

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **LDS 1V-304**

Surface Location: LDS 5N65W1U Pad Sec.1-T5N-R65W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

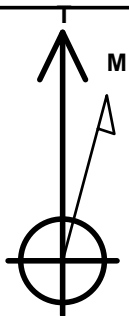
Ground Elevation: 4637.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1402064.01	3249723.55	40.433600	-104.602900	

Original Well Elev WELL @ 4652.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 553'FNL & 326'FEL, Sec.1	1.0	0.0	0.0	Point
BHL 1473'FNL & 2144'FEL, Sec.2	6782.0	-913.4	-7132.4	Point



Azimuths to True North  
Magnetic North: 8.34°

Magnetic Field  
Strength: 52827.7srT  
Dip Angle: 66.99°  
Date: 9/4/2014  
Model: IGRF2010

LDS 5N65W1U Pad Sec.1-T5N-R65W  
LDS 1V-304  
Plan #1 (9-4-14)

## ANNOTATIONS

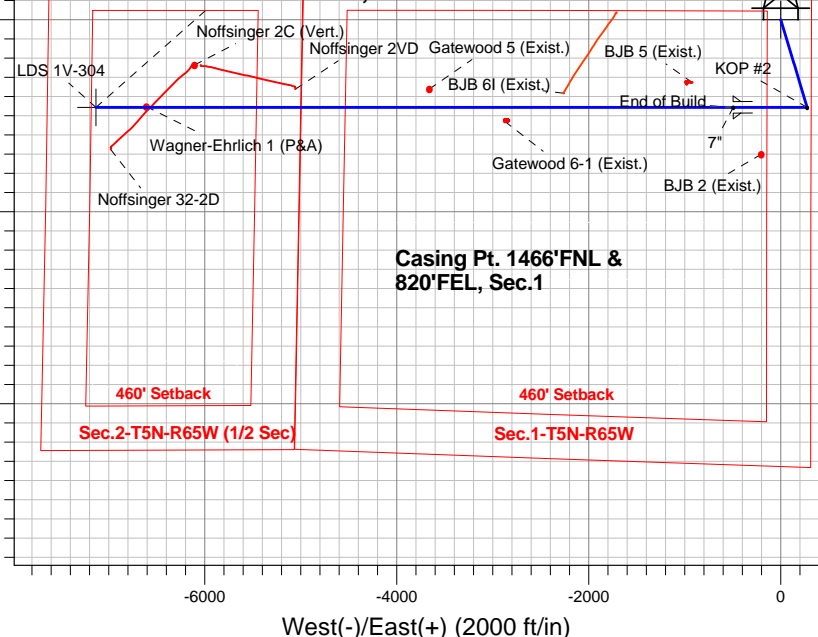
TVD	MD	Annotation
200.0	200.0	KOP #1
6062.1	6148.0	KOP #2
6826.0	7353.1	End of Build

South(-)/North(+) (2000 ft/in)

West(-)/East(+) (2000 ft/in)

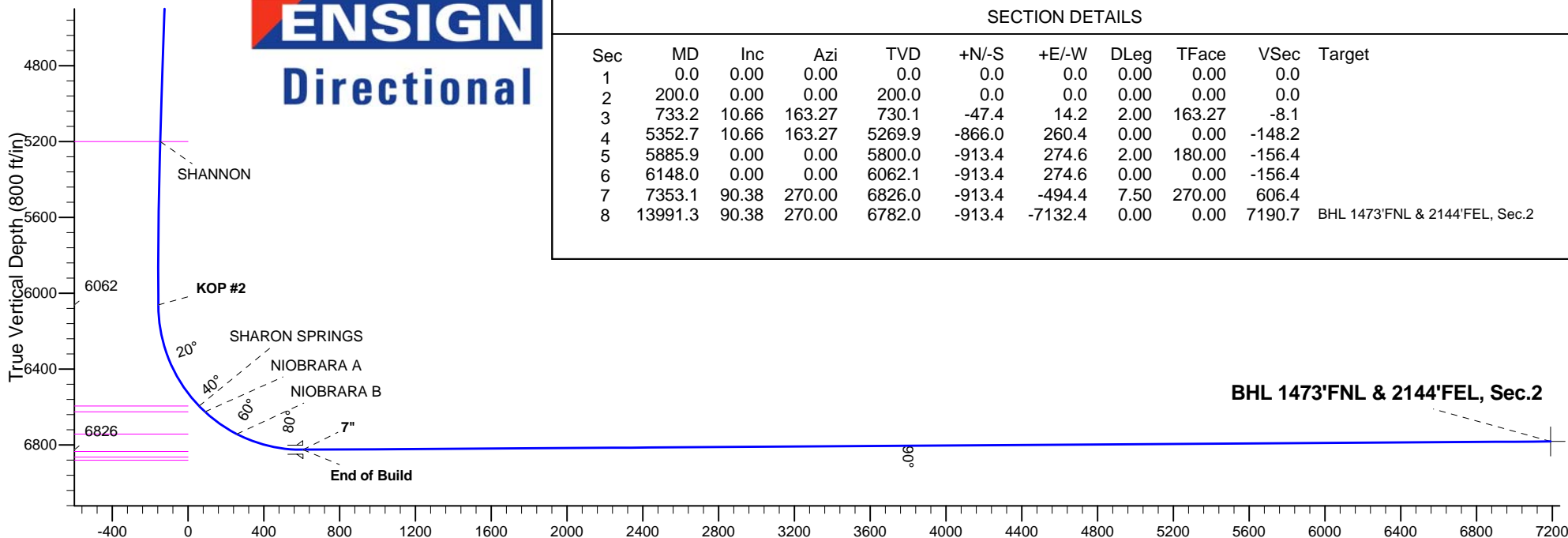
SHL 553'FNL & 326'FEL, Sec.1

BHL 1473'FNL & 2144'FEL, Sec.2



Casing Pt. 1466'FNL & 820'FEL, Sec.1

**ENSIGN**  
Directional



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
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	733.2	10.66	163.27	730.1	-47.4	14.2	2.00	163.27	-8.1	
4	5352.7	10.66	163.27	5269.9	-866.0	260.4	0.00	0.00	-148.2	
5	5885.9	0.00	0.00	5800.0	-913.4	274.6	2.00	180.00	-156.4	
6	6148.0	0.00	0.00	6062.1	-913.4	274.6	0.00	0.00	-156.4	
7	7353.1	90.38	270.00	6826.0	-913.4	-494.4	7.50	270.00	606.4	
8	13991.3	90.38	270.00	6782.0	-913.4	-7132.4	0.00	0.00	7190.7	BHL 1473'FNL & 2144'FEL, Sec.2

BHL 1473'FNL & 2144'FEL, Sec.2

Vertical Section at 262.70° (800 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

**LDS 5N65W1U Pad Sec.1-T5N-R65W**

**LDS 1V-304**

**Wellbore #1**

**Plan: Plan #1 (9-4-14)**

## **Standard Planning Report**

**18 September, 2014**

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

<b>Project</b>	SEC.1-T5N-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

<b>Site</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,402,064.02 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,249,723.55 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.433600
		<b>Longitude:</b>	-104.602900
		<b>Grid Convergence:</b>	0.58 °

<b>Well</b>	LDS 1V-304		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<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	9/4/2014	8.35	66.99	52,828

<b>Design</b>	Plan #1 (9-4-14)			
<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	262.70

<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	
733.2	10.66	163.27	730.1	-47.4	14.2	2.00	2.00	0.00	163.27	
5,352.7	10.66	163.27	5,269.9	-866.0	260.4	0.00	0.00	0.00	0.00	
5,885.9	0.00	0.00	5,800.0	-913.4	274.6	2.00	-2.00	0.00	180.00	
6,148.0	0.00	0.00	6,062.1	-913.4	274.6	0.00	0.00	0.00	0.00	
7,353.1	90.38	270.00	6,826.0	-913.4	-494.4	7.50	7.50	0.00	270.00	
13,991.3	90.38	270.00	6,782.0	-913.4	-7,132.4	0.00	0.00	0.00	0.00	BHL 1473'FNL & 21

