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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
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 AS-DRILLED PLAT

¹ API Number 30-015- 45135	² Pool Code 97020	³ Pool Name HACKBERRY; BONE SPRING, NW
⁴ Property Code 322180	⁵ Property Name BUTTERCUP 27-34 FEDERAL	
⁷ OGRID No. 005380	⁸ Operator Name XTO ENERGY, INC.	
		⁶ Well Number 3H
		⁹ Elevation 3,293'

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
J	22	19 S	30 E		1,329	SOUTH	2,350	EAST	EDDY

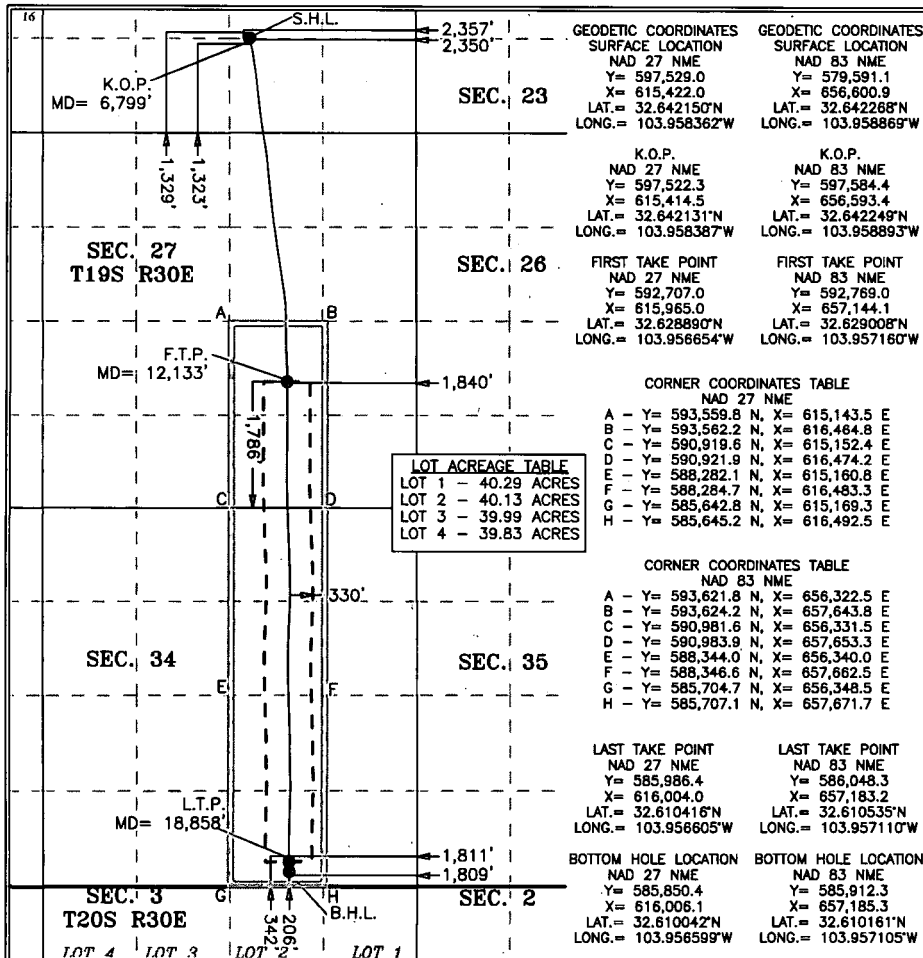
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	34	19 S	30 E		206	SOUTH	1,809	EAST	EDDY

¹² Dedicated Acres 240	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NOTE: AS-DRILLED BOTTOM HOLE PLOTTED FROM
DATA FURNISHED BY XTO ENERGY



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.

Cheryl Rowell 12/19/19
Signature Date

Cheryl Rowell

Printed Name

cheryl_rowell@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.

12-18-2019

Date of Survey

Signature and Seal of
Professional Surveyor:

MARK DILLON HARP 23786
Certificate Number



AW/JC

2017091480

DEC 26 2019

Intent ☐ As Drilled ☒

DISTRICT 7 - ARTESIA O.C.D.

API # 30-015-45135		
Operator Name: XTO ENERGY INC.	Property Name: BUTTE CUP 27-34 FEDERAL	Well Number 3H

Kick Off Point (KOP)

UL J	Section 22	Township 19S	Range 30E	Lot	Feet 1323	From N/S FSL	Feet 2457	From E/W FEL	County EDDY
Latitude 32.642249					Longitude 103.958893			NAD 83	

First Take Point (FTP)

UL J	Section 27	Township 19S	Range 30E	Lot	Feet 1786	From N/S FSL	Feet 1840	From E/W FEL	County EDDY
Latitude 32.629008					Longitude 103.957160			NAD 83	

Last Take Point (LTP)

UL O	Section 34	Township 19S	Range 30E	Lot	Feet 342	From N/S FSL	Feet 1811	From E/W FEL	County EDDY
Latitude 32.610535					Longitude 103.957110			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit?

☒ YES

Is this well an infill well?

☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018



MWD SURVEY CERTIFICATION
Gordon Technologies, LLC

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FEB 04 2020

EMNRD-OCD ARTESIA

State Of Texas
County Of Midland

I, Marcus Mitcham certify that; I am employed by Gordon Technologies, LLC.;
that I did on the day(s) of March 19, 2019 through April 17, 2019 conduct
or supervise the taking of a MWD survey from a depth of 184 feet to a depth of
18,994 feet; that the data is true, correct, complete and within the limitations of the
tool set forth by Gordon Technologies, LLC.; that I am authorized and qualified to make this report;
that this survey was conducted at the request of XTO Energy Incorporated for the
Buttercup 27-34 Federal 3H Well, A.P.I. No. 30-015-45135 in
Hackberry, Bone Spring, NW/HA Field and that I have reviewed this report and find that
it conforms to the principles and procedures set forth by Gordon Technologies, LLC.

Signature

MWD Coordinator

Title

RECEIVED

FEB 04 2020

EMNRD-OCD ARTESIA



Directional Survey Report

Company: XTO Energy Incorporated	Well Surface Location	Report Date: Apr 17 2019
Well: Buttercup 27-34 Federal 3H	Latitude: 32.64214953	Time: 14:04
County: Eddy	Longitude: -103.9583623	Mag Reference: Grid North
State: NM	Reference: NAD 1927	Mag Correction: 6.77
Field: Hackberry; Bone Spring, NW/HA	Y (Northing): 597,529.00	Vert Sect. Azi: 177.20
API: 30-015-45135	X (Easting): 615,422.00	Perm Datum: Mean Sea Level
Rig: Nabors F-26	Field Engr: Jude Miller	Depth Ref: Rotary Table
Service Co: Gordon Technologies LLC	Kevin Trimble	RKB Height: 30
Job #: GT190304		GL Elev: 3285
Survey Calc: Minimum Curvature		

Survey Tie In	MD	Inc	Azimuth	TVD	VS	Rectangular Offsets		Course		Temp	Closure		Source
						NS	EW	Length	DLS		Distance	Azimuth	
1	184.00	0.09	328.10	184.00	-0.13	0.12	-0.08	184.00	0.05	0.00	0.14	328.10	ImpSrvys
2	276.00	0.22	356.31	276.00	-0.37	0.36	-0.13	92.00	0.16	0.00	0.38	340.74	ImpSrvys
3	366.00	0.48	261.91	366.00	-0.50	0.48	-0.51	90.00	0.60	0.00	0.70	313.23	ImpSrvys
4	419.00	0.70	257.61	419.00	-0.43	0.38	-1.05	53.00	0.42	0.00	1.11	289.91	ImpSrvys
5	499.00	0.79	245.48	498.99	-0.14	0.05	-2.03	80.00	0.23	0.00	2.03	271.28	ImpSrvys
6	616.00	0.70	241.52	615.98	0.46	-0.63	-3.39	117.00	0.09	0.00	3.45	259.46	ImpSrvys
7	711.00	1.56	258.66	710.96	0.91	-1.16	-5.17	95.00	0.96	0.00	5.29	257.33	ImpSrvys
8	806.00	0.79	255.41	805.94	1.23	-1.58	-7.07	95.00	0.81	0.00	7.24	257.39	ImpSrvys
9	987.00	1.01	263.23	986.92	1.60	-2.08	-9.86	181.00	0.14	0.00	10.08	258.07	ImpSrvys
10	1017.00	0.88	251.89	1016.91	1.68	-2.19	-10.34	30.00	0.76	0.00	10.57	258.06	ImpSrvys
11	1083.00	1.01	263.23	1082.90	1.85	-2.41	-11.40	66.00	0.34	0.00	11.65	258.05	ImpSrvys
12	1112.00	0.79	262.71	1111.90	1.89	-2.47	-11.85	29.00	0.76	0.00	12.11	258.24	ImpSrvys
13	1198.00	0.88	251.81	1197.89	2.11	-2.75	-13.07	86.00	0.21	0.00	13.35	258.12	ImpSrvys
14	1302.00	0.79	256.03	1301.88	2.46	-3.17	-14.52	104.00	0.10	0.00	14.86	257.68	ImpSrvys
15	1454.00	1.01	269.03	1453.86	2.62	-3.45	-16.88	152.00	0.20	0.00	17.23	258.46	ImpSrvys
16	1501.00	1.01	269.03	1500.85	2.59	-3.46	-17.71	47.00	0.00	0.00	18.04	258.94	ImpSrvys
17	1576.00	0.90	264.90	1575.84	2.59	-3.52	-18.95	75.00	0.17	0.00	19.28	259.47	ImpSrvys
18	1670.00	0.90	272.90	1669.83	2.55	-3.55	-20.43	94.00	0.13	0.00	20.73	260.13	ImpSrvys

