

PDC Energy Inc. DJ Basin

Well Name: **J Clark 6N (Nio B)**

Surface Location: Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W

North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

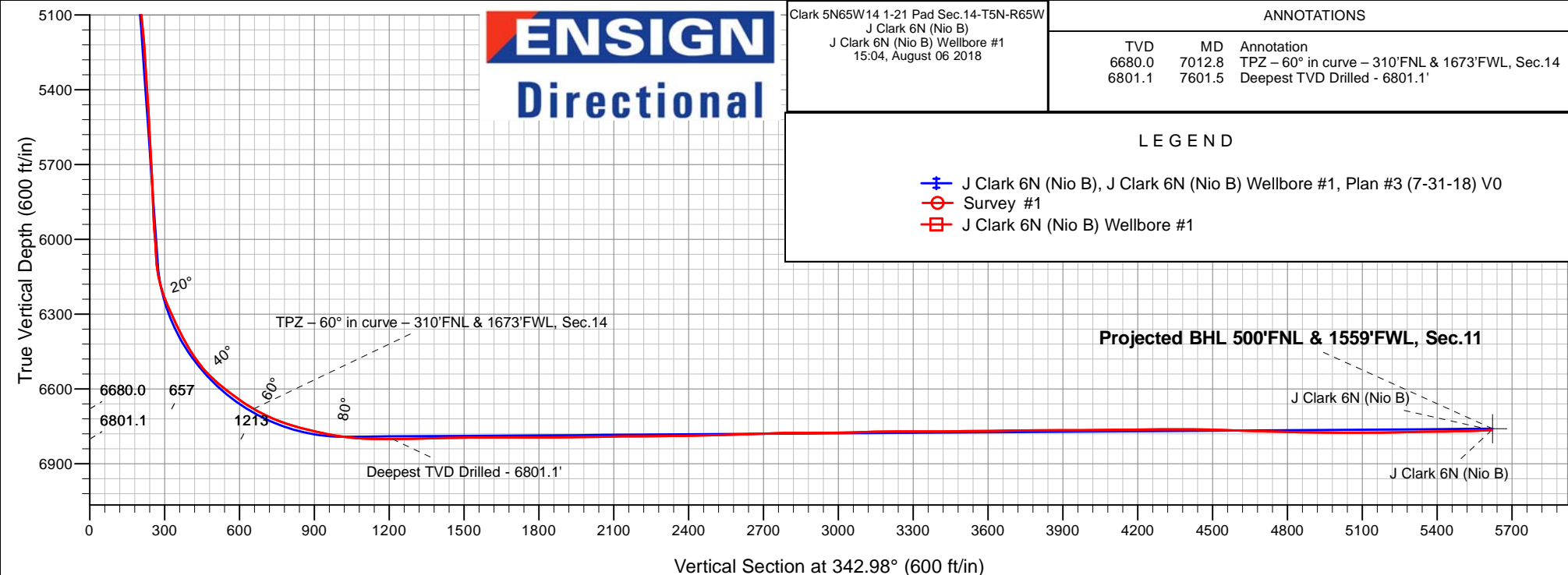
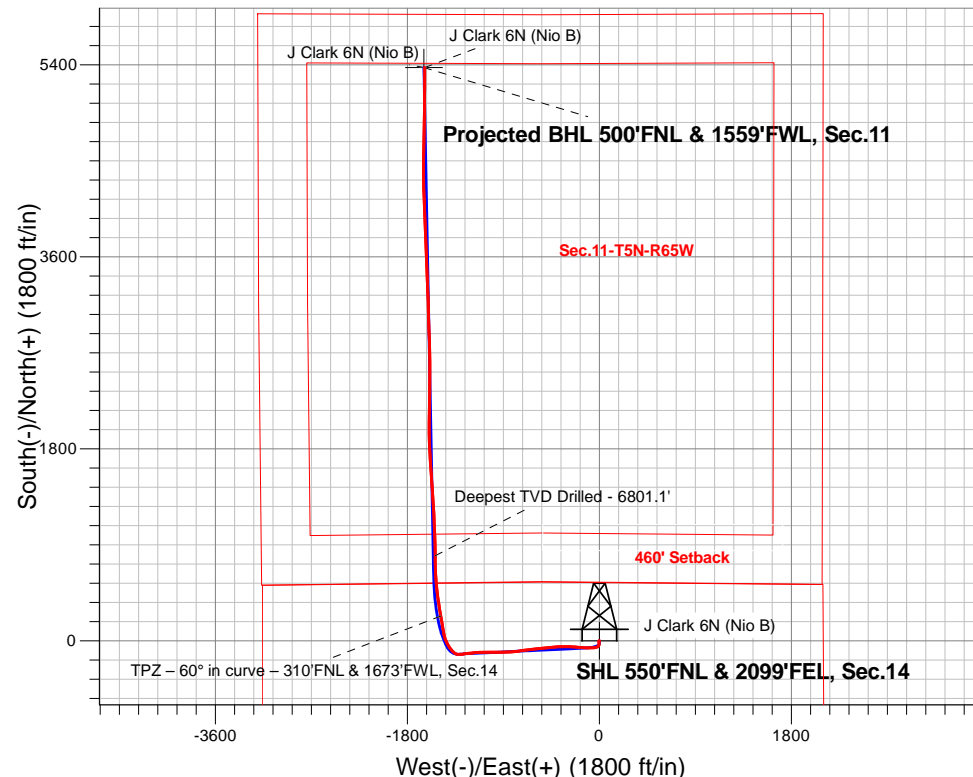
Ground Elevation: 4615.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1391636.24	3242665.94	40.405170	-104.628620	

