

NM STATE DRILLING PERMITTING

Estancia SED State 104H

		Deepest TVD	12476	KOP		11890	End of Curve		12841	Measured depth		17974
Casing Type	Fluid Type	Mud Weight	Hole Size	Casing Size	Casing Grade	Casing Weight	Top MD	Setting Depth	Lead Cement	Tail Cement	Total Sks Cement	TOC
Surface	FW/Native	8.5 - 10.0	17.5	13.375	J-55 LTC	54.5	0	1250	743	289	1032	0
Intermediate	Brine / OBM	9.0-10.3	12.25	9.625	J-55 LTC	40	0	5039	776	488	1264	1710
DV Tool								1710	394	17	411	0
Production	FW/Cut Brine / OBM Cut Brine / OBM	9.0-10.5 9.3	8-3/4" to EOC 8-1/2" to TD	5.5	P110 BTC	17	0	17974	1340	1134	2474	4539

1st Stage

2nd Stage

Max Expected Surface Pressure
3289

BOP
Cameron 5M Double Ram BOP
Test Pressure 5000

Total Vertical Section 5133

Contingencies

1. XTO Requests option to use OBM in intermediate hole section
2. Should losses be seen from 9-5/8" shoe to landing point, 4-string contingency may be utilized
3. XTO requests variance to have the option to batch drill this well. XTO will set intermediate csg, ensure cement is circulated to surface and well is dead. With floats holding, and no flow on annulus, a TA cap will be installed as per GE recommendations. XTO will contact the state before skidding to the other well. Once all surface and intermediate are completed on the pad, XTO will begin drilling the production hole of each well.
4. DV Tool may be set in intermediate fr/ 1300' - 5000'
5. OBM may be used in production hole
6. If cmt is not circulated to surface on 5.5" casing, it will be brought at least 500' into intermediate shoe
7. 8.5" lateral may be drilled if no issues in 8.75" hole



XTO Energy

Lea County, NM (NAD-27)

Estancia Sed

#104H

OH

Plan: PERMIT

HOBBS OCD
JUL 01 2019
RECEIVED

Standard Planning Report

11 June, 2019



Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #104H
Wellbore: OH
Design: PERMIT

PROJECT DETAILS: Lea 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

DESIGN TARGET DETAILS

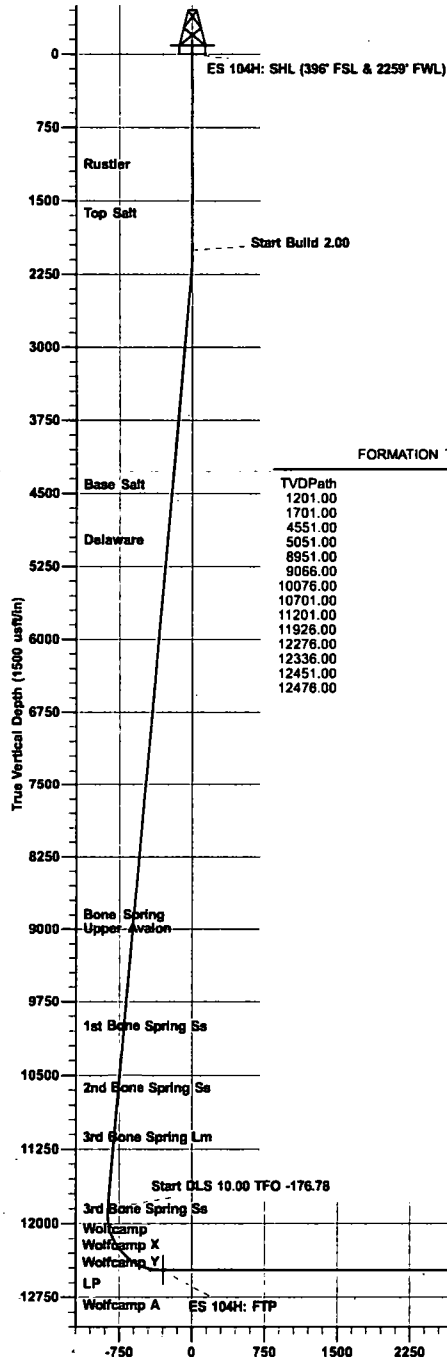
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
ES 104H: SHL (396' FSL & 2259' FWL)	0.00	0.00	0.00	457212.20	722895.70	32.2549338	-103.611853	Point
ES 104H: FTP	12476.00	-295.70	53.30	456918.50	723049.00	32.2541200	-103.6118194	Point
ES 104H: LTP	12476.00	4786.70	26.70	461988.90	723022.40	32.2680908	-103.6117949	Point
ES 104H: PBHL (50' FNL & 2310' FWL)	12476.00	4836.70	26.50	462048.90	723022.20	32.2682282	-103.6117944	Point

