

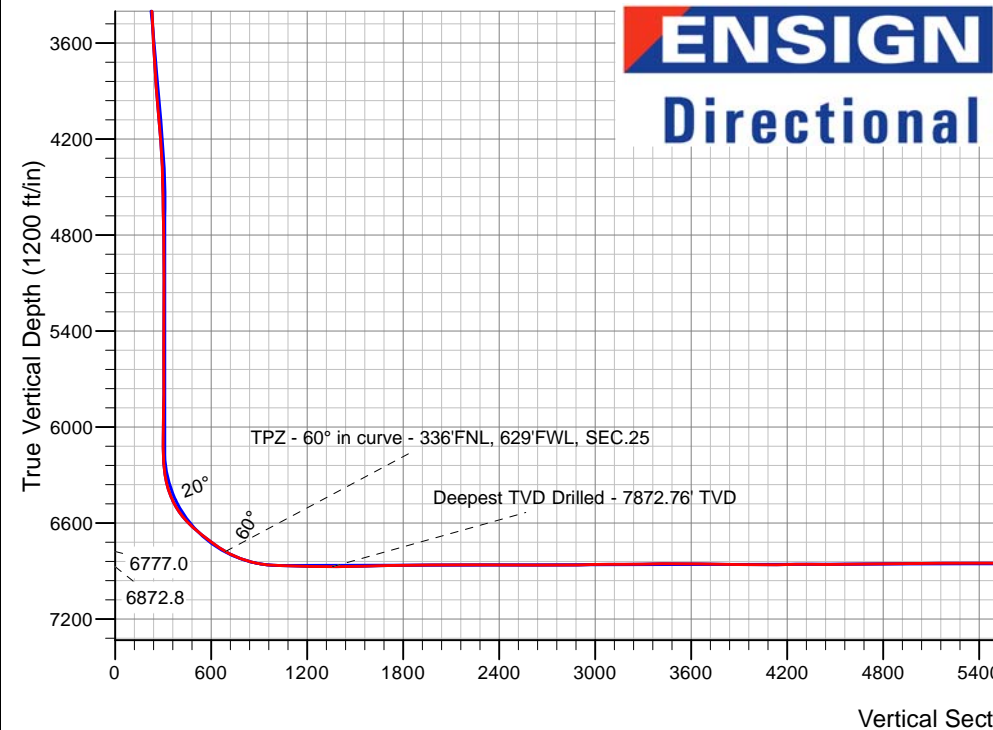
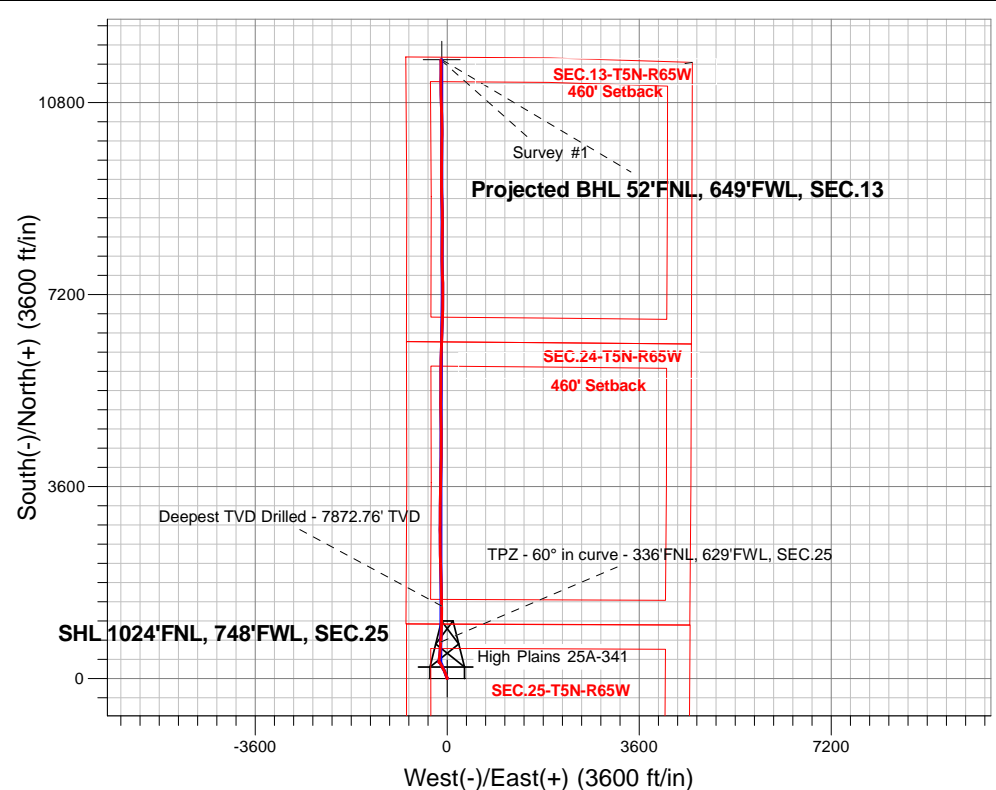
PDC Energy Inc. DJ Basin

