

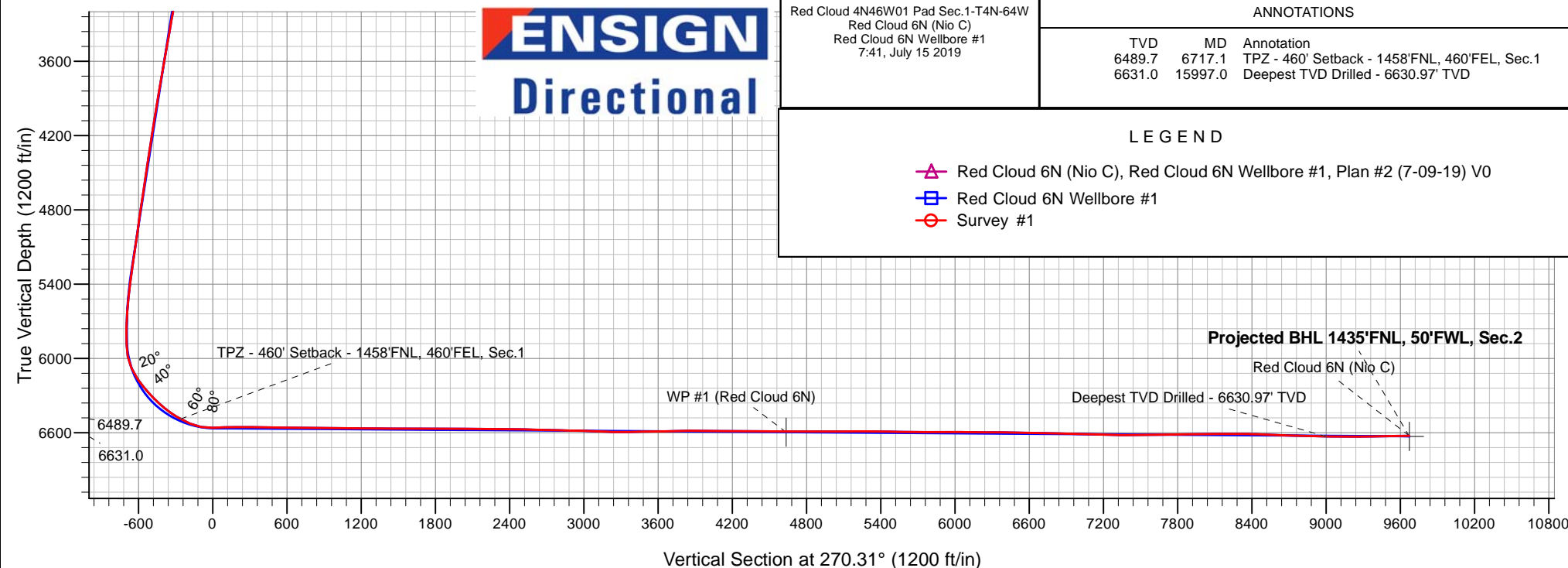
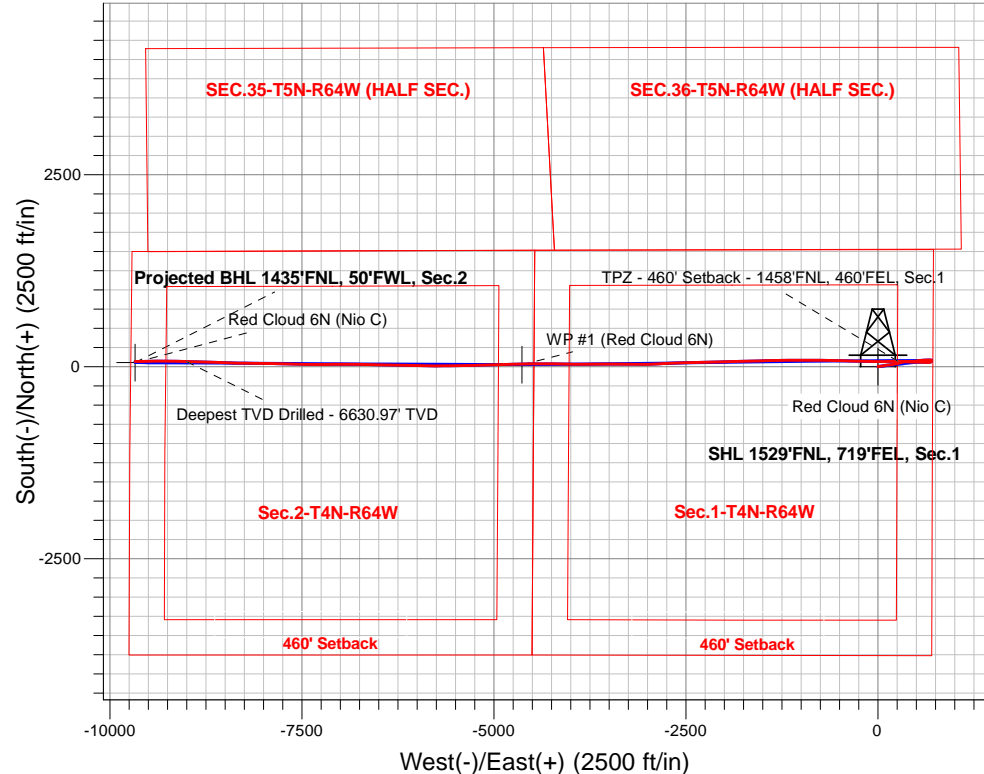
PDC Energy Inc. DJ Basin

