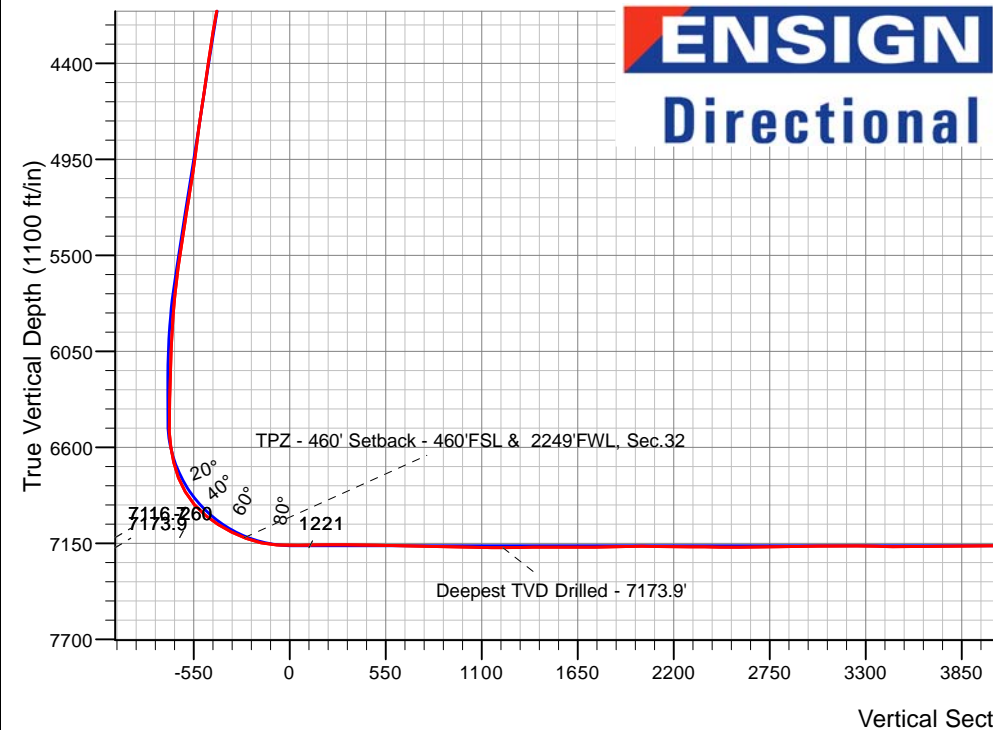
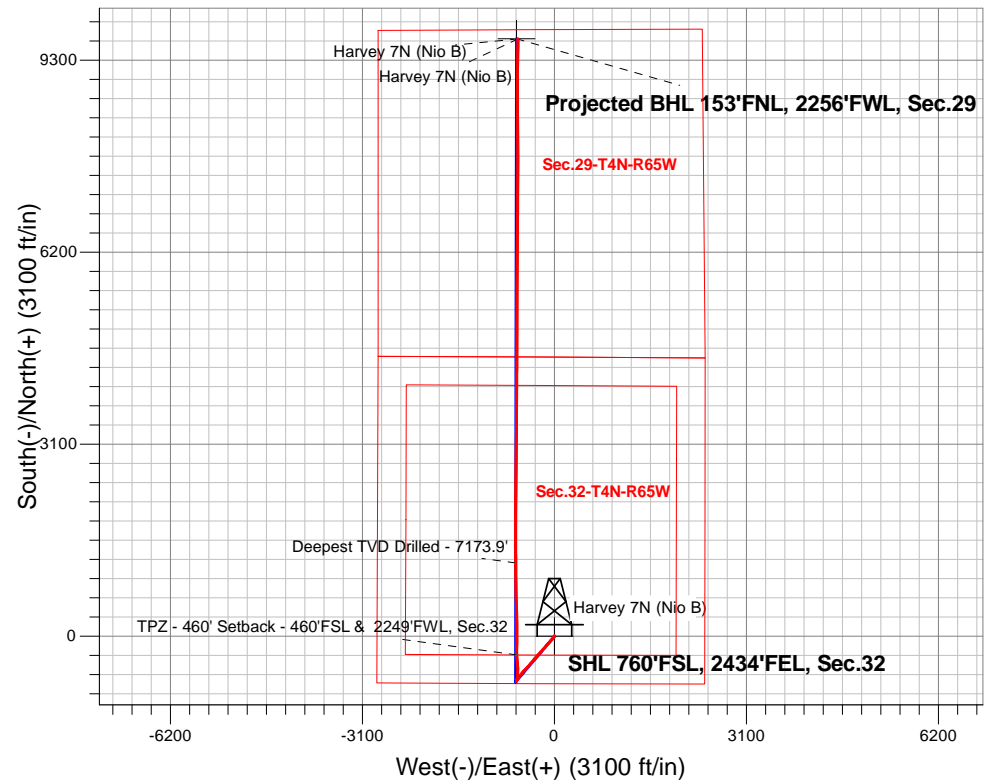


