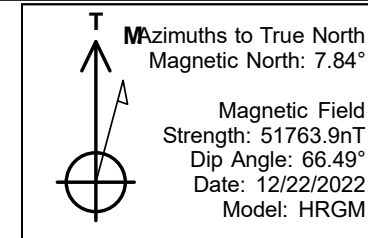


PDC Energy Inc. DJ Basin



Steamboat 1N
 Steamboat 4N66W34 1-16 Pad
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4805.0
 +N/-S +E/-W Northing Easting Longitude Slot
 0.0 0.0 1340509.89 3205789.02 40.265760 -104.762590
 Patterson 272 RKB - 28.5' Well @ 4833.5ft (Patterson 272 RKB - 28.5')

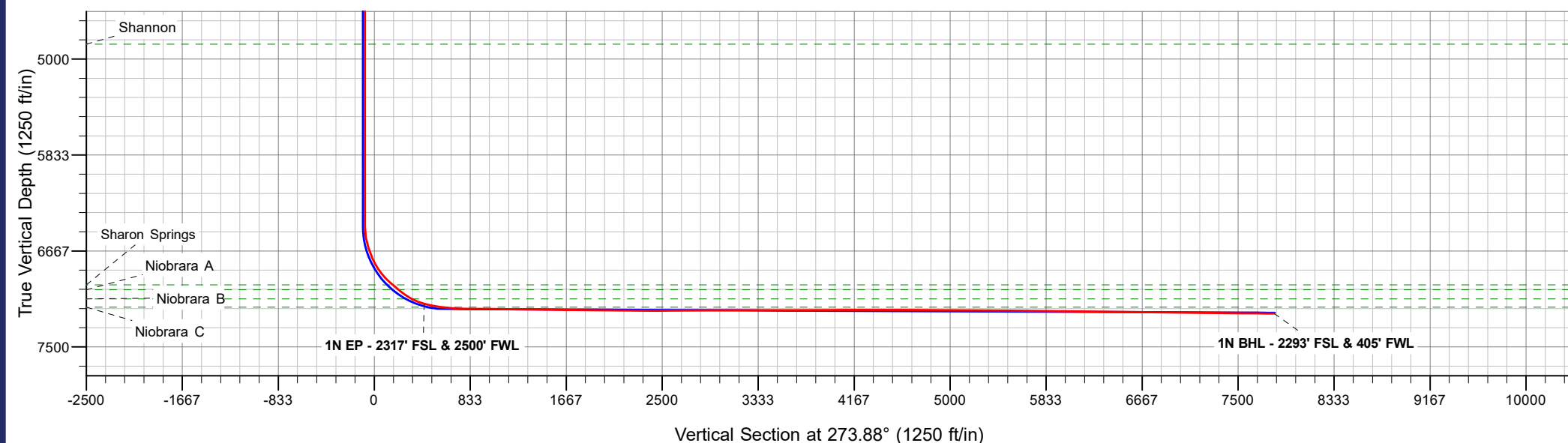
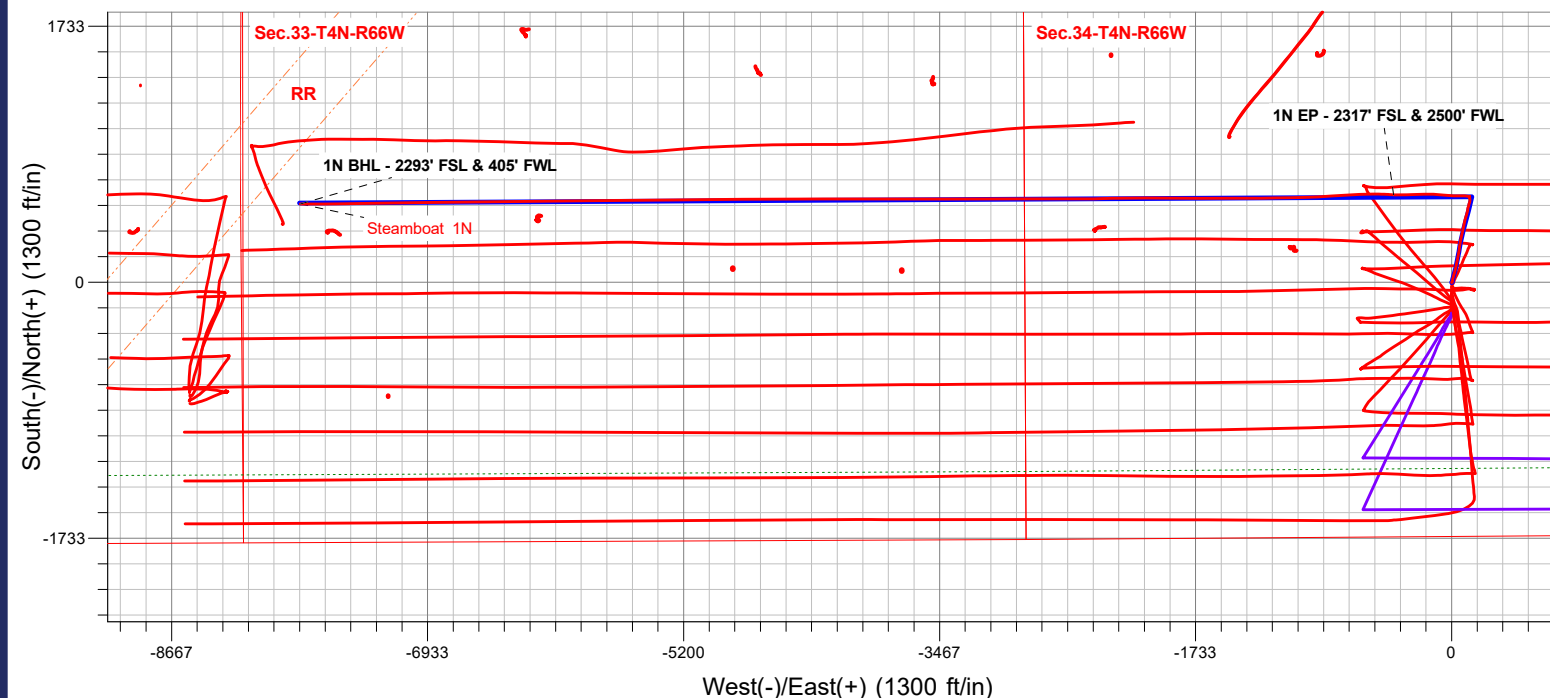
Steamboat 4N66W34 1-16 Pad
 Steamboat 1N
 Steamboat 1N Final Surveys
 13:20, February 23 2023