Well Name: **Red Cloud 6N (Nio C)**

Surface Location: Red Cloud 4N46W01 Pad Sec.1-T4N-64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4602.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1369932.63280930.23 40.344484 -104.492115
 Original Well Elev WELL @ 4625.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
16,667'MD 6625'TVD 66'N & 9672'W of SHL
91.08 degree Incl @ 268.71 degree AZM





PDC Energy Inc. DJ Basin

SEC.1-T4N-R64W

Red Cloud 4N46W01 Pad Sec.1-T4N-64W

Red Cloud 6N (Nio C)

Red Cloud 6N Wellbore #1

Survey: Survey #1

Standard Survey Report

15 July, 2019

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Red Cloud 6N (Nio C)
Project:	SEC.1-T4N-R64W	TVD Reference:	WELL @ 4625.0ft (Original Well Elev)
Site:	Red Cloud 4N46W01 Pad Sec.1-T4N-64W	MD Reference:	WELL @ 4625.0ft (Original Well Elev)
Well:	Red Cloud 6N (Nio C)	North Reference:	True
Wellbore:	Red Cloud 6N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Red Cloud 6N Wellbore #1	Database:	US_EDM

Project	SEC.1-T4N-R64W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Red Cloud 4N46W01 Pad Sec.1-T4N-64W				
Site Position:		Northing:	1,369,932.80 usft	Latitude:	40.344481
From:	Lat/Long	Easting:	3,281,020.19 usft	Longitude:	-104.491793
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.65 °

Well	Red Cloud 6N (Nio C)					
Well Position	+N-S	0.0 ft	Northing:	1,369,932.61 usft	Latitude:	40.344484
	+E-W	0.0 ft	Easting:	3,280,930.24 usft	Longitude:	-104.492115
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,602.0 ft

Wellbore	Red Cloud 6N Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/9/2019	8.08	66.88	52,138