# PDC Energy Inc. DJ Basin

Well Name: **Harvey 7N (Nio B)**  
 Surface Location: Harvey 04N65W33 Pad Sec.32-T4N-R65W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4900.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1339970.82 3227042.63 40.263760 -104.686420  
 Original Well Elev WELL @ 4923.0ft (Original Well Elev)

## FINAL SURVEY

**Projected Bottom Hole Location**  
**17,352'MD 7087'TVD 9644'N & 588'W of SHL**  
**90.96 degree Incl @ 0.95 degree AZM**



**ENSIGN**  
**Directional**

Harvey 04N65W33 Pad Sec.32-T4N-R65W  
 Harvey 7N (Nio B)  
 Harvey 7N Wellbore #1  
 16:31, April 29 2019

### ANNOTATIONS

TVD	MD	Annotation
7116.7	7401.5	TPZ - 460' Setback - 460'FSL & 2249'FWL, Sec.32
7173.9	8890.2	Deepest TVD Drilled - 7173.9'

### LEGEND

- ▲ Harvey 7N (Nio B), Harvey 7N Wellbore #1, Plan #3 (4-22-19) V0
- ▣ Harvey 7N Wellbore #1
- Survey #1

**Projected BHL 153'FNL, 2256'FWL, Sec.29**

Harvey 7N (Nio B)  
 Harvey 7N (Nio B)



## **PDC Energy Inc. DJ Basin**

**SEC.32-T4N-R65W**

**Harvey 04N65W33 Pad Sec.32-T4N-R65W**

**Harvey 7N (Nio B)**

**Harvey 7N Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**29 April, 2019**

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Harvey 7N (Nio B)
<b>Project:</b>	SEC.32-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	Harvey 04N65W33 Pad Sec.32-T4N-R65W	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Well:</b>	Harvey 7N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Harvey 7N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Harvey 7N Wellbore #1	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.32-T4N-R65W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Harvey 04N65W33 Pad Sec.32-T4N-R65W				
Site Position:		Northing:	1,339,821.45 usft	Latitude:	40.263350
From:	Lat/Long	Easting:	3,227,041.21 usft	Longitude:	-104.686430
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.53 °

Well	Harvey 7N (Nio B)					
Well Position	+N/-S	0.0 ft	Northing:	1,339,970.82 usft	Latitude:	40.263760
	+E/-W	0.0 ft	Easting:	3,227,042.63 usft	Longitude:	-104.686420
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,900.0 ft

<b>Wellbore</b>	Harvey 7N Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	4/22/2019	8.20	66.68	52,115

<b>Design</b>	Harvey 7N Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	356.36	

