

WPX ENERGY

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 31 2017

RECEIVED

WPX Energy

Eddy County, New Mexico (NAD 83)

C State 16

3H

30-015-44136

Wellbore #2

Design: Surveys

Standard Survey Report

03 July, 2017

Please provide signature
page for directional survey

MS Energy Services®
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Azimuths to Grid North
True North: -0.08°
Magnetic North: 7.24°

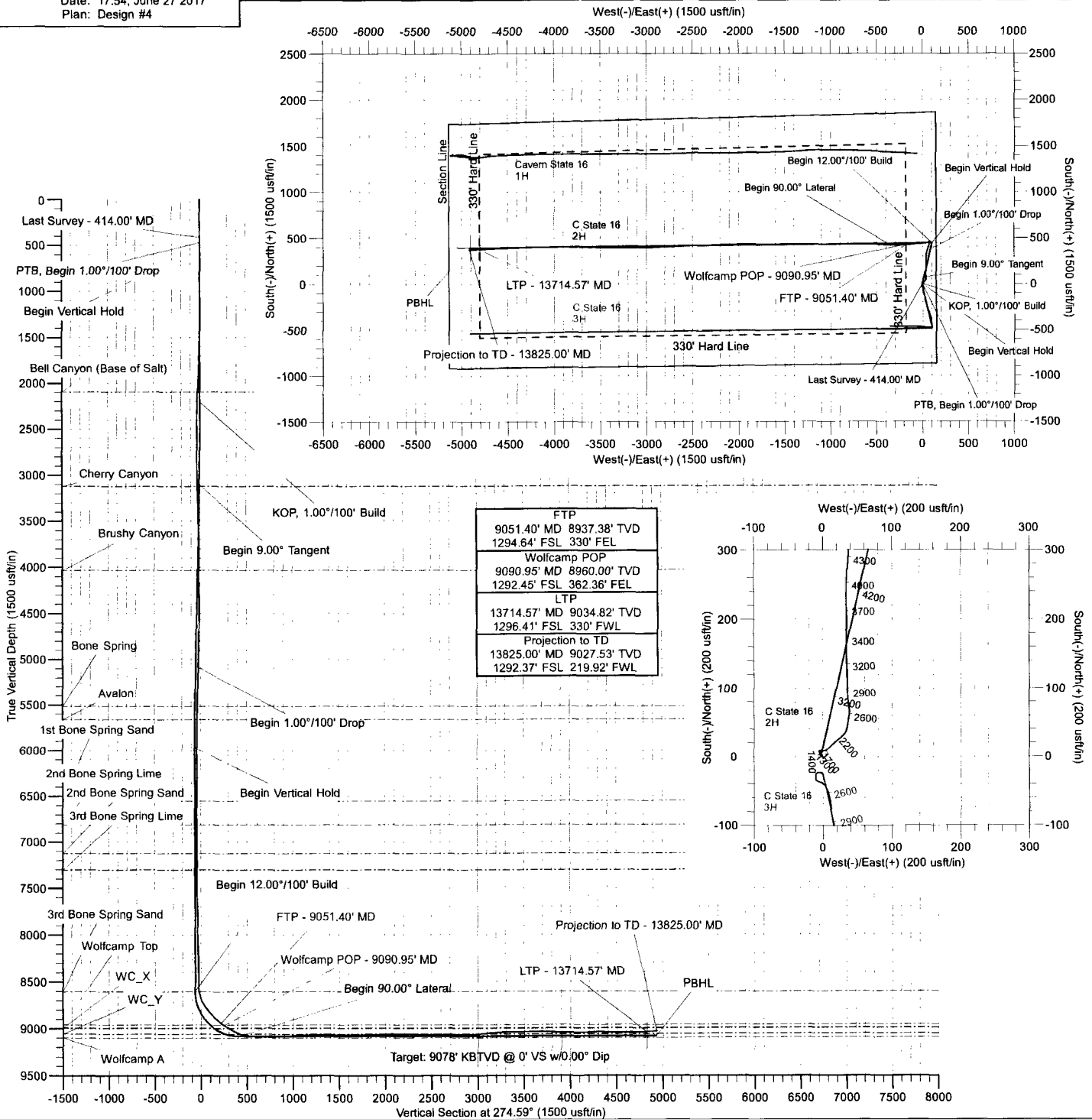
Magnetic Field
Strength: 47993.3snT
Dip Angle: 60.01°
Date: 5/25/2017
Model: BGGM2017

