



NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 24 2017

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XTO Energy

Eddy County, New Mexico (NAD 27)

Ross Draw 25

2H

Wellbore #1

30-015-34372
43472

Design: Surveys

Standard Survey Report

07 November, 2016

**Provide Signature Page for
Directional Survey**

MS Energy Services®
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MS Energy Services

Survey Report



Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Ross Draw 25
Well: 2H
Wellbore: Wellbore #1
Design: Surveys

Local Co-ordinate Reference: Well 2H
TVD Reference: WELL @ 2952.00usft (Noram 25)
MD Reference: WELL @ 2952.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Conroe Server

Project	Eddy County, New Mexico (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		

Well	2H		
Well Position	+N/-S	0.00 usft	Northing: 370,919.90 usft
	+E/-W	0.00 usft	Easting: 620,674.70 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 1' 9.031 N
		Longitude:	103° 56' 38.305 W
		Ground Level:	2,927.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	10/21/2016	7.25	59.81	47,913

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	183.13	

Survey Program	Date 11/6/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
121.00	9,672.00	Wellbender Surveys (Wellbore #1)	MWD	OWSG MWD - Standard
9,723.00	16,700.00	MS MWD (Wellbore #1)	MWD	OWSG MWD - Standard

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
121.00	0.10	64.20	121.00	0.05	0.10	-0.05	0.08	0.08	0.00
151.00	0.50	351.70	151.00	0.19	0.10	-0.19	1.60	1.33	-241.67
181.00	0.50	296.40	181.00	0.37	-0.04	-0.37	1.55	0.00	-184.33
210.00	0.10	109.30	210.00	0.42	-0.13	-0.42	2.07	-1.38	596.21
240.00	0.60	79.50	240.00	0.44	0.05	-0.44	1.72	1.67	-99.33
271.00	0.20	205.80	271.00	0.42	0.19	-0.43	2.38	-1.29	407.42
305.00	0.40	98.30	305.00	0.35	0.28	-0.37	1.47	0.59	-316.18
335.00	0.10	138.10	335.00	0.32	0.40	-0.34	1.10	-1.00	132.67
365.00	0.60	161.10	365.00	0.15	0.47	-0.18	1.70	1.67	76.67
392.00	0.80	178.70	391.99	-0.17	0.52	0.14	1.08	0.74	65.19
483.00	1.20	173.70	482.98	-1.75	0.64	1.72	0.45	0.44	-5.49
575.00	1.20	171.70	574.96	-3.67	0.88	3.61	0.05	0.00	-2.17
664.00	0.90	163.10	663.94	-5.26	1.22	5.18	0.38	-0.34	-9.66
760.00	0.50	169.20	759.94	-6.39	1.52	6.30	0.42	-0.42	6.35



