

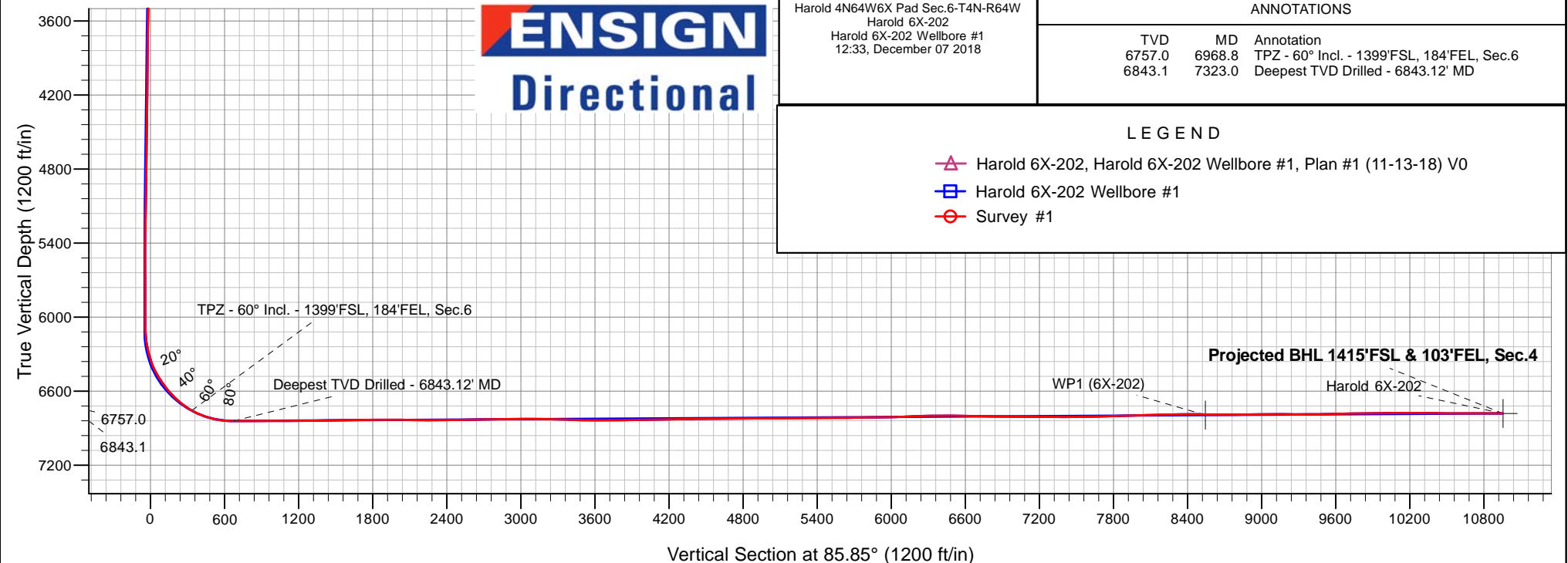
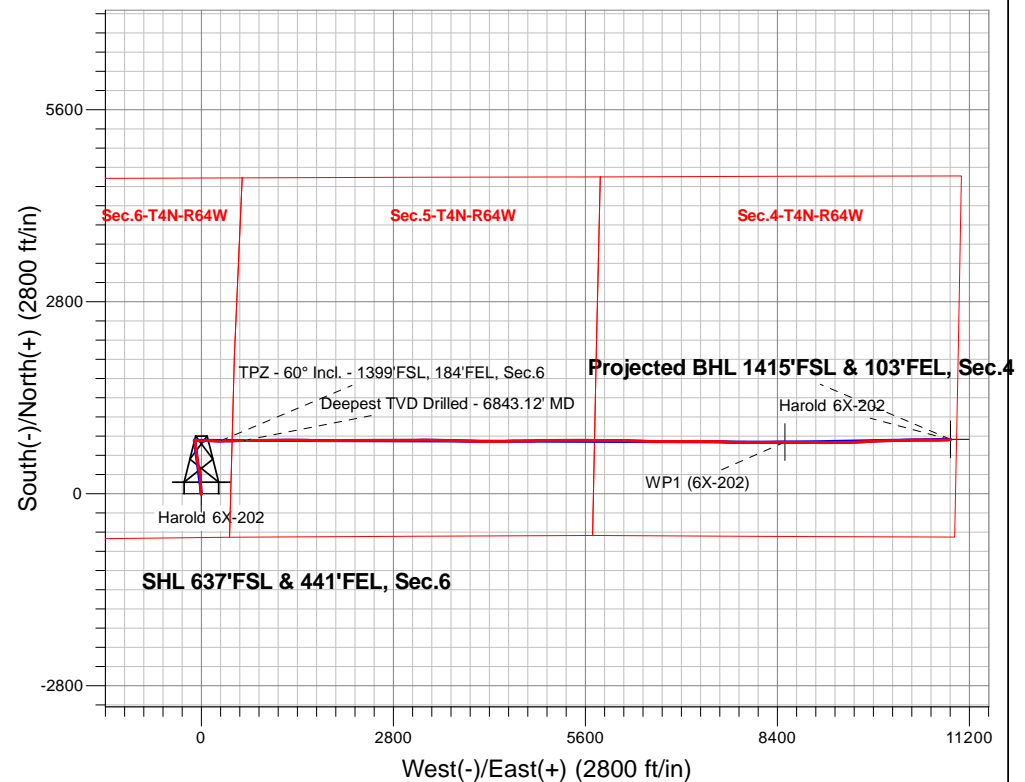
PDC Energy Inc. DJ Basin