ANNOTATIONS

MD	TVD	Annotation
7413.8	7125.2	1N EP - 2317' FSL & 2500' FWL
14820.0	7210.0	1N BHL - 2293' FSL & 405' FWL

FINAL SURVEY
Projected Bottom Hole Location
14820' MD / 7210.0' TVD
89.47° INC / 296.59° AZM
2293' FSL / 405' FWL





PDC Energy Inc. DJ Basin

SEC.34-T4N-R66W

Steamboat 4N66W34 1-16 Pad

Steamboat 1N

Steamboat 1N Wellbore #1

Design: Steamboat 1N Final Surveys

Standard Survey Report

23 February, 2023



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Steamboat 1N
Project:	SEC.34-T4N-R66W	TVD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Site:	Steamboat 4N66W34 1-16 Pad	MD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Well:	Steamboat 1N	North Reference:	True
Wellbore:	Steamboat 1N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Steamboat 1N Final Surveys	Database:	US_EDM

Project	SEC.34-T4N-R66W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Steamboat 4N66W34 1-16 Pad				
Site Position:		Northing:	1,340,466.93 usft	Latitude:	40.265632
From:	Lat/Long	Easting:	3,205,789.66 usft	Longitude:	-104.762559
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.48 °

Well	Steamboat 1N					
Well Position	+N/-S	0.0 ft	Northing:	1,340,509.89 usft	Latitude:	40.265760
	+E/-W	0.0 ft	Easting:	3,205,789.02 usft	Longitude:	-104.762590
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,805.0 ft

Wellbore	Steamboat 1N Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	12/22/2022	7.84	66.49	51,763.94062091

Design	Steamboat 1N Final Surveys				
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	273.88	

Survey Program	Date	02/23/2023			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
161.5	14,820.0	Survey #1 (Steamboat 1N Wellbore #1)	MWD	MWD - Standard	

