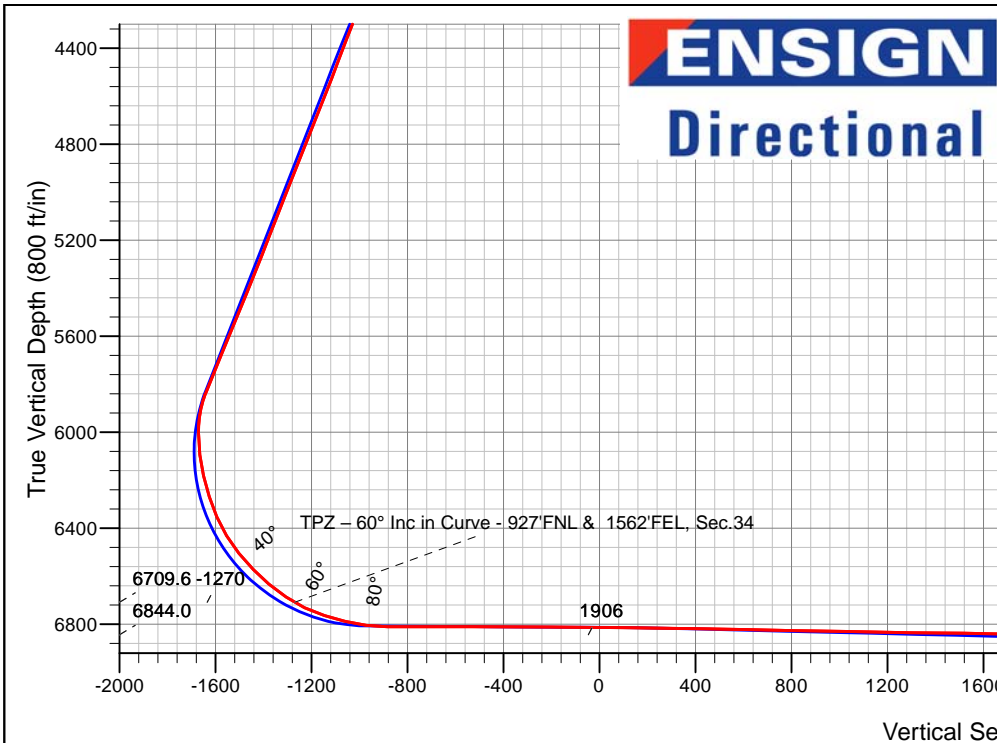
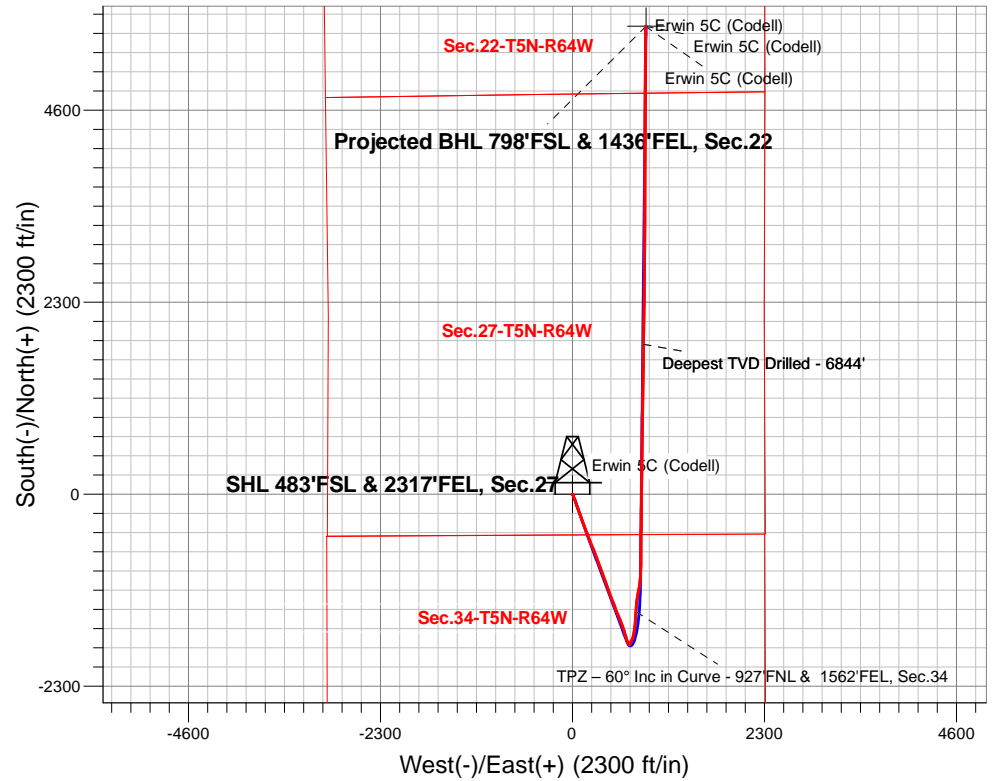