Well Name: **Harold 6X-202**

Surface Location: Harold 4N64W6X Pad Sec.6-T4N-R64W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4788.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0366494.57 3254937.11 40.335820 -104.585490
RKB - 23' WELL @ 4811.0ft (RKB - 23')

FINAL SURVEY

Projected Bottom Hole Location
17,632'MD 6780'TVD 788'N & 10923'E of SHL
90.18 degree Incl @ 87.91 degree AZM





PDC Energy Inc. DJ Basin

SEC.6-T4N-R64W

Harold 4N64W6X Pad Sec.6-T4N-R64W

Harold 6X-202

Harold 6X-202 Wellbore #1

Survey: Survey #1

Standard Survey Report

07 December, 2018

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Harold 6X-202
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4811.0ft (RKB - 23')
Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-202	North Reference:	True
Wellbore:	Harold 6X-202 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-202 Wellbore #1	Database:	US_EDM

Project	SEC.6-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	Harold 4N64W6X Pad Sec.6-T4N-R64W				
Site Position:		Northing:	1,366,494.58 usft	Latitude:	40.335820
From:	Lat/Long	Easting:	3,254,937.11 usft	Longitude:	-104.585490
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59 °

Well	Harold 6X-202					
Well Position	+N/-S	0.0 ft	Northing:	1,366,494.57 usft	Latitude:	40.335820
	+E/-W	0.0 ft	Easting:	3,254,937.11 usft	Longitude:	-104.585490
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,788.0 ft

Wellbore	Harold 6X-202 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/13/2018	8.18	66.83	52,199