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

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
<b>KOP #1</b>									
300.0	2.00	163.27	300.0	-1.7	0.5	-0.3	2.00	2.00	0.00
400.0	4.00	163.27	399.8	-6.7	2.0	-1.1	2.00	2.00	0.00
500.0	6.00	163.27	499.5	-15.0	4.5	-2.6	2.00	2.00	0.00
600.0	8.00	163.27	598.7	-26.7	8.0	-4.6	2.00	2.00	0.00
700.0	10.00	163.27	697.5	-41.7	12.5	-7.1	2.00	2.00	0.00
733.2	10.66	163.27	730.1	-47.4	14.2	-8.1	2.00	2.00	0.00
800.0	10.66	163.27	795.8	-59.2	17.8	-10.1	0.00	0.00	0.00
900.0	10.66	163.27	894.0	-76.9	23.1	-13.2	0.00	0.00	0.00
1,000.0	10.66	163.27	992.3	-94.7	28.5	-16.2	0.00	0.00	0.00
1,100.0	10.66	163.27	1,090.6	-112.4	33.8	-19.2	0.00	0.00	0.00
1,200.0	10.66	163.27	1,188.9	-130.1	39.1	-22.3	0.00	0.00	0.00
1,300.0	10.66	163.27	1,287.1	-147.8	44.4	-25.3	0.00	0.00	0.00
1,400.0	10.66	163.27	1,385.4	-165.5	49.8	-28.3	0.00	0.00	0.00
1,500.0	10.66	163.27	1,483.7	-183.3	55.1	-31.4	0.00	0.00	0.00
1,600.0	10.66	163.27	1,582.0	-201.0	60.4	-34.4	0.00	0.00	0.00
1,700.0	10.66	163.27	1,680.2	-218.7	65.8	-37.4	0.00	0.00	0.00
1,800.0	10.66	163.27	1,778.5	-236.4	71.1	-40.5	0.00	0.00	0.00
1,900.0	10.66	163.27	1,876.8	-254.2	76.4	-43.5	0.00	0.00	0.00
2,000.0	10.66	163.27	1,975.0	-271.9	81.7	-46.5	0.00	0.00	0.00
2,100.0	10.66	163.27	2,073.3	-289.6	87.1	-49.6	0.00	0.00	0.00
2,200.0	10.66	163.27	2,171.6	-307.3	92.4	-52.6	0.00	0.00	0.00
2,300.0	10.66	163.27	2,269.9	-325.0	97.7	-55.6	0.00	0.00	0.00
2,400.0	10.66	163.27	2,368.1	-342.8	103.0	-58.7	0.00	0.00	0.00
2,500.0	10.66	163.27	2,466.4	-360.5	108.4	-61.7	0.00	0.00	0.00
2,600.0	10.66	163.27	2,564.7	-378.2	113.7	-64.7	0.00	0.00	0.00
2,700.0	10.66	163.27	2,663.0	-395.9	119.0	-67.8	0.00	0.00	0.00
2,800.0	10.66	163.27	2,761.2	-413.6	124.4	-70.8	0.00	0.00	0.00
2,900.0	10.66	163.27	2,859.5	-431.4	129.7	-73.8	0.00	0.00	0.00
3,000.0	10.66	163.27	2,957.8	-449.1	135.0	-76.9	0.00	0.00	0.00
3,100.0	10.66	163.27	3,056.1	-466.8	140.3	-79.9	0.00	0.00	0.00
3,200.0	10.66	163.27	3,154.3	-484.5	145.7	-82.9	0.00	0.00	0.00
3,300.0	10.66	163.27	3,252.6	-502.2	151.0	-86.0	0.00	0.00	0.00
3,400.0	10.66	163.27	3,350.9	-520.0	156.3	-89.0	0.00	0.00	0.00
3,500.0	10.66	163.27	3,449.1	-537.7	161.6	-92.0	0.00	0.00	0.00
3,537.5	10.66	163.27	3,486.0	-544.3	163.6	-93.2	0.00	0.00	0.00
<b>PARKMAN</b>									
3,600.0	10.66	163.27	3,547.4	-555.4	167.0	-95.1	0.00	0.00	0.00
3,700.0	10.66	163.27	3,645.7	-573.1	172.3	-98.1	0.00	0.00	0.00
3,800.0	10.66	163.27	3,744.0	-590.9	177.6	-101.1	0.00	0.00	0.00
3,900.0	10.66	163.27	3,842.2	-608.6	183.0	-104.2	0.00	0.00	0.00
4,000.0	10.66	163.27	3,940.5	-626.3	188.3	-107.2	0.00	0.00	0.00
4,100.0	10.66	163.27	4,038.8	-644.0	193.6	-110.2	0.00	0.00	0.00
4,200.0	10.66	163.27	4,137.1	-661.7	198.9	-113.3	0.00	0.00	0.00
4,300.0	10.66	163.27	4,235.3	-679.5	204.3	-116.3	0.00	0.00	0.00
4,308.8	10.66	163.27	4,244.0	-681.0	204.7	-116.6	0.00	0.00	0.00
<b>SUSSEX</b>									
4,400.0	10.66	163.27	4,333.6	-697.2	209.6	-119.3	0.00	0.00	0.00
4,500.0	10.66	163.27	4,431.9	-714.9	214.9	-122.4	0.00	0.00	0.00
4,600.0	10.66	163.27	4,530.1	-732.6	220.3	-125.4	0.00	0.00	0.00

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<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

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)
4,700.0	10.66	163.27	4,628.4	-750.3	225.6	-128.4	0.00	0.00	0.00
4,800.0	10.66	163.27	4,726.7	-768.1	230.9	-131.5	0.00	0.00	0.00
4,900.0	10.66	163.27	4,825.0	-785.8	236.2	-134.5	0.00	0.00	0.00
5,000.0	10.66	163.27	4,923.2	-803.5	241.6	-137.5	0.00	0.00	0.00
5,100.0	10.66	163.27	5,021.5	-821.2	246.9	-140.6	0.00	0.00	0.00
5,200.0	10.66	163.27	5,119.8	-838.9	252.2	-143.6	0.00	0.00	0.00
5,281.6	10.66	163.27	5,200.0	-853.4	256.6	-146.1	0.00	0.00	0.00
<b>SHANNON</b>									
5,300.0	10.66	163.27	5,218.1	-856.7	257.5	-146.6	0.00	0.00	0.00
5,352.7	10.66	163.27	5,269.9	-866.0	260.4	-148.2	0.00	0.00	0.00
5,400.0	9.72	163.27	5,316.4	-874.0	262.8	-149.6	2.00	-2.00	0.00
5,500.0	7.72	163.27	5,415.2	-888.5	267.1	-152.1	2.00	-2.00	0.00
5,600.0	5.72	163.27	5,514.5	-899.7	270.5	-154.0	2.00	-2.00	0.00
5,700.0	3.72	163.27	5,614.2	-907.6	272.9	-155.4	2.00	-2.00	0.00
5,800.0	1.72	163.27	5,714.1	-912.2	274.2	-156.1	2.00	-2.00	0.00
5,885.9	0.00	0.00	5,800.0	-913.4	274.6	-156.4	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,814.1	-913.4	274.6	-156.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,914.1	-913.4	274.6	-156.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,014.1	-913.4	274.6	-156.4	0.00	0.00	0.00
6,148.0	0.00	0.00	6,062.1	-913.4	274.6	-156.4	0.00	0.00	0.00
<b>KOP #2</b>									
6,200.0	3.90	270.00	6,114.0	-913.4	272.8	-154.6	7.50	7.50	0.00
6,300.0	11.40	270.00	6,213.1	-913.4	259.5	-141.4	7.50	7.50	0.00
6,400.0	18.90	270.00	6,309.5	-913.4	233.4	-115.5	7.50	7.50	0.00
6,500.0	26.40	270.00	6,401.8	-913.4	194.9	-77.3	7.50	7.50	0.00
6,600.0	33.90	270.00	6,488.2	-913.4	144.8	-27.6	7.50	7.50	0.00
6,700.0	41.40	270.00	6,567.3	-913.4	83.7	33.0	7.50	7.50	0.00
6,737.8	44.23	270.00	6,595.0	-913.4	58.0	58.5	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,782.3	47.57	270.00	6,626.0	-913.4	26.0	90.2	7.50	7.50	0.00
<b>NIORARA A</b>									
6,800.0	48.90	270.00	6,637.8	-913.4	12.9	103.3	7.50	7.50	0.00
6,900.0	56.40	270.00	6,698.4	-913.4	-66.6	182.0	7.50	7.50	0.00
6,988.5	63.04	270.00	6,743.0	-913.4	-143.0	257.8	7.50	7.50	0.00
<b>NIORARA B</b>									
7,000.0	63.90	270.00	6,748.1	-913.4	-153.2	268.0	7.50	7.50	0.00
7,100.0	71.40	270.00	6,786.1	-913.4	-245.7	359.7	7.50	7.50	0.00
7,200.0	78.90	270.00	6,811.7	-913.4	-342.2	455.5	7.50	7.50	0.00
7,300.0	86.40	270.00	6,824.5	-913.4	-441.4	553.8	7.50	7.50	0.00
7,353.1	90.38	270.00	6,826.0	-913.4	-494.4	606.4	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,400.0	90.38	270.00	6,825.7	-913.4	-541.3	653.0	0.00	0.00	0.00
7,500.0	90.38	270.00	6,825.1	-913.4	-641.3	752.1	0.00	0.00	0.00
7,600.0	90.38	270.00	6,824.4	-913.4	-741.3	851.3	0.00	0.00	0.00
7,700.0	90.38	270.00	6,823.7	-913.4	-841.3	950.5	0.00	0.00	0.00
7,800.0	90.38	270.00	6,823.1	-913.4	-941.3	1,049.7	0.00	0.00	0.00
7,900.0	90.38	270.00	6,822.4	-913.4	-1,041.3	1,148.9	0.00	0.00	0.00
8,000.0	90.38	270.00	6,821.7	-913.4	-1,141.3	1,248.1	0.00	0.00	0.00
8,100.0	90.38	270.00	6,821.1	-913.4	-1,241.3	1,347.3	0.00	0.00	0.00
8,200.0	90.38	270.00	6,820.4	-913.4	-1,341.3	1,446.5	0.00	0.00	0.00
8,300.0	90.38	270.00	6,819.7	-913.4	-1,441.3	1,545.6	0.00	0.00	0.00
8,400.0	90.38	270.00	6,819.1	-913.4	-1,541.3	1,644.8	0.00	0.00	0.00

