

**NM OIL CONSERVATION
ARTESIA DISTRICT**

JUN 21 2018

RECEIVED

WPX Energy

Eddy County, New Mexico NAD 83

Cass Draw/Johnson 10-23-27 Fee

Cass Draw 10-23-27 Fee 401H

API: ???

Wellbore #1 30-015-45043

Plan: Plan #1

Standard Planning Report

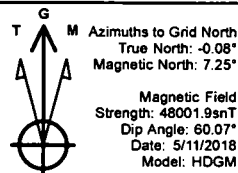
14 May, 2018



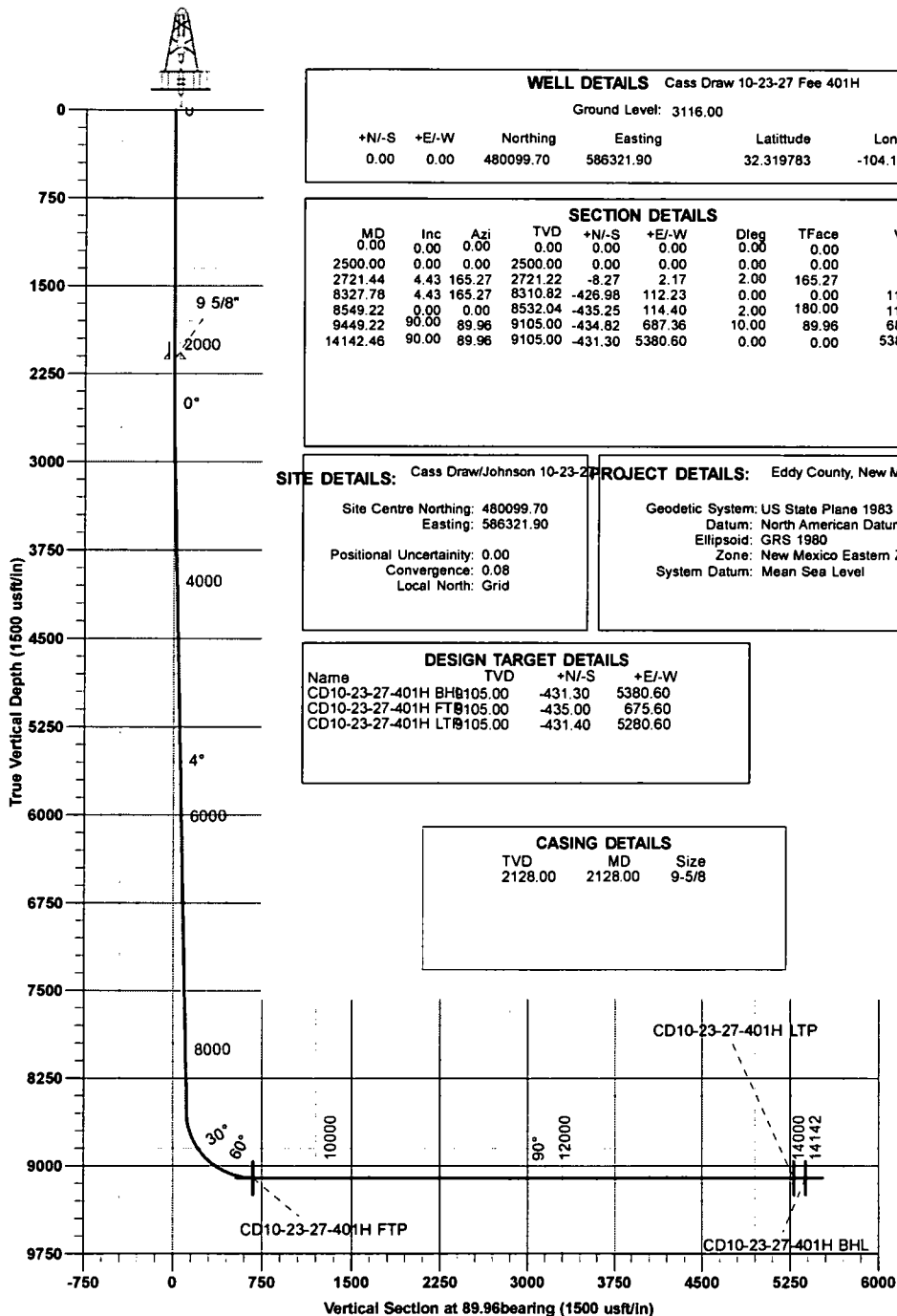
www.scientificdrilling.com

Cass Draw 10-23-27 Fee 401H
Eddy County, New Mexico NAD 83
Northing: 480099.70
Easting: 586321.90
Plan #1

GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
 3116.00



To convert a Magnetic Direction to a Grid Direction, Add 7.26°
 To convert a True Direction to a Grid Direction, Subtract 0.08°



WELL DETAILS Cass Draw 10-23-27 Fee 401H						
Ground Level: 3116.00						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	480099.70	586321.90	32.319783	-104.187709	

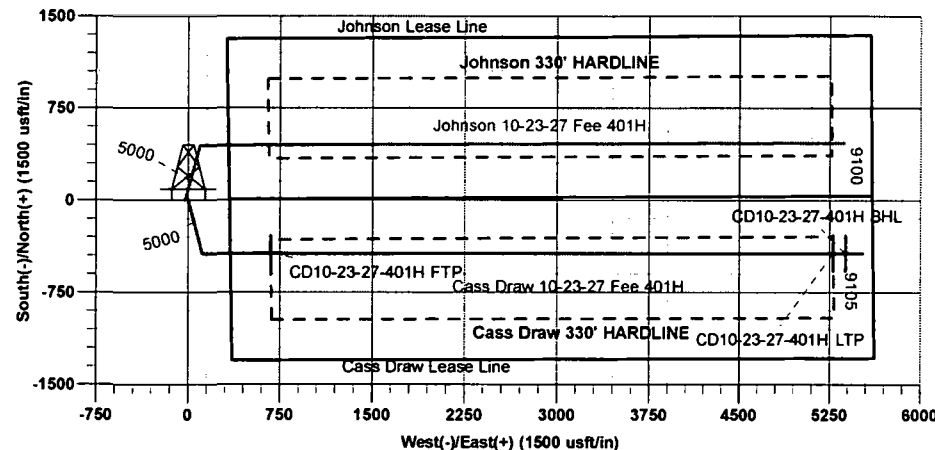
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00
2721.44	4.43	165.27	2721.22	-8.27	2.17	2.00	165.27	2.17	0.00
8327.78	4.43	165.27	8310.82	-426.98	112.23	0.00	0.00	111.93	0.00
8549.22	0.00	0.00	8532.04	-435.25	114.40	2.00	180.00	114.10	0.00
9449.22	90.00	89.96	9105.00	-434.82	687.36	10.00	89.96	687.05	0.00
14142.46	90.00	89.96	9105.00	-431.30	5380.60	0.00	0.00	5380.30	0.00

SITE DETAILS:		PROJECT DETAILS:	
Cass Draw/Johnson 10-23-27 Fee 401H		Eddy County, New Mexico NAD 83	
Site Centre Northing: 480099.70 Easting: 586321.90		Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: New Mexico Eastern Zone System Datum: Mean Sea Level	
Positional Uncertainty: 0.00 Convergence: 0.08 Local North: Grid			

DESIGN TARGET DETAILS			
Name	TVD	+N/-S	+E/-W
CD10-23-27-401H BHL	105.00	-431.30	5380.60
CD10-23-27-401H FTP	105.00	-435.00	675.60
CD10-23-27-401H LTP	105.00	-431.40	5280.60

CASING DETAILS		
TVD	MD	Size
2128.00	2128.00	9-5/8

FORMATION TOP DETAILS	
TVDPath	Formation
2128.00	Cherry Canyon (Base of Salt)
3144.00	Cherry Canyon
4099.00	Brushy Canyon
5571.00	Bone Spring
5940.00	Avalon
6625.00	1st Bone Spring Sand
6874.00	2nd Bone Spring Lime
7264.00	2nd Bone Spring Sand
7430.00	3rd Bone Spring Lime
8659.00	3rd Bone Spring Sand
8990.00	Wolfcamp Top
9017.00	WC_X
9086.00	WC_Y
9093.00	Top Target
9105.00	Landing Point



