submit one copy to appropriate

District Office

RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45820	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP
⁴ Property Code	⁵ Property Name POKER LAKE UNIT 13 DTD	⁶ Well Number 122H
⁷ OGRID No. 373075	⁸ Operator Name XTO PERMIAN OPERATING, LLC	⁹ Elevation 3,443'

¹⁰ 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	24	24 S	30 E		150	NORTH	285	WEST	EDDY

¹¹ 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	25	24 S	30 E		200	SOUTH	1,320	WEST	EDDY

¹² Dedicated Acres 640	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y = 440,503.4 X = 652,098.3 LAT. = 32.210104°N LONG. = 103.841563°W FIRST TAKE POINT NAD 27 NME Y = 440,326.2 X = 653,133.6 LAT. = 32.209604°N LONG. = 103.838218°W	GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y = 440,562.2 X = 693,282.2 LAT. = 32.210228°N LONG. = 103.842048°W FIRST TAKE POINT NAD 83 NME Y = 440,385.0 X = 694,317.6 LAT. = 32.209728°N LONG. = 103.838704°W	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or 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. Kelly Kardos 7/24/19 Signature Date Kelly Kardos Printed Name kelly_kardos@xtoenergy.com E-mail Address																		
	CORNER COORDINATES TABLE NAD 27 NME <table border="1"> <tr><td>A</td><td>Y = 440,652.6 N, X = 651,813.2 E</td></tr> <tr><td>B</td><td>Y = 440,656.2 N, X = 653,148.7 E</td></tr> <tr><td>C</td><td>Y = 438,011.8 N, X = 651,817.2 E</td></tr> <tr><td>D</td><td>Y = 438,016.4 N, X = 653,155.4 E</td></tr> <tr><td>E</td><td>Y = 435,380.7 N, X = 651,818.1 E</td></tr> <tr><td>F</td><td>Y = 435,380.1 N, X = 653,160.5 E</td></tr> <tr><td>G</td><td>Y = 432,735.1 N, X = 651,836.7 E</td></tr> <tr><td>H</td><td>Y = 432,737.5 N, X = 653,176.6 E</td></tr> <tr><td>I</td><td>Y = 430,095.4 N, X = 651,855.5 E</td></tr> </table>			A	Y = 440,652.6 N, X = 651,813.2 E	B	Y = 440,656.2 N, X = 653,148.7 E	C	Y = 438,011.8 N, X = 651,817.2 E	D	Y = 438,016.4 N, X = 653,155.4 E	E	Y = 435,380.7 N, X = 651,818.1 E	F	Y = 435,380.1 N, X = 653,160.5 E	G	Y = 432,735.1 N, X = 651,836.7 E	H	Y = 432,737.5 N, X = 653,176.6 E	I	Y = 430,095.4 N, X = 651,855.5 E
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LAST TAKE POINT NAD 27 NME Y = 430,427.1 X = 653,173.1 LAT. = 32.182392°N LONG. = 103.838238°W LAST TAKE POINT NAD 83 NME Y = 430,485.7 X = 694,357.4 LAT. = 32.182516°N LONG. = 103.838722°W																					
BOTTOM HOLE LOCATION NAD 27 NME Y = 430,297.1 X = 653,174.1 LAT. = 32.182035°N LONG. = 103.838237°W BOTTOM HOLE LOCATION NAD 83 NME Y = 430,355.7 X = 694,358.4 LAT. = 32.182158°N LONG. = 103.838721°W		¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 4-26-2019 Date of Survey Signature and Seal of Professional Surveyor: MARK DILLON HARP 23786 Certificate Number JC 2018010146																			

RwP 10-29-19

AUG 21 2019

Intent ☒ As Drilled ☐

API #
30-015-45820

RECEIVED

Operator Name: XTO Permian Operating, LLC	Property Name: Poker Lake Unit 13 DTD	Well Number 122H
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Kick Off Point (KOP)

UL D	Section 24	Township 24S	Range 30E	Lot	Feet 150	From N/S North	Feet 285	From E/W West	County Eddy
Latitude 32.210228					Longitude -103.842048			NAD NAD83	

First Take Point (FTP)

UL D	Section 24	Township 24S	Range 30E	Lot	Feet 330	From N/S North	Feet 1320	From E/W West	County Eddy
Latitude 32.209728					Longitude -103.838704			NAD NAD83	

Last Take Point (LTP)

UL M	Section 25	Township 24S	Range 30E	Lot	Feet 330	From N/S South	Feet 1320	From E/W West	County Eddy
Latitude 32.182516					Longitude -103.838237			NAD NAD83	

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 13 DTD	Well Number 202H
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KZ 06/29/2018

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

XTO Energy Inc.
PLU 13 Dog Town Draw 122H
Projected TD: 22552' MD / 12424' TVD
SHL: 150' FNL & 285' FWL , Section 24, T24S, R30E
BHL: 200' FSL & 1320' FWL , Section 25, T24S, R30E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Permian

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	480'	Water
Top of Salt	850'	Water
Base of Salt	3900'	Water
Delaware	4130'	Water
Bone Spring	8015'	Water/Oil/Gas
1st Bone Spring Ss	8935'	Water/Oil/Gas
2nd Bone Spring Ss	9705'	Water/Oil/Gas
3rd Bone Spring Ss	10840'	Water/Oil/Gas
Wolfcamp Shale	11260'	Water/Oil/Gas
Wolfcamp A Shale	11450'	Water/Oil/Gas
Wolfcamp B Shale	11805'	Water/Oil/Gas
Wolfcamp D Target/Land Curve	12424'	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 18-5/8 inch casing @ 650' (200' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8 inch casing at 3975' and circulating cement to surface. A 12-1/4 inch vertical hole will be drilled to 11500' and 9-5/8 inch casing ran and cemented 500' into the 13-3/8 inch casing. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to MD/TD and 5-1/2 casing will be set at TD and cemented back 200' into the 9-5/8 inch casing shoe.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' - 650'	18-5/8"	87.5	BTC	J-55	New	1.82	2.14	13.26
17-1/2"	0' - 3975'	13-3/8"	68	BTC	HCL-80	New	1.62	2.15	5.76
12-1/4"	0' - 11500'	9-5/8"	40	BTC	HCL-80	New	1.01	1.25	1.99
8-3/4" - 8-1/2"	0' - 22552'	5-1/2"	20	BTC	P-110	New	1.18	1.32	1.98

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

13-3/8" Collapse analyzed using 50% evacuation based on regional experience.

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

WELLHEAD:

Temporary Wellhead

- 18-5/8" SOW x 21-1/4" 2M top flange

Permanent Wellhead – GE RSH Multibowl System

- A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 10M top flange
- B. Tubing Head: 13-5/8" 10M bottom flange x 7-1/16" 15M 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 8-5/8" casing per Onshore Order 2.
 - Wellhead manufacturer representative may not be present for BOP test plug installation

4. Cement Program

Surface Casing: 18-5/8", 87.5 New J-55, BTC casing to be set at +/- 650'

Lead: 460 sxs EconoCem-HLTRRC (mixed at 12.8 ppg, 1.87 ft³/sx, 10.13 gal/sx water)

Tail: 550 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

1st Intermediate Casing: 13-3/8", 68 New HCL-80, BTC casing to be set at +/- 3975'

Lead: 2350 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 810 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing (Stage 2): 9-5/8", 40 New HCL-80, BTC casing to be set at +/- 11500'

ECP/DV Tool to be set at 4025'

1st Stage

Lead: 1070 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.87 ft³/sx, 9.61 gal/sx water)

Tail: 370 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Stage

Lead: 2150 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 470 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

Compressives:

Production Casing: 5-1/2", 20 New P-110, BTC casing to be set at +/- 22552'

Lead: 60 sxs Halcem-C + 2% CaCl (mixed at 11.5 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 2530 sxs VersaCem (mixed at 13.2 ppg, 1.33 ft³/sx, 8.38 gal/sx water)

Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

5. Pressure Control Equipment

The blow out preventer equipment (BOP) on surface casing temporary wellhead will consist of a 21-1/4" minimum 2M Hydril. MASP should not exceed 1234 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" 10M bradenhead and flange, the BOP test will be limited to 10000 psi. When the 13-3/8" and 9-5/8" casing is set, the packoff seals will be tested to a minimum of 10000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 10M 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 650'	24"	FW/Native	8.4-8.8	35-40	NC
650' to 3975'	17-1/2"	Brine/Gel Sweeps	9.8-10.2	30-32	NC
3975' to 11500'	12-1/4"	FW / Cut Brine	9.1-9.5	29-32	NC - 20
11500' to 22552'	8-3/4" - 8-1/2"	FW / Cut Brine / Polymer/ OBM	12.7-13.5	32-50	NC - 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 16" surface casing with brine solution. A 9.8ppg-10.2ppg brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. 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. 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.

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) below 1st intermediate casing.

Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 160 to 180 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. The maximum anticipated bottom hole pressure for this well is 8399 psi.