Survey	Fox Hills Base									
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	
161.5	1.06	156.22	161.5	-1.4	0.6	-0.7	0.66	0.66	0.00	
253.5	0.62	144.44	253.5	-2.6	1.2	-1.4	0.51	-0.48	-12.80	
344.5	1.93	34.05	344.5	-1.7	2.4	-2.5	2.44	1.44	-121.31	
461.5	4.04	20.87	461.3	3.8	5.0	-4.7	1.88	1.80	-11.26	
548.5	4.66	6.63	548.1	10.2	6.5	-5.7	1.43	0.71	-16.37	
631.5	7.03	9.97	630.6	18.5	7.7	-6.4	2.88	2.86	4.02	
720.5	8.62	12.43	718.8	30.4	10.1	-8.0	1.83	1.79	2.76	
810.5	10.64	15.95	807.5	45.0	13.8	-10.8	2.34	2.24	3.91	
875.8	12.47	16.08	871.5	57.6	17.4	-13.5	2.80	2.80	0.20	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Steamboat 1N
Project:	SEC.34-T4N-R66W	TVD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Site:	Steamboat 4N66W34 1-16 Pad	MD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Well:	Steamboat 1N	North Reference:	True
Wellbore:	Steamboat 1N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Steamboat 1N Final Surveys	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)
898.5	13.10	16.12	893.6	62.4	18.8	-14.6	2.80	2.80	0.17
988.5	13.45	15.77	981.2	82.3	24.5	-18.9	0.40	0.39	-0.39
1,076.5	13.19	10.85	1,066.9	102.0	29.2	-22.2	1.32	-0.30	-5.59
1,165.5	12.57	10.85	1,153.6	121.4	32.9	-24.6	0.70	-0.70	0.00
1,254.5	12.75	10.15	1,240.4	140.6	36.5	-26.9	0.27	0.20	-0.79
1,342.5	11.52	11.55	1,326.5	158.8	39.9	-29.1	1.44	-1.40	1.59
1,430.5	12.05	12.25	1,412.6	176.4	43.7	-31.6	0.62	0.60	0.80
1,519.5	11.70	9.97	1,499.7	194.3	47.2	-33.9	0.66	-0.39	-2.56
1,606.5	10.73	8.56	1,585.1	211.0	49.9	-35.5	1.16	-1.11	-1.62
1,650.5	10.73	8.56	1,628.3	219.1	51.1	-36.2	0.00	0.00	0.00
1,777.0	11.01	7.11	1,752.5	242.8	54.4	-37.8	0.31	0.22	-1.15
1,871.0	10.88	10.36	1,844.8	260.4	57.1	-39.3	0.67	-0.14	3.46
1,966.0	12.80	9.74	1,937.8	279.6	60.5	-41.4	2.03	2.02	-0.65
2,061.0	12.41	10.40	2,030.5	300.0	64.1	-43.7	0.44	-0.41	0.69
2,156.0	12.44	13.37	2,123.3	320.0	68.3	-46.5	0.67	0.03	3.13
2,250.0	12.80	13.70	2,215.0	340.0	73.1	-49.9	0.39	0.38	0.35
2,345.0	12.30	9.39	2,307.7	360.2	77.3	-52.7	1.12	-0.53	-4.54
2,440.0	12.67	15.19	2,400.5	380.2	81.6	-55.7	1.38	0.39	6.11
2,534.0	12.72	10.41	2,492.2	400.4	86.2	-58.9	1.12	0.05	-5.09
2,629.0	12.70	14.02	2,584.9	420.8	90.6	-62.0	0.84	-0.02	3.80
2,724.0	13.11	15.28	2,677.5	441.3	96.0	-65.9	0.52	0.43	1.33
2,819.0	13.19	18.01	2,770.0	462.0	102.2	-70.7	0.66	0.08	2.87
2,913.0	11.26	9.48	2,861.9	481.2	107.0	-74.2	2.81	-2.05	-9.07
3,008.0	12.12	10.64	2,954.9	500.2	110.4	-76.3	0.94	0.91	1.22
3,103.0	9.80	18.49	3,048.1	517.7	114.8	-79.5	2.90	-2.44	8.26
3,198.0	9.35	15.50	3,141.8	532.8	119.4	-83.1	0.71	-0.47	-3.15
3,293.0	7.68	11.41	3,235.8	546.4	122.7	-85.5	1.87	-1.76	-4.31
3,387.0	6.69	359.30	3,329.0	558.1	123.9	-85.9	1.92	-1.05	-12.88
3,482.0	5.22	348.89	3,423.5	567.8	123.0	-84.3	1.91	-1.55	-10.96
3,577.0	3.14	343.57	3,518.3	574.6	121.5	-82.3	2.22	-2.19	-5.60
3,672.0	0.84	350.68	3,613.2	577.8	120.6	-81.2	2.43	-2.42	7.48
3,766.0	0.11	323.08	3,707.2	578.5	120.4	-81.0	0.79	-0.78	-29.36
3,834.3	0.07	200.81	3,775.5	578.5	120.4	-80.9	0.24	-0.05	-179.02
Parkman									
3,861.0	0.13	184.57	3,802.2	578.5	120.4	-80.9	0.24	0.21	-60.83
3,956.0	0.03	219.38	3,897.2	578.4	120.4	-80.9	0.11	-0.11	36.64
4,050.0	0.05	346.43	3,991.2	578.4	120.3	-80.9	0.08	0.02	135.16
4,145.0	0.03	113.05	4,086.2	578.4	120.3	-80.9	0.08	-0.02	133.28
4,240.0	0.12	117.25	4,181.2	578.4	120.5	-81.0	0.09	0.09	4.42
4,269.3	0.11	110.57	4,210.5	578.3	120.5	-81.1	0.06	-0.04	-22.79
Sussex									
4,334.0	0.09	90.63	4,275.2	578.3	120.6	-81.2	0.06	-0.03	-30.82
4,429.0	0.04	68.17	4,370.2	578.3	120.7	-81.3	0.06	-0.05	-23.64

