Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EMNRD-OCD ARTESIA
REC'D: 4/14/2020

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMLC061634B

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
891000303X

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

8. Well Name and No.
POKER LAKE UNIT 30 BS 163H

2. Name of Operator
XTO PERMIAN OPERATING LLC
Contact: KELLY KARDOS
E-Mail: kelly_kardos@xtoenergy.com

9. API Well No.
30-015-46934-00-X1

3a. Address
6401 HOLIDAY HILL ROAD BLDG 5
MIDLAND, TX 79707

3b. Phone No. (include area code)
Ph: 432-620-4374

10. Field and Pool or Exploratory Area
PURPLE SAGE-WOLFCAMP (GAS)

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 30 T25S R31E SENW 2310FNL 1920FWL
32.102180 N Lat, 103.819817 W Lon

11. County or Parish, State
EDDY COUNTY, NM

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 to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 recompletion 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 casing/cement design per the attached drilling program.

XTO requests the following variances:

XTO requests to use a 5000 psi annular BOP with a 10,000 psi BOP stack. Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 psi

Batch drill this well if necessary. In doing so, XTO will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE recommendations, XTO will contact the BLM

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

Electronic Submission #509276 verified by the BLM Well Information System
For XTO PERMIAN OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 04/01/2020 (20PP1885SE)

Name *(Printed/Typed)* KELLY KARDOS — Title REGULATORY COORDINATOR

Signature (Electronic Submission) — Date 04/01/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ALLISON MORENCY — Title PETROLEUM ENGINEER — Date 04/11/2020

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 ****

Accepted for record 4/20/2020 RWP

Additional data for EC transaction #509276 that would not fit on the form

32. Additional remarks, continued

to skid the rig to drill the remaining wells on the pad. Once surface and intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.

ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. Based on discussions with the BLM on February 27th 2020, we will request permission to ONLY retest broken pressure seals if the following conditions are met: 1. After a full BOP test is conducted on the first well on the pad (First well will be the deepest Intermediate) 2. When skidding to drill an intermediate section does not penetrate into the Wolfcamp 3. Full BOP test will be required prior to drilling the production hole.

A variance is requested to cement offline for the surface and intermediate casing strings.

Attachments:
Casing/Cement Design
Multibowl Diagram
5M10M Diagram / Well Control Plan
Directional Plan

Revisions to Operator-Submitted EC Data for Sundry Notice #509276

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMLC061634B	NMLC061634B
Agreement:	NMNM71016X	891000303X (NMNM71016X)
Operator:	XTO PERMIAN OPERATING, LLC 6401 HOLIDAY HILL RD BLDG 5 MIDLAND, TX 79707 Ph: 432-620-4374	XTO PERMIAN OPERATING LLC 6401 HOLIDAY HILL ROAD BLDG 5 MIDLAND, TX 79707 Ph: 432.683 2277
Admin Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374
Tech Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374
Location: State: County:	 NM EDDY	 NM EDDY
Field/Pool:	PURPLE SAGE WOLFCAMP	PURPLE SAGE-WOLFCAMP (GAS)
Well/Facility:	POKER LAKE UNIT 30 BS 163H Sec 30 T25S R31E Mer NMP SENW 2310FNL 1920FWL	POKER LAKE UNIT 30 BS 163H Sec 30 T25S R31E SENW 2310FNL 1920FWL 32.102180 N Lat, 103.819817 W Lon

Kardos, Kelly

From: amorency@blm.gov
Sent: Saturday, April 11, 2020 8:20 PM
To: Kardos, Kelly
Subject: Well POKER LAKE UNIT 30 BS 163H
Attachments: EC509276.pdf

Categories: External Sender

External Email - Think Before You Click

The sundry for Change to Original APD you submitted has been approved by the BLM. Your original Electronic Commerce (EC) transmission was assigned ID 509276. Please be sure to open and save all attachments to this message, since they contain important information.

04/11/2020 - AM
All COAs apply. Shell testing and offline cementing not approved.

Poker Lake Unit 30 BS 163H
Projected TD: 20292' MD / 12416' TVD
SHL: 2310' FNL & 1920' FWL , Section 30, T25S, R31E
BHL: 200' FSL & 1357' FWL , Section 31, T25S, R31E
Eddy County, NM

Casing Design

The surface fresh water sands will be protected by setting 11-3/4" casing @ 1400' (96' above the salt) and circulating cement back to surface. The 7-5/8" intermediate casing will be set at 11650' and bring TOC back to surface. A 6-3/4 inch curve and lateral hole will be drilled to MD/TD and 5-1/2" x 5-0" casing will be set at TD and cemented back 300' into the 7-5/8" casing shoe.

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
14-3/4"	0' – 1400'	11-3/4"	54	STC	J-55	New	1.02	2.38	7.25
9-7/8"	0' – 11650'	7-5/8"	29.7	BTC	L-80	New	1.19	1.57	1.97
6-3/4"	0' – 11550'	5-1/2"	23	BTC	P-110	New	1.21	1.71	2.61
6-3/4"	11550' - 20292'	5-0"	18	BTC	P-110	New	1.16	1.58	2.09

XTO requests to not utilize centralizers in the curve and lateral
7-5/8" Collapse analyzed using 50% evacuation based on regional experience.
5-1/2" x 5-0" Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35
Test on Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

WELLHEAD:

Permanent Wellhead – Multibowl System
A. Starting Head: 11" 10M top flange x 11-3/4" SOW bottom
B. Tubing Head: 11" 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 7-5/8" casing per BLM Onshore Order 2
· Wellhead Manufacturer representative will not be present for BOP test plug installation

Cement Program

Surface Casing:

Lead: 510 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 190 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

Intermediate Casing:

ECP/DV Tool to be set at 4600'

1st Stage

Lead: 1380 sxs Halcem - Class C (mixed at 11.0 ppg, 1.87 ft3/sx, 15.10 gal/sx water)
Tail: 310 sxs Halcem - Class C (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1150 psi

2nd Stage

Lead: 820 sxs Halcem - Class C (mixed at 11.0 ppg, 1.88 ft3/sx, 10.13 gal/sx water)
Tail: 320 sxs Halcem-Class C (mixed at 14.8 ppg, 1.33 ft3/sx, 5.29 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1150 psi

Production Casing:

Lead: 20 sxs VersaCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water)
Tail: 810 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft3/sx, 7.20 gal/sx water)
Compressives: 12-hr = 800 psi 24 hr = 1500 psi

Mud Circulation Program

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 1400'	14-3/4"	FW / Native	8.4-8.8	35-40	NC
1400' - 11650'	9-7/8"	Brine / Cut Brine / Direct Emuslion	8.7-9.2	30-32	NC
11650' to 20292'	6-3/4"	Cut Brine / WBM / OBM	12.7-13.2	32-36	NC

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

XTO Energy Inc.
Poker Lake Unit 30 Big Sinks 163H
Projected TD: 20292' MD / 12416' TVD
SHL: 2310' FNL & 1920' FWL , Section 30, T25S, R31E
BHL: 200' FSL & 1357' FWL , Section 31, T25S, R31E
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	1170'	Water
Top of Salt	1496'	Water
Base of Salt	3972'	Water
Delaware	4139'	Water
Bone Spring	8075'	Water
1st Bone Spring Ss	9075'	Water/Oil/Gas
2nd Bone Spring Ss	9722'	Water/Oil/Gas
3rd Bone Spring Ss	11041'	Water/Oil/Gas
Wolfcamp	11341'	Water/Oil/Gas
Wolfcamp D	12351'	Water/Oil/Gas
Target/Land Curve	12416'	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 11-3/4" casing @ 1400' (96' above the salt) and circulating cement back to surface. The 7-5/8" intermediate casing will be set at 11650' and bring TOC back to surface. A 6-3/4 inch curve and lateral hole will be drilled to MD/TD and 5-1/2" x 5-0" casing will be set at TD and cemented back 300' into the 7-5/8" casing shoe.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
14-3/4"	0' – 1400'	11-3/4"	54	STC	J-55	New	1.02	2.38	7.25
9-7/8"	0' – 11650'	7-5/8"	29.7	BTC	L-80	New	1.19	1.57	1.97
6-3/4"	0' – 11550'	5-1/2"	23	BTC	P-110	New	1.21	1.71	2.61
6-3/4"	11550' - 20292'	5-0"	18	BTC	P-110	New	1.16	1.58	2.09

· XTO requests to not utilize centralizers in the curve and lateral
·7-5/8" Collapse analyzed using 50% evacuation based on regional experience.
· 5-1/2" x 5-0" Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35
· Test on Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

Wellhead:

Permanent Wellhead – Multibowl System

A. Starting Head: 11" 10M top flange x 11-3/4" SOW bottom
B. Tubing Head: 11" 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 7-5/8" casing per BLM Onshore Order 2
· Wellhead Manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 11-3/4", 54 New J-55, STC casing to be set at +/- 1400'

Lead: 510 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 1.87 ft3/sx, 10.13 gal/sx water)

Tail: 190 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
TOC: Surface

Intermediate Casing: 7-5/8", 29.7 New L-80, BTC casing to be set at +/- 11650'
ECP/DV Tool to be set at 4600'
1st Stage
Lead: 1380 sxs Halcem - Class C (mixed at 11.0 ppg, 1.87 ft3/sx, 15.10 gal/sx water)

Tail: 310 sxs Halcem - Class C (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1150psi

2nd Stage
Lead: 820 sxs Halcem - Class C (mixed at 11.0 ppg, 1.88 ft3/sx, 10.13 gal/sx water)

Tail: 320 sxs Halcem-Class C (mixed at 14.8 ppg, 1.33 ft3/sx, 5.29 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1150 psi
TOC: Surface

Production Casing: 5-0", 18 New P-110, BTC casing to be set at +/- 20292'
Lead: 20 sxs VersaCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water)

Tail: 810 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft3/sx, 7.20 gal/sx water)
Compressives 12-hr = 800 psi 24 hr = 1500 psi
TOC: 300' inside previous shoe

5. Pressure Control Equipment

Once the permanent WH is installed on the 11-3/4" casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 10M 3-Ram BOP. MASP should not exceed 5791 psi. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M). Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 70% of the working pressure. When nippling up on the 11-3/4", 10M bradenhead and flange, the BOP test will be limited to 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.

