

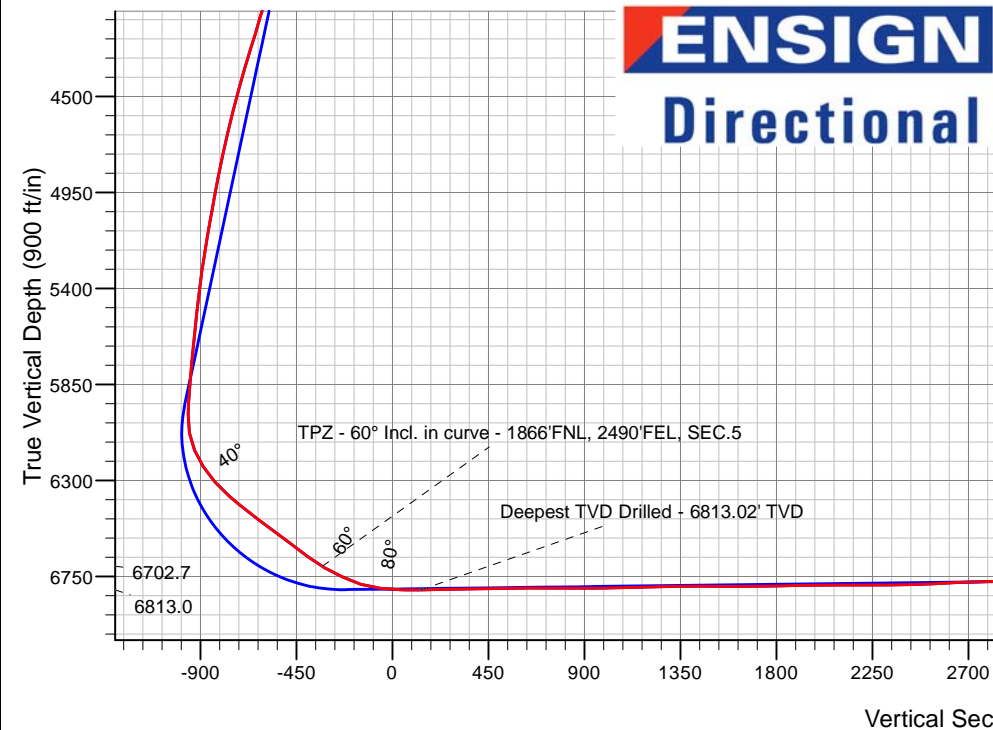
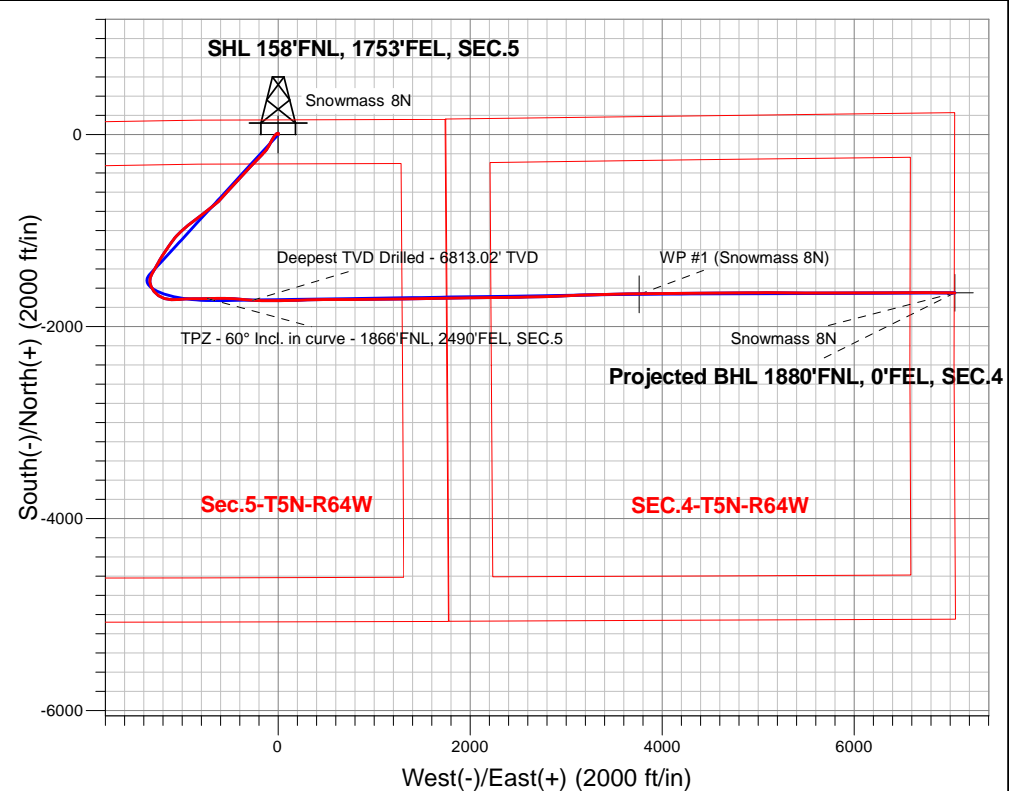
PDC Energy Inc. DJ Basin

