Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD Artesia

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.
NMLC064894

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 20 BD 123H

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

9. API Well No.
30-015-45622-00-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 20 T25S R30E SESW 955FSL 1975FWL
32.110905 N Lat, 103.905685 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 APD....

Change BHL fr/200'FSL & 1650'FWL to 200'FSL & 1980'FWL.

Drilling Progarm

XTO requests a variance to be able to batch drill this well if necessary. In doing so, XTO will set 8-5/8? intermediate casing 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 to skid the rig to drill the remaining wells on the pad.?Once surface and both intermediate strings are all completed, XTO will begin drilling the

SEE ATTACHED FOR CONDITIONS OF APPROVAL

NM OIL CONSERVATION
ARTESIA DISTRICT
SEP 23 2019
RECEIVED

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

Electronic Submission #479866 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 08/23/2019 (19PP3049SE)

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

Signature (Electronic Submission) — Date 08/22/2019

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

SEP 09 2019

Approved By — Title — Date

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 BUREAU OF LAND MANAGEMENT
ROSWELL FIELD OFFICE

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 ****

RWP 10-29-19

Additional data for EC transaction #479866 that would not fit on the form

32. Additional remarks, continued

production hole on each of the wells.

Revisions to Operator-Submitted EC Data for Sundry Notice #479866

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	DRG NOI	APDCH NOI
Lease:	NMLC064894	NMLC064894
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 20 BD 123H Sec 20 T25S R30E Mer NMP SESW 955FSL 1975FWL	POKER LAKE UNIT 20 BD 123H Sec 20 T25S R30E SESW 955FSL 1975FWL 32.110905 N Lat, 103.905685 W Lon

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

NM OIL CONSERVATION
ARTESIA DISTRICT
SEP 23 2019
RECEIVED

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

☑ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015- 45622	98220	PURPLE SAGE; WOLFCAMP

[4] Property Code	[5] Property Name	[6] Well Number
	POKER LAKE UNIT 20 BD	123H

[7] OGRID No.	[8] Operator Name	[9] Elevation
373075	XTO PERMIAN OPERATION, LLC	3,162'

[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
N	20	25 S	30 E		955	SOUTH	1,975	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
N	32	25 S	30 E		200	SOUTH	1,980	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
800			

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.

16

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 404,287.8
X= 632,558.2
LAT.= 32.110780'N
LONG.= 103.905205'W

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 404,345.9
X= 673,743.1
LAT.= 32.110904'N
LONG.= 103.905688'W

FIRST TAKE POINT
NAD 27 NME
Y= 403,002.7
X= 632,568.7
LAT.= 32.107247'N
LONG.= 103.905188'W

FIRST TAKE POINT
NAD 83 NME
Y= 403,060.8
X= 673,753.7
LAT.= 32.107371'N
LONG.= 103.905670'W

CORNER COORDINATES TABLE
NAD 27 NME
A - Y= 403,340.8 N, X= 633,259.4 E
B - Y= 403,325.1 N, X= 631,923.1 E
C - Y= 400,683.8 N, X= 633,276.4 E
D - Y= 400,669.1 N, X= 631,940.0 E
E - Y= 398,025.4 N, X= 633,293.5 E
F - Y= 398,011.2 N, X= 631,958.0 E
G - Y= 395,366.6 N, X= 633,290.8 E
H - Y= 395,354.2 N, X= 631,958.0 E
I - Y= 392,708.5 N, X= 633,288.1 E
J - Y= 392,697.7 N, X= 631,958.4 E

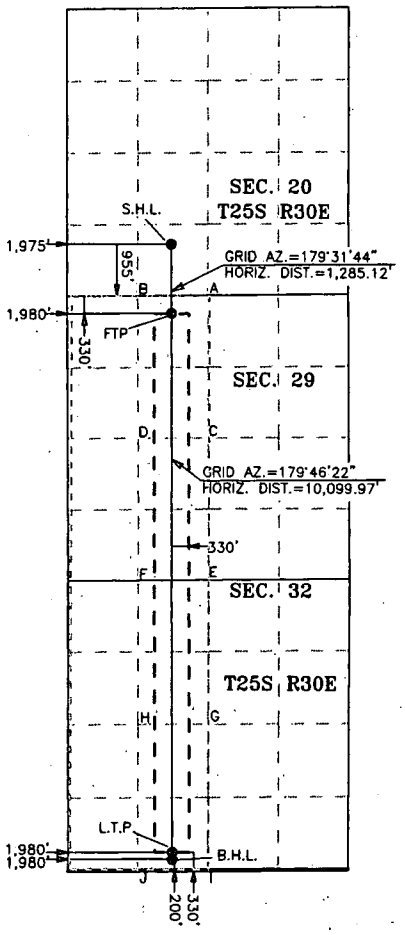
CORNER COORDINATES TABLE
NAD 83 NME
A - Y= 403,398.9 N, X= 674,444.4 E
B - Y= 403,383.2 N, X= 673,108.1 E
C - Y= 400,741.8 N, X= 674,461.5 E
D - Y= 400,727.1 N, X= 673,125.0 E
E - Y= 398,083.4 N, X= 674,478.7 E
F - Y= 398,069.2 N, X= 673,143.1 E
G - Y= 395,424.5 N, X= 674,476.0 E
H - Y= 395,412.1 N, X= 673,143.2 E
I - Y= 392,766.4 N, X= 674,473.4 E
J - Y= 392,755.6 N, X= 673,143.7 E

LAST TAKE POINT
NAD 27 NME
Y= 393,033.0
X= 632,608.3
LAT.= 32.079840'N
LONG.= 103.905188'W

LAST TAKE POINT
NAD 83 NME
Y= 393,090.9
X= 673,793.6
LAT.= 32.079965'N
LONG.= 103.905669'W

BOTTOM HOLE LOCATION
NAD 27 NME
Y= 392,903.0
X= 632,608.4
LAT.= 32.079483'N
LONG.= 103.905189'W

BOTTOM HOLE LOCATION
NAD 83 NME
Y= 392,960.9
X= 673,793.7
LAT.= 32.079607'N
LONG.= 103.905671'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 — 8/22/19
Signature — Date

Kelly Kardos
Printed Name

kelly_kardos@xtoenergy.com
E-mail Address

[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.

4-5-2019
Date of Survey

Signatue and Seal of Professional Surveyor:

MARK DILLON HARP
NEW MEXICO
23786
PROFESSIONAL SURVEYOR

MARK DILLON HARP 23786
Certificate Number — JC — 2017071049

RUP 10-29-19

Intent [X] As Drilled [ ]

NM OIL CONSERVATION
ARTESIA DISTRICT
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API #
30-015-45622

Operator Name:	Property Name:	Well Number
XTO Permian Operating, LLC	Poker Lake Unit 20 BD	123H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
N	20	25S	30E		955	South	1975	West	Eddy

Latitude	Longitude	NAD
32.110904	-103.905688	NAD83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	29	25S	30E		330	North	1980	West	Eddy

Latitude	Longitude	NAD
32.107371	-103.905670	NAD83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
N	32	25S	30E		330	South	1980	West	Eddy

Latitude	Longitude	NAD
32.079965	-103.905669	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 #
30-045-45492

Operator Name:	Property Name:	Well Number
XTO Permian Operating, LLC	Poker Lake Unit 20 BD	701H

KZ 06/29/2018

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

XTO Energy Inc.
PLU 20 Brushy Draw 123H
Projected TD: 21833' MD / 10820' TVD
SHL: 955' FSL & 1975' FWL , Section 20, T25S, R30E
BHL: 200' FSL & 1980' FWL , Section 32, T25S, R30E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

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

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	450'	Water
Top of Salt	890'	Water
Base of Salt	3480'	Water
Delaware	3570'	Water
Bone Spring	7460'	Water
1st Bone Spring Ss	8360'	Water/Oil/Gas
2nd Bone Spring Ss	9202'	Water/Oil/Gas
3rd Bone Spring Ss	10290'	Water/Oil/Gas
Wolfcamp	10705'	Water/Oil/Gas
Target/Land Curve	10820'	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 16" inch casing @ 790' (100' above the salt) and circulating cement back to surface. The salt will be isolated by setting 11-3/4" inch casing at 3530' and circulating cement to surface. The second intermediate will isolate from the salt down to the next casing seat by setting 8-5/8" inch casing at 9565' and cemented "500'" into the 11-3/4 inch casing. A 7-7/8" inch curve and lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back 250' into the 8-5/8"casing.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
18-1/2"	0' – 790'	16"	75	STC	J-55	New	2.48	2.82	11.98
14-3/4"	0' – 3530'	11-3/4"	47	STC	J-55	New	1.17	1.41	2.88
10-5/8"	0' – 9565'	8-5/8"	32	BTC	HCL-80	New	1.23	2.14	2.17
7-7/8"	0' – 21833'	5-1/2"	20	BTC	P-110	New	1.33	1.58	2.24

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 11-3/4" Collapse analyzed using 50% evacuation based on regional experience.
- 8-5/8" Collapse analyzed using 33% 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

- 16" SOW bottom x 16-3/4" 2M top flange.

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 11-3/4" SOW bottom
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 8-5/8" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 16", 75 New J-55, STC casing to be set at +/- 790'

Lead: 270 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 230 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: 11-3/4", 47 New J-55, STC casing to be set at +/- 3530'

Lead: 1490 sxs EconoCem-HLTRRC (mixed at 12.9 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

2nd Intermediate Casing: 8-5/8", 32 New HCL-80, BTC casing to be set at +/- 9565'

Lead: 2020 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft3/sx, 9.61 gal/sx water)
Tail: 150 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing: 5-1/2", 20 New P-110, BTC casing to be set at +/- 21833'

Lead: 810 sxs NeoCem (mixed at 10.5 ppg, 2.69 ft3/sx, 12.26 gal/sx water)
Tail: 1690 sxs VersaCem (mixed at 13.2 ppg, 1.61 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 1059 psi.

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 5M Double Ram BOP. MASP should not exceed 4653 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 nippling up on the 11-3/4", 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nippling up on the 8-5/8", the BOP will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0'.- 790'	18-3/4"	FW/Native	8.4-8.8	35-40	NC
790' - 3530'	14-3/4"	Brine	9.8-10.2	30-32	NC
3530' to 9565'	10-5/8"	FW / Cut Brine	8.7-9.4	30-32	NC
9565' to 21833'	7-7/8"	Cut Brine / Polymer / OBM	12.2 - 12.5	29-32	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 ppg-10.0ppg 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 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

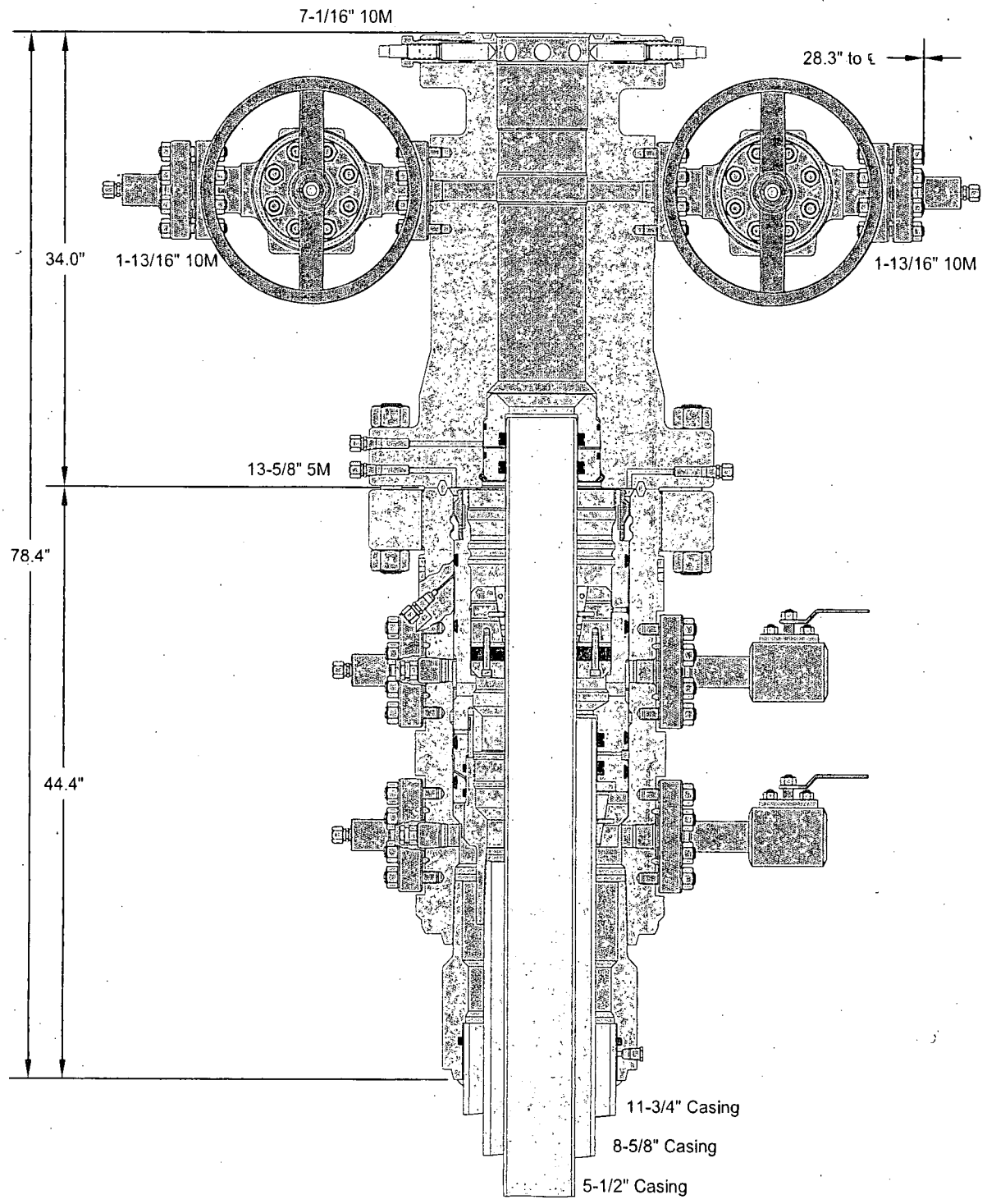
None Anticipated. BHT of 150 to 170 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. 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 7033 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 this well if necessary. In doing so, XTO will set 8-5/8" intermediate casing 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 to skid the rig to drill the remaining wells on the pad. Once surface and both intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.

GE Oil & Gas



ALL DIMENSIONS ARE APPROXIMATE

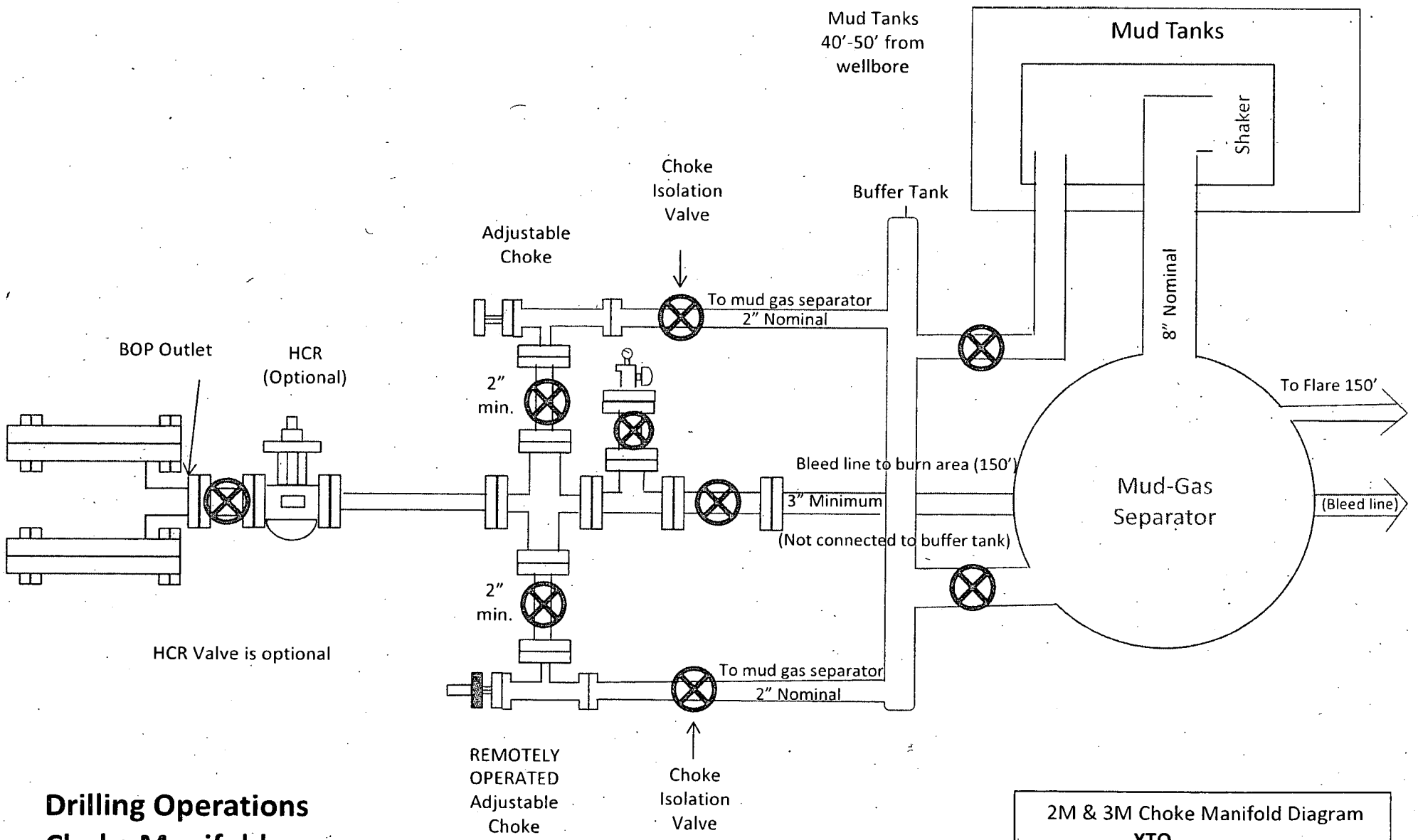
XTO ENERGY, INC.