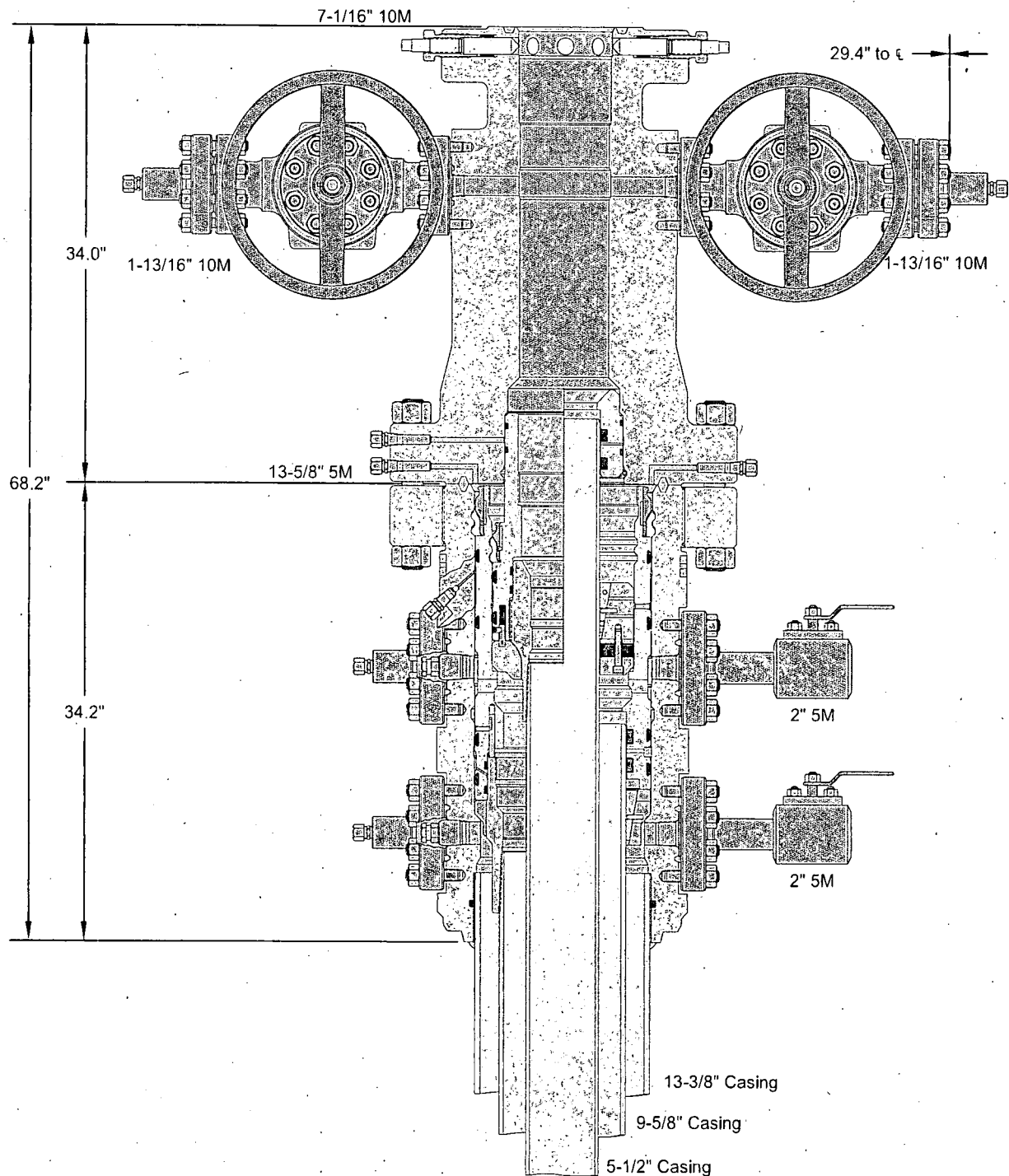
10. Anticipated Starting Date and Duration of Operations

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.

XTO requests a variance to be able to batch drill these wells if necessary. In doing so, XTO will set intermediate casing and ensure that the well is cemented properly and the well is dead. With floats holding, no pressure on the intermediate csg annulus, and the installation of a TA cap as per GE recommendations, XTO will contact the BLM to skid the rig to drill the surface and intermediate for the remaining wells on the pad. Once surface and intermediate are all completed, XTO will begin drilling the production hole on each of the wells.



GE Oil & Gas



ALL DIMENSIONS ARE APPROXIMATE

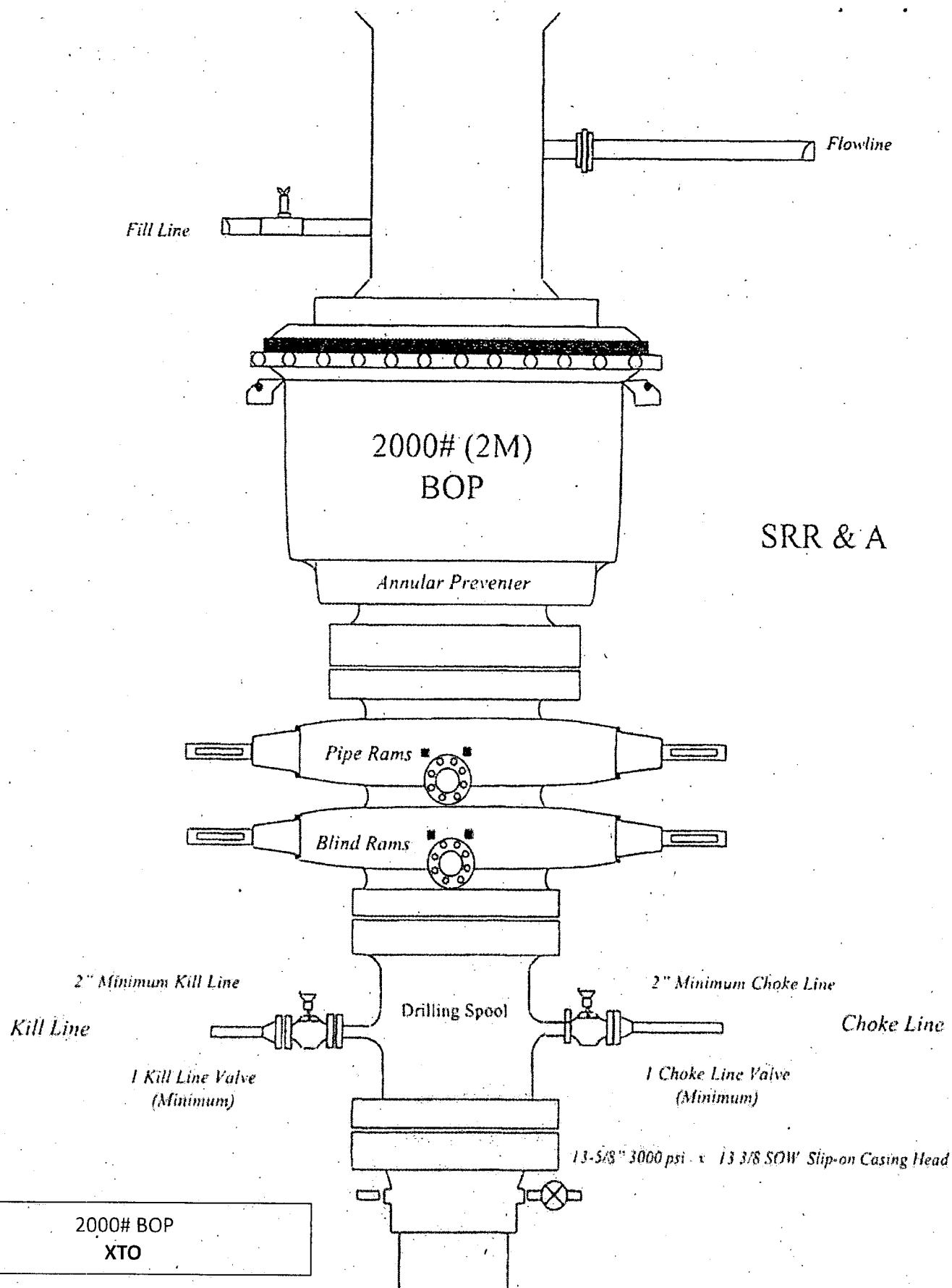
This drawing is the property of GE Oil & Gas Pressure Control LP and is considered confidential. Unless otherwise approved in writing, neither it nor its contents may be used, copied, transmitted or reproduced except for the sole purpose of GE Oil & Gas Pressure Control LP.

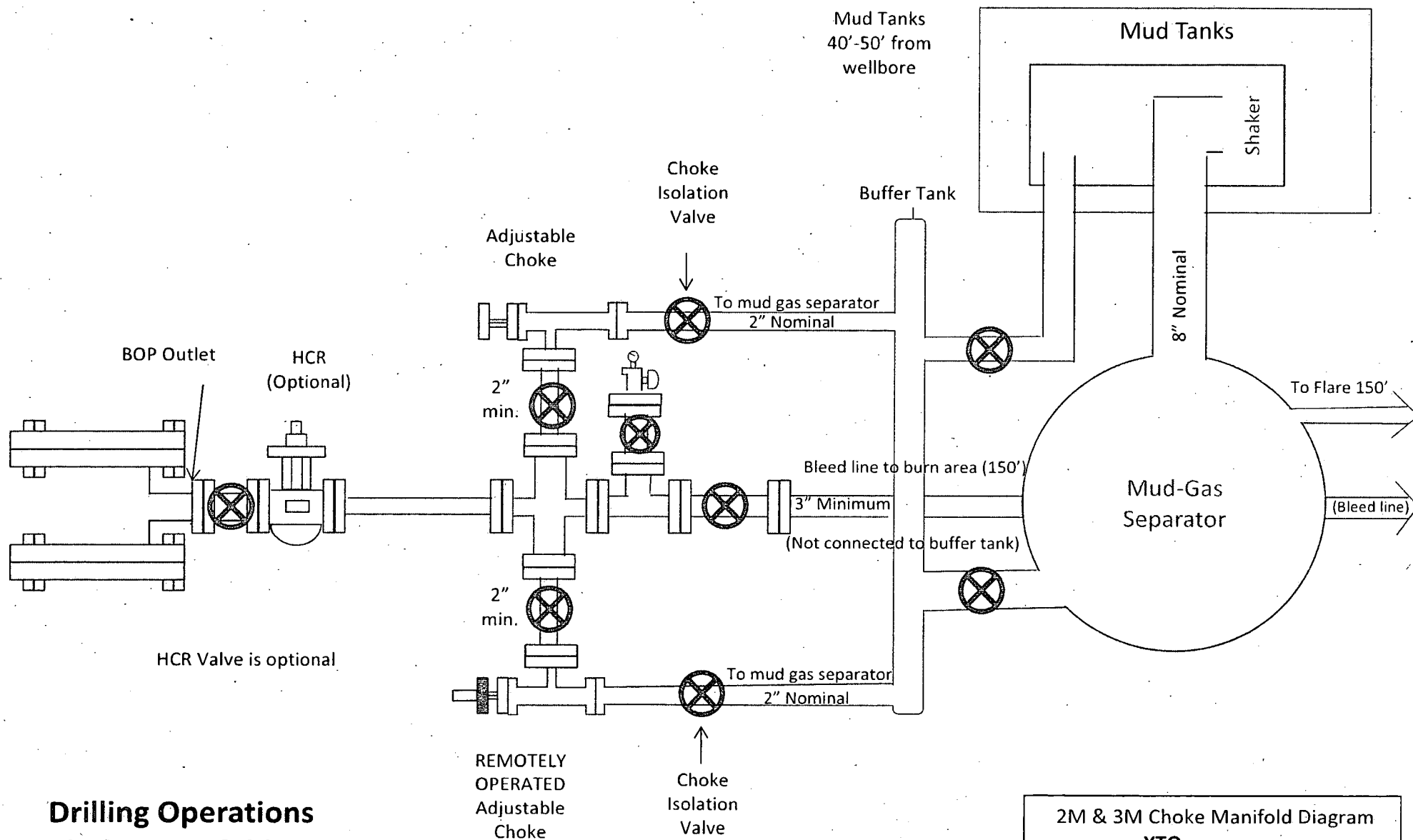
XTO ENERGY, INC.