PDC Energy Inc. DJ Basin

Well Name: **Erwin 5C (Codell)**
 Surface Location: Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4639.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1377057.31 3268989.53 40.364405 -104.534673
 Ensign 142 RKB - 28' WELL @ 4667.0ft (Ensign 142 RKB - 28')

FINAL SURVEY

Projected Bottom Hole Location
14,246'MD 6832'TVD 5604'N & 876'E of SHL
89.66 degree Inc @ 358.18 degree Azm



Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W
 Erwin 5C (Codell)
 Erwin 5C (Codell) Wellbore #1
 16:20, February 16 2021

ANNOTATIONS

TVD	MD	Annotation
6709.6	7214.7	TPZ - 60° Inc in Curve - 927'FNL & 1562'FEL, Sec.34
6844.0	10437.6	Deepest TVD Drilled - 6844'

LEGEND

- Erwin 5C (Codell), Erwin 5C (Codell) Wellbore #1, Plan #3 (1-26-21) V0
- Erwin 5C (Codell) Wellbore #1
- Survey #1

Projected BHL 798'FSL & 1436'FEL, Sec.22

Erwin 5C (Codell)
 Erwin 5C (Codell)
 Deepest TVD Drilled - 6844'



PDC Energy Inc. DJ Basin

SEC.27-T5N-R64W

Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W

Erwin 5C (Codell)

Erwin 5C (Codell) Wellbore #1

Survey: Survey #1

Standard Survey Report

16 February, 2021



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 5C (Codell)
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Site:	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Well:	Erwin 5C (Codell)	North Reference:	True
Wellbore:	Erwin 5C (Codell) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Erwin 5C (Codell) Wellbore #1	Database:	US_EDM

Project	SEC.27-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	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W				
Site Position:		Northing:	1,377,056.42 usft	Latitude:	40.364404
From:	Lat/Long	Easting:	3,268,929.60 usft	Longitude:	-104.534888
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.62 °

Well	Erwin 5C (Codell)					
Well Position	+N/-S	0.0 ft	Northing:	1,377,057.31 usft	Latitude:	40.364405
	+E/-W	0.0 ft	Easting:	3,268,989.53 usft	Longitude:	-104.534673
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,639.0 ft

Wellbore	Erwin 5C (Codell) Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	01/26/2021	7.75	66.77	51,978

Design	Erwin 5C (Codell) 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	8.94	

