

# PETROLEUM DEVELOPMENT CORP Weld County CO

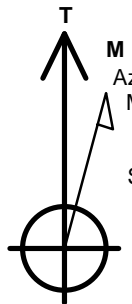
Well Name: **Bernhardt 60-243**

Surface Location: Bernhardt 4N66W6K Pad Sec.6-T4N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4713.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1367122.83	3188035.86	40.339190	-104.825450	
RKB - 15' WELL @ 4728.0ft (RKB - 15')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1924'FSL & 1210'FWL, Sec.6	1.0	0.0	0.0	Point
BHL 2154'FNL & 2385'FWL, Sec.7	7028.0	-4047.4	1185.0	Point



Azimuths to True North  
Magnetic North: 8.46°  
  
Magnetic Field  
Strength: 52754.9snT  
Dip Angle: 66.88°  
Date: 9/3/2014  
Model: IGRF2010

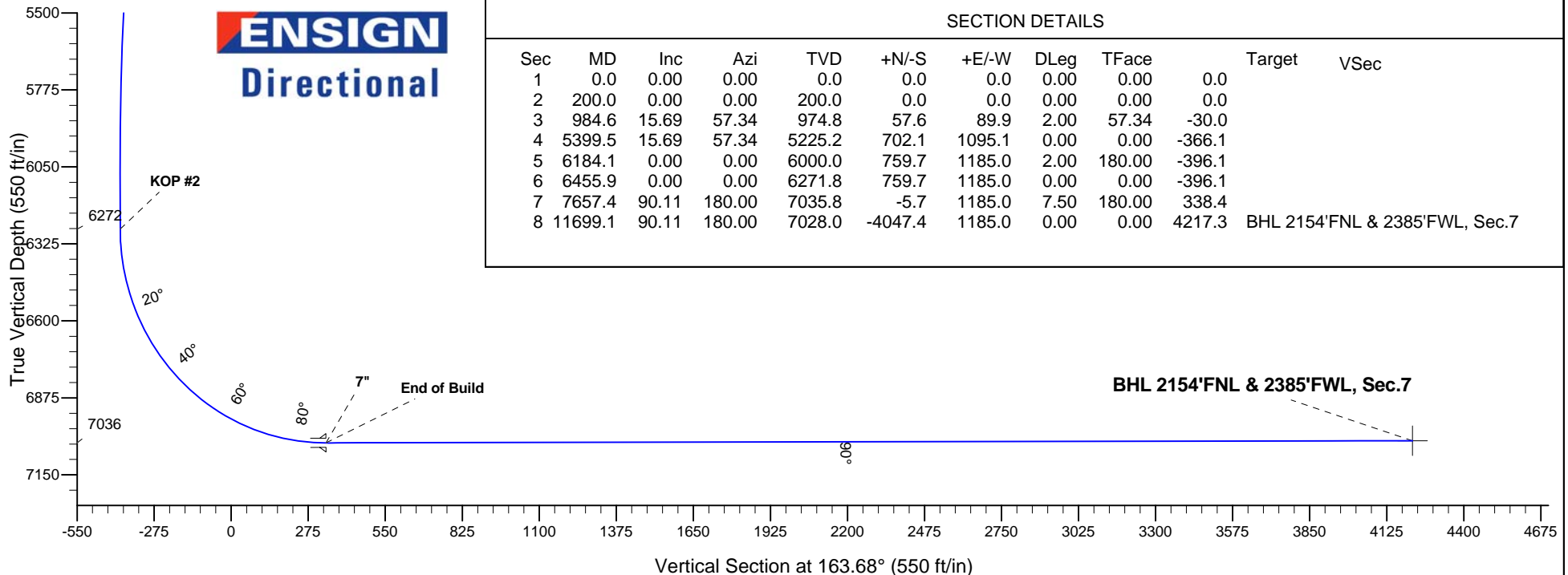
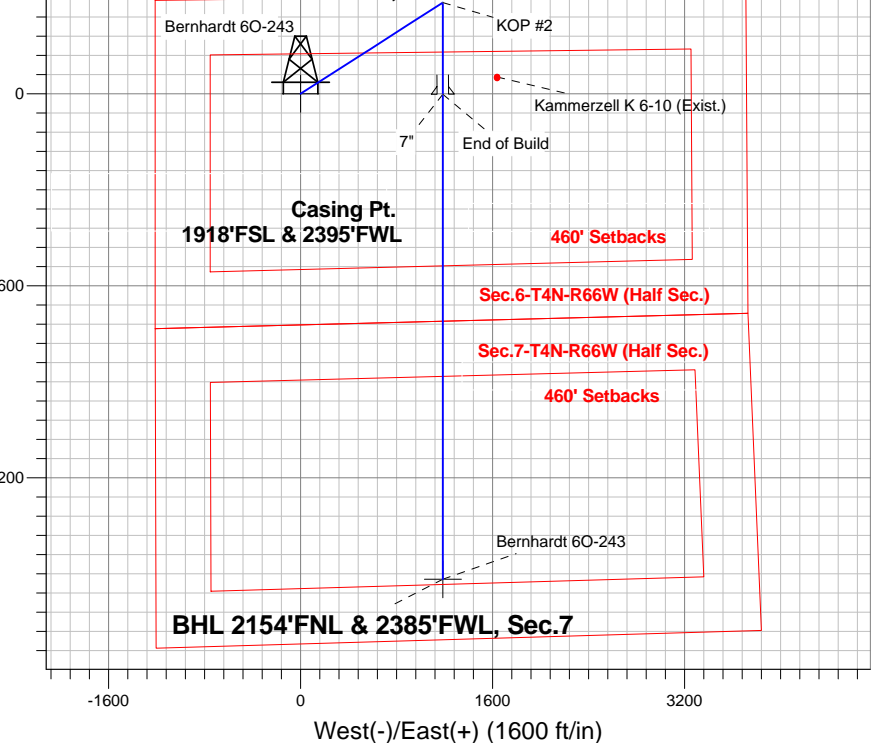
## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6271.8	6455.9	KOP #2
7035.8	7657.4	End of Build

Bernhardt 4N66W6K Pad Sec.6-T4N-R66W  
Bernhardt 60-243  
Plan #2 (9-3-14)  
9:47, September 11 2014

## SHL 1924'FSL & 1210'FWL, Sec.6

South(-)/North(+) (1600 ft/in)



**ENSIGN**  
Directional

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	984.6	15.69	57.34	974.8	57.6	89.9	2.00	57.34	-30.0	
4	5399.5	15.69	57.34	5225.2	702.1	1095.1	0.00	0.00	-366.1	
5	6184.1	0.00	0.00	6000.0	759.7	1185.0	2.00	180.00	-396.1	
6	6455.9	0.00	0.00	6271.8	759.7	1185.0	0.00	0.00	-396.1	
7	7657.4	90.11	180.00	7035.8	-5.7	1185.0	7.50	180.00	338.4	
8	11699.1	90.11	180.00	7028.0	-4047.4	1185.0	0.00	0.00	4217.3	BHL 2154'FNL & 2385'FWL, Sec.7



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.6-T4N-R66W**

**Bernhardt 4N66W6K Pad Sec.6-T4N-R66W**

**Bernhardt 6O-243**

**Wellbore #1**

**Plan: Plan #2 (9-3-14)**

## **Standard Planning Report**

**11 September, 2014**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (9-3-14)		

<b>Project</b>	SEC.6-T4N-R66W, 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						Bernhardt 4N66W6K Pad Sec.6-T4N-R66W											
Site Position:						Northing:			1,367,096.68 ft			Latitude:			40.339120		
From:			Lat/Long			Easting:			3,187,949.64 ft			Longitude:			-104.825760		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.44 °		

Well	Bernhardt 6O-243					
Well Position	+N/-S	25.5 ft	Northing:	1,367,122.83 ft	Latitude:	40.339190
	+E/-W	86.4 ft	Easting:	3,188,035.86 ft	Longitude:	-104.825450
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,713.0 ft

<b>Wellbore</b>	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>
	IGRF2010	9/3/2014	8.46	66.88	52,755

<b>Design</b>	Plan #2 (9-3-14)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	163.68

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
984.6	15.69	57.34	974.8	57.6	89.9	2.00	2.00	0.00	57.34	
5,399.5	15.69	57.34	5,225.2	702.1	1,095.1	0.00	0.00	0.00	0.00	
6,184.1	0.00	0.00	6,000.0	759.7	1,185.0	2.00	-2.00	0.00	180.00	
6,455.9	0.00	0.00	6,271.8	759.7	1,185.0	0.00	0.00	0.00	0.00	
7,657.4	90.11	180.00	7,035.8	-5.7	1,185.0	7.50	7.50	0.00	180.00	
11,699.1	90.11	180.00	7,028.0	-4,047.4	1,185.0	0.00	0.00	0.00	0.00	BHL 2154'FNL & 23