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

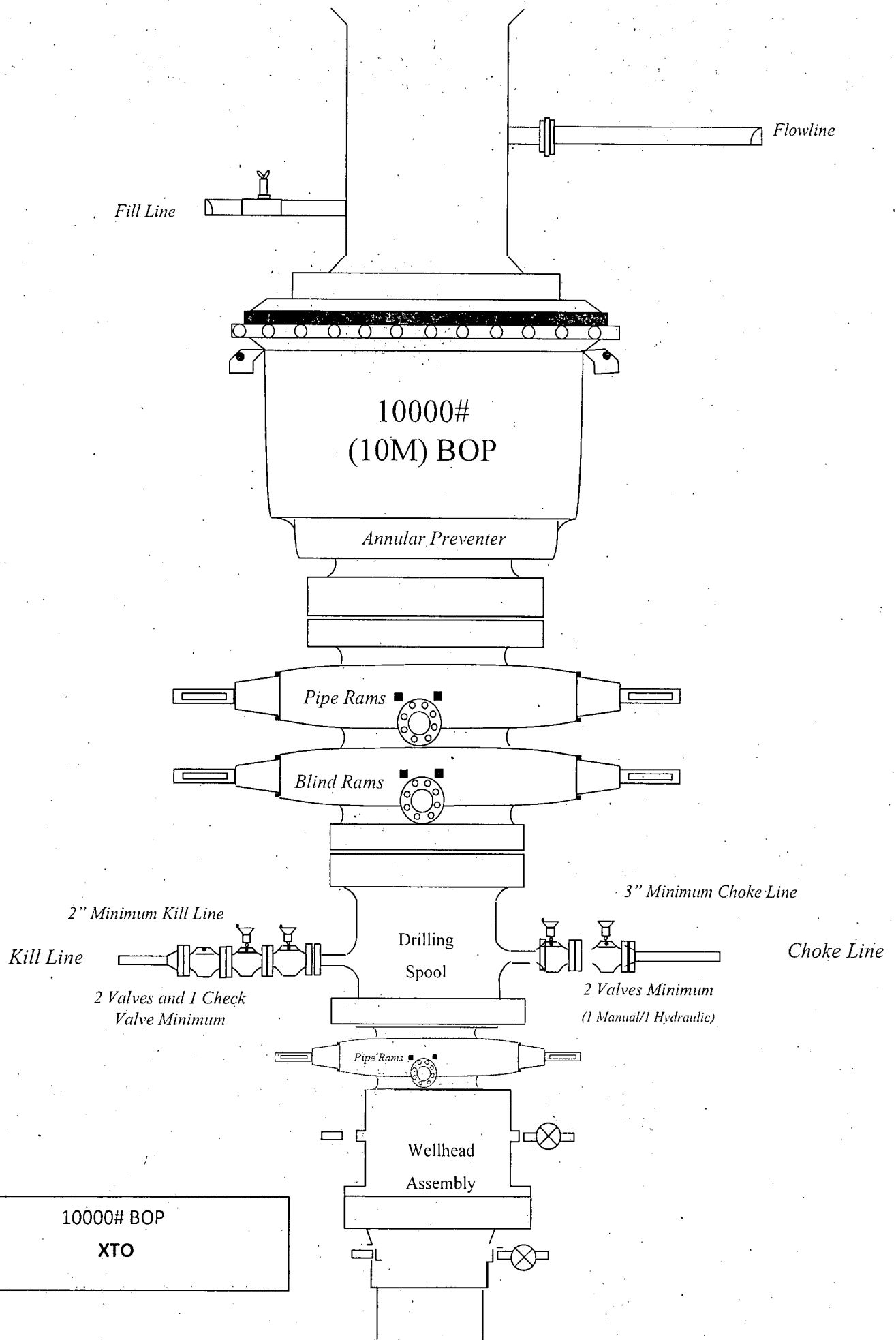
FOR REFERENCE ONLY
DRAWING NO. 10012842

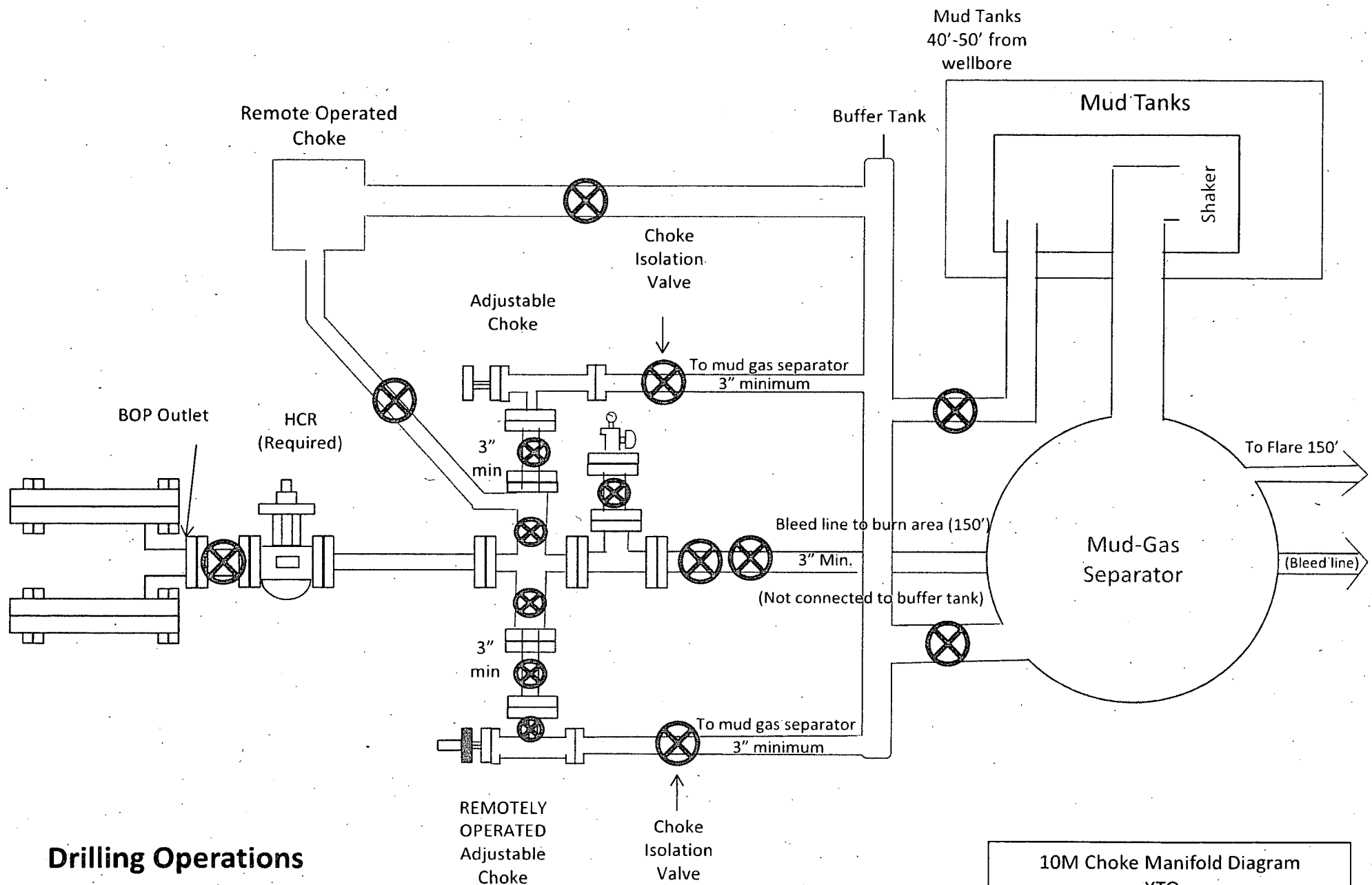




**Drilling Operations
Choke Manifold
2M & 3M Service**

2M & 3M Choke Manifold Diagram
XTO





**Drilling Operations
Choke Manifold
10M Service**

**10M Choke Manifold Diagram
XTO**

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.

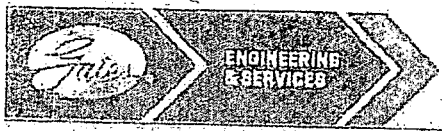
General Procedure With No Pipe In Hole (Open Hole)