Survey Program	Date	02/16/2021			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
162.0	14,246.0	Survey #1 (Erwin 5C (Codell) 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	
162.0	0.40	97.20	162.0	-0.1	0.6	0.0	0.25	0.25	0.00	
253.0	0.40	107.90	253.0	-0.2	1.2	0.0	0.08	0.00	11.76	
343.0	0.40	87.20	343.0	-0.3	1.8	0.0	0.16	0.00	-23.00	
463.0	1.30	140.30	463.0	-1.3	3.1	-0.8	0.92	0.75	44.25	
553.0	3.00	158.80	552.9	-4.3	4.6	-3.5	2.02	1.89	20.56	
642.0	4.40	160.00	641.7	-9.7	6.6	-8.5	1.58	1.57	1.35	
731.0	5.90	164.60	730.4	-17.3	9.0	-15.7	1.75	1.69	5.17	
820.0	6.90	162.30	818.8	-26.8	11.8	-24.6	1.16	1.12	-2.58	
909.0	7.40	159.50	907.1	-37.3	15.4	-34.4	0.68	0.56	-3.15	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 5C (Codell)
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Site:	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Well:	Erwin 5C (Codell)	North Reference:	True
Wellbore:	Erwin 5C (Codell) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Erwin 5C (Codell) 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)	
998.0	8.80	156.10	995.2	-48.9	20.2	-45.1	1.66	1.57	-3.82	
1,088.0	9.90	158.40	1,084.0	-62.3	25.9	-57.6	1.29	1.22	2.56	
1,177.0	11.20	159.10	1,171.5	-77.5	31.8	-71.7	1.47	1.46	0.79	
1,263.0	12.00	160.70	1,255.8	-93.8	37.7	-86.8	1.00	0.93	1.86	
1,352.0	14.10	161.90	1,342.5	-112.8	44.1	-104.6	2.38	2.36	1.35	
1,442.0	14.00	160.00	1,429.8	-133.5	51.2	-123.9	0.52	-0.11	-2.11	
1,640.0	16.40	160.00	1,620.8	-182.2	69.0	-169.3	1.21	1.21	0.00	
1,791.0	15.55	161.14	1,766.0	-221.4	82.8	-205.9	0.60	-0.56	0.75	
1,880.0	15.25	158.41	1,851.8	-243.6	91.0	-226.5	0.88	-0.34	-3.07	
1,970.0	15.07	160.37	1,938.7	-265.6	99.3	-247.0	0.60	-0.20	2.18	
2,059.0	15.70	161.92	2,024.5	-288.0	106.9	-267.9	0.85	0.71	1.74	
2,149.0	15.88	163.11	2,111.1	-311.3	114.3	-289.8	0.41	0.20	1.32	
2,239.0	16.27	159.31	2,197.6	-334.9	122.3	-311.8	1.25	0.43	-4.22	
2,329.0	16.71	156.91	2,283.9	-358.6	131.8	-333.8	0.90	0.49	-2.67	
2,419.0	16.04	160.12	2,370.2	-382.2	141.1	-355.6	1.25	-0.74	3.57	
2,508.0	15.69	157.67	2,455.8	-404.9	149.9	-376.7	0.85	-0.39	-2.75	
2,599.0	18.64	159.92	2,542.8	-429.9	159.5	-399.9	3.32	3.24	2.47	
2,689.0	17.55	159.31	2,628.3	-456.1	169.3	-424.3	1.23	-1.21	-0.68	
2,778.0	18.37	159.09	2,713.0	-481.8	179.0	-448.1	0.92	0.92	-0.25	
2,868.0	18.40	158.22	2,798.4	-508.2	189.4	-472.6	0.31	0.03	-0.97	
2,958.0	20.23	159.58	2,883.3	-536.0	200.1	-498.4	2.09	2.03	1.51	
3,047.0	21.11	159.73	2,966.6	-565.5	211.0	-525.8	0.99	0.99	0.17	
3,137.0	20.15	159.83	3,050.8	-595.2	221.9	-553.5	1.07	-1.07	0.11	
3,227.0	22.00	154.54	3,134.8	-625.0	234.5	-581.0	2.95	2.06	-5.88	
