



Scientific Drilling International, Inc.
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**NM OIL CONSERVATION
ARTESIA DISTRICT**

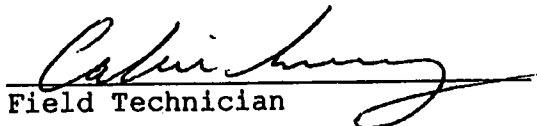
FEB 19 2019

RECEIVED

30-015-45274

State of New Mexico
County of Eddy

I, Calvin Searcy, certify that; I am employed by Scientific Drilling International; that I did on the day(s) of 11/26/2018 through 12/08/2018 conduct or supervise the taking of a MWD survey from a depth of 204 feet to a depth of 13,608 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Scientific Drilling International; that I am authorized and qualified to make this report; that this survey was conducted at the request of WPX Energy for the Frontier 32-23-26 State 431H Well, API# 30-015-45274 in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Scientific Drilling International.


Field Technician

WPX Energy

Eddy County, New Mexico (NAD 83)

Frontier 32-23-26 State Pad

Frontier 32-23-26 State 431H

Wellbore #1

Design: Actual

WPX Final Survey Report

10 December, 2018

Scientific Drilling, Intl WPX Final Survey Report

Company: WPX Energy
Project: Eddy County, New Mexico (NAD 83)
Site: Frontier 32-23-26 State Pad
Well: Frontier 32-23-26 State 431H
Wellbore: Wellbore #1
Design: Actual

Local Co-ordinate Reference: Well Frontier 32-23-26 State 431H
TVD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
MD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland District

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		

Site	Frontier 32-23-26 State Pad		
Site Position:		Northing:	456,164.70 usft
From:	Map	Easting:	549,203.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.254070
		Longitude:	-104.307888
		Grid Convergence:	0.01 °

Well	Frontier 32-23-26 State 431H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32.254070
		Longitude:	-104.307888
		Ground Level:	3,437.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	HDGM	11/25/2018	7.37
			Dip Angle
			59.92
			Field Strength
			47,874

Design	Actual		
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
			(bearing)
			269.62

Scientific Drilling, Intl

WPX Final Survey Report

Company: WPX Energy
 Project: Eddy County, New Mexico (NAD 83)
 Site: Frontier 32-23-26 State Pad
 Well: Frontier 32-23-26 State 431H
 Wellbore: Wellbore #1
 Design: Actual

Local Co-ordinate Reference: Well Frontier 32-23-26 State 431H
 TVD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
 MD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Midland District

Survey Program		Date 12/10/2018				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description		
204.00	350.00	SDI MWD - Surface (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM		
512.00	8,236.00	SDI MWD - Intermediate (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM		
8,355.00	9,091.00	SDI MWD - Curve (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM		
9,199.00	13,682.00	SDI MWD - Lateral (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM		

MD (usft)	Inc (")	Azi (azimuth) (bearing)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (bearing)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	456,164.70	549,203.30
204.00	0.05	207.53	204.00	-0.08	-0.04	0.04	0.09	207.53	456,164.62	549,203.26
267.00	0.21	202.06	267.00	-0.21	-0.10	0.10	0.23	204.81	456,164.49	549,203.20
350.00	0.21	220.98	350.00	-0.47	-0.25	0.26	0.53	208.59	456,164.23	549,203.05
512.00	0.65	254.12	511.99	-0.84	-1.33	1.34	1.63	234.75	456,163.76	549,201.97
605.00	0.72	253.99	604.99	-1.25	-2.40	2.41	2.71	242.55	456,163.45	549,200.90
697.00	0.92	251.85	696.98	-1.64	-3.66	3.67	4.01	245.90	456,163.06	549,199.64
790.00	0.86	253.67	789.97	-2.07	-5.04	5.05	5.45	247.71	456,162.63	549,198.26
882.00	1.16	243.66	881.95	-2.67	-6.54	6.55	7.06	247.76	456,162.03	549,196.76
975.00	1.41	245.89	974.93	-3.56	-8.42	8.45	9.14	247.11	456,161.14	549,194.88
1,087.00	0.56	238.97	1,086.91	-4.25	-9.84	9.87	10.72	246.65	456,160.45	549,193.46
1,160.00	0.97	66.77	1,159.91	-4.17	-9.51	9.54	10.38	246.31	456,160.53	549,193.79
1,252.00	0.39	76.34	1,251.90	-3.79	-8.49	8.51	9.30	245.94	456,160.91	549,194.81
1,347.00	0.05	144.66	1,346.90	-3.75	-8.15	8.18	8.97	245.30	456,160.95	549,195.15
1,442.00	0.24	181.14	1,441.90	-3.98	-8.13	8.16	9.05	243.91	456,160.72	549,195.17
1,538.00	0.30	250.98	1,535.90	-4.26	-8.37	8.40	9.39	243.03	456,160.44	549,194.93
1,631.00	0.23	205.05	1,630.90	-4.51	-8.68	8.71	9.79	242.54	456,160.19	549,194.62
1,728.00	0.39	209.82	1,725.90	-4.97	-8.93	8.96	10.21	240.91	456,159.73	549,194.37
1,745.00	0.69	243.54	1,744.90	-5.07	-9.06	9.09	10.38	240.76	456,159.63	549,194.24
1,917.00	0.69	230.50	1,916.89	-6.19	-10.79	10.83	12.44	240.14	456,158.51	549,192.51