<b>Survey Program</b>	<b>Date</b>	4/29/2019			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
145.0	17,352.0	Survey #1 (Harvey 7N Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
145.0	0.00	0.00	145.0	0.0	0.0	0.0	0.00	0.00	0.00	
235.0	0.40	24.70	235.0	0.3	0.1	0.3	0.44	0.44	0.00	
325.0	0.40	14.10	325.0	0.9	0.3	0.9	0.08	0.00	-11.78	
414.0	0.30	3.50	414.0	1.4	0.4	1.4	0.13	-0.11	-11.91	
504.0	0.30	60.40	504.0	1.8	0.6	1.7	0.32	0.00	63.22	
593.0	0.20	46.20	593.0	2.0	1.0	1.9	0.13	-0.11	-15.96	
683.0	0.10	346.10	683.0	2.2	1.1	2.1	0.19	-0.11	-66.78	
773.0	0.20	33.70	773.0	2.4	1.1	2.3	0.17	0.11	52.89	
862.0	0.20	9.80	862.0	2.7	1.2	2.6	0.09	0.00	-26.85	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Harvey 7N (Nio B)
<b>Project:</b>	SEC.32-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	Harvey 04N65W33 Pad Sec.32-T4N-R65W	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Well:</b>	Harvey 7N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Harvey 7N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Harvey 7N Wellbore #1	<b>Database:</b>	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)
952.0	1.30	224.60	952.0	2.1	0.5	2.0	1.63	1.22	-161.33
1,041.0	3.50	218.10	1,040.9	-0.8	-1.8	-0.7	2.49	2.47	-7.30
1,131.0	4.00	219.00	1,130.7	-5.4	-5.5	-5.0	0.56	0.56	1.00
1,221.0	5.70	217.80	1,220.4	-11.3	-10.2	-10.7	1.89	1.89	-1.33
1,310.0	6.70	214.20	1,308.9	-19.1	-15.9	-18.1	1.20	1.12	-4.04
1,400.0	8.20	219.70	1,398.1	-28.4	-22.9	-26.9	1.84	1.67	6.11
1,490.0	8.60	220.90	1,487.1	-38.4	-31.4	-36.4	0.49	0.44	1.33
1,579.0	10.10	223.20	1,575.0	-49.2	-41.1	-46.4	1.74	1.69	2.58
1,669.0	9.00	222.00	1,663.7	-60.1	-51.2	-56.8	1.24	-1.22	-1.33
1,758.0	8.70	219.70	1,751.6	-70.5	-60.2	-66.5	0.52	-0.34	-2.58
1,848.0	8.80	221.40	1,840.6	-80.9	-69.1	-76.3	0.31	0.11	1.89
1,938.0	7.77	219.17	1,929.7	-90.8	-77.5	-85.7	1.20	-1.14	-2.48
2,028.0	9.16	223.63	2,018.7	-100.7	-86.3	-95.0	1.71	1.54	4.96
2,117.0	11.16	223.64	2,106.3	-112.0	-97.1	-105.6	2.25	2.25	0.01