Original Well Elev WELL @ 4638.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
12,183'MD 6765'TVD 5375'N & 1637'W of SHL
92.2 degree Incl @ 0.20 degree AZM





PDC Energy Inc. DJ Basin

SEC.14-T5N-R65W

Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W

J Clark 6N (Nio B)

J Clark 6N (Nio B) Wellbore #1

Survey: Survey #1

Standard Survey Report

06 August, 2018

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 6N (Nio B)
Project:	SEC.14-T5N-R65W	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site:	Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Well:	J Clark 6N (Nio B)	North Reference:	True
Wellbore:	J Clark 6N (Nio B) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	J Clark 6N (Nio B) Wellbore #1	Database:	US_EDM

Project	SEC.14-T5N-R65W, Weld County, Colorado		
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		Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W			
Site Position:		Northing:	1,391,636.42 usft	Latitude:	40.405168
From:	Lat/Long	Easting:	3,242,770.94 usft	Longitude:	-104.628243
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.56 °

Well	J Clark 6N (Nio B)					
Well Position	+N/-S	0.0 ft	Northing:	1,391,636.24 usft	Latitude:	40.405170
	+E/-W	0.0 ft	Easting:	3,242,665.94 usft	Longitude:	-104.628620
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,615.0 ft

Wellbore	J Clark 6N (Nio B) Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/1/2018	8.10	66.87	52,224

Design	J Clark 6N (Nio B) 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	342.98	

Survey Program	Date	8/6/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
152.0	12,183.0	Survey #1 (J Clark 6N (Nio B) 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	
152.0	0.20	263.50	152.0	0.0	-0.3	0.0	0.13	0.13	0.00	
248.0	0.90	291.30	248.0	0.2	-1.1	0.5	0.76	0.73	28.96	
343.0	1.00	319.80	343.0	1.1	-2.4	1.8	0.50	0.11	30.00	
438.0	1.20	232.20	438.0	1.2	-3.7	2.2	1.61	0.21	-92.21	
534.0	2.00	189.00	533.9	-1.1	-4.7	0.3	1.45	0.83	-45.00	
629.0	3.80	178.40	628.8	-5.9	-4.9	-4.2	1.97	1.89	-11.16	
724.0	5.90	173.30	723.5	-13.9	-4.3	-12.0	2.25	2.21	-5.37	
820.0	5.50	174.00	819.0	-23.4	-3.2	-21.4	0.42	-0.42	0.73	
915.0	5.60	187.20	913.5	-32.5	-3.3	-30.1	1.34	0.11	13.89	