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Steamboat 1N
Project:	SEC.34-T4N-R66W	TVD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Site:	Steamboat 4N66W34 1-16 Pad	MD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Well:	Steamboat 1N	North Reference:	True
Wellbore:	Steamboat 1N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Steamboat 1N Final Surveys	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)
4,524.0	0.07	243.74	4,465.2	578.3	120.7	-81.3	0.12	0.03	184.81
4,618.0	0.07	308.72	4,559.2	578.3	120.6	-81.2	0.08	0.00	69.13
4,713.0	0.12	52.85	4,654.2	578.4	120.6	-81.2	0.16	0.05	109.61
4,807.0	0.10	279.08	4,748.2	578.5	120.6	-81.2	0.22	-0.02	-142.31
4,902.0	0.09	162.79	4,843.2	578.4	120.6	-81.1	0.17	-0.01	-122.41
4,929.3	0.10	152.02	4,870.5	578.4	120.6	-81.2	0.09	0.05	-39.44
Shannon									
4,996.0	0.15	136.13	4,937.2	578.3	120.7	-81.3	0.09	0.07	-23.83
5,091.0	0.09	112.55	5,032.2	578.1	120.8	-81.4	0.08	-0.06	-24.82
5,186.0	0.13	264.82	5,127.2	578.1	120.8	-81.4	0.23	0.04	160.28
5,281.0	0.12	347.26	5,222.2	578.2	120.7	-81.3	0.17	-0.01	86.78
5,376.0	0.05	243.19	5,317.2	578.3	120.6	-81.2	0.15	-0.07	-109.55
5,470.0	0.08	268.14	5,411.2	578.3	120.5	-81.1	0.04	0.03	26.54
5,565.0	0.14	221.66	5,506.2	578.2	120.4	-81.0	0.11	0.06	-48.93
5,660.0	0.18	354.18	5,601.2	578.2	120.3	-80.9	0.31	0.04	139.50
5,755.0	0.07	69.93	5,696.2	578.4	120.3	-80.9	0.19	-0.12	79.74
5,850.0	0.11	189.03	5,791.2	578.3	120.3	-80.9	0.16	0.04	125.37
5,944.0	0.06	111.71	5,885.2	578.2	120.4	-81.0	0.12	-0.05	-82.26
6,039.0	0.04	152.37	5,980.2	578.2	120.4	-81.0	0.04	-0.02	42.80
6,134.0	0.08	60.08	6,075.2	578.2	120.5	-81.1	0.10	0.04	-97.15
6,228.0	0.09	173.48	6,169.2	578.1	120.6	-81.2	0.15	0.01	120.64
6,323.0	0.07	171.48	6,264.2	578.0	120.6	-81.2	0.02	-0.02	-2.11
6,418.0	0.12	333.90	6,359.2	578.0	120.6	-81.2	0.20	0.05	170.97
6,513.0	0.16	24.73	6,454.2	578.2	120.6	-81.2	0.13	0.04	53.51
6,608.0	10.57	290.40	6,548.7	581.4	112.4	-72.8	11.14	10.96	-99.29
6,702.0	17.30	274.72	6,639.9	585.6	90.4	-50.6	8.15	7.16	-16.68
6,797.0	24.20	265.68	6,728.7	585.3	56.9	-17.1	7.99	7.26	-9.52
6,892.0	32.19	272.77	6,812.4	585.0	12.1	27.5	9.11	8.41	7.46
6,986.0	42.26	275.15	6,887.1	589.1	-44.6	84.3	10.82	10.71	2.53
7,081.0	49.09	274.74	6,953.5	594.9	-112.2	152.2	7.20	7.19	-0.43
7,091.8	49.31	273.88	6,960.5	595.5	-120.4	160.4	6.37	2.02	-7.98
Sharon Springs									
7,158.7	50.80	268.67	7,003.5	596.6	-171.6	211.6	6.37	2.23	-7.79
Niobrara A									
7,176.0	51.22	267.36	7,014.4	596.2	-185.1	225.0	6.37	2.44	-7.57
7,271.0	59.02	267.86	7,068.7	593.0	-262.9	302.4	8.22	8.21	0.53
7,299.1	62.01	268.58	7,082.5	592.2	-287.3	326.8	10.85	10.62	2.54
Niobrara B									
7,365.0	69.02	270.11	7,109.8	591.5	-347.2	386.5	10.85	10.64	2.33
7,413.8	74.03	271.90	7,125.2	592.4	-393.5	432.7	10.84	10.26	3.68
1N EP - 2317' FSL & 2500' FWL									
7,460.0	78.78	273.52	7,136.1	594.5	-438.3	477.6	10.84	10.29	3.50
7,554.0	81.85	269.59	7,151.9	597.0	-530.9	570.1	5.26	3.27	-4.18
7,572.8	82.43	269.07	7,154.5	596.8	-549.6	588.7	4.13	3.08	-2.78
Niobrara C									