WELL DETAILS: #104H

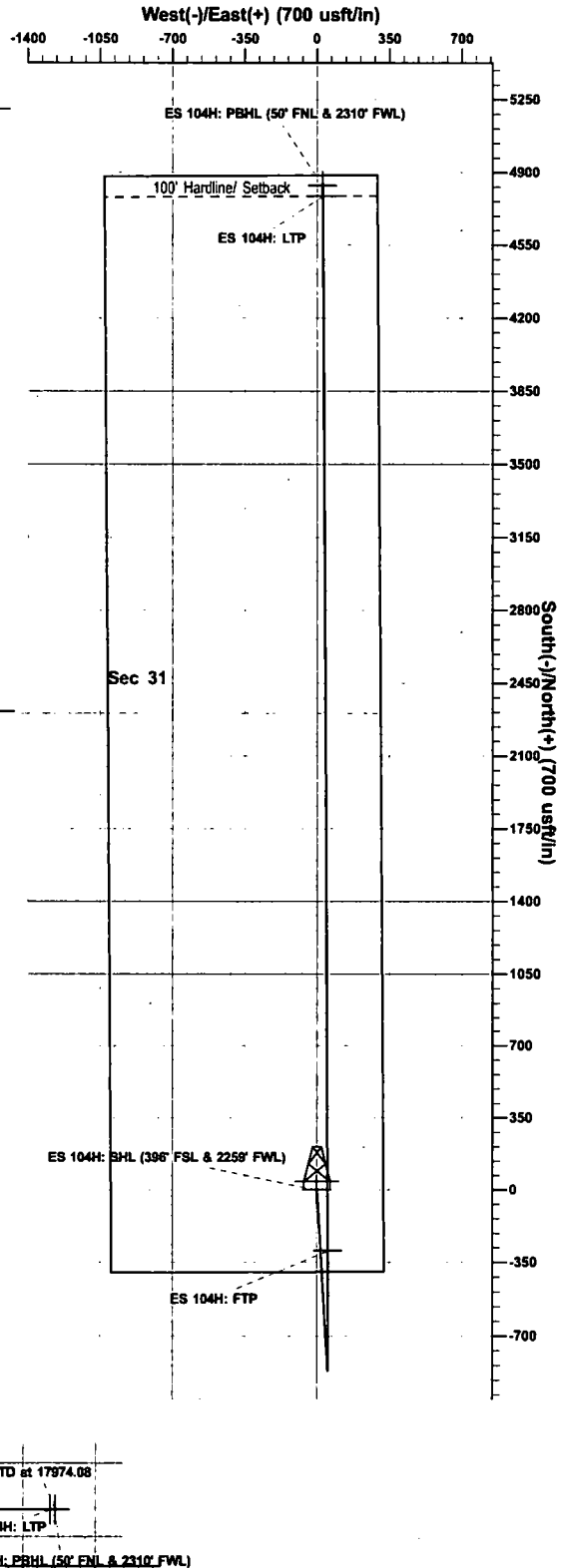
Rig Name: Ref GL @ 3651.00ush Ground Level: 3651.00			
+N/-S	+E/-W	Northing	Eastng
0.00	0.00	457212.20	722895.70
		Latitude	Longitude
		32.2549338	-103.611853

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2255.04	5.10	176.49	2254.70	-11.32	0.69	2.00	176.49	-11.33
4	11890.69	5.10	176.49	11852.19	-866.40	53.16	0.00	0.00	-866.67
5	12841.61	90.00	359.70	12476.00	-285.70	53.30	10.00	-176.78	-285.98
6	17924.08	90.00	359.70	12476.00	4786.70	26.76	0.00	0.00	4786.49
7	17974.08	90.00	359.70	12476.00	4836.70	26.50	0.00	0.00	4836.49



Vertical Section at 359.70° (1500 usf/in)



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

Plan: PERMIT (#104H/OH)

Created By: Matthew May Date: 12:47, June 11 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 30-025-		² Pool Code		³ Pool Name	
⁴ Property Code		⁵ Property Name ESTANCIA SED			⁶ Well Number 104H
⁷ OGRID No. 005380		⁸ Operator Name XTO ENERGY, INC.			⁹ Elevation 3,651'

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	31	23 S	33 E		396	SOUTH	2,259	WEST	LEA

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
C	31	23 S	33 E		50	NORTH	2,310	WEST	LEA

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

CORNER COORDINATES TABLE
NAD 83 NME
A - Y= 456,878.5 N, X= 784,505.8 E
B - Y= 456,870.3 N, X= 783,185.1 E
C - Y= 459,517.1 N, X= 784,488.1 E
D - Y= 459,510.5 N, X= 783,185.8 E
E - Y= 462,159.2 N, X= 784,470.7 E
F - Y= 462,151.3 N, X= 783,149.5 E