US State Plane 1983
New Mexico Eastern Zone

Created By: DLD
Date: 17:54, June 27 2017
Plan: Design #4

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
414.00	0.40	339.30	413.98	2.57	-2.69	2.89	0.00	Last Survey - 414.00' MD
470.00	0.40	339.30	469.98	2.93	-2.83	3.06	0.39	PTB, Begin 1.00°/100' Drop
510.00	0.00	0.00	509.98	3.06	-2.88	3.11	0.53	Begin Vertical Hold
2200.00	0.00	0.00	2199.98	3.06	-2.88	3.11	0.53	KOP, 1.00°/100' Build
3100.14	9.00	13.02	3098.42	71.81	13.01	-7.22	71.09	Begin 9.00° Tangent
5096.87	9.00	13.02	5068.56	376.19	83.38	-52.98	383.50	Begin 1.00°/100' Drop
5997.01	0.00	0.00	5965.00	444.94	99.27	-63.31	454.06	Begin Vertical Hold
8632.55	0.00	0.00	8600.54	444.94	99.27	-63.31	454.06	Begin 12.00°/100' Build
9382.55	90.00	269.42	9078.00	440.10	-378.17	412.21	931.53	Begin 90.00° Lateral
13910.41	90.00	269.42	9078.00	394.20	-4905.80	4921.61	5459.39	PBHL



Company:	WPX Energy	Local Co-ordinate Reference:	Well 3H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3166.00usft (H&P 509)
Site:	C State 16	MD Reference:	WELL @ 3166.00usft (H&P 509)
Well:	3H	North Reference:	Grid
Wellbore:	Wellbore #2	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM Conroe

Project	Eddy County, New Mexico (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Well	3H			
Well Position	+N/-S	0.00 usft	Northing:	472,899.30 usft
	+E/-W	0.00 usft	Easting:	586,567.60 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft
			Latitude:	32° 17' 59.959 N
			Longitude:	104° 11' 13.004 W
			Ground Level:	3,136.00 usft

Wellbore	Wellbore #2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	6/1/2017	7.32	60.01	47,991
	BGGM2017	7/1/2017	7.31	60.00	47,982

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	8,637.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	228.06	

Survey Program	Date 7/3/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
145.00	8,637.00	MS MWD (Wellbore #1)	MWD	OWSG MWD - Standard	
8,668.00	13,853.00	MS MWD (Wellbore #2)	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	
145.00	0.70	333.10	145.00	0.79	-0.40	-0.23	0.48	0.48	0.00	
327.00	1.01	272.40	326.98	1.85	-2.51	0.63	0.50	0.17	-33.35	
414.00	1.50	273.90	413.96	1.96	-4.41	1.97	0.56	0.56	1.72	
519.00	1.90	266.30	518.91	1.94	-7.52	4.30	0.44	0.38	-7.24	
610.00	1.20	218.20	609.88	1.09	-9.61	6.42	1.56	-0.77	-52.86	
702.00	1.40	183.80	701.86	-0.79	-10.28	8.17	0.86	0.22	-37.39	
793.00	1.20	179.60	792.84	-2.85	-10.35	9.60	0.24	-0.22	-4.62	
885.00	1.00	183.20	884.82	-4.61	-10.39	10.81	0.23	-0.22	3.91	
976.00	0.90	188.80	975.81	-6.11	-10.54	11.93	0.15	-0.11	6.15	
1,068.00	0.50	177.90	1,067.80	-7.23	-10.64	12.74	0.46	-0.43	-11.85	
1,159.00	0.40	176.80	1,158.80	-7.94	-10.60	13.20	0.11	-0.11	-1.21	
1,250.00	0.40	145.00	1,249.79	-8.52	-10.40	13.43	0.24	0.00	-34.95	
1,342.00	1.00	120.70	1,341.79	-9.19	-9.53	13.23	0.71	0.65	-26.41	

Company: WPX Energy
Project: Eddy County, New Mexico (NAD 83)
Site: C State 16
Well: 3H
Wellbore: Wellbore #2
Design: Surveys

Local Co-ordinate Reference: Well 3H
TVD Reference: WELL @ 3166.00usft (H&P 509)
MD Reference: WELL @ 3166.00usft (H&P 509)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM Conroe