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (9-3-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
300.0	2.00	57.34	300.0	0.9	1.5	-0.5	2.00	2.00	0.00
400.0	4.00	57.34	399.8	3.8	5.9	-2.0	2.00	2.00	0.00
500.0	6.00	57.34	499.5	8.5	13.2	-4.4	2.00	2.00	0.00
600.0	8.00	57.34	598.7	15.0	23.5	-7.8	2.00	2.00	0.00
700.0	10.00	57.34	697.5	23.5	36.6	-12.2	2.00	2.00	0.00
800.0	12.00	57.34	795.6	33.8	52.7	-17.6	2.00	2.00	0.00
900.0	14.00	57.34	893.1	45.9	71.6	-23.9	2.00	2.00	0.00
984.6	15.69	57.34	974.8	57.6	89.9	-30.0	2.00	2.00	0.00
1,000.0	15.69	57.34	989.7	59.9	93.4	-31.2	0.00	0.00	0.00
1,100.0	15.69	57.34	1,085.9	74.5	116.2	-38.8	0.00	0.00	0.00
1,200.0	15.69	57.34	1,182.2	89.1	138.9	-46.4	0.00	0.00	0.00
1,300.0	15.69	57.34	1,278.5	103.7	161.7	-54.1	0.00	0.00	0.00
1,400.0	15.69	57.34	1,374.7	118.3	184.5	-61.7	0.00	0.00	0.00
1,500.0	15.69	57.34	1,471.0	132.9	207.2	-69.3	0.00	0.00	0.00
1,600.0	15.69	57.34	1,567.3	147.5	230.0	-76.9	0.00	0.00	0.00
1,700.0	15.69	57.34	1,663.6	162.1	252.8	-84.5	0.00	0.00	0.00
1,800.0	15.69	57.34	1,759.8	176.7	275.5	-92.1	0.00	0.00	0.00
1,900.0	15.69	57.34	1,856.1	191.2	298.3	-99.7	0.00	0.00	0.00
2,000.0	15.69	57.34	1,952.4	205.8	321.1	-107.3	0.00	0.00	0.00
2,100.0	15.69	57.34	2,048.7	220.4	343.8	-114.9	0.00	0.00	0.00
2,200.0	15.69	57.34	2,144.9	235.0	366.6	-122.6	0.00	0.00	0.00
2,300.0	15.69	57.34	2,241.2	249.6	389.4	-130.2	0.00	0.00	0.00
2,400.0	15.69	57.34	2,337.5	264.2	412.2	-137.8	0.00	0.00	0.00
2,500.0	15.69	57.34	2,433.8	278.8	434.9	-145.4	0.00	0.00	0.00
2,600.0	15.69	57.34	2,530.0	293.4	457.7	-153.0	0.00	0.00	0.00
2,700.0	15.69	57.34	2,626.3	308.0	480.5	-160.6	0.00	0.00	0.00
2,800.0	15.69	57.34	2,722.6	322.6	503.2	-168.2	0.00	0.00	0.00
2,900.0	15.69	57.34	2,818.8	337.2	526.0	-175.8	0.00	0.00	0.00
3,000.0	15.69	57.34	2,915.1	351.8	548.8	-183.5	0.00	0.00	0.00
3,100.0	15.69	57.34	3,011.4	366.4	571.5	-191.1	0.00	0.00	0.00
3,200.0	15.69	57.34	3,107.7	381.0	594.3	-198.7	0.00	0.00	0.00
3,300.0	15.69	57.34	3,203.9	395.6	617.1	-206.3	0.00	0.00	0.00
3,400.0	15.69	57.34	3,300.2	410.2	639.8	-213.9	0.00	0.00	0.00
3,500.0	15.69	57.34	3,396.5	424.8	662.6	-221.5	0.00	0.00	0.00
3,600.0	15.69	57.34	3,492.8	439.4	685.4	-229.1	0.00	0.00	0.00
3,700.0	15.69	57.34	3,589.0	454.0	708.1	-236.7	0.00	0.00	0.00
3,800.0	15.69	57.34	3,685.3	468.6	730.9	-244.3	0.00	0.00	0.00
3,900.0	15.69	57.34	3,781.6	483.2	753.7	-252.0	0.00	0.00	0.00
4,000.0	15.69	57.34	3,877.8	497.8	776.4	-259.6	0.00	0.00	0.00
4,100.0	15.69	57.34	3,974.1	512.4	799.2	-267.2	0.00	0.00	0.00
4,200.0	15.69	57.34	4,070.4	527.0	822.0	-274.8	0.00	0.00	0.00
4,300.0	15.69	57.34	4,166.7	541.6	844.8	-282.4	0.00	0.00	0.00
4,400.0	15.69	57.34	4,262.9	556.2	867.5	-290.0	0.00	0.00	0.00
4,500.0	15.69	57.34	4,359.2	570.8	890.3	-297.6	0.00	0.00	0.00
4,600.0	15.69	57.34	4,455.5	585.4	913.1	-305.2	0.00	0.00	0.00
4,700.0	15.69	57.34	4,551.8	600.0	935.8	-312.9	0.00	0.00	0.00
4,800.0	15.69	57.34	4,648.0	614.6	958.6	-320.5	0.00	0.00	0.00
4,900.0	15.69	57.34	4,744.3	629.2	981.4	-328.1	0.00	0.00	0.00
5,000.0	15.69	57.34	4,840.6	643.8	1,004.1	-335.7	0.00	0.00	0.00

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<b>Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (9-3-14)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.0	15.69	57.34	4,936.9	658.4	1,026.9	-343.3	0.00	0.00	0.00
5,200.0	15.69	57.34	5,033.1	673.0	1,049.7	-350.9	0.00	0.00	0.00
5,300.0	15.69	57.34	5,129.4	687.6	1,072.4	-358.5	0.00	0.00	0.00
5,399.5	15.69	57.34	5,225.2	702.1	1,095.1	-366.1	0.00	0.00	0.00
5,400.0	15.68	57.34	5,225.7	702.1	1,095.2	-366.1	2.00	-2.00	0.00
5,500.0	13.68	57.34	5,322.4	715.8	1,116.5	-373.3	2.00	-2.00	0.00
5,600.0	11.68	57.34	5,420.0	727.7	1,135.0	-379.4	2.00	-2.00	0.00
5,700.0	9.68	57.34	5,518.2	737.7	1,150.6	-384.7	2.00	-2.00	0.00
5,800.0	7.68	57.34	5,617.1	745.8	1,163.3	-388.9	2.00	-2.00	0.00
5,900.0	5.68	57.34	5,716.4	752.1	1,173.1	-392.2	2.00	-2.00	0.00
6,000.0	3.68	57.34	5,816.0	756.5	1,180.0	-394.5	2.00	-2.00	0.00
6,100.0	1.68	57.34	5,915.9	759.0	1,183.9	-395.8	2.00	-2.00	0.00
6,184.1	0.00	0.00	6,000.0	759.7	1,185.0	-396.1	2.00	-2.00	0.00
6,200.0	0.00	0.00	6,015.9	759.7	1,185.0	-396.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,115.9	759.7	1,185.0	-396.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,215.9	759.7	1,185.0	-396.1	0.00	0.00	0.00
6,455.9	0.00	0.00	6,271.8	759.7	1,185.0	-396.1	0.00	0.00	0.00
<b>KOP #2</b>									
6,500.0	3.31	180.00	6,315.9	758.4	1,185.0	-394.9	7.50	7.50	0.00
6,600.0	10.81	180.00	6,415.1	746.1	1,185.0	-383.1	7.50	7.50	0.00
6,700.0	18.31	180.00	6,511.8	721.0	1,185.0	-359.0	7.50	7.50	0.00
6,800.0	25.81	180.00	6,604.4	683.5	1,185.0	-323.0	7.50	7.50	0.00
6,900.0	33.31	180.00	6,691.3	634.2	1,185.0	-275.7	7.50	7.50	0.00
7,000.0	40.81	180.00	6,771.1	574.0	1,185.0	-217.9	7.50	7.50	0.00
7,100.0	48.31	180.00	6,842.3	503.9	1,185.0	-150.6	7.50	7.50	0.00
7,200.0	55.81	180.00	6,903.7	425.1	1,185.0	-75.0	7.50	7.50	0.00
7,300.0	63.31	180.00	6,954.3	338.9	1,185.0	7.7	7.50	7.50	0.00
7,400.0	70.81	180.00	6,993.3	246.9	1,185.0	96.0	7.50	7.50	0.00
7,500.0	78.31	180.00	7,019.9	150.6	1,185.0	188.4	7.50	7.50	0.00
7,600.0	85.81	180.00	7,033.7	51.6	1,185.0	283.4	7.50	7.50	0.00
7,657.4	90.11	180.00	7,035.8	-5.7	1,185.0	338.5	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,700.0	90.11	180.00	7,035.7	-48.3	1,185.0	379.4	0.00	0.00	0.00
7,800.0	90.11	180.00	7,035.5	-148.3	1,185.0	475.3	0.00	0.00	0.00
7,900.0	90.11	180.00	7,035.3	-248.3	1,185.0	571.3	0.00	0.00	0.00
8,000.0	90.11	180.00	7,035.1	-348.3	1,185.0	667.3	0.00	0.00	0.00
8,100.0	90.11	180.00	7,034.9	-448.3	1,185.0	763.2	0.00	0.00	0.00
8,200.0	90.11	180.00	7,034.7	-548.3	1,185.0	859.2	0.00	0.00	0.00
8,300.0	90.11	180.00	7,034.5	-648.3	1,185.0	955.2	0.00	0.00	0.00
8,400.0	90.11	180.00	7,034.3	-748.3	1,185.0	1,051.2	0.00	0.00	0.00
8,500.0	90.11	180.00	7,034.1	-848.3	1,185.0	1,147.1	0.00	0.00	0.00
8,600.0	90.11	180.00	7,033.9	-948.3	1,185.0	1,243.1	0.00	0.00	0.00
8,700.0	90.11	180.00	7,033.8	-1,048.3	1,185.0	1,339.1	0.00	0.00	0.00
8,800.0	90.11	180.00	7,033.6	-1,148.3	1,185.0	1,435.0	0.00	0.00	0.00
8,900.0	90.11	180.00	7,033.4	-1,248.3	1,185.0	1,531.0	0.00	0.00	0.00
9,000.0	90.11	180.00	7,033.2	-1,348.3	1,185.0	1,627.0	0.00	0.00	0.00
9,100.0	90.11	180.00	7,033.0	-1,448.3	1,185.0	1,722.9	0.00	0.00	0.00
9,200.0	90.11	180.00	7,032.8	-1,548.3	1,185.0	1,818.9	0.00	0.00	0.00
9,300.0	90.11	180.00	7,032.6	-1,648.3	1,185.0	1,914.9	0.00	0.00	0.00
9,400.0	90.11	180.00	7,032.4	-1,748.3	1,185.0	2,010.9	0.00	0.00	0.00
9,500.0	90.11	180.00	7,032.2	-1,848.3	1,185.0	2,106.8	0.00	0.00	0.00
9,600.0	90.11	180.00	7,032.0	-1,948.3	1,185.0	2,202.8	0.00	0.00	0.00
9,700.0	90.11	180.00	7,031.8	-2,048.3	1,185.0	2,298.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (9-3-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,800.0	90.11	180.00	7,031.6	-2,148.3	1,185.0	2,394.7	0.00	0.00	0.00
9,900.0	90.11	180.00	7,031.5	-2,248.3	1,185.0	2,490.7	0.00	0.00	0.00
10,000.0	90.11	180.00	7,031.3	-2,348.3	1,185.0	2,586.7	0.00	0.00	0.00
10,100.0	90.11	180.00	7,031.1	-2,448.3	1,185.0	2,682.7	0.00	0.00	0.00
10,200.0	90.11	180.00	7,030.9	-2,548.3	1,185.0	2,778.6	0.00	0.00	0.00
10,300.0	90.11	180.00	7,030.7	-2,648.3	1,185.0	2,874.6	0.00	0.00	0.00
10,400.0	90.11	180.00	7,030.5	-2,748.3	1,185.0	2,970.6	0.00	0.00	0.00
10,500.0	90.11	180.00	7,030.3	-2,848.3	1,185.0	3,066.5	0.00	0.00	0.00
10,600.0	90.11	180.00	7,030.1	-2,948.3	1,185.0	3,162.5	0.00	0.00	0.00
10,700.0	90.11	180.00	7,029.9	-3,048.3	1,185.0	3,258.5	0.00	0.00	0.00
10,800.0	90.11	180.00	7,029.7	-3,148.3	1,185.0	3,354.5	0.00	0.00	0.00
10,900.0	90.11	180.00	7,029.5	-3,248.3	1,185.0	3,450.4	0.00	0.00	0.00
11,000.0	90.11	180.00	7,029.3	-3,348.3	1,185.0	3,546.4	0.00	0.00	0.00
11,100.0	90.11	180.00	7,029.2	-3,448.3	1,185.0	3,642.4	0.00	0.00	0.00
11,200.0	90.11	180.00	7,029.0	-3,548.3	1,185.0	3,738.3	0.00	0.00	0.00
11,300.0	90.11	180.00	7,028.8	-3,648.3	1,185.0	3,834.3	0.00	0.00	0.00
11,400.0	90.11	180.00	7,028.6	-3,748.3	1,185.0	3,930.3	0.00	0.00	0.00
11,500.0	90.11	180.00	7,028.4	-3,848.3	1,185.0	4,026.3	0.00	0.00	0.00
11,600.0	90.11	180.00	7,028.2	-3,948.3	1,185.0	4,122.2	0.00	0.00	0.00
11,699.1	90.11	180.00	7,028.0	-4,047.4	1,185.0	4,217.3	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 2154'FNL & 238'	0.00	0.00	7,028.0	-4,047.4	1,185.0	1,363,084.72	3,189,251.54	40.328080	-104.821200
- plan hits target center									
- Point									
SHL 1924'FSL & 121'	0.00	0.00	1.0	0.0	0.0	1,367,122.84	3,188,035.86	40.339190	-104.825450
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
7,657.4	7,035.8	7"		7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
6,455.9	6,271.8	759.7	1,185.0	KOP #2
7,657.4	7,035.8	-5.7	1,185.0	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.6-T4N-R66W**