19	1757.00	0.90	259.30	1756.82	2.58	-3.64	-21.78	87.00	0.24	0.00	22.08	260.50	ImpSrvys
20	1849.00	0.80	254.20	1848.81	2.82	-3.95	-23.11	92.00	0.14	0.00	23.44	260.29	ImpSrvys
21	1945.00	1.00	248.10	1944.80	3.25	-4.45	-24.53	96.00	0.23	0.00	24.93	259.72	ImpSrvys
22	2040.00	0.80	239.00	2039.79	3.83	-5.10	-25.87	95.00	0.26	0.00	26.37	258.85	ImpSrvys
23	2137.00	0.90	233.20	2136.78	4.58	-5.90	-27.06	97.00	0.14	0.00	27.70	257.69	ImpSrvys
24	2232.00	0.90	237.20	2231.77	5.37	-6.76	-28.28	95.00	0.07	0.00	29.08	256.57	ImpSrvys
25	2332.00	0.90	219.90	2331.75	6.34	-7.78	-29.45	100.00	0.27	0.00	30.46	255.19	ImpSrvys
26	2424.00	1.10	215.80	2423.74	7.56	-9.05	-30.43	92.00	0.23	0.00	31.75	253.43	ImpSrvys
27	2519.00	1.30	220.70	2518.72	9.05	-10.61	-31.66	95.00	0.24	0.00	33.39	251.47	ImpSrvys
28	2613.00	1.10	239.00	2612.70	10.25	-11.88	-33.13	94.00	0.46	0.00	35.20	250.27	ImpSrvys
29	2708.00	1.30	233.30	2707.68	11.28	-13.00	-34.78	95.00	0.24	0.00	37.13	249.51	ImpSrvys
30	2802.00	1.20	238.10	2801.65	12.36	-14.16	-36.47	94.00	0.15	0.00	39.12	248.79	ImpSrvys
31	2897.00	1.60	231.10	2896.63	13.62	-15.51	-38.34	95.00	0.46	0.00	41.36	247.97	ImpSrvys
32	2991.00	1.60	202.90	2990.59	15.58	-17.55	-39.88	94.00	0.83	0.00	43.57	246.25	ImpSrvys
33	3023.00	1.90	185.90	3022.58	16.50	-18.49	-40.11	32.00	1.86	0.00	44.16	245.25	ImpSrvys
34	3083.00	2.70	152.30	3082.53	18.77	-20.73	-39.55	60.00	2.56	0.00	44.65	242.34	ImpSrvys
35	3177.00	3.70	147.00	3176.38	23.40	-25.23	-36.87	94.00	1.11	0.00	44.68	235.62	ImpSrvys
36	3275.00	3.90	140.60	3274.17	28.81	-30.46	-33.03	98.00	0.48	0.00	44.93	227.32	ImpSrvys
37	3369.00	2.80	134.20	3368.01	33.05	-34.53	-29.36	94.00	1.23	0.00	45.32	220.37	ImpSrvys
38	3459.00	2.30	90.50	3457.92	34.77	-36.08	-25.97	90.00	2.17	0.00	44.46	215.75	ImpSrvys
39	3558.00	1.90	48.90	3556.86	33.86	-35.02	-22.75	99.00	1.55	0.00	41.76	213.01	ImpSrvys
40	3652.00	2.20	36.00	3650.80	31.49	-32.53	-20.52	94.00	0.58	0.00	38.46	212.24	ImpSrvys
41	3746.00	2.10	32.80	3744.74	28.68	-29.62	-18.52	94.00	0.17	0.00	34.94	212.02	ImpSrvys
42	3841.00	2.10	37.40	3839.67	25.94	-26.78	-16.52	95.00	0.18	0.00	31.47	211.68	ImpSrvys
43	3935.00	2.00	36.00	3933.61	23.35	-24.08	-14.51	94.00	0.12	0.00	28.12	211.07	ImpSrvys
44	4025.00	2.10	34.70	4023.56	20.81	-21.46	-12.65	90.00	0.12	0.00	24.91	210.52	ImpSrvys
45	4089.00	2.18	43.52	4087.51	19.04	-19.61	-11.15	64.00	0.53	86.71	22.56	209.61	MWD Run 1
46	4184.00	2.12	47.49	4182.44	16.67	-17.11	-8.61	95.00	0.17	95.53	19.15	206.70	MWD Run 1
47	4278.00	1.74	50.10	4276.39	14.70	-15.02	-6.23	94.00	0.41	104.35	16.26	202.52	MWD Run 1
48	4373.00	1.37	36.54	4371.36	12.95	-13.19	-4.45	95.00	0.55	109.65	13.91	198.64	MWD Run 1
49	4468.00	1.40	28.32	4466.33	11.08	-11.25	-3.22	95.00	0.21	113.18	11.70	195.97	MWD Run 1
50	4562.00	1.25	26.94	4560.30	9.21	-9.33	-2.21	94.00	0.16	116.71	9.58	193.33	MWD Run 1
51	4656.00	1.18	23.16	4654.28	7.45	-7.52	-1.37	94.00	0.11	118.47	7.65	190.29	MWD Run 1
52	4750.00	1.14	20.22	4748.26	5.72	-5.75	-0.66	94.00	0.08	122.00	5.79	186.56	MWD Run 1
53	4844.00	1.09	17.37	4842.25	4.02	-4.02	-0.07	94.00	0.08	123.76	4.02	181.02	MWD Run 1
54	4938.00	0.95	21.38	4936.23	2.47	-2.45	0.48	94.00	0.17	123.76	2.49	168.90	MWD Run 1
55	5032.00	1.00	20.56	5030.22	1.00	-0.95	1.05	94.00	0.06	125.53	1.42	132.13	MWD Run 1
56	5127.00	0.99	15.11	5125.20	-0.54	0.62	1.56	95.00	0.10	127.29	1.67	68.38	MWD Run 1