11-3/4" x 8-5/8" x 5-1/2" 10M RSH-2 Wellhead Assembly, With T-EBS-F Tubing Head

DRAWN	VJK	31OCT16
APPRV	KN	31OCT16

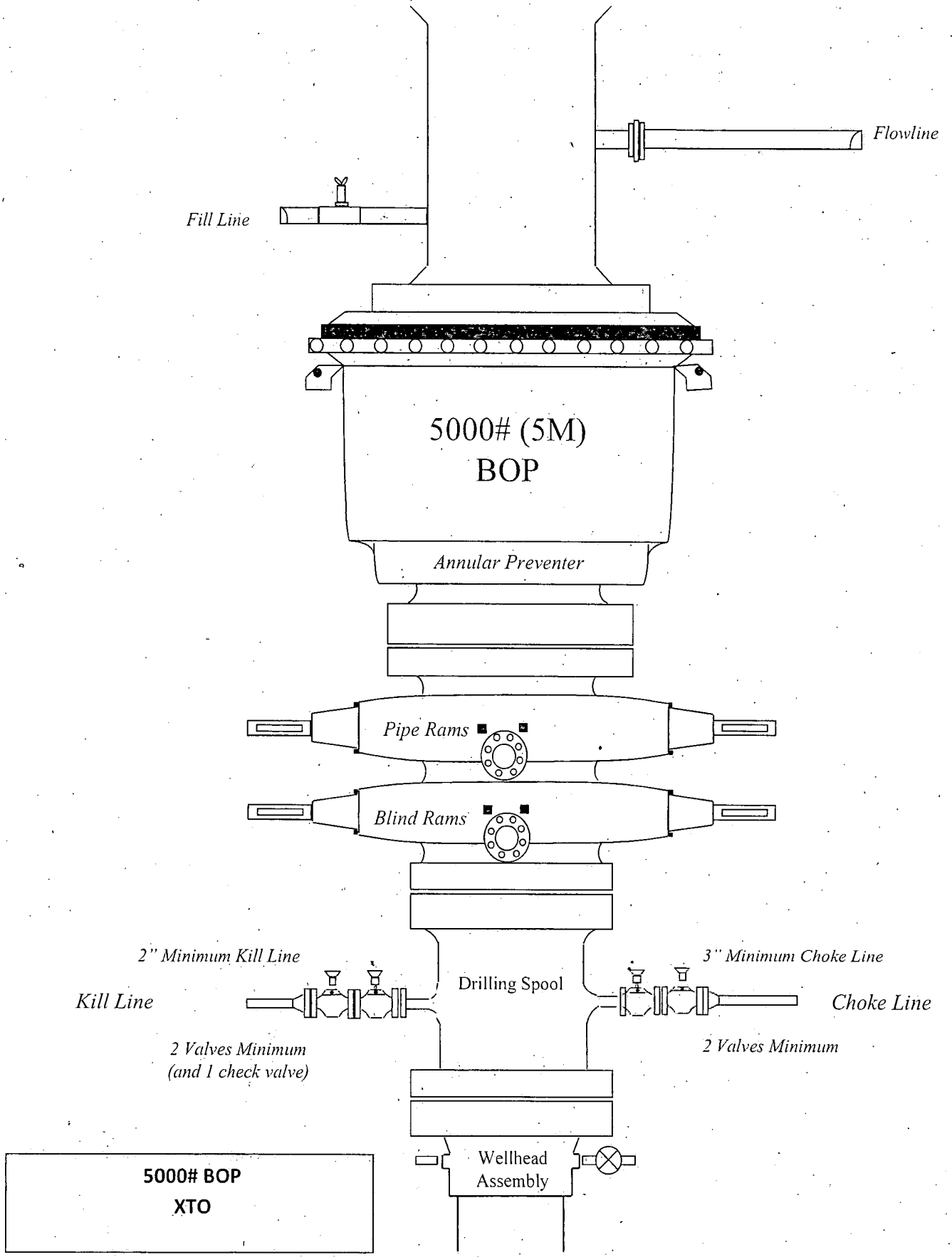
FOR REFERENCE ONLY

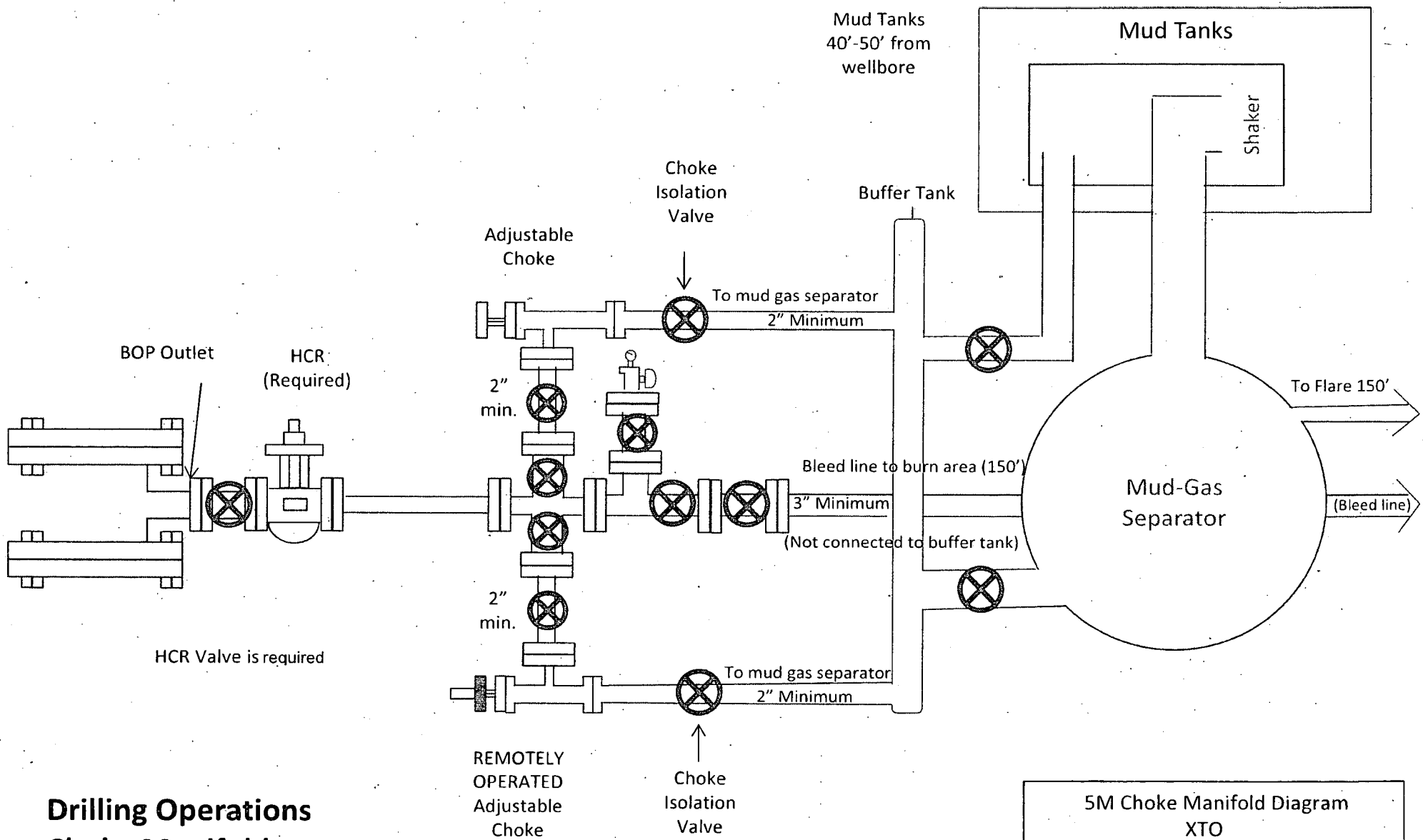
DRAWING NO. 10012358



Drilling Operations
Choke Manifold
2M & 3M Service

2M & 3M Choke Manifold Diagram
XTO


Flowline
Fill Line
5000# (5M)
BOP
Annular Preventer
Pipe Rams
Blind Rams
2" Minimum Kill Line
3" Minimum Choke Line
Kill Line
Drilling Spool
Choke Line
2 Valves Minimum
(and 1 check valve)
2 Valves Minimum
Wellhead
Assembly
5000# BOP
XTO



Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
XTO

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

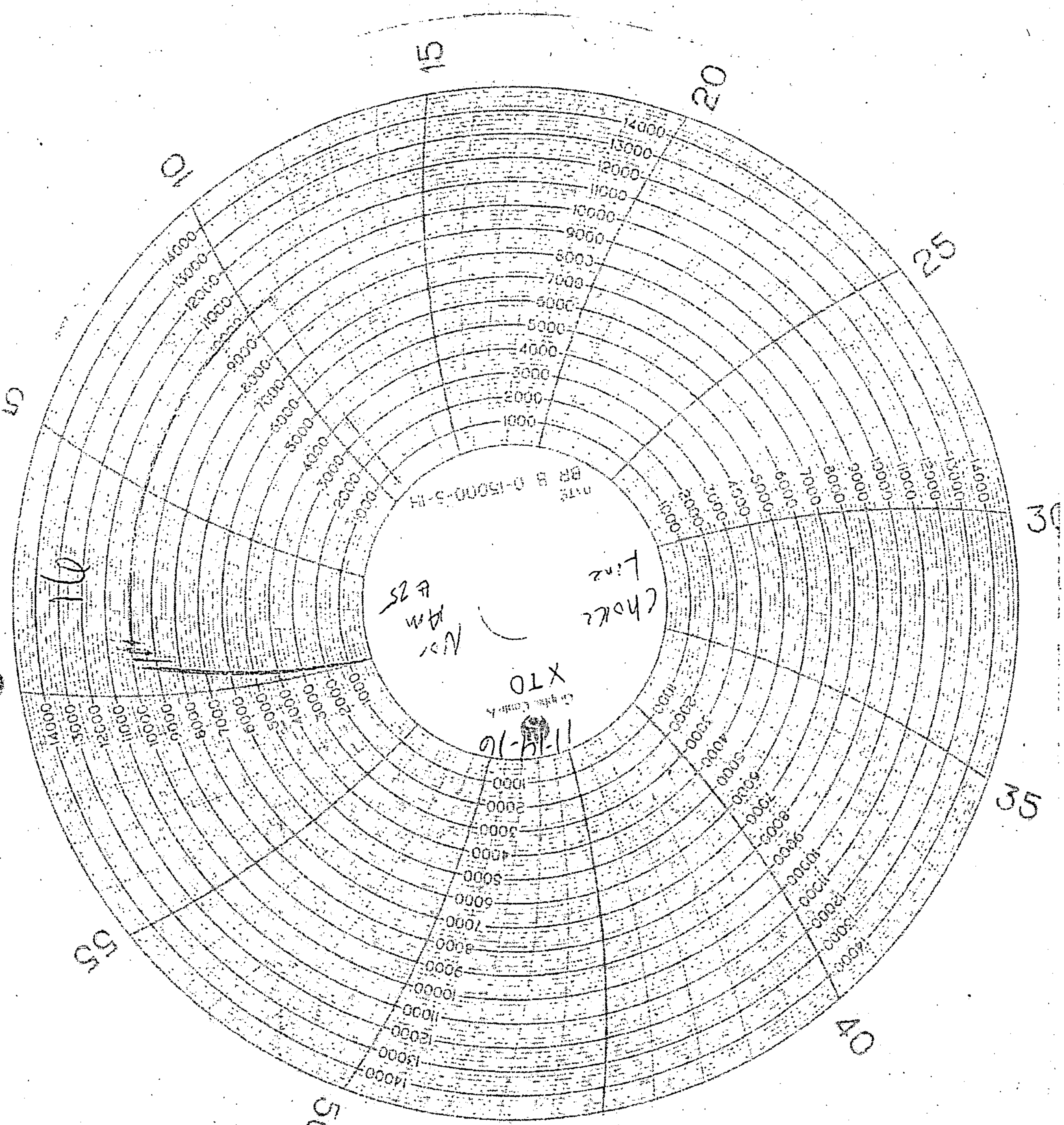
Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA

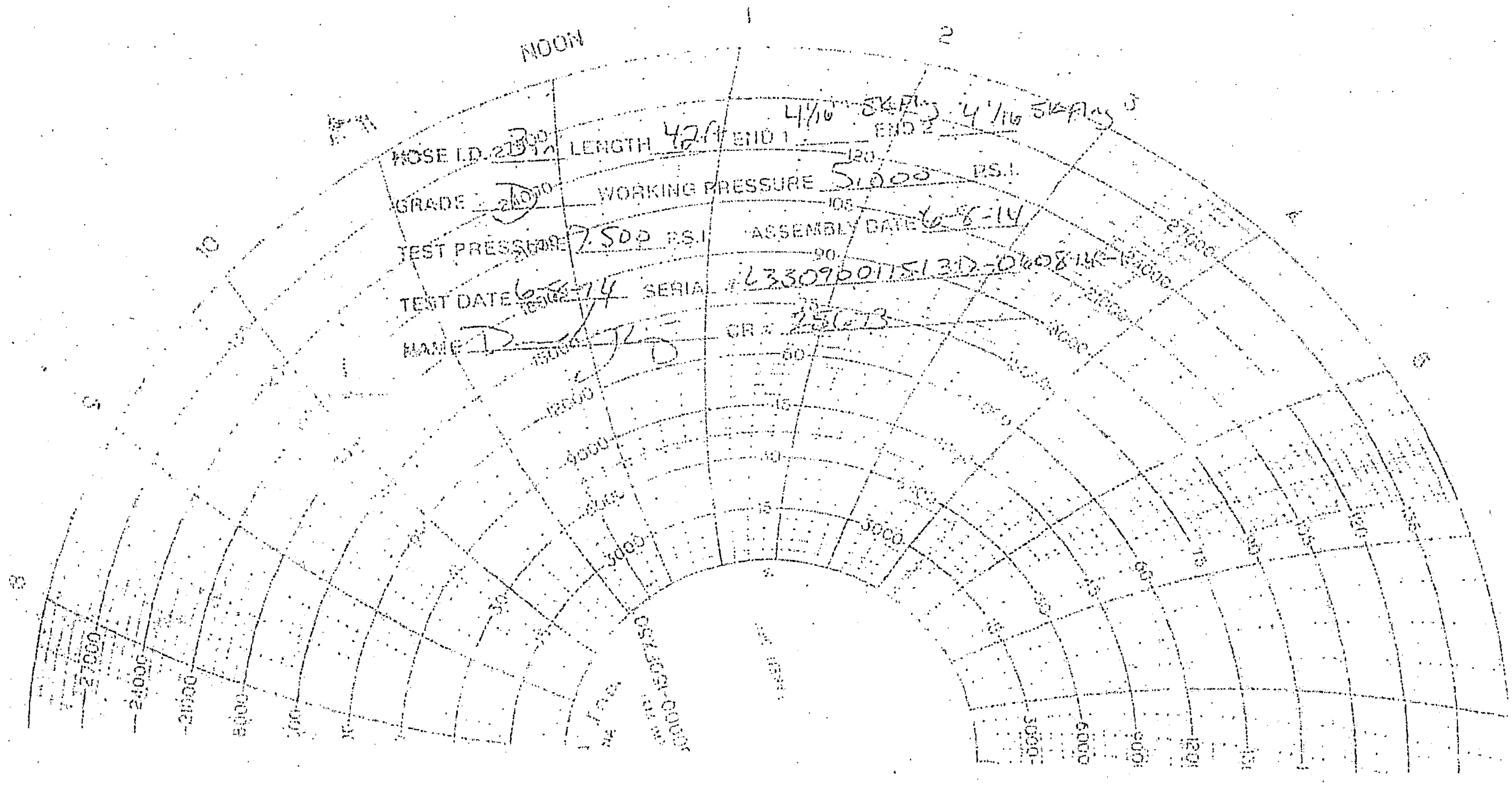
Product Description:	FD3.042.0R41/16.5KFLGE/E LE

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 :	

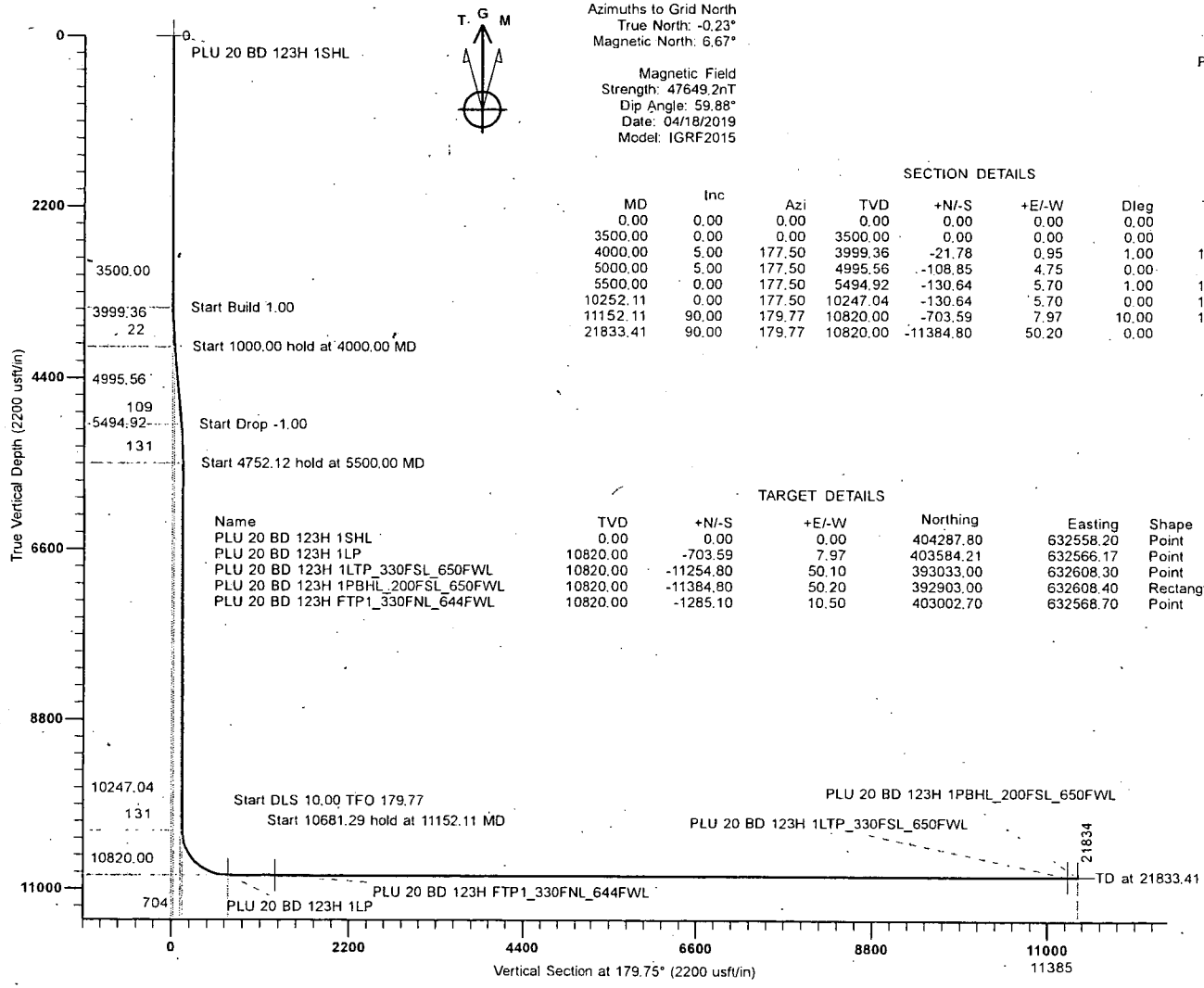

XTO
11-14-16
Choke Line
BR B 0-15000-5-16
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
5
10
15
20
25
30
35
40
45
50
55
60


NOON
1
2
3
4
5
10
9
8
HOSE I.D. 3" LENGTH 42ft END 1 4 1/16" 5K FLG END 2 4 1/16 5K FLG
GRADE D WORKING PRESSURE 5,000 P.S.I.
TEST PRESSURE 7,500 P.S.I. ASSEMBLY DATE 6-8-14
TEST DATE 6-8-14 SERIAL # 6330960115130-060814
NAME
CR # 25613
27000
24000
21000
18000
15000
12000
9000
6000
3000
120
105
90
75
60
45
30
15

XTO Energy

3162+31 @ 3193.00usft (NabF26)
NAD 1927 (NADCON CONUS)

Project: Eddy County, NM (NAD27) NMEZ Grid
Site: PLU 20 Brushy Draw
Well: PLU 20 BD 123H SHL(blm)
Wellbore: 123H Lateral
Design: Plan #2