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

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)
8,500.0	90.38	270.00	6,818.4	-913.4	-1,641.3	1,744.0	0.00	0.00	0.00
8,600.0	90.38	270.00	6,817.8	-913.4	-1,741.3	1,843.2	0.00	0.00	0.00
8,700.0	90.38	270.00	6,817.1	-913.4	-1,841.3	1,942.4	0.00	0.00	0.00
8,800.0	90.38	270.00	6,816.4	-913.4	-1,941.3	2,041.6	0.00	0.00	0.00
8,900.0	90.38	270.00	6,815.8	-913.4	-2,041.3	2,140.8	0.00	0.00	0.00
9,000.0	90.38	270.00	6,815.1	-913.4	-2,141.3	2,240.0	0.00	0.00	0.00
9,100.0	90.38	270.00	6,814.4	-913.4	-2,241.3	2,339.1	0.00	0.00	0.00
9,200.0	90.38	270.00	6,813.8	-913.4	-2,341.3	2,438.3	0.00	0.00	0.00
9,300.0	90.38	270.00	6,813.1	-913.4	-2,441.3	2,537.5	0.00	0.00	0.00
9,400.0	90.38	270.00	6,812.5	-913.4	-2,541.3	2,636.7	0.00	0.00	0.00
9,500.0	90.38	270.00	6,811.8	-913.4	-2,641.3	2,735.9	0.00	0.00	0.00
9,600.0	90.38	270.00	6,811.1	-913.4	-2,741.3	2,835.1	0.00	0.00	0.00
9,700.0	90.38	270.00	6,810.5	-913.4	-2,841.3	2,934.3	0.00	0.00	0.00
9,800.0	90.38	270.00	6,809.8	-913.4	-2,941.3	3,033.5	0.00	0.00	0.00
9,900.0	90.38	270.00	6,809.1	-913.4	-3,041.3	3,132.7	0.00	0.00	0.00
10,000.0	90.38	270.00	6,808.5	-913.4	-3,141.3	3,231.8	0.00	0.00	0.00
10,100.0	90.38	270.00	6,807.8	-913.4	-3,241.3	3,331.0	0.00	0.00	0.00
10,200.0	90.38	270.00	6,807.1	-913.4	-3,341.3	3,430.2	0.00	0.00	0.00
10,300.0	90.38	270.00	6,806.5	-913.4	-3,441.3	3,529.4	0.00	0.00	0.00
10,400.0	90.38	270.00	6,805.8	-913.4	-3,541.3	3,628.6	0.00	0.00	0.00
10,500.0	90.38	270.00	6,805.2	-913.4	-3,641.3	3,727.8	0.00	0.00	0.00
10,600.0	90.38	270.00	6,804.5	-913.4	-3,741.2	3,827.0	0.00	0.00	0.00
10,700.0	90.38	270.00	6,803.8	-913.4	-3,841.2	3,926.2	0.00	0.00	0.00
10,800.0	90.38	270.00	6,803.2	-913.4	-3,941.2	4,025.3	0.00	0.00	0.00
10,900.0	90.38	270.00	6,802.5	-913.4	-4,041.2	4,124.5	0.00	0.00	0.00
11,000.0	90.38	270.00	6,801.8	-913.4	-4,141.2	4,223.7	0.00	0.00	0.00
11,100.0	90.38	270.00	6,801.2	-913.4	-4,241.2	4,322.9	0.00	0.00	0.00
11,200.0	90.38	270.00	6,800.5	-913.4	-4,341.2	4,422.1	0.00	0.00	0.00
11,300.0	90.38	270.00	6,799.8	-913.4	-4,441.2	4,521.3	0.00	0.00	0.00
11,400.0	90.38	270.00	6,799.2	-913.4	-4,541.2	4,620.5	0.00	0.00	0.00
11,500.0	90.38	270.00	6,798.5	-913.4	-4,641.2	4,719.7	0.00	0.00	0.00
11,600.0	90.38	270.00	6,797.9	-913.4	-4,741.2	4,818.8	0.00	0.00	0.00
11,700.0	90.38	270.00	6,797.2	-913.4	-4,841.2	4,918.0	0.00	0.00	0.00
11,800.0	90.38	270.00	6,796.5	-913.4	-4,941.2	5,017.2	0.00	0.00	0.00
11,900.0	90.38	270.00	6,795.9	-913.4	-5,041.2	5,116.4	0.00	0.00	0.00
12,000.0	90.38	270.00	6,795.2	-913.4	-5,141.2	5,215.6	0.00	0.00	0.00
12,100.0	90.38	270.00	6,794.5	-913.4	-5,241.2	5,314.8	0.00	0.00	0.00
12,200.0	90.38	270.00	6,793.9	-913.4	-5,341.2	5,414.0	0.00	0.00	0.00
12,300.0	90.38	270.00	6,793.2	-913.4	-5,441.2	5,513.2	0.00	0.00	0.00
12,400.0	90.38	270.00	6,792.6	-913.4	-5,541.2	5,612.3	0.00	0.00	0.00
12,500.0	90.38	270.00	6,791.9	-913.4	-5,641.2	5,711.5	0.00	0.00	0.00
12,600.0	90.38	270.00	6,791.2	-913.4	-5,741.2	5,810.7	0.00	0.00	0.00
12,700.0	90.38	270.00	6,790.6	-913.4	-5,841.2	5,909.9	0.00	0.00	0.00
12,800.0	90.38	270.00	6,789.9	-913.4	-5,941.2	6,009.1	0.00	0.00	0.00
12,900.0	90.38	270.00	6,789.2	-913.4	-6,041.2	6,108.3	0.00	0.00	0.00
13,000.0	90.38	270.00	6,788.6	-913.4	-6,141.2	6,207.5	0.00	0.00	0.00
13,100.0	90.38	270.00	6,787.9	-913.4	-6,241.2	6,306.7	0.00	0.00	0.00
13,200.0	90.38	270.00	6,787.2	-913.4	-6,341.2	6,405.8	0.00	0.00	0.00
13,300.0	90.38	270.00	6,786.6	-913.4	-6,441.2	6,505.0	0.00	0.00	0.00
13,400.0	90.38	270.00	6,785.9	-913.4	-6,541.2	6,604.2	0.00	0.00	0.00
13,500.0	90.38	270.00	6,785.3	-913.4	-6,641.2	6,703.4	0.00	0.00	0.00
13,600.0	90.38	270.00	6,784.6	-913.4	-6,741.2	6,802.6	0.00	0.00	0.00
13,700.0	90.38	270.00	6,783.9	-913.4	-6,841.2	6,901.8	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

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)
13,800.0	90.38	270.00	6,783.3	-913.4	-6,941.2	7,001.0	0.00	0.00	0.00
13,900.0	90.38	270.00	6,782.6	-913.4	-7,041.2	7,100.2	0.00	0.00	0.00
13,991.3	90.38	270.00	6,782.0	-913.4	-7,132.4	7,190.7	0.00	0.00	0.00

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
SHL 553'FNL & 326'F	- plan hits target - Point	0.00	0.00	1.0	0.0	0.0	1,402,064.02	3,249,723.55	40.433600 -104.602900
BHL 1473'FNL & 214'	- plan hits target - Point	0.00	0.00	6,782.0	-913.4	-7,132.4	1,401,078.55	3,242,600.99	40.431090 -104.628520

Casing Points							
Measured Depth (ft)	Vertical Depth (ft)	Name				Casing Diameter (")	Hole Diameter (")
7,353.1	6,826.0	7"				7	7-1/2

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,537.5	3,486.0	PARKMAN		0.00		
4,308.8	4,244.0	SUSSEX		0.00		
5,281.6	5,200.0	SHANNON		0.00		
6,737.8	6,595.0	SHARON SPRINGS		0.00		
6,782.3	6,626.0	NIOBRARA A		0.00		
6,988.5	6,743.0	NIOBRARA B		0.00		
	6,835.0	NIOBRARA C		0.00		
	6,864.0	FT HAYS		0.00		
	6,881.0	CODELL		0.00		

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
6,148.0	6,062.1	-47.4	14.2	KOP #2
7,353.1	6,826.0	-866.0	260.4	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