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855.00	0.30	158.50	854.93	-7.03	1.69	6.92	0.22	-0.21	-11.26
950.00	0.20	238.70	949.93	-7.35	1.64	7.24	0.35	-0.11	84.42
1,044.00	0.50	267.30	1,043.93	-7.45	1.09	7.38	0.36	0.32	30.43
1,139.00	0.40	258.90	1,138.93	-7.53	0.35	7.50	0.13	-0.11	-8.84
1,234.00	0.40	252.30	1,233.93	-7.70	-0.29	7.70	0.05	0.00	-6.95
1,329.00	0.50	214.50	1,328.92	-8.14	-0.84	8.17	0.32	0.11	-39.79
1,423.00	0.40	251.80	1,422.92	-8.58	-1.39	8.64	0.32	-0.11	39.68
1,518.00	0.60	229.30	1,517.92	-9.01	-2.08	9.11	0.29	0.21	-23.68
1,612.00	0.70	224.20	1,611.91	-9.74	-2.85	9.88	0.12	0.11	-5.43
1,707.00	0.80	203.50	1,706.90	-10.77	-3.52	10.94	0.30	0.11	-21.79
1,806.00	0.80	200.10	1,805.89	-12.05	-4.04	12.25	0.05	0.00	-3.43
1,896.00	1.20	187.10	1,895.88	-13.57	-4.37	13.79	0.51	0.44	-14.44
1,991.00	1.30	193.50	1,990.86	-15.61	-4.74	15.84	0.18	0.11	6.74
2,085.00	1.50	197.90	2,084.83	-17.82	-5.37	18.08	0.24	0.21	4.68
2,182.00	1.50	199.60	2,181.80	-20.22	-6.19	20.53	0.05	0.00	1.75
2,277.00	1.40	194.30	2,276.77	-22.52	-6.89	22.86	0.18	-0.11	-5.58
2,372.00	1.20	179.50	2,371.74	-24.64	-7.17	24.99	0.41	-0.21	-15.58
2,466.00	1.50	150.30	2,465.72	-26.69	-6.55	27.01	0.79	0.32	-31.06
2,561.00	2.00	133.40	2,560.67	-28.91	-4.73	29.12	0.75	0.53	-17.79
2,655.00	2.30	129.80	2,654.61	-31.24	-2.09	31.31	0.35	0.32	-3.83
2,750.00	2.70	125.40	2,749.52	-33.76	1.20	33.64	0.47	0.42	-4.63
2,844.00	2.90	123.30	2,843.40	-36.35	4.99	36.02	0.24	0.21	-2.23
2,939.00	2.80	119.50	2,938.29	-38.81	9.02	38.26	0.22	-0.11	-4.00
3,034.00	2.50	123.30	3,033.19	-41.09	12.77	40.33	0.37	-0.32	4.00
3,064.00	2.20	123.20	3,063.16	-41.76	13.80	40.95	1.00	-1.00	-0.33
3,150.00	2.10	121.90	3,149.10	-43.50	16.52	42.53	0.13	-0.12	-1.51
3,245.00	1.90	117.70	3,244.04	-45.15	19.39	44.03	0.26	-0.21	-4.42
3,340.00	1.80	122.70	3,338.99	-46.69	22.04	45.42	0.20	-0.11	5.26
3,435.00	1.90	118.10	3,433.94	-48.24	24.69	46.82	0.19	0.11	-4.84
3,529.00	1.70	119.80	3,527.90	-49.66	27.27	48.10	0.22	-0.21	1.81
3,623.00	1.80	115.40	3,621.85	-50.99	29.82	49.29	0.18	0.11	-4.68
3,718.00	1.70	115.80	3,716.81	-52.24	32.43	50.39	0.11	-0.11	0.42
3,812.00	1.70	119.50	3,810.77	-53.54	34.90	51.55	0.12	0.00	3.94
3,907.00	1.70	120.30	3,905.72	-54.94	37.34	52.82	0.02	0.00	0.84
4,096.00	1.60	119.50	4,094.65	-57.66	42.06	55.27	0.05	-0.05	-0.42
4,190.00	1.50	122.60	4,188.61	-58.96	44.24	56.46	0.14	-0.11	3.30
4,285.00	1.70	122.40	4,283.57	-60.39	46.48	57.76	0.21	0.21	-0.21
4,379.00	1.60	120.00	4,377.54	-61.79	48.79	59.04	0.13	-0.11	-2.55
4,474.00	1.40	116.70	4,472.50	-62.98	50.98	60.10	0.23	-0.21	-3.47
4,568.00	1.50	110.30	4,566.47	-63.92	53.16	60.92	0.20	0.11	-6.81
4,663.00	1.60	109.70	4,661.44	-64.80	55.57	61.67	0.11	0.11	-0.63
4,757.00	1.50	115.10	4,755.40	-65.76	57.92	62.50	0.19	-0.11	5.74
4,852.00	1.70	117.20	4,850.37	-66.93	60.30	63.54	0.22	0.21	2.21