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



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

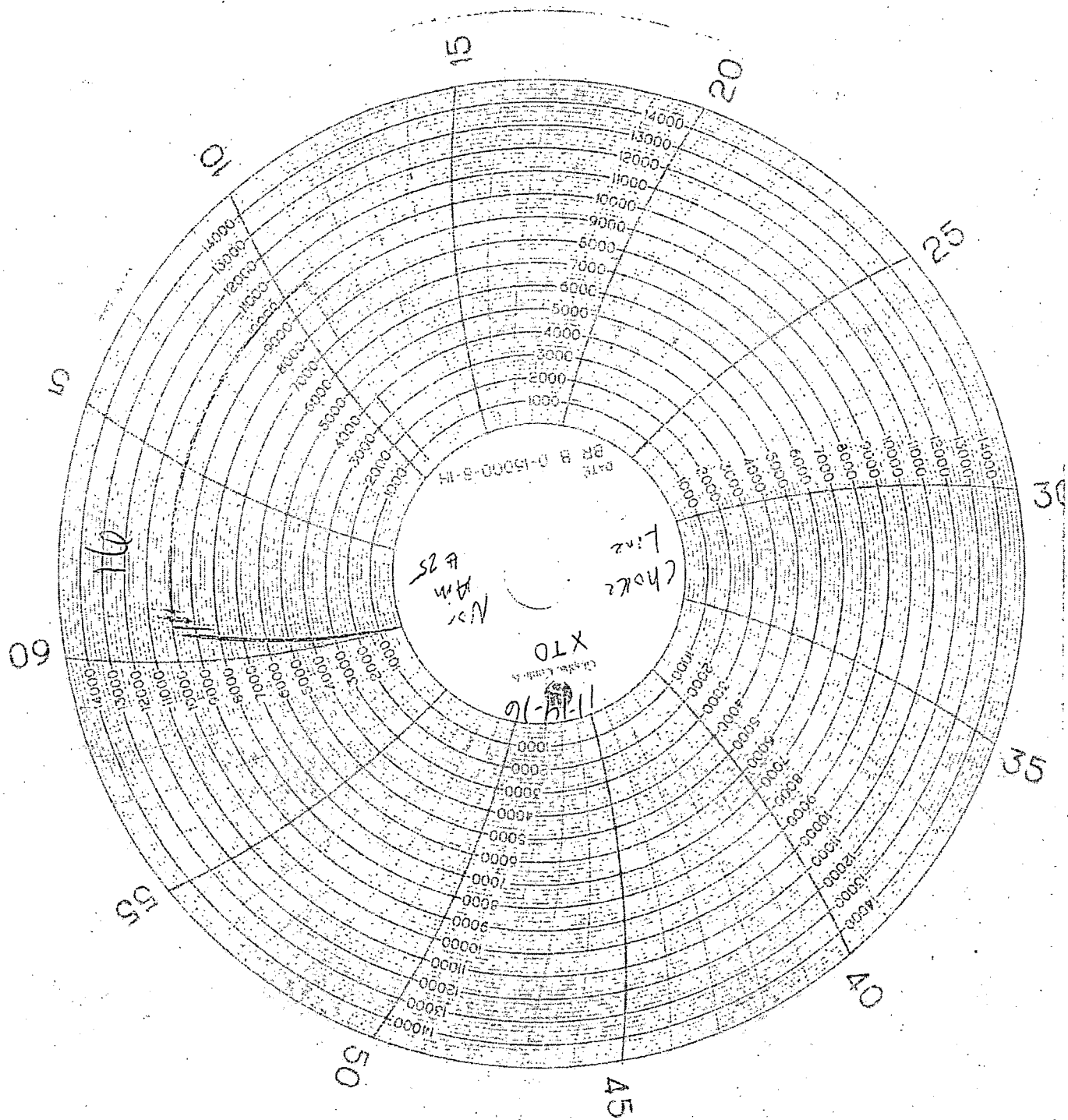
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

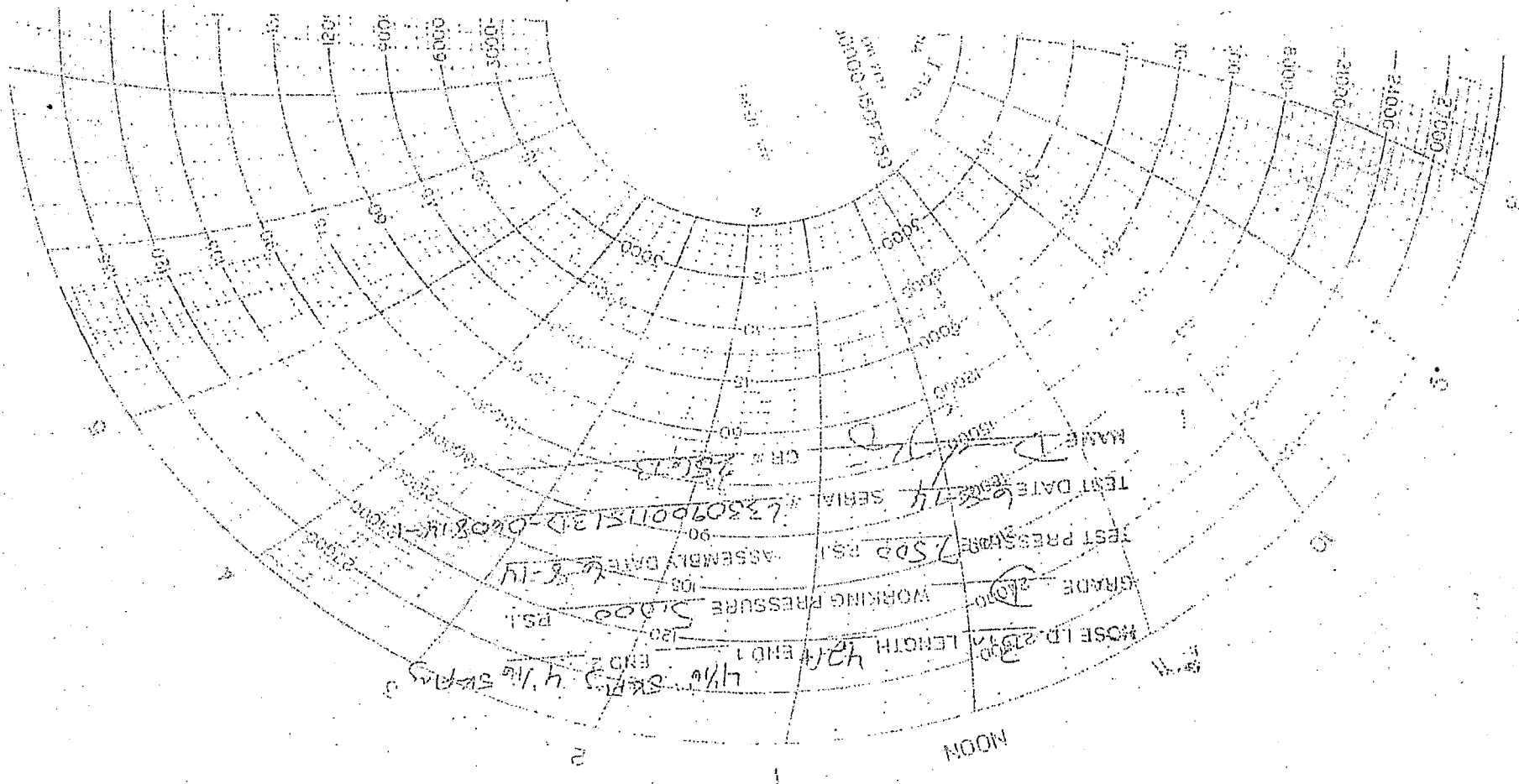
GRADE D PRESSURE TEST CERTIFICATE

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:	





XTO Energy

Project: Eddy County, NM (NAD27) NMEZ Grid

Site: PLU 13 DTD

Well: 122H/152H

Wellbore: 122H/152HLateral

Design: Plan #1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
476.00	476.00	Rustler
846.00	846.00	Top Salt
3896.00	3896.00	Base Salt
4126.00	4126.00	Delaware
8011.00	8040.01	Bone Spring
8931.00	8968.45	1st Bone Spring Ss
9701.00	9745.51	2nd Bone Spring Ss
10111.00	10159.27	3rd Bone Spring Lm
10836.00	10890.92	3rd Bone Spring Ss
11256.00	11314.77	Wolfcamp
11291.00	11350.10	Wolfcamp X
11366.00	11425.78	Wolfcamp Y
11446.00	11506.52	Wolfcamp A
11801.00	11864.77	Wolfcamp B
12201.00	12295.47	Wolfcamp D
12420.00	12816.43	LP

3443+28 @ 3471.00usft (Patt243)
NAD 1927 (NADCON CONUS)



Azimuths to Grid North
True North: -0.26°
Magnetic North: 6.59°

Magnetic Field
Strength: 47685.7nT
Dip Angle: 59.98°
Date: 07/23/2019
Model: IGRF2015

