

JUL 31 2019

Survey Report

DISTRICT II-ARTESIA O.C.D.

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda South 30 State 122H - Slot REMUDA SOUTH 30 STATE_122H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Site:	Remuda North_South 31 State Pad	MD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Well:	Remuda South 30 State 122H	North Reference:	Grid
Wellbore:	South 30 State 122H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	South 30 State 122H Lateral (AsDrilled)	Database:	TP_EDM

Project	Eddy County, NM (NAD27) NMEZ US		
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	Remuda North_South 31 State Pad, centered on 123H				
Site Position:		Northing:	458,327.40 usft	Latitude:	32.2593878
From:	Map	Easting:	627,293.40 usft	Longitude:	-103.9215405
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.22 °

Well	Remuda South 30 State 122H - Slot REMUDA SOUTH 30 STATE_122H_SHL					
Well Position	+N/-S	0.00 usft	Northing:	464,641.70 usft	Latitude:	32.2767628
	+E/-W	0.00 usft	Easting:	625,609.80 usft	Longitude:	-103.9269094
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,112.00 usft

Wellbore	South 30 State 122H Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	07/22/18	7.00	60.04	47,821

Design	South 30 State 122H Lateral (AsDrilled)				
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	177.53	

Survey Program	Date	11/25/18			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
140.00	18,333.00	Survey #1 (South 30 State 122H Lateral)	MWD	MWD v3: standard declination	
18,390.00	18,390.00	Survey #2 (South 30 State 122H Lateral)	Projection	Projection	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
REMUDA SOUTH 30 STATE_122H_SHL										
140.00	0.40	257.00	140.00	-0.11	-0.48	0.09	0.29	0.29	0.00	
200.00	0.70	112.00	200.00	-0.29	-0.34	0.28	1.75	0.50	-241.67	
260.00	0.80	70.00	259.99	-0.29	0.39	0.31	0.91	0.17	-70.00	
330.00	1.30	111.00	329.98	-0.41	1.59	0.47	1.25	0.71	58.57	
420.00	1.40	103.20	419.96	-1.02	3.62	1.18	0.23	0.11	-8.67	
515.00	1.40	119.20	514.93	-1.85	5.76	2.10	0.41	0.00	16.84	
611.00	1.60	133.50	610.90	-3.35	7.76	3.68	0.44	0.21	14.90	