XTO requests a variance to be able to batch drill this well if necessary. In doing so, XTO will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE recommendations, XTO will contact the BLM on each rig skid on the pad.

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compainace with API Standard 53. API standard 53 states, that for pad drilling operation, moving from one welhead to another with in 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. We will also function test BOP equipment after each nipple up. A full BOP test will be required prior to drilling any production hole.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 1400'	14-3/4"	FW / Native	8.4-8.8	35-40	NC
1400' - 11650'	9-7/8"	Brine / Cut Brine / Direct Emuslion	8.7-9.2	30-32	NC
11650' to 20292'	6-3/4"	Cut Brine / WBM / OBM	12.7-13.2	32-36	NC

The necessary mud products for weight addition and fluid loss control will be on location at all times.
Spud with fresh water/native mud and set 11-3/4" surface casing, isolating the fresh water aquifer. Drill out from under 11-3/4" surface casing with a brine/oil direct emulsion mud system. 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 11-3/4" casing.

8. Logging, Coring and Testing Program

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

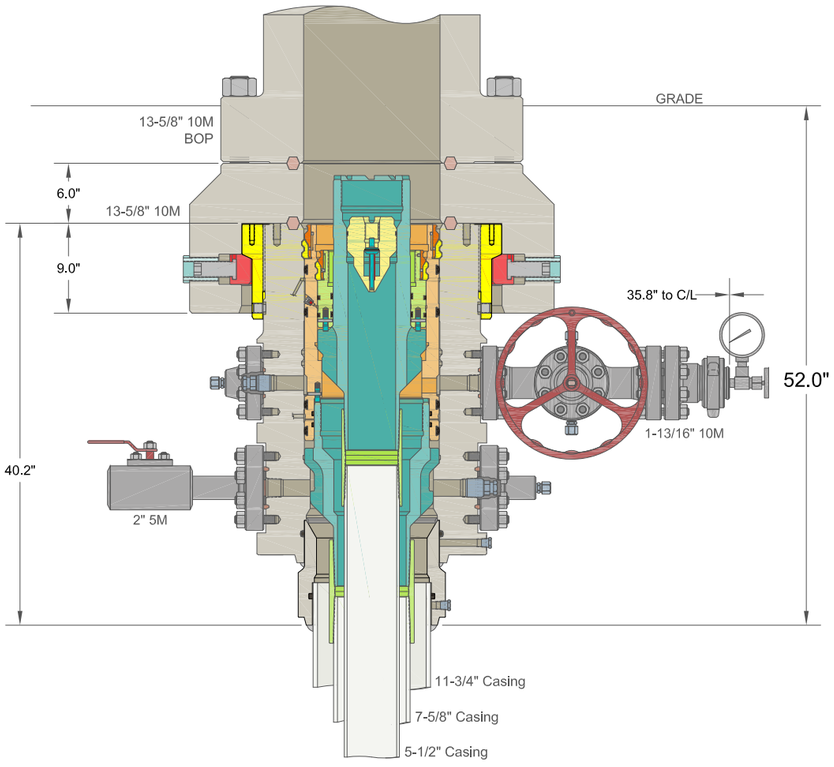
Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

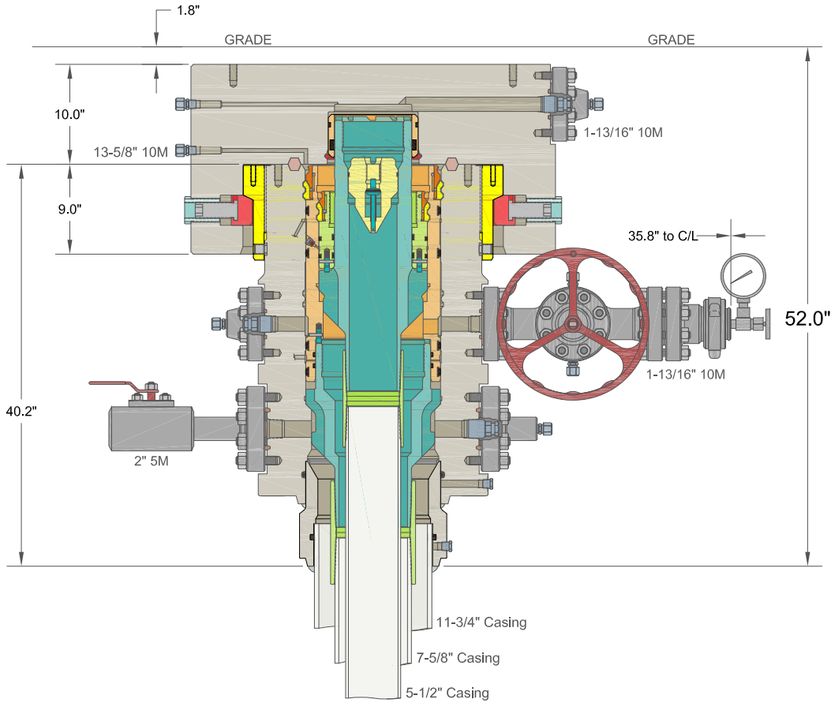
None Anticipated. BHT of 160 to 180 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. 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 8522 psi.

10. Anticipated Starting Date and Duration of Operations

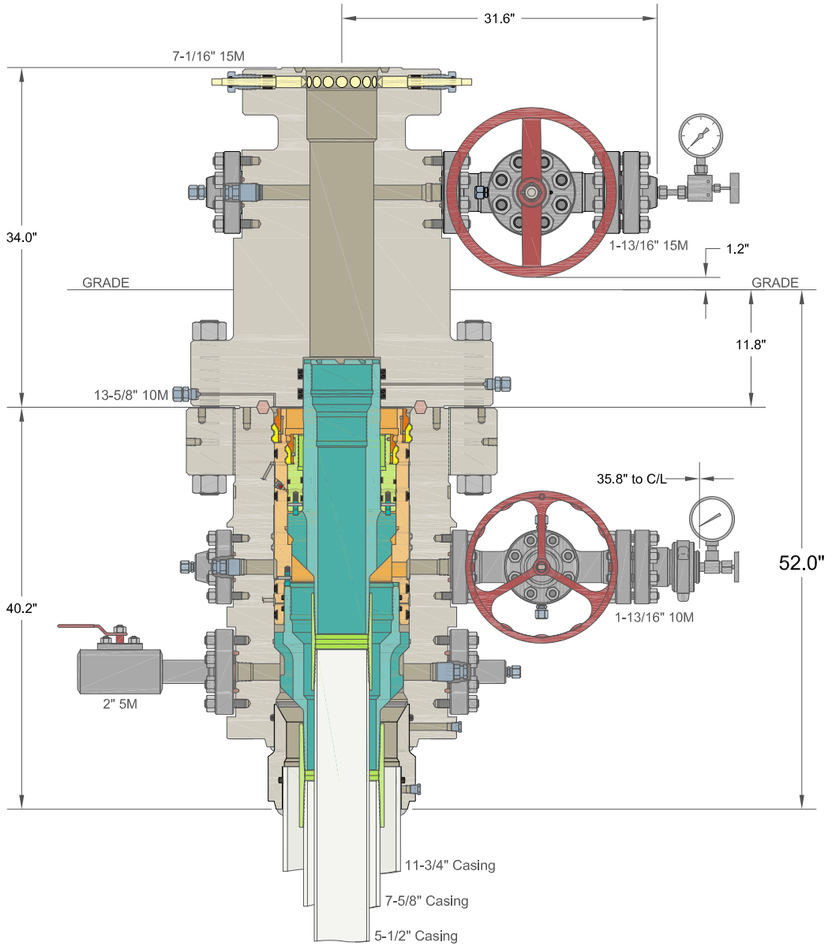
Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 45 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