Design	Harold 6X-202 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	85.85	

Survey Program	Date	12/7/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
156.0	17,632.0	Survey #1 (Harold 6X-202 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	326.75	1.0	0.0	0.0	0.0	0.21	0.21	0.00	
SHL 637'FSL & 441'FEL, Sec.6										
156.0	0.33	326.75	156.0	0.4	-0.2	-0.2	0.21	0.21	0.00	
251.0	0.46	24.06	251.0	1.0	-0.2	-0.2	0.42	0.14	60.33	
346.0	0.24	192.78	346.0	1.1	-0.1	0.0	0.73	-0.23	177.60	
442.0	0.31	173.61	442.0	0.7	-0.1	-0.1	0.12	0.07	-19.97	
537.0	0.52	184.49	537.0	0.0	-0.2	-0.2	0.24	0.22	11.45	
633.0	0.48	168.91	633.0	-0.9	-0.1	-0.2	0.15	-0.04	-16.23	
729.0	0.53	188.22	729.0	-1.7	-0.1	-0.2	0.18	0.05	20.11	
825.0	0.83	176.91	825.0	-2.8	-0.1	-0.3	0.34	0.31	-11.78	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Harold 6X-202
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4811.0ft (RKB - 23')
Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-202	North Reference:	True
Wellbore:	Harold 6X-202 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-202 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)
921.0	0.93	187.63	921.0	-4.3	-0.2	-0.5	0.20	0.10	11.17
1,016.0	0.41	222.68	1,016.0	-5.3	-0.5	-0.9	0.67	-0.55	36.89
1,112.0	2.76	348.23	1,111.9	-3.3	-1.2	-1.5	3.14	2.45	130.78
1,208.0	4.77	347.21	1,207.7	2.9	-2.6	-2.4	2.09	2.09	-1.06
1,303.0	6.37	351.40	1,302.3	11.9	-4.2	-3.4	1.74	1.68	4.41
1,399.0	8.42	354.33	1,397.5	24.2	-5.7	-4.0	2.17	2.14	3.05
1,495.0	9.81	358.75	1,492.2	39.4	-6.6	-3.7	1.62	1.45	4.60
1,593.0	9.75	356.93	1,588.8	56.0	-7.2	-3.2	0.32	-0.06	-1.86
1,683.0	9.18	356.72	1,677.6	70.8	-8.0	-2.9	0.63	-0.63	-0.23
1,779.0	9.45	355.02	1,772.3	86.3	-9.2	-2.9	0.40	0.28	-1.77
1,874.0	9.79	357.28	1,866.0	102.1	-10.2	-2.8	0.53	0.36	2.38
1,970.0	12.22	358.07	1,960.2	120.4	-11.0	-2.2	2.54	2.53	0.82
2,065.0	11.75	359.14	2,053.2	140.1	-11.4	-1.3	0.55	-0.49	1.13