Well Name: **Snowmass 8N**

Surface Location: Snowmass 5N64W05 Pad Sec.5-T5N-R64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4634.0
 +N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1402610.553258575.56 40.434850 -104.571082
 Ensign Rig #152 - RKB - 23'WELL @ 4657.0ft (Ensign Rig #152 - RKB - 23')

FINAL SURVEY

Projected Bottom Hole Location
15,247'MD 6722'TVD 1649'S & 7048'E of SHL
91.5 degree Incl @ 90.2 degree AZM



Snowmass 5N64W05 Pad Sec.5-T5N-R64W
 Snowmass 8N
 Snowmass 8N Wellbore #1
 8:20, January 22 2018

ANNOTATIONS

TVD	MD	Annotation
6702.7	7437.3	TPZ - 60° Incl. in curve - 1866'FNL, 2490'FEL, SEC.5
6813.0	7929.0	Deepest TVD Drilled - 6813.02' TVD

LEGEND

- Snowmass 8N, Snowmass 8N Wellbore #1, Plan #3 (8-15-17) V0
- Survey #1
- Snowmass 8N Wellbore #1



PDC Energy Inc. DJ Basin

SEC.5-T5N-R64W

Snowmass 5N64W05 Pad Sec.5-T5N-R64W

Snowmass 8N

Snowmass 8N Wellbore #1

Survey: Survey #1

Standard Survey Report

22 January, 2018

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Snowmass 8N
Project:	SEC.5-T5N-R64W	TVD Reference:	WELL @ 4657.0ft (Ensign Rig #152 - RKB - 23')
Site:	Snowmass 5N64W05 Pad Sec.5-T5N-R64W	MD Reference:	WELL @ 4657.0ft (Ensign Rig #152 - RKB - 23')
Well:	Snowmass 8N	North Reference:	True
Wellbore:	Snowmass 8N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Snowmass 8N Wellbore #1	Database:	US_EDM

Project	SEC.5-T5N-R64W, 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		Snowmass 5N64W05 Pad Sec.5-T5N-R64W			
Site Position:		Northing:	1,402,678.95 usft	Latitude:	40.435040
From:	Lat/Long	Easting:	3,258,495.78 usft	Longitude:	-104.571366
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.60 °

Well	Snowmass 8N					
Well Position	+N/-S	0.0 ft	Northing:	1,402,610.55 usft	Latitude:	40.434850
	+E/-W	0.0 ft	Easting:	3,258,575.56 usft	Longitude:	-104.571082
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,634.0 ft

Wellbore	Snowmass 8N Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/11/2017	7.93	66.89	52,522