Azimuths to Grid North
True North: -0.23°
Magnetic North: 6.67°

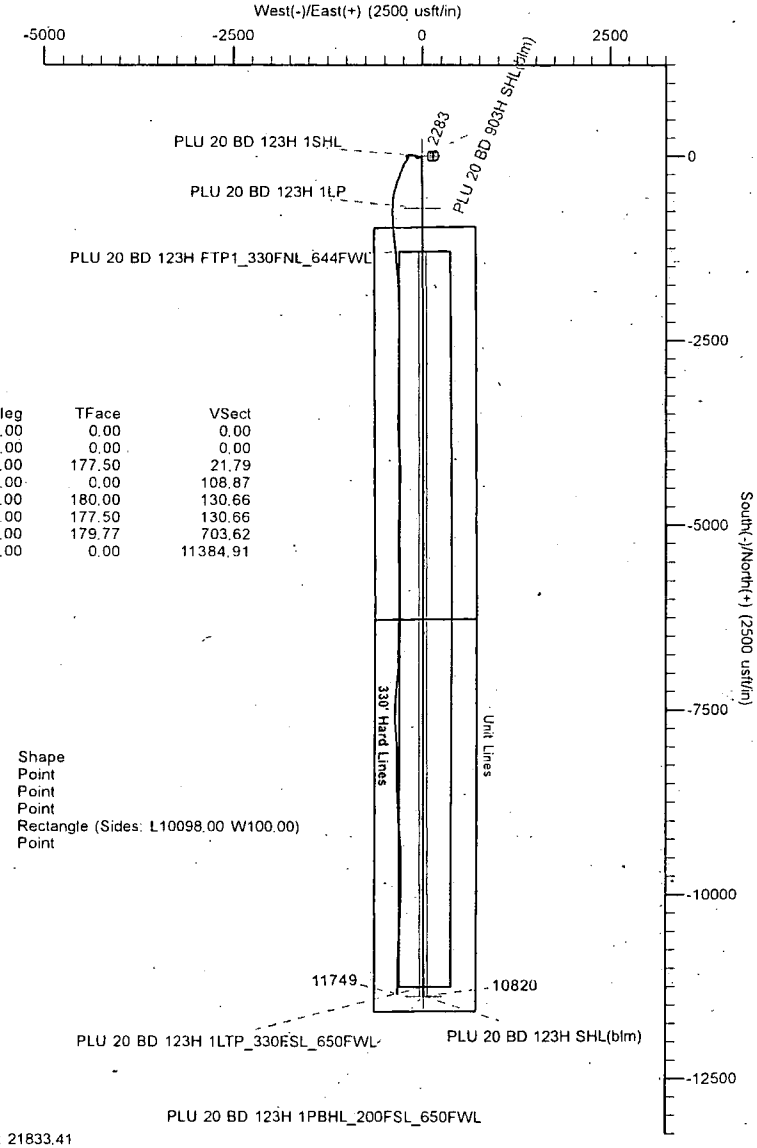
Magnetic Field
Strength: 47649.2nT
Dip Angle: 59.88°
Date: 04/18/2019
Model: IGRF2015

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
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00
4000.00	5.00	177.50	3999.36	-21.78	0.95	1.00	177.50	21.79
5000.00	5.00	177.50	4995.56	-108.85	4.75	0.00	0.00	108.87
5500.00	0.00	177.50	5494.92	-130.64	5.70	1.00	180.00	130.66
10252.11	0.00	177.50	10247.04	-130.64	5.70	0.00	177.50	130.66
11152.11	90.00	179.77	10820.00	-703.59	7.97	10.00	179.77	703.62
21833.41	90.00	179.77	10820.00	-11384.80	50.20	0.00	0.00	11384.91

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PLU 20 BD 123H 1SHL	0.00	0.00	0.00	404287.80	632558.20	Point
PLU 20 BD 123H 1LP	10820.00	-703.59	7.97	403584.21	632566.17	Point
PLU 20 BD 123H 1LTP_330FSL_650FWL	10820.00	-11254.80	50.10	393033.00	632608.30	Point
PLU 20 BD 123H 1PBHL_200FSL_650FWL	10820.00	-11384.80	50.20	392903.00	632608.40	Rectangle (Sides: L10098.00 W100.00)
PLU 20 BD 123H FTP1_330FNL_644FWL	10820.00	-1285.10	10.50	403002.70	632568.70	Point



To convert a Magnetic Direction to a Grid Direction, Add 6.67°
To convert a Magnetic Direction to a True Direction, Add 6.90° East
Magnetic North is 6.67° East of Grid North (Magnetic Convergence)
Magnetic North is 6.90° East of True North (Magnetic Declination)

Plan: Plan #2 (PLU 20 BD 123H SHL(blm)/123H Lateral)
Created By: Mekka Williams
eSomina Well Design
mekka@esominawelldesign.com
10:31, August 20 2019

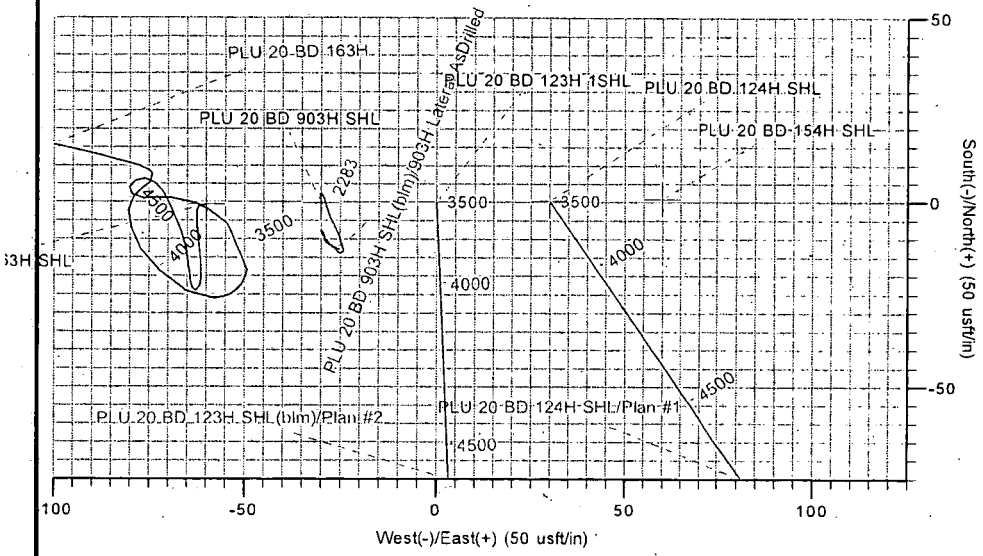
PREDATOR DIRECTIONAL
11323 MONARCHS WAY
Montgomery, Texas 77316

PREDATOR DIRECTIONAL

XTO Energy

To convert a Magnetic Direction to a Grid Direction, Add 6.67°
Magnetic North is 6.67° East of Grid North (Magnetic Convergence)
Magnetic North is 6.90° East of True North (Magnetic Declination)

3162+31 @ 3193.00usft (NabF26)
NAD 1927 (NADCON CONUS)



Project: Eddy County, NM (NAD27) NMEZ Grid
Site: PLU 20 Brushy Draw
Well: PLU 20 BD 123H SHL(blm)
Wellbore: 123H Lateral
Design: Plan #2

XTO ENERGY

Azimuths to Grid North
True North: -0.23°
Magnetic North: 6.67°

Magnetic Field
Strength: 47649.2nT
Dip Angle: 59.88°
Date: 04/18/2019
Model: IGRF2015

Plan: Plan #2 (PLU 20 BD 123H SHL(blm)/123H Lateral)
Created By: Mekka Williams
eSomina Well Design
mekka@esominawelldesign.com
10:35, August 20 2019

PREDATOR DIRECTIONAL
11323 MONARCHS WAY
Montgomery, TX 77316

PREDATOR DIRECTIONAL

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #2		

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 20 Brushy Draw

Site Position:		Northing:	404,287.80 usft	Latitude:	32.11077971
From:	Map	Easting:	632,558.20 usft	Longitude:	-103.90520511
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.23 °

Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL

Well Position	+N/-S	0.00 usft	Northing:	404,287.80 usft	Latitude:	32.11077971
	+E/-W	0.00 usft	Easting:	632,558.20 usft	Longitude:	-103.90520511
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,162.00 usft

Wellbore 123H Lateral

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	04/18/19	6.90	59.88	47,649.19926638

Design Plan #2

Audit Notes:

Version:		Phase:	PLAN	Tie On Depth:	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.75

Plan Survey Tool Program Date 08/20/19

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,833.41	Plan #2 (123H Lateral)	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	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	5.00	177.50	3,999.36	-21.78	0.95	1.00	1.00	0.00	177.50	
5,000.00	5.00	177.50	4,995.56	-108.85	4.75	0.00	0.00	0.00	0.00	
5,500.00	0.00	177.50	5,494.92	-130.64	5.70	1.00	-1.00	0.00	180.00	
10,252.11	0.00	177.50	10,247.04	-130.64	5.70	0.00	0.00	0.00	177.50	
11,152.11	90.00	179.77	10,820.00	-703.59	7.97	10.00	10.00	0.25	179.77	
21,833.41	90.00	179.77	10,820.00	-11,384.80	50.20	0.00	0.00	0.00	0.00	PLU 20 BD 123H 1PE

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #2		

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 20 BD 903H SHL - PLU 20 BD 154H SHL - PLU 20 BD 124H SHL - PLU 20 BD 123H 1SHL - PLU 20 BD 163H 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
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
1,200.00	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	1.00	177.50	3,600.00	-0.87	0.04	0.87	1.00	1.00	0.00
3,700.00	2.00	177.50	3,699.96	-3.49	0.15	3.49	1.00	1.00	0.00
3,800.00	3.00	177.50	3,799.86	-7.84	0.34	7.85	1.00	1.00	0.00
3,900.00	4.00	177.50	3,899.68	-13.94	0.61	13.95	1.00	1.00	0.00
4,000.00	5.00	177.50	3,999.36	-21.78	0.95	21.79	1.00	1.00	0.00
4,100.00	5.00	177.50	4,098.99	-30.49	1.33	30.49	0.00	0.00	0.00
4,200.00	5.00	177.50	4,198.60	-39.20	1.71	39.20	0.00	0.00	0.00
4,300.00	5.00	177.50	4,298.22	-47.90	2.09	47.91	0.00	0.00	0.00
4,400.00	5.00	177.50	4,397.84	-56.61	2.47	56.62	0.00	0.00	0.00
4,500.00	5.00	177.50	4,497.46	-65.32	2.85	65.33	0.00	0.00	0.00
4,600.00	5.00	177.50	4,597.08	-74.03	3.23	74.04	0.00	0.00	0.00
4,700.00	5.00	177.50	4,696.70	-82.73	3.61	82.75	0.00	0.00	0.00
4,800.00	5.00	177.50	4,796.32	-91.44	3.99	91.46	0.00	0.00	0.00
4,900.00	5.00	177.50	4,895.94	-100.15	4.37	100.17	0.00	0.00	0.00
5,000.00	5.00	177.50	4,995.56	-108.85	4.75	108.87	0.00	0.00	0.00
5,100.00	4.00	177.50	5,095.25	-116.69	5.09	116.71	1.00	-1.00	0.00

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #2		

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)
5,200.00	3.00	177.50	5,195.06	-122.79	5.36	122.81	1.00	-1.00	0.00
5,300.00	2.00	177.50	5,294.97	-127.15	5.55	127.17	1.00	-1.00	0.00
5,400.00	1.00	177.50	5,394.93	-129.76	5.67	129.79	1.00	-1.00	0.00
5,500.00	0.00	177.50	5,494.92	-130.64	5.70	130.66	1.00	-1.00	0.00
5,600.00	0.00	177.50	5,594.93	-130.64	5.70	130.66	0.00	0.00	0.00
5,700.00	0.00	177.50	5,694.93	-130.64	5.70	130.66	0.00	0.00	0.00
5,800.00	0.00	177.50	5,794.93	-130.64	5.70	130.66	0.00	0.00	0.00
5,900.00	0.00	177.50	5,894.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,000.00	0.00	177.50	5,994.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,100.00	0.00	177.50	6,094.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,200.00	0.00	177.50	6,194.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,300.00	0.00	177.50	6,294.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,400.00	0.00	177.50	6,394.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,500.00	0.00	177.50	6,494.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,600.00	0.00	177.50	6,594.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,700.00	0.00	177.50	6,694.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,800.00	0.00	177.50	6,794.93	-130.64	5.70	130.66	0.00	0.00	0.00
6,900.00	0.00	177.50	6,894.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,000.00	0.00	177.50	6,994.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,100.00	0.00	177.50	7,094.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,200.00	0.00	177.50	7,194.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,300.00	0.00	177.50	7,294.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,400.00	0.00	177.50	7,394.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,500.00	0.00	177.50	7,494.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,600.00	0.00	177.50	7,594.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,700.00	0.00	177.50	7,694.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,800.00	0.00	177.50	7,794.93	-130.64	5.70	130.66	0.00	0.00	0.00
7,900.00	0.00	177.50	7,894.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,000.00	0.00	177.50	7,994.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,100.00	0.00	177.50	8,094.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,200.00	0.00	177.50	8,194.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,300.00	0.00	177.50	8,294.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,400.00	0.00	177.50	8,394.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,500.00	0.00	177.50	8,494.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,600.00	0.00	177.50	8,594.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,700.00	0.00	177.50	8,694.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,800.00	0.00	177.50	8,794.93	-130.64	5.70	130.66	0.00	0.00	0.00
8,900.00	0.00	177.50	8,894.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,000.00	0.00	177.50	8,994.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,100.00	0.00	177.50	9,094.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,200.00	0.00	177.50	9,194.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,300.00	0.00	177.50	9,294.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,400.00	0.00	177.50	9,394.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,500.00	0.00	177.50	9,494.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,600.00	0.00	177.50	9,594.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,700.00	0.00	177.50	9,694.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,800.00	0.00	177.50	9,794.93	-130.64	5.70	130.66	0.00	0.00	0.00
9,900.00	0.00	177.50	9,894.93	-130.64	5.70	130.66	0.00	0.00	0.00
10,000.00	0.00	177.50	9,994.93	-130.64	5.70	130.66	0.00	0.00	0.00
10,100.00	0.00	177.50	10,094.93	-130.64	5.70	130.66	0.00	0.00	0.00
10,200.00	0.00	177.50	10,194.93	-130.64	5.70	130.66	0.00	0.00	0.00
10,252.11	0.00	177.50	10,247.04	-130.64	5.70	130.66	0.00	0.00	0.00
10,300.00	4.79	179.77	10,294.87	-132.64	5.71	132.66	10.00	10.00	4.75

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #2		

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)
10,350.00	9.79	179.77	10,344.45	-138.98	5.74	139.00	10.00	10.00	0.00
10,400.00	14.79	179.77	10,393.29	-149.62	5.78	149.64	10.00	10.00	0.00
10,450.00	19.79	179.77	10,441.02	-164.47	5.84	164.49	10.00	10.00	0.00
10,500.00	24.79	179.77	10,487.27	-183.43	5.91	183.45	10.00	10.00	0.00
10,550.00	29.79	179.77	10,531.69	-206.34	6.00	206.37	10.00	10.00	0.00
10,600.00	34.79	179.77	10,573.94	-233.05	6.11	233.07	10.00	10.00	0.00
10,650.00	39.79	179.77	10,613.71	-263.33	6.23	263.35	10.00	10.00	0.00
10,700.00	44.79	179.77	10,650.68	-296.96	6.36	296.98	10.00	10.00	0.00
10,750.00	49.79	179.77	10,684.59	-333.69	6.51	333.71	10.00	10.00	0.00
10,800.00	54.79	179.77	10,715.16	-373.23	6.66	373.25	10.00	10.00	0.00
10,850.00	59.79	179.77	10,742.18	-415.29	6.83	415.31	10.00	10.00	0.00
10,900.00	64.79	179.77	10,765.42	-459.54	7.00	459.56	10.00	10.00	0.00
10,950.00	69.79	179.77	10,784.72	-505.64	7.19	505.67	10.00	10.00	0.00
11,000.00	74.79	179.77	10,799.92	-553.26	7.37	553.29	10.00	10.00	0.00
11,050.00	79.79	179.77	10,810.92	-602.02	7.57	602.04	10.00	10.00	0.00
11,100.00	84.79	179.77	10,817.63	-651.55	7.76	651.58	10.00	10.00	0.00
11,152.11	90.00	179.77	10,820.00	-703.59	7.97	703.62	10.00	10.00	0.00
PLU 20 BD 123H 1LP									
11,200.00	90.00	179.77	10,820.00	-751.48	8.16	751.50	0.00	0.00	0.00
11,300.00	90.00	179.77	10,820.00	-851.48	8.55	851.50	0.00	0.00	0.00
11,400.00	90.00	179.77	10,820.00	-951.47	8.95	951.50	0.00	0.00	0.00
11,500.00	90.00	179.77	10,820.00	-1,051.47	9.34	1,051.50	0.00	0.00	0.00
11,600.00	90.00	179.77	10,820.00	-1,151.47	9.74	1,151.50	0.00	0.00	0.00
11,700.00	90.00	179.77	10,820.00	-1,251.47	10.14	1,251.50	0.00	0.00	0.00
11,731.03	90.00	179.77	10,820.00	-1,282.51	10.26	1,282.54	0.00	0.00	0.00
PLU 20 BD 154H FTP_330FNL_363FEL - PLU 20 BD 124H FTP_330FNL_363FEL									
11,733.63	90.00	179.77	10,820.00	-1,285.10	10.27	1,285.13	0.00	0.00	0.00
PLU 20 BD 123H FTP1_330FNL_644FWL									
11,736.42	90.00	179.77	10,820.00	-1,287.90	10.28	1,287.93	0.00	0.00	0.00
PLU 20 BD 163H FTP_330FNL_313FWL - PLU 20 BD 903H FTP_330FNL_313FWL									
11,800.00	90.00	179.77	10,820.00	-1,351.47	10.53	1,351.50	0.00	0.00	0.00
11,900.00	90.00	179.77	10,820.00	-1,451.47	10.93	1,451.50	0.00	0.00	0.00
12,000.00	90.00	179.77	10,820.00	-1,551.47	11.32	1,551.50	0.00	0.00	0.00
12,100.00	90.00	179.77	10,820.00	-1,651.47	11.72	1,651.50	0.00	0.00	0.00
12,200.00	90.00	179.77	10,820.00	-1,751.47	12.11	1,751.50	0.00	0.00	0.00
12,300.00	90.00	179.77	10,820.00	-1,851.47	12.51	1,851.50	0.00	0.00	0.00
12,400.00	90.00	179.77	10,820.00	-1,951.47	12.90	1,951.50	0.00	0.00	0.00
12,500.00	90.00	179.77	10,820.00	-2,051.47	13.30	2,051.50	0.00	0.00	0.00
12,600.00	90.00	179.77	10,820.00	-2,151.47	13.69	2,151.50	0.00	0.00	0.00
12,700.00	90.00	179.77	10,820.00	-2,251.46	14.09	2,251.50	0.00	0.00	0.00
12,800.00	90.00	179.77	10,820.00	-2,351.46	14.48	2,351.50	0.00	0.00	0.00
12,900.00	90.00	179.77	10,820.00	-2,451.46	14.88	2,451.50	0.00	0.00	0.00
13,000.00	90.00	179.77	10,820.00	-2,551.46	15.28	2,551.50	0.00	0.00	0.00
13,100.00	90.00	179.77	10,820.00	-2,651.46	15.67	2,651.50	0.00	0.00	0.00
13,200.00	90.00	179.77	10,820.00	-2,751.46	16.07	2,751.50	0.00	0.00	0.00
13,300.00	90.00	179.77	10,820.00	-2,851.46	16.46	2,851.50	0.00	0.00	0.00
13,400.00	90.00	179.77	10,820.00	-2,951.46	16.86	2,951.50	0.00	0.00	0.00
13,500.00	90.00	179.77	10,820.00	-3,051.46	17.25	3,051.50	0.00	0.00	0.00
13,600.00	90.00	179.77	10,820.00	-3,151.46	17.65	3,151.50	0.00	0.00	0.00
13,700.00	90.00	179.77	10,820.00	-3,251.46	18.04	3,251.50	0.00	0.00	0.00
13,800.00	90.00	179.77	10,820.00	-3,351.46	18.44	3,351.50	0.00	0.00	0.00
13,900.00	90.00	179.77	10,820.00	-3,451.46	18.83	3,451.50	0.00	0.00	0.00
14,000.00	90.00	179.77	10,820.00	-3,551.45	19.23	3,551.50	0.00	0.00	0.00