Scientific Drilling, Intl
WPX Final Survey Report

Company: WPX Energy
Project: Eddy County, New Mexico (NAD 83)
Site: Frontier 32-23-26 State Pad
Well: Frontier 32-23-26 State 431H
Wellbore: Wellbore #1
Design: Actual

Local Co-ordinate Reference: Well Frontier 32-23-26 State 431H
TVD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
MD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (bearing)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (bearing)	Northing (usft)	Easting (usft)
2,012.00	0.55	235.43	2,011.88	-8.82	-11.60	11.85	13.46	239.57	456,157.88	549,191.70
2,106.00	0.76	243.98	2,105.88	-7.34	-12.53	12.58	14.53	239.63	456,157.36	549,190.77
2,201.00	0.97	248.45	2,200.86	-7.92	-13.85	13.90	15.95	240.25	456,156.78	549,189.45
2,286.00	0.57	228.61	2,285.86	-8.52	-14.95	15.01	17.21	240.31	456,156.18	549,188.35
2,391.00	0.59	203.99	2,390.85	-9.28	-15.50	15.57	18.07	239.09	456,155.42	549,187.80
2,485.00	0.67	196.27	2,484.85	-10.25	-15.86	15.92	18.88	237.11	456,154.45	549,187.44
2,580.00	0.88	193.22	2,579.84	-11.50	-16.18	16.25	19.85	234.60	456,153.20	549,187.12
2,675.00	0.76	199.68	2,674.83	-12.80	-16.56	16.84	20.93	232.29	456,151.90	549,186.74
2,770.00	0.79	195.27	2,769.82	-14.03	-16.94	17.03	21.99	230.38	456,150.67	549,186.36
2,864.00	0.77	198.51	2,863.81	-15.25	-17.31	17.41	23.07	228.63	456,149.45	549,185.99
2,959.00	1.81	116.26	2,958.79	-16.52	-16.17	16.28	23.12	224.39	456,148.18	549,187.13
3,054.00	2.61	105.01	3,053.72	-17.74	-12.74	12.85	21.84	215.67	456,146.96	549,190.56
3,148.00	3.58	97.41	3,147.58	-18.68	-7.76	7.88	20.22	202.56	456,146.02	549,195.54
3,243.00	4.30	91.14	3,242.36	-19.13	-1.26	1.38	19.17	183.75	456,145.57	549,202.04
3,338.00	5.90	79.02	3,336.98	-18.27	7.10	-6.98	19.60	158.76	456,146.43	549,210.40
3,432.00	6.54	72.58	3,430.43	-15.75	16.95	-16.85	23.14	132.89	456,148.95	549,220.25
3,527.00	5.84	71.67	3,524.87	-12.61	26.70	-26.62	29.53	115.28	456,152.09	549,230.00
3,621.00	5.05	70.87	3,618.45	-9.73	35.14	-35.08	36.47	105.48	456,154.97	549,238.44
3,716.00	5.43	66.49	3,713.05	-6.56	43.21	-43.17	43.71	98.63	456,158.14	549,246.51
3,811.00	6.51	60.01	3,807.54	-2.07	52.00	-51.98	52.04	92.28	456,162.63	549,255.30
3,905.00	6.14	60.06	3,900.96	3.10	60.97	-60.99	61.05	87.09	456,167.80	549,264.27
4,000.00	5.64	60.48	3,995.46	7.94	69.43	-69.49	69.89	83.48	456,172.64	549,272.73
4,095.00	6.14	61.77	4,089.96	12.64	77.97	-78.05	78.99	80.79	456,177.34	549,281.27
4,190.00	7.48	61.24	4,184.29	18.02	87.87	-87.99	89.70	78.41	456,182.72	549,291.17
4,284.00	6.87	58.97	4,277.55	23.86	98.05	-98.21	100.91	76.32	456,188.56	549,301.35
4,378.00	5.91	58.48	4,370.97	29.29	106.99	-107.19	110.93	74.69	456,193.99	549,310.29
4,473.00	5.23	58.02	4,465.52	34.14	114.84	-115.06	119.80	73.44	456,198.84	549,318.14