2,207.0	13.43	220.70	2,194.2	-126.3	-109.9	-119.0	2.62	2.52	-3.27
2,297.0	12.92	219.39	2,281.8	-142.0	-123.1	-133.9	0.66	-0.57	-1.46
2,387.0	12.27	218.99	2,369.7	-157.2	-135.5	-148.3	0.73	-0.72	-0.44
2,477.0	11.13	218.43	2,457.8	-171.4	-146.9	-161.7	1.27	-1.27	-0.62
2,566.0	12.80	222.00	2,544.9	-185.5	-158.9	-175.0	2.05	1.88	4.01
2,657.0	11.60	221.07	2,633.8	-199.9	-171.6	-188.6	1.34	-1.32	-1.02
2,747.0	13.42	224.17	2,721.7	-214.2	-184.9	-202.0	2.15	2.02	3.44
2,837.0	13.25	223.95	2,809.2	-229.1	-199.3	-216.0	0.20	-0.19	-0.24
2,927.0	13.13	222.18	2,896.9	-244.1	-213.3	-230.1	0.47	-0.13	-1.97
3,017.0	12.78	221.30	2,984.6	-259.1	-226.7	-244.2	0.45	-0.39	-0.98
3,106.0	11.48	220.60	3,071.6	-273.3	-239.0	-257.5	1.47	-1.46	-0.79
3,196.0	13.17	223.05	3,159.5	-287.6	-251.8	-271.0	1.97	1.88	2.72
3,286.0	11.89	222.66	3,247.4	-301.9	-265.1	-284.4	1.43	-1.42	-0.43
3,375.0	9.78	220.86	3,334.8	-314.3	-276.3	-296.2	2.40	-2.37	-2.02
3,465.0	11.56	226.38	3,423.2	-326.3	-287.8	-307.4	2.28	1.98	6.13
3,555.0	12.27	222.81	3,511.3	-339.6	-300.8	-319.8	1.14	0.79	-3.97
3,644.0	13.88	221.33	3,598.0	-354.5	-314.3	-333.9	1.85	1.81	-1.66
3,734.0	12.20	216.52	3,685.6	-370.3	-327.1	-348.8	2.22	-1.87	-5.34
3,824.0	13.02	220.55	3,773.5	-385.6	-339.4	-363.3	1.34	0.91	4.48
3,913.0	12.32	217.54	3,860.3	-400.8	-351.7	-377.6	1.08	-0.79	-3.38
4,003.0	11.99	217.44	3,948.3	-415.8	-363.2	-391.9	0.37	-0.37	-0.11
4,092.0	13.91	220.13	4,035.0	-431.3	-375.7	-406.6	2.26	2.16	3.02
4,182.0	14.04	220.71	4,122.4	-447.9	-389.8	-422.2	0.21	0.14	0.64
4,272.0	12.73	220.24	4,209.9	-463.7	-403.3	-437.2	1.46	-1.46	-0.52
4,361.0	11.66	219.92	4,296.9	-478.1	-415.4	-450.8	1.20	-1.20	-0.36
4,452.0	13.30	225.83	4,385.8	-492.5	-428.8	-464.2	2.28	1.80	6.49
4,542.0	12.14	224.12	4,473.5	-506.5	-442.9	-477.3	1.35	-1.29	-1.90
4,632.0	11.20	223.41	4,561.7	-519.6	-455.5	-489.6	1.06	-1.04	-0.79
4,721.0	13.27	225.20	4,648.7	-533.1	-468.6	-502.2	2.36	2.33	2.01
4,811.0	12.31	224.06	4,736.4	-547.3	-482.6	-515.5	1.10	-1.07	-1.27