2,160.0	13.51	0.49	2,145.8	160.9	-11.5	0.2	1.88	1.85	1.42
2,256.0	13.02	359.72	2,239.3	182.9	-11.5	1.8	0.54	-0.51	-0.80
2,351.0	12.81	0.68	2,331.9	204.2	-11.4	3.4	0.32	-0.22	1.01
2,446.0	13.88	358.82	2,424.3	226.1	-11.5	4.9	1.21	1.13	-1.96
2,541.0	13.97	356.16	2,516.5	248.9	-12.5	5.6	0.68	0.09	-2.80
2,636.0	13.73	349.36	2,608.8	271.4	-15.3	4.3	1.73	-0.25	-7.16
2,731.0	13.45	349.36	2,701.1	293.4	-19.5	1.8	0.29	-0.29	0.00
2,826.0	12.09	347.33	2,793.8	313.9	-23.7	-0.9	1.51	-1.43	-2.14
2,922.0	12.05	346.65	2,887.6	333.5	-28.2	-4.0	0.15	-0.04	-0.71
3,017.0	11.24	345.96	2,980.7	352.1	-32.7	-7.2	0.87	-0.85	-0.73
3,113.0	10.60	345.66	3,074.9	369.8	-37.2	-10.3	0.67	-0.67	-0.31
3,208.0	10.43	345.22	3,168.3	386.5	-41.6	-13.5	0.20	-0.18	-0.46
3,304.0	10.31	347.87	3,262.8	403.3	-45.6	-16.3	0.51	-0.13	2.76
3,400.0	10.14	354.82	3,357.3	420.2	-48.1	-17.6	1.30	-0.18	7.24
3,495.0	9.45	353.37	3,450.9	436.2	-49.8	-18.1	0.77	-0.73	-1.53
3,591.0	10.48	350.25	3,545.4	452.7	-52.2	-19.3	1.21	1.07	-3.25
3,686.0	9.81	347.92	3,638.9	469.1	-55.3	-21.2	0.83	-0.71	-2.45
3,782.0	10.72	354.35	3,733.4	486.0	-57.9	-22.6	1.52	0.95	6.70
3,878.0	10.93	353.40	3,827.7	503.9	-59.9	-23.2	0.29	0.22	-0.99
3,974.0	10.94	353.20	3,922.0	522.0	-62.0	-24.0	0.04	0.01	-0.21
4,070.0	10.53	353.11	4,016.3	539.7	-64.1	-24.9	0.43	-0.43	-0.09
4,165.0	12.25	352.34	4,109.4	558.4	-66.5	-25.9	1.82	1.81	-0.81
4,261.0	11.68	353.03	4,203.3	578.1	-69.0	-27.0	0.61	-0.59	0.72
4,357.0	11.50	351.75	4,297.4	597.2	-71.6	-28.2	0.33	-0.19	-1.33
4,452.0	12.68	353.16	4,390.2	616.9	-74.2	-29.3	1.28	1.24	1.48
4,548.0	12.50	352.60	4,483.9	637.7	-76.8	-30.4	0.23	-0.19	-0.58
4,643.0	12.34	352.57	4,576.7	658.0	-79.4	-31.6	0.17	-0.17	-0.03
4,739.0	11.65	352.44	4,670.6	677.7	-82.0	-32.7	0.72	-0.72	-0.14
4,835.0	11.37	352.11	4,764.7	696.7	-84.6	-33.9	0.30	-0.29	-0.34
4,930.0	10.89	352.44	4,857.9	714.9	-87.1	-35.1	0.51	-0.51	0.35