Well Name: **High Plains 25A-341**

Surface Location: High Plains 5N65W25AF Pad Sec.25-T5N-R65W
 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 380539.39245642.91 40.374630 -104.618327
 Original Well Elev WELL @ 4662.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
17,880'MD 6836'TVD 11,601'N & 121'W of SHL
90.3 degree Incl @ 359.2 degree AZM



ENSIGN
Directional

High Plains 5N65W25AF Pad Sec.25-T5N-R65W
 High Plains 25A-341
 High Plains 25A-341 Wellbore #1
 10:34, November 27 2017

ANNOTATIONS

TVD	MD	Annotation
6777.0	6948.3	TPZ - 60° in curve - 336'FNL, 629'FWL, SEC.25
6872.8	7633.0	Deepest TVD Drilled - 7872.76' TVD

LEGEND

- High Plains 25A-341, High Plains 25A-341 Wellbore #1, Plan #3 (11-14-17) V0
- High Plains 25A-341 Wellbore #1
- Survey #1

Projected BHL 52'FNL, 649'FWL, SEC.13

High Plains 25A-341/Survey #1



PDC Energy Inc. DJ Basin

SEC.25-T5N-R65W

High Plains 5N65W25AF Pad Sec.25-T5N-R65W

High Plains 25A-341

High Plains 25A-341 Wellbore #1

Survey: Survey #1

Standard Survey Report

27 November, 2017

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25A-341
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25A-341	North Reference:	True
Wellbore:	High Plains 25A-341 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25A-341 Wellbore #1	Database:	US_EDM

Project	SEC.25-T5N-R65W, 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		High Plains 5N65W25AF Pad Sec.25-T5N-R65W			
Site Position:		Northing:	1,380,509.53 usft	Latitude:	40.374548
From:	Lat/Long	Easting:	3,245,642.93 usft	Longitude:	-104.618328
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well	High Plains 25A-341					
Well Position	+N/-S	0.0 ft	Northing:	1,380,539.39 usft	Latitude:	40.374630
	+E/-W	0.0 ft	Easting:	3,245,642.91 usft	Longitude:	-104.618327
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,639.0 ft

Wellbore	High Plains 25A-341 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/30/2017	7.94	66.84	52,481

Design	High Plains 25A-341 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	359.48	