Design	Snowmass 8N 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	103.17	

Survey Program	Date	1/22/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
157.0	15,247.0	Survey #1 (Snowmass 8N 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	0.01	24.60	1.0	0.0	0.0	0.0	0.57	0.57	0.00	
SHL 158'FNL, 1753'FEL, SEC.5										
157.0	0.90	24.60	157.0	1.1	0.5	0.2	0.57	0.57	0.00	
253.0	0.80	14.50	253.0	2.5	1.0	0.4	0.19	-0.10	-10.52	
348.0	0.70	21.10	348.0	3.6	1.4	0.5	0.14	-0.11	6.95	
443.0	1.00	8.70	443.0	5.0	1.7	0.5	0.37	0.32	-13.05	
539.0	1.60	7.40	538.9	7.2	2.0	0.3	0.63	0.63	-1.35	
633.0	2.00	351.40	632.9	10.1	1.9	-0.4	0.68	0.43	-17.02	
728.0	2.20	306.30	727.8	12.8	0.2	-2.7	1.71	0.21	-47.47	
824.0	3.30	261.30	823.7	13.5	-4.0	-7.0	2.43	1.15	-46.88	

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Site:	Snowmass 5N64W05 Pad Sec.5-T5N-R64W	MD Reference:	WELL @ 4657.0ft (Ensign Rig #152 - RKB - 23')
Well:	Snowmass 8N	North Reference:	True
Wellbore:	Snowmass 8N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Snowmass 8N 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)
919.0	5.60	245.10	918.4	11.1	-10.9	-13.2	2.74	2.42	-17.05
1,015.0	7.80	235.20	1,013.8	5.4	-20.5	-21.2	2.58	2.29	-10.31
1,110.0	9.30	221.20	1,107.7	-4.0	-30.9	-29.1	2.69	1.58	-14.74
1,205.0	11.10	211.90	1,201.2	-17.6	-40.8	-35.7	2.56	1.89	-9.79
1,301.0	13.20	208.90	1,295.1	-35.0	-50.9	-41.6	2.28	2.19	-3.13
1,396.0	15.00	209.00	1,387.2	-55.3	-62.1	-47.9	1.89	1.89	0.11
1,491.0	15.40	208.30	1,478.9	-77.1	-74.1	-54.6	0.46	0.42	-0.74
1,635.0	14.20	210.10	1,618.1	-109.3	-92.0	-64.7	0.89	-0.83	1.25
1,780.0	14.90	212.00	1,758.5	-140.4	-110.8	-75.9	0.58	0.48	1.31
1,875.0	17.40	218.00	1,849.7	-162.0	-126.0	-85.8	3.16	2.63	6.32
1,970.0	19.00	221.30	1,940.0	-184.8	-145.0	-99.1	2.00	1.68	3.47
2,066.0	21.30	224.80	2,030.1	-208.9	-167.6	-115.6	2.70	2.40	3.65
2,162.0	23.70	225.20	2,118.8	-234.9	-193.6	-135.0	2.51	2.50	0.42
2,257.0	26.30	224.10	2,204.9	-263.5	-221.8	-155.9	2.78	2.74	-1.16
