



XTO Energy

Eddy County, NM (NAD-27)

PLU 28 Big Sinks

#108H

OH

Plan: PERMIT V2

Standard Planning Report

04 April, 2019



Project: Eddy County, NM (NAD-27)
Site: PLU 28 Big Sinks
Well: #108H
Wellbore: OH
Design: PERMIT V2

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

WELL DETAILS: #108H

Rig Name: RKB - 32 @ 3370.00usft
Ground Level: 3338.00
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 401304.80 672581.20 32.102077 -103.775996

DESIGN TARGET DETAILS

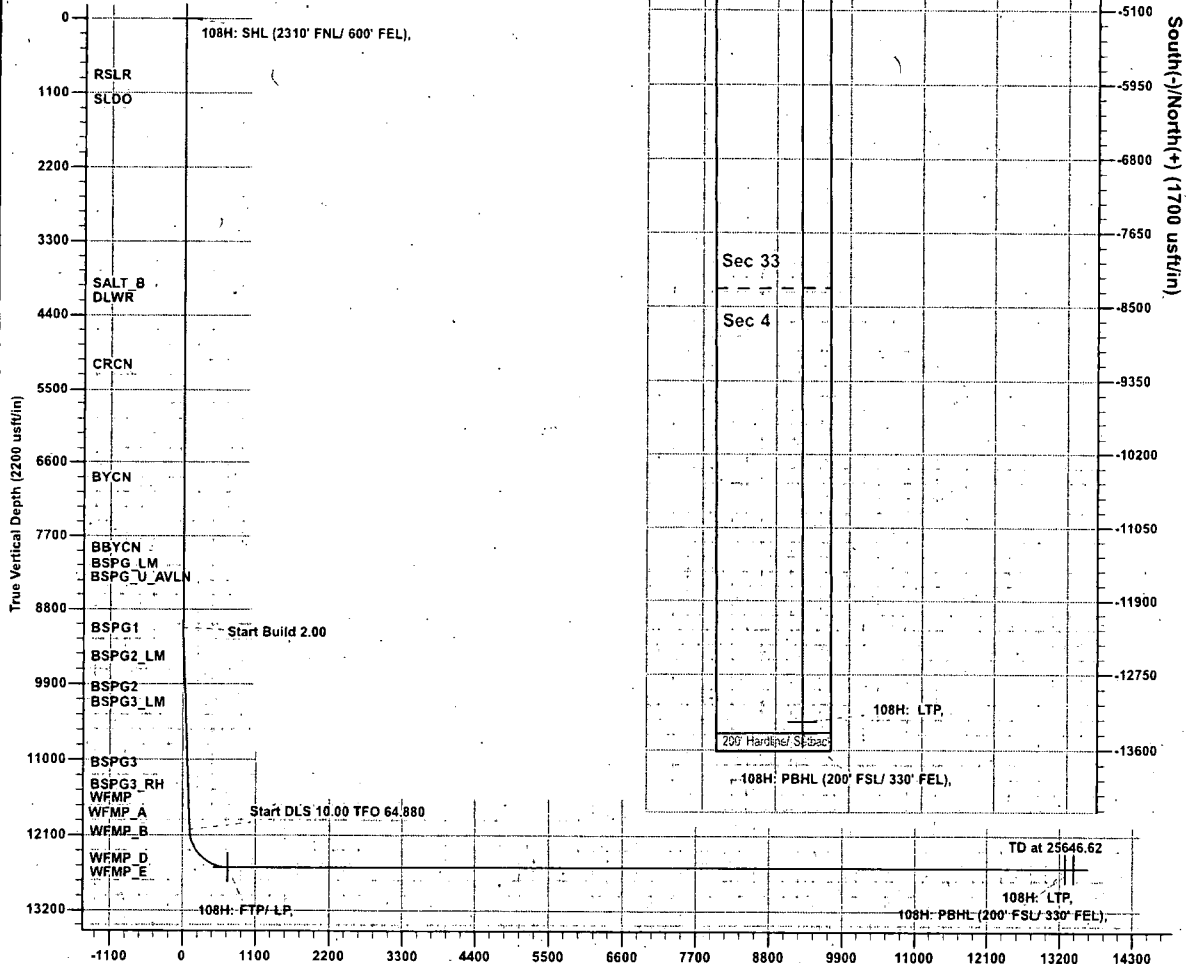
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
108H: SHL (2310' FNL/ 600' FEL).	0.00	0.00	0.00	401304.80	672581.20	32.102077	-103.775996	Point
108H: FTP/ LP.	12570.00	-676.70	268.50	400628.10	672849.70	32.100213	-103.775140	Point
108H: LTP.	12570.00	-13283.90	305.90	388020.90	672887.10	32.065556	-103.775230	Point
108H: PBHL (200' FSL/ 330' FEL).	12570.00	-13413.90	306.20	387890.90	672887.40	32.065199	-103.775231	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00
2	9080.00	0.00	0.00	9080.00	0.00	0.00	0.00	0.000	0.00
3	9330.13	5.00	115.04	9329.81	-4.82	9.89	2.00	115.035	4.65
4	12030.65	5.00	115.04	12020.04	-104.27	223.25	0.00	0.000	104.93
5	12909.36	90.00	179.83	12570.00	-676.70	268.50	10.00	64.880	677.49
6	25646.62	90.00	179.83	12570.00	-13413.90	306.20	0.00	0.000	13414.75