3,316.0	23.96	159.52	3,216.7	-657.0	248.0	-610.5	3.10	2.20	5.60	
3,406.0	23.93	158.45	3,299.0	-691.1	261.1	-642.1	0.48	-0.03	-1.19	
3,495.0	23.92	158.63	3,380.3	-724.7	274.3	-673.2	0.08	-0.01	0.20	
3,585.0	24.37	159.12	3,462.5	-759.0	287.6	-705.1	0.55	0.50	0.54	
3,674.0	24.32	160.52	3,543.6	-793.4	300.3	-737.2	0.65	-0.06	1.57	
3,763.0	24.28	159.93	3,624.7	-827.9	312.6	-769.3	0.28	-0.04	-0.66	
3,852.0	24.31	159.81	3,705.8	-862.3	325.2	-801.3	0.06	0.03	-0.13	
3,943.0	24.22	158.42	3,788.8	-897.2	338.6	-833.7	0.64	-0.10	-1.53	
4,032.0	23.17	159.49	3,870.3	-930.6	351.4	-864.7	1.27	-1.18	1.20	
4,122.0	23.43	159.54	3,952.9	-964.0	363.9	-895.7	0.29	0.29	0.06	
4,211.0	24.11	159.79	4,034.4	-997.6	376.3	-927.0	0.77	0.76	0.28	
4,301.0	23.87	159.86	4,116.6	-1,031.9	389.0	-959.0	0.27	-0.27	0.08	
4,391.0	23.96	160.87	4,198.9	-1,066.3	401.2	-991.0	0.47	0.10	1.12	
4,481.0	23.62	160.47	4,281.2	-1,100.6	413.2	-1,023.0	0.42	-0.38	-0.44	
4,570.0	23.24	159.04	4,362.9	-1,133.8	425.5	-1,053.9	0.77	-0.43	-1.61	
4,660.0	23.38	159.51	4,445.5	-1,167.1	438.1	-1,084.8	0.26	0.16	0.52	
4,749.0	23.89	159.52	4,527.1	-1,200.5	450.6	-1,115.9	0.57	0.57	0.01	
4,840.0	25.04	159.14	4,609.9	-1,235.8	463.9	-1,148.7	1.28	1.26	-0.42	
4,930.0	24.64	159.20	4,691.6	-1,271.1	477.3	-1,181.5	0.45	-0.44	0.07	
5,020.0	24.30	159.88	4,773.5	-1,306.0	490.4	-1,214.0	0.49	-0.38	0.76	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 5C (Codell)
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Site:	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Well:	Erwin 5C (Codell)	North Reference:	True
Wellbore:	Erwin 5C (Codell) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Erwin 5C (Codell) 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)	
5,109.0	24.46	158.80	4,854.5	-1,340.4	503.3	-1,245.9	0.53	0.18	-1.21	
5,199.0	24.57	160.26	4,936.4	-1,375.4	516.4	-1,278.4	0.68	0.12	1.62	
5,288.0	25.08	157.61	5,017.2	-1,410.2	529.8	-1,310.8	1.38	0.57	-2.98	
5,378.0	24.58	157.21	5,098.9	-1,445.1	544.3	-1,343.0	0.59	-0.56	-0.44	
5,468.0	24.42	156.90	5,180.8	-1,479.5	558.9	-1,374.7	0.23	-0.18	-0.34	
5,558.0	24.74	159.74	5,262.6	-1,514.3	572.7	-1,406.9	1.36	0.36	3.16	
5,647.0	24.69	157.96	5,343.5	-1,549.0	586.1	-1,439.1	0.84	-0.06	-2.00	
5,737.0	24.76	158.94	5,425.2	-1,584.0	599.9	-1,471.5	0.46	0.08	1.09	
5,827.0	24.59	160.51	5,507.0	-1,619.2	613.0	-1,504.3	0.75	-0.19	1.74	
5,916.0	25.00	164.14	5,587.8	-1,654.8	624.3	-1,537.7	1.77	0.46	4.08	
6,006.0	24.51	165.60	5,669.5	-1,691.2	634.1	-1,572.1	0.87	-0.54	1.62	
6,096.0	24.61	162.05	5,751.4	-1,727.1	644.5	-1,605.9	1.64	0.11	-3.94	