Survey Program	Date	11/27/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
157.0	17,880.0	Survey #1 (High Plains 25A-341 Wellbore	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	283.60	1.0	0.0	0.0	0.0	0.00	0.00	0.00	
SHL 1024'FNL, 748'FWL, SEC.25										
157.0	0.20	283.60	157.0	0.1	-0.3	0.1	0.13	0.13	0.00	
253.0	0.60	291.80	253.0	0.3	-0.9	0.3	0.42	0.42	8.54	
349.0	0.40	277.10	349.0	0.5	-1.7	0.5	0.25	-0.21	-15.31	
445.0	0.30	323.50	445.0	0.8	-2.2	0.8	0.30	-0.10	48.33	
540.0	0.40	324.20	540.0	1.2	-2.5	1.3	0.11	0.11	0.74	
636.0	1.50	334.60	636.0	2.6	-3.3	2.7	1.16	1.15	10.83	
732.0	2.80	335.40	731.9	5.9	-4.8	5.9	1.35	1.35	0.83	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25A-341
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25A-341	North Reference:	True
Wellbore:	High Plains 25A-341 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25A-341 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)	
828.0	4.20	340.20	827.7	11.3	-6.9	11.4	1.49	1.46	5.00	
923.0	5.70	341.80	922.4	19.1	-9.6	19.2	1.59	1.58	1.68	
1,019.0	5.50	341.10	1,017.9	28.0	-12.6	28.1	0.22	-0.21	-0.73	
1,115.0	5.80	341.40	1,113.4	36.9	-15.6	37.1	0.31	0.31	0.31	
1,211.0	5.00	339.80	1,209.0	45.5	-18.6	45.6	0.85	-0.83	-1.67	
1,307.0	6.50	341.90	1,304.5	54.5	-21.7	54.7	1.58	1.56	2.19	
1,402.0	5.90	342.10	1,399.0	64.3	-24.9	64.5	0.63	-0.63	0.21	
1,498.0	5.40	342.30	1,494.5	73.3	-27.8	73.6	0.52	-0.52	0.21	
1,594.0	4.60	335.40	1,590.1	81.1	-30.8	81.4	1.04	-0.83	-7.19	
1,640.0	4.90	342.50	1,636.0	84.7	-32.1	84.9	1.43	0.65	15.43	
1,788.0	4.50	346.20	1,783.5	96.3	-35.4	96.6	0.34	-0.27	2.50	
1,883.0	4.40	339.30	1,878.2	103.4	-37.6	103.7	0.57	-0.11	-7.26	
1,979.0	4.20	334.20	1,973.9	110.0	-40.4	110.3	0.45	-0.21	-5.31	
2,075.0	4.10	339.50	2,069.7	116.3	-43.2	116.7	0.41	-0.10	5.52	