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #2		

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)
14,100.00	90.00	179.77	10,820.00	-3,651.45	19.62	3,651.50	0.00	0.00	0.00
14,200.00	90.00	179.77	10,820.00	-3,751.45	20.02	3,751.50	0.00	0.00	0.00
14,300.00	90.00	179.77	10,820.00	-3,851.45	20.41	3,851.50	0.00	0.00	0.00
14,400.00	90.00	179.77	10,820.00	-3,951.45	20.81	3,951.50	0.00	0.00	0.00
14,500.00	90.00	179.77	10,820.00	-4,051.45	21.21	4,051.50	0.00	0.00	0.00
14,600.00	90.00	179.77	10,820.00	-4,151.45	21.60	4,151.50	0.00	0.00	0.00
14,700.00	90.00	179.77	10,820.00	-4,251.45	22.00	4,251.50	0.00	0.00	0.00
14,800.00	90.00	179.77	10,820.00	-4,351.45	22.39	4,351.50	0.00	0.00	0.00
14,900.00	90.00	179.77	10,820.00	-4,451.45	22.79	4,451.50	0.00	0.00	0.00
15,000.00	90.00	179.77	10,820.00	-4,551.45	23.18	4,551.50	0.00	0.00	0.00
15,100.00	90.00	179.77	10,820.00	-4,651.45	23.58	4,651.50	0.00	0.00	0.00
15,200.00	90.00	179.77	10,820.00	-4,751.45	23.97	4,751.50	0.00	0.00	0.00
15,300.00	90.00	179.77	10,820.00	-4,851.44	24.37	4,851.50	0.00	0.00	0.00
15,400.00	90.00	179.77	10,820.00	-4,951.44	24.76	4,951.50	0.00	0.00	0.00
15,500.00	90.00	179.77	10,820.00	-5,051.44	25.16	5,051.50	0.00	0.00	0.00
15,600.00	90.00	179.77	10,820.00	-5,151.44	25.55	5,151.50	0.00	0.00	0.00
15,700.00	90.00	179.77	10,820.00	-5,251.44	25.95	5,251.50	0.00	0.00	0.00
15,800.00	90.00	179.77	10,820.00	-5,351.44	26.35	5,351.50	0.00	0.00	0.00
15,900.00	90.00	179.77	10,820.00	-5,451.44	26.74	5,451.50	0.00	0.00	0.00
16,000.00	90.00	179.77	10,820.00	-5,551.44	27.14	5,551.50	0.00	0.00	0.00
16,100.00	90.00	179.77	10,820.00	-5,651.44	27.53	5,651.50	0.00	0.00	0.00
16,200.00	90.00	179.77	10,820.00	-5,751.44	27.93	5,751.50	0.00	0.00	0.00
16,300.00	90.00	179.77	10,820.00	-5,851.44	28.32	5,851.50	0.00	0.00	0.00
16,400.00	90.00	179.77	10,820.00	-5,951.44	28.72	5,951.50	0.00	0.00	0.00
16,500.00	90.00	179.77	10,820.00	-6,051.43	29.11	6,051.50	0.00	0.00	0.00
16,600.00	90.00	179.77	10,820.00	-6,151.43	29.51	6,151.50	0.00	0.00	0.00
16,700.00	90.00	179.77	10,820.00	-6,251.43	29.90	6,251.50	0.00	0.00	0.00
16,800.00	90.00	179.77	10,820.00	-6,351.43	30.30	6,351.50	0.00	0.00	0.00
16,900.00	90.00	179.77	10,820.00	-6,451.43	30.69	6,451.50	0.00	0.00	0.00
17,000.00	90.00	179.77	10,820.00	-6,551.43	31.09	6,551.50	0.00	0.00	0.00
17,100.00	90.00	179.77	10,820.00	-6,651.43	31.49	6,651.50	0.00	0.00	0.00
17,200.00	90.00	179.77	10,820.00	-6,751.43	31.88	6,751.50	0.00	0.00	0.00
17,300.00	90.00	179.77	10,820.00	-6,851.43	32.28	6,851.50	0.00	0.00	0.00
17,400.00	90.00	179.77	10,820.00	-6,951.43	32.67	6,951.50	0.00	0.00	0.00
17,500.00	90.00	179.77	10,820.00	-7,051.43	33.07	7,051.50	0.00	0.00	0.00
17,600.00	90.00	179.77	10,820.00	-7,151.43	33.46	7,151.50	0.00	0.00	0.00
17,700.00	90.00	179.77	10,820.00	-7,251.43	33.86	7,251.50	0.00	0.00	0.00
17,800.00	90.00	179.77	10,820.00	-7,351.42	34.25	7,351.50	0.00	0.00	0.00
17,900.00	90.00	179.77	10,820.00	-7,451.42	34.65	7,451.50	0.00	0.00	0.00
18,000.00	90.00	179.77	10,820.00	-7,551.42	35.04	7,551.50	0.00	0.00	0.00
18,100.00	90.00	179.77	10,820.00	-7,651.42	35.44	7,651.50	0.00	0.00	0.00
18,200.00	90.00	179.77	10,820.00	-7,751.42	35.83	7,751.50	0.00	0.00	0.00
18,300.00	90.00	179.77	10,820.00	-7,851.42	36.23	7,851.50	0.00	0.00	0.00
18,400.00	90.00	179.77	10,820.00	-7,951.42	36.63	7,951.50	0.00	0.00	0.00
18,500.00	90.00	179.77	10,820.00	-8,051.42	37.02	8,051.50	0.00	0.00	0.00
18,600.00	90.00	179.77	10,820.00	-8,151.42	37.42	8,151.50	0.00	0.00	0.00
18,700.00	90.00	179.77	10,820.00	-8,251.42	37.81	8,251.50	0.00	0.00	0.00
18,800.00	90.00	179.77	10,820.00	-8,351.42	38.21	8,351.50	0.00	0.00	0.00
18,900.00	90.00	179.77	10,820.00	-8,451.42	38.60	8,451.50	0.00	0.00	0.00
19,000.00	90.00	179.77	10,820.00	-8,551.42	39.00	8,551.50	0.00	0.00	0.00
19,100.00	90.00	179.77	10,820.00	-8,651.41	39.39	8,651.50	0.00	0.00	0.00
19,200.00	90.00	179.77	10,820.00	-8,751.41	39.79	8,751.50	0.00	0.00	0.00
19,300.00	90.00	179.77	10,820.00	-8,851.41	40.18	8,851.50	0.00	0.00	0.00

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #2		

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)
19,400.00	90.00	179.77	10,820.00	-8,951.41	40.58	8,951.50	0.00	0.00	0.00
19,500.00	90.00	179.77	10,820.00	-9,051.41	40.97	9,051.50	0.00	0.00	0.00
19,600.00	90.00	179.77	10,820.00	-9,151.41	41.37	9,151.50	0.00	0.00	0.00
19,700.00	90.00	179.77	10,820.00	-9,251.41	41.77	9,251.50	0.00	0.00	0.00
19,800.00	90.00	179.77	10,820.00	-9,351.41	42.16	9,351.50	0.00	0.00	0.00
19,900.00	90.00	179.77	10,820.00	-9,451.41	42.56	9,451.50	0.00	0.00	0.00
20,000.00	90.00	179.77	10,820.00	-9,551.41	42.95	9,551.50	0.00	0.00	0.00
20,100.00	90.00	179.77	10,820.00	-9,651.41	43.35	9,651.50	0.00	0.00	0.00
20,200.00	90.00	179.77	10,820.00	-9,751.41	43.74	9,751.50	0.00	0.00	0.00
20,300.00	90.00	179.77	10,820.00	-9,851.41	44.14	9,851.50	0.00	0.00	0.00
20,400.00	90.00	179.77	10,820.00	-9,951.40	44.53	9,951.50	0.00	0.00	0.00
20,500.00	90.00	179.77	10,820.00	-10,051.40	44.93	10,051.50	0.00	0.00	0.00
20,600.00	90.00	179.77	10,820.00	-10,151.40	45.32	10,151.50	0.00	0.00	0.00
20,700.00	90.00	179.77	10,820.00	-10,251.40	45.72	10,251.50	0.00	0.00	0.00
20,800.00	90.00	179.77	10,820.00	-10,351.40	46.11	10,351.50	0.00	0.00	0.00
20,900.00	90.00	179.77	10,820.00	-10,451.40	46.51	10,451.50	0.00	0.00	0.00
21,000.00	90.00	179.77	10,820.00	-10,551.40	46.90	10,551.50	0.00	0.00	0.00
21,100.00	90.00	179.77	10,820.00	-10,651.40	47.30	10,651.50	0.00	0.00	0.00
21,200.00	90.00	179.77	10,820.00	-10,751.40	47.70	10,751.50	0.00	0.00	0.00
21,300.00	90.00	179.77	10,820.00	-10,851.40	48.09	10,851.50	0.00	0.00	0.00
21,400.00	90.00	179.77	10,820.00	-10,951.40	48.49	10,951.50	0.00	0.00	0.00
21,500.00	90.00	179.77	10,820.00	-11,051.40	48.88	11,051.50	0.00	0.00	0.00
21,600.00	90.00	179.77	10,820.00	-11,151.40	49.28	11,151.50	0.00	0.00	0.00
21,700.00	90.00	179.77	10,820.00	-11,251.39	49.67	11,251.50	0.00	0.00	0.00
21,702.01	90.00	179.77	10,820.00	-11,253.41	49.68	11,253.52	0.00	0.00	0.00
PLU 20 BD 154H LTP_330FSL_350FEL - PLU 20 BD 124H LTP_330FSL_350FEL									
21,702.10	90.00	179.77	10,820.00	-11,253.50	49.68	11,253.61	0.00	0.00	0.00
PLU 20 BD 903H LTP_330FSL_320FWL									
21,703.41	90.00	179.77	10,820.00	-11,254.80	49.69	11,254.91	0.00	0.00	0.00
PLU 20 BD 123H 1LTP_330FSL_650FWL									
21,704.80	90.00	179.77	10,820.00	-11,256.20	49.69	11,256.31	0.00	0.00	0.00
PLU 20 BD 163H LTP_330FSL_320FWL									
21,800.00	90.00	179.77	10,820.00	-11,351.39	50.07	11,351.50	0.00	0.00	0.00
21,832.01	90.00	179.77	10,820.00	-11,383.41	50.19	11,383.52	0.00	0.00	0.00
PLU 20 BD 124H PBHL_200FSL_350FEL - PLU 20 BD 154H PBHL_200FSL_350FEL									
21,833.41	90.00	179.77	10,820.00	-11,384.80	50.20	11,384.91	0.00	0.00	0.00
PLU 20 BD 123H 1PBHL_200FSL_650FWL - PLU 20 BD 163H PBHL_200FSL_320FWL - PLU 20 BD 903H PBHL_200FSL_320FWL									

Database:	PREDATOR_EDM	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Company:	XTO Energy	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Project:	Eddy County, NM (NAD27) NMEZ Grid	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site:	PLU 20 Brushy Draw	North Reference:	Grid
Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Wellbore:	123H Lateral		
Design:	Plan #2		

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
PLU 20 BD 123H 1SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	404,287.80	632,558.20	32.11077971	-103.90520511
PLU 20 BD 123H 1PBHl - plan hits target center - Rectangle (sides W100.00 H10,098.00 D0.00)	0.00	0.00	10,820.00	-11,384.80	50.20	392,903.00	632,608.40	32.07948264	-103.90518897
PLU 20 BD 123H 1LTP_ - plan misses target center by 0.41usft at 21703.41usft MD (10820.00 TVD, -11254.80 N, 49.69 E) - Point	0.00	0.00	10,820.00	-11,254.80	50.10	393,033.00	632,608.30	32.07984001	-103.90518763
PLU 20 BD 123H FTP1_ - plan misses target center by 0.23usft at 11733.63usft MD (10820.00 TVD, -1285.10 N, 10.27 E) - Point	0.00	0.00	10,820.00	-1,285.10	10.50	403,002.70	632,568.70	32.10724690	-103.90518769
PLU 20 BD 123H 1LP - plan hits target center - Point	0.00	0.00	10,820.00	-703.59	7.97	403,584.21	632,566.17	32.10884548	-103.90518840

Anticollision Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	123H Lateral	Database:	PREDATOR_EDM
Reference Design:	Plan #2	Offset TVD Reference	Offset Datum

Reference	Plan #2		
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 08/20/19

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	21,833.41	Plan #2 (123H 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 20 Brushy Draw						
PLU 20 BD 104H SHL(nodrill) - 154H Lateral - Plan #1	3,500.00	3,500.00	60.00	34.89	2.389	CC
PLU 20 BD 104H SHL(nodrill) - 154H Lateral - Plan #1	3,550.00	3,549.48	60.21	34.76	2.366	ES
PLU 20 BD 104H SHL(nodrill) - 154H Lateral - Plan #1	3,600.00	3,598.95	60.85	35.05	2.359	SF
PLU 20 BD 124H SHL - 124H Lateral - Plan #1	3,500.00	3,500.00	30.00	4.90	1.195	Level 2, CC
PLU 20 BD 124H SHL - 124H Lateral - Plan #1	3,550.00	3,549.85	30.11	4.68	1.184	Level 2, ES
PLU 20 BD 124H SHL - 124H Lateral - Plan #1	3,600.00	3,599.71	30.46	4.68	1.182	Level 2, SF
PLU 20 BD 163H SHL - 163H Lateral - 163H Lateral AsD	3,541.78	3,543.67	51.13	25.94	2.030	CC
PLU 20 BD 163H SHL - 163H Lateral - 163H Lateral AsD	3,550.00	3,551.70	51.14	25.90	2.026	ES
PLU 20 BD 163H SHL - 163H Lateral - 163H Lateral AsD	3,600.00	3,600.59	51.84	26.24	2.025	SF
PLU 20 BD 903H SHL(blm) - 903H Lateral - 903H Latera	950.00	949.96	27.42	20.52	3.975	CC
PLU 20 BD 903H SHL(blm) - 903H Lateral - 903H Latera	2,282.25	2,283.00	28.34	11.94	1.728	ES, SF

Offset Design PLU 20 Brushy Draw - PLU 20 BD 104H SHL(nodrill) - 154H Lateral - Plan #1

Offset Site Error: 0.00 usft

Survey Program: 0-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
2,100.00	2,100.00	2,100.00	2,100.00	8.21	7.29	89.33	0.70	60.00	60.00	44.94	15.06	3.983	
2,150.00	2,150.00	2,150.00	2,150.00	8.40	7.47	89.33	0.70	60.00	60.00	44.58	15.42	3.890	
2,200.00	2,200.00	2,200.00	2,200.00	8.58	7.65	89.33	0.70	60.00	60.00	44.22	15.78	3.802	
2,250.00	2,250.00	2,250.00	2,250.00	8.75	7.83	89.33	0.70	60.00	60.00	43.86	16.14	3.717	
2,300.00	2,300.00	2,300.00	2,300.00	8.94	8.01	89.33	0.70	60.00	60.00	43.50	16.50	3.636	
2,350.00	2,350.00	2,350.00	2,350.00	9.12	8.19	89.33	0.70	60.00	60.00	43.14	16.86	3.559	
2,400.00	2,400.00	2,400.00	2,400.00	9.30	8.37	89.33	0.70	60.00	60.00	42.79	17.22	3.485	
2,450.00	2,450.00	2,450.00	2,450.00	9.48	8.55	89.33	0.70	60.00	60.00	42.43	17.58	3.414	
2,500.00	2,500.00	2,500.00	2,500.00	9.66	8.73	89.33	0.70	60.00	60.00	42.07	17.94	3.345	
2,550.00	2,550.00	2,550.00	2,550.00	9.84	8.91	89.33	0.70	60.00	60.00	41.71	18.30	3.280	
2,600.00	2,600.00	2,600.00	2,600.00	10.02	9.09	89.33	0.70	60.00	60.00	41.35	18.65	3.217	
2,650.00	2,650.00	2,650.00	2,650.00	10.20	9.26	89.33	0.70	60.00	60.00	40.99	19.01	3.156	
2,700.00	2,700.00	2,700.00	2,700.00	10.38	9.44	89.33	0.70	60.00	60.00	40.63	19.37	3.097	
2,750.00	2,750.00	2,750.00	2,750.00	10.56	9.62	89.33	0.70	60.00	60.00	40.27	19.73	3.041	
2,800.00	2,800.00	2,800.00	2,800.00	10.74	9.80	89.33	0.70	60.00	60.00	39.91	20.09	2.987	
2,850.00	2,850.00	2,850.00	2,850.00	10.92	9.98	89.33	0.70	60.00	60.00	39.56	20.45	2.934	

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 104H SHL(nodrill) - 154H Lateral - Plan #1 — Offset Site Error: 0.00 usft