Scientific Drilling, Intl

Planning Report

Database: Midland District
Company: WPX Energy
Project: Eddy County, New Mexico NAD 83
Site: Cass Draw/Johnson 10-23-27 Fee
Well: Cass Draw 10-23-27 Fee 401H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Cass Draw 10-23-27 Fee 401H
TVD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
MD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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	Cass Draw/Johnson 10-23-27 Fee			
Site Position:		Northing:	480,099.70 usft	Latitude: 32.319783
From:	Map	Easting:	586,321.90 usft	Longitude: -104.187709
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.08 °

Well	Cass Draw 10-23-27 Fee 401H			
Well Position	+N/-S	0.00 usft	Northing:	480,099.70 usft
	+E/-W	0.00 usft	Easting:	586,321.90 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	3,116.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/11/2018	7.33	60.07	48,002

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(bearing)
	0.00	0.00	0.00	89.96

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,721.44	4.43	165.27	2,721.22	-8.27	2.17	2.00	2.00	0.00	165.27	
8,327.78	4.43	165.27	8,310.82	-426.98	112.23	0.00	0.00	0.00	0.00	
8,549.22	0.00	0.00	8,532.04	-435.25	114.40	2.00	-2.00	0.00	180.00	
9,449.22	90.00	89.96	9,105.00	-434.82	687.36	10.00	10.00	10.00	89.96	
14,142.47	90.00	89.96	9,105.00	-431.30	5,380.60	0.00	0.00	0.00	0.00	CD10-23-27-401H BH

Scientific Drilling, Intl

Planning Report

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Site: Cass Draw/Johnson 10-23-27 Fee
Well: Cass Draw 10-23-27 Fee 401H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Cass Draw 10-23-27 Fee 401H
TVD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
MD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,128.00	0.00	0.00	2,128.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon (Base of Salt) - Ø 5/8"									
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	2.00	165.27	2,599.98	-1.69	0.44	0.44	2.00	2.00	0.00
2,700.00	4.00	165.27	2,699.84	-6.75	1.77	1.77	2.00	2.00	0.00
2,721.44	4.43	165.27	2,721.22	-8.27	2.17	2.17	2.00	2.00	0.00
2,800.00	4.43	165.27	2,799.55	-14.14	3.72	3.71	0.00	0.00	0.00
2,900.00	4.43	165.27	2,899.25	-21.61	5.68	5.66	0.00	0.00	0.00
3,000.00	4.43	165.27	2,998.95	-29.08	7.64	7.62	0.00	0.00	0.00
3,100.00	4.43	165.27	3,098.65	-36.55	9.61	9.58	0.00	0.00	0.00
3,145.49	4.43	165.27	3,144.00	-39.94	10.50	10.47	0.00	0.00	0.00
Cherry Canyon									
3,200.00	4.43	165.27	3,198.35	-44.01	11.57	11.54	0.00	0.00	0.00
3,300.00	4.43	165.27	3,298.05	-51.48	13.53	13.50	0.00	0.00	0.00
3,400.00	4.43	165.27	3,397.75	-58.95	15.49	15.45	0.00	0.00	0.00
3,500.00	4.43	165.27	3,497.45	-66.42	17.46	17.41	0.00	0.00	0.00
3,600.00	4.43	165.27	3,597.16	-73.89	19.42	19.37	0.00	0.00	0.00
3,700.00	4.43	165.27	3,696.86	-81.36	21.38	21.33	0.00	0.00	0.00
3,800.00	4.43	165.27	3,796.56	-88.82	23.35	23.28	0.00	0.00	0.00
3,900.00	4.43	165.27	3,896.26	-96.29	25.31	25.24	0.00	0.00	0.00
4,000.00	4.43	165.27	3,995.96	-103.76	27.27	27.20	0.00	0.00	0.00
4,100.00	4.43	165.27	4,095.66	-111.23	29.24	29.16	0.00	0.00	0.00
4,103.35	4.43	165.27	4,099.00	-111.48	29.30	29.22	0.00	0.00	0.00
Brushy Canyon									
4,200.00	4.43	165.27	4,195.36	-118.70	31.20	31.12	0.00	0.00	0.00
4,300.00	4.43	165.27	4,295.07	-126.17	33.16	33.07	0.00	0.00	0.00
4,400.00	4.43	165.27	4,394.77	-133.63	35.12	35.03	0.00	0.00	0.00
4,500.00	4.43	165.27	4,494.47	-141.10	37.09	36.99	0.00	0.00	0.00