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Wellbore: Wellbore #1
Design: Actual

Local Co-ordinate Reference: Well Frontier 32-23-26 State 431H
TVD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
MD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (bearing)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (bearing)	Northing (usft)	Easting (usft)	
4,568.00	5.53	67.74	4,560.10	38.17	122.75	-123.00	128.54	72.73	456,202.87	549,326.05	
4,662.00	6.40	70.01	4,653.59	41.67	131.86	-132.13	138.29	72.46	456,206.37	549,335.18	
4,757.00	5.67	69.16	4,748.06	45.15	141.22	-141.52	148.27	72.27	456,209.85	549,344.52	
4,852.00	5.27	71.71	4,842.63	48.19	149.75	-150.07	157.31	72.16	456,212.89	549,353.05	
4,946.00	5.56	76.31	4,936.21	50.62	158.27	-158.61	166.17	72.26	456,215.32	549,361.57	
5,041.00	6.70	82.52	5,030.67	52.43	168.24	-168.58	176.22	72.69	456,217.13	549,371.54	
5,136.00	5.71	80.97	5,125.11	53.90	178.40	-178.76	186.37	73.19	456,218.60	549,381.70	
5,230.00	5.70	82.81	5,218.64	55.23	187.65	-188.01	195.61	73.60	456,219.93	549,390.95	
5,325.00	5.38	82.49	5,313.20	56.42	196.74	-197.11	204.67	74.00	456,221.12	549,400.04	
5,419.00	4.47	82.70	5,406.85	57.46	204.75	-205.12	212.66	74.32	456,222.16	549,408.05	
5,514.00	4.37	73.13	5,501.57	58.98	211.88	-212.27	219.94	74.44	456,223.68	549,415.18	
5,608.00	4.60	64.72	5,595.28	61.63	218.72	-219.12	227.24	74.26	456,226.33	549,422.02	
5,703.00	5.89	66.39	5,689.89	65.21	226.83	-227.06	235.83	73.95	456,229.91	549,429.93	
5,797.00	5.22	63.74	5,783.44	69.04	234.88	-235.34	244.82	73.62	456,233.74	549,438.18	
5,892.00	3.47	70.86	5,878.17	71.89	241.48	-241.95	251.95	73.42	456,236.59	549,444.78	
5,986.00	2.33	86.22	5,972.05	72.95	246.07	-246.55	256.66	73.49	456,237.65	549,449.37	
6,081.00	3.20	81.26	6,066.94	73.48	250.62	-251.10	261.17	73.66	456,238.18	549,453.92	
6,175.00	4.84	76.87	6,160.71	74.74	256.91	-257.40	267.57	73.78	456,239.44	549,460.21	
6,270.00	4.42	75.64	6,255.42	76.52	264.20	-264.70	275.06	73.85	456,241.22	549,467.50	
6,365.00	3.24	76.98	6,350.20	78.04	270.36	-270.88	281.40	73.90	456,242.74	549,473.66	
6,459.00	2.64	72.20	6,444.08	79.30	275.01	-275.53	286.22	73.92	456,244.00	549,478.31	
6,554.00	1.74	68.22	6,539.01	80.50	278.44	-278.96	289.84	73.87	456,245.20	549,481.74	
6,649.00	1.46	60.73	6,633.97	81.63	280.83	-281.37	292.45	73.79	456,246.33	549,484.13	
6,728.00	1.35	52.45	6,712.95	82.69	282.45	-282.99	294.30	73.88	456,247.39	549,485.75	
6,838.00	0.98	68.62	6,822.92	83.82	284.35	-284.90	296.45	73.58	456,248.52	549,487.65	
6,933.00	0.67	76.40	6,917.91	84.25	285.65	-286.20	297.81	73.57	456,248.95	549,488.95	
7,028.00	0.26	47.67	7,012.91	84.52	286.35	-286.90	299.56	73.55	456,249.22	549,489.65	