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Wellbore:	South 30 State 122H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	South 30 State 122H Lateral (AsDrilled)	Database:	TP_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)
693.00	1.40	138.60	692.87	-4.89	9.25	5.28	0.29	-0.24	6.22
788.00	1.10	161.60	787.85	-6.62	10.30	7.06	0.61	-0.32	24.21
884.00	1.10	151.40	883.83	-8.31	11.04	8.77	0.20	0.00	-10.62
979.00	1.20	161.00	978.81	-10.05	11.80	10.55	0.23	0.11	10.11
1,074.00	1.20	169.20	1,073.79	-11.97	12.31	12.48	0.18	0.00	8.63
1,170.00	1.40	177.60	1,169.76	-14.13	12.54	14.65	0.29	0.21	8.75
1,265.00	1.50	163.20	1,264.73	-16.48	12.95	17.02	0.40	0.11	-15.16
1,361.00	1.60	154.50	1,360.70	-18.89	13.89	19.47	0.27	0.10	-9.06
1,456.00	1.50	168.40	1,455.66	-21.30	14.71	21.92	0.41	-0.11	14.63
1,552.00	1.60	177.10	1,551.63	-23.87	15.03	24.50	0.27	0.10	9.06
1,647.00	1.60	181.50	1,646.59	-26.52	15.07	27.15	0.13	0.00	4.63
1,742.00	1.70	172.30	1,741.55	-29.24	15.22	29.87	0.30	0.11	-9.68
1,838.00	1.70	158.80	1,837.51	-31.98	15.93	32.64	0.42	0.00	-14.06
1,932.00	2.00	161.00	1,931.46	-34.83	16.96	35.53	0.33	0.32	2.34
2,027.00	2.10	161.10	2,026.40	-38.05	18.07	38.79	0.11	0.11	0.11
2,123.00	2.10	164.60	2,122.34	-41.41	19.10	42.19	0.13	0.00	3.65
2,218.00	2.20	166.60	2,217.27	-44.86	19.99	45.68	0.13	0.11	2.11
2,314.00	2.10	165.70	2,313.20	-48.36	20.85	49.21	0.11	-0.10	-0.94
2,409.00	1.70	175.60	2,408.15	-51.45	21.39	52.32	0.54	-0.42	10.42
2,504.00	0.80	166.40	2,503.13	-53.50	21.65	54.38	0.97	-0.95	-9.68
2,599.00	0.90	161.80	2,598.12	-54.85	22.04	55.75	0.13	0.11	-4.84
2,695.00	1.80	152.90	2,694.09	-56.91	22.96	57.85	0.96	0.94	-9.27
2,790.00	2.30	153.00	2,789.03	-59.94	24.51	60.94	0.53	0.53	0.11
2,886.00	2.30	154.70	2,884.95	-63.39	26.21	64.46	0.07	0.00	1.77
2,981.00	3.30	161.30	2,979.84	-67.71	27.90	68.85	1.10	1.05	6.95
3,076.00	4.00	158.30	3,074.64	-73.38	30.00	74.60	0.76	0.74	-3.16
3,172.00	3.60	146.60	3,170.43	-79.00	32.90	80.35	0.91	-0.42	-12.19
3,268.00	2.10	127.60	3,266.31	-82.59	35.95	84.07	1.83	-1.56	-19.79
3,363.00	1.50	121.70	3,361.27	-84.31	38.39	85.88	0.66	-0.63	-6.21
3,458.00	1.40	126.80	3,456.24	-85.66	40.37	87.32	0.17	-0.11	5.37
3,555.00	1.30	146.90	3,553.21	-87.29	41.92	89.01	0.50	-0.10	20.72
3,649.00	1.40	159.00	3,647.18	-89.25	42.92	91.02	0.32	0.11	12.87
3,744.00	1.10	182.90	3,742.16	-91.25	43.29	93.03	0.63	-0.32	25.16
3,839.00	1.10	201.50	3,837.14	-93.01	42.91	94.77	0.37	0.00	19.58
3,934.00	1.10	199.00	3,932.13	-94.72	42.28	96.45	0.05	0.00	-2.63
4,029.00	1.00	199.80	4,027.11	-96.36	41.70	98.07	0.11	-0.11	0.84
4,125.00	1.00	204.80	4,123.10	-97.91	41.06	99.59	0.09	0.00	5.21
4,220.00	1.00	197.10	4,218.08	-99.45	40.47	101.10	0.14	0.00	-8.11
4,315.00	0.70	185.50	4,313.07	-100.82	40.17	102.46	0.36	-0.32	-12.21
4,411.00	0.50	148.30	4,409.07	-101.76	40.34	103.41	0.44	-0.21	-38.75
4,506.00	0.50	151.60	4,504.06	-102.48	40.75	104.14	0.03	0.00	3.47
4,602.00	0.40	158.70	4,600.06	-103.16	41.07	104.84	0.12	-0.10	7.40