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)
1,436.00	1.70	117.50	1,435.76	-10.25	-7.59	12.50	0.75	0.74	-3.40
1,531.00	1.70	111.00	1,530.72	-11.41	-5.02	11.36	0.20	0.00	-6.84
1,625.00	1.90	111.50	1,624.67	-12.48	-2.27	10.03	0.21	0.21	0.53
1,719.00	0.90	140.40	1,718.64	-13.62	-0.35	9.36	1.27	-1.06	30.74
1,814.00	0.70	139.60	1,813.63	-14.64	0.50	9.41	0.21	-0.21	-0.84
1,908.00	0.90	128.60	1,907.63	-15.53	1.45	9.30	0.27	0.21	-11.70
2,002.00	0.60	125.60	2,001.62	-16.28	2.43	9.08	0.32	-0.32	-3.19
2,179.00	0.30	156.10	2,178.61	-17.24	3.37	9.02	0.21	-0.17	17.23
2,273.00	2.90	154.40	2,272.57	-19.61	4.50	9.76	2.77	2.77	-1.81
2,368.00	2.90	155.10	2,367.45	-23.96	6.55	11.14	0.04	0.00	0.74
2,462.00	5.70	167.80	2,461.17	-30.68	8.53	14.16	3.13	2.98	13.51
2,559.00	9.80	171.60	2,557.27	-43.56	10.76	21.11	4.26	4.23	3.92
2,651.00	10.00	171.40	2,647.90	-59.21	13.10	29.83	0.22	0.22	-0.22
2,745.00	9.60	169.60	2,740.53	-74.99	15.73	38.41	0.54	-0.43	-1.91
2,840.00	9.00	169.20	2,834.28	-90.08	18.56	46.40	0.64	-0.63	-0.42
2,934.00	8.20	165.70	2,927.22	-103.79	21.59	53.31	1.02	-0.85	-3.72
3,029.00	7.60	163.40	3,021.32	-116.38	25.06	59.14	0.71	-0.63	-2.42
3,123.00	8.80	172.40	3,114.36	-129.47	27.78	65.86	1.87	1.28	9.57
3,218.00	9.20	171.60	3,208.19	-144.18	29.85	74.15	0.44	0.42	-0.84
3,312.00	9.00	168.90	3,301.01	-158.83	32.37	82.07	0.50	-0.21	-2.87
3,407.00	8.70	166.90	3,394.88	-173.12	35.43	89.35	0.45	-0.32	-2.11
3,501.00	8.00	165.10	3,487.88	-186.37	38.72	95.75	0.79	-0.74	-1.91
3,595.00	7.70	164.20	3,581.00	-198.75	42.12	101.50	0.34	-0.32	-0.96
3,690.00	7.60	163.70	3,675.15	-210.90	45.61	107.02	0.13	-0.11	-0.53
3,784.00	7.30	161.80	3,768.36	-222.54	49.22	112.11	0.41	-0.32	-2.02
3,879.00	7.10	162.60	3,862.61	-233.88	52.86	116.98	0.24	-0.21	0.84
3,973.00	6.90	162.80	3,955.91	-244.81	56.27	121.75	0.21	-0.21	0.21
4,068.00	6.50	161.50	4,050.26	-255.36	59.66	126.28	0.45	-0.42	-1.37
4,162.00	6.00	160.90	4,143.70	-265.05	62.96	130.30	0.54	-0.53	-0.64
4,257.00	5.50	162.40	4,238.22	-274.08	65.96	134.11	0.55	-0.53	1.58
4,351.00	4.70	164.70	4,331.85	-282.09	68.34	137.69	0.88	-0.85	2.45
4,446.00	6.60	161.70	4,426.38	-291.03	71.08	141.63	2.02	2.00	-3.16
4,540.00	8.10	162.20	4,519.61	-302.46	74.80	146.50	1.60	1.60	0.53
4,634.00	6.90	162.50	4,612.80	-314.16	78.52	151.54	1.28	-1.28	0.32
4,729.00	6.30	161.70	4,707.17	-324.55	81.88	155.99	0.64	-0.63	-0.84
4,823.00	5.80	162.10	4,800.65	-333.96	84.96	160.00	0.53	-0.53	0.43
4,918.00	5.50	161.10	4,895.19	-342.84	87.91	163.73	0.33	-0.32	-1.05
5,012.00	7.80	169.80	4,988.55	-353.38	90.50	168.85	2.66	2.45	9.26
5,107.00	8.30	176.40	5,082.62	-366.57	92.07	176.50	1.11	0.53	6.95
5,201.00	7.60	176.00	5,175.71	-379.54	92.93	184.53	0.75	-0.74	-0.43
5,296.00	6.90	176.20	5,269.95	-391.50	93.74	191.91	0.74	-0.74	0.21
5,390.00	6.40	174.90	5,363.32	-402.35	94.58	198.54	0.56	-0.53	-1.38
5,484.00	6.20	173.50	5,456.75	-412.62	95.62	204.63	0.27	-0.21	-1.49