CORNER COORDINATES TABLE
NAD 27 NME
A - Y= 456,817.8 N, X= 723,321.8 E
B - Y= 456,811.6 N, X= 722,001.3 E
C - Y= 459,458.3 N, X= 723,304.4 E
D - Y= 459,451.7 N, X= 721,982.1 E
E - Y= 462,100.4 N, X= 723,287.0 E
F - Y= 462,092.4 N, X= 721,965.9 E

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 457,270.9
X= 784,179.5
LAT.= 32.255056°N
LONG.= 103.612466°W

LAST TAKE POINT
NAD 83 NME
Y= 462,057.7
X= 784,206.1
LAT.= 32.268213°N
LONG.= 103.612276°W

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 457,212.2
X= 722,995.7
LAT.= 32.254834°N
LONG.= 103.611985°W

LAST TAKE POINT
NAD 27 NME
Y= 461,998.9
X= 723,022.4
LAT.= 32.268091°N
LONG.= 103.611795°W

FIRST TAKE POINT
NAD 83 NME
Y= 456,875.2
X= 784,232.8
LAT.= 32.254243°N
LONG.= 103.612300°W

BOTTOM HOLE LOCATION
NAD 83 NME
Y= 462,107.7
X= 784,205.9
LAT.= 32.268350°N
LONG.= 103.612276°W

FIRST TAKE POINT
NAD 27 NME
Y= 456,916.5
X= 723,049.0
LAT.= 32.254120°N
LONG.= 103.611819°W

BOTTOM HOLE LOCATION
NAD 27 NME
Y= 462,048.9
X= 723,022.2
LAT.= 32.268228°N
LONG.= 103.611794°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.

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.

05-21-2019
Date of Survey

Signature and Seal of Professional Surveyor: _____

MARK DILLON HARP 23786
Certificate Number

RR 2018112881



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #104H
Company:	XTO Energy	TVD Reference:	Ref GL @ 3651.00usft
Project:	Lea County, NM (NAD-27)	MD Reference:	Ref GL @ 3651.00usft
Site:	Estancia Sed	North Reference:	Grid
Well:	#104H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Project	Lea 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	Estancia Sed		
Site Position:		Northing:	457,155.00 usft
From:	Map	Easting:	721,273.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.2548083
		Longitude:	-103.6175578
		Grid Convergence:	0.38 °

Well	#104H		
Well Position	+N/-S	57.20 usft	Northing: 457,212.20 usft
	+E/-W	1,722.40 usft	Easting: 722,995.70 usft
Position Uncertainty		0.00 usft	Wellhead Elevation: 0.00 usft
			Latitude: 32.2549338
			Longitude: -103.6119853
			Ground Level: 3,651.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	06/11/19	6.76
			Dip Angle (°) 60.06
			Field Strength (nT) 47,747

Design	PERMIT		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 359.70

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,255.04	5.10	176.49	2,254.70	-11.32	0.69	2.00	2.00	0.00	176.49	
11,890.69	5.10	176.49	11,852.19	-866.40	53.16	0.00	0.00	0.00	0.00	
12,841.61	90.00	359.70	12,476.00	-295.70	53.30	10.00	8.93	-18.59	-176.78	ES 104H: FTP
17,924.08	90.00	359.70	12,476.00	4,786.70	26.76	0.00	0.00	0.00	0.00	ES 104H: LTP
17,974.08	90.00	359.70	12,476.00	4,836.70	26.50	0.00	0.00	0.00	0.00	ES 104H: PBHL (50