Design	Red Cloud 6N Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	270.31	

Survey Program	Date	7/15/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
155.0	16,667.0	Survey #1 (Red Cloud 6N Wellbore #1)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	38.98	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 1529'FNL, 719'FEL, Sec.1									
155.0	0.15	38.98	155.0	0.2	0.1	-0.1	0.10	0.10	0.00
250.0	0.20	79.28	250.0	0.3	0.4	-0.4	0.14	0.05	42.42
346.0	0.30	70.46	346.0	0.4	0.8	-0.8	0.11	0.10	-9.19
441.0	0.13	71.49	441.0	0.5	1.1	-1.1	0.18	-0.18	1.08
536.0	0.07	47.15	536.0	0.6	1.3	-1.2	0.08	-0.06	-25.62
631.0	0.06	61.64	631.0	0.7	1.3	-1.3	0.02	-0.01	15.25
725.0	0.03	355.27	725.0	0.7	1.4	-1.4	0.06	-0.03	-70.61
821.0	1.48	76.22	821.0	1.0	2.6	-2.6	1.54	1.51	84.32

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Red Cloud 6N (Nio C)
Project:	SEC.1-T4N-R64W	TVD Reference:	WELL @ 4625.0ft (Original Well Elev)
Site:	Red Cloud 4N46W01 Pad Sec.1-T4N-64W	MD Reference:	WELL @ 4625.0ft (Original Well Elev)
Well:	Red Cloud 6N (Nio C)	North Reference:	True
Wellbore:	Red Cloud 6N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Red Cloud 6N Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
915.0	3.69	74.69	914.9	2.1	6.7	-6.7	2.35	2.35	-1.63
1,010.0	5.93	83.49	1,009.5	3.5	14.5	-14.5	2.48	2.36	9.26
1,106.0	6.24	84.64	1,105.0	4.5	24.6	-24.6	0.35	0.32	1.20
1,201.0	6.56	82.38	1,199.4	5.7	35.1	-35.1	0.43	0.34	-2.38
1,296.0	6.75	82.23	1,293.8	7.2	46.1	-46.0	0.20	0.20	-0.16
1,392.0	8.11	80.77	1,389.0	9.0	58.3	-58.3	1.43	1.42	-1.52
1,487.0	7.65	80.21	1,483.1	11.2	71.2	-71.1	0.49	-0.48	-0.59
1,581.0	7.38	79.15	1,576.3	13.4	83.3	-83.2	0.32	-0.29	-1.13
1,636.0	7.06	77.84	1,630.8	14.8	90.0	-90.0	0.65	-0.58	-2.38
1,771.0	6.15	78.55	1,764.9	18.0	105.2	-105.1	0.68	-0.67	0.53
1,865.0	7.16	84.30	1,858.3	19.5	116.0	-115.9	1.29	1.07	6.12
1,960.0	8.04	82.64	1,952.5	21.0	128.5	-128.4	0.95	0.93	-1.75