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Wellbore:	J Clark 6N (Nio B) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	J Clark 6N (Nio B) 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)
1,010.0	5.60	196.90	1,008.1	-41.5	-5.2	-38.2	1.00	0.00	10.21
1,106.0	6.00	219.90	1,103.6	-49.9	-9.8	-44.8	2.44	0.42	23.96
1,201.0	6.10	241.20	1,198.1	-56.1	-17.4	-48.6	2.35	0.11	22.42
1,296.0	7.60	253.10	1,292.4	-60.4	-27.9	-49.6	2.17	1.58	12.53
1,391.0	8.40	260.90	1,386.5	-63.3	-40.7	-48.6	1.42	0.84	8.21
1,486.0	8.00	267.00	1,480.5	-64.7	-54.2	-46.0	1.01	-0.42	6.42
1,582.0	9.10	266.90	1,575.5	-65.5	-68.4	-42.6	1.15	1.15	-0.10
1,630.0	8.70	267.90	1,622.9	-65.8	-75.8	-40.8	0.89	-0.83	2.08
1,773.0	10.00	269.30	1,764.0	-66.4	-99.1	-34.5	0.92	0.91	0.98
1,869.0	12.30	271.40	1,858.2	-66.2	-117.6	-28.9	2.43	2.40	2.19
1,965.0	14.40	274.60	1,951.6	-65.0	-139.7	-21.3	2.32	2.19	3.33
2,059.0	16.60	274.90	2,042.1	-62.9	-164.8	-12.0	2.34	2.34	0.32
2,154.0	16.40	274.40	2,133.2	-60.8	-191.7	-2.0	0.26	-0.21	-0.53
2,250.0	15.70	273.00	2,225.5	-59.0	-218.2	7.4	0.83	-0.73	-1.46
2,345.0	17.10	274.90	2,316.6	-57.2	-244.9	17.0	1.58	1.47	2.00
2,441.0	16.80	273.90	2,408.5	-55.0	-272.8	27.2	0.44	-0.31	-1.04
2,537.0	17.80	269.10	2,500.1	-54.3	-301.3	36.3	1.81	1.04	-5.00
2,632.0	17.90	269.30	2,590.5	-54.7	-330.4	44.4	0.12	0.11	0.21
2,728.0	17.80	268.80	2,681.9	-55.2	-359.9	52.5	0.19	-0.10	-0.52
2,823.0	17.40	267.90	2,772.5	-56.0	-388.6	60.2	0.51	-0.42	-0.95
2,919.0	16.90	266.70	2,864.2	-57.4	-416.9	67.2	0.64	-0.52	-1.25
3,015.0	16.20	267.00	2,956.2	-58.9	-444.2	73.7	0.73	-0.73	0.31
3,110.0	15.50	265.80	3,047.6	-60.5	-470.1	79.7	0.81	-0.74	-1.26
3,206.0	14.60	264.00	3,140.3	-62.7	-494.9	84.9	1.06	-0.94	-1.88
3,302.0	15.10	262.30	3,233.1	-65.6	-519.3	89.2	0.69	0.52	-1.77
3,397.0	14.50	260.90	3,325.0	-69.2	-543.3	92.9	0.74	-0.63	-1.47
3,492.0	15.60	262.80	3,416.7	-72.6	-567.7	96.7	1.27	1.16	2.00
3,588.0	15.70	262.60	3,509.1	-75.9	-593.4	101.1	0.12	0.10	-0.21
3,684.0	17.10	264.40	3,601.2	-79.0	-620.3	106.0	1.55	1.46	1.88
3,779.0	17.40	263.50	3,692.0	-82.0	-648.4	111.4	0.42	0.32	-0.95
3,875.0	17.20	263.20	3,783.6	-85.3	-676.7	116.5	0.23	-0.21	-0.31
3,970.0	16.90	263.00	3,874.4	-88.6	-704.4	121.4	0.32	-0.32	-0.21
4,161.0	15.20	260.30	4,058.0	-96.2	-756.6	129.4	0.97	-0.89	-1.41
4,256.0	17.00	266.90	4,149.3	-99.1	-782.8	134.4	2.70	1.89	6.95
4,352.0	16.50	267.00	4,241.2	-100.5	-810.4	141.1	0.52	-0.52	0.10
4,447.0	15.70	266.00	4,332.5	-102.1	-836.7	147.2	0.89	-0.84	-1.05
4,543.0	14.80	264.70	4,425.1	-104.2	-861.8	152.6	1.00	-0.94	-1.35
4,639.0	16.10	268.30	4,517.6	-105.7	-887.4	158.6	1.68	1.35	3.75
4,734.0	15.60	269.50	4,609.0	-106.2	-913.3	165.7	0.63	-0.53	1.26
4,830.0	14.40	266.90	4,701.7	-107.0	-938.1	172.3	1.43	-1.25	-2.71
4,926.0	15.00	270.90	4,794.6	-107.4	-962.5	179.0	1.23	0.63	4.17
5,022.0	16.30	271.40	4,887.0	-106.9	-988.4	187.1	1.36	1.35	0.52
5,117.0	15.30	269.70	4,978.4	-106.6	-1,014.2	194.9	1.16	-1.05	-1.79
5,213.0	18.10	273.00	5,070.4	-105.9	-1,041.8	203.6	3.08	2.92	3.44