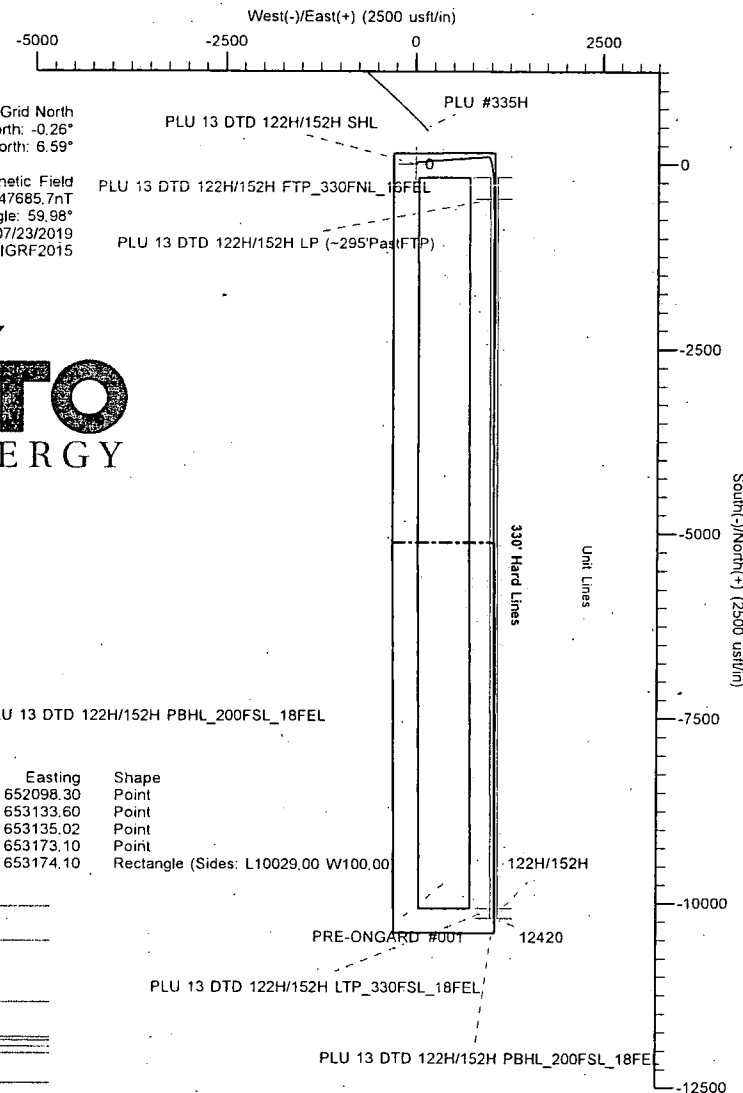
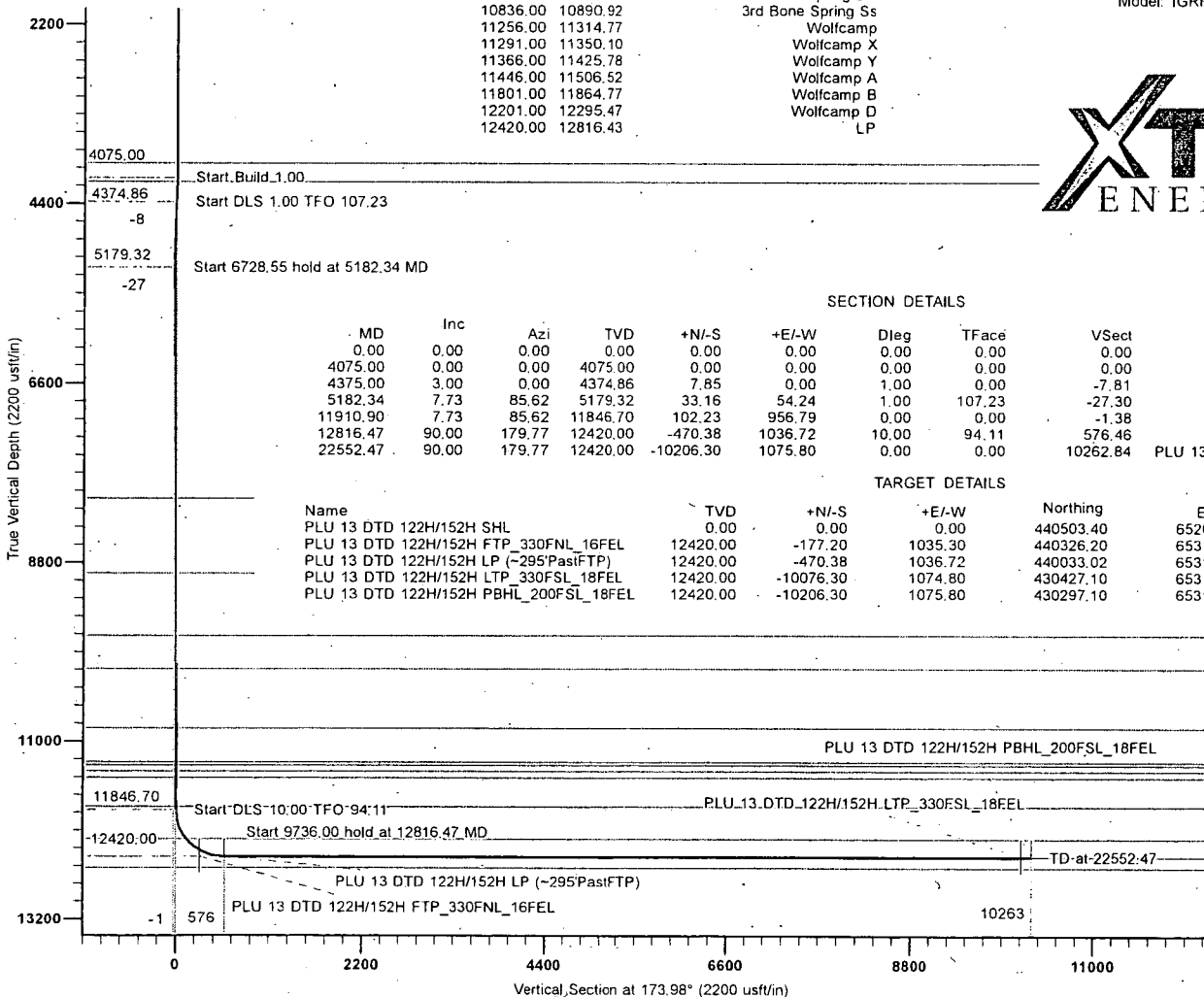


SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4075.00	0.00	0.00	4075.00	0.00	0.00	0.00	0.00	0.00
4375.00	3.00	0.00	4374.86	7.85	0.00	1.00	0.00	-7.81
5182.34	7.73	85.62	5179.32	33.16	54.24	1.00	107.23	-27.30
11910.90	7.73	85.62	11846.70	102.23	956.79	0.00	0.00	-1.38
12816.47	90.00	179.77	12420.00	-470.38	1036.72	10.00	94.11	576.46
22552.47	90.00	179.77	12420.00	-10206.30	1075.80	0.00	0.00	10262.84

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PLU 13 DTD 122H/152H SHL	0.00	0.00	0.00	440503.40	652098.30	Point
PLU 13 DTD 122H/152H FTP_330FNL_16FEL	12420.00	-177.20	1035.30	440326.20	653133.60	Point
PLU 13 DTD 122H/152H LP (~295°PastFTP)	12420.00	-470.38	1036.72	440033.02	653135.02	Point
PLU 13 DTD 122H/152H LTP_330FSL_18FEL	12420.00	-10076.30	1074.80	430427.10	653173.10	Point
PLU 13 DTD 122H/152H PBHL_200FSL_18FEL	12420.00	-10206.30	1075.80	430297.10	653174.10	Rectangle (Sides: L10029.00 W100.00)



To convert a Magnetic Direction to a Grid Direction, Add 6.59°
To convert a Magnetic Direction to a True Direction, Add 6.85° East
Magnetic North is 6.59° East of Grid North (Magnetic Convergence)
Magnetic North is 6.85° East of True North (Magnetic Declination)

Plan: Plan #1 (122H/152H/122H/152HLateral)
Created By: Mekka Williams
eSomina Well Design
mekka@esominawelldesign.com
17:17, July 23 2019

PREDATOR DIRECTIONAL
11323 MONARCHS WAY
Montgomery TX, 77316



Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well 122H/152H - Slot PLU 13 DTD 122H/152H SHL
Company:	XTO Energy	TVD Reference:	3443+28 @ 3471.00usft (Patt243)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3443+28 @ 3471.00usft (Patt243)
Site:	PLU 13 DTD	North Reference:	Grid
Well:	122H/152H	Survey Calculation Method:	Minimum Curvature
Wellbore:	122H/152HLateral		
Design:	Plan #1		

Project:	Eddy County, NM (NAD27) NMEZ Grid		
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		

Site:	PLU 13 DTD		
Site Position:	From: Map	Northing:	440,503.40 usft
		Easting:	652,098.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	32.21010449
		Longitude:	-103.84156320
		Grid Convergence:	0.26 °

Well:	122H/152H - Slot PLU 13 DTD 122H/152H SHL		
Well Position	+N-S	0.00 usft	Northing: 440,503.40 usft
	+E-W	0.00 usft	Easting: 652,098.30 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level: 3,443.00 usft

Wellbore:	122H/152HLateral		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	07/23/19	6.85
			Dip Angle
			59.98
			Field Strength
			47,685.72131915

Design:	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			173.98

Plan Survey Tool Program	Date: 07/23/19		
Depth From	Depth To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
1	0.00	22,552.47 Plan #1 (122H/152HLateral)	MWD+IFR1+MS
			OWSG MWD + IFR1 + Multi-St

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,075.00	0.00	0.00	4,075.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,375.00	3.00	0.00	4,374.86	7.85	0.00	1.00	1.00	0.00	0.00	
5,182.34	7.73	85.62	5,179.32	33.16	54.24	1.00	0.59	10.61	107.23	
11,910.90	7.73	85.62	11,846.70	102.23	956.79	0.00	0.00	0.00	0.00	
12,816.47	90.00	179.77	12,420.00	-470.38	1,036.72	10.00	9.08	10.40	94.11	
22,552.47	90.00	179.77	12,420.00	-10,206.30	1,075.80	0.00	0.00	0.00	0.00	PLU 13 DTD 122H/15

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well 122H/152H - Slot PLU 13 DTD 122H/152H SHL
Company:	XTO Energy	TVD Reference:	3443+28 @ 3471.00usft (Patt243)
Project:	Eddy County, NM (NAD27)-NMEZ Grid	MD Reference:	3443+28 @ 3471.00usft (Patt243)
Site:	PLU 13 DTD	North Reference:	Grid
Well:	122H/152H	Survey Calculation Method:	Minimum Curvature
Wellbore:	122H/152HLateral		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLU 13 DTD 102H/122H SHL - PLU 13 DTD 122H/152H SHL									
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
476.00	0.00	0.00	476.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
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
846.00	0.00	0.00	846.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
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
2,700.00	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
2,900.00	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
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,896.00	0.00	0.00	3,896.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt									
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
4,075.00	0.00	0.00	4,075.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.25	0.00	4,100.00	0.05	0.00	-0.05	1.00	1.00	0.00
4,126.00	0.51	0.00	4,126.00	0.23	0.00	-0.23	1.00	1.00	0.00
Delaware									