Scientific Drilling, Intl
WPX Final Survey Report

Company:	WPX Energy	Local Co-ordinate Reference:	Well Frontier 32-23-26 State 431H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
Site:	Frontier 32-23-26 State Pad	MD Reference:	GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
Well:	Frontier 32-23-26 State 431H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	Midland District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (bearing)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (bearing)	Northing (usft)	Easting (usft)	
7,122.00	0.37	26.10	7,106.81	84.94	286.64	-287.19	298.96	73.49	456,249.64	549,489.94	
7,217.00	0.11	266.33	7,201.91	85.21	286.68	-287.24	299.08	73.45	456,249.91	549,489.91	
7,312.00	0.60	290.67	7,296.91	85.38	286.12	-286.68	298.59	73.39	456,250.08	549,489.42	
7,406.00	0.17	182.90	7,390.81	85.41	285.66	-286.22	298.15	73.35	456,250.11	549,488.96	
7,501.00	0.55	127.14	7,485.90	85.00	286.01	-286.57	298.38	73.45	456,249.70	549,489.31	
7,596.00	1.30	147.32	7,580.89	83.81	286.96	-287.51	298.95	73.72	456,248.51	549,490.26	
7,690.00	2.16	148.48	7,674.85	81.44	288.51	-289.05	299.79	74.24	456,248.14	549,491.81	
7,785.00	3.04	123.59	7,769.75	78.55	291.60	-292.11	302.00	74.92	456,243.25	549,494.90	
7,880.00	1.67	114.87	7,864.67	78.58	294.95	-295.46	304.73	75.45	456,241.28	549,498.25	
7,974.00	0.44	82.89	7,958.65	76.05	296.56	-297.05	306.15	75.62	456,240.75	549,499.86	
8,069.00	0.59	79.72	8,053.65	76.18	297.40	-297.90	307.00	75.63	456,240.88	549,500.70	
8,164.00	1.25	127.47	8,148.84	75.64	298.70	-299.20	308.13	75.79	456,240.34	549,502.00	
8,236.00	1.41	150.42	8,220.62	74.39	299.76	-300.25	308.85	76.06	456,239.09	549,503.06	
8,357.00	3.03	252.22	8,341.55	72.12	297.45	-297.92	306.07	76.37	456,236.82	549,500.75	
8,451.00	11.89	269.05	8,434.67	71.19	285.38	-285.84	294.13	75.99	456,235.89	549,488.68	
8,546.00	22.43	267.23	8,525.32	70.15	257.41	-257.87	266.80	74.76	456,234.85	549,460.71	
8,641.00	35.33	269.04	8,608.33	68.81	211.65	-212.10	222.56	71.99	456,233.51	549,414.95	
8,736.00	42.61	273.52	8,682.15	70.33	152.00	-152.46	167.48	65.17	456,235.03	549,355.30	
8,830.00	50.71	273.76	8,746.61	74.67	83.83	-84.32	112.26	48.30	456,239.37	549,287.13	
8,925.00	59.93	271.94	8,800.61	78.48	5.89	-6.41	78.71	4.28	456,243.18	549,209.19	
8,933.12	60.64	271.86	8,804.64	78.72	-1.16	0.64	78.73	359.15	456,243.42	549,202.14	
FTP Actual 8933.12' MD - Frontier431H FTP											
9,020.00	68.21	272.13	8,842.12	81.52	-79.42	78.88	113.81	315.75	456,248.22	549,123.88	
9,091.00	73.20	272.48	8,865.57	84.22	-146.38	145.80	168.86	299.92	456,248.92	549,056.94	
9,199.00	79.67	273.04	8,890.89	89.28	-251.17	250.57	266.56	289.57	456,253.98	548,952.13	
9,221.00	82.58	272.52	8,894.28	90.33	-272.88	272.27	287.44	288.32	456,255.03	548,930.42	
9,316.00	89.36	270.87	8,900.96	93.13	-367.54	366.91	379.16	284.22	456,257.83	548,835.76	