2,056.0	9.44	82.92	2,047.3	22.8	143.0	-142.8	1.46	1.46	0.29
2,245.0	8.79	84.05	2,234.0	26.2	172.7	-172.6	0.36	-0.34	0.60
2,340.0	8.24	83.75	2,327.9	27.7	186.7	-186.5	0.58	-0.58	-0.32
2,434.0	7.57	84.06	2,421.0	29.1	199.5	-199.4	0.71	-0.71	0.33
2,529.0	8.88	78.77	2,515.0	31.2	213.0	-212.8	1.59	1.38	-5.57
2,623.0	9.30	74.98	2,607.9	34.5	227.4	-227.2	0.78	0.45	-4.03
2,718.0	9.24	75.89	2,701.6	38.4	242.2	-242.0	0.17	-0.06	0.96
2,812.0	9.06	75.99	2,794.4	42.0	256.7	-256.5	0.19	-0.19	0.11
2,907.0	9.03	74.91	2,888.2	45.8	271.2	-270.9	0.18	-0.03	-1.14
3,001.0	8.76	74.50	2,981.1	49.6	285.2	-284.9	0.30	-0.29	-0.44
3,095.0	9.79	73.76	3,073.9	53.8	299.8	-299.5	1.10	1.10	-0.79
3,189.0	10.50	81.81	3,166.4	57.2	315.9	-315.6	1.69	0.76	8.56
3,285.0	9.90	79.70	3,260.9	59.9	332.7	-332.4	0.74	-0.63	-2.20
3,379.0	9.14	79.04	3,353.6	62.8	348.0	-347.6	0.82	-0.81	-0.70
3,474.0	9.79	83.74	3,447.3	65.1	363.4	-363.1	1.06	0.68	4.95
3,665.0	10.41	90.47	3,635.4	66.7	396.8	-396.5	0.70	0.32	3.52
3,760.0	10.23	90.81	3,728.8	66.6	413.8	-413.5	0.20	-0.19	0.36
3,855.0	10.06	89.60	3,822.3	66.5	430.6	-430.2	0.29	-0.18	-1.27
3,950.0	9.68	86.12	3,915.9	67.1	446.8	-446.5	0.74	-0.40	-3.66
4,045.0	9.30	83.96	4,009.6	68.4	462.4	-462.1	0.55	-0.40	-2.27
4,140.0	8.89	83.02	4,103.4	70.1	477.4	-477.0	0.46	-0.43	-0.99
4,235.0	8.65	82.17	4,197.3	72.0	491.7	-491.3	0.29	-0.25	-0.89
4,330.0	8.44	79.35	4,291.3	74.3	505.6	-505.2	0.49	-0.22	-2.97
4,425.0	8.73	78.67	4,385.2	77.0	519.6	-519.1	0.32	0.31	-0.72
4,520.0	8.71	79.01	4,479.1	79.8	533.7	-533.3	0.06	-0.02	0.36
4,615.0	9.26	87.64	4,572.9	81.4	548.4	-548.0	1.53	0.58	9.08
4,711.0	8.99	87.79	4,667.7	82.1	563.6	-563.2	0.28	-0.28	0.16
4,901.0	8.05	85.17	4,855.6	83.7	591.7	-591.2	0.54	-0.49	-1.38
4,996.0	7.73	84.30	4,949.7	84.9	604.7	-604.2	0.36	-0.34	-0.92
5,090.0	8.37	87.67	5,042.8	85.8	617.8	-617.3	0.85	0.68	3.59
5,186.0	7.91	87.36	5,137.8	86.4	631.4	-630.9	0.48	-0.48	-0.32