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Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-202	North Reference:	True
Wellbore:	Harold 6X-202 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-202 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)
5,026.0	10.45	351.95	4,952.2	732.5	-89.5	-36.2	0.47	-0.46	-0.51
5,122.0	8.85	350.12	5,046.9	748.4	-92.0	-37.5	1.70	-1.67	-1.91
5,217.0	8.53	348.44	5,140.8	762.5	-94.6	-39.2	0.43	-0.34	-1.77
5,313.0	5.75	344.67	5,236.0	774.1	-97.3	-41.0	2.94	-2.90	-3.93
5,409.0	3.92	337.45	5,331.7	781.8	-99.9	-43.0	2.01	-1.91	-7.52
5,505.0	1.00	171.29	5,427.6	784.0	-101.0	-44.0	5.10	-3.04	-173.08
5,600.0	0.77	145.44	5,522.6	782.6	-100.5	-43.6	0.48	-0.24	-27.21
5,696.0	0.69	124.26	5,618.6	781.8	-99.7	-42.8	0.29	-0.08	-22.06
5,792.0	0.44	151.10	5,714.6	781.1	-99.0	-42.2	0.37	-0.26	27.96
5,888.0	0.36	182.68	5,810.6	780.5	-98.8	-42.1	0.24	-0.08	32.90
5,984.0	0.41	170.54	5,906.6	779.9	-98.8	-42.1	0.10	0.05	-12.65
6,080.0	0.35	186.32	6,002.6	779.2	-98.8	-42.1	0.13	-0.06	16.44
6,175.0	0.21	178.00	6,097.6	778.8	-98.8	-42.2	0.15	-0.15	-8.76
6,270.0	8.73	98.19	6,192.2	777.6	-91.6	-35.1	9.15	8.97	-84.01
6,366.0	13.44	94.53	6,286.4	775.7	-73.3	-17.0	4.96	4.91	-3.81
6,461.0	21.07	95.47	6,377.1	773.2	-45.3	10.8	8.04	8.03	0.99
6,557.0	30.29	90.48	6,463.5	771.3	-3.8	52.1	9.86	9.60	-5.20
6,653.0	35.68	87.18	6,544.0	772.5	48.4	104.2	5.92	5.61	-3.44
6,749.0	41.77	91.30	6,618.9	773.1	108.4	164.1	6.89	6.34	4.29
6,845.0	50.00	92.79	6,685.7	770.6	177.3	232.6	8.64	8.57	1.55
6,940.0	57.24	89.40	6,742.0	769.3	253.7	308.7	8.14	7.62	-3.57
6,968.8	60.00	89.27	6,757.0	769.5	278.2	333.2	9.58	9.57	-0.45
TPZ - 60° Incl. - 1399'FSL, 184'FEL, Sec.6									
7,036.0	66.43	88.99	6,787.2	770.5	338.2	393.1	9.58	9.57	-0.42
7,132.0	75.03	88.76	6,818.9	772.2	428.7	483.5	8.96	8.96	-0.24
7,228.0	82.80	89.02	6,837.3	774.1	522.8	577.5	8.10	8.09	0.27
7,321.4	90.09	90.45	6,843.1	774.5	616.0	670.4	7.95	7.80	1.53
LPL 1407'FSL & 154'FWL, Sec.5									
7,323.0	90.21	90.47	6,843.1	774.5	617.6	672.0	7.95	7.80	1.52
Deepest TVD Drilled - 6843.12' MD									
7,419.0	90.32	89.68	6,842.7	774.4	713.6	767.8	0.83	0.11	-0.82
7,541.0	90.01	89.50	6,842.3	775.2	835.6	889.5	0.29	-0.25	-0.15
7,636.0	90.74	89.15	6,841.7	776.3	930.6	984.3	0.85	0.77	-0.37
7,732.0	90.38	88.71	6,840.8	778.1	1,026.5	1,080.2	0.59	-0.38	-0.46
7,827.0	89.90	88.17	6,840.5	780.7	1,121.5	1,175.1	0.76	-0.51	-0.57
7,923.0	90.27	89.85	6,840.4	782.4	1,217.5	1,270.9	1.79	0.39	1.75
8,019.0	90.24	89.71	6,840.0	782.8	1,313.5	1,366.7	0.15	-0.03	-0.15
8,115.0	91.92	92.58	6,838.2	780.8	1,409.4	1,462.3	3.46	1.75	2.99
8,210.0	91.72	91.66	6,835.1	777.3	1,504.3	1,556.6	0.99	-0.21	-0.97
8,306.0	90.07	91.03	6,833.6	775.1	1,600.3	1,652.2	1.84	-1.72	-0.66
8,401.0	90.27	90.56	6,833.4	773.8	1,695.3	1,746.8	0.54	0.21	-0.49
8,497.0	90.07	89.97	6,833.1	773.3	1,791.3	1,842.6	0.65	-0.21	-0.61
8,593.0	89.90	88.91	6,833.1	774.2	1,887.3	1,938.4	1.12	-0.18	-1.10
8,688.0	89.79	88.67	6,833.4	776.3	1,982.2	2,033.2	0.28	-0.12	-0.25