**Bernhardt 4N66W6K Pad Sec.6-T4N-R66W**

**Bernhardt 6O-243**

**Wellbore #1**

**Plan #2 (9-3-14)**

## **Anticollision Report**

**11 September, 2014**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (9-3-14)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	9/11/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,699.1	Plan #2 (9-3-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Bernhardt 4N66W6K Pad Sec.6-T4N-R66W						
Bernhardt 6K-323 - Wellbore #1 - Plan #2 (9-3-14)	200.0	200.0	58.7	58.0	86.986	CC, ES
Bernhardt 6K-323 - Wellbore #1 - Plan #2 (9-3-14)	11,699.1	11,666.7	664.4	499.3	4.023	SF
Bernhardt 6K-403 - Wellbore #1 - Plan #2 (9-3-14)	200.0	200.0	90.1	89.4	133.626	CC, ES
Bernhardt 6K-403 - Wellbore #1 - Plan #2 (9-3-14)	6,700.0	6,587.1	990.0	948.5	23.838	SF
Bernhardt 6O-443 - Wellbore #1 - Plan #2 (9-3-14)	200.0	200.0	29.9	29.3	44.406	CC, ES
Bernhardt 6O-443 - Wellbore #1 - Plan #2 (9-3-14)	11,699.1	11,785.2	367.1	211.4	2.358	SF
Existing Wells Sec.6-T4N-R66W						
Kammerzell K 6-10 (Exist.) - Wellbore #1 - Wellbore #1	7,512.3	7,003.3	451.4	292.5	2.841	CC, ES, SF