Survey Program 0-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
2,900.00	2,900.00	2,900.00	2,900.00	11.10	10.16	89.33	0.70	60.00	60.00	39.20	20.81	2.884	
2,950.00	2,950.00	2,950.00	2,950.00	11.29	10.34	89.33	0.70	60.00	60.00	38.84	21.17	2.835	
3,000.00	3,000.00	3,000.00	3,000.00	11.47	10.52	89.33	0.70	60.00	60.00	38.48	21.53	2.788	
3,050.00	3,050.00	3,050.00	3,050.00	11.65	10.70	89.33	0.70	60.00	60.00	38.12	21.88	2.742	
3,100.00	3,100.00	3,100.00	3,100.00	11.83	10.88	89.33	0.70	60.00	60.00	37.76	22.24	2.698	
3,150.00	3,150.00	3,150.00	3,150.00	12.01	11.06	89.33	0.70	60.00	60.00	37.40	22.60	2.655	
3,200.00	3,200.00	3,200.00	3,200.00	12.19	11.24	89.33	0.70	60.00	60.00	37.04	22.96	2.613	
3,250.00	3,250.00	3,250.00	3,250.00	12.37	11.42	89.33	0.70	60.00	60.00	36.68	23.32	2.573	
3,300.00	3,300.00	3,300.00	3,300.00	12.55	11.59	89.33	0.70	60.00	60.00	36.33	23.68	2.534	
3,350.00	3,350.00	3,350.00	3,350.00	12.73	11.77	89.33	0.70	60.00	60.00	35.97	24.04	2.496	
3,400.00	3,400.00	3,400.00	3,400.00	12.91	11.95	89.33	0.70	60.00	60.00	35.61	24.40	2.460	
3,450.00	3,450.00	3,450.00	3,450.00	13.09	12.13	89.33	0.70	60.00	60.00	35.25	24.75	2.424	
3,500.00	3,500.00	3,500.00	3,500.00	13.27	12.31	89.33	0.70	60.00	60.00	34.89	25.11	2.389 CC	
3,550.00	3,550.00	3,549.48	3,549.48	13.42	12.48	-88.37	0.70	60.21	60.21	34.76	25.45	2.366 ES	
3,600.00	3,600.00	3,598.95	3,598.94	13.58	12.66	-88.96	0.70	60.85	60.85	35.05	25.79	2.359 SF	
3,650.00	3,649.98	3,648.40	3,648.38	13.75	12.83	-89.93	0.70	61.92	61.91	35.78	26.13	2.369	
3,700.00	3,699.96	3,697.81	3,697.77	13.91	13.00	-91.22	0.70	63.41	63.44	36.96	26.48	2.396	
3,750.00	3,749.92	3,747.19	3,747.11	14.07	13.16	-92.79	0.70	65.33	65.44	38.62	26.82	2.440	
3,800.00	3,799.86	3,796.51	3,796.38	14.24	13.33	-94.57	0.70	67.67	67.96	40.79	27.17	2.501	
3,850.00	3,849.78	3,845.77	3,845.56	14.40	13.50	-96.52	0.70	70.43	71.01	43.49	27.52	2.580	
3,900.00	3,899.68	3,894.95	3,894.64	14.57	13.67	-98.55	0.70	73.61	74.62	46.76	27.87	2.678	
3,950.00	3,949.54	3,944.05	3,943.60	14.73	13.84	-100.63	0.70	77.20	78.82	50.61	28.21	2.794	
4,000.00	3,999.36	3,993.05	3,992.44	14.90	14.01	-102.70	0.70	81.20	83.63	55.07	28.56	2.928	
4,050.00	4,049.18	4,042.59	4,041.79	15.06	14.18	-104.69	0.70	85.51	88.85	59.93	28.92	3.072	
4,100.00	4,098.99	4,092.23	4,091.24	15.23	14.35	-106.46	0.70	89.84	94.16	64.88	29.28	3.216	
4,150.00	4,148.79	4,141.86	4,140.69	15.40	14.53	-108.04	0.70	94.17	99.56	69.92	29.64	3.359	
4,200.00	4,198.60	4,191.50	4,190.14	15.56	14.70	-109.45	0.70	98.49	105.02	75.03	30.00	3.501	
4,250.00	4,248.41	4,241.14	4,239.59	15.73	14.87	-110.73	0.70	102.82	110.55	80.19	30.36	3.642	
4,300.00	4,298.22	4,290.77	4,289.03	15.90	15.04	-111.88	0.70	107.15	116.12	85.41	30.71	3.781	
4,350.00	4,348.03	4,340.41	4,338.48	16.06	15.22	-112.93	0.70	111.47	121.73	90.67	31.06	3.919	
8,000.00	7,994.93	8,000.00	7,994.93	28.70	28.10	54.64	0.70	190.76	226.93	170.17	56.75	3.999	
8,050.00	8,044.93	8,050.00	8,044.93	28.88	28.27	54.64	0.70	190.76	226.93	169.82	57.10	3.974	
8,100.00	8,094.93	8,100.00	8,094.93	29.05	28.45	54.64	0.70	190.76	226.93	169.47	57.46	3.949	
8,150.00	8,144.93	8,150.00	8,144.93	29.23	28.63	54.64	0.70	190.76	226.93	169.12	57.81	3.925	
8,200.00	8,194.93	8,200.00	8,194.93	29.40	28.81	54.64	0.70	190.76	226.93	168.76	58.16	3.901	
8,250.00	8,244.93	8,250.00	8,244.93	29.58	28.98	54.64	0.70	190.76	226.93	168.41	58.52	3.878	
8,300.00	8,294.93	8,300.00	8,294.93	29.75	29.16	54.64	0.70	190.76	226.93	168.06	58.87	3.855	
8,350.00	8,344.93	8,350.00	8,344.93	29.93	29.34	54.64	0.70	190.76	226.93	167.70	59.22	3.832	
8,400.00	8,394.93	8,400.00	8,394.93	30.11	29.52	54.64	0.70	190.76	226.93	167.35	59.58	3.809	
8,450.00	8,444.93	8,450.00	8,444.93	30.28	29.69	54.64	0.70	190.76	226.93	166.99	59.93	3.786	
8,500.00	8,494.93	8,500.00	8,494.93	30.46	29.87	54.64	0.70	190.76	226.93	166.64	60.29	3.764	
8,550.00	8,544.93	8,550.00	8,544.93	30.64	30.05	54.64	0.70	190.76	226.93	166.29	60.64	3.742	
8,600.00	8,594.93	8,600.00	8,594.93	30.81	30.23	54.64	0.70	190.76	226.93	165.93	60.99	3.721	
8,650.00	8,644.93	8,650.00	8,644.93	30.99	30.40	54.64	0.70	190.76	226.93	165.58	61.35	3.699	
8,700.00	8,694.93	8,700.00	8,694.93	31.16	30.58	54.64	0.70	190.76	226.93	165.23	61.70	3.678	
8,750.00	8,744.93	8,750.00	8,744.93	31.34	30.76	54.64	0.70	190.76	226.93	164.87	62.06	3.657	
8,800.00	8,794.93	8,800.00	8,794.93	31.52	30.94	54.64	0.70	190.76	226.93	164.52	62.41	3.636	
8,850.00	8,844.93	8,850.00	8,844.93	31.69	31.11	54.64	0.70	190.76	226.93	164.16	62.76	3.616	
8,900.00	8,894.93	8,900.00	8,894.93	31.87	31.29	54.64	0.70	190.76	226.93	163.81	63.12	3.595	
8,950.00	8,944.93	8,950.00	8,944.93	32.05	31.47	54.64	0.70	190.76	226.93	163.46	63.47	3.575	
9,000.00	8,994.93	9,000.00	8,994.93	32.22	31.65	54.64	0.70	190.76	226.93	163.10	63.83	3.555	

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 104H SHL(nodrill) - 154H Lateral - Plan #1 — Offset Site Error: 0.00 usft

Survey Program: 0-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
9,050.00	9,044.93	9,050.00	9,044.93	32.40	31.82	54.64	0.70	190.76	226.93	162.75	64.18	3.536	
9,100.00	9,094.93	9,100.00	9,094.93	32.58	32.00	54.64	0.70	190.76	226.93	162.39	64.53	3.516	
9,150.00	9,144.93	9,150.00	9,144.93	32.75	32.18	54.64	0.70	190.76	226.93	162.04	64.89	3.497	
9,200.00	9,194.93	9,200.00	9,194.93	32.93	32.36	54.64	0.70	190.76	226.93	161.68	65.24	3.478	
9,250.00	9,244.93	9,250.00	9,244.93	33.11	32.54	54.64	0.70	190.76	226.93	161.33	65.60	3.459	
9,300.00	9,294.93	9,300.00	9,294.93	33.28	32.71	54.64	0.70	190.76	226.93	160.97	65.95	3.441	
9,350.00	9,344.93	9,350.00	9,344.93	33.46	32.89	54.64	0.70	190.76	226.93	160.62	66.31	3.422	
9,400.00	9,394.93	9,400.00	9,394.93	33.64	33.07	54.64	0.70	190.76	226.93	160.27	66.66	3.404	
9,450.00	9,444.93	9,450.00	9,444.93	33.81	33.25	54.64	0.70	190.76	226.93	159.91	67.02	3.386	
9,500.00	9,494.93	9,500.00	9,494.93	33.99	33.42	54.64	0.70	190.76	226.93	159.56	67.37	3.368	
9,550.00	9,544.93	9,550.00	9,544.93	34.17	33.60	54.64	0.70	190.76	226.93	159.20	67.72	3.351	
9,600.00	9,594.93	9,600.00	9,594.93	34.34	33.78	54.64	0.70	190.76	226.93	158.85	68.08	3.333	
9,650.00	9,644.93	9,650.00	9,644.93	34.52	33.96	54.64	0.70	190.76	226.93	158.49	68.43	3.316	
9,700.00	9,694.93	9,700.00	9,694.93	34.70	34.14	54.64	0.70	190.76	226.93	158.14	68.79	3.299	
9,750.00	9,744.93	9,750.00	9,744.93	34.87	34.31	54.64	0.70	190.76	226.93	157.78	69.14	3.282	
9,800.00	9,794.93	9,800.00	9,794.93	35.05	34.49	54.64	0.70	190.76	226.93	157.43	69.50	3.265	
9,850.00	9,844.93	9,850.00	9,844.93	35.23	34.67	54.64	0.70	190.76	226.93	157.07	69.85	3.249	
9,900.00	9,894.93	9,900.00	9,894.93	35.40	34.85	54.64	0.70	190.76	226.93	156.72	70.21	3.232	
9,950.00	9,944.93	9,950.00	9,944.93	35.58	35.03	54.64	0.70	190.76	226.93	156.36	70.56	3.216	
10,000.00	9,994.93	10,000.00	9,994.93	35.76	35.20	54.64	0.70	190.76	226.93	156.01	70.92	3.200	
10,050.00	10,044.93	10,050.00	10,044.93	35.94	35.38	54.64	0.70	190.76	226.93	155.65	71.27	3.184	
10,100.00	10,094.93	10,100.00	10,094.93	36.11	35.56	54.64	0.70	190.76	226.93	155.30	71.63	3.168	
10,150.00	10,144.93	10,150.00	10,144.93	36.29	35.74	54.64	0.70	190.76	226.93	154.94	71.98	3.152	
10,200.00	10,194.93	10,200.00	10,194.93	36.47	35.92	54.64	0.70	190.76	226.93	154.59	72.34	3.137	
10,250.00	10,244.93	10,250.00	10,244.93	36.64	36.09	54.64	0.70	190.76	226.93	154.24	72.69	3.122	
10,300.00	10,294.87	10,299.94	10,294.87	36.83	36.27	-125.45	0.70	190.76	228.08	155.03	73.06	3.122	
10,350.00	10,344.45	10,349.52	10,344.45	37.07	36.45	-126.42	0.70	190.76	231.83	158.37	73.46	3.156	
10,400.00	10,393.29	10,398.36	10,393.29	37.31	36.62	-127.93	0.70	190.76	238.36	164.49	73.87	3.227	
10,450.00	10,441.02	10,446.09	10,441.02	37.55	36.79	-129.82	0.70	190.76	247.95	173.67	74.28	3.338	
10,500.00	10,487.27	10,492.34	10,487.27	37.78	36.96	-131.90	0.70	190.76	260.91	186.23	74.68	3.494	
10,550.00	10,531.69	10,536.76	10,531.69	38.00	37.11	-133.97	0.70	190.76	277.49	202.42	75.07	3.696	
10,600.00	10,573.94	10,579.02	10,573.94	38.20	37.27	-135.88	0.70	190.76	297.88	222.44	75.44	3.949	

Anticollision Report

Company:	XTO Energy	**Local Co-ordinate Reference:**	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 124H SHL - 124H Lateral - Plan #1 — Offset Site Error: 0.00 usft

Survey Program: 0-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
1,050.00	1,050.00	1,050.00	1,050.00	4.38	3.53	89.43	0.30	30.00	30.00	22.50	7.50	4.000	
1,100.00	1,100.00	1,100.00	1,100.00	4.56	3.71	89.43	0.30	30.00	30.00	22.14	7.86	3.816	
1,150.00	1,150.00	1,150.00	1,150.00	4.75	3.89	89.43	0.30	30.00	30.00	21.78	8.22	3.649	
1,200.00	1,200.00	1,200.00	1,200.00	4.93	4.07	89.43	0.30	30.00	30.00	21.42	8.58	3.495	
1,250.00	1,250.00	1,250.00	1,250.00	5.12	4.25	89.43	0.30	30.00	30.00	21.06	8.94	3.355	
1,300.00	1,300.00	1,300.00	1,300.00	5.30	4.43	89.43	0.30	30.00	30.00	20.70	9.30	3.225	
1,350.00	1,350.00	1,350.00	1,350.00	5.48	4.60	89.43	0.30	30.00	30.00	20.34	9.66	3.105	
1,400.00	1,400.00	1,400.00	1,400.00	5.67	4.78	89.43	0.30	30.00	30.00	19.98	10.02	2.993	
1,450.00	1,450.00	1,450.00	1,450.00	5.85	4.96	89.43	0.30	30.00	30.00	19.62	10.38	2.889	
1,500.00	1,500.00	1,500.00	1,500.00	6.03	5.14	89.43	0.30	30.00	30.00	19.26	10.74	2.793	
1,550.00	1,550.00	1,550.00	1,550.00	6.22	5.32	89.43	0.30	30.00	30.00	18.90	11.10	2.702	
1,600.00	1,600.00	1,600.00	1,600.00	6.40	5.50	89.43	0.30	30.00	30.00	18.54	11.46	2.617	
1,650.00	1,650.00	1,650.00	1,650.00	6.58	5.68	89.43	0.30	30.00	30.00	18.18	11.82	2.538	
1,700.00	1,700.00	1,700.00	1,700.00	6.76	5.86	89.43	0.30	30.00	30.00	17.82	12.18	2.463	
1,750.00	1,750.00	1,750.00	1,750.00	6.94	6.04	89.43	0.30	30.00	30.00	17.46	12.54	2.392	
1,800.00	1,800.00	1,800.00	1,800.00	7.13	6.22	89.43	0.30	30.00	30.00	17.10	12.90	2.326	
1,850.00	1,850.00	1,850.00	1,850.00	7.31	6.40	89.43	0.30	30.00	30.00	16.74	13.26	2.263	
1,900.00	1,900.00	1,900.00	1,900.00	7.49	6.58	89.43	0.30	30.00	30.00	16.38	13.62	2.203	
1,950.00	1,950.00	1,950.00	1,950.00	7.67	6.76	89.43	0.30	30.00	30.00	16.02	13.98	2.145	
2,000.00	2,000.00	2,000.00	2,000.00	7.85	6.93	89.43	0.30	30.00	30.00	15.66	14.34	2.093	
2,050.00	2,050.00	2,050.00	2,050.00	8.03	7.11	89.43	0.30	30.00	30.00	15.30	14.70	2.041	
2,100.00	2,100.00	2,100.00	2,100.00	8.21	7.29	89.43	0.30	30.00	30.00	14.95	15.06	1.993	
2,150.00	2,150.00	2,150.00	2,150.00	8.40	7.47	89.43	0.30	30.00	30.00	14.59	15.41	1.946	
2,200.00	2,200.00	2,200.00	2,200.00	8.58	7.65	89.43	0.30	30.00	30.00	14.23	15.77	1.902	
2,250.00	2,250.00	2,250.00	2,250.00	8.76	7.83	89.43	0.30	30.00	30.00	13.87	16.13	1.860	
2,300.00	2,300.00	2,300.00	2,300.00	8.94	8.01	89.43	0.30	30.00	30.00	13.51	16.49	1.819	
2,350.00	2,350.00	2,350.00	2,350.00	9.12	8.19	89.43	0.30	30.00	30.00	13.15	16.85	1.780	
2,400.00	2,400.00	2,400.00	2,400.00	9.30	8.37	89.43	0.30	30.00	30.00	12.79	17.21	1.743	
2,450.00	2,450.00	2,450.00	2,450.00	9.48	8.55	89.43	0.30	30.00	30.00	12.43	17.57	1.708	
2,500.00	2,500.00	2,500.00	2,500.00	9.66	8.73	89.43	0.30	30.00	30.00	12.07	17.93	1.673	
2,550.00	2,550.00	2,550.00	2,550.00	9.84	8.91	89.43	0.30	30.00	30.00	11.71	18.29	1.641	
2,600.00	2,600.00	2,600.00	2,600.00	10.02	9.09	89.43	0.30	30.00	30.00	11.36	18.65	1.609	
2,650.00	2,650.00	2,650.00	2,650.00	10.20	9.26	89.43	0.30	30.00	30.00	11.00	19.00	1.579	
2,700.00	2,700.00	2,700.00	2,700.00	10.38	9.44	89.43	0.30	30.00	30.00	10.64	19.36	1.549	
2,750.00	2,750.00	2,750.00	2,750.00	10.56	9.62	89.43	0.30	30.00	30.00	10.28	19.72	1.521	
2,800.00	2,800.00	2,800.00	2,800.00	10.74	9.80	89.43	0.30	30.00	30.00	9.92	20.08	1.494	Level 3
2,850.00	2,850.00	2,850.00	2,850.00	10.92	9.98	89.43	0.30	30.00	30.00	9.56	20.44	1.468	Level 3
2,900.00	2,900.00	2,900.00	2,900.00	11.10	10.16	89.43	0.30	30.00	30.00	9.20	20.80	1.442	Level 3
2,950.00	2,950.00	2,950.00	2,950.00	11.29	10.34	89.43	0.30	30.00	30.00	8.84	21.16	1.418	Level 3
3,000.00	3,000.00	3,000.00	3,000.00	11.47	10.52	89.43	0.30	30.00	30.00	8.49	21.52	1.394	Level 3
3,050.00	3,050.00	3,050.00	3,050.00	11.65	10.70	89.43	0.30	30.00	30.00	8.13	21.88	1.371	Level 3
3,100.00	3,100.00	3,100.00	3,100.00	11.83	10.88	89.43	0.30	30.00	30.00	7.77	22.23	1.349	Level 3
3,150.00	3,150.00	3,150.00	3,150.00	12.01	11.06	89.43	0.30	30.00	30.00	7.41	22.59	1.328	Level 3
3,200.00	3,200.00	3,200.00	3,200.00	12.19	11.24	89.43	0.30	30.00	30.00	7.05	22.95	1.307	Level 3
3,250.00	3,250.00	3,250.00	3,250.00	12.37	11.42	89.43	0.30	30.00	30.00	6.69	23.31	1.287	Level 3
3,300.00	3,300.00	3,300.00	3,300.00	12.55	11.59	89.43	0.30	30.00	30.00	6.33	23.67	1.268	Level 3
3,350.00	3,350.00	3,350.00	3,350.00	12.73	11.77	89.43	0.30	30.00	30.00	5.97	24.03	1.249	Level 2
3,400.00	3,400.00	3,400.00	3,400.00	12.91	11.95	89.43	0.30	30.00	30.00	5.62	24.39	1.230	Level 2
3,450.00	3,450.00	3,450.00	3,450.00	13.09	12.13	89.43	0.30	30.00	30.00	5.26	24.75	1.212	Level 2
3,500.00	3,500.00	3,500.00	3,500.00	13.27	12.31	89.43	0.30	30.00	30.00	4.90	25.10	1.195	Level 2, CC
3,550.00	3,550.00	3,549.85	3,549.85	13.42	12.48	-88.14	0.12	30.12	30.11	4.68	25.44	1.184	Level 2, ES

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 124H SHL - 124H Lateral - Plan #1 — Offset Site Error: 0.00 usft