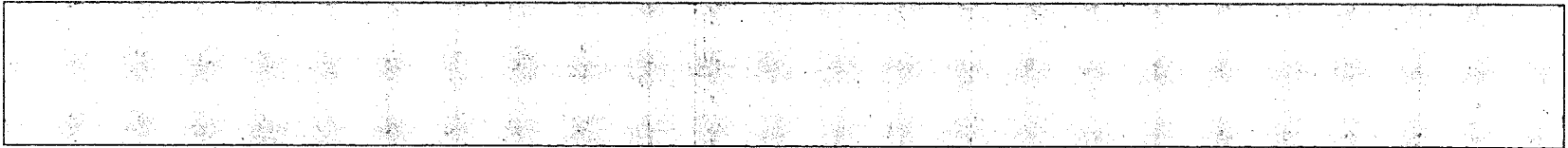
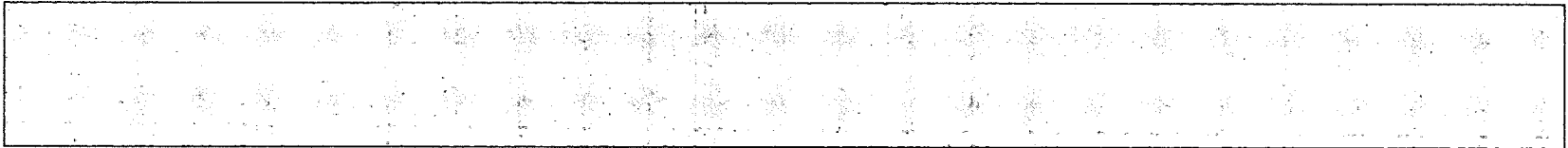
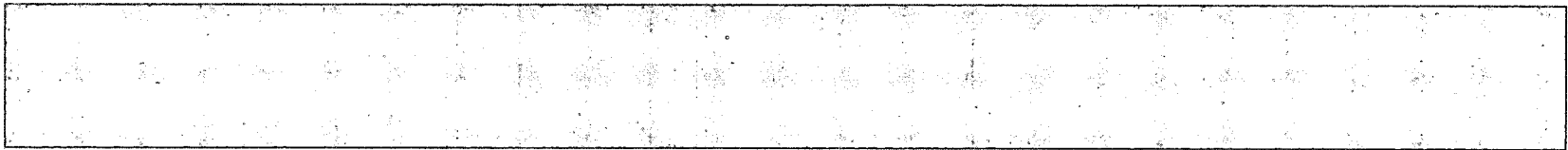
57	5221.00	0.91	13.16	5219.19	-2.03	2.13	1.94	94.00	0.09	113.18	2.88	42.33	MWD Run 1
58	5316.00	0.98	14.71	5314.18	-3.53	3.65	2.32	95.00	0.08	113.18	4.32	32.42	MWD Run 1
59	5410.00	1.03	10.87	5408.16	-5.12	5.26	2.68	94.00	0.09	116.71	5.90	27.02	MWD Run 1
60	5505.00	0.97	13.36	5503.15	-6.72	6.88	3.03	95.00	0.08	120.24	7.51	23.76	MWD Run 1
61	5600.00	1.11	12.86	5598.13	-8.38	8.56	3.42	95.00	0.15	123.76	9.21	21.77	MWD Run 1
62	5694.00	0.88	11.56	5692.12	-9.95	10.15	3.76	94.00	0.25	125.53	10.83	20.35	MWD Run 1
63	5789.00	0.82	355.70	5787.11	-11.34	11.54	3.86	95.00	0.25	125.53	12.17	18.49	MWD Run 1
64	5884.00	0.79	303.89	5882.10	-12.41	12.59	3.27	95.00	0.74	129.06	13.00	14.54	MWD Run 1
65	5979.00	0.92	287.51	5977.09	-13.07	13.18	1.99	95.00	0.29	130.82	13.33	8.60	MWD Run 1
66	6073.00	1.05	266.61	6071.08	-13.32	13.36	0.41	94.00	0.40	132.59	13.36	1.78	MWD Run 1
67	6168.00	0.94	269.89	6166.06	-13.35	13.30	-1.23	95.00	0.13	136.12	13.36	354.70	MWD Run 1
68	6263.00	1.07	254.05	6261.05	-13.18	13.06	-2.87	95.00	0.32	139.65	13.37	347.62	MWD Run 1
69	6358.00	1.31	241.42	6356.03	-12.51	12.30	-4.67	95.00	0.37	134.35	13.15	339.20	MWD Run 1
70	6452.00	1.29	258.58	6450.00	-11.88	11.57	-6.65	94.00	0.41	137.88	13.35	330.11	MWD Run 1
71	6546.00	1.73	193.49	6543.98	-10.36	9.98	-8.02	94.00	1.77	139.65	12.81	321.22	MWD Run 1
72	6639.00	3.33	180.24	6636.88	-6.32	5.92	-8.36	93.00	1.82	139.65	10.24	305.29	MWD Run 1
73	6733.00	3.69	182.13	6730.71	-0.58	0.16	-8.48	94.00	0.40	139.65	8.49	271.10	MWD Run 1
74	6746.00	3.60	185.34	6743.68	0.24	-0.66	-8.54	13.00	1.72	104.35	8.56	265.57	MWD Run 2
75	6841.00	9.83	165.12	6837.99	11.14	-11.48	-6.73	95.00	6.92	109.65	13.31	210.38	MWD Run 2
76	6887.00	17.71	163.62	6882.63	21.80	-22.00	-3.74	46.00	17.15	113.18	22.32	189.66	MWD Run 2
77	6934.00	21.54	162.74	6926.90	37.10	-37.11	0.83	47.00	8.17	116.71	37.12	178.71	MWD Run 2
78	6980.00	26.04	163.16	6968.98	55.09	-54.85	6.27	46.00	9.79	118.47	55.20	173.48	MWD Run 2
79	7029.00	31.06	164.42	7012.01	77.86	-77.33	12.78	49.00	10.32	120.24	78.38	170.61	MWD Run 2
80	7075.00	33.74	165.37	7050.84	101.94	-101.13	19.20	46.00	5.93	120.24	102.93	169.25	MWD Run 2
81	7123.00	33.27	168.31	7090.87	128.00	-126.92	25.23	48.00	3.52	120.24	129.40	168.76	MWD Run 2
82	7169.00	33.94	168.34	7129.18	153.15	-151.85	30.38	46.00	1.46	120.24	154.86	168.69	MWD Run 2
83	7218.00	35.24	170.46	7169.52	180.71	-179.19	35.49	49.00	3.62	122.00	182.67	168.80	MWD Run 2
84	7264.00	38.21	171.43	7206.38	208.05	-206.35	39.81	46.00	6.58	123.76	210.16	169.08	MWD Run 2
85	7311.00	42.27	171.92	7242.25	238.27	-236.39	44.20	47.00	8.66	122.00	240.49	169.41	MWD Run 2
86	7357.00	45.77	172.84	7275.33	270.11	-268.07	48.43	46.00	7.73	120.24	272.41	169.76	MWD Run 2
87	7406.00	49.33	173.69	7308.40	306.18	-303.97	52.66	49.00	7.38	123.76	308.50	170.17	MWD Run 2
88	7452.00	54.71	173.36	7336.69	342.35	-339.98	56.76	46.00	11.71	125.53	344.69	170.52	MWD Run 2
89	7499.00	61.03	171.89	7361.68	382.00	-379.43	61.88	47.00	13.70	125.53	384.44	170.74	MWD Run 2
90	7545.00	66.09	170.00	7382.15	422.92	-420.09	68.37	46.00	11.60	125.53	425.61	170.76	MWD Run 2
91	7593.00	72.12	168.18	7399.27	467.29	-464.09	76.87	48.00	13.05	127.29	470.42	170.60	MWD Run 2
92	7633.00	77.44	171.71	7409.77	505.56	-502.08	83.59	40.00	15.79	129.06	508.99	170.55	MWD Run 2
93	7686.00	77.85	172.22	7421.11	557.12	-553.34	90.83	53.00	1.22	129.06	560.75	170.68	MWD Run 2
94	7780.00	74.91	173.09	7443.24	648.18	-643.94	102.51	94.00	3.25	129.06	652.05	170.95	MWD Run 2

95	7876.00	72.92	173.77	7469.84	740.22	-735.57	113.07	96.00	2.18	132.59	744.21	171.26	MWD Run 2
96	7970.00	71.12	174.82	7498.85	829.50	-824.53	121.96	94.00	2.19	134.35	833.50	171.59	MWD Run 2
97	8065.00	70.61	175.43	7530.00	919.20	-913.96	129.59	95.00	0.81	132.59	923.10	171.93	MWD Run 2
98	8160.00	70.80	173.80	7561.39	1008.76	-1003.22	138.00	95.00	1.63	136.12	1012.67	172.17	MWD Run 2
99	8254.00	72.82	171.42	7590.73	1097.77	-1091.77	149.50	94.00	3.23	137.88	1101.96	172.20	MWD Run 2
100	8349.00	74.42	170.17	7617.53	1188.34	-1181.73	164.08	95.00	2.10	139.65	1193.07	172.10	MWD Run 2
101	8445.00	76.37	170.81	7641.73	1280.59	-1273.35	179.42	96.00	2.13	143.18	1285.93	171.98	MWD Run 2
102	8540.00	76.06	170.28	7664.37	1372.24	-1364.36	194.58	95.00	0.63	144.94	1378.17	171.88	MWD Run 2
103	8635.00	75.12	170.09	7688.01	1463.56	-1455.02	210.26	95.00	1.01	122.00	1470.14	171.78	MWD Run 3
104	8730.00	76.21	171.82	7711.53	1555.05	-1545.92	224.73	95.00	2.10	125.53	1562.17	171.73	MWD Run 3
105	8824.00	76.76	172.53	7733.50	1646.09	-1636.46	237.17	94.00	0.94	129.06	1653.56	171.75	MWD Run 3
106	8919.00	75.86	173.59	7755.98	1738.15	-1728.08	248.33	95.00	1.44	130.82	1745.83	171.82	MWD Run 3
107	9013.00	74.39	174.62	7780.11	1828.86	-1818.45	257.66	94.00	1.89	132.59	1836.61	171.94	MWD Run 3
108	9107.00	75.40	174.30	7804.61	1919.51	-1908.78	266.42	94.00	1.12	132.59	1927.28	172.05	MWD Run 3
109	9202.00	74.28	174.65	7829.45	2011.10	-2000.04	275.25	95.00	1.23	134.35	2018.89	172.16	MWD Run 3
110	9297.00	74.91	174.17	7854.69	2102.58	-2091.19	284.17	95.00	0.82	136.12	2110.41	172.26	MWD Run 3
111	9392.00	75.52	174.44	7878.93	2194.31	-2182.59	293.29	95.00	0.70	139.65	2202.21	172.35	MWD Run 3
112	9486.00	74.01	175.15	7903.63	2284.93	-2272.91	301.52	94.00	1.76	141.41	2292.82	172.44	MWD Run 3
113	9580.00	71.92	173.47	7931.17	2374.68	-2362.34	310.42	94.00	2.80	137.88	2382.65	172.51	MWD Run 3
114	9675.00	72.72	171.66	7960.02	2464.89	-2452.08	322.14	95.00	2.00	139.65	2473.15	172.52	MWD Run 3
115	9770.00	78.17	171.59	7983.89	2556.37	-2543.02	335.52	95.00	5.74	143.18	2565.06	172.48	MWD Run 3
116	9864.00	78.08	171.39	8003.23	2647.91	-2634.00	349.14	94.00	0.23	144.94	2657.03	172.45	MWD Run 3
117	9958.00	75.26	171.96	8024.90	2738.94	-2724.49	362.38	94.00	3.06	146.71	2748.48	172.42	MWD Run 3
118	10053.00	74.54	172.13	8049.65	2830.29	-2815.33	375.07	95.00	0.78	146.71	2840.20	172.41	MWD Run 3
119	10147.00	75.72	170.62	8073.77	2920.66	-2905.15	388.70	94.00	2.00	144.94	2931.03	172.38	MWD Run 3
120	10260.00	76.24	171.87	8101.15	3029.70	-3013.50	405.39	113.00	1.17	130.82	3040.64	172.34	MWD Run 4
121	10354.00	76.52	171.37	8123.29	3120.63	-3103.88	418.70	94.00	0.60	137.88	3131.99	172.32	MWD Run 4
122	10450.00	77.17	170.80	8145.13	3213.58	-3196.23	433.19	96.00	0.89	139.65	3225.45	172.28	MWD Run 4
123	10544.00	74.71	171.10	8167.97	3304.21	-3286.27	447.53	94.00	2.64	143.18	3316.60	172.25	MWD Run 4
124	10639.00	72.35	171.39	8194.90	3394.81	-3376.31	461.40	95.00	2.50	144.94	3407.69	172.22	MWD Run 4
125	10734.00	72.54	170.38	8223.56	3484.84	-3465.74	475.75	95.00	1.03	136.12	3498.24	172.18	MWD Run 5
126	10830.00	73.31	172.64	8251.75	3576.15	-3556.49	489.29	96.00	2.39	148.47	3589.99	172.17	MWD Run 5
127	10923.00	74.77	173.89	8277.32	3665.35	-3645.29	499.77	93.00	2.03	157.29	3679.39	172.19	MWD Run 5
128	11017.00	74.34	174.02	8302.35	3755.81	-3735.39	509.32	94.00	0.48	159.06	3769.95	172.24	MWD Run 5
129	11113.00	69.37	175.94	8332.24	3846.93	-3826.23	517.32	96.00	5.51	144.94	3861.04	172.30	MWD Run 6
130	11207.00	74.33	178.92	8361.52	3936.21	-3915.42	521.29	94.00	6.08	148.47	3949.97	172.42	MWD Run 6
131	11254.00	75.17	179.36	8373.88	3981.53	-3960.76	521.97	47.00	2.00	150.24	3995.01	172.49	MWD Run 6
132	11302.00	77.14	179.42	8385.37	4028.10	-4007.36	522.46	48.00	4.11	150.24	4041.28	172.57	MWD Run 6