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4,946.00	1.80	117.50	4,944.32	-68.25	62.85	64.72	0.11	0.11	0.32
5,041.00	1.90	118.40	5,039.27	-69.69	65.56	66.01	0.11	0.11	0.95
5,130.00	1.80	121.40	5,128.23	-71.12	68.05	67.30	0.16	-0.11	3.37
5,230.00	1.90	121.50	5,228.18	-72.81	70.80	68.83	0.10	0.10	0.10
5,325.00	1.80	122.30	5,323.13	-74.43	73.41	70.31	0.11	-0.11	0.84
5,419.00	1.90	131.00	5,417.08	-76.24	75.83	71.98	0.32	0.11	9.26
5,514.00	1.90	131.00	5,512.02	-78.30	78.21	73.92	0.00	0.00	0.00
5,608.00	2.20	131.70	5,605.96	-80.53	80.73	76.00	0.32	0.32	0.74
5,703.00	1.90	133.20	5,700.90	-82.82	83.24	78.15	0.32	-0.32	1.58
5,797.00	1.90	142.20	5,794.85	-85.12	85.33	80.33	0.32	0.00	9.57
5,892.00	1.70	142.20	5,889.81	-87.47	87.16	82.58	0.21	-0.21	0.00
5,987.00	1.70	147.00	5,984.76	-89.77	88.79	84.79	0.15	0.00	5.05
6,081.00	1.80	148.40	6,078.72	-92.20	90.32	87.13	0.12	0.11	1.49
6,176.00	1.80	149.90	6,173.67	-94.76	91.85	89.60	0.05	0.00	1.58
6,267.00	1.90	154.30	6,264.63	-97.35	93.23	92.12	0.19	0.11	4.84
6,361.00	1.90	151.90	6,358.57	-100.13	94.64	94.81	0.08	0.00	-2.55
6,456.00	1.90	154.30	6,453.52	-102.94	96.06	97.54	0.08	0.00	2.53
6,551.00	1.90	156.80	6,548.47	-105.81	97.36	100.33	0.09	0.00	2.63
6,645.00	1.90	158.90	6,642.42	-108.69	98.54	103.15	0.07	0.00	2.23
6,739.00	1.80	161.60	6,736.37	-111.55	99.57	105.94	0.14	-0.11	2.87
6,835.00	1.50	169.50	6,832.33	-114.21	100.27	108.57	0.39	-0.31	8.23
6,929.00	1.00	188.70	6,926.31	-116.23	100.37	110.58	0.69	-0.53	20.43
7,024.00	0.50	199.80	7,021.30	-117.44	100.10	111.80	0.55	-0.53	11.68
7,119.00	0.40	234.40	7,116.30	-118.03	99.69	112.41	0.30	-0.11	36.42
7,213.00	1.20	234.50	7,210.29	-118.79	98.63	113.23	0.85	0.85	0.11
7,309.00	1.50	232.90	7,306.26	-120.13	96.81	114.67	0.31	0.31	-1.67
7,403.00	1.70	243.20	7,400.22	-121.50	94.58	116.16	0.37	0.21	10.96
7,496.00	1.80	244.70	7,493.18	-122.75	92.03	117.54	0.12	0.11	1.61
7,592.00	1.80	249.90	7,589.13	-123.91	89.25	118.85	0.17	0.00	5.42
7,686.00	1.50	249.40	7,683.09	-124.85	86.71	119.93	0.32	-0.32	-0.53
7,781.00	0.90	214.90	7,778.07	-125.90	85.12	121.06	0.96	-0.63	-36.32
7,875.00	1.00	216.40	7,872.06	-127.17	84.21	122.38	0.11	0.11	1.60
7,970.00	1.10	213.40	7,967.04	-128.59	83.22	123.86	0.12	0.11	-3.16
8,065.00	1.20	216.40	8,062.02	-130.16	82.12	125.48	0.12	0.11	3.16
8,158.00	1.40	202.30	8,155.00	-131.99	81.12	127.36	0.40	0.22	-15.16
8,253.00	1.50	203.90	8,249.97	-134.20	80.17	129.62	0.11	0.11	1.68
8,348.00	2.20	176.00	8,344.92	-137.16	79.80	132.60	1.18	0.74	-29.37
8,443.00	2.80	177.60	8,439.83	-141.29	80.02	136.71	0.64	0.63	1.68
8,540.00	2.50	171.00	8,536.73	-145.75	80.45	141.14	0.44	-0.31	-6.80
8,632.00	2.60	166.60	8,628.64	-149.76	81.25	145.10	0.24	0.11	-4.78
8,727.00	2.60	162.00	8,723.54	-153.91	82.41	149.18	0.22	0.00	-4.84
8,821.00	2.50	160.50	8,817.45	-157.87	83.76	153.06	0.13	-0.11	-1.60
8,915.00	2.10	156.00	8,911.37	-161.37	85.14	156.48	0.47	-0.43	-4.79