2,171.0	5.50	332.40	2,165.3	123.6	-46.5	124.1	1.58	1.46	-7.40	
2,267.0	4.90	330.90	2,260.9	131.3	-50.6	131.8	0.64	-0.63	-1.56	
2,363.0	6.50	338.20	2,356.5	139.9	-54.6	140.4	1.83	1.67	7.60	
2,459.0	6.30	333.80	2,451.9	149.7	-59.0	150.2	0.55	-0.21	-4.58	
2,555.0	6.00	330.50	2,547.3	158.8	-63.8	159.4	0.48	-0.31	-3.44	
2,651.0	6.00	327.50	2,642.8	167.4	-68.9	168.0	0.33	0.00	-3.13	
2,747.0	6.10	326.80	2,738.3	175.9	-74.4	176.6	0.13	0.10	-0.73	
2,843.0	6.30	335.10	2,833.7	184.9	-79.4	185.6	0.96	0.21	8.65	
2,939.0	6.50	331.20	2,929.1	194.5	-84.3	195.2	0.50	0.21	-4.06	
3,035.0	5.30	334.70	3,024.6	203.2	-88.8	204.0	1.30	-1.25	3.65	
3,131.0	5.40	338.90	3,120.2	211.5	-92.3	212.3	0.42	0.10	4.38	
3,226.0	4.20	337.00	3,214.8	218.8	-95.3	219.7	1.27	-1.26	-2.00	
3,322.0	3.50	334.90	3,310.6	224.7	-97.9	225.6	0.74	-0.73	-2.19	
3,419.0	3.50	325.20	3,407.4	229.8	-100.8	230.8	0.61	0.00	-10.00	
3,515.0	3.60	314.90	3,503.3	234.4	-104.6	235.3	0.67	0.10	-10.73	
3,610.0	3.10	331.70	3,598.1	238.7	-108.0	239.7	1.15	-0.53	17.68	
3,706.0	3.60	337.50	3,693.9	243.8	-110.4	244.8	0.63	0.52	6.04	
3,802.0	4.40	334.60	3,789.7	249.9	-113.1	250.9	0.86	0.83	-3.02	
3,897.0	5.50	331.00	3,884.3	257.2	-116.9	258.3	1.20	1.16	-3.79	
3,993.0	4.70	324.70	3,980.0	264.4	-121.4	265.5	1.02	-0.83	-6.56	
4,088.0	6.10	330.90	4,074.5	272.0	-126.1	273.2	1.59	1.47	6.53	
4,184.0	5.60	323.30	4,170.0	280.2	-131.3	281.4	0.96	-0.52	-7.92	
4,279.0	4.60	336.50	4,264.7	287.4	-135.6	288.7	1.62	-1.05	13.89	
4,375.0	2.70	327.90	4,360.5	292.9	-138.4	294.1	2.05	-1.98	-8.96	
4,471.0	1.60	335.80	4,456.4	296.0	-140.1	297.3	1.18	-1.15	8.23	
4,567.0	1.50	309.90	4,552.4	298.1	-141.6	299.3	0.73	-0.10	-26.98	
4,662.0	1.40	309.60	4,647.3	299.6	-143.5	300.9	0.11	-0.11	-0.32	
4,757.0	1.70	309.60	4,742.3	301.2	-145.5	302.5	0.32	0.32	0.00	