133	11396.00	78.43	179.68	8405.26	4119.89	-4099.23	523.18	94.00	1.40	153.76	4132.48	172.73	MWD Run 6
134	11491.00	78.82	179.63	8423.99	4212.94	-4192.36	523.75	95.00	0.41	155.53	4224.95	172.88	MWD Run 6
135	11586.00	78.31	178.58	8442.83	4306.00	-4285.46	525.20	95.00	1.21	155.53	4317.53	173.01	MWD Run 6
136	11680.00	78.43	177.85	8461.78	4398.06	-4377.49	528.07	94.00	0.77	159.06	4409.22	173.12	MWD Run 6
137	11775.00	77.36	177.38	8481.70	4490.94	-4470.29	531.93	95.00	1.23	159.06	4501.83	173.21	MWD Run 6
138	11869.00	78.03	177.40	8501.73	4582.78	-4562.04	536.11	94.00	0.71	159.06	4593.43	173.30	MWD Run 6
139	11961.00	78.63	177.41	8520.34	4672.88	-4652.04	540.19	92.00	0.65	160.82	4683.30	173.38	MWD Run 6
140	12055.00	80.99	179.14	8536.97	4765.37	-4744.51	542.97	94.00	3.10	157.29	4775.48	173.47	MWD Run 6
141	12150.00	86.47	180.78	8547.34	4859.65	-4838.90	543.03	95.00	6.02	160.82	4869.28	173.60	MWD Run 6
142	12244.00	87.59	180.39	8552.21	4953.36	-4932.77	542.07	94.00	1.26	162.59	4962.46	173.73	MWD Run 6
143	12339.00	89.58	180.17	8554.56	5048.19	-5027.73	541.61	95.00	2.11	160.82	5056.82	173.85	MWD Run 6
144	12434.00	91.49	179.97	8553.67	5143.06	-5122.72	541.49	95.00	2.02	160.82	5151.26	173.97	MWD Run 6
145	12529.00	92.97	179.56	8549.98	5237.89	-5217.65	541.88	95.00	1.62	160.82	5245.71	174.07	MWD Run 6
146	12623.00	92.02	179.23	8545.88	5331.73	-5311.55	542.87	94.00	1.07	160.82	5339.22	174.16	MWD Run 6
147	12717.00	90.20	179.48	8544.06	5425.64	-5405.53	543.93	94.00	1.95	162.59	5432.82	174.25	MWD Run 6
148	12812.00	92.05	179.87	8542.20	5520.53	-5500.50	544.47	95.00	1.99	0.00	5527.38	174.35	MWD Run 6
149	12907.00	90.03	180.76	8540.47	5615.37	-5595.48	543.95	95.00	2.32	162.59	5621.86	174.45	MWD Run 6
150	13001.00	89.72	180.01	8540.68	5709.22	-5689.48	543.32	94.00	0.86	164.35	5715.36	174.55	MWD Run 6
151	13095.00	88.94	180.40	8541.78	5803.09	-5783.47	542.98	94.00	0.93	164.35	5808.90	174.64	MWD Run 6
152	13189.00	90.17	180.93	8542.51	5896.91	-5877.46	541.89	94.00	1.42	164.35	5902.38	174.73	MWD Run 6
153	13283.00	88.94	179.62	8543.24	5990.77	-5971.45	541.44	94.00	1.91	164.35	5995.94	174.82	MWD Run 6
154	13377.00	91.82	182.29	8542.62	6084.55	-6065.42	539.87	94.00	4.18	167.88	6089.39	174.91	MWD Run 6
155	13472.00	90.50	180.92	8540.69	6179.24	-6160.35	537.21	95.00	2.00	167.88	6183.73	175.02	MWD Run 6
156	13566.00	88.51	179.21	8541.50	6273.11	-6254.34	537.11	94.00	2.79	167.88	6277.36	175.09	MWD Run 6
157	13661.00	89.41	178.77	8543.23	6368.05	-6349.31	538.78	95.00	1.05	169.65	6372.13	175.15	MWD Run 6
158	13755.00	87.53	177.67	8545.74	6462.00	-6443.23	541.70	94.00	2.32	167.88	6465.96	175.19	MWD Run 6
159	13850.00	88.79	177.54	8548.79	6556.94	-6538.09	545.67	95.00	1.33	169.65	6560.82	175.23	MWD Run 6
160	13944.00	91.63	177.90	8548.44	6650.93	-6632.01	549.40	94.00	3.05	169.65	6654.73	175.26	MWD Run 6
161	14037.00	90.14	178.39	8547.01	6743.90	-6724.94	552.41	93.00	1.69	167.88	6747.60	175.30	MWD Run 6
162	14132.00	88.57	178.50	8548.08	6838.87	-6819.90	554.99	95.00	1.66	167.88	6842.45	175.35	MWD Run 6
163	14227.00	91.06	179.04	8548.38	6933.83	-6914.87	557.03	95.00	2.68	169.65	6937.27	175.39	MWD Run 6
164	14320.00	88.99	177.79	8548.34	7026.80	-7007.83	559.60	93.00	2.60	167.88	7030.14	175.43	MWD Run 6
165	14414.00	87.17	177.56	8551.49	7120.74	-7101.69	563.41	94.00	1.95	169.65	7124.01	175.46	MWD Run 6
166	14508.00	87.45	177.03	8555.90	7214.63	-7195.49	567.85	94.00	0.64	171.41	7217.86	175.49	MWD Run 6
167	14603.00	89.75	176.75	8558.22	7309.60	-7290.31	573.00	95.00	2.44	171.41	7312.79	175.51	MWD Run 6
168	14698.00	87.28	177.35	8560.69	7404.56	-7385.15	577.89	95.00	2.68	169.65	7407.72	175.53	MWD Run 6
169	14791.00	88.57	177.50	8564.05	7497.49	-7477.99	582.06	93.00	1.40	169.65	7500.61	175.55	MWD Run 6
170	14886.00	88.65	179.55	8566.36	7592.44	-7572.92	584.51	95.00	2.16	169.65	7595.45	175.59	MWD Run 6