**LDS 5N65W1U Pad Sec.1-T5N-R65W**

**LDS 1V-304**

**Wellbore #1**

**Plan #1 (9-4-14)**

## **Anticollision Report**

**18 September, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (9-4-14)
<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	9/18/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,991.3	Plan #1 (9-4-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.1-T5N-R65W						
BJB 2 (Exist.) - Wellbore #1 - Wellbore #1	7,054.8	6,732.4	489.2	336.4	3.201	CC, ES
BJB 2 (Exist.) - Wellbore #1 - Wellbore #1	7,100.0	6,748.1	491.1	337.5	3.198	SF
BJB 5 (Exist.) - Wellbore #1 - Wellbore #1	7,785.9	6,812.6	258.6	213.3	5.711	CC, ES
BJB 5 (Exist.) - Wellbore #1 - Wellbore #1	7,800.0	6,812.3	258.9	213.3	5.677	SF
BJB 6I (Exist.) - Wellbore #1 - Wellbore #1	9,119.4	6,957.5	146.5	61.2	1.716	CC, ES, SF
Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1	10,519.6	6,792.0	192.3	-49.8	0.794	Level 1, CC, ES, SF
Gatewood 6-1 (Exist.) - Wellbore #1 - Wellbore #1	9,732.2	6,793.4	144.7	-47.8	0.752	Level 1, CC, ES, SF
Existing Wells Sec.2-T5N-R65W						
Wagner-Ehrlich 1 (P&A) - Wellbore #1 - Wellbore #1	13,467.9	6,779.5	7.1	-317.0	0.022	Level 1, CC, ES, SF
LDS 5N65W1U Pad Sec.1-T5N-R65W						
LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)	200.0	202.0	118.3	117.6	174.282	CC, ES
LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)	4,900.0	4,797.0	991.6	967.6	41.215	SF
LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)	200.0	203.0	149.5	148.8	219.525	CC, ES
LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)	4,200.0	4,083.2	983.5	962.7	47.462	SF
LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)	200.0	201.0	29.3	28.6	43.280	CC
LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)	13,991.3	13,899.8	372.5	-28.5	0.929	Level 1, ES, SF
LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)	200.0	201.0	89.7	89.0	132.623	CC, ES
LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)	13,991.3	13,965.7	612.2	206.7	1.510	SF
LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)	200.0	201.0	60.5	59.8	89.355	CC, ES
LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)	12,900.0	12,834.6	497.9	160.8	1.477	Level 3, SF
LDS 5N65W1W Pad Sec.1-T5N-R65W						
LDS 1V-434 - Wellbore #1 - Plan #1 (9-4-14)	6,100.0	6,031.0	153.0	115.3	4.060	CC
LDS 1V-434 - Wellbore #1 - Plan #1 (9-4-14)	13,991.3	13,992.8	192.6	-136.8	0.585	Level 1, ES, SF
Noffsinger Pad Sec.2-T5N-R65W						
Noffsinger 2C (Vert.) - Wellbore #1 - Design #1	12,965.5	6,796.8	440.5	250.9	2.323	CC, ES
Noffsinger 2C (Vert.) - Wellbore #1 - Design #1	13,000.0	6,796.6	441.9	251.3	2.318	SF
Noffsinger 2VD - Wellbore #1 - Wellbore #1	11,915.5	6,938.3	191.0	22.9	1.137	Level 2, CC, ES, SF
Noffsinger 32-2D - Wellbore #1 - Wellbore #1	13,834.3	6,941.3	429.4	209.5	1.952	CC, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0ft
Survey Program: 7050-UNKNOWN													Offset Well Error:	0.0ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (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
3,100.0	3,056.1	3,018.1	3,018.1	11.6	60.4	37.37		-1,402.6	-203.2	996.9	928.0	68.93	14.463	
3,200.0	3,154.3	3,116.3	3,116.3	12.0	62.3	38.02		-1,402.6	-203.2	982.1	910.9	71.26	13.783	
3,300.0	3,252.6	3,214.6	3,214.6	12.5	64.3	38.69		-1,402.6	-203.2	967.5	893.9	73.60	13.146	
3,400.0	3,350.9	3,312.9	3,312.9	12.9	66.3	39.39		-1,402.6	-203.2	953.1	877.1	75.94	12.550	
3,500.0	3,449.1	3,411.1	3,411.1	13.3	68.2	40.10		-1,402.6	-203.2	938.7	860.4	78.29	11.990	
3,600.0	3,547.4	3,509.4	3,509.4	13.7	70.2	40.83		-1,402.6	-203.2	924.6	843.9	80.65	11.464	
3,700.0	3,645.7	3,607.7	3,607.7	14.2	72.2	41.59		-1,402.6	-203.2	910.5	827.5	83.02	10.968	
3,800.0	3,744.0	3,706.0	3,706.0	14.6	74.1	42.36		-1,402.6	-203.2	896.7	811.3	85.39	10.501	
3,900.0	3,842.2	3,804.2	3,804.2	15.0	76.1	43.17		-1,402.6	-203.2	883.0	795.2	87.77	10.060	
4,000.0	3,940.5	3,902.5	3,902.5	15.4	78.1	43.99		-1,402.6	-203.2	869.5	779.3	90.16	9.643	
4,100.0	4,038.8	4,000.8	4,000.8	15.9	80.0	44.85		-1,402.6	-203.2	856.1	763.6	92.56	9.249	
4,200.0	4,137.1	4,099.1	4,099.1	16.3	82.0	45.73		-1,402.6	-203.2	843.0	748.0	94.97	8.877	
4,300.0	4,235.3	4,197.3	4,197.3	16.7	83.9	46.63		-1,402.6	-203.2	830.1	732.7	97.38	8.524	
4,400.0	4,333.6	4,295.6	4,295.6	17.1	85.9	47.57		-1,402.6	-203.2	817.4	717.5	99.81	8.189	
4,500.0	4,431.9	4,393.9	4,393.9	17.5	87.9	48.53		-1,402.6	-203.2	804.9	702.6	102.24	7.872	
4,600.0	4,530.1	4,492.1	4,492.1	18.0	89.8	49.52		-1,402.6	-203.2	792.6	687.9	104.69	7.571	
4,700.0	4,628.4	4,590.4	4,590.4	18.4	91.8	50.54		-1,402.6	-203.2	780.6	673.5	107.14	7.286	
4,800.0	4,726.7	4,688.7	4,688.7	18.8	93.8	51.60		-1,402.6	-203.2	768.8	659.2	109.60	7.015	
4,900.0	4,825.0	4,787.0	4,787.0	19.2	95.7	52.68		-1,402.6	-203.2	757.4	645.3	112.07	6.758	
5,000.0	4,923.2	4,885.2	4,885.2	19.7	97.7	53.80		-1,402.6	-203.2	746.2	631.6	114.55	6.514	
5,100.0	5,021.5	4,983.5	4,983.5	20.1	99.7	54.95		-1,402.6	-203.2	735.3	618.2	117.04	6.282	
5,200.0	5,119.8	5,081.8	5,081.8	20.5	101.6	56.13		-1,402.6	-203.2	724.7	605.1	119.54	6.062	
5,300.0	5,218.1	5,180.1	5,180.1	20.9	103.6	57.35		-1,402.6	-203.2	714.4	592.4	122.04	5.854	
5,400.0	5,316.4	5,278.4	5,278.4	21.3	105.6	58.50		-1,402.6	-203.2	704.7	580.1	124.59	5.656	
5,500.0	5,415.2	5,377.2	5,377.2	21.6	107.5	59.42		-1,402.6	-203.2	696.8	569.7	127.08	5.483	
5,600.0	5,514.5	5,476.5	5,476.5	21.8	109.5	60.15		-1,402.6	-203.2	690.9	561.4	129.47	5.336	
5,700.0	5,614.2	5,576.2	5,576.2	22.0	111.5	60.67		-1,402.6	-203.2	686.8	555.0	131.77	5.212	
5,800.0	5,714.1	5,676.1	5,676.1	22.1	113.5	60.97		-1,402.6	-203.2	684.5	550.5	133.99	5.109	
5,900.0	5,814.1	5,776.1	5,776.1	22.3	115.5	-135.67		-1,402.6	-203.2	683.9	551.8	132.09	5.177	
6,000.0	5,914.1	5,876.1	5,876.1	22.4	117.5	-135.67		-1,402.6	-203.2	683.9	549.6	134.22	5.095	
6,100.0	6,014.1	5,976.1	5,976.1	22.5	119.5	-135.67		-1,402.6	-203.2	683.9	547.5	136.36	5.015	
6,200.0	6,114.0	6,076.0	6,076.0	22.6	121.5	-45.85		-1,402.6	-203.2	682.6	540.3	142.30	4.797	
6,300.0	6,213.1	6,175.1	6,175.1	22.6	123.5	-47.16		-1,402.6	-203.2	673.4	530.4	143.04	4.708	
6,400.0	6,309.5	6,271.5	6,271.5	22.7	125.4	-49.82		-1,402.6	-203.2	655.7	513.1	142.68	4.596	
6,500.0	6,401.8	6,363.8	6,363.8	22.7	127.3	-53.91		-1,402.6	-203.2	630.8	488.8	141.93	4.444	
6,600.0	6,488.2	6,450.2	6,450.2	22.6	129.0	-59.44		-1,402.6	-203.2	600.4	458.6	141.78	4.234	
6,700.0	6,567.3	6,529.3	6,529.3	22.6	130.6	-66.25		-1,402.6	-203.2	567.2	424.1	143.07	3.964	
6,800.0	6,637.8	6,599.8	6,599.8	22.6	132.0	-73.81		-1,402.6	-203.2	534.8	389.0	145.82	3.668	
6,900.0	6,698.4	6,660.4	6,660.4	22.6	133.2	-81.21		-1,402.6	-203.2	507.9	358.9	149.05	3.408	
7,000.0	6,748.1	6,710.1	6,710.1	22.7	134.2	-87.43		-1,402.6	-203.2	491.8	340.1	151.68	3.242	
7,054.8	6,770.4	6,732.4	6,732.4	22.8	134.6	-90.00		-1,402.6	-203.2	489.2	336.4	152.82	3.201 CC, ES	
7,100.0	6,786.1	6,748.1	6,748.1	22.9	135.0	-91.58		-1,402.6	-203.2	491.1	337.5	153.57	3.198 SF	
7,200.0	6,811.7	6,773.7	6,773.7	23.3	135.5	-93.13		-1,402.6	-203.2	508.6	353.2	155.37	3.273	
7,300.0	6,824.5	6,786.5	6,786.5	24.2	135.7	-91.75		-1,402.6	-203.2	544.1	386.5	157.58	3.453	
7,400.0	6,825.7	6,787.7	6,787.7	25.6	135.8	-89.74		-1,402.6	-203.2	594.7	435.0	159.70	3.724	
7,500.0	6,825.1	6,787.1	6,787.1	27.4	135.7	-89.66		-1,402.6	-203.2	656.7	494.9	161.80	4.059	
7,600.0	6,824.4	6,786.4	6,786.4	29.5	135.7	-89.58		-1,402.6	-203.2	727.2	563.2	164.01	4.434	
7,700.0	6,823.7	6,785.7	6,785.7	31.7	135.7	-89.50		-1,402.6	-203.2	804.0	637.7	166.32	4.834	
7,800.0	6,823.1	6,785.1	6,785.1	34.0	135.7	-89.43		-1,402.6	-203.2	885.5	716.8	168.71	5.249	
7,900.0	6,822.4	6,784.4	6,784.4	36.4	135.7	-89.35		-1,402.6	-203.2	970.4	799.3	171.16	5.670	