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Site:	Steamboat 4N66W34 1-16 Pad	MD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Well:	Steamboat 1N	North Reference:	True
Wellbore:	Steamboat 1N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Steamboat 1N Final Surveys	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)
7,649.0	84.78	266.96	7,163.0	594.1	-625.2	664.0	4.13	3.09	-2.76
7,744.0	89.26	266.97	7,167.9	589.1	-719.9	758.2	4.72	4.72	0.01
7,838.0	89.50	266.21	7,168.9	583.5	-813.8	851.4	0.85	0.26	-0.81
7,933.0	89.42	266.95	7,169.8	577.9	-908.6	945.6	0.78	-0.08	0.78
8,028.0	89.19	268.60	7,171.0	574.2	-1,003.5	1,040.1	1.75	-0.24	1.74
8,122.0	89.41	269.36	7,172.1	572.5	-1,097.5	1,133.7	0.84	0.23	0.81
8,216.0	89.07	268.31	7,173.4	570.6	-1,191.5	1,227.4	1.17	-0.36	-1.12
8,311.0	89.34	269.30	7,174.7	568.6	-1,286.4	1,322.0	1.08	0.28	1.04
8,406.0	89.63	270.25	7,175.6	568.2	-1,381.4	1,416.7	1.05	0.31	1.00
8,501.0	89.29	270.25	7,176.5	568.6	-1,476.4	1,511.5	0.36	-0.36	0.00
8,595.0	89.21	269.46	7,177.7	568.4	-1,570.4	1,605.3	0.84	-0.09	-0.84
8,689.0	89.63	270.23	7,178.6	568.2	-1,664.4	1,699.0	0.93	0.45	0.82
8,784.0	89.32	270.18	7,179.5	568.5	-1,759.4	1,793.8	0.33	-0.33	-0.05
8,879.0	89.20	270.39	7,180.7	569.0	-1,854.4	1,888.7	0.25	-0.13	0.22
8,974.0	89.41	270.16	7,181.9	569.4	-1,949.4	1,983.5	0.33	0.22	-0.24
9,069.0	89.71	270.15	7,182.6	569.7	-2,044.4	2,078.3	0.32	0.32	-0.01
9,163.0	89.55	270.00	7,183.2	569.8	-2,138.4	2,172.0	0.23	-0.17	-0.16
9,258.0	89.84	269.88	7,183.7	569.7	-2,233.4	2,266.8	0.33	0.31	-0.13
9,353.0	88.86	267.05	7,184.8	567.2	-2,328.3	2,361.4	3.15	-1.03	-2.98
9,448.0	90.26	269.71	7,185.5	564.5	-2,423.3	2,455.9	3.16	1.47	2.80
9,542.0	90.42	269.81	7,185.0	564.1	-2,517.3	2,549.7	0.20	0.17	0.11
9,636.0	90.51	270.22	7,184.2	564.1	-2,611.3	2,643.5	0.45	0.10	0.44
9,731.0	90.40	270.36	7,183.5	564.6	-2,706.3	2,738.3	0.19	-0.12	0.15
9,826.0	90.01	269.95	7,183.1	564.8	-2,801.3	2,833.1	0.60	-0.41	-0.43
9,920.0	90.37	269.94	7,182.8	564.7	-2,895.3	2,926.8	0.38	0.38	-0.01
10,015.0	90.18	269.53	7,182.3	564.3	-2,990.3	3,021.6	0.48	-0.20	-0.43
10,110.0	90.45	269.97	7,181.8	563.9	-3,085.3	3,116.4	0.54	0.28	0.46
10,205.0	90.29	270.51	7,181.2	564.3	-3,180.3	3,211.2	0.59	-0.17	0.57
10,299.0	89.62	269.96	7,181.3	564.7	-3,274.3	3,305.0	0.92	-0.71	-0.59
10,394.0	89.73	269.22	7,181.8	564.0	-3,369.2	3,399.7	0.79	0.12	-0.78
10,489.0	90.32	269.92	7,181.8	563.3	-3,464.2	3,494.4	0.96	0.62	0.74
10,584.0	90.48	270.25	7,181.1	563.4	-3,559.2	3,589.2	0.39	0.17	0.35
10,678.0	90.12	269.54	7,180.6	563.3	-3,653.2	3,683.0	0.85	-0.38	-0.76
10,773.0	90.63	270.18	7,180.0	563.0	-3,748.2	3,777.7	0.86	0.54	0.67
10,868.0	90.32	269.83	7,179.2	563.0	-3,843.2	3,872.5	0.49	-0.33	-0.37
10,963.0	90.10	269.91	7,178.9	562.8	-3,938.2	3,967.3	0.25	-0.23	0.08
11,058.0	90.56	270.10	7,178.3	562.8	-4,033.2	4,062.1	0.52	0.48	0.20
11,153.0	90.00	269.57	7,177.9	562.5	-4,128.2	4,156.8	0.81	-0.59	-0.56
11,247.0	89.65	270.21	7,178.1	562.4	-4,222.2	4,250.6	0.78	-0.37	0.68
11,342.0	89.75	270.55	7,178.6	563.0	-4,317.2	4,345.4	0.37	0.11	0.36
11,437.0	89.83	270.19	7,179.0	563.6	-4,412.2	4,440.3	0.39	0.08	-0.38
11,532.0	90.06	270.18	7,179.1	563.9	-4,507.2	4,535.1	0.24	0.24	-0.01
11,626.0	90.09	269.64	7,179.0	563.8	-4,601.2	4,628.8	0.58	0.03	-0.57