Offset Design		Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6K-323 - Wellbore #1 - Plan #2 (9-3-14)										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-108.09	-18.2	-55.8	58.7						
100.0	100.0	100.0	100.0	0.1	0.1	-108.09	-18.2	-55.8	58.7	58.4	0.22	260.959			
200.0	200.0	200.0	200.0	0.3	0.3	-108.09	-18.2	-55.8	58.7	58.0	0.67	86.986	CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-165.84	-18.2	-55.8	60.3	59.2	1.13	53.607			
400.0	399.8	399.8	399.8	0.8	0.8	-166.94	-18.2	-55.8	65.4	63.9	1.58	41.399			
500.0	499.5	499.5	499.5	1.0	1.0	-168.43	-18.2	-55.8	73.9	71.9	2.04	36.275			
600.0	598.7	598.7	598.7	1.3	1.2	-170.02	-18.2	-55.8	85.9	83.4	2.50	34.387			
700.0	697.5	697.5	697.5	1.7	1.5	-171.50	-18.2	-55.8	101.4	98.4	2.96	34.239			
800.0	795.6	795.6	795.6	2.0	1.7	-172.80	-18.2	-55.8	120.3	116.9	3.42	35.124			
900.0	893.1	897.4	897.3	2.5	1.9	-173.62	-16.9	-54.8	141.2	137.3	3.89	36.320			
1,000.0	989.7	1,000.0	999.8	3.0	2.1	-173.79	-12.6	-51.6	162.4	158.0	4.35	37.331			
1,100.0	1,085.9	1,103.7	1,103.1	3.5	2.4	-173.46	-5.4	-46.1	181.6	176.8	4.84	37.554			
1,200.0	1,182.2	1,208.5	1,207.1	4.0	2.6	-172.69	5.0	-38.3	197.7	192.4	5.35	36.977			
1,300.0	1,278.5	1,314.3	1,311.5	4.6	2.9	-171.54	18.6	-28.1	210.6	204.7	5.88	35.788			
1,400.0	1,374.7	1,418.7	1,413.9	5.1	3.3	-170.07	34.9	-15.8	220.5	214.0	6.45	34.176			
1,500.0	1,471.0	1,518.1	1,511.2	5.7	3.6	-168.66	51.1	-3.6	229.6	222.6	7.04	32.633			
1,600.0	1,567.3	1,617.5	1,608.5	6.2	4.0	-167.36	67.4	8.7	238.9	231.3	7.65	31.251			
1,700.0	1,663.6	1,717.0	1,705.9	6.8	4.4	-166.16	83.7	20.9	248.3	240.1	8.27	30.025			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6K-323 - Wellbore #1 - Plan #2 (9-3-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
1,800.0	1,759.8	1,816.4	1,803.2	7.4	4.8	-165.04	100.0	33.2	257.9	248.9	8.92	28.920		
1,900.0	1,856.1	1,915.8	1,900.5	7.9	5.2	-164.01	116.2	45.4	267.5	257.9	9.58	27.925		
2,000.0	1,952.4	2,015.2	1,997.8	8.5	5.6	-163.05	132.5	57.7	277.1	266.9	10.25	27.029		
2,100.0	2,048.7	2,114.7	2,095.1	9.0	6.0	-162.15	148.8	69.9	286.9	276.0	10.94	26.219		
2,200.0	2,144.9	2,214.1	2,192.4	9.6	6.4	-161.31	165.1	82.2	296.7	285.1	11.64	25.485		
2,300.0	2,241.2	2,313.5	2,289.8	10.2	6.8	-160.53	181.4	94.4	306.6	294.3	12.35	24.818		
2,400.0	2,337.5	2,412.9	2,387.1	10.7	7.2	-159.79	197.6	106.7	316.5	303.5	13.08	24.209		
2,500.0	2,433.8	2,512.4	2,484.4	11.3	7.7	-159.10	213.9	118.9	326.5	312.7	13.80	23.653		
2,600.0	2,530.0	2,611.8	2,581.7	11.9	8.1	-158.45	230.2	131.2	336.5	322.0	14.54	23.144		
2,700.0	2,626.3	2,711.2	2,679.0	12.4	8.5	-157.84	246.5	143.5	346.6	331.3	15.29	22.676		
2,800.0	2,722.6	2,810.6	2,776.3	13.0	9.0	-157.26	262.8	155.7	356.7	340.7	16.04	22.244		
2,900.0	2,818.8	2,910.1	2,873.7	13.6	9.4	-156.72	279.0	168.0	366.9	350.1	16.79	21.846		
3,000.0	2,915.1	3,009.5	2,971.0	14.1	9.8	-156.20	295.3	180.2	377.0	359.5	17.55	21.477		
3,100.0	3,011.4	3,108.9	3,068.3	14.7	10.2	-155.71	311.6	192.5	387.2	368.9	18.32	21.135		
3,200.0	3,107.7	3,208.3	3,165.6	15.2	10.7	-155.25	327.9	204.7	397.4	378.4	19.09	20.817		
3,300.0	3,203.9	3,307.8	3,262.9	15.8	11.1	-154.81	344.2	217.0	407.7	387.8	19.87	20.521		
3,400.0	3,300.2	3,407.2	3,360.2	16.4	11.5	-154.39	360.4	229.2	418.0	397.3	20.65	20.244		
3,500.0	3,396.5	3,506.6	3,457.5	16.9	12.0	-153.99	376.7	241.5	428.3	406.8	21.43	19.985		
3,600.0	3,492.8	3,606.0	3,554.9	17.5	12.4	-153.61	393.0	253.7	438.6	416.4	22.21	19.743		
3,700.0	3,589.0	3,705.5	3,652.2	18.1	12.8	-153.25	409.3	266.0	448.9	425.9	23.00	19.516		
3,800.0	3,685.3	3,804.9	3,749.5	18.6	13.3	-152.90	425.5	278.2	459.2	435.5	23.79	19.302		
3,900.0	3,781.6	3,904.3	3,846.8	19.2	13.7	-152.57	441.8	290.5	469.6	445.0	24.59	19.100		
4,000.0	3,877.8	4,003.8	3,944.1	19.8	14.1	-152.25	458.1	302.7	480.0	454.6	25.38	18.911		
4,100.0	3,974.1	4,103.2	4,041.4	20.3	14.6	-151.95	474.4	315.0	490.4	464.2	26.18	18.731		
4,200.0	4,070.4	4,202.6	4,138.8	20.9	15.0	-151.66	490.7	327.2	500.8	473.8	26.98	18.562		
4,300.0	4,166.7	4,302.0	4,236.1	21.5	15.5	-151.38	506.9	339.5	511.2	483.4	27.78	18.401		
4,400.0	4,262.9	4,401.5	4,333.4	22.0	15.9	-151.11	523.2	351.7	521.6	493.0	28.58	18.249		
4,500.0	4,359.2	4,500.9	4,430.7	22.6	16.3	-150.85	539.5	364.0	532.1	502.7	29.39	18.104		
4,600.0	4,455.5	4,600.3	4,528.0	23.2	16.8	-150.60	555.8	376.2	542.5	512.3	30.20	17.967		
4,700.0	4,551.8	4,699.7	4,625.3	23.7	17.2	-150.37	572.1	388.5	553.0	522.0	31.00	17.836		
4,800.0	4,648.0	4,799.2	4,722.7	24.3	17.6	-150.14	588.3	400.7	563.4	531.6	31.81	17.711		
4,900.0	4,744.3	4,898.6	4,820.0	24.9	18.1	-149.92	604.6	413.0	573.9	541.3	32.62	17.592		
5,000.0	4,840.6	4,998.0	4,917.3	25.4	18.5	-149.70	620.9	425.2	584.4	551.0	33.44	17.479		
5,100.0	4,936.9	5,097.4	5,014.6	26.0	19.0	-149.50	637.2	437.5	594.9	560.7	34.25	17.371		
5,200.0	5,033.1	5,196.9	5,111.9	26.6	19.4	-149.30	653.5	449.7	605.4	570.3	35.06	17.267		
5,300.0	5,129.4	5,296.3	5,209.2	27.1	19.8	-149.11	669.7	462.0	615.9	580.0	35.88	17.168		
5,400.0	5,225.7	5,395.7	5,306.5	27.7	20.3	-148.92	686.0	474.2	626.4	589.7	36.69	17.073		
5,500.0	5,322.4	5,495.3	5,404.0	28.2	20.7	-148.76	702.3	486.5	635.4	597.9	37.52	16.937		
5,600.0	5,420.0	5,583.9	5,490.9	28.5	21.1	-148.53	716.0	496.8	642.3	604.1	38.21	16.811		
5,700.0	5,518.2	5,671.4	5,577.3	28.9	21.3	-148.35	727.3	505.3	648.1	609.3	38.78	16.711		
5,800.0	5,617.1	5,759.0	5,664.2	29.2	21.5	-148.21	736.6	512.3	652.8	613.5	39.27	16.623		
5,900.0	5,716.4	5,846.7	5,751.3	29.4	21.7	-148.10	743.7	517.7	656.4	616.8	39.67	16.546		
6,000.0	5,816.0	5,934.3	5,838.7	29.6	21.9	-148.02	748.8	521.5	659.0	619.0	39.99	16.477		
6,100.0	5,915.9	6,022.0	5,926.3	29.7	22.1	-147.98	751.6	523.6	660.4	620.2	40.23	16.416		
6,200.0	6,015.9	6,111.6	6,015.9	29.8	22.2	-90.63	752.4	524.2	660.8	620.4	40.41	16.351		
6,300.0	6,115.9	6,211.6	6,115.9	29.9	22.3	-90.63	752.4	524.2	660.8	620.1	40.69	16.243		
6,400.0	6,215.9	6,311.6	6,215.9	30.0	22.4	-90.63	752.4	524.2	660.8	619.9	40.96	16.134		
6,500.0	6,315.9	6,411.6	6,315.9	30.1	22.6	89.48	752.4	524.2	660.8	619.6	41.26	16.017		
6,575.6	6,391.0	6,486.8	6,391.0	30.1	22.6	90.00	750.3	524.2	660.8	619.3	41.51	15.918		
6,600.0	6,415.1	6,511.1	6,415.3	30.1	22.6	90.18	748.2	524.2	660.8	619.2	41.58	15.892		
6,700.0	6,511.8	6,611.6	6,514.2	30.0	22.6	90.90	731.1	524.2	660.9	619.2	41.64	15.873		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6K-323 - Wellbore #1 - Plan #2 (9-3-14)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
6,800.0	6,604.4	6,713.1	6,611.1	29.8	22.4	91.60	700.8	524.2	661.1	619.6	41.42	15.959		
6,900.0	6,691.3	6,815.9	6,704.1	29.6	22.2	92.29	657.4	524.2	661.3	620.4	40.96	16.146		
7,000.0	6,771.1	6,919.7	6,791.3	29.3	21.8	92.93	601.2	524.2	661.7	621.4	40.29	16.421		
7,100.0	6,842.3	7,024.6	6,870.9	28.9	21.4	93.53	533.0	524.2	662.1	622.6	39.50	16.762		
7,200.0	6,903.7	7,130.5	6,941.1	28.6	20.9	94.07	453.7	524.2	662.5	623.8	38.67	17.133		