FORMATION TOP DETAILS

TVDPath	Formation
950.00	RSLR
1313.00	SLDO
4049.00	SALT_B
4263.00	DLWR
5253.00	CRCN
6939.00	BYCN
7990.00	BSPG
8207.00	BSPG_LM
8232.00	BSPG_U_AVLN
8351.00	BSPG1
9202.00	BSPG2_LM
9616.00	BSPG2
10065.00	BSPG3_LM
10285.00	BSPG3
11157.00	BSPG3_RH
11479.00	WFMP
11572.00	WFMP_X
11597.00	WFMP_Y
11692.00	WFMP_A
11726.00	WFMP_B
12164.00	WFMP_D
12557.00	WFMP_E
12570.00	Landing Point



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

Plan: PERMIT V2 (#108H/OH)

Created By: Matthew May Date: 10:00, April 04 2019

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-		² Pool Code	³ Pool Name
⁴ Property Code	⁵ Property Name POKER LAKE UNIT 28 BS		⁶ Well Number 108H
⁷ OGRID No. 260737	⁸ Operator Name XTO PERMIAN OPERATING, LLC.		⁹ Elevation 3,338'

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
H	28	25 S	31 E		2,310	NORTH	600	EAST	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
P	4	26 S	31 E		200	SOUTH	330	EAST	EDDY

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

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

¹⁶ GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y= 401,304.8 X= 672,581.2 LAT.= 32.102077°N LONG.= 103.775996°W FIRST TAKE POINT NAD 27 NME Y= 400,628.1 X= 672,849.7 LAT.= 32.100213°N LONG.= 103.775140°W CORNER COORDINATES TABLE NAD 27 NME A - Y= 400,969.2 N, X= 673,180.1 E B - Y= 400,962.8 N, X= 671,850.9 E C - Y= 398,320.0 N, X= 673,176.8 E D - Y= 398,312.1 N, X= 671,845.7 E E - Y= 395,671.4 N, X= 673,189.8 E F - Y= 395,661.9 N, X= 671,859.4 E G - Y= 393,022.8 N, X= 673,202.8 E H - Y= 393,012.5 N, X= 671,873.1 E I - Y= 390,358.7 N, X= 673,210.7 E J - Y= 390,347.9 N, X= 671,881.5 E K - Y= 387,693.4 N, X= 670,218.1 E L - Y= 387,683.4 N, X= 671,889.6 E CORNER COORDINATES TABLE NAD 83 NME A - Y= 401,027.1 N, X= 714,365.8 E B - Y= 401,020.7 N, X= 713,036.5 E C - Y= 398,377.8 N, X= 714,362.6 E D - Y= 398,369.9 N, X= 713,031.4 E E - Y= 395,729.1 N, X= 714,375.7 E F - Y= 395,719.6 N, X= 713,045.2 E G - Y= 393,080.5 N, X= 714,388.8 E H - Y= 393,070.2 N, X= 713,059.0 E I - Y= 390,416.3 N, X= 714,396.8 E J - Y= 390,405.5 N, X= 713,067.5 E K - Y= 387,751.0 N, X= 711,404.2 E L - Y= 387,741.0 N, X= 713,075.8 E LAST TAKE POINT NAD 27 NME Y= 388,020.9 X= 672,887.1 LAT.= 32.065556°N LONG.= 103.775230°W BOTTOM HOLE LOCATION NAD 27 NME Y= 387,890.9 X= 672,887.4 LAT.= 32.065199°N LONG.= 103.775231°W GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 401,362.7 X= 713,766.8 LAT.= 32.102201°N LONG.= 103.776474°W FIRST TAKE POINT NAD 83 NME Y= 400,685.9 X= 714,035.4 LAT.= 32.100337°N LONG.= 103.775618°W LAST TAKE POINT NAD 83 NME Y= 388,078.5 X= 714,073.3 LAT.= 32.065681°N LONG.= 103.775706°W BOTTOM HOLE LOCATION NAD 83 NME Y= 387,948.5 X= 714,073.6 LAT.= 32.065323°N LONG.= 103.775707°W	GRID AZ = 158°21'22" HORIZ. DIST. = 728.17' GRID AZ = 179°49'41" HORIZ. DIST. = 12,737.43' SEC. 28 SEC. 33 SEC. 4 T26S R31E S.H.L. F.T.P. L.T.P. B.H.L. 600' 330' 2310' 2310' 330' 200'	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. Signature _____ Date _____ Printed Name _____ 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. 03-15-2019 Date of Survey _____ Signature and Seal of Professional Surveyor: _____ PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT MARK DILLON HARP 23786 Certificate Number _____ AW/TM 2017070998
---	--	--