2,353.0	25.90	223.30	2,291.1	-294.0	-250.9	-177.4	0.55	-0.42	-0.83
2,449.0	25.20	223.30	2,377.7	-324.1	-279.3	-198.2	0.73	-0.73	0.00
2,544.0	24.50	222.20	2,463.9	-353.5	-306.4	-217.9	0.88	-0.74	-1.16
2,640.0	23.90	221.70	2,551.5	-382.7	-332.7	-236.8	0.66	-0.63	-0.52
2,735.0	24.40	222.00	2,638.1	-411.7	-358.7	-255.5	0.54	0.53	0.32
2,830.0	25.90	224.80	2,724.1	-441.0	-386.4	-275.8	2.02	1.58	2.95
2,926.0	25.70	223.60	2,810.6	-470.9	-415.6	-297.4	0.58	-0.21	-1.25
3,022.0	25.10	223.30	2,897.3	-500.8	-443.9	-318.1	0.64	-0.63	-0.31
3,118.0	24.40	222.20	2,984.5	-530.3	-471.2	-338.0	0.87	-0.73	-1.15
3,214.0	23.90	222.00	3,072.1	-559.5	-497.5	-357.0	0.53	-0.52	-0.21
3,310.0	23.20	221.70	3,160.1	-588.0	-523.1	-375.4	0.74	-0.73	-0.31
3,405.0	23.50	222.20	3,247.3	-616.0	-548.3	-393.5	0.38	0.32	0.53
3,501.0	22.20	221.70	3,335.7	-643.8	-573.2	-411.5	1.37	-1.35	-0.52
3,596.0	21.50	222.60	3,423.9	-670.0	-596.9	-428.6	0.82	-0.74	0.95
3,692.0	21.90	225.20	3,513.1	-695.5	-621.5	-446.7	1.08	0.42	2.71
3,788.0	23.20	231.90	3,601.8	-719.8	-649.1	-468.1	3.00	1.35	6.98
3,884.0	24.80	232.20	3,689.5	-743.8	-679.9	-492.6	1.67	1.67	0.31
3,980.0	24.80	231.70	3,776.6	-768.7	-711.6	-517.8	0.22	0.00	-0.52
4,075.0	24.70	231.30	3,862.9	-793.4	-742.7	-542.5	0.21	-0.11	-0.42
4,171.0	23.90	230.80	3,950.4	-818.3	-773.5	-566.7	0.86	-0.83	-0.52
4,266.0	25.80	232.80	4,036.6	-842.9	-804.8	-591.7	2.19	2.00	2.11
4,362.0	25.40	232.80	4,123.2	-868.0	-837.9	-618.1	0.42	-0.42	0.00
4,457.0	24.40	232.60	4,209.4	-892.2	-869.7	-643.6	1.06	-1.05	-0.21
4,553.0	26.30	232.20	4,296.1	-917.3	-902.3	-669.6	1.99	1.98	-0.42
4,649.0	25.40	230.80	4,382.5	-943.4	-935.0	-695.6	1.13	-0.94	-1.46
4,745.0	24.90	230.60	4,469.4	-969.2	-966.6	-720.4	0.53	-0.52	-0.21
4,841.0	23.90	229.80	4,556.8	-994.6	-997.1	-744.3	1.10	-1.04	-0.83
4,937.0	24.70	225.50	4,644.3	-1,021.2	-1,026.2	-766.6	2.02	0.83	-4.48
5,032.0	25.10	220.40	4,730.5	-1,050.5	-1,053.4	-786.5	2.30	0.42	-5.37