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5,579.00	5.30	172.10	5,551.27	-422.06	96.81	210.06	0.96	-0.95	-1.47
5,673.00	4.60	172.00	5,644.92	-430.09	97.93	214.59	0.74	-0.74	-0.11
5,768.00	3.50	167.50	5,739.68	-436.70	99.09	218.14	1.20	-1.16	-4.74
5,862.00	2.50	170.80	5,833.55	-441.52	100.04	220.66	1.08	-1.06	3.51
5,957.00	2.30	186.70	5,928.47	-445.46	100.15	223.21	0.73	-0.21	16.74
6,051.00	2.40	191.80	6,022.39	-449.26	99.52	226.22	0.25	0.11	5.43
6,146.00	2.50	187.70	6,117.31	-453.26	98.84	229.40	0.21	0.11	-4.32
6,240.00	2.40	188.20	6,211.22	-457.24	98.28	232.47	0.11	-0.11	0.53
6,335.00	0.60	252.30	6,306.19	-459.36	97.53	234.45	2.32	-1.89	67.47
6,429.00	1.20	289.80	6,400.18	-459.18	96.13	235.37	0.86	0.64	39.89
6,524.00	0.90	294.60	6,495.16	-458.53	94.52	236.14	0.33	-0.32	5.05
6,618.00	1.00	298.40	6,589.15	-457.83	93.12	236.71	0.13	0.11	4.04
6,713.00	1.30	289.50	6,684.13	-457.08	91.38	237.50	0.37	0.32	-9.37
6,807.00	1.30	276.80	6,778.10	-456.59	89.31	238.71	0.31	0.00	-13.51
6,901.00	1.50	266.70	6,872.08	-456.54	87.03	240.38	0.34	0.21	-10.74
6,996.00	1.30	293.70	6,967.05	-456.18	84.80	241.79	0.72	-0.21	28.42
7,090.00	0.90	289.20	7,061.03	-455.51	83.13	242.59	0.44	-0.43	-4.79
7,185.00	1.20	285.40	7,156.02	-455.00	81.46	243.49	0.32	0.32	-4.00
7,279.00	1.10	286.60	7,250.00	-454.48	79.65	244.49	0.11	-0.11	1.28
7,374.00	1.10	275.30	7,344.98	-454.13	77.87	245.58	0.23	0.00	-11.89
7,468.00	1.20	277.10	7,438.96	-453.93	75.99	246.84	0.11	0.11	1.91
7,563.00	1.10	276.50	7,533.94	-453.70	74.10	248.10	0.11	-0.11	-0.63
7,657.00	1.10	283.80	7,627.92	-453.38	72.33	249.20	0.15	0.00	7.77
7,752.00	0.70	291.00	7,722.91	-452.96	70.90	249.98	0.44	-0.42	7.58
7,846.00	0.20	311.80	7,816.91	-452.64	70.24	250.26	0.55	-0.53	22.13
7,941.00	0.30	164.70	7,911.91	-452.77	70.18	250.39	0.51	0.11	-154.84
8,035.00	0.60	138.10	8,005.91	-453.38	70.57	250.50	0.38	0.32	-28.30
8,129.00	1.30	129.30	8,099.89	-454.42	71.73	250.34	0.76	0.74	-9.36
8,224.00	0.50	209.90	8,194.88	-455.46	72.36	250.57	1.38	-0.84	84.84
8,318.00	0.70	115.00	8,288.88	-456.06	72.67	250.73	0.95	0.21	-100.96
8,448.00	1.10	118.80	8,418.86	-456.99	74.49	250.01	0.31	0.31	2.92
8,542.00	0.90	137.10	8,512.85	-457.97	75.78	249.70	0.40	-0.21	19.47
8,637.00	8.70	285.90	8,607.51	-456.55	69.36	253.52	9.98	8.21	156.63
Tie-in to MS MWD -8637.00' MD									
8,668.00	8.50	265.60	8,638.17	-456.08	64.82	256.59	9.76	-0.65	-65.48
8,731.00	15.40	268.20	8,699.77	-456.70	51.80	266.69	10.98	10.95	4.13
8,825.00	25.90	263.80	8,787.61	-459.32	18.82	292.97	11.28	11.17	-4.68
8,920.00	38.00	262.40	8,868.07	-465.45	-30.98	334.11	12.76	12.74	-1.47
9,014.00	51.90	264.10	8,934.44	-473.11	-96.77	388.18	14.84	14.79	1.81
9,043.53	55.10	264.57	8,952.00	-475.45	-120.39	407.31	10.91	10.84	1.60
Wolfcamp POP - 9043.53' MD									
9,109.00	62.20	265.50	8,986.04	-480.27	-176.06	451.94	10.91	10.84	1.42
9,112.02	62.48	265.55	8,987.44	-480.48	-178.73	454.06	9.26	9.14	1.71
FTP - 9112.02' MD									