Survey Program: 0-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
3,600.00	3,600.00	3,599.71	3,599.70	13.58	12.65	-88.35	-0.42	30.49	30.46	4.68	25.77	1.182	Level 2, SF
3,650.00	3,649.98	3,649.56	3,649.54	13.75	12.82	-88.68	-1.31	31.10	31.02	4.92	26.10	1.189	Level 2
3,700.00	3,699.96	3,699.40	3,699.36	13.91	12.98	-89.12	-2.57	31.96	31.82	5.40	26.43	1.204	Level 2
3,750.00	3,749.92	3,749.24	3,749.16	14.07	13.14	-89.66	-4.18	33.05	32.85	6.10	26.75	1.228	Level 2
3,800.00	3,799.86	3,799.07	3,798.93	14.24	13.31	-90.27	-6.15	34.40	34.11	7.03	27.08	1.259	Level 3
3,850.00	3,849.78	3,848.89	3,848.67	14.40	13.47	-90.94	-8.47	35.98	35.60	8.19	27.42	1.299	Level 3
3,900.00	3,899.68	3,898.70	3,898.37	14.57	13.63	-91.64	-11.15	37.81	37.33	9.58	27.75	1.345	Level 3
3,950.00	3,949.54	3,948.49	3,948.03	14.73	13.80	-92.36	-14.19	39.89	39.30	11.21	28.08	1.399	Level 3
4,000.00	3,999.36	3,998.27	3,997.64	14.90	13.96	-93.09	-17.59	42.20	41.50	13.08	28.42	1.460	Level 3
4,050.00	4,049.16	4,048.21	4,047.39	15.06	14.13	-93.78	-21.16	44.65	43.83	15.06	28.77	1.524	
4,100.00	4,098.99	4,098.15	4,097.14	15.23	14.30	-94.40	-24.78	47.11	46.17	17.06	29.11	1.586	
4,150.00	4,148.79	4,148.09	4,146.89	15.40	14.46	-94.96	-28.37	49.56	48.51	19.06	29.45	1.647	
4,200.00	4,198.60	4,198.03	4,196.65	15.56	14.63	-95.46	-31.97	52.01	50.86	21.06	29.80	1.707	
4,250.00	4,248.41	4,247.98	4,246.40	15.73	14.80	-95.93	-35.57	54.47	53.21	23.07	30.14	1.765	
4,300.00	4,298.22	4,297.92	4,296.15	15.90	14.96	-96.35	-39.16	56.92	55.56	25.08	30.48	1.823	
4,350.00	4,348.03	4,347.86	4,345.91	16.06	15.13	-96.74	-42.76	59.37	57.91	27.09	30.82	1.879	
4,400.00	4,397.84	4,397.81	4,395.66	16.23	15.30	-97.10	-46.35	61.82	60.27	29.11	31.16	1.934	
4,450.00	4,447.65	4,447.75	4,445.41	16.40	15.47	-97.43	-49.95	64.28	62.63	31.13	31.51	1.988	
4,500.00	4,497.46	4,497.69	4,495.16	16.57	15.64	-97.74	-53.54	66.73	65.00	33.15	31.85	2.041	
4,550.00	4,547.27	4,547.64	4,544.92	16.74	15.81	-98.02	-57.14	69.18	67.36	35.17	32.19	2.092	
4,600.00	4,597.08	4,597.58	4,594.67	16.91	15.98	-98.29	-60.74	71.64	69.72	37.19	32.53	2.143	
4,650.00	4,646.89	4,647.52	4,644.42	17.08	16.14	-98.54	-64.33	74.09	72.09	39.22	32.88	2.193	
4,700.00	4,696.70	4,697.46	4,694.18	17.25	16.31	-98.77	-67.93	76.54	74.46	41.24	33.22	2.241	
4,750.00	4,746.51	4,747.41	4,743.93	17.42	16.48	-98.99	-71.52	79.00	76.83	43.27	33.56	2.289	
4,800.00	4,796.32	4,797.35	4,793.68	17.59	16.56	-99.20	-75.12	81.45	79.20	45.29	33.91	2.336	
4,850.00	4,846.13	4,847.29	4,843.44	17.76	16.83	-99.39	-78.72	83.90	81.57	47.32	34.25	2.382	
4,900.00	4,895.94	4,897.24	4,893.19	17.93	17.00	-99.58	-82.31	86.35	83.94	49.35	34.59	2.427	
4,950.00	4,945.75	4,947.18	4,942.94	18.10	17.17	-99.75	-85.91	88.81	86.32	51.38	34.94	2.471	
5,000.00	4,995.56	4,997.12	4,992.69	18.27	17.34	-99.91	-89.50	91.26	88.69	53.41	35.28	2.514	
5,050.00	5,045.39	5,047.35	5,042.74	18.44	17.51	-100.07	-92.96	93.62	90.96	55.32	35.63	2.553	
5,100.00	5,095.25	5,097.60	5,092.86	18.61	17.68	-100.20	-96.05	95.73	92.98	57.00	35.98	2.584	
5,150.00	5,145.14	5,147.87	5,143.02	18.78	17.86	-100.32	-98.79	97.59	94.77	58.44	36.33	2.609	
5,200.00	5,195.06	5,198.15	5,193.22	18.95	18.03	-100.41	-101.15	99.21	96.33	59.65	36.68	2.626	
5,250.00	5,245.01	5,248.44	5,243.45	19.13	18.20	-100.49	-103.16	100.58	97.64	60.61	37.03	2.637	
5,300.00	5,294.97	5,298.74	5,293.71	19.30	18.38	-100.55	-104.80	101.70	98.72	61.34	37.37	2.641	
5,350.00	5,344.94	5,349.05	5,344.00	19.47	18.55	-100.60	-106.08	102.57	99.55	61.83	37.72	2.639	
5,400.00	5,394.93	5,399.37	5,394.30	19.64	18.72	-100.64	-106.99	103.19	100.15	62.08	38.07	2.631	
5,450.00	5,444.93	5,449.68	5,444.61	19.81	18.90	-100.66	-107.54	103.56	100.51	62.09	38.41	2.616	
5,500.00	5,494.92	5,500.00	5,494.92	19.99	19.07	76.84	-107.72	103.69	100.63	61.87	38.76	2.596	
5,550.00	5,544.93	5,550.00	5,544.93	20.16	19.24	76.84	-107.72	103.69	100.63	61.52	39.10	2.573	
5,600.00	5,594.93	5,600.00	5,594.93	20.33	19.41	76.84	-107.72	103.69	100.63	61.18	39.45	2.551	
5,650.00	5,644.93	5,650.00	5,644.93	20.50	19.59	76.84	-107.72	103.69	100.63	60.83	39.79	2.529	
5,700.00	5,694.93	5,700.00	5,694.93	20.68	19.76	76.84	-107.72	103.69	100.63	60.49	40.14	2.507	
5,750.00	5,744.93	5,750.00	5,744.93	20.85	19.93	76.84	-107.72	103.69	100.63	60.14	40.48	2.486	
5,800.00	5,794.93	5,800.00	5,794.93	21.02	20.10	76.84	-107.72	103.69	100.63	59.80	40.83	2.465	
5,850.00	5,844.93	5,850.00	5,844.93	21.19	20.28	76.84	-107.72	103.69	100.63	59.45	41.17	2.444	
5,900.00	5,894.93	5,900.00	5,894.93	21.37	20.45	76.84	-107.72	103.69	100.63	59.11	41.52	2.424	
5,950.00	5,944.93	5,950.00	5,944.93	21.54	20.62	76.84	-107.72	103.69	100.63	58.75	41.87	2.404	
6,000.00	5,994.93	6,000.00	5,994.93	21.71	20.80	76.84	-107.72	103.69	100.63	58.42	42.21	2.384	
6,050.00	6,044.93	6,050.00	6,044.93	21.89	20.97	76.84	-107.72	103.69	100.63	58.07	42.56	2.364	
6,100.00	6,094.93	6,100.00	6,094.93	22.06	21.14	76.84	-107.72	103.69	100.63	57.72	42.91	2.345	

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 124H SHL - 124H Lateral - Plan #1 — Offset Site Error: 0.00 usft

Survey Program: 0-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
6,150.00	6,144.93	6,150.00	6,144.93	22.23	21.32	76.84	-107.72	103.69	100.63	57.37	43.25	2.327	
6,200.00	6,194.93	6,200.00	6,194.93	22.41	21.49	76.84	-107.72	103.69	100.63	57.03	43.60	2.308	
6,250.00	6,244.93	6,250.00	6,244.93	22.58	21.66	76.84	-107.72	103.69	100.63	56.68	43.95	2.290	
6,300.00	6,294.93	6,300.00	6,294.93	22.75	21.84	76.84	-107.72	103.69	100.63	56.33	44.29	2.272	
6,350.00	6,344.93	6,350.00	6,344.93	22.93	22.01	76.84	-107.72	103.69	100.63	55.99	44.64	2.254	
6,400.00	6,394.93	6,400.00	6,394.93	23.10	22.18	76.84	-107.72	103.69	100.63	55.64	44.99	2.237	
6,450.00	6,444.93	6,450.00	6,444.93	23.27	22.36	76.84	-107.72	103.69	100.63	55.29	45.34	2.220	
6,500.00	6,494.93	6,500.00	6,494.93	23.45	22.53	76.84	-107.72	103.69	100.63	54.94	45.69	2.203	
6,550.00	6,544.93	6,550.00	6,544.93	23.62	22.71	76.84	-107.72	103.69	100.63	54.59	46.03	2.186	
6,600.00	6,594.93	6,600.00	6,594.93	23.80	22.88	76.84	-107.72	103.69	100.63	54.24	46.38	2.170	
6,650.00	6,644.93	6,650.00	6,644.93	23.97	23.05	76.84	-107.72	103.69	100.63	53.90	46.73	2.153	
6,700.00	6,694.93	6,700.00	6,694.93	24.15	23.23	76.84	-107.72	103.69	100.63	53.55	47.08	2.137	
6,750.00	6,744.93	6,750.00	6,744.93	24.32	23.40	76.84	-107.72	103.69	100.63	53.20	47.43	2.122	
6,800.00	6,794.93	6,800.00	6,794.93	24.49	23.58	76.84	-107.72	103.69	100.63	52.85	47.78	2.106	
6,850.00	6,844.93	6,850.00	6,844.93	24.67	23.75	76.84	-107.72	103.69	100.63	52.50	48.13	2.091	
6,900.00	6,894.93	6,900.00	6,894.93	24.84	23.93	76.84	-107.72	103.69	100.63	52.15	48.48	2.076	
6,950.00	6,944.93	6,950.00	6,944.93	25.02	24.10	76.84	-107.72	103.69	100.63	51.80	48.83	2.061	
7,000.00	6,994.93	7,000.00	6,994.93	25.19	24.28	76.84	-107.72	103.69	100.63	51.45	49.18	2.046	
7,050.00	7,044.93	7,050.00	7,044.93	25.37	24.45	76.84	-107.72	103.69	100.63	51.10	49.52	2.032	
7,100.00	7,094.93	7,100.00	7,094.93	25.54	24.63	76.84	-107.72	103.69	100.63	50.75	49.87	2.018	
7,150.00	7,144.93	7,150.00	7,144.93	25.72	24.80	76.84	-107.72	103.69	100.63	50.40	50.22	2.004	
7,200.00	7,194.93	7,200.00	7,194.93	25.89	24.98	76.84	-107.72	103.69	100.63	50.05	50.57	1.990	
7,250.00	7,244.93	7,250.00	7,244.93	26.07	25.15	76.84	-107.72	103.69	100.63	49.70	50.92	1.976	
7,300.00	7,294.93	7,300.00	7,294.93	26.24	25.33	76.84	-107.72	103.69	100.63	49.35	51.28	1.962	
7,350.00	7,344.93	7,350.00	7,344.93	26.42	25.50	76.84	-107.72	103.69	100.63	49.00	51.63	1.949	
7,400.00	7,394.93	7,400.00	7,394.93	26.59	25.68	76.84	-107.72	103.69	100.63	48.65	51.98	1.936	
7,450.00	7,444.93	7,450.00	7,444.93	26.77	25.85	76.84	-107.72	103.69	100.63	48.30	52.33	1.923	
7,500.00	7,494.93	7,500.00	7,494.93	26.94	26.03	76.84	-107.72	103.69	100.63	47.95	52.68	1.910	
7,550.00	7,544.93	7,550.00	7,544.93	27.12	26.20	76.84	-107.72	103.69	100.63	47.60	53.03	1.898	
7,600.00	7,594.93	7,600.00	7,594.93	27.29	26.38	76.84	-107.72	103.69	100.63	47.25	53.38	1.885	
7,650.00	7,644.93	7,650.00	7,644.93	27.47	26.56	76.84	-107.72	103.69	100.63	46.90	53.73	1.873	
7,700.00	7,694.93	7,700.00	7,694.93	27.65	26.73	76.84	-107.72	103.69	100.63	46.55	54.08	1.861	
7,750.00	7,744.93	7,750.00	7,744.93	27.82	26.91	76.84	-107.72	103.69	100.63	46.19	54.43	1.849	
7,800.00	7,794.93	7,800.00	7,794.93	28.00	27.08	76.84	-107.72	103.69	100.63	45.84	54.78	1.837	
7,850.00	7,844.93	7,850.00	7,844.93	28.17	27.26	76.84	-107.72	103.69	100.63	45.49	55.14	1.825	
7,900.00	7,894.93	7,900.00	7,894.93	28.35	27.43	76.84	-107.72	103.69	100.63	45.14	55.49	1.814	
7,950.00	7,944.93	7,950.00	7,944.93	28.52	27.61	76.84	-107.72	103.69	100.63	44.79	55.84	1.802	
8,000.00	7,994.93	8,000.00	7,994.93	28.70	27.79	76.84	-107.72	103.69	100.63	44.44	56.19	1.791	
8,050.00	8,044.93	8,050.00	8,044.93	28.88	27.96	76.84	-107.72	103.69	100.63	44.09	56.54	1.780	
8,100.00	8,094.93	8,100.00	8,094.93	29.05	28.14	76.84	-107.72	103.69	100.63	43.73	56.89	1.769	
8,150.00	8,144.93	8,150.00	8,144.93	29.23	28.31	76.84	-107.72	103.69	100.63	43.38	57.25	1.758	
8,200.00	8,194.93	8,200.00	8,194.93	29.40	28.49	76.84	-107.72	103.69	100.63	43.03	57.60	1.747	
8,250.00	8,244.93	8,250.00	8,244.93	29.58	28.67	76.84	-107.72	103.69	100.63	42.68	57.95	1.736	
8,300.00	8,294.93	8,300.00	8,294.93	29.75	28.84	76.84	-107.72	103.69	100.63	42.33	58.30	1.726	
8,350.00	8,344.93	8,350.00	8,344.93	29.93	29.02	76.84	-107.72	103.69	100.63	41.97	58.65	1.716	
8,400.00	8,394.93	8,400.00	8,394.93	30.11	29.19	76.84	-107.72	103.69	100.63	41.62	59.01	1.705	
8,450.00	8,444.93	8,450.00	8,444.93	30.28	29.37	76.84	-107.72	103.69	100.63	41.27	59.36	1.695	
8,500.00	8,494.93	8,500.00	8,494.93	30.46	29.55	76.84	-107.72	103.69	100.63	40.92	59.71	1.685	
8,550.00	8,544.93	8,550.00	8,544.93	30.64	29.72	76.84	-107.72	103.69	100.63	40.56	60.06	1.675	
8,600.00	8,594.93	8,600.00	8,594.93	30.81	29.90	76.84	-107.72	103.69	100.63	40.21	60.42	1.666	
8,650.00	8,644.93	8,650.00	8,644.93	30.99	30.08	76.84	-107.72	103.69	100.63	39.86	60.77	1.656	

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

Company:	XTO Energy	Local Co-ordinate Reference:	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	MD Reference:	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	123H Lateral	Database:	PREDATOR_EDM
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 124H SHL - 124H Lateral - Plan #1 — Offset Site Error: 0.00 usft

Survey Program: 0-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
8,700.00	8,694.93	8,700.00	8,694.93	31.16	30.25	76.84	-107.72	103.69	100.63	39.51	61.12	1.646	
8,750.00	8,744.93	8,750.00	8,744.93	31.34	30.43	76.84	-107.72	103.69	100.63	39.15	61.47	1.637	
8,800.00	8,794.93	8,800.00	8,794.93	31.52	30.61	76.84	-107.72	103.69	100.63	38.80	61.83	1.628	
8,850.00	8,844.93	8,850.00	8,844.93	31.69	30.78	76.84	-107.72	103.69	100.63	38.45	62.18	1.618	
8,900.00	8,894.93	8,900.00	8,894.93	31.87	30.96	76.84	-107.72	103.69	100.63	38.09	62.53	1.609	
8,950.00	8,944.93	8,950.00	8,944.93	32.05	31.14	76.84	-107.72	103.69	100.63	37.74	62.89	1.600	
9,000.00	8,994.93	9,000.00	8,994.93	32.22	31.31	76.84	-107.72	103.69	100.63	37.39	63.24	1.591	
9,050.00	9,044.93	9,050.00	9,044.93	32.40	31.49	76.84	-107.72	103.69	100.63	37.03	63.59	1.582	
9,100.00	9,094.93	9,100.00	9,094.93	32.58	31.67	76.84	-107.72	103.69	100.63	36.68	63.95	1.574	
9,150.00	9,144.93	9,150.00	9,144.93	32.75	31.84	76.84	-107.72	103.69	100.63	36.33	64.30	1.565	
9,200.00	9,194.93	9,200.00	9,194.93	32.93	32.02	76.84	-107.72	103.69	100.63	35.97	64.65	1.556	
9,250.00	9,244.93	9,250.00	9,244.93	33.11	32.20	76.84	-107.72	103.69	100.63	35.62	65.01	1.548	
9,300.00	9,294.93	9,300.00	9,294.93	33.28	32.37	76.84	-107.72	103.69	100.63	35.27	65.36	1.540	
9,350.00	9,344.93	9,350.00	9,344.93	33.46	32.55	76.84	-107.72	103.69	100.63	34.91	65.71	1.531	
9,400.00	9,394.93	9,400.00	9,394.93	33.64	32.73	76.84	-107.72	103.69	100.63	34.56	66.07	1.523	
9,450.00	9,444.93	9,450.00	9,444.93	33.81	32.90	76.84	-107.72	103.69	100.63	34.21	66.42	1.515	
9,500.00	9,494.93	9,500.00	9,494.93	33.99	33.08	76.84	-107.72	103.69	100.63	33.85	66.77	1.507	
9,550.00	9,544.93	9,550.00	9,544.93	34.17	33.26	76.84	-107.72	103.69	100.63	33.50	67.13	1.499	Level 3
9,600.00	9,594.93	9,600.00	9,594.93	34.34	33.43	76.84	-107.72	103.69	100.63	33.15	67.48	1.491	Level 3
9,650.00	9,644.93	9,650.00	9,644.93	34.52	33.61	76.84	-107.72	103.69	100.63	32.79	67.84	1.483	Level 3
9,700.00	9,694.93	9,700.00	9,694.93	34.70	33.79	76.84	-107.72	103.69	100.63	32.44	68.19	1.476	Level 3
9,750.00	9,744.93	9,750.00	9,744.93	34.87	33.96	76.84	-107.72	103.69	100.63	32.08	68.54	1.468	Level 3
9,800.00	9,794.93	9,800.00	9,794.93	35.05	34.14	76.84	-107.72	103.69	100.63	31.73	68.90	1.461	Level 3
9,850.00	9,844.93	9,850.00	9,844.93	35.23	34.32	76.84	-107.72	103.69	100.63	31.38	69.25	1.453	Level 3
9,900.00	9,894.93	9,900.00	9,894.93	35.40	34.50	76.84	-107.72	103.69	100.63	31.02	69.60	1.446	Level 3
9,950.00	9,944.93	9,950.00	9,944.93	35.58	34.67	76.84	-107.72	103.69	100.63	30.67	69.96	1.438	Level 3
10,000.00	9,994.93	10,000.00	9,994.93	35.76	34.85	76.84	-107.72	103.69	100.63	30.31	70.31	1.431	Level 3
10,050.00	10,044.93	10,050.00	10,044.93	35.94	35.03	76.84	-107.72	103.69	100.63	29.96	70.67	1.424	Level 3
10,100.00	10,094.93	10,100.00	10,094.93	36.11	35.20	76.84	-107.72	103.69	100.63	29.61	71.02	1.417	Level 3
10,150.00	10,144.93	10,150.00	10,144.93	36.29	35.38	76.84	-107.72	103.69	100.63	29.25	71.38	1.410	Level 3
10,200.00	10,194.93	10,200.00	10,194.93	36.47	35.56	76.84	-107.72	103.69	100.63	28.90	71.73	1.403	Level 3
10,250.00	10,244.93	10,250.00	10,244.93	36.64	35.74	76.84	-107.72	103.69	100.63	28.55	72.08	1.396	Level 3
10,300.00	10,294.87	10,299.94	10,294.87	36.83	35.91	-103.99	-107.72	103.69	101.09	28.64	72.45	1.395	Level 3
10,350.00	10,344.45	10,349.52	10,344.45	37.07	36.09	-107.23	-107.72	103.69	102.82	29.95	72.87	1.411	Level 3
10,400.00	10,393.29	10,398.36	10,393.29	37.31	36.26	-112.25	-107.72	103.69	106.50	33.18	73.32	1.452	Level 3
10,450.00	10,441.02	10,446.09	10,441.02	37.55	36.43	-118.40	-107.72	103.69	113.12	39.33	73.79	1.533	
10,500.00	10,487.27	10,492.34	10,487.27	37.78	36.60	-124.89	-107.72	103.69	123.66	49.41	74.25	1.665	
10,550.00	10,531.69	10,537.13	10,532.06	38.00	36.75	-131.04	-107.77	103.72	138.80	64.11	74.69	1.858	
10,600.00	10,573.94	10,583.48	10,578.32	38.20	36.92	-136.08	-109.86	105.14	158.12	83.03	75.09	2.106	
10,650.00	10,613.71	10,630.93	10,625.32	38.39	37.09	-139.54	-115.19	108.78	180.55	105.16	75.39	2.395	
10,700.00	10,650.68	10,679.48	10,672.68	38.56	37.26	-141.67	-123.95	114.76	205.34	129.79	75.56	2.718	
10,750.00	10,684.59	10,729.15	10,720.03	38.70	37.43	-142.70	-136.30	123.18	232.01	156.43	75.59	3.069	
10,800.00	10,715.16	10,779.97	10,768.95	38.83	37.61	-142.84	-152.40	134.16	260.20	184.72	75.48	3.447	
10,850.00	10,742.18	10,832.01	10,813.01	38.94	37.78	-142.23	-172.38	147.79	289.64	214.39	75.26	3.849	
16,700.00	10,820.00	17,066.15	11,137.00	61.91	62.17	-133.89	-6,250.10	359.44	457.26	342.88	114.38	3.998	
16,750.00	10,820.00	17,116.15	11,137.00	62.21	62.47	-133.89	-6,300.10	359.64	457.26	342.23	115.03	3.975	
16,800.00	10,820.00	17,166.15	11,137.00	62.52	62.77	-133.89	-6,350.10	359.84	457.26	341.58	115.68	3.953	
16,850.00	10,820.00	17,216.15	11,137.00	62.82	63.07	-133.89	-6,400.10	360.05	457.27	340.93	116.33	3.931	
16,900.00	10,820.00	17,266.15	11,137.00	63.12	63.37	-133.89	-6,450.10	360.25	457.27	340.28	116.99	3.909	
16,950.00	10,820.00	17,316.15	11,137.00	63.43	63.67	-133.89	-6,500.10	360.45	457.27	339.63	117.64	3.887	
17,000.00	10,820.00	17,366.15	11,137.00	63.74	63.98	-133.89	-6,550.10	360.65	457.28	338.98	118.30	3.865	