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Steamboat 1N
Project:	SEC.34-T4N-R66W	TVD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Site:	Steamboat 4N66W34 1-16 Pad	MD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Well:	Steamboat 1N	North Reference:	True
Wellbore:	Steamboat 1N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Steamboat 1N Final Surveys	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)	
11,721.0	89.83	269.36	7,179.0	562.9	-4,696.2	4,723.5	0.40	-0.27	-0.29	
11,816.0	90.17	269.42	7,179.0	561.9	-4,791.2	4,818.3	0.36	0.36	0.06	
11,911.0	89.49	269.35	7,179.3	560.9	-4,886.2	4,913.0	0.72	-0.72	-0.07	
12,006.0	89.57	269.52	7,180.1	560.0	-4,981.2	5,007.7	0.20	0.08	0.18	
12,101.0	89.45	269.31	7,180.9	559.0	-5,076.2	5,102.4	0.25	-0.13	-0.22	
12,196.0	89.55	269.53	7,181.7	558.0	-5,171.2	5,197.1	0.25	0.11	0.23	
12,290.0	89.37	269.37	7,182.6	557.1	-5,265.2	5,290.8	0.26	-0.19	-0.17	
12,385.0	89.27	268.92	7,183.7	555.7	-5,360.2	5,385.5	0.49	-0.11	-0.47	
12,480.0	89.29	269.26	7,184.9	554.2	-5,455.1	5,480.1	0.36	0.02	0.36	
12,575.0	89.52	269.92	7,185.9	553.5	-5,550.1	5,574.9	0.74	0.24	0.69	
12,670.0	89.57	269.69	7,186.7	553.2	-5,645.1	5,669.6	0.25	0.05	-0.24	
12,765.0	89.37	269.21	7,187.6	552.3	-5,740.1	5,764.3	0.55	-0.21	-0.51	
12,860.0	89.37	269.58	7,188.6	551.3	-5,835.1	5,859.0	0.39	0.00	0.39	
12,955.0	89.64	270.07	7,189.4	551.0	-5,930.1	5,953.8	0.59	0.28	0.52	
13,050.0	89.47	269.21	7,190.2	550.4	-6,025.1	6,048.5	0.92	-0.18	-0.91	
13,145.0	89.42	269.70	7,191.1	549.5	-6,120.1	6,143.2	0.52	-0.05	0.52	
13,240.0	89.27	269.39	7,192.2	548.8	-6,215.1	6,238.0	0.36	-0.16	-0.33	
13,335.0	89.20	269.06	7,193.4	547.5	-6,310.1	6,332.6	0.36	-0.07	-0.35	
13,429.0	89.12	269.05	7,194.8	545.9	-6,404.0	6,426.3	0.09	-0.09	-0.01	
13,524.0	89.42	269.56	7,196.0	544.8	-6,499.0	6,521.0	0.62	0.32	0.54	
13,618.0	89.43	269.67	7,197.0	544.1	-6,593.0	6,614.7	0.12	0.01	0.12	
13,713.0	89.43	269.08	7,197.9	543.1	-6,688.0	6,709.4	0.62	0.00	-0.62	
13,808.0	89.16	268.65	7,199.1	541.2	-6,783.0	6,804.1	0.53	-0.28	-0.45	
13,903.0	89.21	269.04	7,200.4	539.3	-6,877.9	6,898.7	0.41	0.05	0.41	
13,998.0	89.32	269.15	7,201.7	537.8	-6,972.9	6,993.3	0.16	0.12	0.12	
14,092.0	89.58	269.84	7,202.6	537.0	-7,066.9	7,087.1	0.78	0.28	0.73	
14,187.0	89.31	269.78	7,203.5	536.7	-7,161.9	7,181.8	0.29	-0.28	-0.06	
14,281.0	89.53	269.21	7,204.4	535.8	-7,255.9	7,275.5	0.65	0.23	-0.61	
14,376.0	89.19	268.67	7,205.5	534.1	-7,350.9	7,370.2	0.67	-0.36	-0.57	
14,470.0	89.33	269.24	7,206.7	532.4	-7,444.9	7,463.8	0.62	0.15	0.61	
14,565.0	89.47	269.13	7,207.7	531.0	-7,539.8	7,558.5	0.19	0.15	-0.12	
14,660.0	89.52	269.60	7,208.5	530.0	-7,634.8	7,653.2	0.50	0.05	0.49	
14,755.0	89.47	269.59	7,209.4	529.3	-7,729.8	7,747.9	0.05	-0.05	-0.01	
14,820.0	89.47	269.59	7,210.0	528.8	-7,794.8	7,812.7	0.00	0.00	0.00	
1N BHL - 2293' FSL & 405' FWL										

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Site:	Steamboat 4N66W34 1-16 Pad	MD Reference:	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
Well:	Steamboat 1N	North Reference:	True
Wellbore:	Steamboat 1N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Steamboat 1N Final Surveys	Database:	US_EDM

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
875.8	871.5	Fox Hills Base		0.00		
3,834.3	3,775.5	Parkman		0.00		
4,269.3	4,210.5	Sussex		0.00		
4,929.3	4,870.5	Shannon		0.00		
7,091.8	6,960.5	Sharon Springs		0.00		
7,158.7	7,003.5	Niobrara A		0.00		
7,299.1	7,082.5	Niobrara B		0.00		
7,572.8	7,154.5	Niobrara C		0.00		

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
7,413.8	7,125.2	592.4	-393.5	1N EP - 2317' FSL & 2500' FWL	
14,820.0	7,210.0	528.8	-7,794.8	1N BHL - 2293' FSL & 405' FWL	

Checked By: _____ Approved By: _____ Date: _____