171	14980.00	90.67	180.18	8566.92	7686.33	-7666.92	584.73	94.00	2.25	171.41	7689.18	175.64	MWD Run 6
172	15072.00	92.38	179.40	8564.47	7778.20	-7758.88	585.06	92.00	2.04	169.65	7780.91	175.69	MWD Run 6
173	15168.00	91.99	180.56	8560.81	7874.01	-7854.81	585.10	96.00	1.27	169.65	7876.57	175.74	MWD Run 6
174	15263.00	91.29	182.44	8558.09	7968.70	-7949.73	582.61	95.00	2.11	167.88	7971.05	175.81	MWD Run 6
175	15357.00	88.82	182.11	8558.00	8062.32	-8043.65	578.88	94.00	2.65	167.88	8064.45	175.88	MWD Run 6
176	15451.00	89.19	182.95	8559.63	8155.90	-8137.54	574.73	94.00	0.98	169.65	8157.81	175.96	MWD Run 6
177	15546.00	89.86	182.81	8560.42	8250.43	-8232.42	569.96	95.00	0.72	169.65	8252.13	176.04	MWD Run 6
178	15640.00	91.46	181.83	8559.34	8344.05	-8326.33	566.15	94.00	2.00	169.65	8345.56	176.11	MWD Run 6
179	15735.00	90.17	181.29	8557.98	8438.76	-8421.28	563.57	95.00	1.47	169.65	8440.12	176.17	MWD Run 6
180	15829.00	91.07	181.66	8556.97	8532.49	-8515.25	561.15	94.00	1.04	171.41	8533.72	176.23	MWD Run 6
181	15924.00	90.45	181.22	8555.71	8627.22	-8610.21	558.76	95.00	0.80	167.88	8628.32	176.29	MWD Run 6
182	16018.00	92.04	180.61	8553.66	8721.00	-8704.17	557.26	94.00	1.81	162.59	8721.99	176.34	MWD Run 6
183	16113.00	92.25	180.38	8550.11	8815.78	-8799.10	556.44	95.00	0.33	167.88	8816.68	176.38	MWD Run 6
184	16208.00	90.87	179.64	8547.52	8910.62	-8894.06	556.42	95.00	1.65	167.88	8911.45	176.42	MWD Run 6
185	16302.00	89.66	178.56	8547.09	9004.57	-8988.05	557.90	94.00	1.73	169.65	9005.34	176.45	MWD Run 6
186	16396.00	90.36	178.09	8547.07	9098.55	-9082.00	560.65	94.00	0.90	171.41	9099.29	176.47	MWD Run 6
187	16491.00	88.99	178.41	8547.61	9193.53	-9176.96	563.55	95.00	1.48	164.35	9194.24	176.49	MWD Run 6
188	16586.00	89.27	178.39	8549.05	9288.50	-9271.91	566.20	95.00	0.30	167.88	9289.18	176.51	MWD Run 6
189	16680.00	91.04	177.91	8548.80	9382.48	-9365.86	569.24	94.00	1.95	167.88	9383.14	176.52	MWD Run 6
190	16775.00	90.08	178.32	8547.87	9477.46	-9460.80	572.36	95.00	1.10	169.65	9478.10	176.54	MWD Run 6
191	16870.00	91.57	178.51	8546.50	9572.43	-9555.75	574.99	95.00	1.58	171.41	9573.03	176.56	MWD Run 6
192	16965.00	88.51	178.19	8546.44	9667.40	-9650.70	577.72	95.00	3.24	171.41	9667.97	176.57	MWD Run 6
193	17059.00	88.96	177.65	8548.51	9761.37	-9744.61	581.13	94.00	0.75	169.65	9761.93	176.59	MWD Run 6
194	17153.00	88.46	179.35	8550.63	9855.32	-9838.55	583.59	94.00	1.88	171.41	9855.85	176.61	MWD Run 6
195	17247.00	89.97	179.89	8551.92	9949.22	-9932.54	584.22	94.00	1.71	173.18	9949.71	176.63	MWD Run 6
196	17342.00	91.29	179.36	8550.87	10044.13	-10027.53	584.84	95.00	1.50	173.18	10044.57	176.66	MWD Run 6
197	17436.00	90.08	179.92	8549.75	10138.03	-10121.52	585.43	94.00	1.42	166.12	10138.43	176.69	MWD Run 6
198	17531.00	89.36	178.41	8550.21	10232.97	-10216.50	586.81	95.00	1.76	169.65	10233.34	176.71	MWD Run 6
199	17625.00	88.82	177.00	8551.70	10326.95	-10310.41	590.58	94.00	1.61	173.18	10327.31	176.72	MWD Run 6
200	17720.00	88.54	178.00	8553.89	10421.93	-10405.30	594.72	95.00	1.09	171.41	10422.28	176.73	MWD Run 6
201	17814.00	88.26	180.68	8556.52	10515.82	-10499.25	595.80	94.00	2.87	171.41	10516.14	176.75	MWD Run 6
202	17909.00	88.18	180.86	8559.47	10610.59	-10594.19	594.53	95.00	0.21	173.18	10610.86	176.79	MWD Run 6
203	18004.00	89.44	182.12	8561.44	10705.29	-10689.13	592.06	95.00	1.88	173.18	10705.52	176.83	MWD Run 6
204	18099.00	89.22	181.16	8562.55	10800.00	-10784.09	589.34	95.00	1.04	174.94	10800.18	176.87	MWD Run 6
205	18193.00	88.54	181.08	8564.39	10893.76	-10878.05	587.50	94.00	0.73	174.94	10893.90	176.91	MWD Run 6
206	18288.00	89.83	181.05	8565.74	10988.54	-10973.02	585.73	95.00	1.36	169.65	10988.65	176.94	MWD Run 6
207	18383.00	90.81	181.24	8565.21	11083.31	-11068.00	583.84	95.00	1.05	171.41	11083.39	176.98	MWD Run 6
208	18477.00	92.72	181.19	8562.32	11177.03	-11161.93	581.84	94.00	2.03	174.94	11177.09	177.02	MWD Run 6

209	18572.00	93.20	180.83	8557.41	11271.69	-11256.79	580.17	95.00	0.63	176.71	11271.73	177.05	MWD Run 6
210	18667.00	91.49	180.15	8553.52	11366.45	-11351.70	579.36	95.00	1.94	173.18	11366.48	177.08	MWD Run 6
211	18762.00	88.18	178.98	8553.80	11461.36	-11446.68	580.08	95.00	3.70	176.71	11461.37	177.10	MWD Run 6
212	18857.00	88.63	178.82	8556.44	11556.28	-11541.63	581.90	95.00	0.50	171.41	11556.29	177.11	MWD Run 6
213	18938.00	88.65	179.22	8558.36	11637.21	-11622.59	583.29	81.00	0.49	167.88	11637.22	177.13	MWD Run 6
PTB	18994.00	88.65	179.22	8559.68	11693.16	-11678.57	584.05	56.00	0.00	0.00	11693.17	177.14	PROJECTION



DEC 26 2019

Survey Report

DISTRICT//ARTESIAO.C.D.

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

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	BUTTERCUP 27-34		
Site Position:	Map	Northing:	597,529.10 usft
From:		Easting:	615,452.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	32.64214952
		Longitude:	-103.95826483
		Grid Convergence:	0.20 °

Well	BUTTERCUP 27-34 FED 3H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.64214953
		Longitude:	-103.95836229
		Ground Level:	3,285.00 usft

Wellbore	3H Lateral		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	03/25/19	6.97
			Dip Angle
			(°)
			Field Strength
			(nT)
			47,963.17519904

Design	3H Lateral (AsDrilled)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			177.14

Survey Program	Date 04/19/19		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
184.00	18,938.00	Survey #1 WB (3H Lateral)	MWD
18,994.00	18,994.00	Survey #2 (3H Lateral)	Projection
			Description
			OWSG MWD - Standard
			Projection

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100ft)	(°/100ft)	(°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BUTTERCUP 27-34 FED 3H SHL - BUTTERCUP 27-34 FED 4H SHL - BUTTERCUP 27-34 FED 2H FTP_CALCULATED_330FNL_1820 - BU1									
0.02	0.00	328.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00
BUTTERCUP 27-34 FED 1H SHL									
184.00	0.09	328.10	184.00	0.12	-0.08	-0.13	0.05	0.05	0.00
276.00	0.22	356.31	276.00	0.36	-0.13	-0.37	0.16	0.14	30.66
366.00	0.48	261.91	366.00	0.48	-0.51	-0.50	0.60	0.29	-104.89
419.00	0.70	257.61	419.00	0.38	-1.05	-0.43	0.42	0.42	-8.11
499.00	0.79	245.48	498.99	0.05	-2.03	-0.15	0.23	0.11	-15.16