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Well:	Snowmass 8N	North Reference:	True
Wellbore:	Snowmass 8N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Snowmass 8N 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)
5,127.0	24.00	219.20	4,816.9	-1,080.8	-1,078.7	-804.2	1.27	-1.16	-1.26
5,223.0	25.90	216.20	4,904.0	-1,112.8	-1,103.4	-820.9	2.38	1.98	-3.13
5,319.0	27.20	215.40	4,989.8	-1,147.6	-1,128.5	-837.4	1.40	1.35	-0.83
5,414.0	26.10	214.30	5,074.7	-1,182.6	-1,152.9	-853.2	1.27	-1.16	-1.16
5,510.0	25.50	213.90	5,161.2	-1,217.2	-1,176.3	-868.1	0.65	-0.63	-0.42
5,605.0	24.70	213.20	5,247.2	-1,250.8	-1,198.6	-882.2	0.90	-0.84	-0.74
5,701.0	23.70	211.30	5,334.8	-1,284.0	-1,219.6	-895.0	1.32	-1.04	-1.98
5,797.0	22.20	210.60	5,423.2	-1,316.1	-1,238.9	-906.5	1.59	-1.56	-0.73
5,893.0	21.10	209.60	5,512.4	-1,346.8	-1,256.6	-916.8	1.21	-1.15	-1.04
5,988.0	20.30	209.20	5,601.3	-1,376.0	-1,273.1	-926.2	0.86	-0.84	-0.42
6,114.0	20.00	209.00	5,719.5	-1,414.0	-1,294.2	-938.1	0.24	-0.24	-0.16
6,209.0	18.40	206.90	5,809.3	-1,441.5	-1,308.9	-946.1	1.83	-1.68	-2.21
6,304.0	17.70	206.90	5,899.6	-1,467.8	-1,322.2	-953.1	0.74	-0.74	0.00
6,400.0	20.80	195.70	5,990.2	-1,497.2	-1,333.4	-957.3	5.01	3.23	-11.67
6,496.0	28.10	175.10	6,077.7	-1,536.3	-1,336.1	-951.0	11.59	7.60	-21.46
6,591.0	35.70	157.20	6,158.5	-1,584.3	-1,323.4	-927.7	12.70	8.00	-18.84
6,687.0	39.20	142.40	6,234.8	-1,634.3	-1,294.0	-887.7	10.03	3.65	-15.42
6,783.0	44.10	124.30	6,306.8	-1,677.3	-1,247.7	-832.8	13.49	5.10	-18.85
6,879.0	48.70	109.40	6,373.2	-1,708.2	-1,185.8	-765.6	12.19	4.79	-15.52
6,974.0	52.50	90.90	6,433.8	-1,720.8	-1,114.1	-692.9	15.54	4.00	-19.47
7,069.0	54.70	83.90	6,490.2	-1,717.2	-1,037.8	-619.4	6.36	2.32	-7.37
7,165.0	54.10	89.10	6,546.1	-1,712.4	-959.9	-544.6	4.45	-0.63	5.42
7,260.0	53.30	88.60	6,602.4	-1,710.9	-883.4	-470.5	0.94	-0.84	-0.53
7,355.0	54.60	89.10	6,658.3	-1,709.4	-806.6	-396.0	1.43	1.37	0.53
7,437.3	60.00	89.01	6,702.7	-1,708.2	-737.4	-328.9	6.56	6.56	-0.11
TPZ - 60° Incl. in curve - 1866'FNL, 2490'FEL, SEC.5									
7,451.0	60.90	89.00	6,709.5	-1,708.0	-725.5	-317.3	6.56	6.56	-0.10
7,547.0	65.20	89.30	6,753.0	-1,706.8	-639.9	-234.3	4.49	4.48	0.31
7,567.9	66.96	89.51	6,761.5	-1,706.6	-620.8	-215.8	8.47	8.42	0.99
LPL 1880'FNL, 2796'FWL, SEC.5									
7,642.0	73.20	90.20	6,786.7	-1,706.4	-551.2	-148.0	8.47	8.42	0.94
7,738.0	83.90	94.40	6,805.7	-1,710.2	-457.3	-55.7	11.94	11.15	4.38
7,833.0	88.30	96.00	6,812.2	-1,718.8	-363.0	38.1	4.93	4.63	1.68
7,929.0	90.70	93.00	6,813.0	-1,726.3	-267.3	133.0	4.00	2.50	-3.13
Deepest TVD Drilled - 6813.02' TVD									
8,024.0	91.00	91.60	6,811.6	-1,730.2	-172.4	226.3	1.51	0.32	-1.47
8,120.0	91.30	89.30	6,809.7	-1,730.9	-76.4	319.9	2.42	0.31	-2.40
8,215.0	91.30	89.00	6,807.5	-1,729.5	18.6	412.0	0.32	0.00	-0.32
8,311.0	90.70	89.10	6,805.9	-1,727.9	114.5	505.1	0.63	-0.63	0.10
8,407.0	90.30	88.40	6,805.0	-1,725.8	210.5	598.1	0.84	-0.42	-0.73
8,502.0	90.20	88.10	6,804.6	-1,722.9	305.4	689.9	0.33	-0.11	-0.32
8,598.0	89.90	88.10	6,804.5	-1,719.7	401.4	782.6	0.31	-0.31	0.00
8,694.0	90.00	89.50	6,804.6	-1,717.7	497.4	875.6	1.46	0.10	1.46
8,790.0	89.80	88.80	6,804.8	-1,716.3	593.4	968.7	0.76	-0.21	-0.73