Scientific Drilling, Intl

Planning Report

Database: Midland District
 Company: WPX Energy
 Project: Eddy County, New Mexico NAD 83
 Site: Cass Draw/Johnson 10-23-27 Fee
 Well: Cass Draw 10-23-27 Fee 401H
 Wellbore: Wellbore #1
 Design: Plan #1

Local Co-ordinate Reference: Well Cass Draw 10-23-27 Fee 401H
 TVD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
 MD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	4.43	165.27	4,594.17	-148.57	39.05	38.95	0.00	0.00	0.00
4,700.00	4.43	165.27	4,693.87	-156.04	41.01	40.90	0.00	0.00	0.00
4,800.00	4.43	165.27	4,793.57	-163.51	42.98	42.86	0.00	0.00	0.00
4,900.00	4.43	165.27	4,893.27	-170.98	44.94	44.82	0.00	0.00	0.00
5,000.00	4.43	165.27	4,992.98	-178.44	46.90	46.78	0.00	0.00	0.00
5,100.00	4.43	165.27	5,092.68	-185.91	48.87	48.74	0.00	0.00	0.00
5,200.00	4.43	165.27	5,192.38	-193.38	50.83	50.69	0.00	0.00	0.00
5,300.00	4.43	165.27	5,292.08	-200.85	52.79	52.65	0.00	0.00	0.00
5,400.00	4.43	165.27	5,391.78	-208.32	54.75	54.61	0.00	0.00	0.00
5,500.00	4.43	165.27	5,491.48	-215.79	56.72	56.57	0.00	0.00	0.00
5,579.76	4.43	165.27	5,571.00	-221.74	58.28	58.13	0.00	0.00	0.00
Bone Spring									
5,600.00	4.43	165.27	5,591.18	-223.26	58.68	58.52	0.00	0.00	0.00
5,700.00	4.43	165.27	5,690.89	-230.72	60.64	60.48	0.00	0.00	0.00
5,800.00	4.43	165.27	5,790.59	-238.19	62.61	62.44	0.00	0.00	0.00
5,900.00	4.43	165.27	5,890.29	-245.66	64.57	64.40	0.00	0.00	0.00
5,949.86	4.43	165.27	5,940.00	-249.38	65.55	65.37	0.00	0.00	0.00
Avalon									
6,000.00	4.43	165.27	5,989.99	-253.13	66.53	66.36	0.00	0.00	0.00
6,100.00	4.43	165.27	6,089.69	-260.60	68.49	68.31	0.00	0.00	0.00
6,200.00	4.43	165.27	6,189.39	-268.07	70.46	70.27	0.00	0.00	0.00
6,300.00	4.43	165.27	6,289.09	-275.53	72.42	72.23	0.00	0.00	0.00
6,400.00	4.43	165.27	6,388.80	-283.00	74.38	74.19	0.00	0.00	0.00
6,500.00	4.43	165.27	6,488.50	-290.47	76.35	76.14	0.00	0.00	0.00
6,600.00	4.43	165.27	6,588.20	-297.94	78.31	78.10	0.00	0.00	0.00
6,636.91	4.43	165.27	6,625.00	-300.70	79.03	78.82	0.00	0.00	0.00
1st Bone Spring Sand									
6,700.00	4.43	165.27	6,687.90	-305.41	80.27	80.06	0.00	0.00	0.00
6,800.00	4.43	165.27	6,787.60	-312.88	82.24	82.02	0.00	0.00	0.00
6,886.66	4.43	165.27	6,874.00	-319.35	83.94	83.71	0.00	0.00	0.00
2nd Bone Spring Lime									
6,900.00	4.43	165.27	6,887.30	-320.34	84.20	83.97	0.00	0.00	0.00
7,000.00	4.43	165.27	6,987.00	-327.81	86.16	85.93	0.00	0.00	0.00
7,100.00	4.43	165.27	7,086.71	-335.28	88.12	87.89	0.00	0.00	0.00
7,200.00	4.43	165.27	7,186.41	-342.75	90.09	89.85	0.00	0.00	0.00
7,277.83	4.43	165.27	7,264.00	-348.56	91.62	91.37	0.00	0.00	0.00
2nd Bone Spring Sand									
7,300.00	4.43	165.27	7,286.11	-350.22	92.05	91.81	0.00	0.00	0.00
7,400.00	4.43	165.27	7,385.81	-357.69	94.01	93.76	0.00	0.00	0.00
7,444.32	4.43	165.27	7,430.00	-361.00	94.88	94.63	0.00	0.00	0.00
3rd Bone Spring Lime									
7,500.00	4.43	165.27	7,485.51	-365.15	95.98	95.72	0.00	0.00	0.00
7,600.00	4.43	165.27	7,585.21	-372.62	97.94	97.68	0.00	0.00	0.00
7,700.00	4.43	165.27	7,684.91	-380.09	99.90	99.64	0.00	0.00	0.00
7,800.00	4.43	165.27	7,784.62	-387.56	101.87	101.59	0.00	0.00	0.00
7,900.00	4.43	165.27	7,884.32	-395.03	103.83	103.55	0.00	0.00	0.00
8,000.00	4.43	165.27	7,984.02	-402.50	105.79	105.51	0.00	0.00	0.00
8,100.00	4.43	165.27	8,083.72	-409.97	107.75	107.47	0.00	0.00	0.00
8,200.00	4.43	165.27	8,183.42	-417.43	109.72	109.43	0.00	0.00	0.00
8,300.00	4.43	165.27	8,283.12	-424.90	111.68	111.38	0.00	0.00	0.00
8,327.78	4.43	165.27	8,310.82	-426.98	112.23	111.93	0.00	0.00	0.00
8,400.00	2.98	165.27	8,382.89	-431.49	113.41	113.11	2.00	-2.00	0.00
8,500.00	0.98	165.27	8,482.82	-434.84	114.29	113.99	2.00	-2.00	0.00