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4,697.00	0.40	168.50	4,695.06	-103.80	41.26	105.48	0.07	0.00	10.32
4,792.00	0.30	160.60	4,790.06	-104.36	41.41	106.04	0.12	-0.11	-8.32
4,889.00	0.30	152.70	4,887.05	-104.82	41.61	106.52	0.04	0.00	-8.14
4,984.00	0.40	174.60	4,982.05	-105.37	41.75	107.07	0.17	0.11	23.05
5,079.00	0.50	168.10	5,077.05	-106.11	41.87	107.81	0.12	0.11	-6.84
5,174.00	0.50	156.20	5,172.05	-106.89	42.12	108.61	0.11	0.00	-12.53
5,269.00	0.60	164.40	5,267.04	-107.75	42.42	109.48	0.13	0.11	8.63
5,365.00	0.60	158.80	5,363.04	-108.70	42.74	110.44	0.06	0.00	-5.83
5,461.00	0.70	163.00	5,459.03	-109.73	43.09	111.49	0.12	0.10	4.37
5,557.00	0.70	168.00	5,555.02	-110.87	43.39	112.63	0.06	0.00	5.21
5,652.00	0.70	171.40	5,650.02	-112.01	43.60	113.78	0.04	0.00	3.58
5,747.00	0.50	155.50	5,745.01	-112.96	43.85	114.74	0.27	-0.21	-16.74
5,843.00	0.30	180.70	5,841.01	-113.59	44.02	115.38	0.27	-0.21	26.25
5,940.00	0.30	194.30	5,938.01	-114.09	43.96	115.88	0.07	0.00	14.02
6,035.00	0.30	155.90	6,033.01	-114.56	44.00	116.35	0.21	0.00	-40.42
6,129.00	0.30	177.50	6,127.00	-115.03	44.11	116.82	0.12	0.00	22.98
6,224.00	0.30	163.10	6,222.00	-115.52	44.19	117.31	0.08	0.00	-15.16
6,320.00	0.40	137.00	6,318.00	-116.00	44.49	117.81	0.19	0.10	-27.19
6,415.00	0.40	138.40	6,413.00	-116.49	44.94	118.32	0.01	0.00	1.47
6,511.00	0.50	149.40	6,509.00	-117.10	45.38	118.95	0.14	0.10	11.46
6,605.00	0.50	149.90	6,602.99	-117.81	45.79	119.68	0.00	0.00	0.53
6,701.00	0.50	151.80	6,698.99	-118.54	46.20	120.42	0.02	0.00	1.98
6,796.00	0.60	158.20	6,793.99	-119.37	46.58	121.27	0.12	0.11	6.74
6,891.00	0.50	162.10	6,888.98	-120.23	46.89	122.14	0.11	-0.11	4.11
6,987.00	0.50	165.00	6,984.98	-121.03	47.13	122.95	0.03	0.00	3.02
7,082.00	0.30	143.50	7,079.97	-121.63	47.38	123.56	0.26	-0.21	-22.63
7,177.00	0.30	185.50	7,174.97	-122.08	47.51	124.01	0.23	0.00	44.21
7,272.00	0.80	202.90	7,269.97	-122.94	47.23	124.86	0.55	0.53	18.32
7,368.00	0.60	180.10	7,365.96	-124.06	46.97	125.96	0.35	-0.21	-23.75
7,463.00	0.80	122.00	7,460.96	-124.91	47.53	126.84	0.74	0.21	-61.16
7,558.00	1.40	126.60	7,555.94	-125.95	49.02	127.94	0.64	0.63	4.84
7,654.00	2.50	123.30	7,651.88	-127.80	51.71	129.91	1.15	1.15	-3.44
7,750.00	1.90	124.00	7,747.81	-129.84	54.78	132.08	0.63	-0.62	0.73
7,845.00	1.20	132.00	7,842.77	-131.38	56.83	133.71	0.77	-0.74	8.42
7,942.00	1.60	125.40	7,939.75	-132.85	58.69	135.25	0.44	0.41	-6.80
8,037.00	1.60	124.20	8,034.71	-134.36	60.86	136.86	0.04	0.00	-1.26
8,134.00	1.60	133.50	8,131.67	-136.06	62.97	138.64	0.27	0.00	9.59
8,229.00	1.70	141.30	8,226.63	-138.07	64.81	140.73	0.26	0.11	8.21
8,325.00	1.50	143.20	8,322.59	-140.19	66.45	142.92	0.22	-0.21	1.98
8,419.00	1.60	139.90	8,416.56	-142.17	68.03	144.97	0.14	0.11	-3.51
8,515.00	1.90	146.00	8,512.51	-144.52	69.79	147.39	0.37	0.31	6.35
8,616.00	1.80	142.80	8,613.46	-147.17	71.68	150.12	0.14	-0.10	-3.17
8,706.00	1.70	143.30	8,703.42	-149.37	73.33	152.39	0.11	-0.11	0.56