6,186.0	24.24	162.35	5,833.4	-1,762.5	655.9	-1,639.2	0.43	-0.41	0.33	
6,275.0	14.94	141.89	5,917.2	-1,789.0	668.6	-1,663.4	12.84	-10.45	-22.99	
6,365.0	8.07	95.16	6,005.5	-1,798.7	682.1	-1,670.9	12.29	-7.63	-51.92	
6,455.0	7.33	37.66	6,094.8	-1,794.8	691.9	-1,665.5	8.24	-0.82	-63.89	
6,544.0	13.87	14.00	6,182.3	-1,779.9	698.0	-1,649.8	8.68	7.35	-26.58	
6,634.0	17.92	25.19	6,268.9	-1,756.9	706.5	-1,625.8	5.62	4.50	12.43	
6,724.0	23.97	22.53	6,352.9	-1,727.4	719.4	-1,594.7	6.80	6.72	-2.96	
6,813.0	30.70	12.16	6,431.9	-1,688.5	731.1	-1,554.4	9.24	7.56	-11.65	
6,903.0	39.48	9.92	6,505.5	-1,637.7	740.9	-1,502.7	9.86	9.76	-2.49	
6,993.0	44.40	6.21	6,572.4	-1,578.2	749.2	-1,442.6	6.12	5.47	-4.12	
7,082.0	49.67	3.46	6,633.1	-1,513.3	754.7	-1,377.7	6.34	5.92	-3.09	
7,172.0	56.50	3.16	6,687.1	-1,441.5	758.8	-1,306.1	7.59	7.59	-0.33	
7,214.7	60.00	3.39	6,709.6	-1,405.3	760.9	-1,270.0	8.20	8.19	0.54	
TPZ – 60° Inc in Curve - 927°FNL & 1562°FEL, Sec.34										
7,261.0	63.79	3.62	6,731.4	-1,364.5	763.4	-1,229.4	8.20	8.19	0.50	
7,351.0	72.97	6.93	6,764.5	-1,281.3	771.1	-1,146.0	10.76	10.20	3.68	
7,440.0	75.96	11.34	6,788.4	-1,196.7	784.8	-1,060.2	5.84	3.36	4.96	
7,530.0	82.44	9.57	6,805.2	-1,109.8	800.8	-971.9	7.45	7.20	-1.97	
7,619.0	90.15	6.10	6,811.0	-1,021.9	812.9	-883.2	9.50	8.66	-3.90	
7,709.0	90.04	0.88	6,810.8	-932.1	818.3	-793.6	5.80	-0.12	-5.80	
7,798.0	89.58	0.62	6,811.1	-843.1	819.5	-705.5	0.59	-0.52	-0.29	
7,888.0	90.12	0.14	6,811.3	-753.1	820.1	-616.6	0.80	0.60	-0.53	
7,977.0	90.10	0.51	6,811.2	-664.1	820.6	-528.6	0.42	-0.02	0.42	
8,067.0	89.96	0.87	6,811.1	-574.1	821.7	-439.5	0.43	-0.16	0.40	
8,157.0	90.28	0.42	6,810.9	-484.1	822.7	-350.4	0.61	0.36	-0.50	
8,247.0	88.82	0.29	6,811.7	-394.1	823.3	-261.4	1.63	-1.62	-0.14	
8,337.0	90.09	0.67	6,812.5	-304.1	824.0	-172.4	1.47	1.41	0.42	
8,427.0	88.87	0.71	6,813.3	-214.2	825.1	-83.4	1.36	-1.36	0.04	
8,517.0	89.87	0.69	6,814.3	-124.2	826.2	5.7	1.11	1.11	-0.02	
8,607.0	88.94	0.51	6,815.2	-34.2	827.1	94.7	1.05	-1.03	-0.20	
8,697.0	89.23	0.55	6,816.7	55.8	828.0	183.8	0.33	0.32	0.04	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 5C (Codell)
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Site:	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Well:	Erwin 5C (Codell)	North Reference:	True
Wellbore:	Erwin 5C (Codell) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Erwin 5C (Codell) 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)	
8,787.0	89.79	0.74	6,817.5	145.8	829.0	272.8	0.66	0.62	0.21	
8,876.0	89.60	0.85	6,817.9	234.8	830.2	360.9	0.25	-0.21	0.12	
8,965.0	88.75	0.47	6,819.2	323.8	831.2	449.0	1.05	-0.96	-0.43	