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Sec.1-T5N-R65W - BJB 5 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 100-NS-GYRO-MS												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis 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
6,800.0	6,637.8	6,641.3	6,639.8	22.6	12.2	22.99	-654.9	-929.8	977.5	953.8	23.74	41.169	
6,900.0	6,698.4	6,700.8	6,699.2	22.6	12.4	28.99	-654.9	-928.9	900.3	878.1	22.24	40.483	
7,000.0	6,748.1	6,749.2	6,747.6	22.7	12.5	38.02	-654.9	-928.2	817.0	794.6	22.35	36.548	
7,100.0	6,786.1	6,785.8	6,784.2	22.9	12.6	51.19	-654.8	-927.6	729.4	704.2	25.23	28.906	
7,200.0	6,811.7	6,810.0	6,808.4	23.3	12.6	68.06	-654.8	-927.3	639.7	609.5	30.15	21.218	
7,300.0	6,824.5	6,821.3	6,819.7	24.2	12.6	84.83	-654.8	-927.1	550.3	516.0	34.30	16.046	
7,400.0	6,825.7	6,821.0	6,819.4	25.6	12.6	91.82	-654.8	-927.1	464.4	427.8	36.65	12.674	
7,500.0	6,825.1	6,818.8	6,817.2	27.4	12.6	91.34	-654.8	-927.1	385.4	346.7	38.73	9.952	
7,600.0	6,824.4	6,816.7	6,815.0	29.5	12.6	90.86	-654.8	-927.2	318.4	277.5	40.94	7.779	
7,700.0	6,823.7	6,814.5	6,812.9	31.7	12.6	90.38	-654.8	-927.2	272.5	229.2	43.24	6.302	
7,785.9	6,823.2	6,812.6	6,811.0	33.7	12.6	89.97	-654.8	-927.2	258.6	213.3	45.27	5.711 CC, ES	
7,800.0	6,823.1	6,812.3	6,810.7	34.0	12.6	89.90	-654.8	-927.2	258.9	213.3	45.61	5.677 SF	
7,900.0	6,822.4	6,810.2	6,808.6	36.4	12.6	89.43	-654.8	-927.3	282.6	234.6	48.04	5.883	
8,000.0	6,821.7	6,808.0	6,806.4	38.8	12.6	88.95	-654.8	-927.3	335.7	285.1	50.52	6.644	
8,100.0	6,821.1	6,805.8	6,804.2	41.3	12.6	88.47	-654.8	-927.3	406.8	353.7	53.03	7.670	
8,200.0	6,820.4	6,803.7	6,802.1	43.9	12.6	87.99	-654.8	-927.3	488.1	432.5	55.58	8.783	
8,300.0	6,819.7	6,801.5	6,799.9	46.4	12.6	87.51	-654.8	-927.4	575.3	517.2	58.14	9.895	
8,400.0	6,819.1	6,799.4	6,797.8	49.0	12.6	87.03	-654.8	-927.4	666.2	605.4	60.73	10.970	
8,500.0	6,818.4	6,797.2	6,795.6	51.7	12.6	86.56	-654.8	-927.4	759.3	696.0	63.32	11.991	
8,600.0	6,817.8	6,795.0	6,793.4	54.3	12.6	86.08	-654.8	-927.5	854.0	788.1	65.93	12.953	
8,700.0	6,817.1	6,792.9	6,791.3	56.9	12.6	85.60	-654.8	-927.5	949.8	881.2	68.55	13.856	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 6I (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 552-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,200.0	6,820.4	6,950.3	6,796.0	43.9	22.5	87.14	-766.9	-2,260.5	930.9	870.4	60.50	15.387		
8,300.0	6,819.7	6,951.0	6,796.7	46.4	22.5	87.42	-766.9	-2,260.5	832.3	769.2	63.14	13.182		
8,400.0	6,819.1	6,951.7	6,797.5	49.0	22.5	87.71	-766.9	-2,260.6	734.1	668.3	65.80	11.156		
8,500.0	6,818.4	6,952.5	6,798.2	51.7	22.5	88.01	-766.9	-2,260.6	636.4	568.0	68.48	9.293		
8,600.0	6,817.8	6,953.3	6,799.0	54.3	22.5	88.31	-766.9	-2,260.6	539.6	468.4	71.18	7.581		
8,700.0	6,817.1	6,954.1	6,799.8	56.9	22.5	88.61	-766.9	-2,260.6	444.2	370.3	73.89	6.012		
8,800.0	6,816.4	6,954.9	6,800.6	59.6	22.5	88.93	-766.9	-2,260.6	351.4	274.7	76.61	4.586		
8,900.0	6,815.8	6,955.7	6,801.4	62.3	22.5	89.25	-766.9	-2,260.6	263.8	184.4	79.34	3.325		
9,000.0	6,815.1	6,956.5	6,802.2	65.0	22.5	89.57	-766.9	-2,260.6	189.0	106.9	82.08	2.302		
9,100.0	6,814.4	6,957.3	6,803.1	67.7	22.5	89.90	-766.9	-2,260.6	147.8	63.0	84.83	1.742		
9,119.4	6,814.3	6,957.5	6,803.2	68.2	22.5	89.97	-766.9	-2,260.6	146.5	61.2	85.36	1.716 CC, ES, SF		
9,200.0	6,813.8	6,958.2	6,803.9	70.4	22.5	90.24	-766.9	-2,260.7	167.2	79.7	87.58	1.910		
9,300.0	6,813.1	6,959.1	6,804.8	73.1	22.5	90.58	-766.9	-2,260.7	232.6	142.2	90.33	2.575		
9,400.0	6,812.5	6,960.0	6,805.7	75.8	22.5	90.93	-766.9	-2,260.7	316.6	223.5	93.08	3.401		
9,500.0	6,811.8	6,960.9	6,806.6	78.6	22.5	91.29	-766.9	-2,260.7	407.8	312.0	95.84	4.255		
9,600.0	6,811.1	6,961.8	6,807.5	81.3	22.5	91.66	-766.9	-2,260.7	502.4	403.9	98.60	5.096		
9,700.0	6,810.5	6,962.0	6,807.7	84.0	22.5	91.72	-766.9	-2,260.7	598.8	497.5	101.35	5.908		
9,800.0	6,809.8	6,963.6	6,809.3	86.8	22.5	92.35	-766.9	-2,260.7	696.2	592.1	104.11	6.687		
9,900.0	6,809.1	6,964.5	6,810.2	89.5	22.5	92.69	-766.9	-2,260.8	794.2	687.4	106.86	7.432		
10,000.0	6,808.5	6,965.4	6,811.1	92.3	22.5	93.03	-766.9	-2,260.8	892.7	783.1	109.62	8.144		
10,100.0	6,807.8	6,966.2	6,811.9	95.0	22.5	93.37	-766.9	-2,260.8	991.5	879.1	112.37	8.824		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 7123-UNKNOWN													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)			
9,600.0	6,811.1	6,798.1	6,798.1	81.3	136.0	91.82	-721.1	-3,660.8	939.5	722.7	216.75	4.334		
9,700.0	6,810.5	6,797.5	6,797.5	84.0	135.9	91.62	-721.1	-3,660.8	841.8	622.3	219.51	3.835		
9,800.0	6,809.8	6,796.8	6,796.8	86.8	135.9	91.42	-721.1	-3,660.8	744.8	522.6	222.26	3.351		
9,900.0	6,809.1	6,796.1	6,796.1	89.5	135.9	91.22	-721.1	-3,660.8	648.7	423.7	225.02	2.883		
10,000.0	6,808.5	6,795.5	6,795.5	92.3	135.9	91.03	-721.1	-3,660.8	554.0	326.3	227.77	2.432		
10,100.0	6,807.8	6,794.8	6,794.8	95.0	135.9	90.83	-721.1	-3,660.8	461.6	231.0	230.53	2.002		
10,200.0	6,807.1	6,794.1	6,794.1	97.8	135.9	90.63	-721.1	-3,660.8	373.0	139.7	233.29	1.599		
10,300.0	6,806.5	6,793.5	6,793.5	100.5	135.9	90.43	-721.1	-3,660.8	291.9	55.9	236.04	1.237	Level 2	
10,400.0	6,805.8	6,792.8	6,792.8	103.3	135.9	90.24	-721.1	-3,660.8	226.5	-12.3	238.80	0.948	Level 1	
10,500.0	6,805.2	6,792.2	6,792.2	106.1	135.8	90.04	-721.1	-3,660.8	193.3	-48.2	241.56	0.800	Level 1	
10,519.6	6,805.0	6,792.0	6,792.0	106.6	135.8	90.00	-721.1	-3,660.8	192.3	-49.8	242.10	0.794	Level 1, CC, ES, SF	
10,600.0	6,804.5	6,791.5	6,791.5	108.8	135.8	89.84	-721.1	-3,660.8	208.4	-35.9	244.31	0.853	Level 1	
10,700.0	6,803.8	6,790.8	6,790.8	111.6	135.8	89.64	-721.1	-3,660.8	263.7	16.6	247.07	1.067	Level 2	
10,800.0	6,803.2	6,790.2	6,790.2	114.4	135.8	89.45	-721.1	-3,660.8	340.0	90.2	249.82	1.361	Level 3	
10,900.0	6,802.5	6,789.5	6,789.5	117.2	135.8	89.25	-721.1	-3,660.8	426.2	173.7	252.57	1.688		
11,000.0	6,801.8	6,788.8	6,788.8	119.9	135.8	89.05	-721.1	-3,660.8	517.5	262.1	255.32	2.027		
11,100.0	6,801.2	6,788.2	6,788.2	122.7	135.8	88.85	-721.1	-3,660.8	611.4	353.4	258.07	2.369		
11,200.0	6,800.5	6,787.5	6,787.5	125.5	135.8	88.66	-721.1	-3,660.8	707.0	446.2	260.82	2.711		
11,300.0	6,799.8	6,786.8	6,786.8	128.3	135.7	88.46	-721.1	-3,660.8	803.7	540.2	263.56	3.050		
11,400.0	6,799.2	6,786.2	6,786.2	131.0	135.7	88.26	-721.1	-3,660.8	901.1	634.8	266.30	3.384		
11,500.0	6,798.5	6,785.5	6,785.5	133.8	135.7	88.06	-721.1	-3,660.8	999.1	730.0	269.04	3.713		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Gatewood 6-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-UNKNOWN													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)			
8,800.0	6,816.4	6,798.5	6,798.1	59.6	108.0	-91.51	-1,058.1	-2,873.5	943.4	776.5	166.92	5.652		
8,900.0	6,815.8	6,798.0	6,797.5	62.3	108.0	-91.30	-1,058.1	-2,873.5	844.7	675.1	169.64	4.979		
9,000.0	6,815.1	6,797.4	6,797.0	65.0	108.0	-91.08	-1,058.1	-2,873.5	746.4	574.0	172.37	4.330		
9,100.0	6,814.4	6,796.9	6,796.4	67.7	108.0	-90.87	-1,058.1	-2,873.5	648.6	473.5	175.11	3.704		
9,200.0	6,813.8	6,796.3	6,795.9	70.4	108.0	-90.66	-1,058.1	-2,873.5	551.6	373.7	177.84	3.101		
9,300.0	6,813.1	6,795.8	6,795.4	73.1	108.0	-90.44	-1,058.1	-2,873.5	455.8	275.2	180.59	2.524		
9,400.0	6,812.5	6,795.2	6,794.8	75.8	108.0	-90.23	-1,058.1	-2,873.5	362.4	179.1	183.33	1.977		
9,500.0	6,811.8	6,794.7	6,794.3	78.6	108.0	-90.01	-1,058.1	-2,873.5	273.6	87.6	186.08	1.471	Level 3	
9,600.0	6,811.1	6,794.2	6,793.7	81.3	108.0	-89.80	-1,058.1	-2,873.5	196.0	7.2	188.83	1.038	Level 2	
9,700.0	6,810.5	6,793.6	6,793.2	84.0	108.0	-89.58	-1,058.1	-2,873.5	148.3	-43.3	191.58	0.774	Level 1	
9,732.2	6,810.2	6,793.4	6,793.0	84.9	108.0	-89.51	-1,058.1	-2,873.5	144.7	-47.8	192.47	0.752	Level 1, CC, ES, SF	
9,800.0	6,809.8	6,793.1	6,792.7	86.8	108.0	-89.37	-1,058.1	-2,873.5	159.8	-34.6	194.33	0.822	Level 1	