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9,009.00	1.80	161.10	9,005.32	-164.34	86.32	159.39	0.37	-0.32	5.43
9,105.00	1.50	181.70	9,101.28	-167.03	86.77	162.04	0.69	-0.31	21.46
9,199.00	1.20	197.30	9,195.25	-169.20	86.44	164.22	0.50	-0.32	16.60
9,294.00	1.30	209.20	9,290.23	-171.09	85.62	166.16	0.29	0.11	12.53
9,389.00	1.40	206.60	9,385.20	-173.07	84.57	168.19	0.12	0.11	-2.74
9,483.00	1.50	212.30	9,479.17	-175.13	83.40	170.32	0.19	0.11	6.06
9,578.00	1.40	222.50	9,574.14	-177.04	81.95	172.30	0.29	-0.11	10.74
9,672.00	1.40	219.80	9,668.11	-178.77	80.44	174.11	0.07	0.00	-2.87
Final Wellbenders Survey - 9672.00' MD - Tie-In to Wellbenders - 9672.00' MD									
9,723.00	2.10	217.50	9,719.09	-179.99	79.48	175.38	1.38	1.37	-4.51
9,754.00	3.90	207.10	9,750.05	-181.38	78.65	176.81	6.04	5.81	-33.55
9,786.00	4.50	203.30	9,781.96	-183.50	77.66	178.98	2.07	1.88	-11.88
9,817.00	5.70	200.70	9,812.84	-186.06	76.63	181.59	3.94	3.87	-8.39
9,849.00	8.60	198.90	9,844.58	-189.81	75.29	185.41	9.09	9.06	-5.63
9,881.00	11.70	198.60	9,876.08	-195.15	73.48	190.84	9.69	9.69	-0.94
9,912.00	15.50	199.90	9,906.20	-202.02	71.07	197.84	12.30	12.26	4.19
9,944.00	19.20	200.90	9,936.74	-210.96	67.74	206.95	11.60	11.56	3.13
9,976.00	22.30	200.90	9,966.66	-221.55	63.69	217.74	9.69	9.69	0.00
10,007.00	25.70	199.30	9,994.98	-233.39	59.37	229.80	11.17	10.97	-5.16
10,039.00	28.30	198.60	10,023.49	-247.13	54.66	243.78	8.19	8.13	-2.19
10,070.00	31.00	197.30	10,050.43	-261.72	49.94	258.61	8.95	8.71	-4.19
10,102.00	33.50	195.00	10,077.49	-278.13	45.20	275.24	8.70	7.81	-7.19
10,134.00	36.20	193.70	10,103.75	-295.84	40.68	293.18	8.75	8.44	-4.06
10,166.00	38.30	192.70	10,129.22	-314.70	36.26	312.25	6.83	6.56	-3.13
10,197.00	40.90	191.80	10,153.10	-334.01	32.07	331.76	8.59	8.39	-2.90
10,229.00	43.60	191.20	10,176.79	-355.09	27.79	353.04	8.53	8.44	-1.88
10,260.00	45.40	191.30	10,198.90	-376.40	23.55	374.55	5.81	5.81	0.32
10,292.00	47.90	191.70	10,220.86	-399.20	18.91	397.57	7.87	7.81	1.25
10,323.00	50.20	190.50	10,241.18	-422.17	14.40	420.76	7.97	7.42	-3.87
10,355.00	52.80	189.40	10,261.10	-446.84	10.08	445.62	8.56	8.13	-3.44
10,386.00	56.50	189.10	10,279.03	-471.79	6.02	470.76	11.96	11.94	-0.97
10,459.00	61.30	190.20	10,316.73	-533.39	-4.47	532.84	6.70	6.58	1.51
10,490.00	65.70	190.40	10,330.56	-560.68	-9.43	560.36	14.21	14.19	0.65
10,521.00	70.90	189.70	10,342.02	-589.03	-14.45	588.94	16.90	16.77	-2.26
10,553.00	76.30	189.20	10,351.05	-619.30	-19.49	619.44	16.94	16.88	-1.56
10,584.00	77.40	189.10	10,358.10	-649.10	-24.29	649.46	3.56	3.55	-0.32
10,616.00	78.40	188.70	10,364.81	-680.02	-29.13	680.59	3.36	3.13	-1.25
10,647.00	79.80	187.80	10,370.67	-710.14	-33.50	710.91	5.34	4.52	-2.90
10,679.00	82.30	186.20	10,375.65	-741.51	-37.35	742.44	9.24	7.81	-5.00
10,710.00	84.40	184.90	10,379.24	-772.16	-40.32	773.21	7.95	6.77	-4.19
10,742.00	87.10	183.90	10,381.61	-803.97	-42.77	805.11	8.99	8.44	-3.13
10,773.00	87.90	182.40	10,382.96	-834.89	-44.47	836.08	5.48	2.58	-4.84
10,804.00	89.50	180.60	10,383.67	-865.87	-45.29	867.05	7.77	5.16	-5.81
10,899.00	91.10	180.40	10,383.17	-960.86	-46.11	961.95	1.70	1.68	-0.21