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU 28 Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

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

Site:	PLU 28 Big Sinks		
Site Position:		Northing:	401,295.70 usft
From:	Map	Easting:	669,897.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.102090
		Longitude:	-103.784664
		Grid Convergence:	0.292 °

Well:	#108H		
Well Position	+N/-S	9.10 usft	Northing:
	+E/-W	2,684.10 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32.102077
		Longitude:	-103.775996
		Ground Level:	3,338.00 usft

Wellbore:	OH		
Magnetics:	Model Name	Sample Date	Declination
			(°)
	IGRF2015	4/4/2019	6.845
			Dip Angle
			(°)
			59.895
			Field Strength
			(nT)
			47,660

Design:	PERMIT V2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			179.83

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
9,080.00	0.00	0.00	9,080.00	0.00	0.00	0.00	0.00	0.00	0.000	
9,330.13	5.00	115.04	9,329.81	-4.62	9.89	2.00	2.00	0.00	115.035	
12,030.65	5.00	115.04	12,020.04	-104.27	223.25	0.00	0.00	0.00	0.000	
12,909.36	90.00	179.83	12,570.00	-676.70	268.50	10.00	9.67	7.37	64.880	108H: FTP/LP,
25,646.62	90.00	179.83	12,570.00	-13,413.90	306.20	0.00	0.00	0.00	0.000	108H: PBHL (200' F



Database:	EDM:5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU 28-Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (%/100usft)	Turn Rate (%/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
108H: SHL (2310' FNL/ 600' FEL)										
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	
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00	
RSLR										
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	
1,313.00	0.00	0.00	1,313.00	0.00	0.00	0.00	0.00	0.00	0.00	
SLDO										
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,049.00	0.00	0.00	4,049.00	0.00	0.00	0.00	0.00	0.00	0.00	
SALT B										
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,263.00	0.00	0.00	4,263.00	0.00	0.00	0.00	0.00	0.00	0.00	
DLWR										
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU 28 Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