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Project:	SEC.1-T4N-R64W	TVD Reference:	WELL @ 4625.0ft (Original Well Elev)
Site:	Red Cloud 4N46W01 Pad Sec.1-T4N-64W	MD Reference:	WELL @ 4625.0ft (Original Well Elev)
Well:	Red Cloud 6N (Nio C)	North Reference:	True
Wellbore:	Red Cloud 6N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Red Cloud 6N Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,280.0	7.99	89.39	5,230.9	86.8	644.4	-643.9	0.31	0.09	2.16
5,375.0	7.65	89.21	5,325.0	87.0	657.3	-656.8	0.36	-0.36	-0.19
5,469.0	7.38	88.11	5,418.2	87.2	669.6	-669.1	0.33	-0.29	-1.17
5,564.0	7.14	88.49	5,512.5	87.6	681.6	-681.1	0.26	-0.25	0.40
5,659.0	3.86	112.18	5,607.0	86.5	690.5	-690.0	4.13	-3.45	24.94
5,755.0	3.46	148.31	5,702.9	82.9	695.0	-694.5	2.40	-0.42	37.64
5,850.0	3.05	155.17	5,797.7	78.1	697.5	-697.1	0.59	-0.43	7.22
5,945.0	6.86	199.00	5,892.4	70.5	696.8	-696.4	5.38	4.01	46.14
6,040.0	12.39	241.38	5,986.1	60.2	685.9	-685.6	9.10	5.82	44.61
6,136.0	23.81	265.81	6,077.3	53.8	657.4	-657.2	14.04	11.90	25.45
6,231.0	34.12	274.46	6,160.3	54.5	611.6	-611.3	11.69	10.85	9.11
6,326.0	40.18	272.51	6,236.0	57.9	554.4	-554.1	6.50	6.38	-2.05
6,421.0	43.56	270.59	6,306.8	59.6	491.0	-490.7	3.80	3.56	-2.02
6,516.0	48.31	272.20	6,372.8	61.3	422.8	-422.5	5.15	5.00	1.69
6,611.0	54.12	274.63	6,432.3	65.8	348.9	-348.6	6.43	6.12	2.56
6,706.0	59.66	272.51	6,484.2	70.7	269.5	-269.2	6.12	5.83	-2.23
6,717.1	60.46	271.89	6,489.7	71.0	259.9	-259.5	8.71	7.24	-5.59
TPZ - 460' Setback - 1458'FNL, 460'FEL, Sec.1									
6,801.0	66.62	267.49	6,527.1	70.6	184.9	-184.5	8.71	7.34	-5.24
6,896.0	79.95	266.43	6,554.4	65.7	94.2	-93.9	14.07	14.03	-1.12
6,992.0	92.94	271.32	6,560.3	63.9	-1.3	1.7	14.45	13.53	5.09
7,008.0	92.56	271.41	6,559.5	64.2	-17.4	17.7	2.41	-2.35	0.55
LPL 1450'FNL, 737'FEL, Sec.1									
7,087.0	90.71	271.84	6,557.3	66.5	-96.2	96.6	2.41	-2.35	0.55
7,182.0	90.62	271.66	6,556.2	69.4	-191.2	191.6	0.21	-0.09	-0.19
7,306.0	89.65	271.84	6,555.9	73.2	-315.1	315.5	0.80	-0.78	0.15
7,402.0	89.23	271.87	6,556.8	76.3	-411.1	411.5	0.44	-0.44	0.03
7,497.0	89.23	271.21	6,558.1	78.8	-506.0	506.5	0.69	0.00	-0.69
7,593.0	89.41	271.28	6,559.2	80.9	-602.0	602.4	0.20	0.19	0.07
7,784.0	88.99	270.14	6,561.9	83.3	-793.0	793.4	0.64	-0.22	-0.60
7,975.0	89.74	269.90	6,564.0	83.3	-984.0	984.4	0.41	0.39	-0.13
8,071.0	89.90	269.87	6,564.3	83.2	-1,080.0	1,080.4	0.17	0.17	-0.03
8,167.0	90.08	269.87	6,564.3	82.9	-1,176.0	1,176.4	0.19	0.19	0.00
8,262.0	89.10	268.66	6,565.0	81.7	-1,270.9	1,271.4	1.64	-1.03	-1.27
8,358.0	89.43	268.76	6,566.3	79.6	-1,366.9	1,367.3	0.36	0.34	0.10
8,453.0	89.41	268.51	6,567.2	77.3	-1,461.9	1,462.3	0.26	-0.02	-0.26
8,548.0	89.69	268.59	6,568.0	74.9	-1,556.8	1,557.2	0.31	0.29	0.08
8,644.0	89.89	268.45	6,568.3	72.4	-1,652.8	1,653.2	0.25	0.21	-0.15
8,739.0	89.67	268.36	6,568.7	69.8	-1,747.8	1,748.1	0.25	-0.23	-0.09
8,835.0	89.93	268.64	6,569.0	67.3	-1,843.7	1,844.1	0.40	0.27	0.29
8,930.0	89.87	268.76	6,569.2	65.1	-1,938.7	1,939.0	0.14	-0.06	0.13
9,025.0	89.72	268.82	6,569.5	63.1	-2,033.7	2,034.0	0.17	-0.16	0.06
9,121.0	89.60	268.65	6,570.1	61.0	-2,129.7	2,130.0	0.22	-0.13	-0.18
9,216.0	89.52	268.71	6,570.8	58.8	-2,224.6	2,224.9	0.11	-0.08	0.06