MS Energy Services Survey Report



Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Ross Draw 25
Well: 2H
Wellbore: Wellbore #1
Design: Surveys

Local Co-ordinate Reference: Well 2H
TVD Reference: WELL @ 2952.00usft (Noram 25)
MD Reference: WELL @ 2952.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Conroe Server

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)
10,994.00	90.70	179.60	10,381.68	-1,055.85	-46.11	1,056.79	0.94	-0.42	-0.84
11,088.00	91.60	180.20	10,379.79	-1,149.83	-45.95	1,150.62	1.15	0.96	0.64
11,183.00	90.60	182.90	10,377.96	-1,244.77	-48.52	1,245.56	3.03	-1.05	2.84
11,278.00	91.60	184.40	10,376.14	-1,339.55	-54.57	1,340.54	1.90	1.05	1.58
11,373.00	87.80	184.00	10,376.64	-1,434.28	-61.52	1,435.50	4.02	-4.00	-0.42
11,467.00	87.80	184.20	10,380.25	-1,527.97	-68.24	1,529.42	0.21	0.00	0.21
11,561.00	90.80	184.70	10,381.39	-1,621.67	-75.53	1,623.37	3.24	3.19	0.53
11,657.00	91.50	184.70	10,379.47	-1,717.33	-83.39	1,719.32	0.73	0.73	0.00
11,751.00	86.60	182.60	10,381.03	-1,811.09	-89.38	1,813.27	5.67	-5.21	-2.23
11,845.00	92.00	184.30	10,382.17	-1,904.87	-95.03	1,907.22	6.02	5.74	1.81
11,939.00	92.20	186.00	10,378.73	-1,998.43	-103.46	2,001.10	1.82	0.21	1.81
12,033.00	92.60	187.90	10,374.79	-2,091.65	-114.83	2,094.80	2.06	0.43	2.02
12,127.00	89.60	186.50	10,372.99	-2,184.88	-126.60	2,188.53	3.52	-3.19	-1.49
12,222.00	87.50	185.40	10,375.39	-2,279.33	-136.45	2,283.38	2.50	-2.21	-1.16
12,316.00	87.20	184.60	10,379.74	-2,372.87	-144.63	2,377.23	0.91	-0.32	-0.85
12,411.00	88.30	184.50	10,383.47	-2,467.50	-152.16	2,472.13	1.16	1.16	-0.11
12,505.00	89.30	182.30	10,385.44	-2,561.31	-157.73	2,566.10	2.57	1.06	-2.34
12,600.00	88.80	181.20	10,387.01	-2,656.25	-160.64	2,661.05	1.27	-0.53	-1.16
12,694.00	90.40	180.80	10,387.67	-2,750.23	-162.28	2,754.98	1.75	1.70	-0.43
12,788.00	90.90	180.10	10,386.60	-2,844.22	-163.01	2,848.87	0.92	0.53	-0.74
12,882.00	91.80	181.20	10,384.39	-2,938.18	-164.08	2,942.76	1.51	0.96	1.17
12,976.00	91.10	180.90	10,382.01	-3,032.14	-165.80	3,036.67	0.81	-0.74	-0.32
13,070.00	92.00	183.40	10,379.47	-3,126.03	-169.33	3,130.61	2.83	0.96	2.66
13,165.00	91.10	182.40	10,376.90	-3,220.87	-174.13	3,225.57	1.42	-0.95	-1.05
13,259.00	90.30	183.00	10,375.75	-3,314.76	-178.56	3,319.56	1.06	-0.85	0.64
13,353.00	90.80	181.50	10,374.85	-3,408.68	-182.25	3,413.54	1.68	0.53	-1.60
13,448.00	90.00	182.90	10,374.18	-3,503.60	-185.90	3,508.52	1.70	-0.84	1.47
13,542.00	88.80	182.10	10,375.17	-3,597.50	-190.00	3,602.51	1.53	-1.28	-0.85
13,636.00	92.50	181.60	10,374.10	-3,691.43	-193.03	3,696.46	3.97	3.94	-0.53
13,731.00	91.30	181.80	10,370.95	-3,786.34	-195.85	3,791.38	1.28	-1.26	0.21
13,825.00	95.50	183.30	10,365.38	-3,880.05	-200.02	3,885.19	4.74	4.47	1.60
13,920.00	90.30	182.20	10,360.57	-3,974.79	-204.57	3,980.03	5.59	-5.47	-1.16
14,014.00	86.70	181.20	10,363.03	-4,068.70	-207.35	4,073.95	3.97	-3.83	-1.06
14,109.00	88.60	181.80	10,366.93	-4,163.58	-209.84	4,168.83	2.10	2.00	0.63
14,203.00	88.60	182.10	10,369.22	-4,257.50	-213.04	4,262.78	0.32	0.00	0.32
14,297.00	88.70	182.90	10,371.44	-4,351.38	-217.14	4,356.75	0.86	0.11	0.85
14,392.00	90.00	183.20	10,372.52	-4,446.24	-222.19	4,451.74	1.40	1.37	0.32
14,486.00	90.20	184.00	10,372.35	-4,540.05	-228.09	4,545.73	0.88	0.21	0.85
14,580.00	89.90	184.60	10,372.27	-4,633.79	-235.14	4,639.71	0.71	-0.32	0.64
14,674.00	89.60	185.40	10,372.68	-4,727.43	-243.33	4,733.66	0.91	-0.32	0.85
14,768.00	90.80	184.30	10,372.35	-4,821.09	-251.28	4,827.62	1.73	1.28	-1.17
14,863.00	91.60	184.80	10,370.36	-4,915.77	-258.81	4,922.57	0.99	0.84	0.53
14,958.00	89.40	182.90	10,369.53	-5,010.54	-265.19	5,017.54	3.06	-2.32	-2.00