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Survey									
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8,784.0	89.91	89.81	6,833.6	777.5	2,078.2	2,129.1	1.19	0.13	1.19
8,879.0	89.88	90.21	6,833.8	777.5	2,173.2	2,223.8	0.42	-0.03	0.42
8,975.0	90.14	89.71	6,833.8	777.6	2,269.2	2,319.6	0.59	0.27	-0.52
9,071.0	89.99	89.29	6,833.7	778.4	2,365.2	2,415.4	0.46	-0.16	-0.44
9,166.0	89.99	88.98	6,833.7	779.8	2,460.2	2,510.2	0.33	0.00	-0.33
9,262.0	91.40	90.99	6,832.5	779.9	2,556.2	2,606.0	2.56	1.47	2.09
9,357.0	91.51	90.81	6,830.1	778.4	2,651.2	2,700.6	0.22	0.12	-0.19
9,452.0	91.82	90.46	6,827.3	777.3	2,746.1	2,795.2	0.49	0.33	-0.37
9,548.0	89.83	90.61	6,825.9	776.4	2,842.1	2,890.8	2.08	-2.07	0.16
9,643.0	89.60	89.75	6,826.4	776.1	2,937.1	2,985.6	0.94	-0.24	-0.91
9,738.0	90.08	89.20	6,826.7	777.0	3,032.1	3,080.4	0.77	0.51	-0.58
9,834.0	89.74	88.64	6,826.8	778.8	3,128.1	3,176.2	0.68	-0.35	-0.58
9,928.0	88.84	88.15	6,828.0	781.4	3,222.0	3,270.1	1.09	-0.96	-0.52
10,024.0	88.20	90.02	6,830.5	783.0	3,318.0	3,366.0	2.06	-0.67	1.95
10,119.0	87.84	89.94	6,833.8	783.0	3,412.9	3,460.6	0.39	-0.38	-0.08
10,213.0	88.87	92.06	6,836.5	781.4	3,506.9	3,554.2	2.51	1.10	2.26
10,309.0	90.50	92.46	6,837.0	777.6	3,602.8	3,649.6	1.75	1.70	0.42
10,404.0	90.72	92.94	6,836.0	773.1	3,697.7	3,743.9	0.56	0.23	0.51
10,500.0	90.55	93.02	6,834.9	768.1	3,793.5	3,839.2	0.20	-0.18	0.08
10,596.0	90.64	92.73	6,833.9	763.3	3,889.4	3,934.5	0.32	0.09	-0.30
10,691.0	91.28	89.99	6,832.3	761.1	3,984.4	4,029.0	2.96	0.67	-2.88
10,787.0	91.11	89.78	6,830.3	761.2	4,080.3	4,124.7	0.28	-0.18	-0.22
10,882.0	91.06	89.60	6,828.5	761.8	4,175.3	4,219.5	0.20	-0.05	-0.19
10,978.0	90.94	89.56	6,826.9	762.5	4,271.3	4,315.3	0.13	-0.13	-0.04
11,073.0	90.75	88.97	6,825.5	763.7	4,366.3	4,410.1	0.65	-0.20	-0.62
11,169.0	90.44	89.06	6,824.5	765.3	4,462.3	4,506.0	0.34	-0.32	0.09
11,265.0	90.69	89.00	6,823.5	767.0	4,558.2	4,601.8	0.27	0.26	-0.06
11,361.0	90.21	88.97	6,822.8	768.7	4,654.2	4,697.7	0.50	-0.50	-0.03
11,457.0	90.24	89.21	6,822.4	770.2	4,750.2	4,793.5	0.25	0.03	0.25
11,553.0	90.30	88.77	6,821.9	771.9	4,846.2	4,889.4	0.46	0.06	-0.46
11,648.0	90.52	87.73	6,821.2	774.8	4,941.1	4,984.3	1.12	0.23	-1.09
11,744.0	90.47	90.96	6,820.4	775.9	5,037.1	5,080.1	3.36	-0.05	3.36
11,839.0	90.80	89.56	6,819.4	775.4	5,132.1	5,174.8	1.51	0.35	-1.47
11,935.0	90.33	89.05	6,818.4	776.6	5,228.1	5,270.6	0.72	-0.49	-0.53
12,031.0	90.75	88.15	6,817.5	779.0	5,324.1	5,366.5	1.03	0.44	-0.94
12,126.0	90.27	91.13	6,816.7	779.5	5,419.1	5,461.3	3.18	-0.51	3.14
12,222.0	90.33	90.89	6,816.2	777.9	5,515.0	5,556.9	0.26	0.06	-0.25
12,317.0	90.24	90.29	6,815.7	776.9	5,610.0	5,651.5	0.64	-0.09	-0.63
12,413.0	90.10	89.67	6,815.4	776.9	5,706.0	5,747.3	0.66	-0.15	-0.65
12,509.0	91.19	91.03	6,814.3	776.3	5,802.0	5,843.0	1.82	1.14	1.42
12,604.0	90.80	89.46	6,812.7	775.9	5,897.0	5,937.7	1.70	-0.41	-1.65
12,700.0	92.15	90.84	6,810.2	775.7	5,993.0	6,033.4	2.01	1.41	1.44
12,796.0	91.86	90.06	6,806.8	774.9	6,088.9	6,129.0	0.87	-0.30	-0.81