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8,767.00	1.60	142.20	8,764.39	-150.77	74.40	153.83	0.17	-0.16	-1.80	
8,904.00	1.30	139.40	8,901.35	-153.46	76.58	156.61	0.22	-0.22	-2.04	
8,999.00	1.30	134.70	8,996.33	-155.03	78.05	158.25	0.11	0.00	-4.95	
9,093.00	1.60	163.20	9,090.30	-157.04	79.19	160.30	0.82	0.32	30.32	
9,188.00	1.60	172.40	9,185.26	-159.62	79.74	162.91	0.27	0.00	9.68	
9,284.00	1.70	167.90	9,281.22	-162.34	80.22	165.65	0.17	0.10	-4.69	
9,380.00	2.10	173.40	9,377.17	-165.48	80.72	168.81	0.46	0.42	5.73	
9,475.00	2.00	179.30	9,472.11	-168.87	80.94	172.20	0.25	-0.11	6.21	
9,570.00	2.00	187.10	9,567.05	-172.17	80.76	175.49	0.29	0.00	8.21	
9,666.00	2.30	186.10	9,662.98	-175.75	80.34	179.05	0.31	0.31	-1.04	
9,761.00	2.00	167.00	9,757.92	-179.26	80.52	182.56	0.81	-0.32	-20.11	
9,857.00	4.60	152.30	9,853.75	-184.30	82.68	187.69	2.83	2.71	-15.31	
9,952.00	3.60	158.60	9,948.51	-190.45	85.54	193.96	1.15	-1.05	6.63	
10,010.00	3.20	166.50	10,006.40	-193.72	86.58	197.27	1.06	-0.69	13.62	
10,058.00	3.20	166.80	10,054.33	-196.33	87.20	199.90	0.03	0.00	0.62	
10,106.00	5.40	163.90	10,102.19	-199.80	88.13	203.41	4.60	4.58	-6.04	
10,153.00	8.60	159.60	10,148.84	-205.22	89.97	208.91	6.89	6.81	-9.15	
10,184.00	12.00	157.10	10,179.33	-210.37	92.04	214.13	11.06	10.97	-8.06	
10,216.00	15.10	155.30	10,210.44	-217.22	95.07	221.11	9.78	9.69	-5.62	
10,247.00	17.90	155.20	10,240.16	-225.21	98.76	229.26	9.03	9.03	-0.32	
10,279.00	21.10	156.10	10,270.32	-234.95	103.16	239.17	10.04	10.00	2.81	
10,310.00	24.50	154.00	10,298.89	-245.83	108.24	250.26	11.28	10.97	-6.77	
10,342.00	27.80	150.90	10,327.61	-258.32	114.78	263.02	11.16	10.31	-9.89	
10,374.00	31.80	149.50	10,355.38	-272.11	122.69	277.14	12.69	12.50	-4.37	
10,405.00	35.10	150.30	10,381.24	-286.89	131.25	292.28	10.74	10.65	2.58	
10,437.00	38.10	150.50	10,406.93	-303.48	140.67	309.25	9.38	9.37	0.62	
10,485.00	40.40	150.30	10,444.10	-329.88	155.67	336.28	4.80	4.79	-0.42	
10,532.00	44.90	152.30	10,478.66	-357.82	170.94	364.84	10.00	9.57	4.26	
10,567.00	48.69	153.42	10,502.61	-380.52	182.57	388.03	11.08	10.83	3.19	
Wellpath Crosses Section Line @ Heel										
10,580.00	50.10	153.80	10,511.07	-389.36	186.96	397.05	11.08	10.85	2.94	
10,627.00	53.50	153.30	10,540.14	-422.42	203.41	430.79	7.28	7.23	-1.06	
10,674.00	57.30	153.50	10,566.82	-457.01	220.73	466.09	8.09	8.09	0.43	
10,721.00	60.30	154.40	10,591.16	-493.12	238.37	502.93	6.59	6.38	1.91	
10,769.00	63.90	154.40	10,613.62	-531.37	256.70	541.93	7.50	7.50	0.00	
10,816.00	66.50	156.40	10,633.34	-570.16	274.45	581.45	6.75	5.53	4.26	
10,864.00	67.10	162.00	10,652.26	-611.39	290.11	623.31	10.80	1.25	11.67	
10,911.00	70.70	166.30	10,669.18	-653.55	302.06	665.95	11.47	7.66	9.15	
10,959.00	74.50	170.60	10,683.54	-698.41	311.21	711.17	11.65	7.92	8.96	
10,978.00	75.33	171.87	10,688.48	-716.54	314.00	729.40	7.80	4.35	6.70	
Wellpath FTP (338FNL,364FEL)										
10,985.99	75.68	172.41	10,690.48	-724.21	315.06	737.10	7.80	4.37	6.67	
REMUDA SOUTH 30 STATE_122H FTP(338'FNL,360'FEL)										