7,300.0	6,954.3	7,237.3	7,000.0	28.2	20.5	94.53	364.8	524.2	662.9	625.0	37.92	17.482		
7,400.0	6,993.3	7,345.0	7,046.2	27.9	20.0	94.92	267.7	524.2	663.2	625.9	37.37	17.746		
7,500.0	7,019.9	7,453.2	7,078.6	27.6	19.6	95.21	164.5	524.2	663.5	626.4	37.15	17.860		
7,600.0	7,033.7	7,561.9	7,096.0	27.4	19.2	95.41	57.2	524.2	663.7	626.4	37.34	17.778		
7,700.0	7,035.7	7,667.6	7,099.1	27.3	18.9	95.48	-48.4	524.2	663.8	625.9	37.96	17.489		
7,800.0	7,035.5	7,767.6	7,099.0	27.2	18.8	95.49	-148.4	524.2	663.8	624.9	38.95	17.043		
7,900.0	7,035.3	7,867.6	7,099.0	27.4	19.7	95.51	-248.4	524.2	663.9	623.6	40.28	16.482		
8,000.0	7,035.1	7,967.6	7,098.9	27.7	20.7	95.52	-348.4	524.2	663.9	622.0	41.91	15.840		
8,100.0	7,034.9	8,067.6	7,098.9	28.1	21.8	95.53	-448.4	524.2	663.9	620.1	43.82	15.150		
8,200.0	7,034.7	8,167.6	7,098.8	28.7	22.9	95.54	-548.4	524.2	663.9	617.9	45.97	14.443		
8,300.0	7,034.5	8,267.6	7,098.8	29.5	24.2	95.55	-648.4	524.2	663.9	615.6	48.32	13.739		
8,400.0	7,034.3	8,367.6	7,098.7	30.4	25.5	95.57	-748.4	524.2	663.9	613.1	50.86	13.055		
8,500.0	7,034.1	8,467.6	7,098.7	31.5	26.9	95.58	-848.4	524.2	663.9	610.4	53.55	12.399		
8,600.0	7,033.9	8,567.6	7,098.6	32.7	28.4	95.59	-948.4	524.2	663.9	607.6	56.36	11.779		
8,700.0	7,033.8	8,667.6	7,098.6	33.9	29.9	95.60	-1,048.4	524.2	664.0	604.7	59.30	11.197		
8,800.0	7,033.6	8,767.6	7,098.5	35.2	31.4	95.61	-1,148.4	524.2	664.0	601.6	62.33	10.653		
8,900.0	7,033.4	8,867.6	7,098.5	36.6	33.0	95.63	-1,248.4	524.2	664.0	598.5	65.44	10.147		
9,000.0	7,033.2	8,967.6	7,098.4	38.0	34.6	95.64	-1,348.4	524.2	664.0	595.4	68.62	9.676		
9,100.0	7,033.0	9,067.6	7,098.4	39.5	36.2	95.65	-1,448.4	524.2	664.0	592.1	71.87	9.239		
9,200.0	7,032.8	9,167.6	7,098.3	41.0	37.9	95.66	-1,548.4	524.2	664.0	588.9	75.17	8.834		
9,300.0	7,032.6	9,267.6	7,098.3	42.6	39.6	95.67	-1,648.4	524.2	664.0	585.5	78.52	8.457		
9,400.0	7,032.4	9,367.6	7,098.2	44.2	41.3	95.69	-1,748.4	524.2	664.1	582.1	81.91	8.107		
9,500.0	7,032.2	9,467.6	7,098.2	45.8	43.0	95.70	-1,848.4	524.2	664.1	578.7	85.34	7.782		
9,600.0	7,032.0	9,567.6	7,098.1	47.4	44.7	95.71	-1,948.4	524.2	664.1	575.3	88.80	7.479		
9,700.0	7,031.8	9,667.6	7,098.0	49.0	46.5	95.72	-2,048.4	524.2	664.1	571.8	92.28	7.196		
9,800.0	7,031.6	9,767.6	7,098.0	50.7	48.2	95.73	-2,148.4	524.2	664.1	568.3	95.80	6.933		
9,900.0	7,031.5	9,867.6	7,097.9	52.4	50.0	95.75	-2,248.4	524.2	664.1	564.8	99.33	6.686		
10,000.0	7,031.3	9,967.6	7,097.9	54.1	51.8	95.76	-2,348.4	524.2	664.1	561.3	102.89	6.455		
10,100.0	7,031.1	10,067.6	7,097.8	55.8	53.6	95.77	-2,448.4	524.2	664.2	557.7	106.46	6.238		
10,200.0	7,030.9	10,167.6	7,097.8	57.5	55.4	95.78	-2,548.4	524.2	664.2	554.1	110.06	6.035		
10,300.0	7,030.7	10,267.6	7,097.7	59.3	57.2	95.79	-2,648.4	524.2	664.2	550.5	113.66	5.844		
10,400.0	7,030.5	10,367.6	7,097.7	61.0	59.0	95.81	-2,748.4	524.2	664.2	546.9	117.28	5.663		
10,500.0	7,030.3	10,467.6	7,097.6	62.8	60.8	95.82	-2,848.4	524.2	664.2	543.3	120.91	5.493		
10,600.0	7,030.1	10,567.6	7,097.6	64.6	62.6	95.83	-2,948.4	524.2	664.2	539.7	124.56	5.333		
10,700.0	7,029.9	10,667.6	7,097.5	66.3	64.5	95.84	-3,048.4	524.2	664.2	536.0	128.21	5.181		
10,800.0	7,029.7	10,767.6	7,097.5	68.1	66.3	95.85	-3,148.4	524.2	664.3	532.4	131.88	5.037		
10,900.0	7,029.5	10,867.6	7,097.4	69.9	68.2	95.87	-3,248.4	524.2	664.3	528.7	135.55	4.901		
11,000.0	7,029.3	10,967.6	7,097.4	71.7	70.0	95.88	-3,348.4	524.2	664.3	525.1	139.23	4.771		
11,100.0	7,029.2	11,067.6	7,097.3	73.5	71.8	95.89	-3,448.4	524.2	664.3	521.4	142.91	4.648		
11,200.0	7,029.0	11,167.6	7,097.3	75.3	73.7	95.90	-3,548.4	524.2	664.3	517.7	146.61	4.531		
11,300.0	7,028.8	11,267.6	7,097.2	77.1	75.6	95.91	-3,648.4	524.2	664.3	514.0	150.31	4.420		
11,400.0	7,028.6	11,367.6	7,097.2	79.0	77.4	95.93	-3,748.4	524.2	664.3	510.3	154.01	4.313		
11,500.0	7,028.4	11,467.6	7,097.1	80.8	79.3	95.94	-3,848.4	524.2	664.4	506.6	157.73	4.212		
11,600.0	7,028.2	11,567.6	7,097.1	82.6	81.1	95.95	-3,948.4	524.2	664.4	502.9	161.44	4.115		
11,699.1	7,028.0	11,666.7	7,097.0	84.4	83.0	95.96	-4,047.4	524.2	664.4	499.3	165.13	4.023 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6K-403 - Wellbore #1 - Plan #2 (9-3-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-106.44	-25.5	-86.4	90.1					
100.0	100.0	100.0	100.0	0.1	0.1	-106.44	-25.5	-86.4	90.1	89.9	0.22	400.877		
200.0	200.0	200.0	200.0	0.3	0.3	-106.44	-25.5	-86.4	90.1	89.4	0.67	133.626 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-164.07	-25.5	-86.4	91.8	90.7	1.13	81.542		
400.0	399.8	399.8	399.8	0.8	0.8	-164.90	-25.5	-86.4	96.8	95.2	1.58	61.272		
500.0	499.5	499.5	499.5	1.0	1.0	-166.09	-25.5	-86.4	105.3	103.2	2.04	51.642		
600.0	598.7	598.7	598.7	1.3	1.2	-167.47	-25.5	-86.4	117.1	114.6	2.50	46.871		
700.0	697.5	697.5	697.5	1.7	1.5	-168.88	-25.5	-86.4	132.5	129.5	2.96	44.717		
800.0	795.6	795.6	795.6	2.0	1.7	-170.21	-25.5	-86.4	151.2	147.8	3.43	44.129		
900.0	893.1	893.1	893.1	2.5	1.9	-171.40	-25.5	-86.4	173.4	169.6	3.89	44.544		
1,000.0	989.7	989.7	989.7	3.0	2.1	-172.46	-25.5	-86.4	199.1	194.7	4.36	45.619		
1,100.0	1,085.9	1,091.1	1,091.1	3.5	2.3	-173.14	-24.1	-85.9	224.9	220.1	4.85	46.415		
1,200.0	1,182.2	1,194.5	1,194.3	4.0	2.6	-173.08	-19.3	-84.2	248.3	243.0	5.33	46.546		
1,300.0	1,278.5	1,299.0	1,298.4	4.6	2.8	-172.46	-10.9	-81.1	269.2	263.3	5.84	46.081		
1,400.0	1,374.7	1,404.4	1,403.1	5.1	3.1	-171.38	1.3	-76.7	287.5	281.2	6.37	45.118		
1,500.0	1,471.0	1,510.4	1,507.7	5.7	3.4	-169.89	17.1	-70.9	303.5	296.6	6.94	43.744		
1,600.0	1,567.3	1,609.8	1,605.5	6.2	3.7	-168.34	34.0	-64.8	318.2	310.6	7.53	42.274		
1,700.0	1,663.6	1,708.4	1,702.4	6.8	4.0	-166.94	50.8	-58.7	333.0	324.9	8.14	40.924		
1,800.0	1,759.8	1,806.9	1,799.3	7.4	4.3	-165.66	67.5	-52.6	348.0	339.3	8.77	39.686		
1,900.0	1,856.1	1,905.5	1,896.3	7.9	4.6	-164.48	84.3	-46.5	363.2	353.8	9.42	38.559		
2,000.0	1,952.4	2,004.1	1,993.2	8.5	5.0	-163.40	101.1	-40.4	378.6	368.5	10.09	37.527		
2,100.0	2,048.7	2,102.7	2,090.2	9.0	5.3	-162.40	117.8	-34.3	394.0	383.2	10.77	36.586		
2,200.0	2,144.9	2,201.2	2,187.1	9.6	5.7	-161.48	134.6	-28.2	409.6	398.1	11.46	35.727		
2,300.0	2,241.2	2,299.8	2,284.1	10.2	6.1	-160.62	151.3	-22.1	425.2	413.1	12.17	34.942		
2,400.0	2,337.5	2,398.4	2,381.0	10.7	6.4	-159.83	168.1	-16.0	441.0	428.1	12.88	34.224		
2,500.0	2,433.8	2,497.0	2,478.0	11.3	6.8	-159.09	184.9	-9.9	456.8	443.2	13.61	33.565		
2,600.0	2,530.0	2,595.5	2,574.9	11.9	7.2	-158.40	201.6	-3.8	472.7	458.3	14.34	32.961		
2,700.0	2,626.3	2,694.1	2,671.9	12.4	7.5	-157.75	218.4	2.3	488.6	473.5	15.08	32.404		
2,800.0	2,722.6	2,792.7	2,768.8	13.0	7.9	-157.15	235.2	8.4	504.6	488.8	15.82	31.891		
2,900.0	2,818.8	2,891.3	2,865.8	13.6	8.3	-156.58	251.9	14.5	520.7	504.1	16.57	31.417		
3,000.0	2,915.1	2,989.8	2,962.7	14.1	8.7	-156.05	268.7	20.6	536.8	519.5	17.33	30.978		
3,100.0	3,011.4	3,088.4	3,059.7	14.7	9.1	-155.54	285.5	26.7	552.9	534.9	18.09	30.571		