9,900.0	6,809.1	6,792.5	6,792.1	89.5	108.0	-89.15	-1,058.1	-2,873.5	221.5	24.5	197.08	1.124	Level 2	
10,000.0	6,808.5	6,792.0	6,791.6	92.3	108.0	-88.94	-1,058.1	-2,873.5	304.4	104.5	199.84	1.523		
10,100.0	6,807.8	6,791.5	6,791.0	95.0	108.0	-88.73	-1,058.1	-2,873.5	395.2	192.6	202.59	1.951		
10,200.0	6,807.1	6,790.9	6,790.5	97.8	107.9	-88.51	-1,058.1	-2,873.5	489.6	284.3	205.34	2.384		
10,300.0	6,806.5	6,790.4	6,789.9	100.5	107.9	-88.30	-1,058.1	-2,873.5	585.9	377.8	208.09	2.816		
10,400.0	6,805.8	6,789.8	6,789.4	103.3	107.9	-88.08	-1,058.1	-2,873.5	683.2	472.4	210.84	3.241		
10,500.0	6,805.2	6,789.3	6,788.9	106.1	107.9	-87.87	-1,058.1	-2,873.5	781.3	567.7	213.59	3.658		
10,600.0	6,804.5	6,788.7	6,788.3	108.8	107.9	-87.65	-1,058.1	-2,873.5	879.7	663.4	216.33	4.067		
10,700.0	6,803.8	6,788.2	6,787.8	111.6	107.9	-87.44	-1,058.0	-2,873.5	978.5	759.4	219.08	4.466		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Sec.2-T5N-R65W - Wagner-Ehrlich 1 (P&A) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7030-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
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	
12,500.0	6,791.9	6,785.9	6,785.9	161.7	135.7	131.99	-906.3	-6,609.1	967.9	742.4	225.52	4.292	
12,600.0	6,791.2	6,785.2	6,785.2	164.5	135.7	128.90	-906.3	-6,609.1	867.9	630.4	237.48	3.655	
12,700.0	6,790.6	6,784.6	6,784.6	167.3	135.7	125.53	-906.3	-6,609.1	767.9	518.0	249.85	3.073	
12,800.0	6,789.9	6,783.9	6,783.9	170.1	135.7	121.84	-906.3	-6,609.1	667.9	405.5	262.43	2.545	
12,900.0	6,789.2	6,783.2	6,783.2	172.9	135.7	117.84	-906.3	-6,609.1	567.9	293.0	274.94	2.066	
13,000.0	6,788.6	6,782.6	6,782.6	175.7	135.7	113.51	-906.3	-6,609.1	467.9	180.9	287.01	1.630	
13,100.0	6,787.9	6,781.9	6,781.9	178.4	135.6	108.88	-906.3	-6,609.1	367.9	69.7	298.21	1.234 Level 2	
13,200.0	6,787.2	6,781.2	6,781.2	181.2	135.6	103.99	-906.3	-6,609.1	268.0	-40.1	308.05	0.870 Level 1	
13,300.0	6,786.6	6,780.6	6,780.6	184.0	135.6	98.87	-906.3	-6,609.1	168.0	-148.0	316.02	0.532 Level 1	
13,400.0	6,785.9	6,779.9	6,779.9	186.8	135.6	93.61	-906.3	-6,609.1	68.3	-253.5	321.71	0.212 Level 1	
13,467.9	6,785.5	6,779.5	6,779.5	188.7	135.6	90.00	-906.3	-6,609.1	7.1	-317.0	324.11	0.022 Level 1, CC, ES, SF	
13,500.0	6,785.3	6,779.3	6,779.3	189.6	135.6	88.29	-906.3	-6,609.1	32.9	-291.9	324.82	0.101 Level 1	
13,600.0	6,784.6	6,778.6	6,778.6	192.4	135.6	83.00	-906.3	-6,609.1	132.3	-193.0	325.26	0.407 Level 1	
13,700.0	6,783.9	6,777.9	6,777.9	195.2	135.6	77.82	-906.3	-6,609.1	232.2	-90.9	323.14	0.719 Level 1	
13,800.0	6,783.3	6,777.3	6,777.3	198.0	135.5	72.84	-906.3	-6,609.1	332.2	13.5	318.73	1.042 Level 2	
13,900.0	6,782.6	6,776.6	6,776.6	200.8	135.5	68.11	-906.3	-6,609.1	432.2	119.7	312.44	1.383 Level 3	
13,991.3	6,782.0	6,776.0	6,776.0	203.4	135.5	64.05	-906.3	-6,609.1	523.4	218.0	305.45	1.714	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)													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	Semi Major Axis	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	2.0	2.0	0.0	0.0	-44.91		83.8	-83.5	118.3	118.3	0.00	N/A	
100.0	100.0	102.0	102.0	0.1	0.1	-44.91		83.8	-83.5	118.3	118.1	0.23	516.011	
200.0	200.0	202.0	202.0	0.3	0.3	-44.91		83.8	-83.5	118.3	117.6	0.68	174.282 CC, ES	
300.0	300.0	302.0	302.0	0.5	0.6	152.21		83.8	-83.5	119.8	118.7	1.11	107.885	
400.0	399.8	401.8	401.8	0.8	0.8	153.29		83.8	-83.5	124.5	123.0	1.54	80.583	
500.0	499.5	501.5	501.5	1.0	1.0	154.92		83.8	-83.5	132.3	130.3	2.00	66.294	
600.0	598.7	600.7	600.7	1.3	1.2	156.89		83.8	-83.5	143.5	141.0	2.46	58.353	
700.0	697.5	699.5	699.5	1.6	1.5	159.01		83.8	-83.5	158.0	155.1	2.93	53.942	
800.0	795.8	797.8	797.8	2.0	1.7	161.11		83.8	-83.5	175.3	171.9	3.40	51.568	
900.0	894.0	896.0	896.0	2.4	1.9	162.89		83.8	-83.5	192.9	189.0	3.87	49.869	
1,000.0	992.3	994.3	994.3	2.8	2.1	164.37		83.8	-83.5	210.7	206.3	4.34	48.559	
1,100.0	1,090.6	1,092.6	1,092.6	3.2	2.3	165.62		83.8	-83.5	228.6	223.8	4.81	47.522	
1,200.0	1,188.9	1,190.9	1,190.9	3.6	2.6	166.68		83.8	-83.5	246.6	241.3	5.28	46.683	
1,300.0	1,287.1	1,289.1	1,289.1	4.0	2.8	167.61		83.8	-83.5	264.6	258.9	5.75	45.991	
1,400.0	1,385.4	1,387.4	1,387.4	4.5	3.0	168.41		83.8	-83.5	282.7	276.5	6.23	45.410	
1,500.0	1,483.7	1,485.7	1,485.7	4.9	3.2	169.12		83.8	-83.5	300.9	294.2	6.70	44.916	
1,600.0	1,582.0	1,584.0	1,584.0	5.3	3.4	169.75		83.8	-83.5	319.1	311.9	7.17	44.491	
1,700.0	1,680.2	1,682.2	1,682.2	5.7	3.7	170.30		83.8	-83.5	337.3	329.7	7.65	44.120	
1,800.0	1,778.5	1,780.5	1,780.5	6.1	3.9	170.81		83.8	-83.5	355.6	347.5	8.12	43.795	
1,900.0	1,876.8	1,878.8	1,878.8	6.6	4.1	171.26		83.8	-83.5	373.9	365.3	8.59	43.508	
2,000.0	1,975.0	1,977.0	1,977.0	7.0	4.3	171.67		83.8	-83.5	392.2	383.1	9.07	43.251	
2,100.0	2,073.3	2,075.3	2,075.3	7.4	4.6	172.04		83.8	-83.5	410.5	401.0	9.54	43.021	
2,200.0	2,171.6	2,173.6	2,173.6	7.8	4.8	172.39		83.8	-83.5	428.8	418.8	10.02	42.813	
2,300.0	2,269.9	2,271.9	2,271.9	8.2	5.0	172.70		83.8	-83.5	447.2	436.7	10.49	42.625	
2,400.0	2,368.1	2,370.1	2,370.1	8.7	5.2	172.99		83.8	-83.5	465.6	454.6	10.97	42.453	
2,500.0	2,466.4	2,468.4	2,468.4	9.1	5.4	173.26		83.8	-83.5	483.9	472.5	11.44	42.296	
2,600.0	2,564.7	2,566.2	2,566.2	9.5	5.7	173.59		84.1	-82.8	502.4	490.4	11.91	42.180	
2,700.0	2,663.0	2,663.5	2,663.4	9.9	5.9	174.25		85.8	-79.3	520.9	508.6	12.37	42.130	
2,800.0	2,761.2	2,760.2	2,759.8	10.4	6.1	175.22		88.9	-72.8	539.8	527.0	12.82	42.119	
2,900.0	2,859.5	2,856.1	2,855.2	10.8	6.3	176.44		93.3	-63.5	559.1	545.8	13.27	42.132	
3,000.0	2,957.8	2,952.8	2,951.1	11.2	6.5	177.82		98.7	-52.2	578.9	565.2	13.74	42.137	
3,100.0	3,056.1	3,049.9	3,047.3	11.6	6.7	179.12		104.1	-40.7	599.0	584.8	14.22	42.123	
3,200.0	3,154.3	3,147.0	3,143.5	12.0	7.0	-179.66		109.6	-29.2	619.4	604.7	14.71	42.102	
3,300.0	3,252.6	3,244.0	3,239.8	12.5	7.2	-178.52		115.0	-17.7	640.1	624.9	15.22	42.066	
3,400.0	3,350.9	3,341.1	3,336.0	12.9	7.5	-177.45		120.5	-6.2	661.0	645.2	15.73	42.024	
3,500.0	3,449.1	3,438.1	3,432.2	13.3	7.7	-176.45		125.9	5.3	682.0	665.8	16.25	41.975	
3,600.0	3,547.4	3,535.2	3,528.4	13.7	8.0	-175.50		131.4	16.8	703.3	686.5	16.78	41.922	
3,700.0	3,645.7	3,632.3	3,624.7	14.2	8.3	-174.61		136.8	28.3	724.8	707.5	17.31	41.866	
3,800.0	3,744.0	3,729.3	3,720.9	14.6	8.5	-173.77		142.3	39.7	746.4	728.5	17.85	41.809	
3,900.0	3,842.2	3,826.4	3,817.1	15.0	8.8	-172.98		147.7	51.2	768.2	749.8	18.40	41.750	
4,000.0	3,940.5	3,923.5	3,913.3	15.4	9.1	-172.23		153.2	62.7	790.1	771.1	18.95	41.692	
4,100.0	4,038.8	4,020.5	4,009.6	15.9	9.4	-171.53		158.6	74.2	812.1	792.6	19.51	41.633	
4,200.0	4,137.1	4,117.6	4,105.8	16.3	9.7	-170.85		164.1	85.7	834.2	814.1	20.06	41.576	
4,300.0	4,235.3	4,214.6	4,202.0	16.7	9.9	-170.22		169.5	97.2	856.4	835.8	20.63	41.520	
4,400.0	4,333.6	4,311.7	4,298.2	17.1	10.2	-169.61		175.0	108.7	878.8	857.6	21.19	41.465	
4,500.0	4,431.9	4,408.8	4,394.5	17.5	10.5	-169.04		180.4	120.2	901.2	879.4	21.76	41.411	
4,600.0	4,530.1	4,505.8	4,490.7	18.0	10.8	-168.49		185.9	131.6	923.7	901.4	22.33	41.359	
4,700.0	4,628.4	4,602.9	4,586.9	18.4	11.1	-167.97		191.3	143.1	946.3	923.4	22.91	41.309	
4,800.0	4,726.7	4,699.9	4,683.1	18.8	11.4	-167.47		196.8	154.6	968.9	945.4	23.48	41.261	
4,900.0	4,825.0	4,797.0	4,779.4	19.2	11.7	-167.00		202.2	166.1	991.6	967.6	24.06	41.215 SF	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)													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)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	3.0	3.0	0.0	0.0	-45.04	105.6	-105.8	149.5	149.5	0.00	N/A		
100.0	100.0	103.0	103.0	0.1	0.1	-45.04	105.6	-105.8	149.5	149.3	0.23	645.787		
200.0	200.0	203.0	203.0	0.3	0.3	-45.04	105.6	-105.8	149.5	148.8	0.68	219.525 CC, ES		
300.0	300.0	303.0	303.0	0.5	0.6	151.99	105.6	-105.8	151.0	149.9	1.11	135.704		
400.0	399.8	402.8	402.8	0.8	0.8	152.86	105.6	-105.8	155.7	154.1	1.55	100.630		