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Well:	High Plains 25A-341	North Reference:	True
Wellbore:	High Plains 25A-341 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25A-341 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)
4,853.0	1.30	300.30	4,838.3	302.7	-147.5	304.0	0.49	-0.42	-9.69
4,949.0	1.00	286.20	4,934.2	303.5	-149.2	304.8	0.43	-0.31	-14.69
5,045.0	0.70	257.20	5,030.2	303.6	-150.6	304.9	0.54	-0.31	-30.21
5,140.0	0.50	278.00	5,125.2	303.5	-151.6	304.9	0.31	-0.21	21.89
5,235.0	0.40	245.30	5,220.2	303.4	-152.3	304.8	0.29	-0.11	-34.42
5,331.0	0.20	200.30	5,316.2	303.1	-152.7	304.5	0.31	-0.21	-46.88
5,427.0	0.30	102.00	5,412.2	302.9	-152.5	304.3	0.40	0.10	-102.40
5,522.0	0.40	30.80	5,507.2	303.1	-152.1	304.5	0.44	0.11	-74.95
5,618.0	0.30	126.10	5,603.2	303.3	-151.7	304.7	0.54	-0.10	99.27
5,714.0	0.40	142.60	5,699.2	302.9	-151.3	304.2	0.15	0.10	17.19
5,810.0	0.40	209.40	5,795.2	302.3	-151.2	303.7	0.46	0.00	69.58
5,905.0	0.30	193.60	5,890.2	301.8	-151.5	303.2	0.15	-0.11	-16.63
6,001.0	0.80	191.10	5,986.2	300.9	-151.7	302.3	0.52	0.52	-2.60
6,097.0	0.90	214.30	6,082.2	299.6	-152.2	301.0	0.37	0.10	24.17
6,193.0	2.10	320.00	6,178.2	300.3	-153.8	301.7	2.60	1.25	110.10
6,289.0	6.70	347.60	6,273.9	307.1	-156.1	308.6	5.14	4.79	28.75
6,384.0	15.20	355.50	6,367.1	325.0	-158.3	326.4	9.07	8.95	8.32
6,480.0	24.60	3.70	6,457.3	357.6	-158.0	359.0	10.19	9.79	8.54
6,577.0	36.70	8.70	6,540.6	406.6	-152.3	407.9	12.74	12.47	5.15
6,673.0	47.30	10.60	6,611.8	469.8	-141.4	471.0	11.12	11.04	1.98
6,769.0	52.00	7.20	6,674.0	542.0	-130.2	543.2	5.59	4.90	-3.54
6,865.0	54.10	5.10	6,731.7	618.3	-122.0	619.4	2.80	2.19	-2.19
6,948.3	59.98	359.41	6,777.0	688.1	-119.3	689.1	9.09	7.06	-6.84
TPZ - 60° in curve - 336'FNL, 629'FWL, SEC.25									
6,961.0	60.90	358.60	6,783.3	699.1	-119.5	700.2	9.09	7.23	-6.35
7,057.0	70.00	2.10	6,823.1	786.3	-118.9	787.4	10.04	9.48	3.65
7,153.0	77.70	2.50	6,849.8	878.4	-115.2	879.4	8.03	8.02	0.42
7,248.0	87.20	2.00	6,862.3	972.4	-111.5	973.4	10.01	10.00	-0.53
7,301.6	88.04	1.67	6,864.5	1,025.9	-109.8	1,026.8	1.68	1.56	-0.63
LPL 2'FSL, 627'FWL, SEC.24									
7,344.0	88.70	1.40	6,865.7	1,068.3	-108.7	1,069.2	1.68	1.56	-0.62
7,440.0	88.20	1.30	6,868.3	1,164.2	-106.4	1,165.1	0.53	-0.52	-0.10
7,537.0	87.80	359.90	6,871.7	1,261.1	-105.4	1,262.1	1.50	-0.41	-1.44
7,633.0	90.90	359.00	6,872.8	1,357.1	-106.3	1,358.0	3.36	3.23	-0.94
Deepest TVD Drilled - 7872.76' TVD									
7,727.0	91.00	358.80	6,871.2	1,451.1	-108.1	1,452.0	0.24	0.11	-0.21
7,825.0	91.50	358.10	6,869.1	1,549.0	-110.8	1,550.0	0.88	0.51	-0.71
7,921.0	91.50	357.40	6,866.6	1,644.9	-114.5	1,645.9	0.73	0.00	-0.73
8,017.0	90.90	358.30	6,864.5	1,740.8	-118.1	1,741.8	1.13	-0.63	0.94
8,112.0	90.70	358.10	6,863.2	1,835.8	-121.1	1,836.8	0.30	-0.21	-0.21
8,208.0	89.80	0.40	6,862.8	1,931.8	-122.4	1,932.8	2.57	-0.94	2.40
8,305.0	90.40	359.70	6,862.6	2,028.8	-122.3	2,029.8	0.95	0.62	-0.72
8,401.0	90.50	359.30	6,861.9	2,124.8	-123.1	2,125.8	0.43	0.10	-0.42