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Planning Report

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 Wellbore: Wellbore #1
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Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,549.22	0.00	0.00	8,532.04	-435.25	114.40	114.10	2.00	-2.00	0.00
8,600.00	5.08	89.96	8,582.75	-435.25	116.65	116.34	10.00	10.00	0.00
8,650.00	10.08	89.96	8,632.30	-435.24	123.24	122.94	10.00	10.00	0.00
8,677.24	12.80	89.96	8,659.00	-435.24	128.64	128.34	10.00	10.00	0.00
3rd Bone Spring Sand									
8,700.00	15.08	89.96	8,681.08	-435.24	134.13	133.82	10.00	10.00	0.00
8,750.00	20.08	89.96	8,728.73	-435.22	149.22	148.92	10.00	10.00	0.00
8,800.00	25.08	89.96	8,774.89	-435.21	168.41	168.11	10.00	10.00	0.00
8,850.00	30.08	89.96	8,819.19	-435.19	191.55	191.25	10.00	10.00	0.00
8,900.00	35.08	89.96	8,861.31	-435.17	218.47	218.16	10.00	10.00	0.00
8,950.00	40.08	89.96	8,900.93	-435.15	248.95	248.64	10.00	10.00	0.00
9,000.00	45.08	89.96	8,937.73	-435.12	282.77	282.46	10.00	10.00	0.00
9,050.00	50.08	89.96	8,971.45	-435.10	319.66	319.36	10.00	10.00	0.00
9,079.85	53.06	89.96	8,990.00	-435.08	343.04	342.74	10.00	10.00	0.00
Wolfcamp Top									
9,100.00	55.08	89.96	9,001.83	-435.07	359.36	359.06	10.00	10.00	0.00
9,127.46	57.82	89.96	9,017.00	-435.05	382.24	381.94	10.00	10.00	0.00
WC_X									
9,150.00	60.08	89.96	9,028.63	-435.03	401.55	401.25	10.00	10.00	0.00
9,200.00	65.08	89.96	9,051.64	-435.00	445.92	445.62	10.00	10.00	0.00
9,250.00	70.08	89.96	9,070.71	-434.97	492.13	491.82	10.00	10.00	0.00
9,300.00	75.08	89.96	9,085.68	-434.93	539.82	539.51	10.00	10.00	0.00
9,301.26	75.20	89.96	9,086.00	-434.93	541.04	540.74	10.00	10.00	0.00
WC_Y									
9,331.76	78.25	89.96	9,093.00	-434.91	570.72	570.42	10.00	10.00	0.00
Top Target									
9,350.00	80.08	89.96	9,096.43	-434.89	588.63	588.33	10.00	10.00	0.00
9,400.00	85.08	89.96	9,102.89	-434.86	638.20	637.89	10.00	10.00	0.00