3,200.0	3,107.7	3,187.0	3,156.6	15.2	9.4	-155.07	302.2	32.8	569.1	550.3	18.85	30.192		
3,300.0	3,203.9	3,285.6	3,253.6	15.8	9.8	-154.62	319.0	38.9	585.3	565.7	19.62	29.839		
3,400.0	3,300.2	3,384.1	3,350.5	16.4	10.2	-154.20	335.7	45.0	601.6	581.2	20.39	29.510		
3,500.0	3,396.5	3,482.7	3,447.4	16.9	10.6	-153.80	352.5	51.1	617.9	596.7	21.16	29.202		
3,600.0	3,492.8	3,581.3	3,544.4	17.5	11.0	-153.41	369.3	57.2	634.2	612.3	21.93	28.914		
3,700.0	3,589.0	3,679.9	3,641.3	18.1	11.4	-153.05	386.0	63.3	650.5	627.8	22.71	28.643		
3,800.0	3,685.3	3,778.4	3,738.3	18.6	11.8	-152.71	402.8	69.4	666.9	643.4	23.49	28.389		
3,900.0	3,781.6	3,877.0	3,835.2	19.2	12.1	-152.38	419.6	75.5	683.3	659.0	24.27	28.150		
4,000.0	3,877.8	3,975.6	3,932.2	19.8	12.5	-152.07	436.3	81.6	699.7	674.7	25.06	27.924		
4,100.0	3,974.1	4,074.1	4,029.1	20.3	12.9	-151.77	453.1	87.7	716.1	690.3	25.84	27.711		
4,200.0	4,070.4	4,172.7	4,126.1	20.9	13.3	-151.49	469.9	93.8	732.6	706.0	26.63	27.510		
4,300.0	4,166.7	4,271.3	4,223.0	21.5	13.7	-151.21	486.6	99.9	749.0	721.6	27.42	27.319		
4,400.0	4,262.9	4,369.9	4,320.0	22.0	14.1	-150.95	503.4	106.0	765.5	737.3	28.21	27.138		
4,500.0	4,359.2	4,468.4	4,416.9	22.6	14.5	-150.70	520.2	112.1	782.0	753.0	29.00	26.967		
4,600.0	4,455.5	4,567.0	4,513.9	23.2	14.9	-150.47	536.9	118.2	798.5	768.7	29.79	26.804		
4,700.0	4,551.8	4,665.6	4,610.8	23.7	15.3	-150.24	553.7	124.3	815.0	784.5	30.58	26.649		
4,800.0	4,648.0	4,764.2	4,707.8	24.3	15.7	-150.02	570.4	130.3	831.6	800.2	31.38	26.501		
4,900.0	4,744.3	4,862.7	4,804.7	24.9	16.1	-149.80	587.2	136.4	848.1	815.9	32.17	26.360		
5,000.0	4,840.6	4,961.3	4,901.7	25.4	16.4	-149.60	604.0	142.5	864.7	831.7	32.97	26.226		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6K-403 - Wellbore #1 - Plan #2 (9-3-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	4,936.9	5,059.9	4,998.6	26.0	16.8	-149.40	620.7	148.6	881.2	847.5	33.77	26.098		
5,200.0	5,033.1	5,158.5	5,095.5	26.6	17.2	-149.21	637.5	154.7	897.8	863.2	34.56	25.975		
5,300.0	5,129.4	5,257.0	5,192.5	27.1	17.6	-149.03	654.3	160.8	914.4	879.0	35.36	25.858		
5,400.0	5,225.7	5,355.6	5,289.4	27.7	18.0	-148.86	671.0	166.9	931.0	894.8	36.16	25.745		
5,500.0	5,322.4	5,454.4	5,386.6	28.2	18.4	-148.79	687.8	173.0	946.1	909.1	36.97	25.590		
5,600.0	5,420.0	5,551.0	5,481.6	28.5	18.8	-148.60	704.2	179.0	958.3	920.5	37.73	25.397		
5,700.0	5,518.2	5,641.7	5,571.0	28.9	19.1	-148.39	718.3	184.1	968.1	929.8	38.36	25.237		
5,800.0	5,617.1	5,730.3	5,658.9	29.2	19.3	-148.23	729.5	188.2	976.1	937.3	38.88	25.105		
5,900.0	5,716.4	5,819.2	5,747.3	29.4	19.5	-148.11	738.2	191.4	982.3	943.0	39.32	24.985		
6,000.0	5,816.0	5,908.2	5,836.0	29.6	19.7	-148.03	744.3	193.6	986.7	947.0	39.67	24.875		
6,100.0	5,915.9	6,000.0	5,927.7	29.7	19.9	-147.98	747.8	194.9	989.2	949.3	39.93	24.771		
6,200.0	6,015.9	6,088.2	6,015.9	29.8	20.0	-90.64	748.7	195.2	989.9	949.7	40.12	24.670		
6,300.0	6,115.9	6,188.2	6,115.9	29.9	20.1	-90.64	748.7	195.2	989.9	949.5	40.40	24.503		
6,400.0	6,215.9	6,288.2	6,215.9	30.0	20.3	-90.64	748.7	195.2	989.9	949.2	40.68	24.335		
6,500.0	6,315.9	6,388.2	6,315.9	30.1	20.4	89.44	748.7	195.2	989.8	948.9	40.96	24.165		
6,585.7	6,401.0	6,473.3	6,401.0	30.1	20.5	90.00	748.7	195.2	989.8	948.5	41.25	23.996		
6,600.0	6,415.1	6,487.3	6,415.1	30.1	20.6	90.14	748.7	195.2	989.8	948.5	41.31	23.960		
6,700.0	6,511.8	6,587.1	6,514.6	30.0	20.6	91.22	742.2	195.2	990.0	948.5	41.53	23.838 SF		
6,800.0	6,604.4	6,689.5	6,614.9	29.8	20.5	92.28	722.2	195.2	990.6	949.1	41.47	23.887		
6,900.0	6,691.3	6,794.6	6,714.1	29.6	20.3	93.32	687.9	195.2	991.5	950.4	41.13	24.108		
7,000.0	6,771.1	6,902.6	6,810.2	29.3	20.0	94.31	638.8	195.2	992.7	952.1	40.53	24.491		
7,100.0	6,842.3	7,013.4	6,900.6	28.9	19.6	95.24	574.8	195.2	994.0	954.3	39.75	25.010		
7,200.0	6,903.7	7,127.1	6,982.7	28.6	19.1	96.08	496.3	195.2	995.5	956.6	38.87	25.611		
7,300.0	6,954.3	7,243.5	7,053.8	28.2	18.7	96.81	404.3	195.2	996.9	958.9	38.03	26.214		
7,400.0	6,993.3	7,362.3	7,111.1	27.9	18.3	97.42	300.3	195.2	998.2	960.8	37.39	26.699		
7,500.0	7,019.9	7,483.1	7,152.1	27.6	18.0	97.87	186.8	195.2	999.2	962.1	37.09	26.941		
7,600.0	7,033.7	7,605.4	7,174.9	27.4	17.9	98.16	66.9	195.2	999.9	962.7	37.25	26.841		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6O-443 - Wellbore #1 - Plan #2 (9-3-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-111.41	-10.9	-27.9	29.9					
100.0	100.0	100.0	100.0	0.1	0.1	-111.41	-10.9	-27.9	29.9	29.7	0.22	133.219		
200.0	200.0	200.0	200.0	0.3	0.3	-111.41	-10.9	-27.9	29.9	29.3	0.67	44.406 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-169.35	-10.9	-27.9	31.7	30.5	1.13	28.116		
400.0	399.8	399.8	399.8	0.8	0.8	-170.84	-10.9	-27.9	36.8	35.2	1.58	23.283		
500.0	499.5	501.0	500.9	1.0	1.0	-171.96	-9.8	-26.5	43.8	41.7	2.03	21.551		
600.0	598.7	602.3	602.1	1.3	1.2	-172.19	-6.2	-22.5	50.8	48.3	2.48	20.504		
700.0	697.5	703.9	703.3	1.7	1.5	-171.84	-0.4	-15.7	57.8	54.9	2.93	19.727		
800.0	795.6	805.7	804.4	2.0	1.8	-171.10	7.9	-6.2	65.0	61.6	3.40	19.096		
900.0	893.1	907.8	905.1	2.5	2.1	-170.09	18.5	6.0	72.2	68.3	3.89	18.537		
1,000.0	989.7	1,010.1	1,005.5	3.0	2.4	-168.88	31.6	20.9	79.4	75.0	4.41	17.987		
1,100.0	1,085.9	1,111.4	1,104.2	3.5	2.9	-167.32	46.5	38.1	84.9	79.9	4.98	17.026		
1,200.0	1,182.2	1,211.3	1,201.4	4.0	3.3	-165.85	61.7	55.5	89.9	84.3	5.58	16.099		
1,300.0	1,278.5	1,311.1	1,298.5	4.6	3.7	-164.52	76.8	72.9	94.9	88.7	6.21	15.301		
1,400.0	1,374.7	1,411.0	1,395.7	5.1	4.2	-163.34	91.9	90.2	100.1	93.2	6.85	14.619		
1,500.0	1,471.0	1,510.8	1,492.8	5.7	4.7	-162.27	107.0	107.6	105.2	97.7	7.50	14.022		
1,600.0	1,567.3	1,610.7	1,590.0	6.2	5.1	-161.29	122.1	125.0	110.4	102.2	8.18	13.500		
1,700.0	1,663.6	1,710.5	1,687.2	6.8	5.6	-160.41	137.2	142.3	115.6	106.8	8.87	13.042		
1,800.0	1,759.8	1,810.4	1,784.3	7.4	6.1	-159.60	152.3	159.7	120.9	111.3	9.57	12.638		
1,900.0	1,856.1	1,910.2	1,881.5	7.9	6.6	-158.87	167.5	177.0	126.2	115.9	10.27	12.278		
2,000.0	1,952.4	2,010.1	1,978.6	8.5	7.0	-158.18	182.6	194.4	131.4	120.4	10.99	11.957		
2,100.0	2,048.7	2,109.9	2,075.8	9.0	7.5	-157.56	197.7	211.8	136.7	125.0	11.72	11.669		
2,200.0	2,144.9	2,209.8	2,173.0	9.6	8.0	-156.98	212.8	229.1	142.1	129.6	12.45	11.409		
2,300.0	2,241.2	2,309.6	2,270.1	10.2	8.5	-156.44	227.9	246.5	147.4	134.2	13.19	11.175		
2,400.0	2,337.5	2,409.4	2,367.3	10.7	9.0	-155.94	243.0	263.9	152.7	138.8	13.93	10.961		
2,500.0	2,433.8	2,509.3	2,464.4	11.3	9.5	-155.47	258.1	281.2	158.1	143.4	14.68	10.767		
2,600.0	2,530.0	2,609.1	2,561.6	11.9	9.9	-155.03	273.3	298.6	163.5	148.0	15.44	10.588		
2,700.0	2,626.3	2,709.0	2,658.8	12.4	10.4	-154.62	288.4	315.9	168.8	152.6	16.20	10.425		
2,800.0	2,722.6	2,808.8	2,755.9	13.0	10.9	-154.24	303.5	333.3	174.2	157.3	16.96	10.274		
2,900.0	2,818.8	2,908.7	2,853.1	13.6	11.4	-153.88	318.6	350.7	179.6	161.9	17.72	10.135		
3,000.0	2,915.1	3,008.5	2,950.2	14.1	11.9	-153.54	333.7	368.0	185.0	166.5	18.49	10.006		