Planned Survey:									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,253.00	0.00	0.00	5,253.00	0.00	0.00	0.00	0.00	0.00	0.00
CRCN									
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,939.00	0.00	0.00	6,939.00	0.00	0.00	0.00	0.00	0.00	0.00
BYCN									
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,990.00	0.00	0.00	7,990.00	0.00	0.00	0.00	0.00	0.00	0.00
BBYCN									
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,207.00	0.00	0.00	8,207.00	0.00	0.00	0.00	0.00	0.00	0.00
BSPG									
8,232.00	0.00	0.00	8,232.00	0.00	0.00	0.00	0.00	0.00	0.00
BSPG_LM									
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,351.00	0.00	0.00	8,351.00	0.00	0.00	0.00	0.00	0.00	0.00
BSPG_U_AVLN									
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU 28 Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,080.00	0.00	0.00	9,080.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.40	115.04	9,100.00	-0.03	0.06	0.03	2.00	2.00	0.00
9,200.00	2.40	115.04	9,199.97	-1.06	2.28	1.07	2.00	2.00	0.00
9,202.04	2.44	115.04	9,202.00	-1.10	2.35	1.11	2.00	2.00	0.00
BSPG1									
9,300.00	4.40	115.04	9,299.78	-3.57	7.65	3.60	2.00	2.00	0.00
9,330.13	5.00	115.04	9,329.81	-4.62	9.89	4.65	2.00	2.00	0.00
9,400.00	5.00	115.04	9,399.42	-7.20	15.41	7.24	0.00	0.00	0.00
9,500.00	5.00	115.04	9,499.04	-10.89	23.31	10.96	0.00	0.00	0.00
9,600.00	5.00	115.04	9,598.65	-14.58	31.21	14.67	0.00	0.00	0.00
9,617.41	5.00	115.04	9,616.00	-15.22	32.58	15.32	0.00	0.00	0.00
BSPG2_LM									
9,700.00	5.00	115.04	9,698.27	-18.27	39.11	18.38	0.00	0.00	0.00
9,800.00	5.00	115.04	9,797.89	-21.96	47.01	22.10	0.00	0.00	0.00
9,900.00	5.00	115.04	9,897.51	-25.65	54.91	25.81	0.00	0.00	0.00
10,000.00	5.00	115.04	9,997.13	-29.34	62.81	29.52	0.00	0.00	0.00
10,068.13	5.00	115.04	10,065.00	-31.85	68.20	32.05	0.00	0.00	0.00
BSPG2									
10,100.00	5.00	115.04	10,096.75	-33.03	70.71	33.24	0.00	0.00	0.00
10,200.00	5.00	115.04	10,196.37	-36.72	78.61	36.95	0.00	0.00	0.00
10,288.97	5.00	115.04	10,285.00	-40.00	85.64	40.25	0.00	0.00	0.00
BSPG3_LM									
10,300.00	5.00	115.04	10,295.99	-40.41	86.51	40.66	0.00	0.00	0.00
10,400.00	5.00	115.04	10,395.61	-44.10	94.42	44.38	0.00	0.00	0.00
10,500.00	5.00	115.04	10,495.23	-47.79	102.32	48.09	0.00	0.00	0.00
10,600.00	5.00	115.04	10,594.85	-51.48	110.22	51.80	0.00	0.00	0.00
10,700.00	5.00	115.04	10,694.46	-55.17	118.12	55.52	0.00	0.00	0.00
10,800.00	5.00	115.04	10,794.08	-58.86	126.02	59.23	0.00	0.00	0.00
10,900.00	5.00	115.04	10,893.70	-62.55	133.92	62.94	0.00	0.00	0.00
11,000.00	5.00	115.04	10,993.32	-66.24	141.82	66.66	0.00	0.00	0.00
11,100.00	5.00	115.04	11,092.94	-69.93	149.72	70.37	0.00	0.00	0.00
11,164.30	5.00	115.04	11,157.00	-72.30	154.80	72.76	0.00	0.00	0.00
BSPG3									
11,200.00	5.00	115.04	11,192.56	-73.62	157.62	74.08	0.00	0.00	0.00
11,300.00	5.00	115.04	11,292.18	-77.31	165.52	77.80	0.00	0.00	0.00
11,400.00	5.00	115.04	11,391.80	-81.00	173.42	81.51	0.00	0.00	0.00
11,487.54	5.00	115.04	11,479.00	-84.23	180.34	84.76	0.00	0.00	0.00
BSPG3_RH									
11,500.00	5.00	115.04	11,491.42	-84.69	181.32	85.23	0.00	0.00	0.00
11,580.89	5.00	115.04	11,572.00	-87.67	187.71	88.23	0.00	0.00	0.00
WFMP									
11,600.00	5.00	115.04	11,591.04	-88.38	189.22	88.94	0.00	0.00	0.00
11,605.99	5.00	115.04	11,597.00	-88.60	189.70	89.16	0.00	0.00	0.00
WFMP_X									
11,700.00	5.00	115.04	11,690.66	-92.07	197.13	92.65	0.00	0.00	0.00
11,701.35	5.00	115.04	11,692.00	-92.12	197.23	92.70	0.00	0.00	0.00
WFMP_Y									
11,735.48	5.00	115.04	11,726.00	-93.38	199.93	93.97	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU 28 Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
WFMP_A									
11,800.00	5.00	115.04	11,790.27	-95.76	205.03	96.37	0.00	0.00	0.00
11,900.00	5.00	115.04	11,889.89	-99.45	212.93	100.08	0.00	0.00	0.00
12,000.00	5.00	115.04	11,989.51	-103.14	220.83	103.79	0.00	0.00	0.00