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WPX Final Survey Report

Company: WPX Energy
Project: Eddy County, New Mexico (NAD 83)
Site: Frontier 32-23-26 State Pad
Well: Frontier 32-23-26 State 431H
Wellbore: Wellbore #1
Design: Actual

Local Co-ordinate Reference: Well Frontier 32-23-26 State 431H
TVD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
MD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland District

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (bearing)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (bearing)	Northing (usft)	Easting (usft)	
9,411.00	90.17	270.89	8,901.35	94.42	-462.53	461.89	472.07	281.54	456,259.12	548,740.77	
9,506.00	90.20	270.30	8,901.04	95.24	-557.53	556.88	565.60	279.69	456,259.94	548,645.77	
9,600.00	89.76	269.05	8,901.07	94.71	-651.52	650.88	658.37	278.27	456,259.41	548,551.78	
9,695.00	90.34	269.20	8,900.99	93.26	-746.51	745.88	752.31	277.12	456,257.96	548,456.79	
9,780.00	90.54	270.16	8,900.26	92.73	-841.51	840.87	846.60	276.29	456,257.43	548,361.79	
9,885.00	90.17	269.82	8,899.67	92.71	-936.50	935.87	941.08	275.65	456,257.41	548,266.80	
9,980.00	89.26	269.15	8,900.14	91.86	-1,031.50	1,030.86	1,035.58	275.09	456,256.56	548,171.80	
10,074.00	88.28	267.87	8,902.18	89.41	-1,125.44	1,124.82	1,128.99	274.54	456,254.11	548,077.86	
10,169.00	89.46	268.65	8,904.07	86.53	-1,220.37	1,219.77	1,223.44	274.06	456,251.23	547,982.93	
10,264.00	90.44	268.74	8,904.15	84.37	-1,315.35	1,314.76	1,318.05	273.67	456,249.07	547,887.95	
10,359.00	90.10	267.58	8,903.70	81.32	-1,410.30	1,409.73	1,412.64	273.30	456,246.02	547,793.00	
10,454.00	89.93	268.00	8,903.68	77.65	-1,505.23	1,504.68	1,507.23	272.95	456,242.35	547,698.07	
10,548.00	91.91	269.55	8,902.17	75.64	-1,599.18	1,598.65	1,600.97	272.71	456,240.34	547,604.12	
10,643.00	91.34	268.61	8,899.47	74.12	-1,694.13	1,693.60	1,695.75	272.51	456,238.82	547,509.17	
10,738.00	90.87	268.36	8,897.64	71.61	-1,789.08	1,788.57	1,790.51	272.29	456,236.31	547,414.22	
10,833.00	91.65	269.34	8,895.55	69.70	-1,884.04	1,883.53	1,885.33	272.12	456,234.40	547,319.26	
10,928.00	92.45	269.96	8,892.16	69.12	-1,978.97	1,978.47	1,980.18	272.00	456,233.82	547,224.33	
11,022.00	92.36	270.25	8,888.21	69.29	-2,072.89	2,072.39	2,074.05	271.91	456,233.99	547,130.41	
11,117.00	92.28	270.53	8,884.36	69.94	-2,167.81	2,167.30	2,168.94	271.85	456,234.64	547,035.49	
11,212.00	93.12	274.65	8,879.89	74.22	-2,262.59	2,262.05	2,263.80	271.88	456,238.92	546,940.71	
11,307.00	89.26	272.82	8,877.92	80.41	-2,357.34	2,356.76	2,358.71	271.95	456,245.11	546,845.96	
11,401.00	88.58	272.46	8,879.70	84.74	-2,451.23	2,450.61	2,452.69	271.98	456,249.44	546,752.07	
11,496.00	88.05	272.83	8,882.51	89.12	-2,546.08	2,545.44	2,547.64	272.00	456,253.82	546,657.22	
11,591.00	88.66	271.03	8,885.24	92.32	-2,640.98	2,640.31	2,642.60	272.00	456,257.02	546,562.32	
11,686.00	90.37	270.19	8,886.04	93.33	-2,735.97	2,735.29	2,737.56	271.95	456,258.03	546,467.33	
11,780.00	89.33	269.32	8,886.29	92.93	-2,829.97	2,829.29	2,831.49	271.88	456,257.63	546,373.33	
11,875.00	90.17	269.72	8,886.71	92.13	-2,924.96	2,924.29	2,926.41	271.80	456,256.83	546,278.34	