MS Energy Services

Survey Report



Company: XTO Energy
Project: Eddy County, New Mexico (NAD 27)
Site: Ross Draw 25
Well: 2H
Wellbore: Wellbore #1
Design: Surveys

Local Co-ordinate Reference: Well 2H
TVD Reference: WELL @ 2952.00usft (Noram 25)
MD Reference: WELL @ 2952.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Conroe Server

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)
15,052.00	93.90	185.30	10,366.83	-5,104.23	-271.90	5,111.46	5.42	4.79	2.55
15,146.00	94.60	185.10	10,359.86	-5,197.58	-280.40	5,205.14	0.77	0.74	-0.21
15,241.00	93.70	184.90	10,352.99	-5,291.97	-288.66	5,299.84	0.97	-0.95	-0.21
15,335.00	92.50	183.90	10,347.90	-5,385.56	-295.86	5,393.68	1.66	-1.28	-1.06
15,429.00	92.90	183.10	10,343.47	-5,479.28	-301.59	5,487.57	0.95	0.43	-0.85
15,550.00	88.40	183.70	10,342.10	-5,600.02	-308.77	5,608.53	3.75	-3.72	0.50
15,644.00	88.20	183.70	10,344.89	-5,693.79	-314.83	5,702.48	0.21	-0.21	0.00
15,738.00	88.50	183.90	10,347.60	-5,787.54	-321.06	5,796.44	0.38	0.32	0.21
15,832.00	88.70	184.20	10,349.89	-5,881.28	-327.69	5,890.40	0.38	0.21	0.32
15,927.00	88.90	185.10	10,351.88	-5,975.94	-335.39	5,985.34	0.97	0.21	0.95
16,021.00	88.80	183.70	10,353.77	-6,069.64	-342.60	6,079.30	1.49	-0.11	-1.49
16,115.00	88.40	183.40	10,356.07	-6,163.44	-348.42	6,173.27	0.53	-0.43	-0.32
16,210.00	89.50	184.50	10,357.81	-6,258.19	-354.96	6,268.24	1.64	1.16	1.16
16,304.00	89.20	181.80	10,358.87	-6,352.03	-360.13	6,362.22	2.89	-0.32	-2.87
16,399.00	88.50	181.20	10,360.78	-6,446.98	-362.62	6,457.16	0.97	-0.74	-0.63
16,494.00	87.60	180.00	10,364.01	-6,541.92	-363.61	6,552.01	1.58	-0.95	-1.26
16,589.00	86.90	179.80	10,368.57	-6,636.81	-363.44	6,646.75	0.77	-0.74	-0.21
16,645.00	86.70	179.90	10,371.70	-6,692.72	-363.30	6,702.57	0.40	-0.36	0.18
16,700.00	86.70	179.90	10,374.86	-6,747.63	-363.20	6,757.40	0.00	0.00	0.00