Planning Report

Database: EDM 5000.1.13 Single User Db
Company: XTO Energy
Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #104H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #104H
TVD Reference: Ref GL @ 3651.00usft
MD Reference: Ref GL @ 3651.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,201.00	0.00	0.00	1,201.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
1,701.00	0.00	0.00	1,701.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
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	2.00	176.49	2,099.98	-1.74	0.11	-1.74	2.00	2.00	0.00
2,200.00	4.00	176.49	2,199.84	-6.97	0.43	-6.97	2.00	2.00	0.00
2,255.04	5.10	176.49	2,254.70	-11.32	0.69	-11.33	2.00	2.00	0.00
2,300.00	5.10	176.49	2,299.49	-15.31	0.94	-15.32	0.00	0.00	0.00
2,400.00	5.10	176.49	2,399.09	-24.19	1.48	-24.20	0.00	0.00	0.00
2,500.00	5.10	176.49	2,498.69	-33.06	2.03	-33.07	0.00	0.00	0.00
2,600.00	5.10	176.49	2,598.30	-41.94	2.57	-41.95	0.00	0.00	0.00
2,700.00	5.10	176.49	2,697.90	-50.81	3.12	-50.83	0.00	0.00	0.00
2,800.00	5.10	176.49	2,797.51	-59.68	3.66	-59.70	0.00	0.00	0.00
2,900.00	5.10	176.49	2,897.11	-68.56	4.21	-68.58	0.00	0.00	0.00
3,000.00	5.10	176.49	2,996.71	-77.43	4.75	-77.46	0.00	0.00	0.00
3,100.00	5.10	176.49	3,096.32	-86.31	5.30	-86.33	0.00	0.00	0.00
3,200.00	5.10	176.49	3,195.92	-95.18	5.84	-95.21	0.00	0.00	0.00
3,300.00	5.10	176.49	3,295.53	-104.05	6.38	-104.09	0.00	0.00	0.00
3,400.00	5.10	176.49	3,395.13	-112.93	6.93	-112.96	0.00	0.00	0.00
3,500.00	5.10	176.49	3,494.73	-121.80	7.47	-121.84	0.00	0.00	0.00
3,600.00	5.10	176.49	3,594.34	-130.68	8.02	-130.72	0.00	0.00	0.00
3,700.00	5.10	176.49	3,693.94	-139.55	8.56	-139.59	0.00	0.00	0.00
3,800.00	5.10	176.49	3,793.55	-148.43	9.11	-148.47	0.00	0.00	0.00
3,900.00	5.10	176.49	3,893.15	-157.30	9.65	-157.35	0.00	0.00	0.00
4,000.00	5.10	176.49	3,992.75	-166.17	10.20	-166.23	0.00	0.00	0.00
4,100.00	5.10	176.49	4,092.36	-175.05	10.74	-175.10	0.00	0.00	0.00
4,200.00	5.10	176.49	4,191.96	-183.92	11.28	-183.98	0.00	0.00	0.00
4,300.00	5.10	176.49	4,291.56	-192.80	11.83	-192.86	0.00	0.00	0.00
4,400.00	5.10	176.49	4,391.17	-201.67	12.37	-201.73	0.00	0.00	0.00
4,500.00	5.10	176.49	4,490.77	-210.54	12.92	-210.61	0.00	0.00	0.00
4,560.47	5.10	176.49	4,551.00	-215.91	13.25	-215.98	0.00	0.00	0.00
Base Salt									