9,449.22	90.00	89.96	9,105.00	-434.82	687.36	687.05	10.00	10.00	0.00
Landing Point									
9,500.00	90.00	89.96	9,105.00	-434.78	738.14	737.83	0.00	0.00	0.00
9,600.00	90.00	89.96	9,105.00	-434.71	838.14	837.83	0.00	0.00	0.00
9,700.00	90.00	89.96	9,105.00	-434.63	938.14	937.83	0.00	0.00	0.00
9,800.00	90.00	89.96	9,105.00	-434.56	1,038.14	1,037.83	0.00	0.00	0.00
9,900.00	90.00	89.96	9,105.00	-434.48	1,138.14	1,137.83	0.00	0.00	0.00
10,000.00	90.00	89.96	9,105.00	-434.41	1,238.14	1,237.83	0.00	0.00	0.00
10,100.00	90.00	89.96	9,105.00	-434.33	1,338.14	1,337.83	0.00	0.00	0.00
10,200.00	90.00	89.96	9,105.00	-434.26	1,438.14	1,437.83	0.00	0.00	0.00
10,300.00	90.00	89.96	9,105.00	-434.18	1,538.14	1,537.83	0.00	0.00	0.00
10,400.00	90.00	89.96	9,105.00	-434.11	1,638.14	1,637.83	0.00	0.00	0.00
10,500.00	90.00	89.96	9,105.00	-434.03	1,738.14	1,737.83	0.00	0.00	0.00
10,600.00	90.00	89.96	9,105.00	-433.96	1,838.14	1,837.83	0.00	0.00	0.00
10,700.00	90.00	89.96	9,105.00	-433.88	1,938.14	1,937.83	0.00	0.00	0.00
10,800.00	90.00	89.96	9,105.00	-433.81	2,038.14	2,037.83	0.00	0.00	0.00
10,900.00	90.00	89.96	9,105.00	-433.73	2,138.14	2,137.83	0.00	0.00	0.00
11,000.00	90.00	89.96	9,105.00	-433.66	2,238.14	2,237.83	0.00	0.00	0.00
11,100.00	90.00	89.96	9,105.00	-433.58	2,338.14	2,337.83	0.00	0.00	0.00
11,200.00	90.00	89.96	9,105.00	-433.51	2,438.14	2,437.83	0.00	0.00	0.00
11,300.00	90.00	89.96	9,105.00	-433.43	2,538.14	2,537.83	0.00	0.00	0.00
11,400.00	90.00	89.96	9,105.00	-433.36	2,638.14	2,637.83	0.00	0.00	0.00
11,500.00	90.00	89.96	9,105.00	-433.28	2,738.14	2,737.83	0.00	0.00	0.00
11,600.00	90.00	89.96	9,105.00	-433.21	2,838.14	2,837.83	0.00	0.00	0.00
11,700.00	90.00	89.96	9,105.00	-433.13	2,938.14	2,937.83	0.00	0.00	0.00

Scientific Drilling, Intl

Planning Report

Database: Midland District
 Company: WPX Energy
 Project: Eddy County, New Mexico NAD 83
 Site: Cass Draw/Johnson 10-23-27 Fee
 Well: Cass Draw 10-23-27 Fee 401H
 Wellbore: Wellbore #1
 Design: Plan #1