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Wellbore:	Snowmass 8N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Snowmass 8N 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)
8,886.0	91.70	90.40	6,803.5	-1,715.6	689.3	1,062.0	2.59	1.98	1.67
8,982.0	91.70	90.50	6,800.7	-1,716.4	785.3	1,155.6	0.10	0.00	0.10
9,077.0	91.30	90.50	6,798.2	-1,717.2	880.3	1,248.3	0.42	-0.42	0.00
9,173.0	90.70	89.30	6,796.5	-1,717.0	976.2	1,341.7	1.40	-0.63	-1.25
9,269.0	89.80	89.50	6,796.1	-1,716.0	1,072.2	1,434.9	0.96	-0.94	0.21
9,364.0	89.80	89.00	6,796.4	-1,714.8	1,167.2	1,527.2	0.53	0.00	-0.53
9,461.0	89.70	88.80	6,796.8	-1,712.9	1,264.2	1,621.2	0.23	-0.10	-0.21
9,557.0	91.50	89.50	6,795.8	-1,711.5	1,360.2	1,714.3	2.01	1.88	0.73
9,653.0	91.00	89.30	6,793.7	-1,710.5	1,456.2	1,807.5	0.56	-0.52	-0.21
9,748.0	90.90	89.50	6,792.2	-1,709.5	1,551.1	1,899.8	0.24	-0.11	0.21
9,844.0	90.40	88.60	6,791.1	-1,707.9	1,647.1	1,992.9	1.07	-0.52	-0.94
9,940.0	90.70	88.80	6,790.2	-1,705.7	1,743.1	2,085.8	0.38	0.31	0.21
10,036.0	90.40	88.60	6,789.2	-1,703.6	1,839.1	2,178.8	0.38	-0.31	-0.21
10,132.0	89.60	87.90	6,789.2	-1,700.6	1,935.0	2,271.5	1.11	-0.83	-0.73
10,228.0	90.40	89.10	6,789.2	-1,698.1	2,031.0	2,364.4	1.50	0.83	1.25
10,323.0	91.80	89.80	6,787.4	-1,697.2	2,126.0	2,456.7	1.65	1.47	0.74
10,418.0	92.50	89.80	6,783.8	-1,696.9	2,220.9	2,549.0	0.74	0.74	0.00
10,514.0	93.00	89.30	6,779.2	-1,696.1	2,316.8	2,642.2	0.74	0.52	-0.52
10,610.0	91.30	89.50	6,775.6	-1,695.1	2,412.7	2,735.4	1.78	-1.77	0.21
10,705.0	91.20	89.00	6,773.6	-1,693.9	2,507.7	2,827.6	0.54	-0.11	-0.53