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Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda South 30 State 122H - Slot REMUDA SOUTH 30 STATE_122H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Site:	Remuda North_South 31 State Pad	MD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Well:	Remuda South 30 State 122H	North Reference:	Grid
Wellbore:	South 30 State 122H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	South 30 State 122H Lateral (AsDrilled)	Database:	TP_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)
11,001.25	76.35	173.42	10,694.17	-738.90	316.88	751.86	7.80	4.40	6.64
REMUDA SOUTH 30 STATE_122H_LP(354°FNL,360°FEL)									
11,007.00	76.60	173.80	10,695.52	-744.46	317.51	757.44	7.80	4.41	6.61
11,055.00	80.90	176.10	10,704.88	-791.34	321.64	804.45	10.12	8.96	4.79
11,102.00	84.40	177.00	10,710.89	-837.86	324.45	851.05	7.69	7.45	1.91
11,150.00	88.40	179.10	10,713.91	-885.72	326.07	898.94	9.41	8.33	4.37
11,197.00	90.20	179.40	10,714.48	-932.71	326.69	945.92	3.88	3.83	0.64
11,293.00	90.70	179.90	10,713.73	-1,028.71	327.28	1,041.85	0.74	0.52	0.52
11,388.00	90.20	180.90	10,712.98	-1,123.70	326.61	1,136.72	1.18	-0.53	1.05
11,483.00	87.70	180.80	10,714.72	-1,218.67	325.20	1,231.54	2.63	-2.63	-0.11
11,579.00	89.00	180.60	10,717.49	-1,314.62	324.03	1,327.35	1.37	1.35	-0.21
11,674.00	91.90	180.40	10,716.74	-1,409.60	323.20	1,422.21	3.06	3.05	-0.21
11,770.00	89.70	179.10	10,715.40	-1,505.58	323.62	1,518.12	2.66	-2.29	-1.35
11,866.00	88.80	178.80	10,716.66	-1,601.56	325.38	1,614.08	0.99	-0.94	-0.31
11,963.00	90.80	179.70	10,717.00	-1,698.54	326.65	1,711.03	2.26	2.06	0.93
12,058.00	91.10	180.40	10,715.42	-1,793.53	326.57	1,805.93	0.80	0.32	0.74
12,153.00	90.70	179.20	10,713.93	-1,888.52	326.90	1,900.84	1.33	-0.42	-1.26
12,249.00	90.10	179.50	10,713.26	-1,984.51	327.99	1,996.79	0.70	-0.62	0.31