9,055.0	88.94	0.63	6,821.0	413.7	832.1	538.0	0.28	0.21	0.18	
9,144.0	88.48	0.64	6,823.0	502.7	833.1	626.0	0.52	-0.52	0.01	
9,234.0	89.09	1.20	6,824.9	592.7	834.5	715.1	0.92	0.68	0.62	
9,324.0	88.67	0.99	6,826.7	682.6	836.3	804.3	0.52	-0.47	-0.23	
9,414.0	89.17	0.74	6,828.4	772.6	837.6	893.4	0.62	0.56	-0.28	
9,503.0	88.85	0.50	6,829.9	861.6	838.6	981.4	0.45	-0.36	-0.27	
9,593.0	89.19	0.88	6,831.5	951.6	839.7	1,070.5	0.57	0.38	0.42	
9,683.0	88.94	1.30	6,832.9	1,041.6	841.4	1,159.6	0.54	-0.28	0.47	
9,772.0	88.85	0.56	6,834.7	1,130.5	842.8	1,247.7	0.84	-0.10	-0.83	
9,861.0	89.32	0.79	6,836.1	1,219.5	843.9	1,335.8	0.59	0.53	0.26	
9,951.0	89.35	0.90	6,837.1	1,309.5	845.2	1,424.9	0.13	0.03	0.12	
10,041.0	89.28	0.50	6,838.2	1,399.5	846.3	1,514.0	0.45	-0.08	-0.44	
10,130.0	89.04	0.67	6,839.5	1,488.5	847.2	1,602.0	0.33	-0.27	0.19	
10,220.0	88.93	0.62	6,841.1	1,578.4	848.2	1,691.1	0.13	-0.12	-0.06	
10,310.0	88.99	0.66	6,842.7	1,668.4	849.2	1,780.1	0.08	0.07	0.04	
10,400.0	89.62	0.26	6,843.8	1,758.4	849.9	1,869.1	0.83	0.70	-0.44	
10,437.6	89.83	0.56	6,844.0	1,796.0	850.2	1,906.3	0.96	0.56	0.79	
Deepest TVD Drilled - 6844'										
10,490.0	90.12	0.97	6,844.0	1,848.4	850.9	1,958.2	0.96	0.56	0.79	
10,580.0	90.26	1.38	6,843.7	1,938.4	852.8	2,047.3	0.48	0.16	0.46	
10,670.0	90.90	1.11	6,842.8	2,028.4	854.7	2,136.5	0.77	0.71	-0.30	
10,759.0	91.10	0.56	6,841.3	2,117.3	856.0	2,224.6	0.66	0.22	-0.62	
10,849.0	91.38	0.70	6,839.3	2,207.3	857.0	2,313.7	0.35	0.31	0.16	
10,939.0	91.24	0.83	6,837.3	2,297.3	858.2	2,402.7	0.21	-0.16	0.14	
11,028.0	91.12	0.85	6,835.4	2,386.3	859.5	2,490.8	0.14	-0.13	0.02	
11,118.0	90.98	0.82	6,833.8	2,476.2	860.8	2,579.9	0.16	-0.16	-0.03	
11,207.0	90.60	0.58	6,832.5	2,565.2	861.9	2,668.0	0.50	-0.43	-0.27	
11,297.0	90.92	0.61	6,831.4	2,655.2	862.8	2,757.0	0.36	0.36	0.03	
11,386.0	90.74	0.76	6,830.1	2,744.2	863.9	2,845.1	0.26	-0.20	0.17	
11,476.0	91.03	0.66	6,828.7	2,834.2	865.0	2,934.1	0.34	0.32	-0.11	
11,566.0	89.92	1.64	6,827.9	2,924.1	866.8	3,023.3	1.65	-1.23	1.09	
11,655.0	89.83	0.25	6,828.1	3,013.1	868.3	3,111.4	1.57	-0.10	-1.56	
11,745.0	90.07	359.54	6,828.2	3,103.1	868.1	3,200.3	0.83	0.27	-0.79	
11,835.0	89.91	359.36	6,828.2	3,193.1	867.3	3,289.1	0.27	-0.18	-0.20	
11,925.0	90.03	0.13	6,828.3	3,283.1	866.9	3,377.9	0.87	0.13	0.86	
12,014.0	90.22	0.18	6,828.1	3,372.1	867.1	3,465.9	0.22	0.21	0.06	
12,104.0	90.37	0.40	6,827.6	3,462.1	867.6	3,554.9	0.30	0.17	0.24	
12,193.0	90.50	0.86	6,826.9	3,551.1	868.5	3,642.9	0.54	0.15	0.52	
12,283.0	91.43	0.35	6,825.4	3,641.1	869.5	3,732.0	1.18	1.03	-0.57	