12,030.65	5.00	115.04	12,020.04	-104.27	223.25	104.93	0.00	0.00	0.00
12,050.00	6.08	131.81	12,039.31	-105.31	224.78	105.98	10.00	5.57	86.68
12,100.00	10.12	153.50	12,088.81	-111.01	228.72	111.69	10.00	8.08	43.37
12,150.00	14.76	162.34	12,137.62	-121.02	232.61	121.71	10.00	9.27	17.68
12,177.45	17.39	165.18	12,164.00	-128.32	234.72	129.01	10.00	9.58	10.37
WFMP_B									
12,200.00	19.57	166.96	12,185.39	-135.26	236.44	135.96	10.00	9.68	7.88
12,250.00	24.46	169.80	12,231.73	-153.62	240.16	154.33	10.00	9.77	5.69
12,300.00	29.38	171.74	12,276.29	-175.96	243.76	176.68	10.00	9.85	3.88
12,350.00	34.33	173.17	12,318.75	-202.11	247.20	202.85	10.00	9.89	2.85
12,400.00	39.28	174.27	12,358.77	-231.88	250.45	232.62	10.00	9.91	2.21
12,450.00	44.25	175.17	12,396.05	-265.03	253.51	265.78	10.00	9.93	1.78
12,500.00	49.22	175.91	12,430.31	-301.32	256.33	302.08	10.00	9.94	1.49
12,550.00	54.19	176.56	12,461.29	-340.47	258.89	341.23	10.00	9.95	1.28
12,600.00	59.17	177.12	12,488.74	-382.17	261.19	382.94	10.00	9.96	1.13
12,650.00	64.15	177.63	12,512.47	-426.12	263.20	426.90	10.00	9.96	1.02
12,700.00	69.13	178.10	12,532.29	-471.97	264.91	472.76	10.00	9.96	0.94
12,750.00	74.11	178.54	12,548.05	-519.39	266.30	520.18	10.00	9.97	0.88
12,786.89	77.79	178.85	12,557.00	-555.16	267.11	555.95	10.00	9.97	0.84
WFMP_D									
12,800.00	79.10	178.96	12,559.63	-568.00	267.36	568.79	10.00	9.97	0.82
12,850.00	84.08	179.36	12,566.94	-617.44	268.08	618.24	10.00	9.97	0.81
12,900.00	89.07	179.76	12,569.92	-667.34	268.47	668.13	10.00	9.97	0.79
12,909.36	90.00	179.83	12,570.00	-676.70	268.50	677.49	10.00	9.97	0.79
Landing Point - 108H: FTP/LP									
13,000.00	90.00	179.83	12,570.00	-767.34	268.77	768.13	0.00	0.00	0.00
13,100.00	90.00	179.83	12,570.00	-867.34	269.06	868.13	0.00	0.00	0.00
13,200.00	90.00	179.83	12,570.00	-967.33	269.36	968.13	0.00	0.00	0.00
13,300.00	90.00	179.83	12,570.00	-1,067.33	269.66	1,068.13	0.00	0.00	0.00
13,400.00	90.00	179.83	12,570.00	-1,167.33	269.95	1,168.13	0.00	0.00	0.00
13,500.00	90.00	179.83	12,570.00	-1,267.33	270.25	1,268.13	0.00	0.00	0.00
13,600.00	90.00	179.83	12,570.00	-1,367.33	270.54	1,368.13	0.00	0.00	0.00
13,700.00	90.00	179.83	12,570.00	-1,467.33	270.84	1,468.13	0.00	0.00	0.00
13,800.00	90.00	179.83	12,570.00	-1,567.33	271.14	1,568.13	0.00	0.00	0.00
13,900.00	90.00	179.83	12,570.00	-1,667.33	271.43	1,668.13	0.00	0.00	0.00
14,000.00	90.00	179.83	12,570.00	-1,767.33	271.73	1,768.13	0.00	0.00	0.00
14,100.00	90.00	179.83	12,570.00	-1,867.33	272.02	1,868.13	0.00	0.00	0.00
14,200.00	90.00	179.83	12,570.00	-1,967.33	272.32	1,968.13	0.00	0.00	0.00
14,300.00	90.00	179.83	12,570.00	-2,067.33	272.62	2,068.13	0.00	0.00	0.00
14,400.00	90.00	179.83	12,570.00	-2,167.33	272.91	2,168.13	0.00	0.00	0.00
14,500.00	90.00	179.83	12,570.00	-2,267.33	273.21	2,268.13	0.00	0.00	0.00
14,600.00	90.00	179.83	12,570.00	-2,367.33	273.50	2,368.13	0.00	0.00	0.00
14,700.00	90.00	179.83	12,570.00	-2,467.33	273.80	2,468.13	0.00	0.00	0.00
14,800.00	90.00	179.83	12,570.00	-2,567.33	274.10	2,568.13	0.00	0.00	0.00
14,900.00	90.00	179.83	12,570.00	-2,667.33	274.39	2,668.13	0.00	0.00	0.00
15,000.00	90.00	179.83	12,570.00	-2,767.33	274.69	2,768.13	0.00	0.00	0.00
15,100.00	90.00	179.83	12,570.00	-2,867.33	274.98	2,868.13	0.00	0.00	0.00
15,200.00	90.00	179.83	12,570.00	-2,967.33	275.28	2,968.13	0.00	0.00	0.00
15,300.00	90.00	179.83	12,570.00	-3,067.33	275.58	3,068.13	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County: NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU.28 Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,400.00	90.00	179.83	12,570.00	-3,167.33	275.87	3,168.13	0.00	0.00	0.00
15,500.00	90.00	179.83	12,570.00	-3,267.32	276.17	3,268.13	0.00	0.00	0.00
15,600.00	90.00	179.83	12,570.00	-3,367.32	276.46	3,368.13	0.00	0.00	0.00
15,700.00	90.00	179.83	12,570.00	-3,467.32	276.76	3,468.13	0.00	0.00	0.00