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well 122H/152H - Slot PLU 13 DTD
Company:	XTO Energy	TVD Reference:	122H/152H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3443+28 @ 3471.00usft (Patt243)
Site:	PLU 13 DTD	North Reference:	3443+28 @ 3471.00usft (Patt243)
Well:	122H/152H	Survey Calculation Method:	Grid
Wellbore:	122H/152HLateral		Minimum Curvature
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,200.00	1.25	0.00	4,199.99	1.36	0.00	-1.36	1.00	1.00	0.00	
4,300.00	2.25	0.00	4,299.94	4.42	0.00	-4.39	1.00	1.00	0.00	
4,375.00	3.00	0.00	4,374.86	7.85	0.00	-7.81	1.00	1.00	0.00	
4,400.00	2.94	4.67	4,399.83	9.14	0.05	-9.09	1.00	-0.26	18.67	
4,500.00	2.89	24.43	4,499.70	13.99	1.30	-13.78	1.00	-0.05	19.76	
4,600.00	3.17	42.67	4,599.57	18.32	4.22	-17.77	1.00	0.28	18.24	
4,700.00	3.71	56.77	4,699.39	22.13	8.80	-21.08	1.00	0.54	14.10	
4,800.00	4.42	66.85	4,799.14	25.41	15.05	-23.70	1.00	0.70	10.08	
4,900.00	5.22	74.01	4,898.78	28.18	22.96	-25.62	1.00	0.80	7.16	
5,000.00	6.08	79.21	4,998.30	30.42	32.53	-26.84	1.00	0.86	5.20	
5,100.00	6.97	83.10	5,097.65	32.14	43.75	-27.38	1.00	0.90	3.89	
5,182.34	7.73	85.62	5,179.32	33.16	54.24	-27.30	1.00	0.92	3.06	
5,200.00	7.73	85.62	5,196.81	33.35	56.61	-27.23	0.00	0.00	0.00	
5,300.00	7.73	85.62	5,295.90	34.37	70.02	-26.84	0.00	0.00	0.00	
5,400.00	7.73	85.62	5,394.99	35.40	83.43	-26.46	0.00	0.00	0.00	
5,500.00	7.73	85.62	5,494.08	36.43	96.85	-26.07	0.00	0.00	0.00	
5,600.00	7.73	85.62	5,593.18	37.45	110.26	-25.69	0.00	0.00	0.00	
5,700.00	7.73	85.62	5,692.27	38.48	123.67	-25.30	0.00	0.00	0.00	
5,800.00	7.73	85.62	5,791.36	39.50	137.09	-24.92	0.00	0.00	0.00	
5,900.00	7.73	85.62	5,890.45	40.53	150.50	-24.53	0.00	0.00	0.00	
6,000.00	7.73	85.62	5,989.54	41.56	163.92	-24.15	0.00	0.00	0.00	
6,100.00	7.73	85.62	6,088.63	42.58	177.33	-23.76	0.00	0.00	0.00	
6,200.00	7.73	85.62	6,187.72	43.61	190.74	-23.38	0.00	0.00	0.00	
6,300.00	7.73	85.62	6,286.81	44.64	204.16	-22.99	0.00	0.00	0.00	
6,400.00	7.73	85.62	6,385.90	45.66	217.57	-22.61	0.00	0.00	0.00	
6,500.00	7.73	85.62	6,484.99	46.69	230.98	-22.22	0.00	0.00	0.00	
6,600.00	7.73	85.62	6,584.08	47.72	244.40	-21.84	0.00	0.00	0.00	
6,700.00	7.73	85.62	6,683.18	48.74	257.81	-21.45	0.00	0.00	0.00	
6,800.00	7.73	85.62	6,782.27	49.77	271.23	-21.06	0.00	0.00	0.00	
6,900.00	7.73	85.62	6,881.36	50.80	284.64	-20.68	0.00	0.00	0.00	
7,000.00	7.73	85.62	6,980.45	51.82	298.05	-20.29	0.00	0.00	0.00	
7,100.00	7.73	85.62	7,079.54	52.85	311.47	-19.91	0.00	0.00	0.00	
7,200.00	7.73	85.62	7,178.63	53.88	324.88	-19.52	0.00	0.00	0.00	
7,300.00	7.73	85.62	7,277.72	54.90	338.29	-19.14	0.00	0.00	0.00	
7,400.00	7.73	85.62	7,376.81	55.93	351.71	-18.75	0.00	0.00	0.00	
7,500.00	7.73	85.62	7,475.90	56.96	365.12	-18.37	0.00	0.00	0.00	
7,600.00	7.73	85.62	7,574.99	57.98	378.54	-17.98	0.00	0.00	0.00	
7,700.00	7.73	85.62	7,674.09	59.01	391.95	-17.60	0.00	0.00	0.00	
7,800.00	7.73	85.62	7,773.18	60.04	405.36	-17.21	0.00	0.00	0.00	
7,900.00	7.73	85.62	7,872.27	61.06	418.78	-16.83	0.00	0.00	0.00	
8,000.00	7.73	85.62	7,971.36	62.09	432.19	-16.44	0.00	0.00	0.00	
8,040.01	7.73	85.62	8,011.00	62.50	437.56	-16.29	0.00	0.00	0.00	
Bone Spring										
8,100.00	7.73	85.62	8,070.45	63.11	445.60	-16.06	0.00	0.00	0.00	
8,200.00	7.73	85.62	8,169.54	64.14	459.02	-15.67	0.00	0.00	0.00	
8,300.00	7.73	85.62	8,268.63	65.17	472.43	-15.29	0.00	0.00	0.00	
8,400.00	7.73	85.62	8,367.72	66.19	485.85	-14.90	0.00	0.00	0.00	
8,500.00	7.73	85.62	8,466.81	67.22	499.26	-14.52	0.00	0.00	0.00	
8,600.00	7.73	85.62	8,565.90	68.25	512.67	-14.13	0.00	0.00	0.00	
8,700.00	7.73	85.62	8,664.99	69.27	526.09	-13.75	0.00	0.00	0.00	
8,800.00	7.73	85.62	8,764.09	70.30	539.50	-13.36	0.00	0.00	0.00	
8,900.00	7.73	85.62	8,863.18	71.33	552.91	-12.98	0.00	0.00	0.00	
8,968.45	7.73	85.62	8,931.00	72.03	562.10	-12.71	0.00	0.00	0.00	

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well 122H/152H - Slot PLU 13 DTD
Company:	XTO Energy	TVD Reference:	122H/152H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3443+28 @ 3471.00usft (Patt243)
Site:	PLU 13 DTD	North Reference:	3443+28 @ 3471.00usft (Patt243)
Well:	122H/152H	Survey Calculation Method:	Grid
Wellbore:	122H/152HLateral		Minimum Curvature
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1st Bone Spring Ss										
9,000.00	7.73	85.62	8,962.27	72.35	566.33	-12.59	0.00	0.00	0.00	
9,100.00	7.73	85.62	9,061.36	73.38	579.74	-12.20	0.00	0.00	0.00	
9,200.00	7.73	85.62	9,160.45	74.41	593.16	-11.82	0.00	0.00	0.00	
9,300.00	7.73	85.62	9,259.54	75.43	606.57	-11.43	0.00	0.00	0.00	
9,400.00	7.73	85.62	9,358.63	76.46	619.98	-11.05	0.00	0.00	0.00	
9,500.00	7.73	85.62	9,457.72	77.49	633.40	-10.66	0.00	0.00	0.00	
9,600.00	7.73	85.62	9,556.81	78.51	646.81	-10.28	0.00	0.00	0.00	
9,700.00	7.73	85.62	9,655.90	79.54	660.22	-9.89	0.00	0.00	0.00	
9,745.51	7.73	85.62	9,701.00	80.01	666.33	-9.72	0.00	0.00	0.00	
2nd Bone Spring Ss										
9,800.00	7.73	85.62	9,755.00	80.57	673.64	-9.51	0.00	0.00	0.00	
9,900.00	7.73	85.62	9,854.09	81.59	687.05	-9.12	0.00	0.00	0.00	
10,000.00	7.73	85.62	9,953.18	82.62	700.47	-8.74	0.00	0.00	0.00	
10,100.00	7.73	85.62	10,052.27	83.65	713.88	-8.35	0.00	0.00	0.00	
10,159.27	7.73	85.62	10,111.00	84.25	721.83	-8.12	0.00	0.00	0.00	
3rd Bone Spring Lm										
10,200.00	7.73	85.62	10,151.36	84.67	727.29	-7.97	0.00	0.00	0.00	
10,300.00	7.73	85.62	10,250.45	85.70	740.71	-7.58	0.00	0.00	0.00	
10,400.00	7.73	85.62	10,349.54	86.73	754.12	-7.20	0.00	0.00	0.00	
10,500.00	7.73	85.62	10,448.63	87.75	767.53	-6.81	0.00	0.00	0.00	
10,600.00	7.73	85.62	10,547.72	88.78	780.95	-6.43	0.00	0.00	0.00	
10,700.00	7.73	85.62	10,646.81	89.80	794.36	-6.04	0.00	0.00	0.00	
10,800.00	7.73	85.62	10,745.90	90.83	807.78	-5.66	0.00	0.00	0.00	
10,890.92	7.73	85.62	10,836.00	91.76	819.97	-5.31	0.00	0.00	0.00	
3rd Bone Spring Ss										
10,900.00	7.73	85.62	10,845.00	91.86	821.19	-5.27	0.00	0.00	0.00	
11,000.00	7.73	85.62	10,944.09	92.88	834.60	-4.89	0.00	0.00	0.00	
11,100.00	7.73	85.62	11,043.18	93.91	848.02	-4.50	0.00	0.00	0.00	
11,200.00	7.73	85.62	11,142.27	94.94	861.43	-4.11	0.00	0.00	0.00	
11,300.00	7.73	85.62	11,241.36	95.96	874.84	-3.73	0.00	0.00	0.00	
11,314.78	7.73	85.62	11,256.00	96.12	876.83	-3.67	0.00	0.00	0.00	
Wolfcamp										
11,350.10	7.73	85.62	11,291.00	96.48	881.56	-3.54	0.00	0.00	0.00	
Wolfcamp X										
11,400.00	7.73	85.62	11,340.45	96.99	888.26	-3.34	0.00	0.00	0.00	
11,425.78	7.73	85.62	11,366.00	97.26	891.72	-3.25	0.00	0.00	0.00	
Wolfcamp Y										
11,500.00	7.73	85.62	11,439.54	98.02	901.67	-2.96	0.00	0.00	0.00	
11,506.52	7.73	85.62	11,446.00	98.08	902.55	-2.93	0.00	0.00	0.00	
Wolfcamp A										
11,600.00	7.73	85.62	11,538.63	99.04	915.09	-2.57	0.00	0.00	0.00	
11,640.93	7.73	85.62	11,579.19	99.46	920.58	-2.42	0.00	0.00	0.00	
PLU 13 DTD 102H/122H FTP_330FNL_470FEL										
11,700.00	7.73	85.62	11,637.72	100.07	928.50	-2.19	0.00	0.00	0.00	
11,800.00	7.73	85.62	11,736.81	101.10	941.91	-1.80	0.00	0.00	0.00	
11,864.77	7.73	85.62	11,801.00	101.76	950.60	-1.55	0.00	0.00	0.00	
Wolfcamp B										
11,900.00	7.73	85.62	11,835.91	102.12	955.33	-1.42	0.00	0.00	0.00	
11,910.90	7.73	85.62	11,846.70	102.23	956.79	-1.38	0.00	0.00	0.00	
11,950.00	8.40	113.36	11,885.43	101.30	962.04	0.10	10.00	1.72	70.92	