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9,203.00	70.80	267.00	9,023.49	-485.87	-262.00	519.61	9.26	9.15	1.59
9,298.00	78.00	270.60	9,049.03	-487.73	-353.40	588.85	8.41	7.58	3.79
9,392.00	88.10	270.70	9,060.39	-486.67	-446.58	657.46	10.75	10.74	0.11
9,421.00	90.70	270.60	9,060.69	-486.35	-475.58	678.80	8.97	8.97	-0.34
9,499.00	92.40	270.60	9,058.58	-485.53	-553.54	736.25	2.18	2.18	0.00
9,589.00	90.70	270.30	9,056.15	-484.82	-643.50	802.70	1.92	-1.89	-0.33
9,680.00	88.40	270.20	9,056.86	-484.43	-734.49	870.12	2.53	-2.53	-0.11
9,769.00	87.40	270.00	9,060.12	-484.27	-823.43	936.18	1.15	-1.12	-0.22
9,859.00	86.80	269.90	9,064.68	-484.35	-913.32	1,003.09	0.68	-0.67	-0.11
9,949.00	88.80	270.20	9,068.13	-484.27	-1,003.24	1,069.93	2.25	2.22	0.33
10,039.00	90.50	270.40	9,068.68	-483.80	-1,093.24	1,136.56	1.90	1.89	0.22
10,129.00	90.10	270.30	9,068.21	-483.25	-1,183.24	1,203.14	0.46	-0.44	-0.11
10,218.00	90.30	269.90	9,067.90	-483.09	-1,272.23	1,269.24	0.50	0.22	-0.45
10,308.00	90.90	267.70	9,066.96	-484.98	-1,362.20	1,337.43	2.53	0.67	-2.44
10,390.00	90.50	262.70	9,065.95	-491.84	-1,443.88	1,402.77	6.12	-0.49	-6.10
10,487.00	92.50	262.70	9,063.41	-504.16	-1,540.06	1,482.55	2.06	2.06	0.00
10,577.00	92.10	267.30	9,059.80	-511.99	-1,629.62	1,554.41	5.13	-0.44	5.11
10,666.00	92.50	269.50	9,056.23	-514.48	-1,718.51	1,622.19	2.51	0.45	2.47
10,756.00	92.40	269.60	9,052.38	-515.18	-1,808.42	1,689.55	0.16	-0.11	0.11
10,845.00	92.00	269.70	9,048.96	-515.73	-1,897.36	1,756.06	0.46	-0.45	0.11
10,935.00	90.50	272.00	9,047.00	-514.39	-1,987.32	1,822.09	3.05	-1.67	2.56
11,025.00	89.40	272.00	9,047.08	-511.25	-2,077.26	1,886.90	1.22	-1.22	0.00
11,114.00	89.40	272.00	9,048.01	-508.14	-2,166.20	1,950.98	0.00	0.00	0.00
11,203.00	89.50	271.80	9,048.87	-505.19	-2,255.15	2,015.18	0.25	0.11	-0.22
11,293.00	91.20	271.90	9,048.32	-502.29	-2,345.10	2,080.14	1.89	1.89	0.11
11,383.00	90.40	271.90	9,047.06	-499.30	-2,435.04	2,145.05	0.89	-0.89	0.00
11,472.00	92.90	272.40	9,044.50	-495.97	-2,523.93	2,208.95	2.86	2.81	0.56
11,562.00	91.80	272.10	9,040.81	-492.44	-2,613.78	2,273.43	1.27	-1.22	-0.33
11,652.00	90.40	271.40	9,039.08	-489.69	-2,703.72	2,338.50	1.74	-1.56	-0.78
11,741.00	90.80	271.30	9,038.15	-487.59	-2,792.69	2,403.28	0.46	0.45	-0.11
11,831.00	90.80	270.60	9,036.89	-486.10	-2,882.67	2,469.21	0.78	0.00	-0.78
11,921.00	90.00	270.20	9,036.26	-485.47	-2,972.67	2,535.74	0.99	-0.89	-0.44
12,011.00	91.10	269.80	9,035.40	-485.47	-3,062.66	2,602.68	1.30	1.22	-0.44
12,100.00	90.30	269.10	9,034.31	-486.33	-3,151.65	2,669.45	1.19	-0.90	-0.79
12,190.00	90.50	268.50	9,033.68	-488.21	-3,241.63	2,737.64	0.70	0.22	-0.67
12,280.00	90.70	268.00	9,032.74	-490.96	-3,331.58	2,806.39	0.60	0.22	-0.56
12,369.00	91.30	267.80	9,031.19	-494.22	-3,420.50	2,874.72	0.71	0.67	-0.22
12,459.00	91.00	267.60	9,029.38	-497.83	-3,510.41	2,944.01	0.40	-0.33	-0.22
12,549.00	91.40	267.60	9,027.50	-501.60	-3,600.32	3,013.41	0.44	0.44	0.00
12,639.00	91.80	267.50	9,024.98	-505.44	-3,690.20	3,082.84	0.46	0.44	-0.11
12,728.00	92.90	267.60	9,021.33	-509.25	-3,779.04	3,151.47	1.24	1.24	0.11
12,818.00	91.60	269.10	9,017.80	-511.83	-3,868.93	3,220.06	2.20	-1.44	1.67
12,908.00	90.80	271.00	9,015.92	-511.76	-3,958.90	3,286.94	2.29	-0.89	2.11