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Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,311.0	89.52	268.65	6,571.6	56.6	-2,319.6	2,319.9	0.06	0.00	-0.06
9,406.0	89.17	268.22	6,572.7	54.0	-2,414.6	2,414.8	0.58	-0.37	-0.45
9,502.0	89.03	267.99	6,574.2	50.8	-2,510.5	2,510.7	0.28	-0.15	-0.24
9,598.0	88.87	267.96	6,576.0	47.4	-2,606.4	2,606.7	0.17	-0.17	-0.03
9,693.0	88.57	267.70	6,578.1	43.8	-2,701.3	2,701.5	0.42	-0.32	-0.27
9,789.0	88.48	267.41	6,580.6	39.7	-2,797.2	2,797.4	0.32	-0.09	-0.30
9,884.0	88.82	267.16	6,582.8	35.2	-2,892.1	2,892.2	0.44	0.36	-0.26
9,980.0	88.61	267.39	6,585.0	30.7	-2,988.0	2,988.1	0.32	-0.22	0.24
10,075.0	87.74	270.82	6,588.0	29.2	-3,082.9	3,083.0	3.72	-0.92	3.61
10,170.0	87.01	271.59	6,592.3	31.2	-3,177.8	3,177.9	1.12	-0.77	0.81
10,266.0	90.20	270.16	6,594.7	32.7	-3,273.7	3,273.8	3.64	3.32	-1.49
10,362.0	90.92	270.39	6,593.7	33.1	-3,369.7	3,369.8	0.79	0.75	0.24
10,457.0	90.74	269.97	6,592.4	33.4	-3,464.7	3,464.8	0.48	-0.19	-0.44
10,552.0	90.94	269.89	6,591.0	33.3	-3,559.7	3,559.8	0.23	0.21	-0.08
10,648.0	91.15	270.02	6,589.2	33.2	-3,655.7	3,655.8	0.26	0.22	0.14
10,839.0	91.31	268.24	6,585.1	30.3	-3,846.6	3,846.7	0.94	0.08	-0.93
10,935.0	89.43	271.75	6,584.5	30.3	-3,942.6	3,942.7	4.15	-1.96	3.66
11,031.0	89.24	271.59	6,585.6	33.1	-4,038.5	4,038.6	0.26	-0.20	-0.17
11,222.0	89.20	271.10	6,588.2	37.6	-4,229.4	4,229.6	0.26	-0.02	-0.26
11,317.0	89.58	269.99	6,589.2	38.5	-4,324.4	4,324.6	1.23	0.40	-1.17
11,413.0	90.06	269.31	6,589.5	37.9	-4,420.4	4,420.6	0.87	0.50	-0.71
11,508.0	90.01	269.15	6,589.5	36.6	-4,515.4	4,515.6	0.18	-0.05	-0.17
11,604.0	89.66	269.06	6,589.7	35.1	-4,611.4	4,611.5	0.38	-0.36	-0.09
11,628.7	89.76	269.03	6,589.9	34.7	-4,636.1	4,636.3	0.43	0.41	-0.12
WP #1 (Red Cloud 6N)									
11,699.0	90.05	268.95	6,590.0	33.5	-4,706.4	4,706.5	0.43	0.41	-0.12
11,795.0	89.71	268.38	6,590.2	31.3	-4,802.4	4,802.5	0.69	-0.35	-0.59
11,890.0	89.88	268.08	6,590.5	28.3	-4,897.3	4,897.4	0.36	0.18	-0.32
11,986.0	90.09	267.93	6,590.5	25.0	-4,993.3	4,993.3	0.27	0.22	-0.16
12,081.0	90.28	267.61	6,590.2	21.3	-5,088.2	5,088.2	0.39	0.20	-0.34
12,177.0	91.07	267.68	6,589.1	17.3	-5,184.1	5,184.1	0.83	0.82	0.07
12,272.0	89.15	269.49	6,588.9	15.0	-5,279.1	5,279.1	2.78	-2.02	1.91
12,368.0	88.85	270.11	6,590.6	14.7	-5,375.1	5,375.1	0.72	-0.31	0.65
12,463.0	89.02	269.57	6,592.4	14.4	-5,470.0	5,470.0	0.60	0.18	-0.57
12,559.0	89.20	269.38	6,593.9	13.5	-5,566.0	5,566.0	0.27	0.19	-0.20
12,654.0	89.70	269.21	6,594.8	12.3	-5,661.0	5,661.0	0.56	0.53	-0.18
12,750.0	89.97	268.72	6,595.0	10.6	-5,757.0	5,757.0	0.58	0.28	-0.51
12,846.0	89.76	270.80	6,595.3	10.2	-5,853.0	5,853.0	2.18	-0.22	2.17
12,941.0	89.97	271.86	6,595.5	12.4	-5,948.0	5,947.9	1.14	0.22	1.12
13,037.0	90.07	271.36	6,595.5	15.1	-6,043.9	6,043.9	0.53	0.10	-0.52
13,133.0	88.80	271.29	6,596.4	17.3	-6,139.9	6,139.9	1.32	-1.32	-0.07
13,228.0	90.03	271.26	6,597.4	19.4	-6,234.9	6,234.9	1.30	1.29	-0.03
13,324.0	90.15	270.94	6,597.2	21.3	-6,330.8	6,330.9	0.36	0.13	-0.33