Planning Report

Database: EDM 5000.1.13 Single User Db
Company: XTO Energy
Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #104H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #104H
TVD Reference: Ref GL @ 3651.00usft
MD Reference: Ref GL @ 3651.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	5.10	176.49	4,590.38	-219.42	13.46	-219.49	0.00	0.00	0.00
4,700.00	5.10	176.49	4,689.98	-228.29	14.01	-228.36	0.00	0.00	0.00
4,800.00	5.10	176.49	4,789.58	-237.17	14.55	-237.24	0.00	0.00	0.00
4,900.00	5.10	176.49	4,889.19	-246.04	15.10	-246.12	0.00	0.00	0.00
5,000.00	5.10	176.49	4,988.79	-254.92	15.64	-254.99	0.00	0.00	0.00
5,062.45	5.10	176.49	5,051.00	-260.46	15.98	-260.54	0.00	0.00	0.00
Delaware									
5,100.00	5.10	176.49	5,088.40	-263.79	16.19	-263.87	0.00	0.00	0.00
5,200.00	5.10	176.49	5,188.00	-272.66	16.73	-272.75	0.00	0.00	0.00
5,300.00	5.10	176.49	5,287.60	-281.54	17.27	-281.62	0.00	0.00	0.00
5,400.00	5.10	176.49	5,387.21	-290.41	17.82	-290.50	0.00	0.00	0.00
5,500.00	5.10	176.49	5,486.81	-299.29	18.36	-299.38	0.00	0.00	0.00
5,600.00	5.10	176.49	5,586.42	-308.16	18.91	-308.25	0.00	0.00	0.00
5,700.00	5.10	176.49	5,686.02	-317.03	19.45	-317.13	0.00	0.00	0.00
5,800.00	5.10	176.49	5,785.62	-325.91	20.00	-326.01	0.00	0.00	0.00
5,900.00	5.10	176.49	5,885.23	-334.78	20.54	-334.89	0.00	0.00	0.00
6,000.00	5.10	176.49	5,984.83	-343.66	21.09	-343.76	0.00	0.00	0.00
6,100.00	5.10	176.49	6,084.44	-352.53	21.63	-352.64	0.00	0.00	0.00
6,200.00	5.10	176.49	6,184.04	-361.41	22.17	-361.52	0.00	0.00	0.00
6,300.00	5.10	176.49	6,283.64	-370.28	22.72	-370.39	0.00	0.00	0.00
6,400.00	5.10	176.49	6,383.25	-379.15	23.26	-379.27	0.00	0.00	0.00
6,500.00	5.10	176.49	6,482.85	-388.03	23.81	-388.15	0.00	0.00	0.00
6,600.00	5.10	176.49	6,582.46	-396.90	24.35	-397.02	0.00	0.00	0.00
6,700.00	5.10	176.49	6,682.06	-405.78	24.90	-405.90	0.00	0.00	0.00
6,800.00	5.10	176.49	6,781.66	-414.65	25.44	-414.78	0.00	0.00	0.00
6,900.00	5.10	176.49	6,881.27	-423.52	25.99	-423.65	0.00	0.00	0.00
7,000.00	5.10	176.49	6,980.87	-432.40	26.53	-432.53	0.00	0.00	0.00
7,100.00	5.10	176.49	7,080.48	-441.27	27.08	-441.41	0.00	0.00	0.00
7,200.00	5.10	176.49	7,180.08	-450.15	27.62	-450.28	0.00	0.00	0.00
7,300.00	5.10	176.49	7,279.68	-459.02	28.16	-459.16	0.00	0.00	0.00
7,400.00	5.10	176.49	7,379.29	-467.89	28.71	-468.04	0.00	0.00	0.00
7,500.00	5.10	176.49	7,478.89	-476.77	29.25	-476.92	0.00	0.00	0.00
7,600.00	5.10	176.49	7,578.50	-485.64	29.80	-485.79	0.00	0.00	0.00
7,700.00	5.10	176.49	7,678.10	-494.52	30.34	-494.67	0.00	0.00	0.00
7,800.00	5.10	176.49	7,777.70	-503.39	30.89	-503.55	0.00	0.00	0.00
7,900.00	5.10	176.49	7,877.31	-512.27	31.43	-512.42	0.00	0.00	0.00
8,000.00	5.10	176.49	7,976.91	-521.14	31.98	-521.30	0.00	0.00	0.00
8,100.00	5.10	176.49	8,076.52	-530.01	32.52	-530.18	0.00	0.00	0.00
8,200.00	5.10	176.49	8,176.12	-538.89	33.06	-539.05	0.00	0.00	0.00
8,300.00	5.10	176.49	8,275.72	-547.76	33.61	-547.93	0.00	0.00	0.00
8,400.00	5.10	176.49	8,375.33	-556.64	34.15	-556.81	0.00	0.00	0.00
8,500.00	5.10	176.49	8,474.93	-565.51	34.70	-565.68	0.00	0.00	0.00
8,600.00	5.10	176.49	8,574.54	-574.38	35.24	-574.56	0.00	0.00	0.00
8,700.00	5.10	176.49	8,674.14	-583.26	35.79	-583.44	0.00	0.00	0.00
8,800.00	5.10	176.49	8,773.74	-592.13	36.33	-592.31	0.00	0.00	0.00
8,900.00	5.10	176.49	8,873.35	-601.01	36.88	-601.19	0.00	0.00	0.00
8,977.96	5.10	176.49	8,951.00	-607.93	37.30	-608.11	0.00	0.00	0.00
Bone Spring									
9,000.00	5.10	176.49	8,972.95	-609.88	37.42	-610.07	0.00	0.00	0.00
9,093.42	5.10	176.49	9,066.00	-618.17	37.93	-618.36	0.00	0.00	0.00
Upper Avalon									
9,100.00	5.10	176.49	9,072.56	-618.76	37.97	-618.95	0.00	0.00	0.00
9,200.00	5.10	176.49	9,172.16	-627.63	38.51	-627.82	0.00	0.00	0.00