Company: WPX Energy
Project: Eddy County, New Mexico (NAD 83)
Site: C State 16
Well: 3H
Wellbore: Wellbore #2
Design: Surveys

Local Co-ordinate Reference: Well 3H
TVD Reference: WELL @ 3166.00usft (H&P 509)
MD Reference: WELL @ 3166.00usft (H&P 509)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM Conroe

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,997.00	90.90	271.40	9,014.60	-509.89	-4,047.87	3,351.88	0.46	0.11	0.45
13,086.00	90.60	270.60	9,013.43	-508.34	-4,136.85	3,417.03	0.96	-0.34	-0.90
13,176.00	91.30	270.00	9,011.94	-507.87	-4,226.84	3,483.65	1.02	0.78	-0.67
13,266.00	92.90	269.40	9,008.64	-508.34	-4,316.77	3,550.87	1.90	1.78	-0.67
13,355.00	92.30	269.80	9,004.60	-508.96	-4,405.68	3,617.42	0.81	-0.67	0.45
13,445.00	88.90	271.60	9,003.66	-507.86	-4,495.65	3,683.61	4.27	-3.78	2.00
13,535.00	88.50	272.50	9,005.70	-504.64	-4,585.57	3,748.35	1.09	-0.44	1.00
13,624.00	86.80	271.80	9,009.35	-501.30	-4,674.43	3,812.21	2.07	-1.91	-0.79
13,714.00	87.00	271.60	9,014.22	-498.64	-4,764.26	3,877.25	0.31	0.22	-0.22
13,753.31	87.47	271.42	9,016.12	-497.60	-4,803.51	3,905.76	1.28	1.19	-0.45
LTP - 13753.31' MD									
13,781.00	87.80	271.30	9,017.26	-496.94	-4,831.16	3,925.89	1.28	1.19	-0.45
13,853.00	87.80	271.30	9,020.02	-495.31	-4,903.09	3,978.31	0.00	0.00	0.00
Projection to TD - 13853.00' MD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
8,637.00	8,607.51	-456.55	69.36	Tie-in to MS MWD -8637.00' MD
9,043.53	8,952.00	-475.45	-120.39	Wolfcamp POP - 9043.53' MD
9,112.02	8,987.44	-480.48	-178.73	FTP - 9112.02' MD
13,753.31	9,016.12	-497.60	-4,803.51	LTP - 13753.31' MD
13,853.00	9,020.02	-495.31	-4,903.09	Projection to TD - 13853.00' MD