15,800.00	90.00	179.83	12,570.00	-3,567.32	277.06	3,568.13	0.00	0.00	0.00
15,900.00	90.00	179.83	12,570.00	-3,667.32	277.35	3,668.13	0.00	0.00	0.00
16,000.00	90.00	179.83	12,570.00	-3,767.32	277.65	3,768.13	0.00	0.00	0.00
16,100.00	90.00	179.83	12,570.00	-3,867.32	277.94	3,868.13	0.00	0.00	0.00
16,200.00	90.00	179.83	12,570.00	-3,967.32	278.24	3,968.13	0.00	0.00	0.00
16,300.00	90.00	179.83	12,570.00	-4,067.32	278.54	4,068.13	0.00	0.00	0.00
16,400.00	90.00	179.83	12,570.00	-4,167.32	278.83	4,168.13	0.00	0.00	0.00
16,500.00	90.00	179.83	12,570.00	-4,267.32	279.13	4,268.13	0.00	0.00	0.00
16,600.00	90.00	179.83	12,570.00	-4,367.32	279.42	4,368.13	0.00	0.00	0.00
16,700.00	90.00	179.83	12,570.00	-4,467.32	279.72	4,468.13	0.00	0.00	0.00
16,800.00	90.00	179.83	12,570.00	-4,567.32	280.02	4,568.13	0.00	0.00	0.00
16,900.00	90.00	179.83	12,570.00	-4,667.32	280.31	4,668.13	0.00	0.00	0.00
17,000.00	90.00	179.83	12,570.00	-4,767.32	280.61	4,768.13	0.00	0.00	0.00
17,100.00	90.00	179.83	12,570.00	-4,867.32	280.90	4,868.13	0.00	0.00	0.00
17,200.00	90.00	179.83	12,570.00	-4,967.32	281.20	4,968.13	0.00	0.00	0.00
17,300.00	90.00	179.83	12,570.00	-5,067.32	281.50	5,068.13	0.00	0.00	0.00
17,400.00	90.00	179.83	12,570.00	-5,167.32	281.79	5,168.13	0.00	0.00	0.00
17,500.00	90.00	179.83	12,570.00	-5,267.32	282.09	5,268.13	0.00	0.00	0.00
17,600.00	90.00	179.83	12,570.00	-5,367.32	282.38	5,368.13	0.00	0.00	0.00
17,700.00	90.00	179.83	12,570.00	-5,467.32	282.68	5,468.13	0.00	0.00	0.00
17,800.00	90.00	179.83	12,570.00	-5,567.31	282.98	5,568.13	0.00	0.00	0.00
17,900.00	90.00	179.83	12,570.00	-5,667.31	283.27	5,668.13	0.00	0.00	0.00
18,000.00	90.00	179.83	12,570.00	-5,767.31	283.57	5,768.13	0.00	0.00	0.00
18,100.00	90.00	179.83	12,570.00	-5,867.31	283.86	5,868.13	0.00	0.00	0.00
18,200.00	90.00	179.83	12,570.00	-5,967.31	284.16	5,968.13	0.00	0.00	0.00
18,300.00	90.00	179.83	12,570.00	-6,067.31	284.46	6,068.13	0.00	0.00	0.00
18,400.00	90.00	179.83	12,570.00	-6,167.31	284.75	6,168.13	0.00	0.00	0.00
18,500.00	90.00	179.83	12,570.00	-6,267.31	285.05	6,268.13	0.00	0.00	0.00
18,600.00	90.00	179.83	12,570.00	-6,367.31	285.34	6,368.13	0.00	0.00	0.00
18,700.00	90.00	179.83	12,570.00	-6,467.31	285.64	6,468.13	0.00	0.00	0.00
18,800.00	90.00	179.83	12,570.00	-6,567.31	285.94	6,568.13	0.00	0.00	0.00
18,900.00	90.00	179.83	12,570.00	-6,667.31	286.23	6,668.13	0.00	0.00	0.00
19,000.00	90.00	179.83	12,570.00	-6,767.31	286.53	6,768.13	0.00	0.00	0.00
19,100.00	90.00	179.83	12,570.00	-6,867.31	286.82	6,868.13	0.00	0.00	0.00
19,200.00	90.00	179.83	12,570.00	-6,967.31	287.12	6,968.13	0.00	0.00	0.00
19,300.00	90.00	179.83	12,570.00	-7,067.31	287.42	7,068.13	0.00	0.00	0.00
19,400.00	90.00	179.83	12,570.00	-7,167.31	287.71	7,168.13	0.00	0.00	0.00
19,500.00	90.00	179.83	12,570.00	-7,267.31	288.01	7,268.13	0.00	0.00	0.00
19,600.00	90.00	179.83	12,570.00	-7,367.31	288.30	7,368.13	0.00	0.00	0.00
19,700.00	90.00	179.83	12,570.00	-7,467.31	288.60	7,468.13	0.00	0.00	0.00
19,800.00	90.00	179.83	12,570.00	-7,567.31	288.90	7,568.13	0.00	0.00	0.00
19,900.00	90.00	179.83	12,570.00	-7,667.31	289.19	7,668.13	0.00	0.00	0.00
20,000.00	90.00	179.83	12,570.00	-7,767.31	289.49	7,768.13	0.00	0.00	0.00
20,100.00	90.00	179.83	12,570.00	-7,867.30	289.78	7,868.13	0.00	0.00	0.00
20,200.00	90.00	179.83	12,570.00	-7,967.30	290.08	7,968.13	0.00	0.00	0.00
20,300.00	90.00	179.83	12,570.00	-8,067.30	290.37	8,068.13	0.00	0.00	0.00
20,400.00	90.00	179.83	12,570.00	-8,167.30	290.67	8,168.13	0.00	0.00	0.00
20,500.00	90.00	179.83	12,570.00	-8,267.30	290.97	8,268.13	0.00	0.00	0.00
20,600.00	90.00	179.83	12,570.00	-8,367.30	291.26	8,368.13	0.00	0.00	0.00
20,700.00	90.00	179.83	12,570.00	-8,467.30	291.56	8,468.13	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU 28 Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,800.00	90.00	179.83	12,570.00	-8,567.30	291.85	8,568.13	0.00	0.00	0.00