Planning Report

Database: EDM 5000.1.13 Single User Db
Company: XTO Energy
Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #104H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #104H
TVD Reference: Ref GL @ 3651.00usft
MD Reference: Ref GL @ 3651.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.00	5.10	176.49	9,271.76	-636.50	39.05	-636.70	0.00	0.00	0.00
9,400.00	5.10	176.49	9,371.37	-645.38	39.60	-645.58	0.00	0.00	0.00
9,500.00	5.10	176.49	9,470.97	-654.25	40.14	-654.45	0.00	0.00	0.00
9,600.00	5.10	176.49	9,570.58	-663.13	40.69	-663.33	0.00	0.00	0.00
9,700.00	5.10	176.49	9,670.18	-672.00	41.23	-672.21	0.00	0.00	0.00
9,800.00	5.10	176.49	9,769.78	-680.87	41.78	-681.08	0.00	0.00	0.00
9,900.00	5.10	176.49	9,869.39	-689.75	42.32	-689.96	0.00	0.00	0.00
10,000.00	5.10	176.49	9,968.99	-698.62	42.87	-698.84	0.00	0.00	0.00
10,100.00	5.10	176.49	10,068.60	-707.50	43.41	-707.71	0.00	0.00	0.00
10,107.43	5.10	176.49	10,076.00	-708.16	43.45	-708.37	0.00	0.00	0.00
1st Bone Spring Ss									
10,200.00	5.10	176.49	10,168.20	-716.37	43.95	-716.59	0.00	0.00	0.00
10,300.00	5.10	176.49	10,267.80	-725.24	44.50	-725.47	0.00	0.00	0.00
10,400.00	5.10	176.49	10,367.41	-734.12	45.04	-734.34	0.00	0.00	0.00
10,500.00	5.10	176.49	10,467.01	-742.99	45.59	-743.22	0.00	0.00	0.00
10,600.00	5.10	176.49	10,566.62	-751.87	46.13	-752.10	0.00	0.00	0.00
10,700.00	5.10	176.49	10,666.22	-760.74	46.68	-760.98	0.00	0.00	0.00
10,734.92	5.10	176.49	10,701.00	-763.84	46.87	-764.08	0.00	0.00	0.00
2nd Bone Spring Ss									
10,800.00	5.10	176.49	10,765.82	-769.62	47.22	-769.85	0.00	0.00	0.00
10,900.00	5.10	176.49	10,865.43	-778.49	47.77	-778.73	0.00	0.00	0.00
11,000.00	5.10	176.49	10,965.03	-787.36	48.31	-787.61	0.00	0.00	0.00
11,100.00	5.10	176.49	11,064.64	-796.24	48.85	-796.48	0.00	0.00	0.00
11,200.00	5.10	176.49	11,164.24	-805.11	49.40	-805.36	0.00	0.00	0.00
11,236.91	5.10	176.49	11,201.00	-808.39	49.60	-808.64	0.00	0.00	0.00
3rd Bone Spring Lm									
11,300.00	5.10	176.49	11,263.84	-813.99	49.94	-814.24	0.00	0.00	0.00
11,400.00	5.10	176.49	11,363.45	-822.86	50.49	-823.11	0.00	0.00	0.00
11,500.00	5.10	176.49	11,463.05	-831.73	51.03	-831.99	0.00	0.00	0.00
11,600.00	5.10	176.49	11,562.66	-840.61	51.58	-840.87	0.00	0.00	0.00
11,700.00	5.10	176.49	11,662.26	-849.48	52.12	-849.74	0.00	0.00	0.00
11,800.00	5.10	176.49	11,761.86	-858.36	52.67	-858.62	0.00	0.00	0.00
11,890.69	5.10	176.49	11,852.19	-866.40	53.16	-866.67	0.00	0.00	0.00
11,900.00	4.17	175.77	11,861.47	-867.16	53.21	-867.42	10.00	-9.98	-7.73
11,950.00	0.89	18.56	11,911.44	-868.60	53.47	-868.87	10.00	-6.57	-314.41
11,964.57	2.31	6.81	11,926.00	-868.20	53.54	-868.47	10.00	9.80	-80.65
3rd Bone Spring Ss									
12,000.00	5.85	2.50	11,961.34	-865.69	53.70	-865.96	10.00	9.97	-12.17
12,050.00	10.84	1.20	12,010.79	-858.44	53.91	-858.71	10.00	9.99	-2.61
12,100.00	15.84	0.71	12,059.43	-846.91	54.09	-847.18	10.00	10.00	-0.97
12,150.00	20.84	0.45	12,106.87	-831.18	54.25	-831.45	10.00	10.00	-0.51
12,200.00	25.84	0.29	12,152.76	-811.38	54.38	-811.65	10.00	10.00	-0.32
12,250.00	30.84	0.18	12,196.76	-787.65	54.47	-787.92	10.00	10.00	-0.22
12,300.00	35.84	0.10	12,238.52	-760.18	54.54	-760.45	10.00	10.00	-0.17
12,347.73	40.61	0.03	12,276.00	-730.65	54.57	-730.93	10.00	10.00	-0.13
Wolfcamp									
12,350.00	40.84	0.03	12,277.72	-729.17	54.57	-729.45	10.00	10.00	-0.12
12,400.00	45.84	359.98	12,314.07	-694.87	54.57	-695.14	10.00	10.00	-0.11
12,432.44	49.08	359.95	12,336.00	-670.97	54.56	-671.25	10.00	10.00	-0.09
Wolfcamp X									
12,450.00	50.84	359.93	12,347.30	-657.52	54.55	-657.80	10.00	10.00	-0.09
12,500.00	55.84	359.90	12,377.14	-617.43	54.49	-617.70	10.00	10.00	-0.08
12,550.00	60.84	359.86	12,403.38	-574.88	54.39	-575.16	10.00	10.00	-0.07