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

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)
616.00	0.70	241.52	615.98	-0.63	-3.39	0.46	0.09	-0.08	-3.38
711.00	1.56	258.66	710.96	-1.16	-5.17	0.90	0.96	0.91	18.04
806.00	0.79	255.41	805.94	-1.58	-7.07	1.23	0.81	-0.81	-3.42
987.00	1.01	263.23	986.92	-2.08	-9.86	1.59	0.14	0.12	4.32
1,017.00	0.88	251.89	1,016.91	-2.19	-10.34	1.67	0.76	-0.43	-37.80
1,083.00	1.01	263.23	1,082.90	-2.41	-11.40	1.84	0.34	0.20	17.18
1,112.00	0.79	262.71	1,111.90	-2.47	-11.85	1.87	0.76	-0.76	-1.79
1,198.00	0.88	251.81	1,197.89	-2.75	-13.07	2.09	0.21	0.10	-12.67
1,302.00	0.79	256.03	1,301.88	-3.17	-14.52	2.44	0.10	-0.09	4.06
1,454.00	1.01	269.03	1,453.86	-3.45	-16.88	2.60	0.20	0.14	8.55
1,501.00	1.01	269.03	1,500.85	-3.46	-17.71	2.57	0.00	0.00	0.00
1,576.00	0.90	264.90	1,575.84	-3.52	-18.95	2.57	0.17	-0.15	-5.51
1,670.00	0.90	272.90	1,669.83	-3.55	-20.43	2.53	0.13	0.00	8.51
1,757.00	0.90	259.30	1,756.82	-3.64	-21.78	2.55	0.24	0.00	-15.63
1,849.00	0.80	254.20	1,848.81	-3.95	-23.11	2.79	0.14	-0.11	-5.54
1,945.00	1.00	248.10	1,944.80	-4.45	-24.53	3.22	0.23	0.21	-6.35
2,040.00	0.80	239.00	2,039.79	-5.10	-25.87	3.80	0.26	-0.21	-9.58
2,137.00	0.90	233.20	2,136.78	-5.90	-27.06	4.55	0.14	0.10	-5.98
2,232.00	0.90	237.20	2,231.77	-6.76	-28.28	5.33	0.07	0.00	4.21
2,332.00	0.90	219.90	2,331.75	-7.78	-29.45	6.30	0.27	0.00	-17.30
2,424.00	1.10	215.80	2,423.74	-9.05	-30.43	7.52	0.23	0.22	-4.46
2,519.00	1.30	220.70	2,518.72	-10.61	-31.66	9.02	0.24	0.21	5.16
2,613.00	1.10	239.00	2,612.70	-11.88	-33.13	10.21	0.46	-0.21	19.47
2,708.00	1.30	233.30	2,707.68	-13.00	-34.78	11.24	0.24	0.21	-6.00
2,802.00	1.20	238.10	2,801.65	-14.16	-36.47	12.32	0.15	-0.11	5.11
2,897.00	1.60	231.10	2,896.63	-15.51	-38.34	13.58	0.46	0.42	-7.37
2,991.00	1.60	202.90	2,990.59	-17.55	-39.88	15.53	0.83	0.00	-30.00
3,023.00	1.90	185.90	3,022.58	-18.49	-40.11	16.46	1.86	0.94	-53.12
3,083.00	2.70	152.30	3,082.53	-20.73	-39.55	18.73	2.56	1.33	-56.00
3,177.00	3.70	147.00	3,176.38	-25.23	-36.87	23.36	1.11	1.06	-5.64
3,275.00	3.90	140.60	3,274.17	-30.46	-33.03	28.77	0.48	0.20	-6.53
3,369.00	2.80	134.20	3,368.01	-34.53	-29.36	33.02	1.23	-1.17	-6.81
3,459.00	2.30	90.50	3,457.92	-36.08	-25.97	34.74	2.17	-0.56	-48.56
3,558.00	1.90	48.90	3,556.86	-35.02	-22.75	33.84	1.55	-0.40	-42.02
3,652.00	2.20	36.00	3,650.80	-32.53	-20.52	31.47	0.58	0.32	-13.72
3,746.00	2.10	32.80	3,744.74	-29.62	-18.52	28.66	0.17	-0.11	-3.40
3,841.00	2.10	37.40	3,839.67	-26.78	-16.52	25.92	0.18	0.00	4.84
3,935.00	2.00	36.00	3,933.61	-24.08	-14.51	23.33	0.12	-0.11	-1.49
4,025.00	2.10	34.70	4,023.56	-21.46	-12.65	20.80	0.12	0.11	-1.44
4,089.00	2.18	43.52	4,087.51	-19.61	-11.15	19.03	0.53	0.12	13.78
4,184.00	2.12	47.49	4,182.44	-17.11	-8.61	16.66	0.17	-0.06	4.18
4,278.00	1.74	50.10	4,276.39	-15.02	-6.23	14.69	0.41	-0.40	2.78
4,373.00	1.37	36.54	4,371.36	-13.19	-4.45	12.95	0.55	-0.39	-14.27

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,468.00	1.40	28.32	4,466.33	-11.25	-3.22	11.08	0.21	0.03	-8.65
4,562.00	1.25	26.94	4,560.30	-9.33	-2.21	9.20	0.16	-0.16	-1.47
4,656.00	1.18	23.16	4,654.28	-7.52	-1.37	7.44	0.11	-0.07	-4.02
4,750.00	1.14	20.22	4,748.26	-5.75	-0.66	5.71	0.08	-0.04	-3.13
4,844.00	1.09	17.37	4,842.25	-4.02	-0.07	4.02	0.08	-0.05	-3.03
4,938.00	0.95	21.38	4,936.23	-2.45	0.48	2.47	0.17	-0.15	4.27
5,032.00	1.00	20.56	5,030.22	-0.95	1.05	1.00	0.06	0.05	-0.87
5,127.00	0.99	15.11	5,125.20	0.62	1.56	-0.54	0.10	-0.01	-5.74
5,221.00	0.91	13.16	5,219.19	2.13	1.94	-2.03	0.09	-0.09	-2.07
5,316.00	0.98	14.71	5,314.18	3.65	2.32	-3.53	0.08	0.07	1.63
5,410.00	1.03	10.87	5,408.16	5.26	2.68	-5.11	0.09	0.05	-4.09
5,505.00	0.97	13.36	5,503.15	6.88	3.03	-6.72	0.08	-0.06	2.62
5,600.00	1.11	12.86	5,598.13	8.56	3.42	-8.37	0.15	0.15	-0.53
5,694.00	0.88	11.56	5,692.12	10.15	3.76	-9.95	0.25	-0.24	-1.38
5,789.00	0.82	355.70	5,787.11	11.54	3.86	-11.34	0.25	-0.06	-16.69
5,884.00	0.79	303.89	5,882.10	12.59	3.27	-12.41	0.74	-0.03	-54.54
5,979.00	0.92	287.51	5,977.09	13.18	1.99	-13.06	0.29	0.14	-17.24
6,073.00	1.05	266.61	6,071.08	13.36	0.41	-13.32	0.40	0.14	-22.23
6,168.00	0.94	269.89	6,166.06	13.30	-1.23	-13.35	0.13	-0.12	3.45
6,263.00	1.07	254.05	6,261.05	13.06	-2.87	-13.19	0.32	0.14	-16.67
6,358.00	1.31	241.42	6,356.03	12.30	-4.67	-12.51	0.37	0.25	-13.29
6,452.00	1.29	258.58	6,450.00	11.57	-6.65	-11.89	0.41	-0.02	18.26
6,546.00	1.73	193.49	6,543.98	9.98	-8.02	-10.37	1.77	0.47	-69.24
6,639.00	3.33	180.24	6,636.88	5.92	-8.36	-6.33	1.82	1.72	-14.25
6,733.00	3.69	182.13	6,730.71	0.16	-8.48	-0.59	0.40	0.38	2.01
6,746.00	3.60	185.34	6,743.68	-0.66	-8.54	0.23	1.72	-0.69	24.69
6,841.00	9.83	165.12	6,837.99	-11.48	-6.73	11.13	6.92	6.56	-21.28
6,887.00	17.71	163.62	6,882.64	-22.00	-3.74	21.79	17.15	17.13	-3.26
6,934.00	21.54	162.74	6,926.90	-37.11	0.83	37.10	8.17	8.15	-1.87
6,980.00	26.04	163.16	6,968.98	-54.85	6.27	55.09	9.79	9.78	0.91
7,029.00	31.06	164.42	7,012.01	-77.33	12.78	77.87	10.32	10.24	2.57
7,075.00	33.74	165.37	7,050.84	-101.13	19.20	101.96	5.93	5.83	2.07
7,123.00	33.27	168.31	7,090.87	-126.92	25.23	128.02	3.52	-0.98	6.12
7,169.00	33.94	168.34	7,129.18	-151.85	30.38	153.18	1.46	1.46	0.07
7,218.00	35.24	170.46	7,169.52	-179.19	35.49	180.74	3.62	2.65	4.33
7,264.00	38.21	171.43	7,206.39	-206.35	39.81	208.08	6.58	6.46	2.11
7,311.00	42.27	171.92	7,242.25	-236.39	44.20	238.30	8.66	8.64	1.04
7,357.00	45.77	172.84	7,275.33	-268.07	48.43	270.15	7.73	7.61	2.00
7,406.00	49.33	173.69	7,308.40	-303.97	52.66	306.22	7.38	7.27	1.73
7,452.00	54.71	173.36	7,336.69	-339.98	56.76	342.39	11.71	11.70	-0.72
7,499.00	61.03	171.89	7,361.68	-379.43	61.88	382.05	13.70	13.45	-3.13
7,545.00	66.09	170.00	7,382.16	-420.09	68.37	422.98	11.60	11.00	-4.11
7,593.00	72.12	168.18	7,399.27	-464.09	76.87	467.35	13.05	12.56	-3.79
7,633.00	77.44	171.71	7,409.77	-502.08	83.59	505.63	15.79	13.30	8.82