3,100.0	3,011.4	3,108.4	3,047.4	14.7	12.4	-153.22	348.8	385.4	190.4	171.2	19.26	9.887		
3,200.0	3,107.7	3,208.2	3,144.5	15.2	12.9	-152.92	363.9	402.7	195.8	175.8	20.03	9.776		
3,300.0	3,203.9	3,308.1	3,241.7	15.8	13.4	-152.63	379.1	420.1	201.2	180.4	20.81	9.672		
3,400.0	3,300.2	3,407.9	3,338.9	16.4	13.8	-152.36	394.2	437.5	206.6	185.1	21.58	9.575		
3,500.0	3,396.5	3,507.8	3,436.0	16.9	14.3	-152.10	409.3	454.8	212.1	189.7	22.36	9.484		
3,600.0	3,492.8	3,607.6	3,533.2	17.5	14.8	-151.86	424.4	472.2	217.5	194.4	23.14	9.398		
3,700.0	3,589.0	3,707.5	3,630.3	18.1	15.3	-151.63	439.5	489.6	222.9	199.0	23.92	9.318		
3,800.0	3,685.3	3,807.3	3,727.5	18.6	15.8	-151.40	454.6	506.9	228.4	203.7	24.71	9.243		
3,900.0	3,781.6	3,907.2	3,824.7	19.2	16.3	-151.19	469.7	524.3	233.8	208.3	25.49	9.171		
4,000.0	3,877.8	4,007.0	3,921.8	19.8	16.8	-150.99	484.9	541.6	239.2	213.0	26.28	9.104		
4,100.0	3,974.1	4,106.9	4,019.0	20.3	17.3	-150.80	500.0	559.0	244.7	217.6	27.07	9.040		
4,200.0	4,070.4	4,206.7	4,116.1	20.9	17.7	-150.61	515.1	576.4	250.1	222.3	27.85	8.980		
4,300.0	4,166.7	4,306.6	4,213.3	21.5	18.2	-150.44	530.2	593.7	255.6	226.9	28.64	8.923		
4,400.0	4,262.9	4,406.4	4,310.5	22.0	18.7	-150.27	545.3	611.1	261.0	231.6	29.43	8.868		
4,500.0	4,359.2	4,506.3	4,407.6	22.6	19.2	-150.11	560.4	628.5	266.5	236.3	30.22	8.817		
4,600.0	4,455.5	4,606.1	4,504.8	23.2	19.7	-149.95	575.5	645.8	271.9	240.9	31.02	8.767		
4,700.0	4,551.8	4,706.0	4,601.9	23.7	20.2	-149.80	590.7	663.2	277.4	245.6	31.81	8.720		
4,800.0	4,648.0	4,805.8	4,699.1	24.3	20.7	-149.66	605.8	680.5	282.8	250.2	32.60	8.675		
4,900.0	4,744.3	4,905.7	4,796.2	24.9	21.2	-149.52	620.9	697.9	288.3	254.9	33.40	8.633		
5,000.0	4,840.6	5,005.5	4,893.4	25.4	21.7	-149.39	636.0	715.3	293.8	259.6	34.19	8.592		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6O-443 - Wellbore #1 - Plan #2 (9-3-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	4,936.9	5,105.4	4,990.6	26.0	22.1	-149.26	651.1	732.6	299.2	264.2	34.99	8.552		
5,200.0	5,033.1	5,205.2	5,087.7	26.6	22.6	-149.13	666.2	750.0	304.7	268.9	35.78	8.515		
5,300.0	5,129.4	5,305.1	5,184.9	27.1	23.1	-149.02	681.3	767.3	310.2	273.6	36.58	8.479		
5,400.0	5,225.7	5,404.9	5,282.0	27.7	23.6	-148.90	696.5	784.7	315.6	278.3	37.38	8.444		
5,500.0	5,322.4	5,500.0	5,374.6	28.2	24.1	-148.71	710.7	801.1	319.8	281.6	38.16	8.381		
5,600.0	5,420.0	5,593.6	5,466.2	28.5	24.4	-148.50	723.1	815.4	323.0	284.2	38.80	8.325		
5,700.0	5,518.2	5,685.5	5,556.9	28.9	24.7	-148.33	733.4	827.2	325.8	286.4	39.36	8.277		
5,800.0	5,617.1	5,777.4	5,647.9	29.2	24.9	-148.19	741.8	836.8	328.0	288.2	39.83	8.235		
5,900.0	5,716.4	5,869.4	5,739.3	29.4	25.1	-148.09	748.3	844.2	329.7	289.5	40.22	8.198		
6,000.0	5,816.0	5,961.3	5,830.9	29.6	25.3	-148.01	752.8	849.4	330.9	290.4	40.52	8.167		
6,100.0	5,915.9	6,053.2	5,922.7	29.7	25.4	-147.97	755.4	852.4	331.6	290.9	40.74	8.139		
6,200.0	6,015.9	6,146.4	6,015.9	29.8	25.5	-90.63	756.1	853.2	331.8	290.9	40.91	8.111		
6,300.0	6,115.9	6,246.4	6,115.9	29.9	25.6	-90.63	756.1	853.2	331.8	290.6	41.17	8.059		
6,400.0	6,215.9	6,346.4	6,215.9	30.0	25.7	-90.63	756.1	853.2	331.8	290.4	41.44	8.007		
6,500.0	6,315.9	6,446.3	6,315.9	30.1	25.9	89.59	756.1	853.2	331.8	290.0	41.78	7.941		
6,530.4	6,346.2	6,476.6	6,346.2	30.1	25.9	90.00	756.1	853.2	331.8	289.8	41.99	7.902		
6,600.0	6,415.1	6,545.5	6,415.1	30.1	26.0	91.68	756.1	853.2	331.9	289.2	42.76	7.763		
6,700.0	6,511.8	6,646.3	6,515.5	30.0	26.0	94.86	749.5	853.2	333.0	289.1	43.90	7.585		
6,800.0	6,604.4	6,749.7	6,616.8	29.8	26.0	97.96	729.0	853.2	335.1	290.5	44.59	7.516		
6,900.0	6,691.3	6,855.9	6,717.0	29.6	25.8	100.93	694.0	853.2	338.1	293.4	44.71	7.562		
7,000.0	6,771.1	6,965.0	6,813.8	29.3	25.5	103.70	643.9	853.2	341.8	297.5	44.26	7.722		
7,100.0	6,842.3	7,077.0	6,904.7	28.9	25.1	106.21	578.8	853.2	345.8	302.5	43.29	7.988		
7,200.0	6,903.7	7,191.7	6,987.0	28.6	24.7	108.41	498.9	853.2	350.0	308.0	41.95	8.342		
7,300.0	6,954.3	7,309.0	7,057.8	28.2	24.2	110.25	405.5	853.2	353.9	313.4	40.48	8.743		
7,400.0	6,993.3	7,428.6	7,114.4	27.9	23.7	111.69	300.3	853.2	357.2	318.1	39.16	9.122		
7,500.0	7,019.9	7,550.0	7,154.4	27.6	23.3	112.71	185.8	853.2	359.7	321.4	38.31	9.391		
7,600.0	7,033.7	7,672.6	7,175.8	27.4	22.9	113.28	65.3	853.2	361.2	323.0	38.19	9.459		
7,700.0	7,035.7	7,786.1	7,179.4	27.3	22.7	113.42	-48.1	853.2	361.6	322.7	38.84	9.308		
7,800.0	7,035.5	7,886.1	7,179.5	27.2	22.7	113.47	-148.1	853.2	361.7	321.8	39.89	9.067		
7,900.0	7,035.3	7,986.1	7,179.7	27.4	22.9	113.52	-248.1	853.2	361.8	320.6	41.22	8.778		
8,000.0	7,035.1	8,086.1	7,179.8	27.7	23.3	113.57	-348.1	853.2	362.0	319.2	42.81	8.455		
8,100.0	7,034.9	8,186.1	7,180.0	28.1	24.1	113.61	-448.1	853.2	362.1	317.5	44.63	8.114		
8,200.0	7,034.7	8,286.1	7,180.1	28.7	25.0	113.66	-548.1	853.2	362.2	315.6	46.64	7.766		
8,300.0	7,034.5	8,386.1	7,180.2	29.5	26.1	113.71	-648.1	853.2	362.4	313.5	48.84	7.420		
8,400.0	7,034.3	8,486.1	7,180.4	30.4	27.3	113.76	-748.1	853.2	362.5	311.3	51.18	7.083		
8,500.0	7,034.1	8,586.1	7,180.5	31.5	28.6	113.81	-848.1	853.2	362.6	309.0	53.66	6.758		
8,600.0	7,033.9	8,686.1	7,180.7	32.7	30.0	113.85	-948.1	853.2	362.8	306.5	56.26	6.449		
8,700.0	7,033.8	8,786.1	7,180.8	33.9	31.4	113.90	-1,048.1	853.2	362.9	304.0	58.95	6.156		
8,800.0	7,033.6	8,886.1	7,180.9	35.2	32.8	113.95	-1,148.1	853.2	363.0	301.3	61.73	5.881		
8,900.0	7,033.4	8,986.1	7,181.1	36.6	34.4	114.00	-1,248.1	853.2	363.2	298.6	64.58	5.624		
9,000.0	7,033.2	9,086.1	7,181.2	38.0	35.9	114.04	-1,348.1	853.2	363.3	295.8	67.50	5.382		
9,100.0	7,033.0	9,186.1	7,181.4	39.5	37.5	114.09	-1,448.1	853.2	363.5	293.0	70.47	5.157		
9,200.0	7,032.8	9,286.1	7,181.5	41.0	39.1	114.14	-1,548.1	853.2	363.6	290.1	73.50	4.947		
9,300.0	7,032.6	9,386.1	7,181.6	42.6	40.7	114.19	-1,648.1	853.2	363.7	287.2	76.56	4.751		
9,400.0	7,032.4	9,486.1	7,181.8	44.2	42.4	114.24	-1,748.1	853.2	363.9	284.2	79.67	4.567		
9,500.0	7,032.2	9,586.1	7,181.9	45.8	44.1	114.28	-1,848.1	853.2	364.0	281.2	82.80	4.396		
9,600.0	7,032.0	9,686.1	7,182.1	47.4	45.7	114.33	-1,948.1	853.2	364.1	278.2	85.97	4.236		
9,700.0	7,031.8	9,786.1	7,182.2	49.0	47.5	114.38	-2,048.1	853.2	364.3	275.1	89.16	4.085		
9,800.0	7,031.6	9,886.1	7,182.3	50.7	49.2	114.43	-2,148.1	853.2	364.4	272.0	92.38	3.945		
9,900.0	7,031.5	9,986.1	7,182.5	52.4	50.9	114.47	-2,248.1	853.2	364.5	268.9	95.61	3.813		
10,000.0	7,031.3	10,086.1	7,182.6	54.1	52.7	114.52	-2,348.1	853.2	364.7	265.8	98.87	3.689		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Bernhardt 4N66W6K Pad Sec.6-T4N-R66W - Bernhardt 6O-443 - Wellbore #1 - Plan #2 (9-3-14)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,031.1	10,186.1	7,182.8	55.8	54.4	114.57	-2,448.1	853.2	364.8	262.7	102.14	3.572	
10,200.0	7,030.9	10,286.1	7,182.9	57.5	56.2	114.62	-2,548.1	853.2	365.0	259.5	105.42	3.462	
10,300.0	7,030.7	10,386.1	7,183.0	59.3	58.0	114.66	-2,648.1	853.2	365.1	256.4	108.72	3.358	