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Harvey 7N (Nio B)
<b>Project:</b>	SEC.32-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	Harvey 04N65W33 Pad Sec.32-T4N-R65W	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Well:</b>	Harvey 7N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Harvey 7N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Harvey 7N Wellbore #1	<b>Database:</b>	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)
4,900.0	9.83	223.26	4,823.8	-559.6	-494.5	-527.1	2.79	-2.79	-0.90
4,990.0	10.33	221.44	4,912.4	-571.3	-505.1	-538.0	0.66	0.56	-2.02
5,080.0	12.60	220.17	5,000.6	-584.8	-516.7	-550.8	2.54	2.52	-1.41
5,169.0	11.27	217.53	5,087.6	-599.1	-528.3	-564.4	1.62	-1.49	-2.97
5,259.0	12.89	218.94	5,175.6	-613.9	-540.0	-578.4	1.83	1.80	1.57
5,349.0	12.20	219.21	5,263.5	-629.1	-552.3	-592.7	0.77	-0.77	0.30
5,438.0	10.62	215.96	5,350.7	-643.0	-563.0	-606.0	1.92	-1.78	-3.65
5,528.0	11.93	217.44	5,439.0	-657.1	-573.6	-619.4	1.49	1.46	1.64
5,618.0	10.60	215.57	5,527.3	-671.2	-584.0	-632.8	1.53	-1.48	-2.08
5,707.0	8.67	210.97	5,615.0	-683.6	-592.3	-644.7	2.33	-2.17	-5.17
5,797.0	6.87	205.53	5,704.2	-694.3	-598.1	-654.9	2.16	-2.00	-6.04
5,887.0	5.27	200.60	5,793.7	-703.0	-601.8	-663.4	1.87	-1.78	-5.48
5,977.0	4.11	197.13	5,883.4	-710.0	-604.2	-670.2	1.33	-1.29	-3.86
6,067.0	3.65	217.60	5,973.2	-715.3	-606.9	-675.4	1.61	-0.51	22.74
6,156.0	3.25	218.16	6,062.0	-719.6	-610.2	-679.4	0.45	-0.45	0.63
6,246.0	2.39	214.29	6,151.9	-723.1	-612.9	-682.8	0.98	-0.96	-4.30
6,336.0	1.93	221.96	6,241.8	-725.8	-614.9	-685.3	0.60	-0.51	8.52
6,425.0	1.64	210.04	6,330.8	-728.0	-616.6	-687.4	0.53	-0.33	-13.39
6,515.0	1.10	200.32	6,420.8	-729.9	-617.5	-689.3	0.65	-0.60	-10.80
6,605.0	1.59	5.85	6,510.8	-729.5	-617.7	-688.8	2.97	0.54	183.92
6,694.0	9.86	23.13	6,599.2	-721.3	-614.6	-680.8	9.39	9.29	19.42
6,784.0	14.54	19.11	6,687.2	-703.5	-607.8	-663.5	5.28	5.20	-4.47
6,875.0	20.78	8.19	6,773.9	-676.7	-601.8	-637.1	7.74	6.86	-12.00
6,964.0	31.82	3.72	6,853.5	-637.5	-598.0	-598.3	12.59	12.40	-5.02
7,054.0	40.35	5.38	6,926.2	-584.7	-593.7	-545.9	9.54	9.48	1.84
7,144.0	50.24	356.48	6,989.5	-521.0	-593.1	-482.3	13.02	10.99	-9.89
7,233.0	58.62	355.08	7,041.2	-448.9	-598.5	-409.9	9.50	9.42	-1.57
7,323.0	63.45	355.42	7,084.8	-370.4	-605.0	-331.2	5.38	5.37	0.38
7,401.5	68.55	358.22	7,116.7	-298.8	-608.9	-259.6	7.27	6.50	3.56
TPZ - 460' Setback - 460'FSL & 2249'FWL, Sec.32									
7,413.0	69.30	358.61	7,120.9	-288.1	-609.2	-248.8	7.27	6.53	3.41
7,502.0	76.87	0.27	7,146.7	-203.0	-610.0	-163.9	8.69	8.51	1.87
7,592.0	87.57	1.69	7,158.9	-114.0	-608.5	-75.1	11.99	11.89	1.58
7,716.0	90.99	0.18	7,160.5	10.0	-606.5	48.4	3.01	2.76	-1.22
7,806.0	91.43	359.46	7,158.6	99.9	-606.8	138.3	0.94	0.49	-0.80
7,896.0	89.73	359.50	7,157.7	189.9	-607.6	228.1	1.89	-1.89	0.04
7,986.0	90.50	358.36	7,157.5	279.9	-609.3	318.0	1.53	0.86	-1.27
8,075.0	88.57	359.03	7,158.2	368.9	-611.3	406.9	2.30	-2.17	0.75
8,165.0	88.73	358.46	7,160.3	458.8	-613.3	496.8	0.66	0.18	-0.63
8,255.0	88.72	358.36	7,162.3	548.8	-615.8	586.8	0.11	-0.01	-0.11
8,345.0	88.89	357.73	7,164.2	638.7	-618.8	676.7	0.72	0.19	-0.70
8,434.0	89.13	359.14	7,165.7	727.6	-621.3	765.6	1.61	0.27	1.58
8,524.0	88.55	359.21	7,167.6	817.6	-622.6	855.5	0.65	-0.64	0.08