12,345.00	89.60	180.30	10,713.51	-2,080.51	328.15	2,092.71	0.98	-0.52	0.83
12,441.00	90.30	181.00	10,713.59	-2,176.50	327.07	2,188.56	1.03	0.73	0.73
12,537.00	89.10	179.80	10,714.10	-2,272.49	326.40	2,284.44	1.77	-1.25	-1.25
12,633.00	89.40	180.70	10,715.35	-2,368.48	325.98	2,380.32	0.99	0.31	0.94
12,729.00	90.30	180.10	10,715.60	-2,464.48	325.31	2,476.20	1.13	0.94	-0.62
12,824.00	89.90	180.30	10,715.44	-2,559.48	324.97	2,571.09	0.47	-0.42	0.21
12,918.00	90.40	180.20	10,715.19	-2,653.47	324.56	2,664.99	0.54	0.53	-0.11
13,013.00	90.20	180.70	10,714.69	-2,748.47	323.82	2,759.86	0.57	-0.21	0.53
13,109.00	89.60	180.50	10,714.86	-2,844.46	322.81	2,855.73	0.66	-0.62	-0.21
13,203.00	88.70	180.80	10,716.26	-2,938.45	321.75	2,949.57	1.01	-0.96	0.32
13,298.00	87.30	179.20	10,719.57	-3,033.38	321.75	3,044.42	2.24	-1.47	-1.68
13,394.00	88.70	178.70	10,722.92	-3,129.31	323.50	3,140.33	1.55	1.46	-0.52
13,489.00	90.00	177.60	10,724.00	-3,224.25	326.57	3,235.32	1.79	1.37	-1.16
13,584.00	92.20	176.30	10,722.18	-3,319.09	331.62	3,330.29	2.69	2.32	-1.37
13,679.00	92.20	178.20	10,718.53	-3,413.90	336.18	3,425.21	2.00	0.00	2.00
13,775.00	87.40	177.30	10,718.86	-3,509.80	339.95	3,521.18	5.09	-5.00	-0.94
13,870.00	88.10	180.00	10,722.59	-3,604.69	342.18	3,616.08	2.93	0.74	2.84
13,895.00	88.20	179.50	10,723.40	-3,629.68	342.29	3,641.05	2.04	0.40	-2.00
13,991.00	90.20	180.60	10,724.74	-3,725.66	342.21	3,736.94	2.38	2.08	1.15
14,086.00	91.10	181.10	10,723.66	-3,820.64	340.80	3,831.77	1.08	0.95	0.53
14,181.00	91.90	181.20	10,721.18	-3,915.59	338.89	3,926.55	0.85	0.84	0.11
14,277.00	91.20	181.30	10,718.58	-4,011.53	336.80	4,022.31	0.74	-0.73	0.10
14,374.00	90.20	181.90	10,717.40	-4,108.49	334.09	4,119.06	1.20	-1.03	0.62
14,468.00	89.70	182.80	10,717.48	-4,202.41	330.24	4,212.73	1.10	-0.53	0.96
14,563.00	89.30	182.60	10,718.31	-4,297.30	325.76	4,307.34	0.47	-0.42	-0.21