500.0	499.5	502.5	502.5	1.0	1.0	154.18	105.6	-105.8	163.5	161.5	2.00	81.803		
600.0	598.7	601.7	601.7	1.3	1.2	155.83	105.6	-105.8	174.6	172.1	2.46	70.897		
700.0	697.5	700.5	700.5	1.6	1.5	157.66	105.6	-105.8	189.0	186.0	2.93	64.394		
800.0	795.8	798.8	798.8	2.0	1.7	159.55	105.6	-105.8	206.0	202.6	3.41	60.480		
900.0	894.0	897.0	897.0	2.4	1.9	161.21	105.6	-105.8	223.5	219.6	3.88	57.615		
1,000.0	992.3	995.3	995.3	2.8	2.1	162.62	105.6	-105.8	241.1	236.8	4.35	55.396		
1,100.0	1,090.6	1,093.6	1,093.6	3.2	2.3	163.84	105.6	-105.8	258.9	254.1	4.83	53.634		
1,200.0	1,188.9	1,191.9	1,191.9	3.6	2.6	164.91	105.6	-105.8	276.7	271.4	5.30	52.205		
1,300.0	1,287.1	1,290.1	1,290.1	4.0	2.8	165.84	105.6	-105.8	294.6	288.9	5.77	51.024		
1,400.0	1,385.4	1,388.4	1,388.4	4.5	3.0	166.67	105.6	-105.8	312.6	306.4	6.25	50.033		
1,500.0	1,483.7	1,484.4	1,484.4	4.9	3.2	167.61	106.5	-104.9	331.0	324.3	6.71	49.311		
1,600.0	1,582.0	1,579.4	1,579.3	5.3	3.4	168.95	109.4	-101.6	350.2	343.1	7.17	48.875		
1,700.0	1,680.2	1,673.6	1,673.1	5.7	3.6	170.61	114.5	-96.2	370.6	362.9	7.62	48.649		
1,800.0	1,778.5	1,767.0	1,766.0	6.1	3.9	172.52	121.5	-88.5	392.2	384.1	8.07	48.584		
1,900.0	1,876.8	1,863.5	1,861.7	6.6	4.1	174.47	129.6	-79.6	414.6	406.1	8.54	48.530		
2,000.0	1,975.0	1,960.0	1,957.5	7.0	4.3	176.21	137.7	-70.8	437.5	428.5	9.03	48.471		
2,100.0	2,073.3	2,056.5	2,053.3	7.4	4.6	177.79	145.8	-61.9	460.7	451.2	9.52	48.411		
2,200.0	2,171.6	2,153.0	2,149.0	7.8	4.9	179.21	153.9	-53.0	484.3	474.2	10.02	48.337		
2,300.0	2,269.9	2,249.5	2,244.8	8.2	5.1	-179.50	162.0	-44.2	508.1	497.5	10.53	48.271		
2,400.0	2,368.1	2,346.0	2,340.5	8.7	5.4	-178.32	170.1	-35.3	532.1	521.0	11.04	48.204		
2,500.0	2,466.4	2,442.6	2,436.3	9.1	5.7	-177.24	178.2	-26.5	556.3	544.7	11.56	48.139		
2,600.0	2,564.7	2,539.1	2,532.1	9.5	5.9	-176.25	186.3	-17.6	580.7	568.6	12.08	48.077		
2,700.0	2,663.0	2,635.6	2,627.8	9.9	6.2	-175.35	194.4	-8.7	605.2	592.6	12.60	48.018		
2,800.0	2,761.2	2,732.1	2,723.6	10.4	6.5	-174.51	202.5	0.1	629.9	616.7	13.13	47.963		
2,900.0	2,859.5	2,828.6	2,819.4	10.8	6.8	-173.73	210.6	9.0	654.6	641.0	13.66	47.910		
3,000.0	2,957.8	2,925.1	2,915.1	11.2	7.1	-173.01	218.7	17.8	679.5	665.3	14.20	47.861		
3,100.0	3,056.1	3,021.6	3,010.9	11.6	7.4	-172.35	226.8	26.7	704.5	689.8	14.73	47.814		
3,200.0	3,154.3	3,118.1	3,106.6	12.0	7.7	-171.72	234.9	35.5	729.6	714.3	15.27	47.771		
3,300.0	3,252.6	3,214.6	3,202.4	12.5	8.0	-171.14	243.0	44.4	754.7	738.9	15.81	47.730		
3,400.0	3,350.9	3,311.2	3,298.2	12.9	8.3	-170.60	251.1	53.3	779.9	763.6	16.35	47.692		
3,500.0	3,449.1	3,407.7	3,393.9	13.3	8.6	-170.09	259.2	62.1	805.2	788.3	16.90	47.657		
3,600.0	3,547.4	3,504.2	3,489.7	13.7	8.9	-169.61	267.3	71.0	830.5	813.1	17.44	47.623		
3,700.0	3,645.7	3,600.7	3,585.4	14.2	9.1	-169.16	275.4	79.8	855.9	837.9	17.98	47.592		
3,800.0	3,744.0	3,697.2	3,681.2	14.6	9.4	-168.73	283.5	88.7	881.3	862.8	18.53	47.563		
3,900.0	3,842.2	3,793.7	3,777.0	15.0	9.7	-168.33	291.6	97.6	906.8	887.7	19.08	47.535		
4,000.0	3,940.5	3,890.2	3,872.7	15.4	10.0	-167.95	299.7	106.4	932.3	912.7	19.62	47.510		
4,100.0	4,038.8	3,986.7	3,968.5	15.9	10.3	-167.59	307.8	115.3	957.9	937.7	20.17	47.485		
4,200.0	4,137.1	4,083.2	4,064.3	16.3	10.6	-167.25	315.9	124.1	983.5	962.7	20.72	47.462 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)													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	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-41.72		21.9	-19.5	29.3	29.3	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-41.72		21.9	-19.5	29.3	29.1	0.23	128.983	
200.0	200.0	201.0	201.0	0.3	0.3	-41.72		21.9	-19.5	29.3	28.6	0.68	43.280 CC	
300.0	300.0	301.0	301.0	0.5	0.6	156.37		21.9	-19.5	30.9	29.8	1.11	27.835	
400.0	399.8	400.8	400.8	0.8	0.8	159.70		21.9	-19.5	35.7	34.2	1.54	23.148	
500.0	499.5	502.0	501.9	1.0	1.0	163.41		20.2	-18.7	42.2	40.3	1.96	21.505	
600.0	598.7	603.3	603.2	1.3	1.2	166.88		15.5	-16.2	48.7	46.3	2.38	20.503	
700.0	697.5	704.9	704.3	1.6	1.4	170.22		7.5	-12.0	55.2	52.4	2.81	19.672	
800.0	795.8	806.3	805.0	2.0	1.7	173.36		-3.6	-6.3	61.1	57.9	3.26	18.781	
900.0	894.0	906.1	903.9	2.4	2.0	176.04		-15.5	-0.1	66.3	62.5	3.72	17.803	
1,000.0	992.3	1,006.0	1,002.8	2.8	2.3	178.32		-27.4	6.1	71.5	67.3	4.20	17.029	
1,100.0	1,090.6	1,105.8	1,101.7	3.2	2.6	-179.71		-39.3	12.2	76.8	72.1	4.68	16.401	
1,200.0	1,188.9	1,205.6	1,200.6	3.6	2.9	-177.99		-51.2	18.4	82.2	77.1	5.18	15.880	
1,300.0	1,287.1	1,305.4	1,299.6	4.0	3.3	-176.49		-63.2	24.6	87.7	82.0	5.68	15.440	
1,400.0	1,385.4	1,405.3	1,398.5	4.5	3.6	-175.17		-75.1	30.8	93.3	87.1	6.19	15.067	
1,500.0	1,483.7	1,505.1	1,497.4	4.9	3.9	-173.99		-87.0	36.9	98.8	92.1	6.70	14.740	
1,600.0	1,582.0	1,604.9	1,596.3	5.3	4.3	-172.94		-98.9	43.1	104.4	97.2	7.22	14.456	
1,700.0	1,680.2	1,704.7	1,695.2	5.7	4.6	-172.00		-110.8	49.3	110.1	102.3	7.75	14.205	
1,800.0	1,778.5	1,804.6	1,794.2	6.1	4.9	-171.15		-122.7	55.4	115.8	107.5	8.28	13.981	
1,900.0	1,876.8	1,904.4	1,893.1	6.6	5.3	-170.38		-134.6	61.6	121.4	112.6	8.81	13.782	
2,000.0	1,975.0	2,004.2	1,992.0	7.0	5.6	-169.68		-146.5	67.8	127.2	117.8	9.35	13.602	
2,100.0	2,073.3	2,104.0	2,090.9	7.4	5.9	-169.04		-158.4	74.0	132.9	123.0	9.89	13.439	
2,200.0	2,171.6	2,203.9	2,189.9	7.8	6.3	-168.45		-170.3	80.1	138.6	128.2	10.43	13.292	
2,300.0	2,269.9	2,303.7	2,288.8	8.2	6.6	-167.91		-182.2	86.3	144.4	133.4	10.97	13.157	
2,400.0	2,368.1	2,403.5	2,387.7	8.7	7.0	-167.41		-194.1	92.5	150.2	138.6	11.52	13.034	
2,500.0	2,466.4	2,503.3	2,486.6	9.1	7.3	-166.95		-206.0	98.6	155.9	143.9	12.07	12.920	
2,600.0	2,564.7	2,603.2	2,585.5	9.5	7.7	-166.52		-217.9	104.8	161.7	149.1	12.62	12.816	
2,700.0	2,663.0	2,703.0	2,684.5	9.9	8.0	-166.12		-229.8	111.0	167.5	154.4	13.17	12.719	
2,800.0	2,761.2	2,802.8	2,783.4	10.4	8.3	-165.75		-241.7	117.2	173.3	159.6	13.73	12.629	
2,900.0	2,859.5	2,902.6	2,882.3	10.8	8.7	-165.40		-253.6	123.3	179.2	164.9	14.28	12.546	
3,000.0	2,957.8	3,002.5	2,981.2	11.2	9.0	-165.07		-265.6	129.5	185.0	170.1	14.84	12.468	
3,100.0	3,056.1	3,102.3	3,080.1	11.6	9.4	-164.76		-277.5	135.7	190.8	175.4	15.39	12.395	
3,200.0	3,154.3	3,202.1	3,179.1	12.0	9.7	-164.48		-289.4	141.9	196.6	180.7	15.95	12.327	
3,300.0	3,252.6	3,301.9	3,278.0	12.5	10.1	-164.20		-301.3	148.0	202.5	186.0	16.51	12.264	
3,400.0	3,350.9	3,401.8	3,376.9	12.9	10.4	-163.95		-313.2	154.2	208.3	191.2	17.07	12.204	
3,500.0	3,449.1	3,501.6	3,475.8	13.3	10.7	-163.70		-325.1	160.4	214.2	196.5	17.63	12.147	
3,600.0	3,547.4	3,601.4	3,574.7	13.7	11.1	-163.47		-337.0	166.5	220.0	201.8	18.19	12.094	
3,700.0	3,645.7	3,701.2	3,673.7	14.2	11.4	-163.26		-348.9	172.7	225.9	207.1	18.75	12.043	
3,800.0	3,744.0	3,801.1	3,772.6	14.6	11.8	-163.05		-360.8	178.9	231.7	212.4	19.32	11.996	
3,900.0	3,842.2	3,900.9	3,871.5	15.0	12.1	-162.85		-372.7	185.1	237.6	217.7	19.88	11.951	
4,000.0	3,940.5	4,000.7	3,970.4	15.4	12.5	-162.67		-384.6	191.2	243.4	223.0	20.44	11.908	
4,100.0	4,038.8	4,100.5	4,069.3	15.9	12.8	-162.49		-396.5	197.4	249.3	228.3	21.01	11.867	
4,200.0	4,137.1	4,200.4	4,168.3	16.3	13.2	-162.32		-408.4	203.6	255.1	233.6	21.57	11.829	
4,300.0	4,235.3	4,300.2	4,267.2	16.7	13.5	-162.15		-420.3	209.8	261.0	238.9	22.14	11.792	
4,400.0	4,333.6	4,400.0	4,366.1	17.1	13.8	-162.00		-432.2	215.9	266.9	244.2	22.70	11.757	
4,500.0	4,431.9	4,499.8	4,465.0	17.5	14.2	-161.85		-444.1	222.1	272.8	249.5	23.27	11.723	
4,600.0	4,530.1	4,599.7	4,563.9	18.0	14.5	-161.71		-456.0	228.3	278.6	254.8	23.83	11.691	
4,700.0	4,628.4	4,699.5	4,662.9	18.4	14.9	-161.57		-468.0	234.4	284.5	260.1	24.40	11.660	
4,800.0	4,726.7	4,799.3	4,761.8	18.8	15.2	-161.44		-479.9	240.6	290.4	265.4	24.97	11.631	
4,900.0	4,825.0	4,899.1	4,860.7	19.2	15.6	-161.31		-491.8	246.8	296.3	270.7	25.53	11.603	
5,000.0	4,923.2	4,999.0	4,959.6	19.7	15.9	-161.19		-503.7	253.0	302.1	276.0	26.10	11.576	