Local Co-ordinate Reference: Well Cass Draw 10-23-27 Fee 401H
 TVD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
 MD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,800.00	90.00	89.96	9,105.00	-433.06	3,038.14	3,037.83	0.00	0.00	0.00
11,900.00	90.00	89.96	9,105.00	-432.98	3,138.14	3,137.83	0.00	0.00	0.00
12,000.00	90.00	89.96	9,105.00	-432.91	3,238.14	3,237.83	0.00	0.00	0.00
12,100.00	90.00	89.96	9,105.00	-432.83	3,338.14	3,337.83	0.00	0.00	0.00
12,200.00	90.00	89.96	9,105.00	-432.76	3,438.14	3,437.83	0.00	0.00	0.00
12,300.00	90.00	89.96	9,105.00	-432.68	3,538.14	3,537.83	0.00	0.00	0.00
12,400.00	90.00	89.96	9,105.00	-432.61	3,638.14	3,637.83	0.00	0.00	0.00
12,500.00	90.00	89.96	9,105.00	-432.53	3,738.14	3,737.83	0.00	0.00	0.00
12,600.00	90.00	89.96	9,105.00	-432.46	3,838.14	3,837.83	0.00	0.00	0.00
12,700.00	90.00	89.96	9,105.00	-432.38	3,938.14	3,937.83	0.00	0.00	0.00
12,800.00	90.00	89.96	9,105.00	-432.31	4,038.14	4,037.83	0.00	0.00	0.00
12,900.00	90.00	89.96	9,105.00	-432.23	4,138.14	4,137.83	0.00	0.00	0.00
13,000.00	90.00	89.96	9,105.00	-432.16	4,238.14	4,237.83	0.00	0.00	0.00
13,100.00	90.00	89.96	9,105.00	-432.08	4,338.14	4,337.83	0.00	0.00	0.00
13,200.00	90.00	89.96	9,105.00	-432.01	4,438.14	4,437.83	0.00	0.00	0.00
13,300.00	90.00	89.96	9,105.00	-431.93	4,538.14	4,537.83	0.00	0.00	0.00
13,400.00	90.00	89.96	9,105.00	-431.86	4,638.14	4,637.83	0.00	0.00	0.00
13,500.00	90.00	89.96	9,105.00	-431.78	4,738.14	4,737.83	0.00	0.00	0.00
13,600.00	90.00	89.96	9,105.00	-431.71	4,838.14	4,837.83	0.00	0.00	0.00
13,700.00	90.00	89.96	9,105.00	-431.63	4,938.14	4,937.83	0.00	0.00	0.00
13,800.00	90.00	89.96	9,105.00	-431.56	5,038.14	5,037.83	0.00	0.00	0.00
13,900.00	90.00	89.96	9,105.00	-431.48	5,138.14	5,137.83	0.00	0.00	0.00
14,000.00	90.00	89.96	9,105.00	-431.41	5,238.14	5,237.83	0.00	0.00	0.00
14,100.00	90.00	89.96	9,105.00	-431.33	5,338.14	5,337.83	0.00	0.00	0.00
14,142.47	90.00	89.96	9,105.00	-431.30	5,380.60	5,380.30	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CD10-23-27-401H FTP	0.00	0.00	9,105.00	-435.00	675.60	479,664.70	586,997.50	32.318584	-104.185524
- hit/miss target									
- Shape									
- plan misses target center by 0.21usft at 9437.47usft MD (9104.88 TVD, -434.83 N, 675.61 E)									
- Point									
CD10-23-27-401H BHL	0.00	0.00	9,105.00	-431.30	5,380.60	479,668.40	591,702.50	32.318576	-104.170293
- plan hits target center									
- Point									
CD10-23-27-401H LTP	0.00	0.00	9,105.00	-431.40	5,280.60	479,668.30	591,602.50	32.318576	-104.170617
- plan misses target center by 0.02usft at 14042.46usft MD (9105.00 TVD, -431.38 N, 5280.60 E)									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,128.00	2,128.00	9 5/8"	9-5/8	12-1/4

Scientific Drilling, Intl

Planning Report

Database: Midland District
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Project: Eddy County, New Mexico NAD 83
Site: Cass Draw/Johnson 10-23-27 Fee
Well: Cass Draw 10-23-27 Fee 401H
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Design: Plan #1

Local Co-ordinate Reference: Well Cass Draw 10-23-27 Fee 401H
TVD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
MD Reference: GL 3116 + RKB 30 = @ 3146.00usft (HP 265)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)
2,128.00	2,128.00	Bell Canyon (Base of Salt)			
3,145.49	3,144.00	Cherry Canyon			
4,103.35	4,099.00	Brushy Canyon			
5,579.76	5,571.00	Bone Spring			
5,949.86	5,940.00	Avalon			
6,636.91	6,625.00	1st Bone Spring Sand			
6,886.66	6,874.00	2nd Bone Spring Lime			
7,277.83	7,264.00	2nd Bone Spring Sand			
7,444.32	7,430.00	3rd Bone Spring Lime			
8,677.24	8,659.00	3rd Bone Spring Sand			
9,079.85	8,990.00	Wolfcamp Top			
9,127.46	9,017.00	WC_X			
9,301.26	9,086.00	WC_Y			
9,331.76	9,093.00	Top Target			
9,449.22	9,105.00	Landing Point			