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda South 30 State 122H - Slot REMUDA SOUTH 30 STATE_122H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Site:	Remuda North_South 31 State Pad	MD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Well:	Remuda South 30 State 122H	North Reference:	Grid
Wellbore:	South 30 State 122H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	South 30 State 122H Lateral (AsDrilled)	Database:	TP_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)
14,659.00	89.40	181.10	10,719.40	-4,393.24	322.66	4,403.06	1.57	0.10	-1.56
14,755.00	89.90	181.30	10,719.98	-4,489.21	320.65	4,498.86	0.56	0.52	0.21
14,850.00	90.30	179.90	10,719.82	-4,584.21	319.66	4,593.72	1.53	0.42	-1.47
14,946.00	91.00	179.50	10,718.73	-4,680.20	320.16	4,689.64	0.84	0.73	-0.42
15,042.00	90.00	179.60	10,717.89	-4,776.19	320.91	4,785.58	1.05	-1.04	0.10
15,137.00	89.70	180.80	10,718.14	-4,871.19	320.58	4,880.47	1.30	-0.32	1.26
15,233.00	89.60	180.60	10,718.72	-4,967.18	319.41	4,976.32	0.23	-0.10	-0.21
15,328.00	88.80	179.10	10,720.05	-5,062.16	319.66	5,071.23	1.79	-0.84	-1.58
15,424.00	89.00	179.20	10,721.89	-5,158.14	321.08	5,167.18	0.23	0.21	0.10
15,519.00	89.30	179.10	10,723.30	-5,253.12	322.49	5,262.13	0.33	0.32	-0.11
15,615.00	88.40	178.20	10,725.23	-5,349.07	324.75	5,358.09	1.33	-0.94	-0.94
15,710.00	89.80	178.40	10,726.72	-5,444.01	327.57	5,453.07	1.49	1.47	0.21
15,805.00	92.10	179.30	10,725.15	-5,538.97	329.48	5,548.02	2.60	2.42	0.95
15,900.00	92.70	180.60	10,721.17	-5,633.89	329.56	5,642.85	1.51	0.63	1.37
15,996.00	91.20	181.00	10,717.90	-5,729.82	328.22	5,738.64	1.62	-1.56	0.42
16,092.00	87.90	179.80	10,718.66	-5,825.80	327.55	5,834.50	3.66	-3.44	-1.25
16,187.00	88.40	178.60	10,721.72	-5,920.74	328.88	5,929.41	1.37	0.53	-1.26
16,282.00	90.90	179.00	10,722.30	-6,015.71	330.86	6,024.37	2.67	2.63	0.42
16,378.00	90.50	179.20	10,721.13	-6,111.69	332.37	6,120.33	0.47	-0.42	0.21
16,474.00	91.10	178.40	10,719.79	-6,207.66	334.38	6,216.30	1.04	0.62	-0.83
16,569.00	89.00	179.10	10,719.71	-6,302.63	336.45	6,311.27	2.33	-2.21	0.74
16,664.00	88.10	178.30	10,722.11	-6,397.57	338.61	6,406.22	1.27	-0.95	-0.84
16,759.00	87.70	179.40	10,725.59	-6,492.49	340.51	6,501.13	1.23	-0.42	1.16
16,855.00	90.70	179.90	10,726.93	-6,588.46	341.10	6,597.04	3.17	3.12	0.52
16,950.00	90.70	180.60	10,725.77	-6,683.46	340.69	6,691.93	0.74	0.00	0.74
17,045.00	90.20	180.30	10,725.03	-6,778.45	339.94	6,786.80	0.61	-0.53	-0.32
17,139.00	89.80	179.50	10,725.03	-6,872.45	340.10	6,880.72	0.95	-0.43	-0.85
17,235.00	88.90	179.50	10,726.12	-6,968.44	340.94	6,976.65	0.94	-0.94	0.00
17,329.00	89.20	180.50	10,727.67	-7,062.42	340.94	7,070.55	1.11	0.32	1.06
17,425.00	89.30	180.40	10,728.93	-7,158.41	340.19	7,166.42	0.15	0.10	-0.10
17,519.00	89.10	180.50	10,730.24	-7,252.40	339.45	7,260.29	0.24	-0.21	0.11
17,615.00	89.80	180.60	10,731.16	-7,348.39	338.53	7,356.15	0.74	0.73	0.10
17,711.00	91.20	179.70	10,730.33	-7,444.38	338.28	7,452.04	1.73	1.46	-0.94
17,806.00	92.70	179.80	10,727.09	-7,539.32	338.69	7,546.92	1.58	1.58	0.11
17,901.00	93.80	180.30	10,721.71	-7,634.17	338.61	7,641.67	1.27	1.16	0.53
17,996.00	92.60	179.90	10,716.41	-7,729.02	338.44	7,736.42	1.33	-1.26	-0.42
18,091.00	89.40	179.80	10,714.75	-7,823.99	338.69	7,831.32	3.37	-3.37	-0.11
18,186.00	89.00	179.10	10,716.07	-7,918.98	339.60	7,926.26	0.85	-0.42	-0.74
18,279.00	88.61	179.79	10,718.01	-8,011.95	340.51	8,019.18	0.85	-0.42	0.74
Wellpath LTP (330°FSL,370°FEL)									
18,279.40	88.61	179.79	10,718.02	-8,012.35	340.51	8,019.59	0.00	0.00	0.00
REMUDA SOUTH 30 STATE_122H_LTP(330°FSL,360°FEL)									

Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Remuda South 30 State 122H - Slot REMUDA SOUTH 30 STATE_122H_SHL
Project:	Eddy County, NM (NAD27) NMEZ US	TVD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Site:	Remuda North_South 31 State Pad	MD Reference:	3112+22 @ 3134.00usft (Orion Perseus)
Well:	Remuda South 30 State 122H	North Reference:	Grid
Wellbore:	South 30 State 122H Lateral	Survey Calculation Method:	Minimum Curvature
Design:	South 30 State 122H Lateral (AsDrilled)	Database:	TP_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)
18,281.00	88.60	179.80	10,718.06	-8,013.95	340.52	8,021.18	1.06	-0.53	0.92
18,333.00	89.10	180.40	10,719.11	-8,065.94	340.42	8,073.12	1.50	0.96	1.15
18,390.00	89.10	180.40	10,720.00	-8,122.93	340.03	8,130.04	0.00	0.00	0.00

TD @ 219FSL,386FEL - REMUDA SOUTH 30 STATE_122H_PBHL(200°FSL,360°FEL)

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
REMUDA SOUTH 30 S1	0.00	0.00	0.00	0.00	0.00	464,641.70	625,609.80	32.2767628	-103.9269094
- actual wellpath hits target center									
- Point									
REMUDA SOUTH 30 S1	0.00	0.00	10,715.0 0	-733.63	317.03	463,908.07	625,926.83	32.2747428	-103.9258927
- actual wellpath misses target center by 21.48usft at 11001.23usft MD (10694.17 TVD, -738.88 N, 316.88 E)									
- Point									
REMUDA SOUTH 30 S1	0.00	0.00	10,715.0 0	-717.60	317.90	463,924.10	625,927.70	32.2747869	-103.9258897
- actual wellpath misses target center by 25.55usft at 10985.99usft MD (10690.48 TVD, -724.21 N, 315.06 E)									
- Point									
REMUDA SOUTH 30 S1	0.00	0.01	10,720.0 0	-8,122.93	340.03	456,518.77	625,949.83	32.2544301	-103.9259090
- actual wellpath hits target center									
- Rectangle (sides W65.00 H7,416.00 D0.00)									
REMUDA SOUTH 30 S1	0.00	0.00	10,727.0 0	-8,141.80	350.90	456,499.90	625,960.70	32.2543781	-103.9258741
- actual wellpath misses target center by 22.87usft at 18390.00usft MD (10720.00 TVD, -8122.93 N, 340.03 E)									
- Rectangle (sides W100.00 H7,434.00 D0.00)									
REMUDA SOUTH 30 S1	0.00	0.00	10,727.0 0	-8,012.10	350.40	456,629.60	625,960.20	32.2547347	-103.9258741
- actual wellpath misses target center by 13.36usft at 18279.40usft MD (10718.02 TVD, -8012.35 N, 340.51 E)									
- Point									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,567.00	10,502.61	-380.52	182.57	Wellpath Crosses Section Line @ Heel
10,978.00	10,688.48	-716.54	314.00	Wellpath FTP (338FNL,364FEL)
18,279.00	10,718.01	-8,011.95	340.51	Wellpath LTP (330FSL,370FEL)
18,390.00	10,720.00	-8,122.93	340.03	TD @ 219FSL,386FEL

Checked By: _____	Approved By: _____	Date: _____
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