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Survey									
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8,496.0	90.40	358.50	6,861.1	2,219.7	-124.9	2,220.8	0.85	-0.11	-0.84
8,592.0	90.60	358.10	6,860.3	2,315.7	-127.8	2,316.8	0.47	0.21	-0.42
8,689.0	90.00	359.50	6,859.8	2,412.7	-129.8	2,413.7	1.57	-0.62	1.44
8,785.0	89.50	359.00	6,860.2	2,508.7	-131.1	2,509.7	0.74	-0.52	-0.52
8,881.0	89.40	359.20	6,861.1	2,604.6	-132.6	2,605.7	0.23	-0.10	0.21
8,977.0	88.70	358.80	6,862.7	2,700.6	-134.3	2,701.7	0.84	-0.73	-0.42
9,072.0	90.60	359.70	6,863.3	2,795.6	-135.5	2,796.7	2.21	2.00	0.95
9,168.0	91.70	0.70	6,861.4	2,891.6	-135.2	2,892.7	1.55	1.15	1.04
9,264.0	90.70	1.30	6,859.4	2,987.5	-133.5	2,988.6	1.21	-1.04	0.63
9,360.0	90.70	0.90	6,858.2	3,083.5	-131.7	3,084.6	0.42	0.00	-0.42
9,456.0	90.10	0.20	6,857.5	3,179.5	-130.7	3,180.6	0.96	-0.63	-0.73
9,573.0	91.10	0.20	6,856.3	3,296.5	-130.3	3,297.5	0.85	0.85	0.00
9,669.0	91.10	359.70	6,854.4	3,392.5	-130.4	3,393.5	0.52	0.00	-0.52
9,765.0	89.90	0.90	6,853.6	3,488.5	-129.9	3,489.5	1.77	-1.25	1.25
9,861.0	90.00	0.00	6,853.7	3,584.5	-129.2	3,585.5	0.94	0.10	-0.94
9,957.0	89.30	2.30	6,854.3	3,680.4	-127.2	3,681.4	2.50	-0.73	2.40
10,053.0	88.70	1.80	6,856.0	3,776.4	-123.8	3,777.3	0.81	-0.63	-0.52
10,149.0	88.00	0.90	6,858.7	3,872.3	-121.5	3,873.2	1.19	-0.73	-0.94
10,245.0	89.90	1.40	6,860.5	3,968.2	-119.6	3,969.2	2.05	1.98	0.52
10,341.0	90.90	0.70	6,859.8	4,064.2	-117.8	4,065.1	1.27	1.04	-0.73
10,437.0	90.40	0.40	6,858.7	4,160.2	-116.9	4,161.1	0.61	-0.52	-0.31
10,533.0	90.30	0.40	6,858.1	4,256.2	-116.3	4,257.1	0.10	-0.10	0.00
10,629.0	90.00	0.60	6,857.9	4,352.2	-115.4	4,353.1	0.38	-0.31	0.21
10,725.0	89.30	0.00	6,858.5	4,448.2	-114.9	4,449.1	0.96	-0.73	-0.63
10,821.0	90.80	0.20	6,858.4	4,544.2	-114.7	4,545.1	1.58	1.56	0.21
10,917.0	90.60	359.50	6,857.2	4,640.2	-115.0	4,641.0	0.76	-0.21	-0.73
11,013.0	90.90	359.20	6,856.0	4,736.2	-116.1	4,737.0	0.44	0.31	-0.31
11,109.0	91.20	358.30	6,854.2	4,832.1	-118.2	4,833.0	0.99	0.31	-0.94
11,206.0	91.30	357.80	6,852.1	4,929.1	-121.5	4,930.0	0.53	0.10	-0.52
11,302.0	89.70	359.50	6,851.2	5,025.0	-123.7	5,025.9	2.43	-1.67	1.77
11,397.0	90.50	359.30	6,851.1	5,120.0	-124.7	5,120.9	0.87	0.84	-0.21
11,493.0	89.80	1.30	6,850.8	5,216.0	-124.2	5,216.9	2.21	-0.73	2.08
11,589.0	89.80	0.70	6,851.2	5,312.0	-122.6	5,312.9	0.62	0.00	-0.63
11,685.0	89.80	0.40	6,851.5	5,408.0	-121.6	5,408.9	0.31	0.00	-0.31
11,781.0	89.90	359.90	6,851.7	5,504.0	-121.4	5,504.9	0.53	0.10	-0.52
11,877.0	90.50	359.70	6,851.4	5,600.0	-121.7	5,600.9	0.66	0.63	-0.21
11,941.8	90.64	359.70	6,850.8	5,664.8	-122.1	5,665.7	0.21	0.21	0.00
WP #1 (25A-341)									
11,973.0	90.70	359.70	6,850.4	5,696.0	-122.2	5,696.9	0.21	0.21	0.00
12,069.0	89.60	0.70	6,850.2	5,792.0	-121.9	5,792.8	1.55	-1.15	1.04
12,165.0	90.00	1.10	6,850.5	5,888.0	-120.4	5,888.8	0.59	0.42	0.42
12,261.0	90.70	0.60	6,849.9	5,983.9	-119.0	5,984.8	0.90	0.73	-0.52
12,357.0	90.20	2.70	6,849.1	6,079.9	-116.2	6,080.7	2.25	-0.52	2.19