Planning Report

Database: EDM 5000.1.13 Single User Db
 Company: XTO Energy
 Project: Lea County, NM (NAD-27)
 Site: Estancia Sed
 Well: #104H
 Wellbore: OH
 Design: PERMIT

Local Co-ordinate Reference: Well #104H
 TVD Reference: Ref GL @ 3651.00usft
 MD Reference: Ref GL @ 3651.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,600.00	65.84	359.83	12,425.81	-530.21	54.27	-530.49	10.00	10.00	-0.06
12,650.00	70.84	359.80	12,444.26	-483.76	54.12	-484.04	10.00	10.00	-0.06
12,671.73	73.01	359.79	12,451.00	-463.10	54.05	-463.38	10.00	10.00	-0.06
Wolfcamp Y									
12,700.00	75.84	359.77	12,458.59	-435.87	53.94	-436.15	10.00	10.00	-0.05
12,750.00	80.84	359.75	12,468.69	-386.92	53.74	-387.20	10.00	10.00	-0.05
12,800.00	85.84	359.72	12,474.49	-337.28	53.51	-337.55	10.00	10.00	-0.05
12,841.61	90.00	359.70	12,476.00	-295.70	53.30	-295.98	10.00	10.00	-0.05
LP									
12,900.00	90.00	359.70	12,476.00	-237.31	53.00	-237.59	0.00	0.00	0.00
13,000.00	90.00	359.70	12,476.00	-137.31	52.47	-137.59	0.00	0.00	0.00
13,100.00	90.00	359.70	12,476.00	-37.32	51.95	-37.59	0.00	0.00	0.00
13,200.00	90.00	359.70	12,476.00	62.68	51.43	62.41	0.00	0.00	0.00
13,300.00	90.00	359.70	12,476.00	162.68	50.91	162.41	0.00	0.00	0.00
13,400.00	90.00	359.70	12,476.00	262.68	50.38	262.41	0.00	0.00	0.00
13,500.00	90.00	359.70	12,476.00	362.68	49.86	362.41	0.00	0.00	0.00
13,600.00	90.00	359.70	12,476.00	462.68	49.34	462.41	0.00	0.00	0.00
13,700.00	90.00	359.70	12,476.00	562.68	48.82	562.41	0.00	0.00	0.00
13,800.00	90.00	359.70	12,476.00	662.67	48.30	662.41	0.00	0.00	0.00
13,900.00	90.00	359.70	12,476.00	762.67	47.77	762.41	0.00	0.00	0.00
14,000.00	90.00	359.70	12,476.00	862.67	47.25	862.41	0.00	0.00	0.00
14,100.00	90.00	359.70	12,476.00	962.67	46.73	962.41	0.00	0.00	0.00
14,200.00	90.00	359.70	12,476.00	1,062.67	46.21	1,062.41	0.00	0.00	0.00
14,300.00	90.00	359.70	12,476.00	1,162.67	45.68	1,162.41	0.00	0.00	0.00
14,400.00	90.00	359.70	12,476.00	1,262.67	45.16	1,262.41	0.00	0.00	0.00
14,500.00	90.00	359.70	12,476.00	1,362.66	44.64	1,362.41	0.00	0.00	0.00
14,600.00	90.00	359.70	12,476.00	1,462.66	44.12	1,462.41	0.00	0.00	0.00
14,700.00	90.00	359.70	12,476.00	1,562.66	43.60	1,562.41	0.00	0.00	0.00
14,800.00	90.00	359.70	12,476.00	1,662.66	43.07	1,662.41	0.00	0.00	0.00
14,900.00	90.00	359.70	12,476.00	1,762.66	42.55	1,762.41	0.00	0.00	0.00
15,000.00	90.00	359.70	12,476.00	1,862.66	42.03	1,862.41	0.00	0.00	0.00
15,100.00	90.00	359.70	12,476.00	1,962.66	41.51	1,962.41	0.00	0.00	0.00
15,200.00	90.00	359.70	12,476.00	2,062.66	40.99	2,062.41	0.00	0.00	0.00
15,300.00	90.00	359.70	12,476.00	2,162.65	40.46	2,162.41	0.00	0.00	0.00
15,400.00	90.00	359.70	12,476.00	2,262.65	39.94	2,262.41	0.00	0.00	0.00
15,500.00	90.00	359.70	12,476.00	2,362.65	39.42	2,362.41	0.00	0.00	0.00
15,600.00	90.00	359.70	12,476.00	2,462.65	38.90	2,462.41	0.00	0.00	0.00
15,700.00	90.00	359.70	12,476.00	2,562.65	38.37	2,562.41	0.00	0.00	0.00
15,800.00	90.00	359.70	12,476.00	2,662.65	37.85	2,662.41	0.00	0.00	0.00
15,900.00	90.00	359.70	12,476.00	2,762.65	37.33	2,762.41	0.00	0.00	0.00
16,000.00	90.00	359.70	12,476.00	2,862.64	36.81	2,862.41	0.00	0.00	0.00
16,100.00	90.00	359.70	12,476.00	2,962.64	36.29	2,962.41	0.00	0.00	0.00
16,200.00	90.00	359.70	12,476.00	3,062.64	35.76	3,062.41	0.00	0.00	0.00
16,300.00	90.00	359.70	12,476.00	3,162.64	35.24	3,162.41	0.00	0.00	0.00
16,400.00	90.00	359.70	12,476.00	3,262.64	34.72	3,262.41	0.00	0.00	0.00
16,500.00	90.00	359.70	12,476.00	3,362.64	34.20	3,362.41	0.00	0.00	0.00
16,600.00	90.00	359.70	12,476.00	3,462.64	33.67	3,462.41	0.00	0.00	0.00
16,700.00	90.00	359.70	12,476.00	3,562.63	33.15	3,562.41	0.00	0.00	0.00
16,800.00	90.00	359.70	12,476.00	3,662.63	32.63	3,662.41	0.00	0.00	0.00
16,900.00	90.00	359.70	12,476.00	3,762.63	32.11	3,762.41	0.00	0.00	0.00
17,000.00	90.00	359.70	12,476.00	3,862.63	31.59	3,862.41	0.00	0.00	0.00
17,100.00	90.00	359.70	12,476.00	3,962.63	31.06	3,962.41	0.00	0.00	0.00
17,200.00	90.00	359.70	12,476.00	4,062.63	30.54	4,062.41	0.00	0.00	0.00
17,300.00	90.00	359.70	12,476.00	4,162.63	30.02	4,162.41	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #104H
Company:	XTO Energy	TVD Reference:	Ref GL @ 3651.00usft
Project:	Lea County, NM (NAD-27)	MD Reference:	Ref GL @ 3651.00usft
Site:	Estancia Sed	North Reference:	Grid
Well:	#104H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,400.00	90.00	359.70	12,476.00	4,262.63	29.50	4,262.41	0.00	0.00	0.00
17,500.00	90.00	359.70	12,476.00	4,362.62	28.98	4,362.41	0.00	0.00	0.00
17,600.00	90.00	359.70	12,476.00	4,462.62	28.45	4,462.41	0.00	0.00	0.00
17,700.00	90.00	359.70	12,476.00	4,562.62	27.93	4,562.41	0.00	0.00	0.00
17,800.00	90.00	359.70	12,476.00	4,662.62	27.41	4,662.41	0.00	0.00	0.00
17,900.00	90.00	359.70	12,476.00	4,762.62	26.89	4,762.41	0.00	0.00	0.00
17,924.08	90.00	359.70	12,476.00	4,786.70	26.76	4,786.49	0.00	0.00	0.00
17,974.08	90.00	359.70	12,476.00	4,836.70	26.50	4,836.50	0.00	0.00	0.00