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Harvey 7N (Nio B)
<b>Project:</b>	SEC.32-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	Harvey 04N65W33 Pad Sec.32-T4N-R65W	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Well:</b>	Harvey 7N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Harvey 7N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Harvey 7N Wellbore #1	<b>Database:</b>	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)
8,613.0	88.36	358.36	7,170.0	906.6	-624.4	944.4	0.98	-0.21	-0.96
8,703.0	89.33	359.73	7,171.8	996.5	-625.9	1,034.3	1.86	1.08	1.52
8,793.0	88.66	359.37	7,173.3	1,086.5	-626.6	1,124.1	0.85	-0.74	-0.40
8,883.0	90.58	0.04	7,173.9	1,176.5	-627.1	1,213.9	2.26	2.13	0.74
8,890.2	90.60	359.98	7,173.9	1,183.7	-627.1	1,221.1	0.90	0.23	-0.87
Deepest TVD Drilled - 7173.9'									
8,973.0	90.79	359.26	7,172.9	1,266.5	-627.7	1,303.8	0.90	0.23	-0.87
9,062.0	90.62	358.75	7,171.8	1,355.5	-629.2	1,392.7	0.60	-0.19	-0.57
9,153.0	89.90	358.97	7,171.4	1,446.5	-631.0	1,483.6	0.83	-0.79	0.24
9,242.0	89.48	0.89	7,171.8	1,535.5	-631.1	1,572.4	2.21	-0.47	2.16
9,331.0	89.94	2.32	7,172.3	1,624.4	-628.6	1,661.0	1.69	0.52	1.61
9,420.0	91.13	0.99	7,171.5	1,713.4	-626.1	1,749.7	2.01	1.34	-1.49
9,509.0	91.01	0.63	7,169.8	1,802.3	-624.8	1,838.4	0.43	-0.13	-0.40
9,599.0	91.57	359.61	7,167.8	1,892.3	-624.6	1,928.2	1.29	0.62	-1.13
9,689.0	89.83	359.83	7,166.7	1,982.3	-625.1	2,018.0	1.95	-1.93	0.24
9,779.0	89.31	359.81	7,167.4	2,072.3	-625.3	2,107.8	0.58	-0.58	-0.02
9,869.0	89.28	359.08	7,168.5	2,162.3	-626.2	2,197.7	0.81	-0.03	-0.81
9,959.0	89.64	358.46	7,169.3	2,252.3	-628.1	2,287.6	0.80	0.40	-0.69
10,049.0	89.35	0.93	7,170.1	2,342.3	-628.6	2,377.4	2.76	-0.32	2.74
10,140.0	89.03	0.55	7,171.4	2,433.2	-627.4	2,468.2	0.55	-0.35	-0.42
10,230.0	90.27	2.11	7,171.9	2,523.2	-625.4	2,557.8	2.21	1.38	1.73
10,320.0	90.59	1.45	7,171.3	2,613.2	-622.6	2,647.4	0.81	0.36	-0.73
10,410.0	90.60	0.66	7,170.3	2,703.1	-620.9	2,737.1	0.88	0.01	-0.88
10,499.0	91.43	0.64	7,168.7	2,792.1	-619.9	2,825.8	0.93	0.93	-0.02
10,589.0	92.03	0.27	7,166.0	2,882.1	-619.2	2,915.6	0.78	0.67	-0.41
10,679.0	89.78	0.86	7,164.6	2,972.1	-618.3	3,005.3	2.58	-2.50	0.66
10,769.0	89.77	0.30	7,165.0	3,062.0	-617.4	3,095.1	0.62	-0.01	-0.62
10,858.0	90.11	0.90	7,165.1	3,151.0	-616.4	3,183.8	0.77	0.38	0.67
10,948.0	89.41	0.67	7,165.4	3,241.0	-615.2	3,273.6	0.82	-0.78	-0.26
11,039.0	89.43	0.13	7,166.4	3,332.0	-614.6	3,364.3	0.59	0.02	-0.59
11,129.0	88.29	0.20	7,168.1	3,422.0	-614.3	3,454.1	1.27	-1.27	0.08
11,218.0	90.83	0.78	7,168.8	3,511.0	-613.6	3,542.9	2.93	2.85	0.65
11,308.0	90.77	0.23	7,167.6	3,601.0	-612.8	3,632.6	0.61	-0.07	-0.61
11,398.0	90.57	0.65	7,166.5	3,691.0	-612.1	3,722.4	0.52	-0.22	0.47
11,487.0	90.78	0.29	7,165.5	3,780.0	-611.3	3,811.1	0.47	0.24	-0.40
11,576.0	90.95	0.02	7,164.1	3,869.0	-611.1	3,899.9	0.36	0.19	-0.30
11,666.0	90.37	0.07	7,163.1	3,958.9	-611.0	3,989.8	0.65	-0.64	0.06
11,757.0	89.76	0.41	7,163.0	4,049.9	-610.7	4,080.5	0.77	-0.67	0.37
11,847.0	89.54	0.34	7,163.5	4,139.9	-610.1	4,170.3	0.26	-0.24	-0.08
11,937.0	89.48	0.25	7,164.3	4,229.9	-609.6	4,260.1	0.12	-0.07	-0.10
12,027.0	89.08	0.50	7,165.4	4,319.9	-609.0	4,349.9	0.52	-0.44	0.28
12,116.0	90.29	0.20	7,165.9	4,408.9	-608.5	4,438.7	1.40	1.36	-0.34
12,206.0	89.59	0.19	7,166.0	4,498.9	-608.2	4,528.5	0.78	-0.78	-0.01
12,296.0	89.49	0.25	7,166.7	4,588.9	-607.8	4,618.2	0.13	-0.11	0.07