Scientific Drilling, Intl
WPX Final Survey Report

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Project: Eddy County, New Mexico (NAD 83)
Site: Frontier 32-23-26 State Pad
Well: Frontier 32-23-26 State 431H
Wellbore: Wellbore #1
Design: Actual

Local Co-ordinate Reference: Well Frontier 32-23-26 State 431H
TVD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
MD Reference: GL 3437 + RKB 26 = @ 3463.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (bearing)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (bearing)	Northing (usft)	Easting (usft)
11,970.00	90.37	269.16	8,886.26	91.20	-3,019.96	3,019.29	3,021.33	271.73	456,255.90	546,183.34
12,065.00	89.60	268.77	8,886.28	89.49	-3,114.94	3,114.28	3,116.23	271.65	456,254.19	546,088.36
12,160.00	89.83	267.29	8,886.76	86.22	-3,209.88	3,209.24	3,211.04	271.54	456,250.92	545,993.42
12,254.00	92.72	270.02	8,884.66	84.01	-3,303.81	3,303.18	3,304.88	271.46	456,248.71	545,899.49
12,349.00	92.78	269.38	8,880.11	83.52	-3,398.70	3,398.07	3,399.73	271.41	456,248.22	545,804.60
12,444.00	92.72	269.07	8,875.55	82.23	-3,493.58	3,492.96	3,494.55	271.35	456,246.93	545,709.72
12,539.00	92.68	268.90	8,871.07	80.55	-3,588.46	3,587.85	3,589.37	271.29	456,245.25	545,614.84
12,634.00	92.28	269.50	8,866.96	79.23	-3,683.36	3,682.76	3,684.22	271.23	456,243.83	545,519.94
12,728.00	90.67	268.73	8,864.54	77.78	-3,777.32	3,776.72	3,778.12	271.18	456,242.48	545,425.98
12,823.00	90.23	268.63	8,863.80	75.59	-3,872.29	3,871.70	3,873.03	271.12	456,240.29	545,331.01
12,918.00	89.66	268.32	8,863.89	73.06	-3,967.26	3,966.68	3,967.93	271.06	456,237.76	545,236.04
13,013.00	89.50	268.43	8,864.58	70.37	-4,062.21	4,061.66	4,062.82	270.99	456,235.07	545,141.09
13,108.00	90.24	269.73	8,864.80	68.84	-4,157.20	4,156.65	4,157.77	270.95	456,233.54	545,046.10
13,202.00	90.30	270.69	8,864.36	69.19	-4,251.20	4,250.64	4,251.76	270.93	456,233.89	544,952.10
13,297.00	92.08	272.28	8,862.38	71.65	-4,346.14	4,345.57	4,346.73	270.94	456,236.35	544,857.16
13,392.00	94.10	274.02	8,857.26	76.86	-4,440.85	4,440.24	4,441.51	270.89	456,241.56	544,762.45
13,487.00	93.57	274.04	8,850.91	83.52	-4,535.40	4,534.75	4,536.17	271.05	456,248.22	544,667.90
13,578.27	91.51	272.92	8,846.86	89.05	-4,626.40	4,625.71	4,627.26	271.10	456,253.75	544,576.90
Frontier431H LTP										
13,580.55	91.46	272.90	8,846.80	89.17	-4,628.68	4,627.99	4,629.54	271.10	456,253.87	544,574.62
LTP Actual 13580.55' MD										
13,608.00	90.84	272.58	8,846.25	90.48	-4,656.10	4,655.39	4,656.97	271.11	456,255.18	544,547.20
SDI MWD										
13,680.86	90.84	272.56	8,845.18	93.74	-4,728.98	4,728.25	4,729.91	271.14	456,258.44	544,474.32
Frontier431H BHL										
13,682.00	90.84	272.56	8,845.17	93.78	-4,730.01	4,729.29	4,730.94	271.14	456,258.48	544,473.29
Bit Projection										

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,933.12	8,804.64	78.72	-1.16	FTP Actual 8933.12' MD
13,580.55	8,848.80	89.17	-4,628.68	LTP Actual 13580.55' MD
13,608.00	8,846.25	90.48	-4,656.10	SDI MWD
13,682.00	8,845.17	93.78	-4,730.01	Bit Projection

Checked By: _____ Approved By: _____ Date: _____