DRILLING



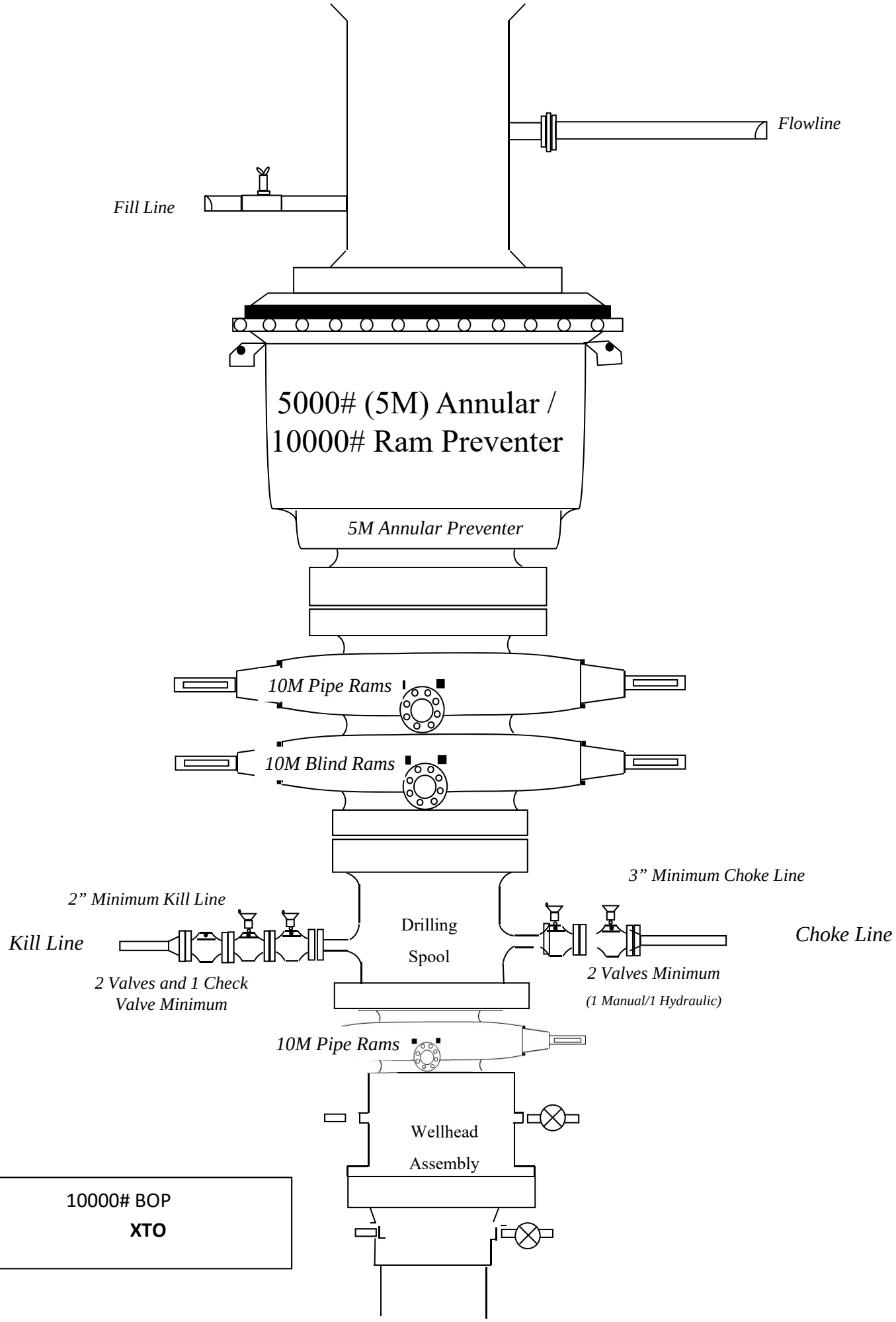
SKID



COMPLETION

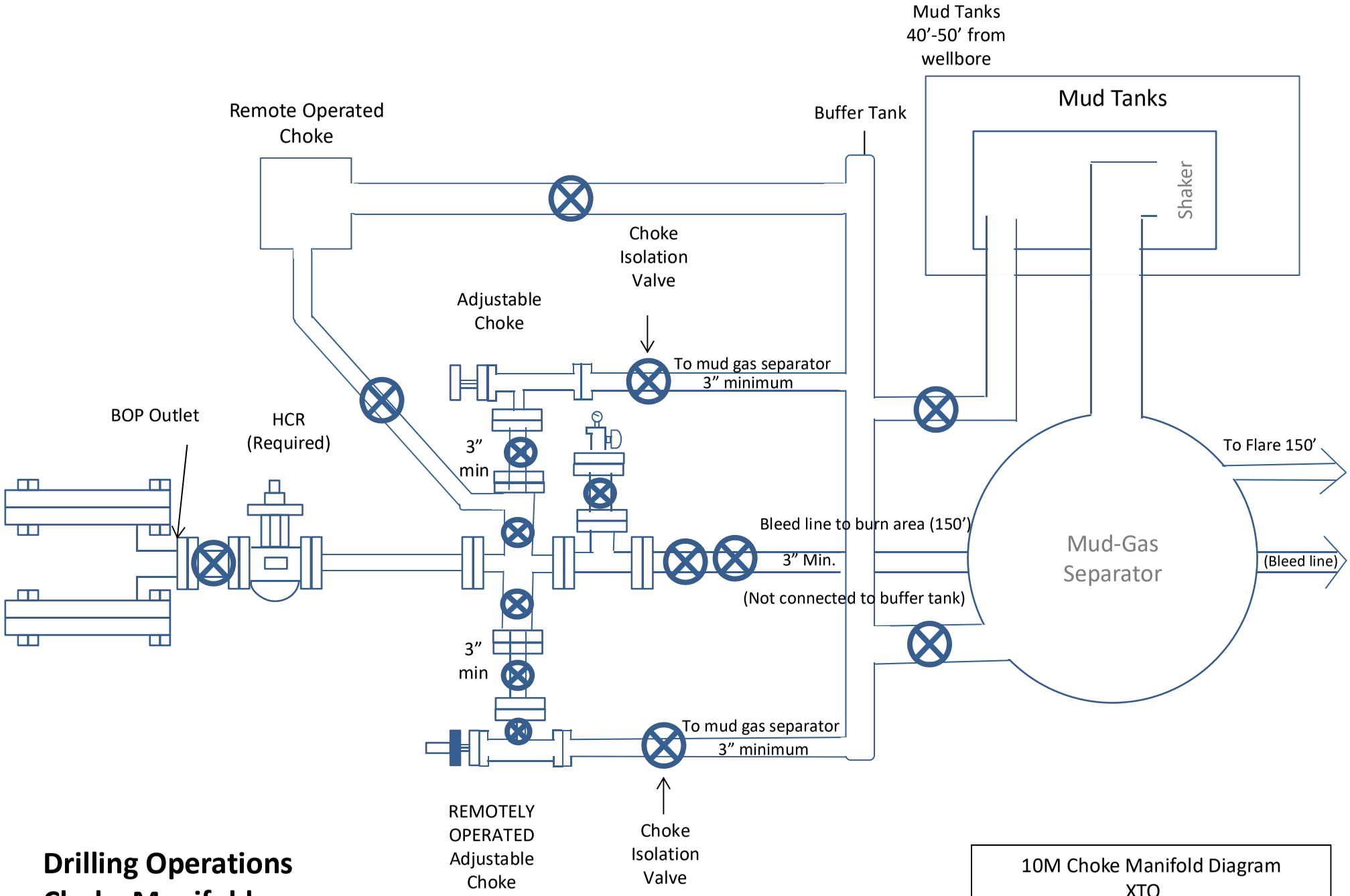
ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	XTO ENERGY INC POKER LAKE, NM	
30" x 11-3/4" x 7-5/8" x 5-1/2" MBU-3T-SF SOW Wellhead System With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head And 7-5/8" & 5-1/2" Fluted Mandrel Casing Hangers	DRAWN	DLE 09DEC19
	APPRV	
	DRAWING NO.	ODE0003261



10000# BOP

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.

<u>General Procedure While Drilling</u>

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

XTO Energy

Project: Eddy County, NM (NAD27) NMEZ Grid
Site: PLU 30 BS
Well: 163H
Wellbore: Lateral
Design: Plan #1

3381+25 @ 3406.00usft (E101)
NAD 1927 (NADCON CONUS)

To convert a Magnetic Direction to a True Direction, Add 6.80° East
To convert a Magnetic Direction to a Grid Direction, Add 6.53°
Magnetic North is 6.80° East of True North (Magnetic Declination)
Magnetic North is 6.53° East of Grid North (Magnetic Convergence)

SECTION DETAILS

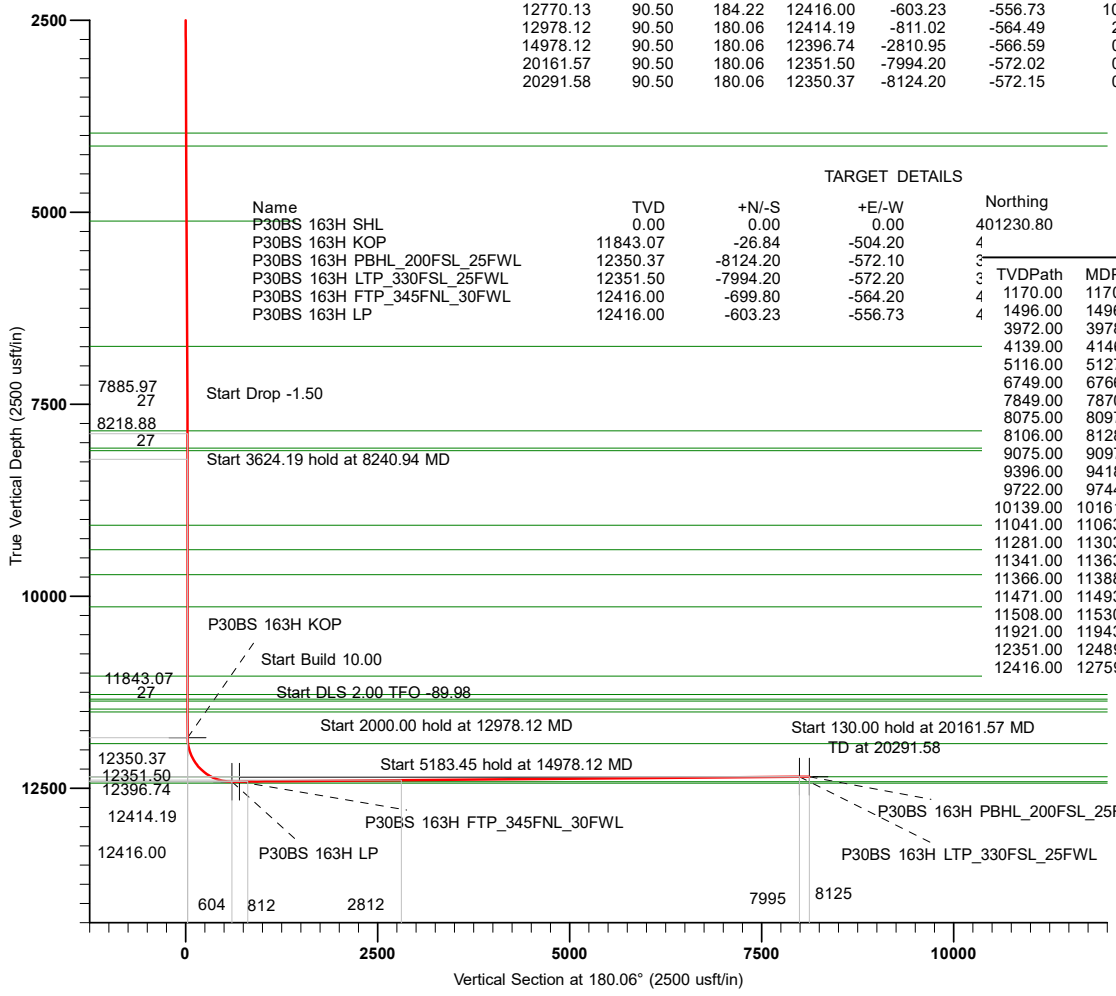
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
2333.33	5.00	267.01	2332.91	-0.76	-14.52	1.50	267.01	0.77
7907.61	5.00	267.01	7885.97	-26.08	-499.68	0.00	0.00	26.61
8240.94	0.00	0.00	8218.88	-26.84	-514.20	1.50	180.00	27.38
11865.13	0.00	0.00	11843.07	-26.84	-514.20	0.00	0.00	27.38
12770.13	90.50	184.22	12416.00	-603.23	-556.73	10.00	184.22	603.81
12978.12	90.50	180.06	12414.19	-811.02	-564.49	2.00	-89.98	811.61
14978.12	90.50	180.06	12396.74	-2810.95	-566.59	0.00	0.00	2811.54
20161.57	90.50	180.06	12351.50	-7994.20	-572.02	0.00	0.00	7994.79
20291.58	90.50	180.06	12350.37	-8124.20	-572.15	0.00	0.00	8124.79