10,800.0	91.30	89.10	6,771.5	-1,692.3	2,602.6	2,919.7	0.15	0.11	0.11
10,896.0	91.00	88.60	6,769.6	-1,690.4	2,698.6	3,012.7	0.61	-0.31	-0.52
10,991.0	90.80	88.40	6,768.1	-1,687.9	2,793.5	3,104.6	0.30	-0.21	-0.21
11,087.0	90.90	87.40	6,766.7	-1,684.4	2,889.5	3,197.2	1.05	0.10	-1.04
11,183.0	91.20	87.20	6,764.9	-1,679.8	2,985.3	3,289.5	0.38	0.31	-0.21
11,278.0	90.00	88.40	6,763.9	-1,676.2	3,080.3	3,381.1	1.79	-1.26	1.26
11,374.0	89.90	87.90	6,764.0	-1,673.1	3,176.2	3,473.8	0.53	-0.10	-0.52
11,470.0	90.60	87.70	6,763.6	-1,669.4	3,272.1	3,566.4	0.76	0.73	-0.21
11,565.0	90.90	87.40	6,762.3	-1,665.4	3,367.1	3,657.9	0.45	0.32	-0.32
11,660.0	90.40	89.00	6,761.2	-1,662.4	3,462.0	3,749.7	1.76	-0.53	1.68
11,756.0	90.10	89.10	6,760.8	-1,660.8	3,558.0	3,842.8	0.33	-0.31	0.10
11,851.0	90.70	88.80	6,760.2	-1,659.0	3,653.0	3,934.8	0.71	0.63	-0.32
11,946.0	91.00	88.40	6,758.7	-1,656.7	3,747.9	4,026.8	0.53	0.32	-0.42
11,958.6	91.07	88.66	6,758.5	-1,656.4	3,760.6	4,039.0	2.15	0.52	2.08
WP #1 (Snowmass 8N)									
12,042.0	91.50	90.40	6,756.7	-1,655.7	3,843.9	4,120.0	2.15	0.52	2.08
12,137.0	91.00	90.20	6,754.6	-1,656.2	3,938.9	4,212.6	0.57	-0.53	-0.21
12,233.0	90.70	89.70	6,753.2	-1,656.1	4,034.9	4,306.0	0.61	-0.31	-0.52
12,329.0	90.40	89.50	6,752.2	-1,655.5	4,130.8	4,399.3	0.38	-0.31	-0.21
12,425.0	90.10	89.30	6,751.8	-1,654.5	4,226.8	4,492.6	0.38	-0.31	-0.21
12,521.0	90.70	89.50	6,751.1	-1,653.4	4,322.8	4,585.8	0.66	0.63	0.21
12,617.0	90.60	89.10	6,750.1	-1,652.3	4,418.8	4,679.0	0.43	-0.10	-0.42
12,713.0	90.10	89.10	6,749.5	-1,650.8	4,514.8	4,772.1	0.52	-0.52	0.00