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Harold 6X-202
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4811.0ft (RKB - 23')
Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-202	North Reference:	True
Wellbore:	Harold 6X-202 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-202 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)
12,892.0	92.20	90.82	6,803.4	774.2	6,184.8	6,224.7	0.87	0.35	0.79
12,988.0	92.20	91.94	6,799.8	771.9	6,280.7	6,320.1	1.17	0.00	1.17
13,083.0	89.06	92.22	6,798.7	768.4	6,375.7	6,414.6	3.32	-3.31	0.29
13,178.0	89.26	92.11	6,800.1	764.8	6,470.6	6,509.0	0.24	0.21	-0.12
13,275.0	89.26	91.48	6,801.4	761.8	6,567.5	6,605.4	0.65	0.00	-0.65
13,371.0	89.23	91.02	6,802.6	759.7	6,663.5	6,701.0	0.48	-0.03	-0.48
13,467.0	89.23	90.23	6,803.9	758.7	6,759.5	6,796.7	0.82	0.00	-0.82
13,563.0	89.48	90.03	6,805.0	758.4	6,855.5	6,892.4	0.33	0.26	-0.21
13,658.0	89.20	89.37	6,806.1	758.9	6,950.5	6,987.2	0.75	-0.29	-0.69
13,753.0	89.15	88.57	6,807.5	760.6	7,045.4	7,082.0	0.84	-0.05	-0.84
13,848.0	89.57	89.24	6,808.5	762.5	7,140.4	7,176.9	0.83	0.44	0.71
13,944.0	89.73	91.15	6,809.1	762.1	7,236.4	7,272.6	2.00	0.17	1.99
14,040.0	89.87	89.95	6,809.4	761.2	7,332.4	7,368.3	1.26	0.15	-1.25
14,135.0	90.24	90.65	6,809.3	760.7	7,427.4	7,463.0	0.83	0.39	0.74
14,232.0	90.24	91.47	6,808.9	758.9	7,524.4	7,559.6	0.85	0.00	0.85
14,327.0	91.56	92.38	6,807.4	755.7	7,619.3	7,654.0	1.69	1.39	0.96
14,423.0	91.75	92.13	6,804.7	751.9	7,715.2	7,749.4	0.33	0.20	-0.26
14,519.0	91.81	91.36	6,801.7	749.0	7,811.1	7,844.8	0.80	0.06	-0.80
14,615.0	91.75	90.89	6,798.7	747.1	7,907.0	7,940.4	0.49	-0.06	-0.49
14,710.0	91.89	90.06	6,795.7	746.4	8,002.0	8,035.0	0.89	0.15	-0.87
14,806.0	91.72	89.17	6,792.7	747.0	8,097.9	8,130.8	0.94	-0.18	-0.93
14,902.0	90.88	89.64	6,790.5	748.0	8,193.9	8,226.6	1.00	-0.88	0.49
14,998.0	90.85	89.47	6,789.0	748.7	8,289.9	8,322.3	0.18	-0.03	-0.18
15,093.0	91.08	89.17	6,787.4	749.9	8,384.9	8,417.2	0.40	0.24	-0.32
15,188.0	88.39	90.53	6,787.9	750.1	8,479.9	8,511.9	3.17	-2.83	1.43
15,220.0	88.30	90.42	6,788.8	749.9	8,511.9	8,543.8	0.46	-0.29	-0.36
WP1 (6X-202)									
15,283.0	88.11	90.19	6,790.8	749.5	8,574.8	8,606.6	0.46	-0.29	-0.36
15,378.0	90.60	91.00	6,791.9	748.5	8,669.8	8,701.2	2.76	2.62	0.85
15,474.0	91.13	90.69	6,790.4	747.1	8,765.8	8,796.9	0.64	0.55	-0.32
15,569.0	91.33	90.55	6,788.4	746.1	8,860.7	8,891.5	0.26	0.21	-0.15
15,665.0	89.73	90.69	6,787.5	745.1	8,956.7	8,987.2	1.67	-1.67	0.15
15,760.0	89.65	90.18	6,788.0	744.3	9,051.7	9,081.9	0.54	-0.08	-0.54
15,855.0	89.79	89.74	6,788.5	744.4	9,146.7	9,176.6	0.49	0.15	-0.46
15,951.0	90.24	89.62	6,788.4	744.9	9,242.7	9,272.4	0.49	0.47	-0.13
16,046.0	90.54	88.88	6,787.8	746.2	9,337.7	9,367.2	0.84	0.32	-0.78
16,142.0	90.46	88.34	6,786.9	748.5	9,433.7	9,463.1	0.57	-0.08	-0.56
16,237.0	91.16	87.62	6,785.6	751.9	9,528.6	9,558.0	1.06	0.74	-0.76
16,332.0	91.08	87.41	6,783.7	756.0	9,623.5	9,653.0	0.24	-0.08	-0.22
16,428.0	91.22	86.89	6,781.8	760.7	9,719.4	9,748.9	0.56	0.15	-0.54
16,524.0	91.30	88.25	6,779.7	764.8	9,815.2	9,844.9	1.42	0.08	1.42
16,619.0	90.29	87.61	6,778.4	768.2	9,910.2	9,939.8	1.26	-1.06	-0.67
16,714.0	90.37	87.33	6,777.8	772.4	10,005.1	10,034.7	0.31	0.08	-0.29
16,809.0	89.62	88.25	6,777.9	776.1	10,100.0	10,129.7	1.25	-0.79	0.97