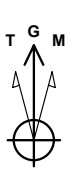
TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
P30BS 163H SHL	0.00	0.00	0.00	401230.80	659159.30	Point
P30BS 163H KOP	11843.07	-26.84	-504.20	4		
P30BS 163H PBHL_200FSL_25FWL	12350.37	-8124.20	-572.10	3		
P30BS 163H LTP_330FSL_25FWL	12351.50	-7994.20	-572.20	3		
P30BS 163H FTP_345FNL_30FWL	12416.00	-699.80	-564.20	4		
P30BS 163H LP	12416.00	-603.23	-556.73	4		

FORMATION TOP DETAILS

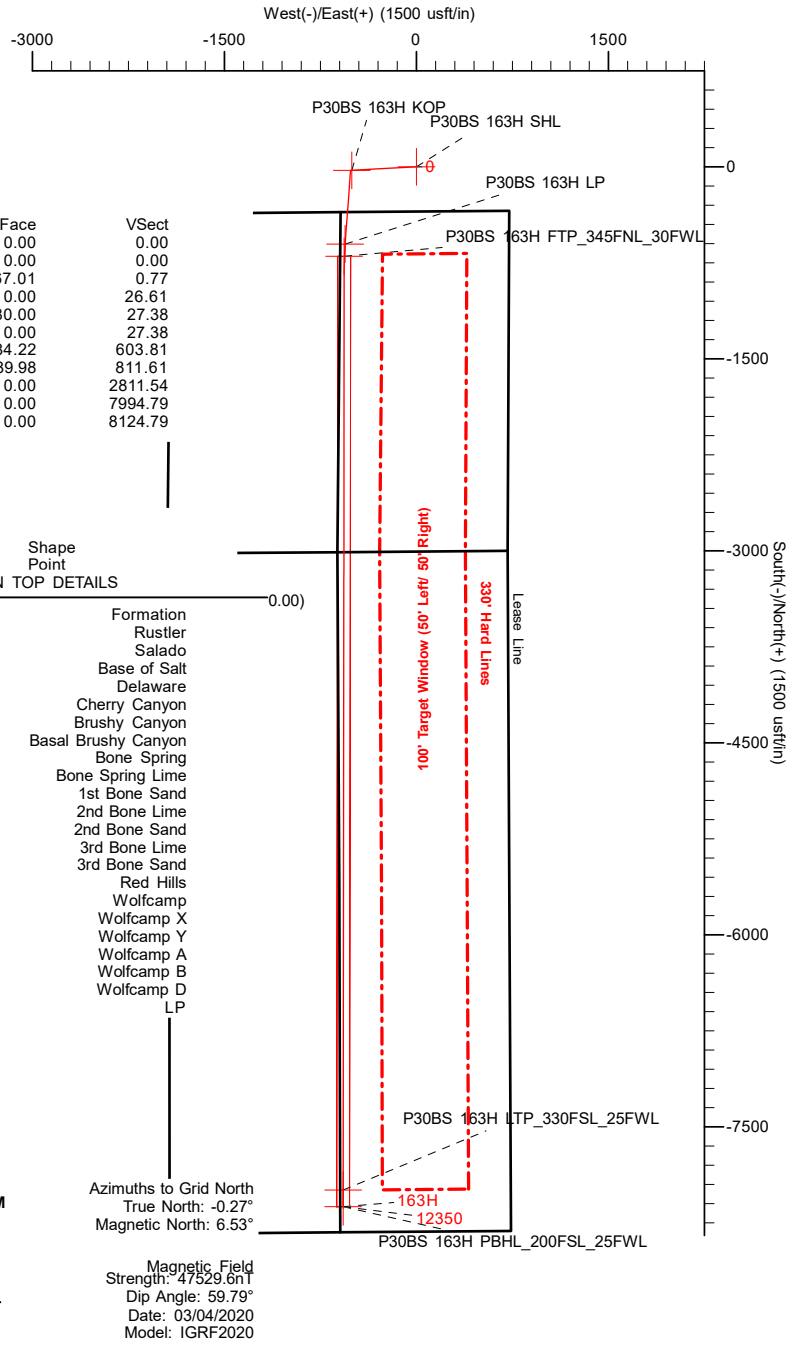
TVDPath	MDPath	Formation
1170.00	1170.00	Rustler
1496.00	1496.00	Salado
3972.00	3978.68	Base of Salt
4139.00	4146.32	Delaware
5116.00	5127.05	Cherry Canyon
6749.00	6766.29	Brushy Canyon
7849.00	7870.49	Basal Brushy Canyon
8075.00	8097.02	Bone Spring
8106.00	8128.04	Bone Spring Lime
9075.00	9097.06	1st Bone Sand
9396.00	9418.06	2nd Bone Lime
9722.00	9744.06	2nd Bone Sand
10139.00	10161.06	3rd Bone Lime
11041.00	11063.06	3rd Bone Sand
11281.00	11303.06	Red Hills
11341.00	11363.06	Wolfcamp
11366.00	11388.06	Wolfcamp X
11471.00	11493.06	Wolfcamp Y
11508.00	11530.06	Wolfcamp A
11921.00	11943.30	Wolfcamp B
12351.00	12489.50	Wolfcamp D
12416.00	12759.60	LP





Azimuths to Grid North
True North: -0.27°
Magnetic North: 6.53°

Magnetic Field
Strength: 47529.6nT
Dip Angle: 59.79°
Date: 03/04/2020
Model: IGRF2020



Plan: Plan #1 (163H/Lateral)
Created By: Mekka Williams
eSomina Well Design
mekka@esominawelldesign.com
13:20, March 06 2020

STRYKER DIRECTIONAL
6701 FM 307
Midland, Texas 79706 - 432-687-1121

STRYKER DIRECTIONAL

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
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 30 BS				
Site Position:		**Northing:**	401,230.80 usft	**Latitude:**	32° 6' 7.4038 N
From:	Map	**Easting:**	659,159.30 usft	**Longitude:**	103° 49' 9.6252 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.27 °

Well	163H - Slot P30BS 163H SHL					
Well Position	**+N/-S**	0.00 usft	**Northing:**	401,230.80 usft	**Latitude:**	32° 6' 7.4038 N
	+E/-W	0.00 usft	**Easting:**	659,159.30 usft	**Longitude:**	103° 49' 9.6252 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,381.00 usft

Wellbore	Lateral				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2020	03/04/20	6.80	59.79	47,529.59142186

Design	Plan #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	180.06	

Plan Survey Tool Program **Date** 03/06/20

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	11,870.57	Plan #1 (Lateral)	MWD OWSG MWD - Standard	
2	11,870.57	20,290.91	Plan #1 (Lateral)	MWD+IFR1+MS OWSG MWD + IFR1 + Multi-St	

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
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Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,333.33	5.00	267.01	2,332.91	-0.76	-14.52	1.50	1.50	0.00	267.01	
7,907.61	5.00	267.01	7,885.97	-26.08	-499.68	0.00	0.00	0.00	0.00	
8,240.94	0.00	0.00	8,218.88	-26.84	-514.20	1.50	-1.50	0.00	180.00	
11,865.13	0.00	0.00	11,843.07	-26.84	-514.20	0.00	0.00	0.00	0.00	
12,770.13	90.50	184.22	12,416.01	-603.23	-556.73	10.00	10.00	0.00	184.22	
12,978.12	90.50	180.06	12,414.19	-811.02	-564.49	2.00	0.00	-2.00	-89.98	
14,978.12	90.50	180.06	12,396.74	-2,810.95	-566.59	0.00	0.00	0.00	0.00	
20,161.57	90.50	180.06	12,351.50	-7,994.20	-572.02	0.00	0.00	0.00	0.00	P30BS 163H LTP_33
20,291.58	90.50	180.06	12,350.37	-8,124.20	-572.15	0.00	0.00	0.00	0.00	P30BS 163H PBHL_2