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Harvey 7N (Nio B)
<b>Project:</b>	SEC.32-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	Harvey 04N65W33 Pad Sec.32-T4N-R65W	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Well:</b>	Harvey 7N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Harvey 7N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Harvey 7N Wellbore #1	<b>Database:</b>	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)
12,386.0	89.05	0.13	7,167.9	4,678.9	-607.5	4,708.0	0.51	-0.49	-0.13
12,476.0	91.77	0.02	7,167.2	4,768.9	-607.4	4,797.8	3.02	3.02	-0.12
12,566.0	91.63	359.71	7,164.6	4,858.9	-607.6	4,887.6	0.38	-0.16	-0.34
12,656.0	91.31	0.00	7,162.3	4,948.8	-607.8	4,977.4	0.48	-0.36	0.32
12,746.0	90.87	0.75	7,160.6	5,038.8	-607.2	5,067.2	0.97	-0.49	0.83
12,836.0	90.35	0.55	7,159.6	5,128.8	-606.2	5,156.9	0.62	-0.58	-0.22
12,925.0	90.42	0.28	7,159.0	5,217.8	-605.6	5,245.7	0.31	0.08	-0.30
13,015.0	90.29	0.43	7,158.4	5,307.8	-605.0	5,335.5	0.22	-0.14	0.17
13,105.0	90.15	0.80	7,158.1	5,397.8	-604.1	5,425.2	0.44	-0.16	0.41
13,194.0	89.76	0.72	7,158.2	5,486.8	-602.9	5,514.0	0.45	-0.44	-0.09
13,283.0	90.46	0.45	7,158.0	5,575.8	-602.0	5,602.7	0.84	0.79	-0.30
13,372.0	90.51	0.64	7,157.2	5,664.8	-601.1	5,691.5	0.22	0.06	0.21
13,462.0	90.06	0.24	7,156.8	5,754.8	-600.4	5,781.3	0.67	-0.50	-0.44
13,553.0	91.57	359.25	7,155.5	5,845.7	-600.8	5,872.1	1.98	1.66	-1.09
13,642.0	91.12	359.34	7,153.4	5,934.7	-601.9	5,961.0	0.52	-0.51	0.10
13,732.0	90.76	358.98	7,151.9	6,024.7	-603.3	6,050.8	0.57	-0.40	-0.40
13,822.0	90.31	359.45	7,151.1	6,114.7	-604.5	6,140.7	0.72	-0.50	0.52
13,912.0	92.74	1.24	7,148.7	6,204.6	-603.9	6,230.5	3.35	2.70	1.99
14,002.0	92.32	0.74	7,144.7	6,294.5	-602.4	6,320.1	0.73	-0.47	-0.56
14,092.0	91.93	0.41	7,141.4	6,384.5	-601.5	6,409.8	0.57	-0.43	-0.37
14,182.0	91.38	0.73	7,138.8	6,474.4	-600.6	6,499.5	0.71	-0.61	0.36
14,271.0	91.23	0.59	7,136.8	6,563.4	-599.6	6,588.2	0.23	-0.17	-0.16
14,361.0	91.08	0.84	7,134.9	6,653.4	-598.4	6,677.9	0.32	-0.17	0.28
14,451.0	90.96	0.31	7,133.3	6,743.3	-597.5	6,767.7	0.60	-0.13	-0.59
14,541.0	90.51	1.01	7,132.2	6,833.3	-596.5	6,857.4	0.92	-0.50	0.78
14,630.0	90.01	0.17	7,131.8	6,922.3	-595.6	6,946.2	1.10	-0.56	-0.94
14,721.0	89.90	359.87	7,131.9	7,013.3	-595.6	7,037.0	0.35	-0.12	-0.33
14,810.0	91.17	0.21	7,131.0	7,102.3	-595.5	7,125.8	1.48	1.43	0.38
14,900.0	90.90	0.45	7,129.4	7,192.3	-595.0	7,215.6	0.40	-0.30	0.27
14,989.0	90.37	0.82	7,128.4	7,281.3	-594.0	7,304.3	0.73	-0.60	0.42
15,079.0	90.17	0.82	7,128.0	7,371.3	-592.7	7,394.0	0.22	-0.22	0.00
15,169.0	91.18	0.15	7,126.9	7,461.3	-591.9	7,483.8	1.35	1.12	-0.74
15,259.0	90.66	0.20	7,125.5	7,551.3	-591.7	7,573.6	0.58	-0.58	0.06
15,348.0	90.22	0.42	7,124.8	7,640.3	-591.2	7,662.4	0.55	-0.49	0.25
15,437.0	91.50	359.05	7,123.5	7,729.2	-591.6	7,751.2	2.11	1.44	-1.54
15,527.0	90.85	359.47	7,121.6	7,819.2	-592.8	7,841.1	0.86	-0.72	0.47
15,616.0	90.27	359.61	7,120.8	7,908.2	-593.5	7,929.9	0.67	-0.65	0.16
15,706.0	91.04	359.27	7,119.7	7,998.2	-594.4	8,019.8	0.94	0.86	-0.38
15,796.0	90.81	359.63	7,118.3	8,088.2	-595.2	8,109.7	0.47	-0.26	0.40
15,886.0	90.40	359.91	7,117.3	8,178.2	-595.6	8,199.5	0.55	-0.46	0.31
15,976.0	90.20	0.30	7,116.8	8,268.2	-595.4	8,289.3	0.49	-0.22	0.43
16,066.0	89.61	0.47	7,117.0	8,358.2	-594.8	8,379.1	0.68	-0.66	0.19
16,155.0	91.59	359.32	7,116.1	8,447.2	-595.0	8,467.9	2.57	2.22	-1.29