Projection to TD - 16700.00' MD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,672.00	9,668.11	-178.77	80.44	Final Wellbenders Survey - 9672.00' MD
9,672.00	9,668.11	-178.77	80.44	Tie-In to Wellbenders - 9672.00' MD
16,700.00	10,374.86	-6,747.63	-363.20	Projection to TD - 16700.00' MD

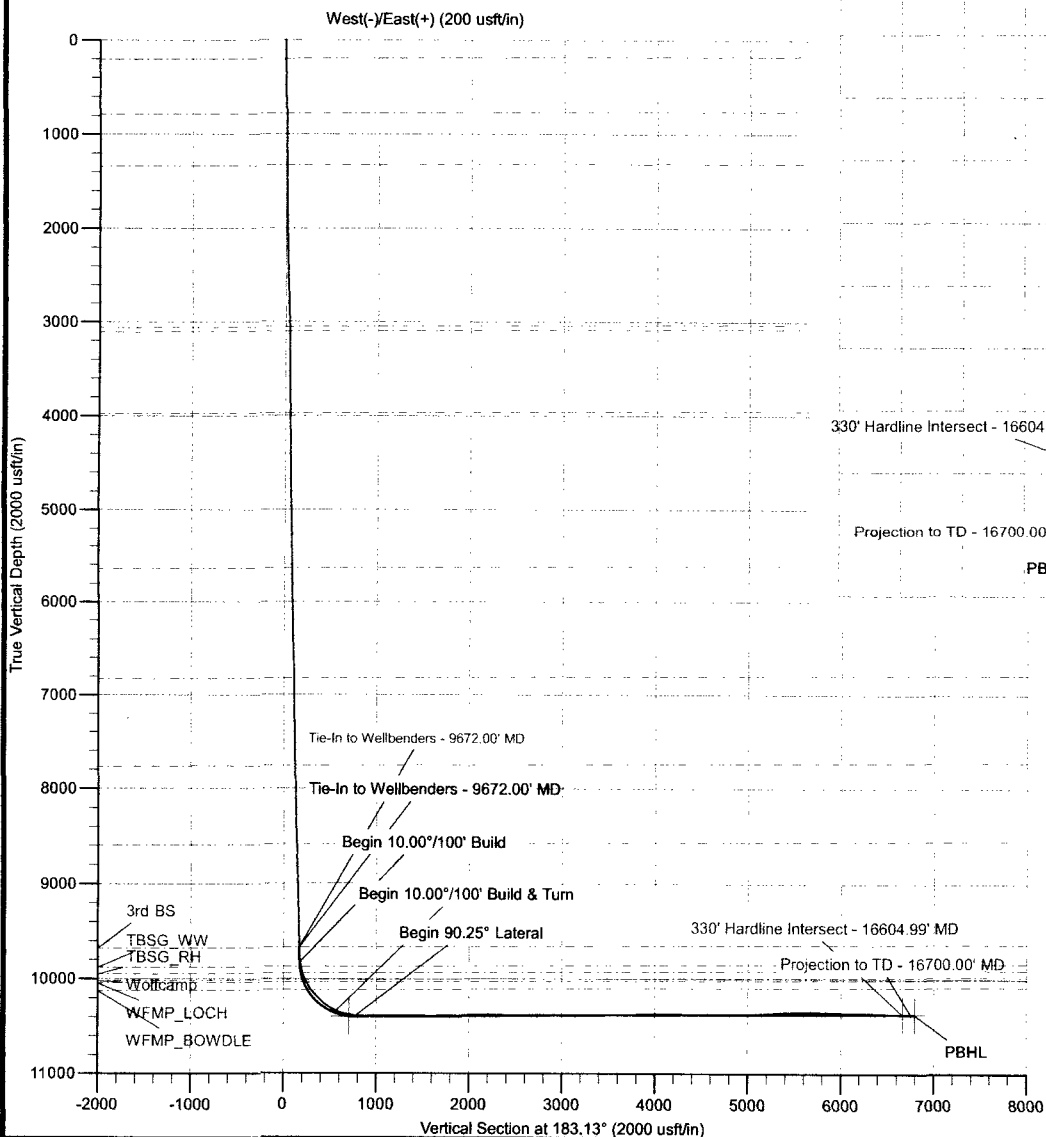
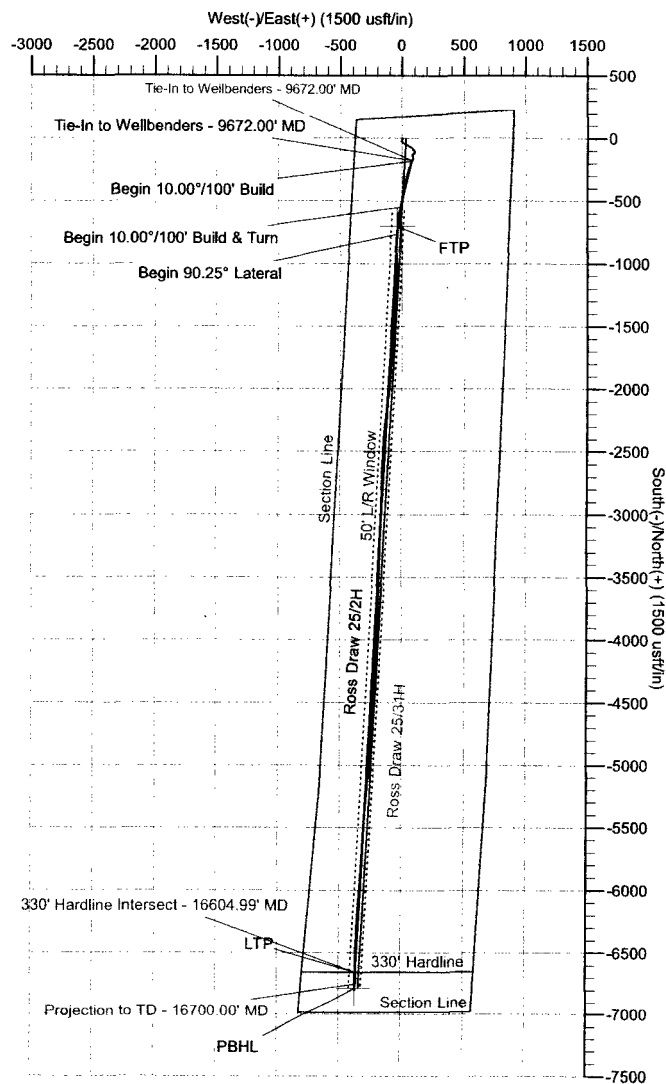
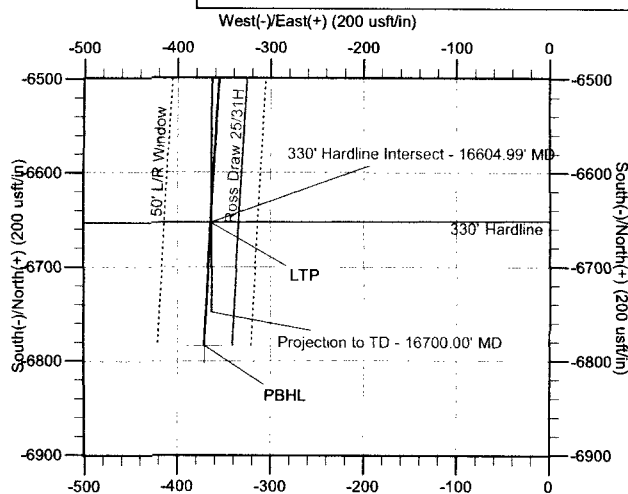


Company: XTO Energy
Site: Ross Draw 25
Well: 2H
Project: Eddy County, New Mexico (NAD 27)
Rig: Noram 25



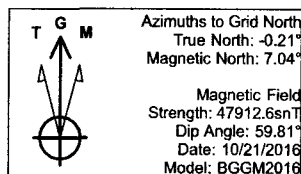
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
9672.00	1.40	219.80	9666.11	-178.77	80.44	174.10	0.00	Tie-In to Wellbenders - 9672.00' MD
9830.55	1.40	219.80	9826.61	-181.74	77.96	177.21	3.87	Begin 10.00°/100' Build
10518.05	70.00	193.17	10352.49	-547.72	-12.08	547.56	380.85	Begin 10.00°/100' Build & Turn
10743.18	90.25	183.13	10391.00	-765.93	-42.72	767.12	601.48	Begin 90.25° Lateral
16769.17	90.25	183.13	10364.72	-6782.90	-371.30	6793.05	6627.42	PBHL



Landing Point
X: 620631.985 Y: 370153.97

PBHL
X: 620303.4 Y: 364137



US State Plane 1927 (Exact solution)
New Mexico East 3001

Created By: DLD
Date: 10:54, November 07 2016
Plan: Design #2