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Red Cloud 6N (Nio C)
Project:	SEC.1-T4N-R64W	TVD Reference:	WELL @ 4625.0ft (Original Well Elev)
Site:	Red Cloud 4N46W01 Pad Sec.1-T4N-64W	MD Reference:	WELL @ 4625.0ft (Original Well Elev)
Well:	Red Cloud 6N (Nio C)	North Reference:	True
Wellbore:	Red Cloud 6N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Red Cloud 6N Wellbore #1	Database:	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,420.0	88.68	271.26	6,598.2	23.1	-6,426.8	6,426.8	1.57	-1.53	0.33	
13,611.0	88.86	270.96	6,602.3	26.8	-6,617.7	6,617.8	0.18	0.09	-0.16	
13,707.0	88.75	270.90	6,604.3	28.4	-6,713.7	6,713.8	0.13	-0.11	-0.06	
13,802.0	88.48	270.41	6,606.6	29.5	-6,808.7	6,808.7	0.59	-0.28	-0.52	
13,898.0	88.59	270.22	6,609.1	30.0	-6,904.6	6,904.7	0.23	0.11	-0.20	
13,994.0	88.86	269.99	6,611.2	30.2	-7,000.6	7,000.7	0.37	0.28	-0.24	
14,090.0	88.78	269.60	6,613.2	29.8	-7,096.6	7,096.6	0.41	-0.08	-0.41	
14,185.0	88.66	268.93	6,615.3	28.6	-7,191.6	7,191.6	0.72	-0.13	-0.71	
14,280.0	88.13	268.90	6,618.0	26.8	-7,286.5	7,286.5	0.56	-0.56	-0.03	
14,376.0	90.20	271.38	6,619.4	27.1	-7,382.5	7,382.5	3.36	2.16	2.58	
14,472.0	90.88	272.07	6,618.5	29.9	-7,478.4	7,478.5	1.01	0.71	0.72	
14,567.0	90.69	271.83	6,617.2	33.2	-7,573.4	7,573.4	0.32	-0.20	-0.25	
14,663.0	90.41	271.37	6,616.2	35.9	-7,669.3	7,669.4	0.56	-0.29	-0.48	
14,758.0	90.66	271.04	6,615.3	37.9	-7,764.3	7,764.4	0.44	0.26	-0.35	
14,853.0	90.83	270.61	6,614.1	39.2	-7,859.3	7,859.4	0.49	0.18	-0.45	
14,949.0	91.08	270.06	6,612.5	39.8	-7,955.3	7,955.4	0.63	0.26	-0.57	
15,044.0	90.22	270.96	6,611.4	40.6	-8,050.3	8,050.4	1.31	-0.91	0.95	
15,140.0	89.89	271.37	6,611.3	42.6	-8,146.2	8,146.3	0.55	-0.34	0.43	
15,235.0	90.04	270.76	6,611.4	44.3	-8,241.2	8,241.3	0.66	0.16	-0.64	
15,330.0	90.06	270.50	6,611.3	45.4	-8,336.2	8,336.3	0.27	0.02	-0.27	
15,425.0	88.39	272.44	6,612.6	47.8	-8,431.2	8,431.3	2.69	-1.76	2.04	
15,521.0	87.69	272.20	6,615.9	51.7	-8,527.0	8,527.2	0.77	-0.73	-0.25	
15,712.0	88.28	272.08	6,622.6	58.8	-8,717.8	8,718.0	0.32	0.31	-0.06	
15,807.0	87.93	271.46	6,625.7	61.8	-8,812.7	8,812.9	0.75	-0.37	-0.65	
15,902.0	87.85	271.22	6,629.2	64.0	-8,907.6	8,907.8	0.27	-0.08	-0.25	
15,997.0	90.06	271.22	6,631.0	66.0	-9,002.5	9,002.8	2.33	2.33	0.00	
Deepest TVD Drilled - 6630.97' TVD										
16,189.0	90.08	270.97	6,630.7	69.7	-9,194.5	9,194.7	0.13	0.01	-0.13	
16,285.0	89.91	271.13	6,630.7	71.4	-9,290.5	9,290.7	0.24	-0.18	0.17	
16,380.0	90.78	269.05	6,630.2	71.6	-9,385.5	9,385.7	2.37	0.92	-2.19	
16,475.0	90.90	269.18	6,628.8	70.1	-9,480.5	9,480.7	0.19	0.13	0.14	
16,571.0	91.21	268.96	6,627.0	68.6	-9,576.4	9,576.7	0.40	0.32	-0.23	
16,609.0	91.08	268.71	6,626.2	67.8	-9,614.4	9,614.6	0.74	-0.34	-0.66	
16,667.0	91.08	268.71	6,625.2	66.5	-9,672.4	9,672.6	0.00	0.00	0.00	
Projected BHL 1435'FNL, 50'FWL, Sec.2										