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
ES 104H: SHL (396' F - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	457,212.20	722,995.70	32.2549338	-103.6119853
ES 104H: FTP - plan hits target center - Point	0.00	0.00	12,476.00	-295.70	53.30	456,916.50	723,049.00	32.2541200	-103.6118193
ES 104H: PBHL (50' F - plan hits target center - Point	0.00	0.00	12,476.00	4,836.70	26.50	462,048.90	723,022.20	32.2682282	-103.6117944
ES 104H: LTP - plan misses target center by 0.06usft at 17924.08usft MD (12476.00 TVD, 4786.70 N, 26.76 E) - Point	0.00	0.00	12,476.00	4,786.70	26.70	461,998.90	723,022.40	32.2680908	-103.6117949

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,201.00	1,201.00	Rustler			
1,701.00	1,701.00	Top Salt			
4,560.47	4,551.00	Base Salt			
5,062.45	5,051.00	Delaware			
8,977.96	8,951.00	Bone Spring			
9,093.42	9,066.00	Upper Avalon			
10,107.43	10,076.00	1st Bone Spring Ss			
10,734.92	10,701.00	2nd Bone Spring Ss			
11,236.91	11,201.00	3rd Bone Spring Lm			
11,964.57	11,926.00	3rd Bone Spring Ss			
12,347.73	12,276.00	Wolfcamp			
12,432.44	12,336.00	Wolfcamp X			
12,671.73	12,451.00	Wolfcamp Y			
12,841.61	12,476.00	LP			