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 124H SHL - 124H Lateral - Plan #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-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
17,050.00	10,820.00	17,416.15	11,137.00	64.04	64.28	-133.89	-6,500.10	360.86	457.28	338.32	118.96	3.844	
17,100.00	10,820.00	17,466.15	11,137.00	64.35	64.59	-133.89	-6,550.10	361.06	457.28	337.67	119.62	3.823	
17,150.00	10,820.00	17,516.15	11,137.00	64.66	64.89	-133.89	-6,700.10	361.26	457.29	337.01	120.28	3.802	
17,200.00	10,820.00	17,566.15	11,137.00	64.97	65.20	-133.89	-6,750.10	361.46	457.29	336.35	120.94	3.781	
17,250.00	10,820.00	17,616.15	11,137.00	65.28	65.51	-133.88	-6,800.10	361.66	457.29	335.69	121.60	3.761	
17,300.00	10,820.00	17,666.15	11,137.00	65.59	65.81	-133.88	-6,850.10	361.87	457.30	335.03	122.26	3.740	
17,350.00	10,820.00	17,716.15	11,137.00	65.91	66.12	-133.88	-6,900.09	362.07	457.30	334.37	122.93	3.720	
17,400.00	10,820.00	17,766.15	11,137.00	66.22	66.43	-133.88	-6,950.09	362.27	457.30	333.71	123.60	3.700	
17,450.00	10,820.00	17,816.15	11,137.00	66.53	66.74	-133.88	-7,000.09	362.47	457.31	333.04	124.27	3.680	
17,500.00	10,820.00	17,866.15	11,137.00	66.85	67.06	-133.88	-7,050.09	362.68	457.31	332.38	124.93	3.660	
17,550.00	10,820.00	17,916.15	11,137.00	67.16	67.37	-133.88	-7,100.09	362.88	457.31	331.71	125.61	3.641	
17,600.00	10,820.00	17,966.15	11,137.00	67.48	67.68	-133.88	-7,150.09	363.08	457.32	331.04	126.28	3.622	
17,650.00	10,820.00	18,016.15	11,137.00	67.79	67.99	-133.88	-7,200.09	363.28	457.32	330.37	126.95	3.602	
17,700.00	10,820.00	18,066.15	11,137.00	68.11	68.31	-133.88	-7,250.09	363.49	457.32	329.70	127.62	3.583	
17,750.00	10,820.00	18,116.15	11,137.00	68.43	68.62	-133.88	-7,300.09	363.69	457.33	329.03	128.30	3.565	
17,800.00	10,820.00	18,166.15	11,137.00	68.75	68.94	-133.88	-7,350.09	363.89	457.33	328.36	128.98	3.546	
17,850.00	10,820.00	18,216.15	11,137.00	69.07	69.25	-133.88	-7,400.09	364.09	457.33	327.68	129.65	3.527	
17,900.00	10,820.00	18,266.15	11,137.00	69.38	69.57	-133.88	-7,450.09	364.29	457.34	327.01	130.33	3.509	
17,950.00	10,820.00	18,316.15	11,137.00	69.71	69.89	-133.88	-7,500.09	364.50	457.34	326.33	131.01	3.491	
18,000.00	10,820.00	18,366.15	11,137.00	70.03	70.21	-133.88	-7,550.09	364.70	457.34	325.65	131.69	3.473	
18,050.00	10,820.00	18,416.15	11,137.00	70.35	70.52	-133.88	-7,600.09	364.90	457.35	324.97	132.37	3.455	
18,100.00	10,820.00	18,466.15	11,137.00	70.67	70.84	-133.88	-7,650.09	365.10	457.35	324.30	133.05	3.437	
18,150.00	10,820.00	18,516.15	11,137.00	70.99	71.16	-133.88	-7,700.09	365.31	457.35	323.62	133.74	3.420	
18,200.00	10,820.00	18,566.15	11,137.00	71.32	71.49	-133.88	-7,750.09	365.51	457.36	322.93	134.42	3.402	
18,250.00	10,820.00	18,616.15	11,137.00	71.64	71.81	-133.88	-7,800.09	365.71	457.36	322.25	135.11	3.385	
18,300.00	10,820.00	18,666.15	11,137.00	71.96	72.13	-133.88	-7,850.09	365.91	457.36	321.57	135.79	3.368	
18,350.00	10,820.00	18,716.15	11,137.00	72.29	72.45	-133.88	-7,900.09	366.11	457.37	320.89	136.48	3.351	
18,400.00	10,820.00	18,766.15	11,137.00	72.62	72.77	-133.88	-7,950.09	366.32	457.37	320.20	137.17	3.334	
18,450.00	10,820.00	18,816.15	11,137.00	72.94	73.10	-133.88	-8,000.09	366.52	457.37	319.51	137.86	3.318	
18,500.00	10,820.00	18,866.15	11,137.00	73.27	73.42	-133.87	-8,050.09	366.72	457.38	318.83	138.55	3.301	
18,550.00	10,820.00	18,916.15	11,137.00	73.60	73.75	-133.87	-8,100.09	366.92	457.38	318.14	139.24	3.285	
18,600.00	10,820.00	18,966.15	11,137.00	73.92	74.07	-133.87	-8,150.08	367.13	457.38	317.45	139.93	3.269	
18,650.00	10,820.00	19,016.15	11,137.00	74.25	74.40	-133.87	-8,200.08	367.33	457.39	316.75	140.62	3.253	
18,700.00	10,820.00	19,066.15	11,137.00	74.58	74.72	-133.87	-8,250.08	367.53	457.39	316.07	141.32	3.237	
18,750.00	10,820.00	19,116.15	11,137.00	74.91	75.05	-133.87	-8,300.08	367.73	457.39	315.38	142.01	3.221	
18,800.00	10,820.00	19,166.15	11,137.00	75.24	75.38	-133.87	-8,350.08	367.93	457.40	314.69	142.71	3.205	
18,850.00	10,820.00	19,216.15	11,137.00	75.57	75.71	-133.87	-8,400.08	368.14	457.40	314.00	143.40	3.190	
18,900.00	10,820.00	19,266.15	11,137.00	75.90	76.04	-133.87	-8,450.08	368.34	457.40	313.30	144.10	3.174	
18,950.00	10,820.00	19,316.15	11,137.00	76.23	76.36	-133.87	-8,500.08	368.54	457.41	312.61	144.80	3.159	
19,000.00	10,820.00	19,366.15	11,137.00	76.57	76.69	-133.87	-8,550.08	368.74	457.41	311.91	145.49	3.144	
19,050.00	10,820.00	19,416.15	11,137.00	76.90	77.02	-133.87	-8,600.08	368.95	457.41	311.22	146.19	3.129	
19,100.00	10,820.00	19,466.15	11,137.00	77.23	77.35	-133.87	-8,650.08	369.15	457.42	310.52	146.89	3.114	
19,150.00	10,820.00	19,516.15	11,137.00	77.56	77.69	-133.87	-8,700.08	369.35	457.42	309.83	147.59	3.099	
19,200.00	10,820.00	19,566.15	11,137.00	77.90	78.02	-133.87	-8,750.08	369.55	457.42	309.13	148.30	3.085	
19,250.00	10,820.00	19,616.15	11,137.00	78.23	78.35	-133.87	-8,800.08	369.76	457.43	308.43	149.00	3.070	
19,300.00	10,820.00	19,666.15	11,137.00	78.57	78.68	-133.87	-8,850.08	369.96	457.43	307.73	149.70	3.056	
19,350.00	10,820.00	19,716.15	11,137.00	78.90	79.01	-133.87	-8,900.08	370.16	457.43	307.03	150.40	3.041	
19,400.00	10,820.00	19,766.15	11,137.00	79.24	79.35	-133.87	-8,950.08	370.36	457.44	306.33	151.11	3.027	
19,450.00	10,820.00	19,816.15	11,137.00	79.57	79.68	-133.87	-9,000.08	370.56	457.44	305.63	151.81	3.013	
19,500.00	10,820.00	19,866.15	11,137.00	79.91	80.01	-133.87	-9,050.08	370.77	457.44	304.93	152.52	2.999	
19,550.00	10,820.00	19,916.15	11,137.00	80.25	80.35	-133.87	-9,100.08	370.97	457.45	304.22	153.22	2.985	

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 124H SHL - 124H Lateral - Plan #1 — Offset Site Error: 0.00 usft

Survey Program: 0-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
19,600.00	10,820.00	19,966.15	11,137.00	80.58	80.68	-133.87	-9,150.08	371.17	457.45	303.52	153.93	2.972	
19,650.00	10,820.00	20,016.15	11,137.00	80.92	81.02	-133.87	-9,200.08	371.37	457.45	302.81	154.64	2.958	
19,700.00	10,820.00	20,066.15	11,137.00	81.25	81.36	-133.87	-9,250.08	371.58	457.46	302.11	155.35	2.945	
19,750.00	10,820.00	20,116.15	11,137.00	81.60	81.69	-133.86	-9,300.08	371.78	457.46	301.40	156.05	2.931	
19,800.00	10,820.00	20,166.15	11,137.00	81.94	82.03	-133.86	-9,350.07	371.98	457.46	300.70	156.76	2.918	
19,850.00	10,820.00	20,216.15	11,137.00	82.28	82.37	-133.86	-9,400.07	372.18	457.47	299.99	157.47	2.905	
19,900.00	10,820.00	20,266.15	11,137.00	82.61	82.70	-133.86	-9,450.07	372.38	457.47	299.29	158.18	2.892	
19,950.00	10,820.00	20,316.15	11,137.00	82.95	83.04	-133.86	-9,500.07	372.59	457.47	298.58	158.89	2.879	
20,000.00	10,820.00	20,366.15	11,137.00	83.30	83.38	-133.86	-9,550.07	372.79	457.48	297.87	159.61	2.866	
20,050.00	10,820.00	20,416.15	11,137.00	83.64	83.72	-133.86	-9,600.07	372.99	457.48	297.16	160.32	2.854	
20,100.00	10,820.00	20,466.15	11,137.00	83.98	84.06	-133.86	-9,650.07	373.19	457.48	296.45	161.03	2.841	
20,150.00	10,820.00	20,516.15	11,137.00	84.32	84.40	-133.86	-9,700.07	373.40	457.49	295.74	161.74	2.828	
20,200.00	10,820.00	20,566.15	11,137.00	84.66	84.74	-133.86	-9,750.07	373.60	457.49	295.03	162.46	2.816	
20,250.00	10,820.00	20,616.15	11,137.00	85.00	85.08	-133.86	-9,800.07	373.80	457.49	294.32	163.17	2.804	
20,300.00	10,820.00	20,666.15	11,137.00	85.34	85.42	-133.86	-9,850.07	374.00	457.50	293.61	163.89	2.792	
20,350.00	10,820.00	20,716.15	11,137.00	85.69	85.76	-133.86	-9,900.07	374.20	457.50	292.90	164.60	2.779	
20,400.00	10,820.00	20,766.15	11,137.00	86.03	86.10	-133.86	-9,950.07	374.41	457.50	292.19	165.32	2.767	
20,450.00	10,820.00	20,816.15	11,137.00	86.37	86.44	-133.86	-10,000.07	374.61	457.51	291.47	166.03	2.755	
20,500.00	10,820.00	20,866.15	11,137.00	86.72	86.78	-133.86	-10,050.07	374.81	457.51	290.76	166.75	2.744	
20,550.00	10,820.00	20,916.15	11,137.00	87.06	87.13	-133.86	-10,100.07	375.01	457.51	290.04	167.47	2.732	
20,600.00	10,820.00	20,966.15	11,137.00	87.41	87.47	-133.86	-10,150.07	375.22	457.52	289.33	168.19	2.720	
20,650.00	10,820.00	21,016.15	11,137.00	87.75	87.81	-133.86	-10,200.07	375.42	457.52	288.61	168.91	2.709	
20,700.00	10,820.00	21,066.15	11,137.00	88.10	88.15	-133.86	-10,250.07	375.62	457.52	287.90	169.62	2.697	
20,750.00	10,820.00	21,116.15	11,137.00	88.44	88.50	-133.86	-10,300.07	375.82	457.52	287.18	170.34	2.686	
20,800.00	10,820.00	21,166.15	11,137.00	88.79	88.84	-133.86	-10,350.07	376.03	457.53	286.47	171.06	2.675	
20,850.00	10,820.00	21,216.15	11,137.00	89.13	89.19	-133.86	-10,400.07	376.23	457.53	285.75	171.78	2.663	
20,900.00	10,820.00	21,266.15	11,137.00	89.48	89.53	-133.86	-10,450.07	376.43	457.53	285.03	172.50	2.652	
20,950.00	10,820.00	21,316.15	11,137.00	89.83	89.88	-133.86	-10,500.07	376.63	457.54	284.31	173.22	2.641	
21,000.00	10,820.00	21,366.15	11,137.00	90.17	90.22	-133.85	-10,550.07	376.83	457.54	283.59	173.95	2.630	
21,050.00	10,820.00	21,416.15	11,137.00	90.52	90.57	-133.85	-10,600.06	377.04	457.54	282.88	174.67	2.619	
21,100.00	10,820.00	21,466.15	11,137.00	90.87	90.91	-133.85	-10,650.06	377.24	457.55	282.15	175.39	2.609	
21,150.00	10,820.00	21,516.15	11,137.00	91.22	91.26	-133.85	-10,700.06	377.44	457.55	281.44	176.11	2.598	
21,200.00	10,820.00	21,566.15	11,137.00	91.56	91.60	-133.85	-10,750.06	377.64	457.55	280.72	176.84	2.587	
21,250.00	10,820.00	21,616.15	11,137.00	91.91	91.95	-133.85	-10,800.06	377.85	457.56	280.00	177.56	2.577	
21,300.00	10,820.00	21,666.15	11,137.00	92.26	92.30	-133.85	-10,850.06	378.05	457.56	279.28	178.29	2.566	
21,350.00	10,820.00	21,716.15	11,137.00	92.61	92.64	-133.85	-10,900.06	378.25	457.56	278.55	179.01	2.556	
21,400.00	10,820.00	21,766.15	11,137.00	92.96	92.99	-133.85	-10,950.06	378.45	457.57	277.83	179.74	2.546	
21,450.00	10,820.00	21,816.15	11,137.00	93.31	93.34	-133.85	-11,000.06	378.65	457.57	277.11	180.46	2.536	
21,500.00	10,820.00	21,866.15	11,137.00	93.66	93.69	-133.85	-11,050.06	378.86	457.57	276.39	181.19	2.525	
21,550.00	10,820.00	21,916.15	11,137.00	94.01	94.04	-133.85	-11,100.06	379.06	457.58	275.66	181.91	2.515	
21,600.00	10,820.00	21,966.15	11,137.00	94.36	94.39	-133.85	-11,150.06	379.26	457.58	274.94	182.64	2.505	
21,650.00	10,820.00	22,016.15	11,137.00	94.71	94.73	-133.85	-11,200.06	379.46	457.58	274.22	183.37	2.495	
21,700.00	10,820.00	22,066.15	11,137.00	95.06	95.08	-133.85	-11,250.06	379.67	457.59	273.49	184.09	2.486	
21,750.00	10,820.00	22,116.15	11,137.00	95.41	95.43	-133.85	-11,300.06	379.87	457.59	272.77	184.82	2.476	
21,800.00	10,820.00	22,166.15	11,137.00	95.75	95.78	-133.85	-11,350.06	380.07	457.59	272.04	185.55	2.466	
21,802.75	10,820.00	22,168.90	11,137.00	95.78	95.80	-133.85	-11,352.81	380.08	457.59	272.00	185.59	2.466	
21,834.37	10,820.00	22,198.19	11,137.00	96.00	96.01	-133.85	-11,382.10	380.20	457.60	271.57	186.04	2.460	