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Site:	Red Cloud 4N46W01 Pad Sec.1-T4N-64W	MD Reference:	WELL @ 4625.0ft (Original Well Elev)
Well:	Red Cloud 6N (Nio C)	North Reference:	True
Wellbore:	Red Cloud 6N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Red Cloud 6N Wellbore #1	Database:	US_EDM

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 1529'FNL, 719'FEL - survey hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,369,932.61	3,280,930.24	40.344484	-104.492115
WP #1 (Red Cloud 6N) - survey misses target center by 10.8ft at 11628.7ft MD (6589.9 TVD, 34.7 N, -4636.1 E) - Point	0.00	0.00	6,596.0	25.9	-4,636.0	1,369,905.81	3,276,294.46	40.344554	-104.508747
Projected BHL 1435'FNL - survey misses target center by 15.4ft at 16667.0ft MD (6625.2 TVD, 66.5 N, -9672.4 E) - Point	0.00	0.00	6,630.0	51.8	-9,672.7	1,369,874.51	3,271,257.98	40.344621	-104.526816

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,717.1	6,489.7	71.0	259.9	TPZ - 460' Setback - 1458'FNL, 460'FEL, Sec.1
15,997.0	6,631.0	66.0	-9,002.5	Deepest TVD Drilled - 6630.97' TVD

Checked By: _____ Approved By: _____ Date: _____