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5,308.0	17.10	270.50	5,160.9	-105.0	-1,070.5	212.9	1.32	-1.05	-2.63
5,403.0	15.20	267.90	5,252.2	-105.4	-1,096.9	220.3	2.14	-2.00	-2.74
5,499.0	14.80	265.30	5,344.9	-106.8	-1,121.7	226.2	0.82	-0.42	-2.71
5,595.0	17.00	265.80	5,437.2	-108.9	-1,147.9	231.9	2.30	2.29	0.52
5,690.0	15.20	263.70	5,528.5	-111.2	-1,174.2	237.3	1.99	-1.89	-2.21
5,786.0	16.50	264.00	5,620.9	-114.0	-1,200.2	242.2	1.36	1.35	0.31
5,882.0	17.20	263.70	5,712.7	-117.0	-1,227.9	247.5	0.73	0.73	-0.31
5,977.0	15.50	261.40	5,803.9	-120.5	-1,254.4	251.9	1.91	-1.79	-2.42
6,072.0	14.20	260.90	5,895.7	-124.2	-1,278.5	255.4	1.38	-1.37	-0.53
6,168.0	15.70	268.80	5,988.5	-126.3	-1,303.1	260.6	2.63	1.56	8.23
6,263.0	13.70	266.10	6,080.4	-127.4	-1,327.2	266.6	2.22	-2.11	-2.84
6,358.0	18.30	301.00	6,171.9	-120.4	-1,351.2	280.3	11.00	4.84	36.74
6,454.0	25.10	320.30	6,261.1	-97.0	-1,377.2	310.4	10.18	7.08	20.10
6,550.0	26.90	324.30	6,347.4	-63.6	-1,402.9	349.7	2.62	1.88	4.17
6,645.0	30.50	330.80	6,430.7	-25.1	-1,427.2	393.7	5.01	3.79	6.84
6,741.0	38.80	343.80	6,509.8	25.2	-1,447.6	447.7	11.54	8.65	13.54
6,836.0	50.20	350.00	6,577.4	89.9	-1,462.3	514.0	12.83	12.00	6.53
6,932.0	54.30	351.00	6,636.2	164.8	-1,474.8	589.2	4.35	4.27	1.04
7,012.8	60.00	349.54	6,680.0	231.7	-1,486.3	656.5	7.21	7.05	-1.81
TPZ - 60° in curve - 310'FNL & 1673'FWL, Sec.14									
7,027.0	61.00	349.30	6,687.0	243.8	-1,488.5	668.8	7.21	7.06	-1.68
7,123.0	69.00	351.20	6,727.5	329.5	-1,503.2	755.0	8.52	8.33	1.98
7,219.0	75.70	353.50	6,756.6	420.1	-1,515.3	845.2	7.34	6.98	2.40
7,314.0	78.30	352.80	6,778.0	512.0	-1,526.4	936.3	2.83	2.74	-0.74
7,410.0	83.10	356.90	6,793.5	606.3	-1,534.9	1,029.0	6.54	5.00	4.27
7,506.0	88.70	0.20	6,800.4	702.0	-1,537.3	1,121.2	6.77	5.83	3.44
7,601.0	90.50	358.80	6,801.1	797.0	-1,538.1	1,212.2	2.40	1.89	-1.47
7,601.5	90.50	358.80	6,801.0	797.5	-1,538.1	1,212.7	0.67	0.52	-0.42
Deepest TVD Drilled - 6801.1'									
7,697.0	91.00	358.40	6,799.8	892.9	-1,540.4	1,304.7	0.67	0.52	-0.42
7,792.0	91.30	357.90	6,797.9	987.9	-1,543.5	1,396.4	0.61	0.32	-0.53
7,888.0	90.80	357.60	6,796.1	1,083.8	-1,547.3	1,489.2	0.61	-0.52	-0.31
7,983.0	90.40	357.00	6,795.1	1,178.7	-1,551.8	1,581.2	0.76	-0.42	-0.63
8,079.0	90.10	356.90	6,794.7	1,274.5	-1,556.9	1,674.4	0.33	-0.31	-0.10
8,175.0	90.00	356.10	6,794.6	1,370.3	-1,562.7	1,767.7	0.84	-0.10	-0.83
8,270.0	90.20	355.60	6,794.5	1,465.1	-1,569.6	1,860.3	0.57	0.21	-0.53
8,365.0	90.80	355.40	6,793.6	1,559.8	-1,577.1	1,953.1	0.67	0.63	-0.21
8,461.0	90.70	357.00	6,792.4	1,655.6	-1,583.4	2,046.5	1.67	-0.10	1.67
8,557.0	91.20	356.90	6,790.8	1,751.4	-1,588.5	2,139.7	0.53	0.52	-0.10
8,652.0	90.50	358.30	6,789.4	1,846.3	-1,592.5	2,231.6	1.65	-0.74	1.47
8,748.0	90.10	358.60	6,788.9	1,942.3	-1,595.1	2,324.1	0.52	-0.42	0.31
8,844.0	90.80	0.90	6,788.1	2,038.3	-1,595.5	2,416.0	2.50	0.73	2.40
8,940.0	91.70	1.10	6,786.0	2,134.2	-1,593.8	2,507.3	0.96	0.94	0.21