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

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)
7,686.00	77.85	172.22	7,421.11	-553.34	90.83	557.19	1.22	0.77	0.96
7,780.00	74.91	173.09	7,443.24	-643.94	102.51	648.26	3.25	-3.13	0.93
7,876.00	72.92	173.77	7,469.84	-735.57	113.07	740.30	2.18	-2.07	0.71
7,970.00	71.12	174.82	7,498.85	-824.53	121.96	829.59	2.19	-1.91	1.12
8,065.00	70.61	175.43	7,530.00	-913.96	129.59	919.29	0.81	-0.54	0.64
8,160.00	70.80	173.80	7,561.39	-1,003.22	138.00	1,008.86	1.63	0.20	-1.72
8,254.00	72.82	171.42	7,590.73	-1,091.77	149.50	1,097.87	3.23	2.15	-2.53
8,349.00	74.42	170.17	7,617.53	-1,181.73	164.08	1,188.45	2.10	1.68	-1.32
8,445.00	76.37	170.81	7,641.73	-1,273.35	179.42	1,280.72	2.13	2.03	0.67
8,540.00	76.06	170.28	7,664.37	-1,364.36	194.58	1,372.38	0.63	-0.33	-0.56
8,635.00	75.12	170.09	7,688.01	-1,455.02	210.26	1,463.71	1.01	-0.99	-0.20
8,730.00	76.21	171.82	7,711.53	-1,545.92	224.73	1,555.21	2.10	1.15	1.82
8,824.00	76.76	172.53	7,733.50	-1,636.46	237.17	1,646.27	0.94	0.59	0.76
8,919.00	75.86	173.59	7,755.98	-1,728.08	248.33	1,738.33	1.44	-0.95	1.12
9,013.00	74.39	174.62	7,780.11	-1,818.45	257.66	1,829.05	1.89	-1.56	1.10
9,107.00	75.40	174.30	7,804.61	-1,908.78	266.42	1,919.70	1.12	1.07	-0.34
9,202.00	74.28	174.65	7,829.45	-2,000.04	275.25	2,011.29	1.23	-1.18	0.37
9,297.00	74.91	174.17	7,854.69	-2,091.19	284.17	2,102.78	0.82	0.66	-0.51
9,392.00	75.52	174.44	7,878.93	-2,182.59	293.29	2,194.52	0.70	0.64	0.28
9,486.00	74.01	175.15	7,903.63	-2,272.91	301.52	2,285.14	1.76	-1.61	0.76
9,580.00	71.92	173.47	7,931.17	-2,362.34	310.42	2,374.89	2.80	-2.22	-1.79
9,675.00	72.72	171.66	7,960.02	-2,452.08	322.14	2,465.11	2.00	0.84	-1.91
9,770.00	78.17	171.59	7,983.89	-2,543.02	335.52	2,556.60	5.74	5.74	-0.07
9,864.00	78.08	171.39	8,003.23	-2,634.00	349.14	2,648.15	0.23	-0.10	-0.21
9,958.00	75.26	171.96	8,024.90	-2,724.49	362.38	2,739.19	3.06	-3.00	0.61
10,053.00	74.54	172.13	8,049.65	-2,815.33	375.07	2,830.55	0.78	-0.76	0.18
10,147.00	75.72	170.62	8,073.78	-2,905.15	388.70	2,920.93	2.00	1.26	-1.61
10,260.00	76.24	171.87	8,101.15	-3,013.50	405.39	3,029.99	1.17	0.46	1.11
10,354.00	76.52	171.37	8,123.29	-3,103.88	418.70	3,120.92	0.60	0.30	-0.53
10,450.00	77.17	170.80	8,145.14	-3,196.23	433.19	3,213.88	-0.89	0.68	-0.59
10,544.00	74.71	171.10	8,167.97	-3,286.27	447.53	3,304.52	2.64	-2.62	0.32
10,639.00	72.35	171.39	8,194.90	-3,376.31	461.40	3,395.14	2.50	-2.48	0.31
10,734.00	72.54	170.38	8,223.56	-3,465.74	475.75	3,485.17	1.03	0.20	-1.06
10,830.00	73.31	172.64	8,251.75	-3,556.49	489.29	3,576.49	2.39	0.80	2.35
10,923.00	74.77	173.89	8,277.32	-3,645.29	499.77	3,665.70	2.03	1.57	1.34
11,017.00	74.34	174.02	8,302.35	-3,735.39	509.32	3,756.16	0.48	-0.46	0.14
11,113.00	69.37	175.94	8,332.24	-3,826.23	517.32	3,847.29	5.51	-5.18	2.00
11,207.00	74.33	178.92	8,361.52	-3,915.42	521.29	3,936.57	6.08	5.28	3.17
11,254.00	75.17	179.36	8,373.88	-3,960.76	521.97	3,981.89	2.00	1.79	0.94
11,262.00	75.50	179.37	8,375.91	-3,968.50	522.05	3,989.62	4.11	4.10	0.13
Wellpath Crosses Unit Line @ Heel									
11,302.00	77.14	179.42	8,385.37	-4,007.36	522.46	4,028.46	4.11	4.10	0.12
11,396.00	78.43	179.68	8,405.26	-4,099.23	523.18	4,120.25	1.40	1.37	0.28

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,491.00	78.82	179.63	8,423.99	-4,192.36	523.75	4,213.29	0.41	0.41	-0.05
11,572.56	78.38	178.73	8,440.11	-4,272.31	524.89	4,293.19	1.21	-0.54	-1.10
BUTTERCUP 27-34 FED 1H FTP_330FNL_400FWL									
11,586.00	78.31	178.58	8,442.83	-4,285.46	525.20	4,306.35	1.21	-0.54	-1.11
11,598.00	78.33	178.49	8,445.26	-4,297.21	525.50	4,318.09	0.77	0.13	-0.78
Wellpath Crosses FTP									
11,621.46	78.36	178.30	8,450.00	-4,320.17	526.14	4,341.06	0.77	0.13	-0.78
BUTTERCUP 27-34 FED 3H FTP_330FNL_1820FEL p2									
11,626.59	78.36	178.26	8,451.04	-4,325.20	526.29	4,346.09	0.77	0.13	-0.78
BUTTERCUP 27-34 FED 3H FTP_330FNL_1820FEL									
11,664.65	78.41	177.97	8,458.70	-4,362.46	527.52	4,383.37	0.77	0.13	-0.78
BUTTERCUP 27-34 FED 4H FTP_330FNL_400FEL									
11,680.00	78.43	177.85	8,461.78	-4,377.49	528.07	4,398.40	0.77	0.13	-0.78
11,775.00	77.36	177.38	8,481.70	-4,470.29	531.93	4,491.28	1.23	-1.13	-0.49
11,869.00	78.03	177.40	8,501.73	-4,562.04	536.11	4,583.12	0.71	0.71	0.02
11,961.00	78.63	177.41	8,520.34	-4,652.04	540.19	4,673.22	0.65	0.65	0.01
12,055.00	80.99	179.14	8,536.97	-4,744.51	542.97	4,765.71	3.10	2.51	1.84
12,064.04	81.51	179.30	8,538.35	-4,753.45	543.09	4,774.64	6.02	5.77	1.74
BUTTERCUP 27-34 FED 3H LP p2									
12,150.00	86.47	180.78	8,547.34	-4,838.90	543.03	4,859.98	6.02	5.77	1.72
12,204.92	87.12	180.55	8,550.41	-4,893.73	542.39	4,914.71	1.26	1.19	-0.42
BUTTERCUP 27-34 FED 3H LP p3									
12,244.00	87.59	180.39	8,552.21	-4,932.77	542.07	4,953.69	1.26	1.19	-0.41
12,339.00	89.58	180.17	8,554.56	-5,027.73	541.61	5,048.51	2.11	2.09	-0.23
12,434.00	91.49	179.97	8,553.67	-5,122.72	541.49	5,143.38	2.02	2.01	-0.21
12,529.00	92.97	179.56	8,549.98	-5,217.65	541.88	5,238.20	1.62	1.56	-0.43
12,623.00	92.02	179.23	8,545.88	-5,311.55	542.87	5,332.04	1.07	-1.01	-0.35
12,717.00	90.20	179.48	8,544.06	-5,405.53	543.93	5,425.95	1.95	-1.94	0.27
12,812.00	92.05	179.87	8,542.20	-5,500.50	544.47	5,520.83	1.99	1.95	0.41
12,907.00	90.03	180.76	8,540.47	-5,595.48	543.95	5,615.66	2.32	-2.13	0.94
13,001.00	89.72	180.01	8,540.68	-5,689.48	543.32	5,709.51	0.86	-0.33	-0.80
13,095.00	88.94	180.40	8,541.78	-5,783.47	542.98	5,803.37	0.93	-0.83	0.41
13,189.00	90.17	180.93	8,542.51	-5,877.46	541.89	5,897.19	1.42	1.31	0.56
13,283.00	88.94	179.62	8,543.24	-5,971.45	541.44	5,991.04	1.91	-1.31	-1.39
13,377.00	91.82	182.29	8,542.62	-6,065.42	539.87	6,084.81	4.18	3.06	2.84
13,472.00	90.50	180.92	8,540.69	-6,160.35	537.21	6,179.50	2.00	-1.39	-1.44
13,566.00	88.51	179.21	8,541.50	-6,254.34	537.11	6,273.36	2.79	-2.12	-1.82
13,661.00	89.41	178.77	8,543.23	-6,349.31	538.78	6,368.30	1.05	0.95	-0.46
13,755.00	87.53	177.67	8,545.74	-6,443.23	541.70	6,462.24	2.32	-2.00	-1.17
13,850.00	88.79	177.54	8,548.79	-6,538.09	545.67	6,557.19	1.33	1.33	-0.14
13,944.00	91.63	177.90	8,548.44	-6,632.01	549.40	6,651.17	3.05	3.02	0.38
14,037.00	90.14	178.39	8,547.01	-6,724.94	552.41	6,744.14	1.69	-1.60	0.53
14,132.00	88.57	178.50	8,548.08	-6,819.90	554.99	6,839.11	1.66	-1.65	0.12
14,227.00	91.06	179.04	8,548.38	-6,914.87	557.03	6,934.06	2.68	2.62	0.57
14,320.00	88.99	177.79	8,548.34	-7,007.83	559.60	7,027.03	2.60	-2.23	-1.34