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,170.00	0.00	0.00	1,170.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
1,496.00	0.00	0.00	1,496.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
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	1.50	267.01	2,099.99	-0.07	-1.31	0.07	1.50	1.50	0.00
2,200.00	3.00	267.01	2,199.91	-0.27	-5.23	0.28	1.50	1.50	0.00
2,300.00	4.50	267.01	2,299.69	-0.61	-11.76	0.63	1.50	1.50	0.00
2,333.33	5.00	267.01	2,332.91	-0.76	-14.52	0.77	1.50	1.50	0.00
2,400.00	5.00	267.01	2,399.32	-1.06	-20.32	1.08	0.00	0.00	0.00
2,500.00	5.00	267.01	2,498.94	-1.51	-29.02	1.55	0.00	0.00	0.00
2,600.00	5.00	267.01	2,598.56	-1.97	-37.73	2.01	0.00	0.00	0.00
2,700.00	5.00	267.01	2,698.18	-2.42	-46.43	2.47	0.00	0.00	0.00
2,800.00	5.00	267.01	2,797.80	-2.88	-55.13	2.94	0.00	0.00	0.00
2,900.00	5.00	267.01	2,897.42	-3.33	-63.84	3.40	0.00	0.00	0.00
3,000.00	5.00	267.01	2,997.04	-3.79	-72.54	3.86	0.00	0.00	0.00
3,100.00	5.00	267.01	3,096.66	-4.24	-81.24	4.33	0.00	0.00	0.00
3,200.00	5.00	267.01	3,196.28	-4.70	-89.95	4.79	0.00	0.00	0.00
3,300.00	5.00	267.01	3,295.90	-5.15	-98.65	5.25	0.00	0.00	0.00
3,400.00	5.00	267.01	3,395.52	-5.60	-107.36	5.72	0.00	0.00	0.00
3,500.00	5.00	267.01	3,495.14	-6.06	-116.06	6.18	0.00	0.00	0.00
3,600.00	5.00	267.01	3,594.76	-6.51	-124.76	6.64	0.00	0.00	0.00
3,700.00	5.00	267.01	3,694.38	-6.97	-133.47	7.11	0.00	0.00	0.00
3,800.00	5.00	267.01	3,794.00	-7.42	-142.17	7.57	0.00	0.00	0.00
3,900.00	5.00	267.01	3,893.62	-7.88	-150.87	8.03	0.00	0.00	0.00
3,978.68	5.00	267.01	3,972.00	-8.23	-157.72	8.40	0.00	0.00	0.00
Base of Salt									
4,000.00	5.00	267.01	3,993.24	-8.33	-159.58	8.50	0.00	0.00	0.00
4,100.00	5.00	267.01	4,092.85	-8.78	-168.28	8.96	0.00	0.00	0.00
4,146.32	5.00	267.01	4,139.00	-8.99	-172.31	9.17	0.00	0.00	0.00
Delaware									
4,200.00	5.00	267.01	4,192.47	-9.24	-176.98	9.42	0.00	0.00	0.00
4,300.00	5.00	267.01	4,292.09	-9.69	-185.69	9.89	0.00	0.00	0.00
4,400.00	5.00	267.01	4,391.71	-10.15	-194.39	10.35	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
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)
4,500.00	5.00	267.01	4,491.33	-10.60	-203.10	10.81	0.00	0.00	0.00
4,600.00	5.00	267.01	4,590.95	-11.06	-211.80	11.28	0.00	0.00	0.00
4,700.00	5.00	267.01	4,690.57	-11.51	-220.50	11.74	0.00	0.00	0.00
4,800.00	5.00	267.01	4,790.19	-11.96	-229.21	12.20	0.00	0.00	0.00
4,900.00	5.00	267.01	4,889.81	-12.42	-237.91	12.67	0.00	0.00	0.00
5,000.00	5.00	267.01	4,989.43	-12.87	-246.61	13.13	0.00	0.00	0.00
5,100.00	5.00	267.01	5,089.05	-13.33	-255.32	13.59	0.00	0.00	0.00
5,127.05	5.00	267.01	5,116.00	-13.45	-257.67	13.72	0.00	0.00	0.00
Cherry Canyon									
5,200.00	5.00	267.01	5,188.67	-13.78	-264.02	14.06	0.00	0.00	0.00
5,300.00	5.00	267.01	5,288.29	-14.24	-272.73	14.52	0.00	0.00	0.00
5,400.00	5.00	267.01	5,387.91	-14.69	-281.43	14.98	0.00	0.00	0.00
5,500.00	5.00	267.01	5,487.53	-15.14	-290.13	15.45	0.00	0.00	0.00
5,600.00	5.00	267.01	5,587.15	-15.60	-298.84	15.91	0.00	0.00	0.00
5,700.00	5.00	267.01	5,686.77	-16.05	-307.54	16.37	0.00	0.00	0.00
5,800.00	5.00	267.01	5,786.39	-16.51	-316.24	16.84	0.00	0.00	0.00
5,900.00	5.00	267.01	5,886.00	-16.96	-324.95	17.30	0.00	0.00	0.00
6,000.00	5.00	267.01	5,985.62	-17.42	-333.65	17.77	0.00	0.00	0.00
6,100.00	5.00	267.01	6,085.24	-17.87	-342.36	18.23	0.00	0.00	0.00
6,200.00	5.00	267.01	6,184.86	-18.32	-351.06	18.69	0.00	0.00	0.00
6,300.00	5.00	267.01	6,284.48	-18.78	-359.76	19.16	0.00	0.00	0.00
6,400.00	5.00	267.01	6,384.10	-19.23	-368.47	19.62	0.00	0.00	0.00
6,500.00	5.00	267.01	6,483.72	-19.69	-377.17	20.08	0.00	0.00	0.00
6,600.00	5.00	267.01	6,583.34	-20.14	-385.87	20.55	0.00	0.00	0.00
6,700.00	5.00	267.01	6,682.96	-20.60	-394.58	21.01	0.00	0.00	0.00
6,766.29	5.00	267.01	6,749.00	-20.90	-400.35	21.32	0.00	0.00	0.00
Brushy Canyon									
6,800.00	5.00	267.01	6,782.58	-21.05	-403.28	21.47	0.00	0.00	0.00
6,900.00	5.00	267.01	6,882.20	-21.50	-411.99	21.94	0.00	0.00	0.00
7,000.00	5.00	267.01	6,981.82	-21.96	-420.69	22.40	0.00	0.00	0.00
7,100.00	5.00	267.01	7,081.44	-22.41	-429.39	22.86	0.00	0.00	0.00
7,200.00	5.00	267.01	7,181.06	-22.87	-438.10	23.33	0.00	0.00	0.00
7,300.00	5.00	267.01	7,280.68	-23.32	-446.80	23.79	0.00	0.00	0.00
7,400.00	5.00	267.01	7,380.30	-23.78	-455.50	24.25	0.00	0.00	0.00
7,500.00	5.00	267.01	7,479.92	-24.23	-464.21	24.72	0.00	0.00	0.00
7,600.00	5.00	267.01	7,579.54	-24.68	-472.91	25.18	0.00	0.00	0.00
7,700.00	5.00	267.01	7,679.16	-25.14	-481.62	25.64	0.00	0.00	0.00
7,800.00	5.00	267.01	7,778.77	-25.59	-490.32	26.11	0.00	0.00	0.00
7,870.49	5.00	267.01	7,849.00	-25.91	-496.45	26.43	0.00	0.00	0.00
Basal Brushy Canyon									
7,907.61	5.00	267.01	7,885.97	-26.08	-499.68	26.61	0.00	0.00	0.00
8,000.00	3.61	267.01	7,978.10	-26.44	-506.61	26.97	1.50	-1.50	0.00
8,097.02	2.16	267.01	8,075.00	-26.70	-511.49	27.23	1.50	-1.50	0.00
Bone Spring									
8,100.00	2.11	267.01	8,077.97	-26.70	-511.60	27.24	1.50	-1.50	0.00
8,128.04	1.69	267.01	8,106.00	-26.75	-512.53	27.29	1.50	-1.50	0.00
Bone Spring Lime									
8,200.00	0.61	267.01	8,177.94	-26.83	-513.98	27.37	1.50	-1.50	0.00
8,240.94	0.00	0.00	8,218.88	-26.84	-514.20	27.38	1.50	-1.50	0.00
8,300.00	0.00	0.00	8,277.94	-26.84	-514.20	27.38	0.00	0.00	0.00
8,400.00	0.00	0.00	8,377.94	-26.84	-514.20	27.38	0.00	0.00	0.00
8,500.00	0.00	0.00	8,477.94	-26.84	-514.20	27.38	0.00	0.00	0.00
8,600.00	0.00	0.00	8,577.94	-26.84	-514.20	27.38	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
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)
8,700.00	0.00	0.00	8,677.94	-26.84	-514.20	27.38	0.00	0.00	0.00
8,800.00	0.00	0.00	8,777.94	-26.84	-514.20	27.38	0.00	0.00	0.00
8,900.00	0.00	0.00	8,877.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,000.00	0.00	0.00	8,977.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,097.06	0.00	0.00	9,075.00	-26.84	-514.20	27.38	0.00	0.00	0.00
1st Bone Sand									
9,100.00	0.00	0.00	9,077.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,200.00	0.00	0.00	9,177.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,300.00	0.00	0.00	9,277.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,400.00	0.00	0.00	9,377.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,418.06	0.00	0.00	9,396.00	-26.84	-514.20	27.38	0.00	0.00	0.00
2nd Bone Lime									
9,500.00	0.00	0.00	9,477.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,600.00	0.00	0.00	9,577.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,700.00	0.00	0.00	9,677.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,744.06	0.00	0.00	9,722.00	-26.84	-514.20	27.38	0.00	0.00	0.00
2nd Bone Sand									
9,800.00	0.00	0.00	9,777.94	-26.84	-514.20	27.38	0.00	0.00	0.00
9,900.00	0.00	0.00	9,877.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,000.00	0.00	0.00	9,977.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,100.00	0.00	0.00	10,077.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,161.06	0.00	0.00	10,139.00	-26.84	-514.20	27.38	0.00	0.00	0.00
3rd Bone Lime									
10,200.00	0.00	0.00	10,177.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,300.00	0.00	0.00	10,277.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,400.00	0.00	0.00	10,377.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,500.00	0.00	0.00	10,477.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,600.00	0.00	0.00	10,577.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,700.00	0.00	0.00	10,677.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,800.00	0.00	0.00	10,777.94	-26.84	-514.20	27.38	0.00	0.00	0.00
10,900.00	0.00	0.00	10,877.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,000.00	0.00	0.00	10,977.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,063.06	0.00	0.00	11,041.00	-26.84	-514.20	27.38	0.00	0.00	0.00
3rd Bone Sand									
11,100.00	0.00	0.00	11,077.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,200.00	0.00	0.00	11,177.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,300.00	0.00	0.00	11,277.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,303.06	0.00	0.00	11,281.00	-26.84	-514.20	27.38	0.00	0.00	0.00
Red Hills									
11,363.06	0.00	0.00	11,341.00	-26.84	-514.20	27.38	0.00	0.00	0.00
Wolfcamp									
11,388.06	0.00	0.00	11,366.00	-26.84	-514.20	27.38	0.00	0.00	0.00
Wolfcamp X									