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25A-341
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25A-341	North Reference:	True
Wellbore:	High Plains 25A-341 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25A-341 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)	
12,453.0	90.00	2.70	6,849.0	6,175.8	-111.7	6,176.6	0.21	-0.21	0.00	
12,550.0	90.10	2.30	6,848.9	6,272.7	-107.4	6,273.4	0.43	0.10	-0.41	
12,645.0	89.70	2.50	6,849.1	6,367.6	-103.5	6,368.3	0.47	-0.42	0.21	
12,741.0	90.00	2.00	6,849.3	6,463.5	-99.7	6,464.2	0.61	0.31	-0.52	
12,837.0	89.60	2.10	6,849.6	6,559.5	-96.3	6,560.1	0.43	-0.42	0.10	
12,934.0	89.80	1.40	6,850.2	6,656.4	-93.3	6,657.0	0.75	0.21	-0.72	
13,029.0	89.80	1.10	6,850.5	6,751.4	-91.2	6,752.0	0.32	0.00	-0.32	
13,125.0	89.80	0.90	6,850.8	6,847.4	-89.5	6,847.9	0.21	0.00	-0.21	
13,139.6	89.77	0.87	6,850.9	6,862.0	-89.3	6,862.5	0.29	-0.21	-0.21	
WP #2 (25A-341)										
13,221.0	89.60	0.70	6,851.3	6,943.4	-88.2	6,943.9	0.29	-0.21	-0.21	
13,316.0	89.40	0.70	6,852.2	7,038.4	-87.0	7,038.9	0.21	-0.21	0.00	
13,411.0	89.20	0.20	6,853.3	7,133.4	-86.3	7,133.9	0.57	-0.21	-0.53	
13,507.0	89.80	359.90	6,854.2	7,229.4	-86.2	7,229.8	0.70	0.63	-0.31	
13,602.0	89.80	359.50	6,854.5	7,324.4	-86.7	7,324.8	0.42	0.00	-0.42	
13,698.0	90.20	358.60	6,854.5	7,420.3	-88.3	7,420.8	1.03	0.42	-0.94	
13,793.0	91.20	358.30	6,853.3	7,515.3	-90.9	7,515.8	1.10	1.05	-0.32	
13,889.0	91.00	359.20	6,851.5	7,611.3	-93.0	7,611.8	0.96	-0.21	0.94	
13,984.0	92.10	358.80	6,848.9	7,706.2	-94.6	7,706.7	1.23	1.16	-0.42	
14,080.0	90.00	359.20	6,847.2	7,802.2	-96.3	7,802.7	2.23	-2.19	0.42	
14,175.0	90.30	358.60	6,846.9	7,897.1	-98.1	7,897.7	0.71	0.32	-0.63	
14,271.0	91.20	358.50	6,845.6	7,993.1	-100.6	7,993.7	0.94	0.94	-0.10	
14,367.0	90.10	0.70	6,844.6	8,089.1	-101.2	8,089.7	2.56	-1.15	2.29	
14,463.0	90.60	2.30	6,844.0	8,185.1	-98.7	8,185.6	1.75	0.52	1.67	
14,559.0	90.90	2.90	6,842.7	8,280.9	-94.4	8,281.5	0.70	0.31	0.63	
14,655.0	90.20	0.70	6,841.8	8,376.9	-91.3	8,377.4	2.40	-0.73	-2.29	
14,750.0	89.20	359.70	6,842.3	8,471.9	-91.0	8,472.4	1.49	-1.05	-1.05	
14,846.0	90.00	359.20	6,843.0	8,567.9	-91.9	8,568.4	0.98	0.83	-0.52	
14,941.0	91.00	359.00	6,842.1	8,662.9	-93.4	8,663.4	1.07	1.05	-0.21	
15,037.0	90.10	359.00	6,841.2	8,758.8	-95.1	8,759.3	0.94	-0.94	0.00	
15,132.0	89.50	358.30	6,841.5	8,853.8	-97.3	8,854.3	0.97	-0.63	-0.74	
15,228.0	90.00	357.90	6,842.0	8,949.8	-100.5	8,950.3	0.67	0.52	-0.42	
15,323.0	89.10	358.80	6,842.7	9,044.7	-103.3	9,045.3	1.34	-0.95	0.95	
15,419.0	89.50	358.50	6,843.9	9,140.7	-105.5	9,141.3	0.52	0.42	-0.31	
15,514.0	90.10	358.80	6,844.2	9,235.7	-107.8	9,236.3	0.71	0.63	0.32	
15,609.0	90.30	359.20	6,843.9	9,330.6	-109.4	9,331.2	0.47	0.21	0.42	