20,900.00	90.00	179.83	12,570.00	-8,667.30	292.15	8,668.13	0.00	0.00	0.00
21,000.00	90.00	179.83	12,570.00	-8,767.30	292.45	8,768.13	0.00	0.00	0.00
21,100.00	90.00	179.83	12,570.00	-8,867.30	292.74	8,868.13	0.00	0.00	0.00
21,200.00	90.00	179.83	12,570.00	-8,967.30	293.04	8,968.13	0.00	0.00	0.00
21,300.00	90.00	179.83	12,570.00	-9,067.30	293.33	9,068.13	0.00	0.00	0.00
21,400.00	90.00	179.83	12,570.00	-9,167.30	293.63	9,168.13	0.00	0.00	0.00
21,500.00	90.00	179.83	12,570.00	-9,267.30	293.93	9,268.13	0.00	0.00	0.00
21,600.00	90.00	179.83	12,570.00	-9,367.30	294.22	9,368.13	0.00	0.00	0.00
21,700.00	90.00	179.83	12,570.00	-9,467.30	294.52	9,468.13	0.00	0.00	0.00
21,800.00	90.00	179.83	12,570.00	-9,567.30	294.81	9,568.13	0.00	0.00	0.00
21,900.00	90.00	179.83	12,570.00	-9,667.30	295.11	9,668.13	0.00	0.00	0.00
22,000.00	90.00	179.83	12,570.00	-9,767.30	295.41	9,768.13	0.00	0.00	0.00
22,100.00	90.00	179.83	12,570.00	-9,867.30	295.70	9,868.13	0.00	0.00	0.00
22,200.00	90.00	179.83	12,570.00	-9,967.30	296.00	9,968.13	0.00	0.00	0.00
22,300.00	90.00	179.83	12,570.00	-10,067.30	296.29	10,068.13	0.00	0.00	0.00
22,400.00	90.00	179.83	12,570.00	-10,167.29	296.59	10,168.13	0.00	0.00	0.00
22,500.00	90.00	179.83	12,570.00	-10,267.29	296.89	10,268.13	0.00	0.00	0.00
22,600.00	90.00	179.83	12,570.00	-10,367.29	297.18	10,368.13	0.00	0.00	0.00
22,700.00	90.00	179.83	12,570.00	-10,467.29	297.48	10,468.13	0.00	0.00	0.00
22,800.00	90.00	179.83	12,570.00	-10,567.29	297.77	10,568.13	0.00	0.00	0.00
22,900.00	90.00	179.83	12,570.00	-10,667.29	298.07	10,668.13	0.00	0.00	0.00
23,000.00	90.00	179.83	12,570.00	-10,767.29	298.37	10,768.13	0.00	0.00	0.00
23,100.00	90.00	179.83	12,570.00	-10,867.29	298.66	10,868.13	0.00	0.00	0.00
23,200.00	90.00	179.83	12,570.00	-10,967.29	298.96	10,968.13	0.00	0.00	0.00
23,300.00	90.00	179.83	12,570.00	-11,067.29	299.25	11,068.13	0.00	0.00	0.00
23,400.00	90.00	179.83	12,570.00	-11,167.29	299.55	11,168.13	0.00	0.00	0.00
23,500.00	90.00	179.83	12,570.00	-11,267.29	299.85	11,268.13	0.00	0.00	0.00
23,600.00	90.00	179.83	12,570.00	-11,367.29	300.14	11,368.13	0.00	0.00	0.00
23,700.00	90.00	179.83	12,570.00	-11,467.29	300.44	11,468.13	0.00	0.00	0.00
23,800.00	90.00	179.83	12,570.00	-11,567.29	300.73	11,568.13	0.00	0.00	0.00
23,900.00	90.00	179.83	12,570.00	-11,667.29	301.03	11,668.13	0.00	0.00	0.00
24,000.00	90.00	179.83	12,570.00	-11,767.29	301.33	11,768.13	0.00	0.00	0.00
24,100.00	90.00	179.83	12,570.00	-11,867.29	301.62	11,868.13	0.00	0.00	0.00
24,200.00	90.00	179.83	12,570.00	-11,967.29	301.92	11,968.13	0.00	0.00	0.00
24,300.00	90.00	179.83	12,570.00	-12,067.29	302.21	12,068.13	0.00	0.00	0.00
24,400.00	90.00	179.83	12,570.00	-12,167.29	302.51	12,168.13	0.00	0.00	0.00
24,500.00	90.00	179.83	12,570.00	-12,267.29	302.81	12,268.13	0.00	0.00	0.00
24,600.00	90.00	179.83	12,570.00	-12,367.29	303.10	12,368.13	0.00	0.00	0.00
24,700.00	90.00	179.83	12,570.00	-12,467.28	303.40	12,468.13	0.00	0.00	0.00
24,800.00	90.00	179.83	12,570.00	-12,567.28	303.69	12,568.13	0.00	0.00	0.00
24,900.00	90.00	179.83	12,570.00	-12,667.28	303.99	12,668.13	0.00	0.00	0.00
25,000.00	90.00	179.83	12,570.00	-12,767.28	304.29	12,768.13	0.00	0.00	0.00
25,100.00	90.00	179.83	12,570.00	-12,867.28	304.58	12,868.13	0.00	0.00	0.00
25,200.00	90.00	179.83	12,570.00	-12,967.28	304.88	12,968.13	0.00	0.00	0.00
25,300.00	90.00	179.83	12,570.00	-13,067.28	305.17	13,068.13	0.00	0.00	0.00
25,400.00	90.00	179.83	12,570.00	-13,167.28	305.47	13,168.13	0.00	0.00	0.00
25,500.00	90.00	179.83	12,570.00	-13,267.28	305.77	13,268.13	0.00	0.00	0.00
25,516.62	90.00	179.83	12,570.00	-13,283.90	305.82	13,284.75	0.00	0.00	0.00
108H: LTP									
25,600.00	90.00	179.83	12,570.00	-13,367.28	306.06	13,368.13	0.00	0.00	0.00
25,646.62	90.00	179.83	12,570.00	-13,413.90	306.20	13,414.75	0.00	0.00	0.00
108H: PBHL (200' FSL/ 330' FEL)									