11,400.00	0.00	0.00	11,377.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,493.06	0.00	0.00	11,471.00	-26.84	-514.20	27.38	0.00	0.00	0.00
Wolfcamp Y									
11,500.00	0.00	0.00	11,477.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,530.06	0.00	0.00	11,508.00	-26.84	-514.20	27.38	0.00	0.00	0.00
Wolfcamp A									
11,600.00	0.00	0.00	11,577.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,700.00	0.00	0.00	11,677.94	-26.84	-514.20	27.38	0.00	0.00	0.00
11,800.00	0.00	0.00	11,777.94	-26.84	-514.20	27.38	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
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)
11,865.13	0.00	0.00	11,843.07	-26.84	-514.20	27.38	0.00	0.00	0.00
11,900.00	3.49	184.22	11,877.92	-27.90	-514.28	28.44	10.00	10.00	0.00
11,943.30	7.82	184.22	11,921.00	-32.15	-514.59	32.69	10.00	10.00	0.00
Wolfcamp B									
11,950.00	8.49	184.22	11,927.63	-33.10	-514.66	33.64	10.00	10.00	0.00
12,000.00	13.49	184.22	11,976.70	-42.60	-515.36	43.14	10.00	10.00	0.00
12,050.00	18.49	184.22	12,024.75	-56.33	-516.38	56.87	10.00	10.00	0.00
12,100.00	23.49	184.22	12,071.42	-74.18	-517.69	74.72	10.00	10.00	0.00
12,150.00	28.49	184.22	12,116.35	-96.02	-519.30	96.57	10.00	10.00	0.00
12,200.00	33.49	184.22	12,159.20	-121.69	-521.20	122.23	10.00	10.00	0.00
12,250.00	38.49	184.22	12,199.64	-150.98	-523.36	151.53	10.00	10.00	0.00
12,300.00	43.49	184.22	12,237.38	-183.67	-525.77	184.23	10.00	10.00	0.00
12,350.00	48.49	184.22	12,272.11	-219.53	-528.42	220.08	10.00	10.00	0.00
12,400.00	53.49	184.22	12,303.57	-258.26	-531.28	258.81	10.00	10.00	0.00
12,450.00	58.49	184.22	12,331.53	-299.58	-534.32	300.14	10.00	10.00	0.00
12,489.50	62.44	184.22	12,351.00	-333.85	-536.85	334.41	10.00	10.00	0.00
Wolfcamp D									
12,500.00	63.49	184.22	12,355.77	-343.17	-537.54	343.73	10.00	10.00	0.00
12,550.00	68.49	184.22	12,376.11	-388.71	-540.90	389.27	10.00	10.00	0.00
12,600.00	73.49	184.22	12,392.40	-435.84	-544.38	436.41	10.00	10.00	0.00
12,650.00	78.49	184.22	12,404.50	-484.20	-547.95	484.77	10.00	10.00	0.00
12,700.00	83.49	184.22	12,412.33	-533.43	-551.58	534.01	10.00	10.00	0.00
12,750.00	88.49	184.22	12,415.83	-583.16	-555.25	583.74	10.00	10.00	0.00
12,759.60	89.45	184.22	12,416.00	-592.73	-555.96	593.31	10.00	10.00	0.00
LP									
12,770.13	90.50	184.22	12,416.01	-603.23	-556.73	603.81	10.00	10.00	0.00
12,800.00	90.50	183.62	12,415.74	-633.03	-558.77	633.62	2.00	0.00	-2.00
12,900.00	90.50	181.62	12,414.87	-732.92	-563.35	733.51	2.00	0.00	-2.00
12,978.12	90.50	180.06	12,414.19	-811.02	-564.49	811.61	2.00	0.00	-2.00
13,000.00	90.50	180.06	12,414.00	-832.90	-564.52	833.50	0.00	0.00	0.00
13,100.00	90.50	180.06	12,413.13	-932.90	-564.62	933.49	0.00	0.00	0.00
13,200.00	90.50	180.06	12,412.25	-1,032.90	-564.73	1,033.49	0.00	0.00	0.00
13,300.00	90.50	180.06	12,411.38	-1,132.89	-564.83	1,133.48	0.00	0.00	0.00
13,400.00	90.50	180.06	12,410.51	-1,232.89	-564.94	1,233.48	0.00	0.00	0.00
13,500.00	90.50	180.06	12,409.64	-1,332.89	-565.04	1,333.48	0.00	0.00	0.00
13,600.00	90.50	180.06	12,408.76	-1,432.88	-565.15	1,433.47	0.00	0.00	0.00
13,700.00	90.50	180.06	12,407.89	-1,532.88	-565.25	1,533.47	0.00	0.00	0.00
13,800.00	90.50	180.06	12,407.02	-1,632.87	-565.36	1,633.46	0.00	0.00	0.00
13,900.00	90.50	180.06	12,406.14	-1,732.87	-565.46	1,733.46	0.00	0.00	0.00
14,000.00	90.50	180.06	12,405.27	-1,832.87	-565.56	1,833.46	0.00	0.00	0.00
14,100.00	90.50	180.06	12,404.40	-1,932.86	-565.67	1,933.45	0.00	0.00	0.00
14,200.00	90.50	180.06	12,403.53	-2,032.86	-565.77	2,033.45	0.00	0.00	0.00
14,300.00	90.50	180.06	12,402.65	-2,132.85	-565.88	2,133.45	0.00	0.00	0.00
14,400.00	90.50	180.06	12,401.78	-2,232.85	-565.98	2,233.44	0.00	0.00	0.00
14,500.00	90.50	180.06	12,400.91	-2,332.85	-566.09	2,333.44	0.00	0.00	0.00
14,600.00	90.50	180.06	12,400.04	-2,432.84	-566.19	2,433.43	0.00	0.00	0.00
14,700.00	90.50	180.06	12,399.16	-2,532.84	-566.30	2,533.43	0.00	0.00	0.00
14,800.00	90.50	180.06	12,398.29	-2,632.83	-566.40	2,633.43	0.00	0.00	0.00
14,900.00	90.50	180.06	12,397.42	-2,732.83	-566.51	2,733.42	0.00	0.00	0.00
14,978.12	90.50	180.06	12,396.74	-2,810.95	-566.59	2,811.54	0.00	0.00	0.00
15,000.00	90.50	180.06	12,396.55	-2,832.83	-566.61	2,833.42	0.00	0.00	0.00
15,100.00	90.50	180.06	12,395.67	-2,932.82	-566.72	2,933.42	0.00	0.00	0.00
15,200.00	90.50	180.06	12,394.80	-3,032.82	-566.82	3,033.41	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
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)
15,300.00	90.50	180.06	12,393.93	-3,132.82	-566.93	3,133.41	0.00	0.00	0.00
15,400.00	90.50	180.06	12,393.05	-3,232.81	-567.03	3,233.40	0.00	0.00	0.00
15,500.00	90.50	180.06	12,392.18	-3,332.81	-567.14	3,333.40	0.00	0.00	0.00
15,600.00	90.50	180.06	12,391.31	-3,432.80	-567.24	3,433.40	0.00	0.00	0.00
15,700.00	90.50	180.06	12,390.44	-3,532.80	-567.34	3,533.39	0.00	0.00	0.00
15,800.00	90.50	180.06	12,389.56	-3,632.80	-567.45	3,633.39	0.00	0.00	0.00
15,900.00	90.50	180.06	12,388.69	-3,732.79	-567.55	3,733.38	0.00	0.00	0.00
16,000.00	90.50	180.06	12,387.82	-3,832.79	-567.66	3,833.38	0.00	0.00	0.00
16,100.00	90.50	180.06	12,386.95	-3,932.78	-567.76	3,933.38	0.00	0.00	0.00
16,200.00	90.50	180.06	12,386.07	-4,032.78	-567.87	4,033.37	0.00	0.00	0.00
16,300.00	90.50	180.06	12,385.20	-4,132.78	-567.97	4,133.37	0.00	0.00	0.00
16,400.00	90.50	180.06	12,384.33	-4,232.77	-568.08	4,233.37	0.00	0.00	0.00
16,500.00	90.50	180.06	12,383.46	-4,332.77	-568.18	4,333.36	0.00	0.00	0.00
16,600.00	90.50	180.06	12,382.58	-4,432.77	-568.29	4,433.36	0.00	0.00	0.00
16,700.00	90.50	180.06	12,381.71	-4,532.76	-568.39	4,533.35	0.00	0.00	0.00
16,800.00	90.50	180.06	12,380.84	-4,632.76	-568.50	4,633.35	0.00	0.00	0.00
16,900.00	90.50	180.06	12,379.96	-4,732.75	-568.60	4,733.35	0.00	0.00	0.00
17,000.00	90.50	180.06	12,379.09	-4,832.75	-568.71	4,833.34	0.00	0.00	0.00
17,100.00	90.50	180.06	12,378.22	-4,932.75	-568.81	4,933.34	0.00	0.00	0.00
17,200.00	90.50	180.06	12,377.35	-5,032.74	-568.92	5,033.34	0.00	0.00	0.00
17,300.00	90.50	180.06	12,376.47	-5,132.74	-569.02	5,133.33	0.00	0.00	0.00
17,400.00	90.50	180.06	12,375.60	-5,232.73	-569.12	5,233.33	0.00	0.00	0.00
17,500.00	90.50	180.06	12,374.73	-5,332.73	-569.23	5,333.32	0.00	0.00	0.00
17,600.00	90.50	180.06	12,373.86	-5,432.73	-569.33	5,433.32	0.00	0.00	0.00
17,700.00	90.50	180.06	12,372.98	-5,532.72	-569.44	5,533.32	0.00	0.00	0.00
17,800.00	90.50	180.06	12,372.11	-5,632.72	-569.54	5,633.31	0.00	0.00	0.00
17,900.00	90.50	180.06	12,371.24	-5,732.72	-569.65	5,733.31	0.00	0.00	0.00
18,000.00	90.50	180.06	12,370.37	-5,832.71	-569.75	5,833.30	0.00	0.00	0.00
18,100.00	90.50	180.06	12,369.49	-5,932.71	-569.86	5,933.30	0.00	0.00	0.00
18,200.00	90.50	180.06	12,368.62	-6,032.70	-569.96	6,033.30	0.00	0.00	0.00
18,300.00	90.50	180.06	12,367.75	-6,132.70	-570.07	6,133.29	0.00	0.00	0.00
18,400.00	90.50	180.06	12,366.88	-6,232.70	-570.17	6,233.29	0.00	0.00	0.00
18,500.00	90.50	180.06	12,366.00	-6,332.69	-570.28	6,333.29	0.00	0.00	0.00
18,600.00	90.50	180.06	12,365.13	-6,432.69	-570.38	6,433.28	0.00	0.00	0.00
18,700.00	90.50	180.06	12,364.26	-6,532.68	-570.49	6,533.28	0.00	0.00	0.00
18,800.00	90.50	180.06	12,363.38	-6,632.68	-570.59	6,633.27	0.00	0.00	0.00
18,900.00	90.50	180.06	12,362.51	-6,732.68	-570.70	6,733.27	0.00	0.00	0.00
19,000.00	90.50	180.06	12,361.64	-6,832.67	-570.80	6,833.27	0.00	0.00	0.00
19,100.00	90.50	180.06	12,360.77	-6,932.67	-570.90	6,933.26	0.00	0.00	0.00
19,200.00	90.50	180.06	12,359.89	-7,032.67	-571.01	7,033.26	0.00	0.00	0.00
19,300.00	90.50	180.06	12,359.02	-7,132.66	-571.11	7,133.26	0.00	0.00	0.00
19,400.00	90.50	180.06	12,358.15	-7,232.66	-571.22	7,233.25	0.00	0.00	0.00
19,500.00	90.50	180.06	12,357.28	-7,332.65	-571.32	7,333.25	0.00	0.00	0.00
19,600.00	90.50	180.06	12,356.40	-7,432.65	-571.43	7,433.24	0.00	0.00	0.00
19,700.00	90.50	180.06	12,355.53	-7,532.65	-571.53	7,533.24	0.00	0.00	0.00
19,800.00	90.50	180.06	12,354.66	-7,632.64	-571.64	7,633.24	0.00	0.00	0.00
19,900.00	90.50	180.06	12,353.79	-7,732.64	-571.74	7,733.23	0.00	0.00	0.00
20,000.00	90.50	180.06	12,352.91	-7,832.63	-571.85	7,833.23	0.00	0.00	0.00
20,100.00	90.50	180.06	12,352.04	-7,932.63	-571.95	7,933.22	0.00	0.00	0.00
20,161.57	90.50	180.06	12,351.50	-7,994.20	-572.02	7,994.80	0.00	0.00	0.00
20,200.00	90.50	180.06	12,351.17	-8,032.63	-572.06	8,033.22	0.00	0.00	0.00
20,291.58	90.50	180.06	12,350.37	-8,124.20	-572.15	8,124.79	0.00	0.00	0.00