12,373.0	90.84	359.86	6,823.6	3,731.1	869.6	3,820.9	0.85	-0.66	-0.54	
12,463.0	91.13	359.87	6,822.1	3,821.1	869.4	3,909.7	0.32	0.32	0.01	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 5C (Codell)
Project:	SEC.27-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Site:	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	MD Reference:	WELL @ 4667.0ft (Ensign 142 RKB - 28')
Well:	Erwin 5C (Codell)	North Reference:	True
Wellbore:	Erwin 5C (Codell) Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Erwin 5C (Codell) 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)	
12,553.0	90.28	0.18	6,821.0	3,911.0	869.5	3,998.6	1.01	-0.94	0.34	
12,643.0	90.17	359.78	6,820.6	4,001.0	869.4	4,087.5	0.46	-0.12	-0.44	
12,733.0	89.92	0.39	6,820.6	4,091.0	869.6	4,176.5	0.73	-0.28	0.68	
12,822.0	90.31	1.16	6,820.4	4,180.0	870.8	4,264.6	0.97	0.44	0.87	
12,912.0	90.16	0.20	6,820.0	4,270.0	871.9	4,353.6	1.08	-0.17	-1.07	
13,002.0	90.22	359.53	6,819.7	4,360.0	871.6	4,442.5	0.75	0.07	-0.74	
13,092.0	89.95	358.91	6,819.6	4,450.0	870.4	4,531.2	0.75	-0.30	-0.69	
13,182.0	90.24	0.04	6,819.4	4,540.0	869.6	4,620.0	1.30	0.32	1.26	
13,272.0	89.61	0.32	6,819.5	4,630.0	869.9	4,708.9	0.77	-0.70	0.31	
13,362.0	89.68	359.80	6,820.1	4,720.0	870.0	4,797.9	0.58	0.08	-0.58	
13,452.0	88.71	0.07	6,821.4	4,810.0	869.9	4,886.7	1.12	-1.08	0.30	
13,542.0	88.46	0.71	6,823.6	4,900.0	870.5	4,975.7	0.76	-0.28	0.71	
13,632.0	88.99	1.24	6,825.6	4,989.9	872.0	5,064.8	0.83	0.59	0.59	
13,722.0	89.15	359.81	6,827.0	5,079.9	872.8	5,153.8	1.60	0.18	-1.59	
13,811.0	89.52	0.66	6,828.1	5,168.9	873.2	5,241.8	1.04	0.42	0.96	
13,900.0	89.25	0.23	6,829.0	5,257.9	873.9	5,329.8	0.57	-0.30	-0.48	
13,990.0	89.68	1.16	6,829.9	5,347.9	875.0	5,418.9	1.14	0.48	1.03	
14,080.0	89.56	0.68	6,830.5	5,437.9	876.4	5,508.0	0.55	-0.13	-0.53	
14,169.0	89.38	0.38	6,831.3	5,526.9	877.2	5,596.0	0.39	-0.20	-0.34	
14,224.0	89.66	358.18	6,831.8	5,581.9	876.6	5,650.3	4.03	0.51	-4.00	
14,246.0	89.66	358.18	6,831.9	5,603.8	875.9	5,671.9	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 483'FSL & 2317'FE - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,377,057.33	3,268,989.53	40.364405	-104.534673	
BHL 800'FSL & 1430'FE - survey misses target center by 20.1ft at 14246.0ft MD (6831.9 TVD, 5603.8 N, 875.9 E) - Point	0.00	0.00	6,812.7	5,605.6	881.6	1,382,671.90	3,269,810.07	40.379791	-104.531508	

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
7,214.7	6,709.6	-1,405.3	760.9	TPZ - 60° Inc in Curve - 927'FNL & 1562'FEL, Sec.34	
10,437.6	6,844.0	1,796.0	850.2	Deepest TVD Drilled - 6844'	

Checked By: _____ Approved By: _____ Date: _____