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Harvey 7N (Nio B)
<b>Project:</b>	SEC.32-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	Harvey 04N65W33 Pad Sec.32-T4N-R65W	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Well:</b>	Harvey 7N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Harvey 7N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Harvey 7N Wellbore #1	<b>Database:</b>	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)	
16,246.0	91.33	359.31	7,113.7	8,538.1	-596.1	8,558.7	0.29	-0.29	-0.01	
16,336.0	90.82	359.31	7,112.1	8,628.1	-597.1	8,648.6	0.57	-0.57	0.00	
16,426.0	90.23	359.86	7,111.2	8,718.1	-597.8	8,738.5	0.90	-0.66	0.61	
16,516.0	90.29	359.86	7,110.8	8,808.1	-598.0	8,828.3	0.07	0.07	0.00	
16,605.0	89.86	0.39	7,110.7	8,897.1	-597.8	8,917.1	0.77	-0.48	0.60	
16,695.0	92.75	359.77	7,108.7	8,987.1	-597.7	9,006.9	3.28	3.21	-0.69	
16,785.0	92.67	0.47	7,104.4	9,077.0	-597.5	9,096.6	0.78	-0.09	0.78	
16,875.0	92.58	0.51	7,100.3	9,166.9	-596.7	9,186.3	0.11	-0.10	0.04	
16,964.0	92.04	0.90	7,096.7	9,255.8	-595.6	9,274.9	0.75	-0.61	0.44	
17,053.0	91.71	1.07	7,093.8	9,344.7	-594.1	9,363.6	0.42	-0.37	0.19	
17,143.0	91.47	1.05	7,091.3	9,434.7	-592.4	9,453.2	0.27	-0.27	-0.02	
17,232.0	91.10	1.48	7,089.3	9,523.6	-590.5	9,541.9	0.64	-0.42	0.48	
17,292.0	90.96	0.95	7,088.2	9,583.6	-589.2	9,601.7	0.91	-0.23	-0.88	
17,352.0	90.96	0.95	7,087.2	9,643.6	-588.2	9,661.5	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	
- hit/miss target										
- Shape										
SHL 760'FSL, 2434'FEL	0.00	0.00	1.0	0.0	0.0	1,339,970.83	3,227,042.63	40.263760	-104.686420	
- survey hits target center										
- Point										
BHL 150'FNL, 2230'FWL	0.00	0.00	7,098.0	9,646.8	-613.7	1,349,611.14	3,226,340.44	40.290240	-104.688620	
- survey misses target center by 27.9ft at 17352.0ft MD (7087.2 TVD, 9643.6 N, -588.2 E)										
- Point										

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,401.5	7,116.7	-298.8	-608.9	TPZ - 460' Setback - 460'FSL & 2249'FWL, Sec.32	
8,890.2	7,173.9	1,183.7	-627.1	Deepest TVD Drilled - 7173.9'	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_