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well 122H/152H - Slot PLU 13 DTD 122H/152H SHL
Company:	XTO Energy	TVD Reference:	3443+28 @ 3471.00usft (Patt243)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3443+28 @ 3471.00usft (Patt243)
Site:	PLU 13 DTD	North Reference:	Grid
Well:	122H/152H	Survey Calculation Method:	Minimum Curvature
Wellbore:	122H/152HLateral		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,000.00	11.35	137.35	11,934.71	96.23	968.73	5.85	10.00	5.89	47.98
12,050.00	15.38	150.29	11,983.35	86.85	975.35	15.87	10.00	8.07	25.89
12,100.00	19.86	157.75	12,031.00	73.22	981.86	30.11	10.00	8.94	14.91
12,150.00	24.53	162.51	12,077.29	55.45	988.20	48.44	10.00	9.34	9.52
12,200.00	29.30	165.81	12,121.86	33.68	994.32	70.74	10.00	9.55	6.60
12,250.00	34.13	168.25	12,164.39	8.07	1,000.18	96.82	10.00	9.67	4.88
12,295.47	38.56	169.99	12,201.00	-18.39	1,005.25	123.66	10.00	9.74	3.83
Wolfcamp D									
12,300.00	39.00	170.15	12,204.53	-21.19	1,005.74	126.50	10.00	9.77	3.42
12,350.00	43.90	171.68	12,242.00	-53.86	1,010.94	159.54	10.00	9.79	3.07
12,400.00	48.81	172.97	12,276.50	-89.71	1,015.76	195.69	10.00	9.83	2.57
12,450.00	53.74	174.07	12,307.77	-128.46	1,020.15	234.68	10.00	9.85	2.21
12,500.00	58.67	175.04	12,335.57	-169.81	1,024.06	276.22	10.00	9.87	1.95
12,547.99	63.41	175.88	12,358.80	-211.66	1,027.39	318.19	10.00	9.88	1.75
PLU 13 DTD 122H/152H FTP_330FNL_16FEL									
12,550.00	63.61	175.92	12,359.70	-213.45	1,027.52	319.98	10.00	9.89	1.68
12,600.00	68.56	176.72	12,379.96	-259.05	1,030.45	365.64	10.00	9.89	1.61
12,650.00	73.51	177.47	12,396.20	-306.26	1,032.84	412.84	10.00	9.90	1.50
12,700.00	78.46	178.19	12,408.31	-354.72	1,034.67	461.22	10.00	9.90	1.43
12,750.00	83.41	178.87	12,416.18	-404.06	1,035.93	510.43	10.00	9.91	1.38
12,800.00	88.37	179.55	12,419.77	-453.91	1,036.62	560.08	10.00	9.91	1.35
12,816.43	90.00	179.77	12,420.00	-470.34	1,036.72	576.43	10.00	9.91	1.34
LP									
12,816.47	90.00	179.77	12,420.00	-470.38	1,036.72	576.46	9.58	9.49	1.29
PLU 13 DTD 122H/152H LP (~295°PastFTP)									
12,900.00	90.00	179.77	12,420.00	-553.91	1,037.05	659.57	0.00	0.00	0.00
13,000.00	90.00	179.77	12,420.00	-653.91	1,037.45	759.06	0.00	0.00	0.00
13,100.00	90.00	179.77	12,420.00	-753.91	1,037.86	858.55	0.00	0.00	0.00
13,200.00	90.00	179.77	12,420.00	-853.91	1,038.26	958.04	0.00	0.00	0.00
13,300.00	90.00	179.77	12,420.00	-953.91	1,038.66	1,057.53	0.00	0.00	0.00
13,400.00	90.00	179.77	12,420.00	-1,053.91	1,039.06	1,157.02	0.00	0.00	0.00
13,500.00	90.00	179.77	12,420.00	-1,153.91	1,039.46	1,256.51	0.00	0.00	0.00
13,600.00	90.00	179.77	12,420.00	-1,253.90	1,039.86	1,356.00	0.00	0.00	0.00
13,700.00	90.00	179.77	12,420.00	-1,353.90	1,040.26	1,455.49	0.00	0.00	0.00
13,800.00	90.00	179.77	12,420.00	-1,453.90	1,040.67	1,554.98	0.00	0.00	0.00
13,900.00	90.00	179.77	12,420.00	-1,553.90	1,041.07	1,654.47	0.00	0.00	0.00
14,000.00	90.00	179.77	12,420.00	-1,653.90	1,041.47	1,753.96	0.00	0.00	0.00
14,100.00	90.00	179.77	12,420.00	-1,753.90	1,041.87	1,853.45	0.00	0.00	0.00
14,200.00	90.00	179.77	12,420.00	-1,853.90	1,042.27	1,952.94	0.00	0.00	0.00
14,300.00	90.00	179.77	12,420.00	-1,953.90	1,042.67	2,052.43	0.00	0.00	0.00
14,400.00	90.00	179.77	12,420.00	-2,053.90	1,043.07	2,151.92	0.00	0.00	0.00
14,500.00	90.00	179.77	12,420.00	-2,153.90	1,043.48	2,251.41	0.00	0.00	0.00
14,600.00	90.00	179.77	12,420.00	-2,253.90	1,043.88	2,350.90	0.00	0.00	0.00
14,700.00	90.00	179.77	12,420.00	-2,353.90	1,044.28	2,450.39	0.00	0.00	0.00
14,800.00	90.00	179.77	12,420.00	-2,453.90	1,044.68	2,549.88	0.00	0.00	0.00
14,900.00	90.00	179.77	12,420.00	-2,553.89	1,045.08	2,649.37	0.00	0.00	0.00
15,000.00	90.00	179.77	12,420.00	-2,653.89	1,045.48	2,748.86	0.00	0.00	0.00
15,100.00	90.00	179.77	12,420.00	-2,753.89	1,045.88	2,848.36	0.00	0.00	0.00
15,200.00	90.00	179.77	12,420.00	-2,853.89	1,046.29	2,947.85	0.00	0.00	0.00
15,300.00	90.00	179.77	12,420.00	-2,953.89	1,046.69	3,047.34	0.00	0.00	0.00
15,400.00	90.00	179.77	12,420.00	-3,053.89	1,047.09	3,146.83	0.00	0.00	0.00
15,500.00	90.00	179.77	12,420.00	-3,153.89	1,047.49	3,246.32	0.00	0.00	0.00
15,600.00	90.00	179.77	12,420.00	-3,253.89	1,047.89	3,345.81	0.00	0.00	0.00

Planning Report

Database	PREDATOR_EDM	Local Co-ordinate Reference	Well 122H/152H - Slot PLU 13 DTD
Company	XTO Energy	TVD Reference	122H/152H SHL
Project	Eddy County, NM (NAD27) NMEZ Grid	MD Reference	3443+28 @ 3471.00usft (Patt243)
Site	PLU 13 DTD	North Reference	3443+28 @ 3471.00usft (Patt243)
Well	122H/152H	Survey Calculation Method	Grid
Wellbore	122H/152H Lateral		Minimum Curvature
Design	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,700.00	90.00	179.77	12,420.00	-3,353.89	1,048.29	3,445.30	0.00	0.00	0.00
15,800.00	90.00	179.77	12,420.00	-3,453.89	1,048.69	3,544.79	0.00	0.00	0.00
15,900.00	90.00	179.77	12,420.00	-3,553.89	1,049.10	3,644.28	0.00	0.00	0.00
16,000.00	90.00	179.77	12,420.00	-3,653.89	1,049.50	3,743.77	0.00	0.00	0.00
16,100.00	90.00	179.77	12,420.00	-3,753.88	1,049.90	3,843.26	0.00	0.00	0.00
16,200.00	90.00	179.77	12,420.00	-3,853.88	1,050.30	3,942.75	0.00	0.00	0.00
16,300.00	90.00	179.77	12,420.00	-3,953.88	1,050.70	4,042.24	0.00	0.00	0.00
16,400.00	90.00	179.77	12,420.00	-4,053.88	1,051.10	4,141.73	0.00	0.00	0.00
16,500.00	90.00	179.77	12,420.00	-4,153.88	1,051.50	4,241.22	0.00	0.00	0.00
16,600.00	90.00	179.77	12,420.00	-4,253.88	1,051.91	4,340.71	0.00	0.00	0.00
16,700.00	90.00	179.77	12,420.00	-4,353.88	1,052.31	4,440.20	0.00	0.00	0.00
16,800.00	90.00	179.77	12,420.00	-4,453.88	1,052.71	4,539.69	0.00	0.00	0.00
16,900.00	90.00	179.77	12,420.00	-4,553.88	1,053.11	4,639.18	0.00	0.00	0.00
17,000.00	90.00	179.77	12,420.00	-4,653.88	1,053.51	4,738.67	0.00	0.00	0.00
17,100.00	90.00	179.77	12,420.00	-4,753.88	1,053.91	4,838.16	0.00	0.00	0.00
17,200.00	90.00	179.77	12,420.00	-4,853.88	1,054.31	4,937.65	0.00	0.00	0.00
17,300.00	90.00	179.77	12,420.00	-4,953.88	1,054.72	5,037.14	0.00	0.00	0.00
17,400.00	90.00	179.77	12,420.00	-5,053.87	1,055.12	5,136.63	0.00	0.00	0.00
17,500.00	90.00	179.77	12,420.00	-5,153.87	1,055.52	5,236.12	0.00	0.00	0.00
17,600.00	90.00	179.77	12,420.00	-5,253.87	1,055.92	5,335.61	0.00	0.00	0.00
17,700.00	90.00	179.77	12,420.00	-5,353.87	1,056.32	5,435.10	0.00	0.00	0.00
17,800.00	90.00	179.77	12,420.00	-5,453.87	1,056.72	5,534.59	0.00	0.00	0.00
17,900.00	90.00	179.77	12,420.00	-5,553.87	1,057.12	5,634.09	0.00	0.00	0.00
18,000.00	90.00	179.77	12,420.00	-5,653.87	1,057.53	5,733.58	0.00	0.00	0.00
18,100.00	90.00	179.77	12,420.00	-5,753.87	1,057.93	5,833.07	0.00	0.00	0.00
18,200.00	90.00	179.77	12,420.00	-5,853.87	1,058.33	5,932.56	0.00	0.00	0.00
18,300.00	90.00	179.77	12,420.00	-5,953.87	1,058.73	6,032.05	0.00	0.00	0.00
18,400.00	90.00	179.77	12,420.00	-6,053.87	1,059.13	6,131.54	0.00	0.00	0.00
18,500.00	90.00	179.77	12,420.00	-6,153.87	1,059.53	6,231.03	0.00	0.00	0.00
18,600.00	90.00	179.77	12,420.00	-6,253.86	1,059.93	6,330.52	0.00	0.00	0.00
18,700.00	90.00	179.77	12,420.00	-6,353.86	1,060.34	6,430.01	0.00	0.00	0.00
18,800.00	90.00	179.77	12,420.00	-6,453.86	1,060.74	6,529.50	0.00	0.00	0.00
18,900.00	90.00	179.77	12,420.00	-6,553.86	1,061.14	6,628.99	0.00	0.00	0.00
19,000.00	90.00	179.77	12,420.00	-6,653.86	1,061.54	6,728.48	0.00	0.00	0.00
19,100.00	90.00	179.77	12,420.00	-6,753.86	1,061.94	6,827.97	0.00	0.00	0.00
19,200.00	90.00	179.77	12,420.00	-6,853.86	1,062.34	6,927.46	0.00	0.00	0.00
19,300.00	90.00	179.77	12,420.00	-6,953.86	1,062.74	7,026.95	0.00	0.00	0.00
19,400.00	90.00	179.77	12,420.00	-7,053.86	1,063.15	7,126.44	0.00	0.00	0.00
19,500.00	90.00	179.77	12,420.00	-7,153.86	1,063.55	7,225.93	0.00	0.00	0.00
19,600.00	90.00	179.77	12,420.00	-7,253.86	1,063.95	7,325.42	0.00	0.00	0.00
19,700.00	90.00	179.77	12,420.00	-7,353.86	1,064.35	7,424.91	0.00	0.00	0.00
19,800.00	90.00	179.77	12,420.00	-7,453.85	1,064.75	7,524.40	0.00	0.00	0.00
19,900.00	90.00	179.77	12,420.00	-7,553.85	1,065.15	7,623.89	0.00	0.00	0.00
20,000.00	90.00	179.77	12,420.00	-7,653.85	1,065.55	7,723.38	0.00	0.00	0.00
20,100.00	90.00	179.77	12,420.00	-7,753.85	1,065.96	7,822.87	0.00	0.00	0.00
20,200.00	90.00	179.77	12,420.00	-7,853.85	1,066.36	7,922.36	0.00	0.00	0.00
20,300.00	90.00	179.77	12,420.00	-7,953.85	1,066.76	8,021.85	0.00	0.00	0.00
20,400.00	90.00	179.77	12,420.00	-8,053.85	1,067.16	8,121.34	0.00	0.00	0.00
20,500.00	90.00	179.77	12,420.00	-8,153.85	1,067.56	8,220.83	0.00	0.00	0.00
20,600.00	90.00	179.77	12,420.00	-8,253.85	1,067.96	8,320.32	0.00	0.00	0.00
20,700.00	90.00	179.77	12,420.00	-8,353.85	1,068.36	8,419.81	0.00	0.00	0.00
20,800.00	90.00	179.77	12,420.00	-8,453.85	1,068.77	8,519.31	0.00	0.00	0.00
20,900.00	90.00	179.77	12,420.00	-8,553.85	1,069.17	8,618.80	0.00	0.00	0.00