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Harold 6X-202
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4811.0ft (RKB - 23')
Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-202	North Reference:	True
Wellbore:	Harold 6X-202 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-202 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)
16,905.0	90.01	87.44	6,778.2	779.7	10,195.9	10,225.6	0.94	0.41	-0.84
17,000.0	89.59	89.40	6,778.5	782.3	10,290.9	10,320.5	2.11	-0.44	2.06
17,096.0	89.56	91.09	6,779.2	781.9	10,386.9	10,416.2	1.76	-0.03	1.76
17,191.0	89.67	90.41	6,779.8	780.7	10,481.9	10,510.9	0.73	0.12	-0.72
17,286.0	89.81	89.90	6,780.3	780.4	10,576.9	10,605.6	0.56	0.15	-0.54
17,382.0	89.95	89.15	6,780.5	781.2	10,672.9	10,701.4	0.79	0.15	-0.78
17,476.0	89.84	88.91	6,780.6	782.8	10,766.9	10,795.3	0.28	-0.12	-0.26
17,572.0	90.18	87.91	6,780.6	785.5	10,862.8	10,891.2	1.10	0.35	-1.04
17,632.0	90.18	87.91	6,780.4	787.7	10,922.8	10,951.1	0.00	0.00	0.00
Projected BHL 1415'FSL & 103'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
- hit/miss target									
- Shape									
SHL 637'FSL & 441'FEL	0.00	0.00	1.0	0.0	0.0	1,366,494.58	3,254,937.11	40.335820	-104.585490
- survey hits target center									
- Point									
Projected BHL 1415'FSL	0.00	0.00	6,781.0	793.0	10,925.3	1,367,400.13	3,265,853.16	40.337990	-104.546300
- survey misses target center by 5.9ft at 17632.0ft MD (6780.4 TVD, 787.7 N, 10922.8 E)									
- Point									
WP1 (6X-202)	0.00	0.00	6,795.0	753.0	8,511.7	1,367,335.27	3,263,440.22	40.337883	-104.554958
- survey misses target center by 6.9ft at 15220.0ft MD (6788.8 TVD, 749.9 N, 8511.9 E)									
- Point									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,968.8	6,757.0	769.5	278.2	TPZ - 60° Incl. - 1399'FSL, 184'FEL, Sec.6
7,323.0	6,843.1	774.5	617.6	Deepest TVD Drilled - 6843.12' MD

Checked By: _____	Approved By: _____	Date: _____
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