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

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)
14,414.00	87.17	177.56	8,551.49	-7,101.69	563.41	7,120.97	1.95	-1.94	-0.24
14,508.00	87.45	177.03	8,555.90	-7,195.49	567.85	7,214.87	0.64	0.30	-0.56
14,603.00	89.75	176.75	8,558.22	-7,290.31	573.00	7,309.83	2.44	2.42	-0.29
14,698.00	87.28	177.35	8,560.69	-7,385.15	577.89	7,404.79	2.68	-2.60	0.63
14,791.00	88.57	177.50	8,564.05	-7,477.99	582.06	7,497.73	1.40	1.39	0.16
14,886.00	88.65	179.55	8,566.36	-7,572.92	584.51	7,592.67	2.16	0.08	2.16
14,980.00	90.67	180.18	8,566.92	-7,666.92	584.73	7,686.55	2.25	2.15	0.67
15,074.00	92.38	179.40	8,564.41	-7,760.88	585.07	7,780.41	2.00	1.82	-0.83
15,168.00	91.99	180.56	8,560.83	-7,854.81	585.10	7,874.23	1.30	-0.41	1.23
15,263.00	91.29	182.44	8,558.11	-7,949.73	582.62	7,968.91	2.11	-0.74	1.98
15,357.00	88.82	182.11	8,558.02	-8,043.65	578.89	8,062.52	2.65	-2.63	-0.35
15,451.00	89.19	182.95	8,559.65	-8,137.54	574.74	8,156.09	0.98	0.39	0.89
15,546.00	89.86	182.81	8,560.44	-8,232.42	569.96	8,250.61	0.72	0.71	-0.15
15,640.00	91.46	181.83	8,559.36	-8,326.33	566.16	8,344.22	2.00	1.70	-1.04
15,735.00	90.17	181.29	8,558.01	-8,421.29	563.57	8,438.92	1.47	-1.36	-0.57
15,829.00	91.07	181.66	8,556.99	-8,515.25	561.15	8,532.65	1.04	0.96	0.39
15,924.00	90.45	181.22	8,555.73	-8,610.21	558.77	8,627.37	0.80	-0.65	-0.46
16,018.00	92.04	180.61	8,553.69	-8,704.17	557.27	8,721.14	1.81	1.69	-0.65
16,113.00	92.25	180.38	8,550.13	-8,799.10	556.45	8,815.91	0.33	0.22	-0.24
16,208.00	90.87	179.64	8,547.55	-8,894.06	556.43	8,910.75	1.65	-1.45	-0.78
16,302.00	89.66	178.56	8,547.11	-8,988.05	557.91	9,004.69	1.73	-1.29	-1.15
16,396.00	90.36	178.09	8,547.09	-9,082.01	560.65	9,098.67	0.90	0.74	-0.50
16,491.00	88.99	178.41	8,547.63	-9,176.96	563.56	9,193.65	1.48	-1.44	0.34
16,586.00	89.27	178.39	8,549.08	-9,271.91	566.21	9,288.62	0.30	0.29	-0.02
16,680.00	91.04	177.91	8,548.82	-9,365.86	569.24	9,382.60	1.95	1.88	-0.51
16,775.00	90.08	178.32	8,547.89	-9,460.80	572.37	9,477.58	1.10	-1.01	0.43
16,870.00	91.57	178.51	8,546.53	-9,555.75	574.99	9,572.54	1.58	1.57	0.20
16,965.00	88.51	178.19	8,546.46	-9,650.70	577.73	9,667.51	3.24	-3.22	-0.34
17,059.00	88.96	177.65	8,548.53	-9,744.61	581.14	9,761.48	0.75	0.48	-0.57
17,153.00	88.46	179.35	8,550.65	-9,838.55	583.60	9,855.42	1.88	-0.53	1.81
17,247.00	89.97	179.89	8,551.94	-9,932.54	584.22	9,949.32	1.71	1.61	0.57
17,342.00	91.29	179.36	8,550.89	-10,027.53	584.84	10,044.23	1.50	1.39	-0.56
17,436.00	90.08	179.92	8,549.77	-10,121.52	585.44	10,138.13	1.42	-1.29	0.60
17,531.00	89.36	178.41	8,550.23	-10,216.50	586.82	10,233.06	1.76	-0.76	-1.59
17,625.00	88.82	177.00	8,551.73	-10,310.41	590.58	10,327.04	1.61	-0.57	-1.50
17,720.00	88.54	178.00	8,553.92	-10,405.30	594.73	10,422.02	1.09	-0.29	1.05
17,814.00	88.26	180.68	8,556.54	-10,499.25	595.81	10,515.90	2.87	-0.30	2.85
17,909.00	88.18	180.86	8,559.49	-10,594.19	594.53	10,610.66	0.21	-0.08	0.19
18,004.00	89.44	182.12	8,561.46	-10,689.14	592.06	10,705.37	1.88	1.33	1.33
18,099.00	89.22	181.16	8,562.58	-10,784.09	589.34	10,800.06	1.04	-0.23	-1.01
18,193.00	88.54	181.08	8,564.41	-10,878.05	587.51	10,893.82	0.73	-0.72	-0.09
18,288.00	89.83	181.05	8,565.76	-10,973.02	585.74	10,988.58	1.36	1.36	-0.03
18,383.00	90.81	181.24	8,565.23	-11,068.00	583.84	11,083.35	1.05	1.03	0.20

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

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)
18,477.00	92.72	181.19	8,562.34	-11,161.93	581.85	11,177.06	2.03	2.03	-0.05
18,572.00	93.20	180.83	8,557.43	-11,256.79	580.18	11,271.72	0.63	0.51	-0.38
18,667.00	91.49	180.15	8,553.55	-11,351.70	579.37	11,366.47	1.94	-1.80	-0.72
18,762.00	88.18	178.98	8,553.82	-11,446.69	580.09	11,461.37	3.70	-3.48	-1.23
BUTTERCUP 27-34 FED 2H PBHL_200FSL_1820FWL - BUTTERCUP 27-34 FED 2H LTP_330FSL_1820FWL									
18,815.75	88.43	178.89	8,555.41	-11,500.41	581.09	11,515.08	0.50	0.47	-0.17
BUTTERCUP 27-34 FED 1H LTP_330FSL_400FWL									
18,857.00	88.63	178.82	8,556.46	-11,541.63	581.91	11,556.29	0.50	0.47	-0.17
18,870.11	88.63	178.88	8,556.78	-11,554.73	582.17	11,569.39	0.49	0.02	0.49
BUTTERCUP 27-34 FED 3H LTP_330FSL_1820FEL p3									
18,871.00	88.63	178.89	8,556.80	-11,555.62	582.19	11,570.28	0.49	0.02	0.49
Wellpath Crosses LTP									
18,871.32	88.63	178.89	8,556.81	-11,555.94	582.20	11,570.60	0.00	0.00	0.00
BUTTERCUP 27-34 FED 3H LTP_330FSL_1820FEL p2									
18,892.02	88.64	178.99	8,557.30	-11,576.63	582.58	11,591.28	0.50	0.03	0.50
BUTTERCUP 27-34 FED 4H LTP_330FSL_400FEL									
18,938.00	88.65	179.22	8,558.39	-11,622.60	583.30	11,637.22	0.49	0.02	0.49
BUTTERCUP 27-34 FED 1H PBHL_200FSL_400FWL									
18,994.00	88.65	179.22	8,559.71	-11,678.57	584.06	11,693.17	0.00	0.00	0.00
TD @ 206FSL,1808FEL - BUTTERCUP 27-34 FED 3H PBHL_200FSL_1820FEL p3 - BUTTERCUP 27-34 FED 3H BHL - BUTTERCUP 27-34 I									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BUTTERCUP 27-34 FEI - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	597,529.00	615,422.00	32.64214953	-103.95836229
BUTTERCUP 27-34 FEI - actual wellpath hits target center - Point	0.00	0.00	0.00	-11,558.00	-1,077.60	585,971.00	614,344.40	32.61038978	-103.96199423
BUTTERCUP 27-34 FEI - actual wellpath misses target center by 8713.68usft at 18762.00usft MD (8553.82 TVD, -11446.69 N, 580.09 E) - Point	0.00	0.01	8,559.71	-11,678.57	584.06	585,850.43	616,006.06	32.61004229	-103.95659939
BUTTERCUP 27-34 FEI - actual wellpath hits target center - Point	0.00	0.00	8,575.50	-4,299.00	544.80	593,230.00	615,966.80	32.63032734	-103.95664195
BUTTERCUP 27-34 FEI - actual wellpath misses target center by 128.53usft at 11626.59usft MD (8451.04 TVD, -4325.20 N, 526.29 E) - Point	0.00	0.01	8,600.00	-11,685.10	572.40	585,843.90	615,994.40	32.61002445	-103.95663733
BUTTERCUP 27-34 FEI - actual wellpath misses target center by 42.45usft at 18994.00usft MD (8559.71 TVD, -11678.57 N, 584.06 E) - Point									

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well BUTTERCUP 27-34 FED 3H
Project:	Eddy County, NM (NAD27) NMEZ Grid	TVD Reference:	3285+30 @ 3315.00usft (F26)
Site:	BUTTERCUP 27-34	MD Reference:	3285+30 @ 3315.00usft (F26)
Well:	BUTTERCUP 27-34 FED 3H	North Reference:	Grid
Wellbore:	3H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	3H Lateral (AsDrilled)	Database:	PREDATOR_EDM

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,262.00	8,375.91	-3,968.50	522.05	Wellpath Crosses Unit Line @ Heel
11,598.00	8,445.26	-4,297.21	525.50	Wellpath Crosses FTP
18,871.00	8,556.80	-11,555.62	582.19	Wellpath Crosses LTP
18,994.00	8,559.71	-11,678.58	584.06	TD @ 206FSL, 1808FEL

Checked By: _____	Approved By: _____	Date: _____
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