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Snowmass 8N
Project:	SEC.5-T5N-R64W	TVD Reference:	WELL @ 4657.0ft (Ensign Rig #152 - RKB - 23')
Site:	Snowmass 5N64W05 Pad Sec.5-T5N-R64W	MD Reference:	WELL @ 4657.0ft (Ensign Rig #152 - RKB - 23')
Well:	Snowmass 8N	North Reference:	True
Wellbore:	Snowmass 8N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Snowmass 8N 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)
12,808.0	90.00	88.80	6,749.4	-1,649.0	4,609.8	4,864.2	0.33	-0.11	-0.32
12,904.0	90.70	90.50	6,748.8	-1,648.4	4,705.8	4,957.6	1.92	0.73	1.77
12,999.0	90.20	90.00	6,748.1	-1,648.9	4,800.8	5,050.2	0.74	-0.53	-0.53
13,095.0	89.90	89.80	6,748.0	-1,648.7	4,896.8	5,143.6	0.38	-0.31	-0.21
13,190.0	91.40	89.50	6,746.9	-1,648.1	4,991.8	5,236.0	1.61	1.58	-0.32
13,286.0	91.30	89.30	6,744.6	-1,647.1	5,087.7	5,329.2	0.23	-0.10	-0.21
13,382.0	90.60	91.40	6,743.0	-1,647.7	5,183.7	5,422.8	2.31	-0.73	2.19
13,477.0	90.40	90.40	6,742.2	-1,649.2	5,278.7	5,515.6	1.07	-0.21	-1.05
13,573.0	90.10	89.80	6,741.8	-1,649.3	5,374.7	5,609.1	0.70	-0.31	-0.63
13,669.0	91.40	91.10	6,740.5	-1,650.1	5,470.7	5,702.7	1.91	1.35	1.35
13,765.0	91.90	90.20	6,737.8	-1,651.2	5,566.6	5,796.4	1.07	0.52	-0.94
13,861.0	92.20	89.80	6,734.3	-1,651.2	5,662.6	5,889.8	0.52	0.31	-0.42
13,956.0	90.50	90.20	6,732.1	-1,651.2	5,757.5	5,982.3	1.84	-1.79	0.42
14,052.0	90.70	90.00	6,731.1	-1,651.4	5,853.5	6,075.8	0.29	0.21	-0.21
14,147.0	90.70	89.70	6,729.9	-1,651.1	5,948.5	6,168.2	0.32	0.00	-0.32
14,243.0	90.70	89.80	6,728.8	-1,650.7	6,044.5	6,261.6	0.10	0.00	0.10
14,338.0	90.50	89.70	6,727.8	-1,650.3	6,139.5	6,354.0	0.24	-0.21	-0.11
14,434.0	90.30	89.70	6,727.1	-1,649.8	6,235.5	6,447.4	0.21	-0.21	0.00
14,529.0	90.10	89.50	6,726.8	-1,649.1	6,330.5	6,539.7	0.30	-0.21	-0.21
14,624.0	90.30	89.10	6,726.4	-1,648.0	6,425.5	6,632.0	0.47	0.21	-0.42
14,719.0	90.20	88.80	6,726.0	-1,646.2	6,520.5	6,724.1	0.33	-0.11	-0.32
14,815.0	89.60	90.40	6,726.2	-1,645.5	6,616.5	6,817.4	1.78	-0.63	1.67
14,911.0	89.40	90.20	6,727.0	-1,646.0	6,712.5	6,911.0	0.29	-0.21	-0.21
15,006.0	91.00	91.10	6,726.7	-1,647.1	6,807.5	7,003.7	1.93	1.68	0.95
15,102.0	90.90	90.50	6,725.1	-1,648.5	6,903.4	7,097.5	0.63	-0.10	-0.63
15,190.0	91.50	90.20	6,723.3	-1,649.0	6,991.4	7,183.2	0.76	0.68	-0.34
15,247.0	91.50	90.20	6,721.8	-1,649.2	7,048.4	7,238.8	0.00	0.00	0.00
BHL 1880'FNL, 0'FEL, SEC.4									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 158'FNL, 1753'FEL - hit/miss target - Shape - survey hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,402,610.56	3,258,575.56	40.434850	-104.571082
BHL 1880'FNL, 0'FEL, S - survey misses target center by 1.8ft at 15247.0ft MD (6721.8 TVD, -1649.2 N, 7048.4 E) - Point	0.00	0.00	6,720.0	-1,649.0	7,048.7	1,401,035.58	3,265,640.90	40.430321	-104.545763
WP #1 (Snowmass 8N) - survey misses target center by 7.0ft at 11958.5ft MD (6758.5 TVD, -1656.4 N, 3760.5 E) - Point	0.00	0.00	6,759.3	-1,663.3	3,760.7	1,400,986.80	3,262,353.28	40.430284	-104.557574

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Site:	Snowmass 5N64W05 Pad Sec.5-T5N-R64W	MD Reference:	WELL @ 4657.0ft (Ensign Rig #152 - RKB - 23')
Well:	Snowmass 8N	North Reference:	True
Wellbore:	Snowmass 8N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Snowmass 8N Wellbore #1	Database:	US_EDM

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,437.3	6,702.7	-1,708.2	-737.4	TPZ - 60° Incl. in curve - 1866'FNL, 2490'FEL, SEC.5
7,929.0	6,813.0	-1,726.3	-267.3	Deepest TVD Drilled - 6813.02' TVD

Checked By: _____	Approved By: _____	Date: _____
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