15,705.0	89.50	0.00	6,844.0	9,426.6	-110.1	9,427.2	1.18	-0.83	0.83	
15,801.0	90.90	0.60	6,843.7	9,522.6	-109.6	9,523.2	1.59	1.46	0.63	
15,896.0	91.30	0.70	6,841.9	9,617.6	-108.5	9,618.2	0.43	0.42	0.11	
15,992.0	91.20	1.10	6,839.8	9,713.6	-107.0	9,714.1	0.43	-0.10	0.42	
16,088.0	89.70	1.10	6,839.0	9,809.5	-105.2	9,810.1	1.56	-1.56	0.00	
16,184.0	90.00	0.40	6,839.3	9,905.5	-103.9	9,906.1	0.79	0.31	-0.73	
16,279.0	91.30	0.00	6,838.2	10,000.5	-103.6	10,001.1	1.43	1.37	-0.42	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25A-341
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25A-341	North Reference:	True
Wellbore:	High Plains 25A-341 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25A-341 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)
16,375.0	90.70	0.70	6,836.5	10,096.5	-103.0	10,097.0	0.96	-0.63	0.73
16,471.0	91.80	0.70	6,834.4	10,192.5	-101.8	10,193.0	1.15	1.15	0.00
16,566.0	90.90	0.20	6,832.2	10,287.4	-101.1	10,287.9	1.08	-0.95	-0.53
16,662.0	90.00	359.50	6,831.5	10,383.4	-101.3	10,383.9	1.19	-0.94	-0.73
16,757.0	90.00	358.50	6,831.5	10,478.4	-103.0	10,478.9	1.05	0.00	-1.05
16,853.0	89.40	357.40	6,832.0	10,574.4	-106.4	10,574.9	1.31	-0.63	-1.15
16,948.0	89.30	357.60	6,833.0	10,669.3	-110.5	10,669.8	0.24	-0.11	0.21
17,044.0	90.00	358.30	6,833.6	10,765.2	-114.0	10,765.8	1.03	0.73	0.73
17,139.0	90.40	358.50	6,833.3	10,860.2	-116.6	10,860.8	0.47	0.42	0.21
17,235.0	89.90	359.00	6,833.0	10,956.1	-118.7	10,956.8	0.74	-0.52	0.52
17,330.0	90.70	359.50	6,832.5	11,051.1	-120.0	11,051.8	0.99	0.84	0.53
17,426.0	90.20	0.00	6,831.8	11,147.1	-120.4	11,147.8	0.74	-0.52	0.52
17,521.0	89.30	0.40	6,832.2	11,242.1	-120.1	11,242.8	1.04	-0.95	0.42
17,617.0	88.50	0.20	6,834.0	11,338.1	-119.6	11,338.7	0.86	-0.83	-0.21
17,713.0	89.10	359.70	6,836.1	11,434.1	-119.6	11,434.7	0.81	0.63	-0.52
17,809.0	90.10	359.30	6,836.7	11,530.1	-120.5	11,530.7	1.12	1.04	-0.42
17,825.0	90.30	359.20	6,836.7	11,546.1	-120.7	11,546.7	1.40	1.25	-0.63
17,880.0	90.30	359.20	6,836.4	11,601.1	-121.5	11,601.7	0.00	0.00	0.00
BHL 50°FNL, 664°FNL, SEC.13									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 1024°FNL, 748°FNL - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,380,539.40	3,245,642.91	40.374630	-104.618327
BHL 50°FNL, 664°FNL, SEC.13 - survey misses target center by 15.8ft at 17880.0ft MD (6836.4 TVD, 11601.1 N, -121.5 E) - Point	0.00	0.00	6,840.0	11,602.6	-106.1	1,392,139.88	3,245,421.46	40.406478	-104.618708

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
6,948.3	6,777.0	688.1	-119.3	TPZ - 60° in curve - 336°FNL, 629°FNL, SEC.25
7,633.0	6,872.8	1,357.1	-106.3	Deepest TVD Drilled - 7872.76' TVD

Checked By: _____ Approved By: _____ Date: _____