10,400.0	7,030.5	10,486.1	7,183.2	61.0	59.8	114.71	-2,748.1	853.2	365.2	253.2	112.03	3.260	
10,500.0	7,030.3	10,586.1	7,183.3	62.8	61.6	114.76	-2,848.1	853.2	365.4	250.0	115.34	3.168	
10,600.0	7,030.1	10,686.1	7,183.4	64.6	63.4	114.80	-2,948.1	853.2	365.5	246.8	118.67	3.080	
10,700.0	7,029.9	10,786.1	7,183.6	66.3	65.2	114.85	-3,048.1	853.2	365.6	243.6	122.01	2.997	
10,800.0	7,029.7	10,886.1	7,183.7	68.1	67.0	114.90	-3,148.1	853.2	365.8	240.4	125.35	2.918	
10,900.0	7,029.5	10,986.1	7,183.9	69.9	68.8	114.95	-3,248.1	853.2	365.9	237.2	128.70	2.843	
11,000.0	7,029.3	11,086.1	7,184.0	71.7	70.6	114.99	-3,348.1	853.2	366.1	234.0	132.06	2.772	
11,100.0	7,029.2	11,186.1	7,184.1	73.5	72.5	115.04	-3,448.1	853.2	366.2	230.8	135.42	2.704	
11,200.0	7,029.0	11,286.1	7,184.3	75.3	74.3	115.09	-3,548.1	853.2	366.3	227.6	138.79	2.640	
11,300.0	7,028.8	11,386.1	7,184.4	77.1	76.1	115.13	-3,648.1	853.2	366.5	224.3	142.16	2.578	
11,400.0	7,028.6	11,486.1	7,184.6	79.0	78.0	115.18	-3,748.1	853.2	366.6	221.1	145.53	2.519	
11,500.0	7,028.4	11,586.1	7,184.7	80.8	79.8	115.23	-3,848.1	853.2	366.8	217.9	148.91	2.463	
11,600.0	7,028.2	11,686.1	7,184.8	82.6	81.7	115.27	-3,948.1	853.2	366.9	214.6	152.29	2.409	
11,699.1	7,028.0	11,785.2	7,185.0	84.4	83.5	115.32	-4,047.2	853.2	367.1	211.4	155.65	2.358 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.6-T4N-R66W - Kammerzell K 6-10 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7361-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
3,600.0	3,492.8	3,473.8	3,473.8	17.5	69.5	51.29	138.5	1,636.4	997.5	914.2	83.31	11.973		
3,700.0	3,589.0	3,570.0	3,570.0	18.1	71.4	52.49	138.5	1,636.4	980.4	894.5	85.89	11.415		
3,800.0	3,685.3	3,666.3	3,666.3	18.6	73.3	53.74	138.5	1,636.4	963.8	875.3	88.48	10.892		
3,900.0	3,781.6	3,762.6	3,762.6	19.2	75.3	55.02	138.5	1,636.4	947.6	856.5	91.09	10.403		
4,000.0	3,877.8	3,858.8	3,858.8	19.8	77.2	56.35	138.5	1,636.4	932.0	838.3	93.72	9.945		
4,100.0	3,974.1	3,955.1	3,955.1	20.3	79.1	57.72	138.5	1,636.4	916.9	820.5	96.36	9.516		
4,200.0	4,070.4	4,051.4	4,051.4	20.9	81.0	59.13	138.5	1,636.4	902.3	803.3	99.01	9.114		
4,300.0	4,166.7	4,147.7	4,147.7	21.5	83.0	60.59	138.5	1,636.4	888.3	786.7	101.67	8.737		
4,400.0	4,262.9	4,243.9	4,243.9	22.0	84.9	62.09	138.5	1,636.4	875.0	770.6	104.35	8.385		
4,500.0	4,359.2	4,340.2	4,340.2	22.6	86.8	63.63	138.5	1,636.4	862.3	755.2	107.04	8.056		
4,600.0	4,455.5	4,436.5	4,436.5	23.2	88.7	65.21	138.5	1,636.4	850.2	740.5	109.74	7.748		
4,700.0	4,551.8	4,532.8	4,532.8	23.7	90.7	66.84	138.5	1,636.4	838.9	726.5	112.44	7.461		
4,800.0	4,648.0	4,629.0	4,629.0	24.3	92.6	68.50	138.5	1,636.4	828.3	713.1	115.14	7.194		
4,900.0	4,744.3	4,725.3	4,725.3	24.9	94.5	70.20	138.5	1,636.4	818.4	700.6	117.85	6.945		
5,000.0	4,840.6	4,821.6	4,821.6	25.4	96.4	71.95	138.5	1,636.4	809.3	688.8	120.55	6.714		
5,100.0	4,936.9	4,917.9	4,917.9	26.0	98.4	73.72	138.5	1,636.4	801.1	677.8	123.25	6.500		
5,200.0	5,033.1	5,014.1	5,014.1	26.6	100.3	75.53	138.5	1,636.4	793.7	667.7	125.94	6.302		
5,300.0	5,129.4	5,110.4	5,110.4	27.1	102.2	77.37	138.5	1,636.4	787.1	658.5	128.62	6.119		
5,400.0	5,225.7	5,206.7	5,206.7	27.7	104.1	79.24	138.5	1,636.4	781.4	650.1	131.29	5.952		
5,500.0	5,322.0	5,303.0	5,303.0	28.2	106.1	80.92	138.5	1,636.4	776.9	643.0	133.87	5.803		
5,600.0	5,420.0	5,401.0	5,401.0	28.5	108.0	82.43	138.5	1,636.4	773.6	637.3	136.31	5.676		
5,700.0	5,518.2	5,499.2	5,499.2	28.9	110.0	83.72	138.5	1,636.4	771.4	632.7	138.68	5.562		
5,800.0	5,617.1	5,598.1	5,598.1	29.2	112.0	84.80	138.5	1,636.4	769.8	628.8	140.99	5.460		
5,900.0	5,716.4	5,697.4	5,697.4	29.4	113.9	85.63	138.5	1,636.4	768.9	625.6	143.24	5.367		
6,000.0	5,816.0	5,797.0	5,797.0	29.6	115.9	86.23	138.5	1,636.4	768.3	622.8	145.45	5.282		
6,100.0	5,915.9	5,896.9	5,896.9	29.7	117.9	86.57	138.5	1,636.4	768.0	620.4	147.60	5.203		
6,200.0	6,015.9	5,996.9	5,996.9	29.8	119.9	144.00	138.5	1,636.4	767.9	618.2	149.70	5.130		
6,300.0	6,115.9	6,096.9	6,096.9	29.9	121.9	144.00	138.5	1,636.4	767.9	616.1	151.79	5.059		
6,400.0	6,215.9	6,196.9	6,196.9	30.0	123.9	144.00	138.5	1,636.4	767.9	614.0	153.89	4.990		
6,500.0	6,315.9	6,296.9	6,296.9	30.1	125.9	-36.11	138.5	1,636.4	766.9	611.1	155.80	4.922		
6,600.0	6,415.1	6,396.1	6,396.1	30.1	127.9	-37.10	138.5	1,636.4	757.0	600.8	156.15	4.848		
6,700.0	6,511.8	6,492.8	6,492.8	30.0	129.9	-39.22	138.5	1,636.4	737.0	582.1	154.87	4.759		
6,800.0	6,604.4	6,585.4	6,585.4	29.8	131.7	-42.61	138.5	1,636.4	707.7	555.1	152.55	4.639		
6,900.0	6,691.3	6,672.3	6,672.3	29.6	133.4	-47.46	138.5	1,636.4	670.5	520.2	150.26	4.462		
7,000.0	6,771.1	6,752.1	6,752.1	29.3	135.0	-53.86	138.5	1,636.4	627.2	477.9	149.32	4.201		
7,100.0	6,842.3	6,823.3	6,823.3	28.9	136.5	-61.70	138.5	1,636.4	580.8	430.1	150.64	3.855		
7,200.0	6,903.7	6,884.7	6,884.7	28.6	137.7	-70.36	138.5	1,636.4	534.7	381.0	153.72	3.478		
7,300.0	6,954.3	6,935.3	6,935.3	28.2	138.7	-78.72	138.5	1,636.4	493.9	337.2	156.75	3.151		
7,400.0	6,993.3	6,974.3	6,974.3	27.9	139.5	-85.49	138.5	1,636.4	464.2	305.9	158.39	2.931		
7,500.0	7,019.9	7,000.9	7,000.9	27.6	140.0	-89.69	138.5	1,636.4	451.6	292.7	158.85	2.843		
7,512.3	7,022.3	7,003.3	7,003.3	27.6	140.1	-90.00	138.5	1,636.4	451.4	292.5	158.89	2.841 CC, ES, SF		
7,600.0	7,033.7	7,014.7	7,014.7	27.4	140.3	-90.81	138.5	1,636.4	459.7	300.6	159.12	2.889		
7,700.0	7,035.7	7,016.7	7,016.7	27.3	140.3	-89.95	138.5	1,636.4	488.5	329.0	159.51	3.063		
7,800.0	7,035.5	7,016.5	7,016.5	27.2	140.3	-89.93	138.5	1,636.4	534.8	374.9	159.97	3.343		
7,900.0	7,035.3	7,016.3	7,016.3	27.4	140.3	-89.91	138.5	1,636.4	594.5	433.9	160.59	3.702		
8,000.0	7,035.1	7,016.1	7,016.1	27.7	140.3	-89.88	138.5	1,636.4	663.9	502.5	161.37	4.114		
8,100.0	7,034.9	7,015.9	7,015.9	28.1	140.3	-89.86	138.5	1,636.4	740.4	578.1	162.30	4.562		
8,200.0	7,034.7	7,015.7	7,015.7	28.7	140.3	-89.83	138.5	1,636.4	821.9	658.6	163.34	5.032		
8,300.0	7,034.5	7,015.5	7,015.5	29.5	140.3	-89.81	138.5	1,636.4	907.1	742.6	164.50	5.515		
8,400.0	7,034.3	7,015.3	7,015.3	30.4	140.3	-89.78	138.5	1,636.4	995.1	829.4	165.74	6.004		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
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<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4728.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Bernhardt 6O-243

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.44°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt 6O-243
<b>Project:</b>	SEC.6-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt 4N66W6K Pad Sec.6-T4N-R66W	<b>MD Reference:</b>	WELL @ 4728.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt 6O-243	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (9-3-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4728.0ft (RKB - 15')  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Bernhardt 6O-243  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.44°