Database:	STRYKER_EDM	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Company:	XTO Energy	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Project:	Eddy County, NM (NAD27) NMEZ Grid	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site:	PLU 30 BS	**North Reference:**	Grid
Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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
P30BS 163H SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	401,230.80	659,159.30	32° 6' 7.4038 N	103° 49' 9.6252 W
P30BS 163H KOP - plan misses target center by 10.00usft at 11865.13usft MD (11843.07 TVD, -26.84 N, -514.20 E) - Point	0.00	0.00	11,843.07	-26.84	-504.20	401,203.96	658,655.10	32° 6' 7.1620 N	103° 49' 15.4883 W
P30BS 163H PBHL_200 - plan misses target center by 0.05usft at 20291.58usft MD (12350.37 TVD, -8124.20 N, -572.15 E) - Rectangle (sides W100.00 H7,424.20 D0.00)	0.00	0.00	12,350.37	-8,124.20	-572.10	393,106.60	658,587.20	32° 4' 47.0321 N	103° 49' 16.7246 W
P30BS 163H LTP_330F - plan misses target center by 0.18usft at 20161.57usft MD (12351.50 TVD, -7994.20 N, -572.02 E) - Point	0.00	0.00	12,351.50	-7,994.20	-572.20	393,236.60	658,587.10	32° 4' 48.3186 N	103° 49' 16.7186 W
P30BS 163H LP - plan hits target center - Point	0.00	0.01	12,416.00	-603.23	-556.73	400,627.57	658,602.57	32° 6' 1.4604 N	103° 49' 16.1308 W
P30BS 163H FTP_345F - plan misses target center by 2.15usft at 12866.94usft MD (12415.16 TVD, -699.88 N, -562.22 E) - Point	0.00	0.00	12,416.00	-699.80	-564.20	400,531.00	658,595.10	32° 6' 0.5051 N	103° 49' 16.2229 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,170.00	1,170.00	Rustler			
1,496.00	1,496.00	Salado			
3,978.68	3,972.00	Base of Salt			
4,146.32	4,139.00	Delaware			
5,127.05	5,116.00	Cherry Canyon			
6,766.29	6,749.00	Brushy Canyon			
7,870.49	7,849.00	Basal Brushy Canyon			
8,097.02	8,075.00	Bone Spring			
8,128.04	8,106.00	Bone Spring Lime			
9,097.06	9,075.00	1st Bone Sand			
9,418.06	9,396.00	2nd Bone Lime			
9,744.06	9,722.00	2nd Bone Sand			
10,161.06	10,139.00	3rd Bone Lime			
11,063.06	11,041.00	3rd Bone Sand			
11,303.06	11,281.00	Red Hills			
11,363.06	11,341.00	Wolfcamp			
11,388.06	11,366.00	Wolfcamp X			
11,493.06	11,471.00	Wolfcamp Y			
11,530.06	11,508.00	Wolfcamp A			
11,943.30	11,921.00	Wolfcamp B			
12,489.50	12,351.00	Wolfcamp D			
12,759.60	12,416.00	LP			