Anticollision Report

Company:	XTO Energy	**Local Co-ordinate Reference:**	Well PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 163H SHL - 163H Lateral - 163H Lateral AsDrilled — Offset Site Error: 0.00 usft

Survey Program: 159-MWD,11018-MWD+IFR1+MS, 22836-Projection — 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
2,800.00	2,800.00	2,803.38	2,802.32	10.74	9.47	-89.01	1.35	-78.23	78.27	56.55	19.72	3.969	
2,850.00	2,850.00	2,853.96	2,852.88	10.92	9.64	-89.20	1.07	-76.52	76.58	56.51	20.07	3.816	
2,900.00	2,900.00	2,904.16	2,903.05	11.10	9.81	-89.17	1.09	-74.55	74.62	54.21	20.42	3.655	
2,950.00	2,950.00	2,954.24	2,953.06	11.29	9.99	-89.03	1.23	-72.43	72.51	51.75	20.76	3.492	
3,000.00	3,000.00	3,003.38	3,002.68	11.47	10.16	-89.00	1.23	-70.43	70.49	49.38	21.11	3.339	
3,050.00	3,050.00	3,053.61	3,052.38	11.65	10.33	-89.19	0.97	-68.65	68.70	47.22	21.47	3.199	
3,100.00	3,100.00	3,103.51	3,102.25	11.83	10.50	-89.47	0.62	-66.95	66.99	45.17	21.83	3.069	
3,150.00	3,150.00	3,153.45	3,152.16	12.01	10.67	-89.78	0.25	-65.30	65.34	43.15	22.18	2.945	
3,200.00	3,200.00	3,203.46	3,202.14	12.19	10.84	-90.12	-0.13	-63.64	63.67	41.13	22.54	2.825	
3,250.00	3,250.00	3,253.52	3,252.16	12.37	11.01	-90.54	-0.59	-61.93	61.97	39.07	22.90	2.706	
3,300.00	3,300.00	3,303.60	3,302.21	12.55	11.19	-91.45	-1.52	-60.12	60.18	36.91	23.26	2.587	
3,350.00	3,350.00	3,354.07	3,352.61	12.73	11.36	-92.98	-3.02	-58.06	58.20	34.57	23.63	2.463	
3,400.00	3,400.00	3,404.69	3,403.11	12.91	11.54	-95.34	-5.18	-55.35	55.67	31.67	24.01	2.319	
3,450.00	3,450.00	3,453.99	3,452.25	13.09	11.71	-98.48	-7.81	-52.42	53.04	28.62	24.43	2.171	
3,500.00	3,500.00	3,502.83	3,500.96	13.27	11.88	-101.99	-10.70	-50.38	51.51	26.66	24.86	2.072	
3,541.78	3,541.78	3,543.67	3,541.70	13.40	12.02	77.59	-13.31	-49.40	51.13	25.94	25.18	2.030 CC	
3,550.00	3,550.00	3,551.70	3,549.72	13.42	12.05	77.05	-13.84	-49.28	51.14	25.90	25.25	2.026 ES	
3,600.00	3,600.00	3,600.59	3,598.49	13.58	12.22	74.06	-17.24	-49.13	51.84	26.24	25.60	2.025 SF	
3,650.00	3,649.98	3,649.79	3,647.57	13.75	12.40	71.93	-20.66	-49.91	53.43	27.49	25.94	2.060	
3,700.00	3,699.96	3,699.16	3,696.83	13.91	12.57	71.44	-23.31	-51.59	55.50	29.23	26.26	2.113	
3,750.00	3,749.92	3,748.61	3,746.18	14.07	12.74	72.49	-25.09	-54.13	57.93	31.36	26.57	2.180	
3,800.00	3,799.86	3,797.97	3,795.42	14.24	12.92	74.95	-25.90	-57.43	60.69	33.84	26.85	2.260	
3,850.00	3,849.78	3,847.98	3,845.29	14.40	13.09	78.68	-25.61	-61.28	63.68	36.54	27.15	2.346	
3,900.00	3,899.68	3,897.92	3,895.05	14.57	13.26	83.52	-24.03	-65.12	66.66	39.25	27.41	2.432	
3,950.00	3,949.54	3,947.71	3,944.53	14.73	13.44	89.01	-21.51	-68.87	69.92	42.26	27.66	2.528	
4,000.00	3,999.36	3,997.40	3,994.11	14.90	13.61	94.68	-18.51	-72.41	73.62	45.72	27.90	2.639	
4,050.00	4,049.18	4,048.18	4,044.69	15.06	13.79	100.25	-15.28	-75.40	77.44	49.26	28.18	2.748	
4,100.00	4,098.99	4,098.91	4,095.29	15.23	13.96	105.32	-12.15	-77.45	80.97	52.50	28.47	2.844	
4,150.00	4,148.79	4,149.03	4,145.30	15.40	14.14	109.93	-9.19	-78.89	84.48	55.73	28.75	2.939	
4,200.00	4,198.60	4,199.33	4,195.50	15.56	14.31	114.18	-6.33	-79.93	88.07	59.03	29.04	3.033	
4,250.00	4,248.41	4,249.93	4,245.03	15.73	14.49	118.18	-3.60	-80.42	91.53	62.19	29.35	3.119	
4,300.00	4,298.22	4,300.79	4,296.83	15.90	14.67	121.96	-1.06	-80.29	94.78	65.11	29.66	3.195	
4,350.00	4,348.03	4,352.03	4,348.02	16.06	14.85	125.41	0.91	-79.54	97.58	67.59	29.98	3.254	
4,400.00	4,397.84	4,402.45	4,398.41	16.23	15.02	128.51	2.29	-78.31	99.97	69.67	30.31	3.299	
4,450.00	4,447.65	4,452.33	4,448.25	16.40	15.20	131.33	3.42	-77.08	102.49	71.86	30.64	3.346	
4,500.00	4,497.46	4,502.02	4,497.92	16.57	15.37	133.92	4.39	-75.91	105.18	74.21	30.97	3.396	
4,550.00	4,547.27	4,551.63	4,547.52	16.74	15.54	136.33	5.33	-74.82	108.11	76.80	31.31	3.453	
4,600.00	4,597.08	4,600.00	4,595.87	16.91	15.71	138.46	6.31	-74.06	111.49	79.85	31.64	3.524	
4,650.00	4,646.89	4,648.03	4,643.88	17.08	15.88	140.25	7.52	-74.07	115.72	83.76	31.97	3.620	
4,700.00	4,696.70	4,694.78	4,690.60	17.25	16.04	141.52	8.85	-75.21	120.98	88.72	32.27	3.749	
4,750.00	4,746.51	4,741.12	4,736.82	17.42	16.21	142.02	10.15	-78.20	127.57	95.03	32.54	3.920	
8,750.00	8,744.93	8,756.26	8,744.52	31.34	30.31	-58.96	-5.92	-201.52	241.86	181.20	60.66	3.987	
8,800.00	8,794.93	8,806.33	8,794.58	31.52	30.49	-59.06	-6.24	-201.80	241.94	180.93	61.01	3.966	
8,850.00	8,844.93	8,856.35	8,844.60	31.69	30.67	-59.19	-6.68	-202.14	242.00	180.64	61.36	3.944	
8,900.00	8,894.93	8,906.58	8,894.84	31.87	30.84	-59.34	-7.19	-202.52	242.07	180.35	61.72	3.922	
8,950.00	8,944.93	8,958.62	8,946.87	32.05	31.02	-59.44	-7.67	-202.57	241.85	179.80	62.07	3.897	
9,000.00	8,994.93	9,010.34	8,998.58	32.22	31.20	-59.45	-8.02	-202.06	241.27	178.85	62.43	3.865	
9,050.00	9,044.93	9,061.22	9,049.46	32.40	31.38	-59.40	-8.27	-201.20	240.42	177.65	62.77	3.830	
9,100.00	9,094.93	9,111.65	9,099.87	32.58	31.55	-59.31	-8.46	-200.12	239.41	176.29	63.12	3.793	
9,150.00	9,144.93	9,161.45	9,149.66	32.75	31.72	-59.21	-8.62	-199.05	238.39	174.93	63.47	3.756	
9,200.00	9,194.93	9,211.82	9,200.02	32.93	31.89	-59.12	-8.83	-197.99	237.39	173.57	63.81	3.720	

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore:	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 163H SHL - 163H Lateral - 163H Lateral AsDrilled — **Offset Site Error:** 0.00 usft

Survey Program: 169-MWD,11018-MWD+IFR1+MS, 22836-Projection — **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
9,250.00	9,244.93	9,262.70	9,250.88	33.11	32.07	-59.07	-9.26	-196.86	236.22	172.06	64.16	3.682	
9,300.00	9,294.93	9,312.96	9,301.13	33.23	32.24	-59.04	-9.84	-195.67	234.91	170.40	64.51	3.642	
9,350.00	9,344.93	9,362.91	9,351.06	33.45	32.41	-58.98	-10.30	-194.41	233.59	168.74	64.86	3.602	
9,400.00	9,394.93	9,412.80	9,400.94	33.64	32.58	-58.89	-10.67	-193.12	232.29	167.08	65.21	3.562	
9,450.00	9,444.93	9,462.69	9,450.80	33.81	32.76	-58.83	-11.09	-191.88	231.01	165.45	65.55	3.524	
9,500.00	9,494.93	9,511.84	9,499.94	33.99	32.93	-58.78	-11.53	-190.78	229.82	163.91	65.91	3.487	
9,550.00	9,544.93	9,560.64	9,548.73	34.17	33.09	-58.75	-11.94	-189.91	228.84	162.58	66.26	3.454	
9,600.00	9,594.93	9,609.22	9,597.31	34.34	33.26	-58.75	-12.29	-189.35	228.16	161.55	66.61	3.425	
9,650.00	9,644.93	9,657.80	9,645.89	34.52	33.43	-58.78	-12.57	-189.11	227.80	160.84	66.96	3.402	
9,700.00	9,694.93	9,706.14	9,696.23	34.70	33.61	-58.84	-12.88	-189.05	227.59	160.28	67.31	3.381	
9,750.00	9,744.93	9,758.95	9,747.03	34.87	33.79	-58.93	-13.38	-188.91	227.22	159.55	67.67	3.358	
9,800.00	9,794.93	9,809.02	9,797.09	35.05	33.96	-59.06	-14.06	-188.76	226.74	158.72	68.02	3.333	
9,850.00	9,844.93	9,859.01	9,847.08	35.23	34.14	-59.24	-14.91	-188.71	226.26	157.88	68.38	3.309	
9,900.00	9,894.93	9,909.06	9,897.12	35.40	34.31	-59.44	-15.85	-188.71	225.78	157.05	68.73	3.285	
9,950.00	9,944.93	9,959.00	9,947.05	35.58	34.49	-59.65	-16.81	-188.70	225.29	156.20	69.09	3.261	
10,000.00	9,994.93	10,008.38	9,996.43	35.76	34.66	-59.80	-17.51	-188.65	224.89	155.45	69.44	3.239	
10,050.00	10,044.93	10,057.83	10,045.87	35.94	34.83	-59.85	-17.81	-188.52	224.62	154.83	69.79	3.218	
10,100.00	10,094.93	10,107.46	10,095.51	36.11	35.01	-59.86	-17.93	-188.40	224.45	154.31	70.14	3.200	
10,150.00	10,144.93	10,157.15	10,145.19	36.29	35.18	-59.86	-17.97	-188.31	224.36	153.87	70.49	3.183	
10,200.00	10,194.93	10,206.92	10,194.96	36.47	35.35	-59.84	-17.92	-188.25	224.32	153.48	70.84	3.167	
10,208.08	10,203.00	10,214.96	10,203.00	36.49	35.38	-59.83	-17.90	-188.24	224.32	153.43	70.90	3.164	
10,250.00	10,244.93	10,256.81	10,244.86	36.64	35.52	-59.80	-17.79	-188.18	224.34	153.15	71.19	3.151	
10,300.00	10,294.87	10,306.78	10,294.83	36.83	35.69	120.83	-17.59	-188.08	225.37	153.83	71.54	3.150	
10,350.00	10,344.45	10,356.69	10,344.74	37.07	35.87	121.99	-17.36	-187.92	228.68	156.73	71.91	3.180	
10,400.00	10,393.29	10,406.13	10,394.18	37.31	36.04	123.76	-17.21	-187.68	234.43	162.19	72.27	3.244	
10,450.00	10,441.02	10,454.36	10,442.40	37.55	36.20	125.97	-17.18	-187.38	242.95	170.31	72.65	3.344	
10,500.00	10,487.27	10,501.14	10,489.18	37.79	36.37	128.37	-17.32	-187.09	254.65	181.62	73.02	3.487	
10,550.00	10,531.69	10,546.18	10,534.22	38.00	36.52	130.79	-17.58	-186.81	269.64	196.44	73.41	3.676	
10,600.00	10,573.94	10,589.11	10,577.15	38.20	36.67	133.05	-17.90	-186.51	288.79	215.00	73.79	3.914	

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 PLU 20 BD 123H SHL(blm) - Slot PLU 20 BD 123H SHL
Project:	Eddy County, NM (NAD27) NMEZ Grid	**TVD Reference:**	3162+31 @ 3193.00usft (NabF26)
Reference Site:	PLU 20 Brushy Draw	**MD Reference:**	3162+31 @ 3193.00usft (NabF26)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	PLU 20 BD 123H SHL(blm)	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	123H Lateral	**Database:**	PREDATOR_EDM
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design PLU 20 Brushy Draw - PLU 20 BD 903H SHL(blm) - 903H Lateral - 903H Lateral AsDrilled — Offset Site Error: 0.00 usft

Survey Program: 163-MWD — 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
950.00	950.00	949.96	949.66	4.00	2.96	-118.06	-12.90	-24.20	27.42	20.52	6.90	3.975 CC	
1,000.00	1,000.00	999.94	999.63	4.19	3.14	-119.86	-13.99	-24.36	28.09	20.82	7.27	3.862	
1,050.00	1,050.00	1,049.97	1,049.66	4.38	3.31	-119.08	-13.95	-25.09	28.71	21.08	7.63	3.765	
1,100.00	1,100.00	1,100.03	1,099.69	4.56	3.48	-116.62	-13.11	-26.17	29.27	21.31	7.96	3.676	
1,150.00	1,150.00	1,150.08	1,149.72	4.75	3.65	-113.80	-12.01	-27.23	29.76	21.47	8.29	3.590	
1,200.00	1,200.00	1,200.11	1,199.73	4.93	3.82	-111.04	-10.85	-28.20	30.22	21.60	8.62	3.506	
1,250.00	1,250.00	1,250.16	1,249.77	5.12	4.00	-108.73	-9.84	-29.02	30.64	21.69	8.95	3.424	
1,300.00	1,300.00	1,300.31	1,299.90	5.30	4.17	-106.83	-8.95	-29.59	30.91	21.63	9.28	3.331	
1,350.00	1,350.00	1,350.43	1,350.02	5.48	4.34	-105.33	-8.19	-29.87	30.97	21.35	9.62	3.220	
1,400.00	1,400.00	1,400.47	1,400.05	5.57	4.52	-104.40	-7.69	-29.94	30.91	20.95	9.96	3.103	
1,450.00	1,450.00	1,450.48	1,450.07	5.85	4.69	-104.12	-7.51	-29.88	30.81	20.49	10.31	2.987	
1,500.00	1,500.00	1,500.45	1,500.03	6.03	4.87	-104.18	-7.53	-29.79	30.73	20.06	10.67	2.880	
1,550.00	1,550.00	1,550.43	1,550.01	6.22	5.04	-104.50	-7.69	-29.73	30.70	19.67	11.03	2.783	
1,600.00	1,600.00	1,600.44	1,600.02	6.40	5.22	-105.15	-8.02	-29.61	30.67	19.28	11.40	2.692	
1,650.00	1,650.00	1,650.45	1,650.02	6.58	5.39	-106.09	-8.49	-29.43	30.63	18.87	11.76	2.604	
1,700.00	1,700.00	1,700.44	1,700.02	6.76	5.57	-107.01	-8.95	-29.25	30.60	18.47	12.13	2.522	
1,727.31	1,727.31	1,727.73	1,727.31	6.86	5.66	-107.49	-9.19	-29.17	30.59	18.25	12.33	2.480	
1,750.00	1,750.00	1,750.39	1,749.97	6.94	5.74	-107.88	-9.39	-29.12	30.60	18.10	12.50	2.448	
1,800.00	1,800.00	1,800.32	1,799.90	7.13	5.92	-108.66	-9.83	-29.10	30.71	17.84	12.87	2.387	
1,850.00	1,850.00	1,850.38	1,849.94	7.31	6.10	-109.37	-10.23	-29.11	30.86	17.63	13.23	2.332	
1,900.00	1,900.00	1,900.46	1,900.02	7.49	6.27	-109.99	-10.56	-29.02	30.88	17.29	13.60	2.271	
1,950.00	1,950.00	1,950.51	1,950.08	7.67	6.45	-110.50	-10.79	-28.85	30.80	16.84	13.95	2.206	
2,000.00	2,000.00	2,000.57	2,000.13	7.85	6.62	-110.87	-10.91	-28.61	30.62	16.30	14.32	2.138	
2,050.00	2,050.00	2,050.60	2,050.16	8.03	6.80	-111.39	-11.08	-28.29	30.38	15.70	14.69	2.069	
2,100.00	2,100.00	2,100.63	2,100.19	8.21	6.98	-112.33	-11.44	-27.84	30.10	15.04	15.06	1.999	
2,150.00	2,150.00	2,150.71	2,150.27	8.40	7.16	-113.46	-11.83	-27.26	29.72	14.29	15.43	1.927	
2,200.00	2,200.00	2,200.76	2,200.32	8.58	7.33	-114.66	-12.19	-26.54	29.21	13.41	15.80	1.849	
2,250.00	2,250.00	2,250.76	2,250.30	8.76	7.51	-115.87	-12.51	-25.80	28.68	12.51	16.17	1.774	
2,282.25	2,282.25	2,283.00	2,282.54	8.87	7.62	-116.63	-12.70	-25.33	28.34	11.94	16.40	1.728 ES, SF	
2,300.00	2,300.00	2,283.00	2,282.54	8.94	7.62	-116.63	-12.70	-25.33	33.29	19.72	13.57	2.454	

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

PECOS DISTRICT DRILLING
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**XTO Permian Operation, LLC.**
LEASE NO.:	**NMLC-0064894**
WELL NAME & NO.:	**Poker Lake Unit 20 BD 123H**
SURFACE HOLE FOOTAGE:	**0955' FSL & 1975' FWL**
BOTTOM HOLE FOOTAGE	**0200' FSL & 1980' FWL Sec. 32, T. 25 S., R 30 E.**
LOCATION:	**Section 20, T. 25 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. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please 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 well.**

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 pressures may be encountered upon penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

1. The **16** inch surface casing shall be set at approximately **790** 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.

11-3/4'' 1st Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **11-3/4** inch intermediate casing is:

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

Formation below the 11-3/4" 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.

8-5/8"; 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 **8-5/8** inch intermediate casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

Formation below the 8-5/8" 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.

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 11-3/4'' 1st intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 11-3/4'' 1st intermediate casing shoe shall be 5000 (5M) psi.**
    a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
    b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
    c. **Manufacturer representative shall install the test plug for the initial BOP test.**
    d. **Operator shall perform the 8-5/8 2nd 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.**

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

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

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

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

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

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

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

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

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

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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