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well 122H/152H - Slot PLU 13 DTD 122H/152H SHL
Company:	XTO Energy	TVD Reference:	3443+28 @ 3471.00usft (Patt243)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3443+28 @ 3471.00usft (Patt243)
Site:	PLU 13 DTD	North Reference:	Grid
Well:	122H/152H	Survey Calculation Method:	Minimum Curvature
Wellbore:	122H/152HLateral		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
21,000.00	90.00	179.77	12,420.00	-8,653.85	1,069.57	8,718.29	0.00	0.00	0.00	
21,100.00	90.00	179.77	12,420.00	-8,753.84	1,069.97	8,817.78	0.00	0.00	0.00	
21,200.00	90.00	179.77	12,420.00	-8,853.84	1,070.37	8,917.27	0.00	0.00	0.00	
21,300.00	90.00	179.77	12,420.00	-8,953.84	1,070.77	9,016.76	0.00	0.00	0.00	
21,400.00	90.00	179.77	12,420.00	-9,053.84	1,071.17	9,116.25	0.00	0.00	0.00	
21,500.00	90.00	179.77	12,420.00	-9,153.84	1,071.58	9,215.74	0.00	0.00	0.00	
21,600.00	90.00	179.77	12,420.00	-9,253.84	1,071.98	9,315.23	0.00	0.00	0.00	
21,700.00	90.00	179.77	12,420.00	-9,353.84	1,072.38	9,414.72	0.00	0.00	0.00	
21,800.00	90.00	179.77	12,420.00	-9,453.84	1,072.78	9,514.21	0.00	0.00	0.00	
21,900.00	90.00	179.77	12,420.00	-9,553.84	1,073.18	9,613.70	0.00	0.00	0.00	
22,000.00	90.00	179.77	12,420.00	-9,653.84	1,073.58	9,713.19	0.00	0.00	0.00	
22,100.00	90.00	179.77	12,420.00	-9,753.84	1,073.98	9,812.68	0.00	0.00	0.00	
22,200.00	90.00	179.77	12,420.00	-9,853.84	1,074.39	9,912.17	0.00	0.00	0.00	
22,300.00	90.00	179.77	12,420.00	-9,953.83	1,074.79	10,011.66	0.00	0.00	0.00	
22,400.00	90.00	179.77	12,420.00	-10,053.83	1,075.19	10,111.15	0.00	0.00	0.00	
22,421.24	90.00	179.77	12,420.00	-10,075.08	1,075.27	10,132.28	0.00	0.00	0.00	
PLU 13 DTD 102H/122H LTP_330FSL_472FEL										
22,422.46	90.00	179.77	12,420.00	-10,076.30	1,075.28	10,133.50	0.00	0.00	0.00	
PLU 13 DTD 122H/152H LTP_330FSL_18FEL										
22,500.00	90.00	179.77	12,420.00	-10,153.83	1,075.59	10,210.64	0.00	0.00	0.00	
22,551.25	90.00	179.77	12,420.00	-10,205.08	1,075.80	10,261.62	0.00	0.00	0.00	
PLU 13 DTD 102H/122H PBHL_200FSL_472FEL										
22,552.47	90.00	179.77	12,420.00	-10,206.30	1,075.80	10,262.84	0.00	0.00	0.00	
PLU 13 DTD 122H/152H PBHL_200FSL_18FEL										

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 13 DTD 122H/152H	0.00	0.00	0.00	0.00	0.00	440,503.40	652,098.30	32.21010449	-103.84156320	
- plan hits target center										
- Point										
PLU 13 DTD 122H/152H	0.00	0.00	12,420.00	-10,076.30	1,074.80	430,427.10	653,173.10	32.18239213	-103.83823822	
- plan misses target center by 0.48usft at 22422.46usft MD (12420.00 TVD, -10076.30 N, 1075.28 E)										
- Point										
PLU 13 DTD 122H/152H	0.00	0.00	12,420.00	-10,206.30	1,075.80	430,297.10	653,174.10	32.18203476	-103.83823693	
- plan hits target center										
- Rectangle (sides W100.00 H10,029.00 D0.00)										
PLU 13 DTD 122H/152H	0.00	0.00	12,420.00	-177.20	1,035.30	440,326.20	653,133.60	32.20960432	-103.83821857	
- plan misses target center by 70.68usft at 12547.99usft MD (12358.80 TVD, -211.66 N, 1027.39 E)										
- Point										
PLU 13 DTD 122H/152H	0.00	0.00	12,420.00	-470.38	1,036.72	440,033.02	653,135.02	32.20879838	-103.83821835	
- plan hits target center										
- Point										

Planning Report

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well 122H/152H - Slot PLU 13 DTD
Company:	XTO Energy	TVD Reference:	122H/152H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3443+28 @ 3471.00usft (Patt243)
Site:	PLU 13 DTD	North Reference:	3443+28 @ 3471.00usft (Patt243)
Well:	122H/152H	Survey Calculation Method:	Grid
Wellbore:	122H/152HLateral		Minimum Curvature
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction	
476.00	476.00	Rustler				
846.00	846.00	Top Salt				
3,896.00	3,896.00	Base Salt				
4,126.00	4,126.00	Delaware				
8,040.01	8,011.00	Bone Spring				
8,968.45	8,931.00	1st Bone Spring Ss				
9,745.51	9,701.00	2nd Bone Spring Ss				
10,159.27	10,111.00	3rd Bone Spring Lm				
10,890.92	10,836.00	3rd Bone Spring Ss				
11,314.78	11,256.00	Wolfcamp				
11,350.10	11,291.00	Wolfcamp X				
11,425.76	11,366.00	Wolfcamp Y				
11,506.52	11,446.00	Wolfcamp A				
11,864.77	11,801.00	Wolfcamp B				
12,295.47	12,201.00	Wolfcamp D				
12,816.43	12,420.00	LP				

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Permian Operating, LLC
LEASE NO.:	NMNM-0030453
WELL NAME & NO.:	Poker Lake Unit 13 DTD 122H
SURFACE HOLE FOOTAGE:	0150' FNL & 0285' FWL
BOTTOM HOLE FOOTAGE	0200' FSL & 1320' FWL Sec. 25, T. 24 S., R 30 E.
LOCATION:	Section 24, T. 24 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

Commercial Well Determination

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

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.

A. DRILLING OPERATIONS 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. **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.**
2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**

3. 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 wells.
4. 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 is located, this does not include the dog house or stairway area.
5. 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.

B. 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.

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.

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.

1. The 18-5/8 inch surface casing shall be set at approximately 650 feet (in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and 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.

2. The minimum required fill of cement behind the 13-3/8 inch 1st intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

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.

9-5/8" 2nd Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

3. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Operator has proposed DV tool at depth of 4025', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage.

b. Second stage above DV tool:

- ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 6% - Additional cement may be required.**

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 and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required through the curve and a minimum of one every other joint.

4. 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 22% - Additional cement may be required.**

5. 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.

C. 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 53.
2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi.**
4. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 13-3/8" 1st intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8" 1st intermediate casing shoe shall be 10,000 (10M) 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. Operator shall perform the 9-5/8" intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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.

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

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.

D. 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.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. 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.

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