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9,036.0	92.00	0.70	6,782.9	2,230.2	-1,592.3	2,598.6	0.52	0.31	-0.42
9,131.0	92.90	0.40	6,778.9	2,325.1	-1,591.4	2,689.0	1.00	0.95	-0.32
9,227.0	90.00	0.90	6,776.4	2,421.0	-1,590.3	2,780.5	3.07	-3.02	0.52
9,322.0	90.00	0.40	6,776.4	2,516.0	-1,589.3	2,871.0	0.53	0.00	-0.53
9,418.0	90.50	359.30	6,776.0	2,612.0	-1,589.5	2,962.9	1.26	0.52	-1.15
9,514.0	91.10	358.60	6,774.7	2,708.0	-1,591.3	3,055.1	0.96	0.63	-0.73
9,609.0	92.10	358.10	6,772.0	2,802.9	-1,594.0	3,146.7	1.18	1.05	-0.53
9,704.0	89.60	358.30	6,770.6	2,897.9	-1,597.0	3,238.4	2.64	-2.63	0.21
9,800.0	90.00	358.30	6,771.0	2,993.8	-1,599.8	3,331.0	0.42	0.42	0.00
9,896.0	90.60	358.30	6,770.5	3,089.8	-1,602.7	3,423.5	0.63	0.63	0.00
9,991.0	90.50	358.10	6,769.5	3,184.7	-1,605.7	3,515.2	0.24	-0.11	-0.21
10,086.0	90.60	357.70	6,768.6	3,279.7	-1,609.1	3,607.0	0.43	0.11	-0.42
10,182.0	91.10	357.00	6,767.2	3,375.5	-1,613.6	3,700.0	0.90	0.52	-0.73
10,277.0	90.10	358.30	6,766.2	3,470.4	-1,617.5	3,791.9	1.73	-1.05	1.37
10,373.0	90.00	358.40	6,766.1	3,566.4	-1,620.2	3,884.4	0.15	-0.10	0.10
10,468.0	90.40	357.90	6,765.8	3,661.4	-1,623.3	3,976.1	0.67	0.42	-0.53
10,564.0	90.50	357.40	6,765.0	3,757.3	-1,627.2	4,069.0	0.53	0.10	-0.52
10,659.0	91.10	357.20	6,763.7	3,852.2	-1,631.7	4,161.0	0.67	0.63	-0.21
10,754.0	90.20	358.10	6,762.6	3,947.1	-1,635.6	4,252.9	1.34	-0.95	0.95
10,850.0	90.30	357.20	6,762.2	4,043.0	-1,639.5	4,345.8	0.94	0.10	-0.94
10,946.0	89.20	358.40	6,762.6	4,138.9	-1,643.2	4,438.6	1.70	-1.15	1.25
11,041.0	88.10	358.80	6,764.9	4,233.9	-1,645.6	4,530.1	1.23	-1.16	0.42
11,136.0	88.40	358.10	6,767.8	4,328.8	-1,648.1	4,621.6	0.80	0.32	-0.74
11,232.0	88.70	0.70	6,770.2	4,424.7	-1,649.1	4,713.6	2.73	0.31	2.71
11,327.0	88.60	1.40	6,772.4	4,519.7	-1,647.4	4,803.9	0.74	-0.11	0.74
11,422.0	88.50	0.90	6,774.8	4,614.6	-1,645.5	4,894.2	0.54	-0.11	-0.53
11,518.0	90.10	1.10	6,776.0	4,710.6	-1,643.8	4,985.4	1.68	1.67	0.21
11,613.0	90.60	0.90	6,775.4	4,805.6	-1,642.1	5,075.8	0.57	0.53	-0.21
11,709.0	90.00	0.40	6,774.9	4,901.6	-1,641.1	5,167.3	0.81	-0.63	-0.52
11,805.0	91.40	0.90	6,773.8	4,997.6	-1,640.0	5,258.7	1.55	1.46	0.52
11,900.0	90.90	0.70	6,771.9	5,092.5	-1,638.6	5,349.1	0.57	-0.53	-0.21
11,996.0	90.30	0.40	6,770.9	5,188.5	-1,637.7	5,440.7	0.70	-0.63	-0.31
12,091.0	92.20	0.20	6,768.8	5,283.5	-1,637.2	5,531.3	2.01	2.00	-0.21
12,126.0	92.20	0.20	6,767.4	5,318.5	-1,637.1	5,564.7	0.00	0.00	0.00
12,183.0	92.20	0.20	6,765.2	5,375.4	-1,636.9	5,619.1	0.00	0.00	0.00

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 6N (Nio B)
Project:	SEC.14-T5N-R65W	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site:	Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Well:	J Clark 6N (Nio B)	North Reference:	True
Wellbore:	J Clark 6N (Nio B) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	J Clark 6N (Nio B) 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 550'FNL & 2099'FE - survey hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,391,636.27	3,242,665.94	40.405170	-104.628620
BHL 500'FNL & 1550'FM - survey misses target center by 10.1ft at 12183.0ft MD (6765.2 TVD, 5375.4 N, -1636.9 E) - Point	0.00	0.00	6,760.0	5,375.9	-1,645.5	1,396,995.47	3,240,967.80	40.419926	-104.634530

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,012.8	6,680.0	231.7	-1,486.3	TPZ – 60° in curve – 310'FNL & 1673'FWL, Sec.14
7,601.5	6,801.0	797.5	-1,538.1	Deepest TVD Drilled - 6801.1'

Checked By: _____	Approved By: _____	Date: _____
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