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #108H
Company:	XTO Energy	TVD Reference:	RKB = 32' @ 3370.00usft
Project:	Eddy County NM (NAD-27)	MD Reference:	RKB = 32' @ 3370.00usft
Site:	PLU 28 Big Sinks	North Reference:	Grid
Well:	#108H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT V2		

Design Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
108H: SHL (2310' FNI	- plan hits target center	0.00	0.00	0.00	0.00	0.00	401,304.80	672,581.20	32.102077	-103.775996
- Point										
108H: LTP,	- plan misses target center by 0.08usft at 25516.62usft MD (12570.00 TVD, -13283.90 N, 305.82 E)	0.00	0.00	12,570.00	-13,283.90	305.90	388,020.90	672,887.10	32.065556	-103.775230
- Point										
108H: FTP/ LP,	- plan hits target center	0.00	0.00	12,570.00	-676.70	268.50	400,628.10	672,849.70	32.100213	-103.775140
- Point										
108H: PBHL (200' FS	- plan hits target center	0.00	0.00	12,570.00	-13,413.90	306.20	387,890.90	672,887.40	32.065199	-103.775231
- Point										

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
950.00	950.00	RSLR			
1,313.00	1,313.00	SLDO			
4,049.00	4,049.00	SALT_B			
4,263.00	4,263.00	DLWR			
5,253.00	5,253.00	CRCN			
6,939.00	6,939.00	BYCN			
7,990.00	7,990.00	BBYCN			
8,207.00	8,207.00	BSPG			
8,232.00	8,232.00	BSPG_LM			
8,351.00	8,351.00	BSPG_U_AVLN			
9,202.04	9,202.00	BSPG1			
9,617.41	9,616.00	BSPG2_LM			
10,068.13	10,065.00	BSPG2			
10,288.97	10,285.00	BSPG3_LM			
11,164.30	11,157.00	BSPG3			
11,487.54	11,479.00	BSPG3_RH			
11,580.89	11,572.00	WFMP			
11,605.99	11,597.00	WFMP_X			
11,701.35	11,692.00	WFMP_Y			
11,735.48	11,726.00	WFMP_A			
12,177.45	12,164.00	WFMP_B			
12,786.89	12,557.00	WFMP_D			
12,909.36	12,570.00	Landing Point			

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L.P.
LEASE NO.:	NMLC-0063136A
WELL NAME & NO.:	Poker Lake Unit 28 BS 108H
SURFACE HOLE FOOTAGE:	2310' FNL & 0600' FEL
BOTTOM HOLE FOOTAGE:	0200' FSL & 0330' FEL Sec. 04, T. 26 S., R 31 E.
LOCATION:	Section 28, T. 25 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

The original COAs still stand with the following drilling modifications:

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. 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.
4. 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.

Medium Cave/Karst

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 18-5/8 inch surface casing shall be set at approximately 1290 feet (in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 13-3/8 inch 1st intermediate casing is:
 - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

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

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

3. The minimum required fill of cement behind the 9-5/8 inch 2nd intermediate casing is:

Operator has proposed DV tool at depth of 4250', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

- a. First stage to DV tool:

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

- b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

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.

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

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi.**
4. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 13-3/8 inch casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8 inch casing shoe shall be 10,000 (10M) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Operator shall perform the 9-5/8 inch 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.

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

10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

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.

JAM 041119