Anticollision Report

Company:	XTO Energy	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Reference Site:	PLU 30 BS	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	STRYKER_EDM
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum separation factor of 4.00	**Error Surface:**	Ellipsoid Separation
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 03/06/20

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,870.57	Plan #1 (Lateral)	MWD	OWSG MWD - Standard
11,870.57	20,290.91	Plan #1 (Lateral)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
PLU 30 BS						
101H - Lateral E121 - Plan #1						Out of range
103H - Lateral - Plan #1						Out of range
121H - Lateral E121 - Plan #1						Out of range
122H - Lateral E121 - Plan #1	11,151.28	11,167.54	148.66	68.52	1.855	CC
122H - Lateral E121 - Plan #1	11,200.00	11,214.24	148.76	68.33	1.849	ES, SF
124H - Lateral - Plan #1						Out of range
161H - Lateral E121 - Plan #1						Out of range
164H - Lateral - Plan #1						Out of range

Offset Design PLU 30 BS - 122H - Lateral E121 - Plan #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD, 11212-MWD+IFR1+MS — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,800.00	7,778.77	7,837.24	7,790.16	28.58	29.95	-22.81	-117.90	-683.76	215.61	159.59	56.02	3.849	
7,850.00	7,828.58	7,886.07	7,838.56	28.77	30.15	-24.29	-118.84	-677.46	206.27	149.81	56.46	3.654	
7,900.00	7,878.39	7,934.89	7,886.97	28.96	30.35	-25.90	-119.79	-671.16	197.08	140.17	56.91	3.463	
7,950.00	7,928.22	7,983.77	7,935.43	29.15	30.55	-27.58	-120.74	-664.85	188.26	130.90	57.37	3.282	
8,000.00	7,978.10	8,032.78	7,984.02	29.34	30.75	-29.32	-121.69	-658.52	180.19	122.36	57.83	3.116	
8,050.00	8,028.02	8,080.82	8,031.67	29.52	30.95	-31.05	-122.60	-652.46	172.97	114.63	58.33	2.965	
8,100.00	8,077.97	8,128.63	8,079.16	29.70	31.14	-32.66	-123.42	-646.98	166.89	108.06	58.83	2.837	
8,150.00	8,127.95	8,176.72	8,126.98	29.88	31.33	-34.13	-124.16	-642.06	161.96	102.64	59.31	2.730	
8,200.00	8,177.94	8,225.02	8,175.09	30.06	31.52	-35.41	-124.81	-637.72	158.10	98.32	59.78	2.645	
8,250.00	8,227.94	8,273.51	8,223.42	30.23	31.70	-129.44	-125.37	-633.97	155.27	95.06	60.22	2.579	
8,300.00	8,277.94	8,322.10	8,271.91	30.39	31.88	-130.33	-125.85	-630.82	153.10	92.46	60.64	2.525	
8,350.00	8,327.94	8,370.76	8,320.50	30.56	32.05	-131.06	-126.23	-628.28	151.37	90.33	61.04	2.480	
8,400.00	8,377.94	8,419.48	8,369.19	30.73	32.23	-131.63	-126.52	-626.35	150.08	88.65	61.42	2.443	
8,450.00	8,427.94	8,468.24	8,417.93	30.90	32.39	-132.02	-126.72	-625.03	149.21	87.41	61.79	2.415	
8,500.00	8,477.94	8,517.03	8,466.71	31.06	32.56	-132.24	-126.82	-624.33	148.74	86.60	62.14	2.394	
8,546.41	8,524.35	8,562.67	8,512.35	31.22	32.71	-132.27	-126.84	-624.20	148.66	86.21	62.45	2.380	
8,550.00	8,527.94	8,566.26	8,515.94	31.23	32.72	-132.27	-126.84	-624.20	148.66	86.18	62.48	2.379	
8,600.00	8,577.94	8,616.26	8,565.94	31.40	32.88	-132.27	-126.84	-624.20	148.66	85.85	62.81	2.367	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	XTO Energy	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Reference Site:	PLU 30 BS	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	STRYKER_EDM
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 30 BS - 122H - Lateral E121 - Plan #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD, 11212-MWD+IFR1+MS — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,650.00	8,627.94	8,666.26	8,615.94	31.57	33.04	-132.27	-126.84	-624.20	148.66	85.51	63.15	2.354	
8,700.00	8,677.94	8,716.26	8,665.94	31.74	33.20	-132.27	-126.84	-624.20	148.66	85.18	63.48	2.342	
8,750.00	8,727.94	8,766.26	8,715.94	31.91	33.36	-132.27	-126.84	-624.20	148.66	84.85	63.82	2.330	
8,800.00	8,777.94	8,816.26	8,765.94	32.07	33.52	-132.27	-126.84	-624.20	148.66	84.51	64.15	2.317	
8,850.00	8,827.94	8,866.26	8,815.94	32.24	33.68	-132.27	-126.84	-624.20	148.66	84.17	64.49	2.305	
8,900.00	8,877.94	8,916.26	8,865.94	32.41	33.84	-132.27	-126.84	-624.20	148.66	83.84	64.82	2.293	
8,950.00	8,927.94	8,966.26	8,915.94	32.58	34.00	-132.27	-126.84	-624.20	148.66	83.50	65.16	2.282	
9,000.00	8,977.94	9,016.26	8,965.94	32.75	34.17	-132.27	-126.84	-624.20	148.66	83.17	65.49	2.270	
9,050.00	9,027.94	9,066.26	9,015.94	32.92	34.33	-132.27	-126.84	-624.20	148.66	82.83	65.83	2.258	
9,100.00	9,077.94	9,116.26	9,065.94	33.09	34.49	-132.27	-126.84	-624.20	148.66	82.49	66.17	2.247	
9,150.00	9,127.94	9,166.26	9,115.94	33.26	34.65	-132.27	-126.84	-624.20	148.66	82.16	66.50	2.235	
9,200.00	9,177.94	9,216.26	9,165.94	33.43	34.81	-132.27	-126.84	-624.20	148.66	81.82	66.84	2.224	
9,250.00	9,227.94	9,266.26	9,215.94	33.60	34.97	-132.27	-126.84	-624.20	148.66	81.48	67.18	2.213	
9,300.00	9,277.94	9,316.26	9,265.94	33.77	35.14	-132.27	-126.84	-624.20	148.66	81.15	67.52	2.202	
9,350.00	9,327.94	9,366.26	9,315.94	33.94	35.30	-132.27	-126.84	-624.20	148.66	80.81	67.85	2.191	
9,400.00	9,377.94	9,416.26	9,365.94	34.11	35.46	-132.27	-126.84	-624.20	148.66	80.47	68.19	2.180	
9,450.00	9,427.94	9,466.26	9,415.94	34.28	35.63	-132.27	-126.84	-624.20	148.66	80.13	68.53	2.169	
9,500.00	9,477.94	9,516.26	9,465.94	34.45	35.79	-132.27	-126.84	-624.20	148.66	79.79	68.87	2.159	
9,550.00	9,527.94	9,566.26	9,515.94	34.62	35.95	-132.27	-126.84	-624.20	148.66	79.45	69.21	2.148	
9,600.00	9,577.94	9,616.26	9,565.94	34.79	36.12	-132.27	-126.84	-624.20	148.66	79.12	69.54	2.138	
9,650.00	9,627.94	9,666.26	9,615.94	34.96	36.28	-132.27	-126.84	-624.20	148.66	78.78	69.88	2.127	
9,700.00	9,677.94	9,716.26	9,665.94	35.13	36.44	-132.27	-126.84	-624.20	148.66	78.44	70.22	2.117	
9,750.00	9,727.94	9,766.26	9,715.94	35.30	36.61	-132.27	-126.84	-624.20	148.66	78.10	70.56	2.107	
9,800.00	9,777.94	9,816.26	9,765.94	35.47	36.77	-132.27	-126.84	-624.20	148.66	77.76	70.90	2.097	
9,850.00	9,827.94	9,866.26	9,815.94	35.64	36.93	-132.27	-126.84	-624.20	148.66	77.42	71.24	2.087	
9,900.00	9,877.94	9,916.26	9,865.94	35.81	37.10	-132.27	-126.84	-624.20	148.66	77.08	71.58	2.077	
9,950.00	9,927.94	9,966.26	9,915.94	35.98	37.26	-132.27	-126.84	-624.20	148.66	76.74	71.92	2.067	
10,000.00	9,977.94	10,016.26	9,965.94	36.15	37.43	-132.27	-126.84	-624.20	148.66	76.40	72.26	2.057	
10,050.00	10,027.94	10,066.26	10,015.94	36.32	37.59	-132.27	-126.84	-624.20	148.66	76.06	72.60	2.048	
10,100.00	10,077.94	10,116.26	10,065.94	36.50	37.76	-132.27	-126.84	-624.20	148.66	75.72	72.94	2.038	
10,150.00	10,127.94	10,166.26	10,115.94	36.67	37.92	-132.27	-126.84	-624.20	148.66	75.38	73.28	2.029	
10,200.00	10,177.94	10,216.26	10,165.94	36.84	38.09	-132.27	-126.84	-624.20	148.66	75.04	73.62	2.019	
10,250.00	10,227.94	10,266.26	10,215.94	37.01	38.25	-132.27	-126.84	-624.20	148.66	74.70	73.97	2.010	
10,300.00	10,277.94	10,316.26	10,265.94	37.18	38.42	-132.27	-126.84	-624.20	148.66	74.35	74.31	2.001	
10,350.00	10,327.94	10,366.26	10,315.94	37.35	38.58	-132.27	-126.84	-624.20	148.66	74.01	74.65	1.991	
10,400.00	10,377.94	10,416.26	10,365.94	37.52	38.75	-132.27	-126.84	-624.20	148.66	73.67	74.99	1.982	
10,450.00	10,427.94	10,466.26	10,415.94	37.70	38.91	-132.27	-126.84	-624.20	148.66	73.33	75.33	1.973	
10,500.00	10,477.94	10,516.26	10,465.94	37.87	39.08	-132.27	-126.84	-624.20	148.66	72.99	75.67	1.965	
10,550.00	10,527.94	10,566.26	10,515.94	38.04	39.25	-132.27	-126.84	-624.20	148.66	72.65	76.01	1.956	
10,600.00	10,577.94	10,616.26	10,565.94	38.21	39.41	-132.27	-126.84	-624.20	148.66	72.30	76.36	1.947	
10,650.00	10,627.94	10,666.26	10,615.94	38.38	39.58	-132.27	-126.84	-624.20	148.66	71.96	76.70	1.938	
10,700.00	10,677.94	10,716.26	10,665.94	38.56	39.75	-132.27	-126.84	-624.20	148.66	71.62	77.04	1.930	
10,750.00	10,727.94	10,766.26	10,715.94	38.73	39.91	-132.27	-126.84	-624.20	148.66	71.28	77.38	1.921	
10,800.00	10,777.94	10,816.26	10,765.94	38.90	40.08	-132.27	-126.84	-624.20	148.66	70.93	77.73	1.913	
10,850.00	10,827.94	10,866.26	10,815.94	39.07	40.24	-132.27	-126.84	-624.20	148.66	70.59	78.07	1.904	
10,900.00	10,877.94	10,916.26	10,865.94	39.24	40.41	-132.27	-126.84	-624.20	148.66	70.25	78.41	1.896	
10,950.00	10,927.94	10,966.26	10,915.94	39.42	40.58	-132.27	-126.84	-624.20	148.66	69.90	78.76	1.888	
11,000.00	10,977.94	11,016.26	10,965.94	39.59	40.75	-132.27	-126.84	-624.20	148.66	69.56	79.10	1.879	
11,050.00	11,027.94	11,066.26	11,015.94	39.76	40.91	-132.27	-126.84	-624.20	148.66	69.22	79.44	1.871	
11,100.00	11,077.94	11,116.26	11,065.94	39.93	41.08	-132.27	-126.84	-624.20	148.66	68.87	79.79	1.863	
11,150.00	11,127.94	11,166.26	11,115.94	40.11	41.25	-132.27	-126.84	-624.20	148.66	68.53	80.13	1.855	
11,151.28	11,129.22	11,167.54	11,117.22	40.11	41.25	-132.27	-126.84	-624.20	148.66	68.52	80.14	1.855	CC

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	XTO Energy	**Local Co-ordinate Reference:**	Well 163H - Slot P30BS 163H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3381+25 @ 3406.00usft (E101)
Reference Site:	PLU 30 BS	**MD Reference:**	3381+25 @ 3406.00usft (E101)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	163H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	STRYKER_EDM
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 30 BS - 122H - Lateral E121 - Plan #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD, 11212-MWD+IFR1+MS — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,200.00	11,177.94	11,214.24	11,163.92	40.28	41.39	-132.32	-126.98	-624.19	148.76	68.33	80.44	1.849	ES, SF
11,250.00	11,227.94	11,257.26	11,206.86	40.45	41.49	-133.10	-129.55	-623.97	150.60	70.07	80.53	1.870	
11,300.00	11,277.94	11,300.00	11,249.19	40.62	41.57	-134.78	-135.28	-623.47	154.85	74.39	80.46	1.925	
11,350.00	11,327.94	11,341.02	11,289.32	40.80	41.66	-137.12	-143.71	-622.74	161.70	81.56	80.14	2.018	
11,400.00	11,377.94	11,380.93	11,327.69	40.97	41.74	-139.91	-154.64	-621.79	171.38	91.77	79.61	2.153	
11,450.00	11,427.94	11,419.13	11,363.61	41.14	41.81	-142.89	-167.57	-620.67	184.07	105.22	78.84	2.335	
11,500.00	11,477.94	11,450.00	11,391.95	41.32	41.87	-145.42	-179.74	-619.62	199.92	122.73	77.18	2.590	
11,550.00	11,527.94	11,489.61	11,427.28	41.49	41.95	-148.68	-197.56	-618.08	218.62	141.89	76.72	2.849	
11,600.00	11,577.94	11,521.71	11,454.96	41.66	42.01	-151.27	-213.75	-616.67	240.32	164.83	75.49	3.183	
11,650.00	11,627.94	11,550.00	11,478.56	41.84	42.06	-153.46	-229.29	-615.33	264.73	190.70	74.03	3.576	
11,700.00	11,677.94	11,579.67	11,502.46	42.01	42.11	-155.64	-246.80	-613.81	291.60	218.64	72.97	3.996	