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)													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	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,021.5	5,098.8	5,058.5	20.1	16.3	-161.08		-515.6	259.1	308.0	281.3	26.67	11.550	
5,200.0	5,119.8	5,194.9	5,153.8	20.5	16.6	-160.99		-526.8	265.0	314.1	286.9	27.21	11.546	
5,300.0	5,218.1	5,285.8	5,244.2	20.9	16.8	-161.13		-535.3	269.3	322.6	294.9	27.65	11.668	
5,400.0	5,316.4	5,376.1	5,334.3	21.3	16.9	-161.52		-541.2	272.4	333.4	305.4	28.03	11.895	
5,500.0	5,415.2	5,466.2	5,424.2	21.6	17.1	-162.00		-544.6	274.2	344.1	315.8	28.32	12.151	
5,600.0	5,514.5	5,557.5	5,515.5	21.8	17.2	-162.52		-545.4	274.6	354.3	325.7	28.58	12.399	
5,700.0	5,614.2	5,657.2	5,615.2	22.0	17.3	-162.96		-545.4	274.6	362.2	333.4	28.81	12.571	
5,800.0	5,714.1	5,757.0	5,715.1	22.1	17.5	-163.20		-545.4	274.6	366.7	337.7	29.04	12.630	
5,900.0	5,814.1	5,857.0	5,815.1	22.3	17.6	0.00		-545.4	274.6	367.9	329.4	38.56	9.543	
6,000.0	5,914.1	5,957.0	5,915.1	22.4	17.7	0.00		-545.4	274.6	367.9	329.2	38.79	9.486	
6,100.0	6,014.1	6,057.0	6,015.1	22.5	17.8	0.00		-545.4	274.6	367.9	328.9	39.03	9.429	
6,200.0	6,114.0	6,156.7	6,114.5	22.6	18.0	89.36		-545.4	268.8	368.0	337.9	30.09	12.227	
6,300.0	6,213.1	6,255.7	6,211.7	22.6	18.0	88.50		-545.4	250.2	368.1	338.0	30.13	12.218	
6,400.0	6,309.5	6,353.9	6,304.9	22.7	18.0	87.67		-545.4	219.5	368.3	338.2	30.08	12.243	
6,500.0	6,401.8	6,451.6	6,393.0	22.7	18.0	86.88		-545.4	177.4	368.5	338.5	30.03	12.270	
6,600.0	6,488.2	6,548.6	6,474.4	22.6	18.0	86.15		-545.4	124.8	368.8	338.7	30.09	12.257	
6,700.0	6,567.3	6,645.1	6,548.2	22.6	18.0	85.49		-545.4	62.7	369.1	338.7	30.38	12.151	
6,800.0	6,637.8	6,741.1	6,613.2	22.6	17.9	84.90		-545.4	-7.9	369.4	338.4	31.05	11.899	
6,900.0	6,698.4	6,836.8	6,668.7	22.6	17.9	84.39		-545.4	-85.7	369.7	337.5	32.22	11.474	
7,000.0	6,748.1	6,932.0	6,713.9	22.7	17.9	83.98		-545.4	-169.5	370.0	336.0	33.98	10.887	
7,100.0	6,786.1	7,027.1	6,748.2	22.9	18.5	83.66		-545.4	-258.0	370.2	333.8	36.36	10.181	
7,200.0	6,811.7	7,121.9	6,771.2	23.3	19.9	83.45		-545.4	-349.9	370.4	331.1	39.29	9.426	
7,300.0	6,824.5	7,216.6	6,782.7	24.2	21.7	83.35		-545.4	-443.9	370.4	327.8	42.67	8.681	
7,400.0	6,825.7	7,313.7	6,783.6	25.6	23.6	83.32		-545.4	-540.9	370.5	324.0	46.48	7.970	
7,500.0	6,825.1	7,413.7	6,782.7	27.4	25.8	83.29		-545.4	-640.9	370.5	319.8	50.69	7.308	
7,600.0	6,824.4	7,513.7	6,781.8	29.5	28.0	83.25		-545.4	-740.9	370.5	315.4	55.15	6.718	
7,700.0	6,823.7	7,613.7	6,781.0	31.7	30.4	83.22		-545.4	-840.9	370.5	310.8	59.79	6.197	
7,800.0	6,823.1	7,713.7	6,780.1	34.0	32.8	83.18		-545.4	-940.9	370.6	306.0	64.58	5.738	
7,900.0	6,822.4	7,813.7	6,779.2	36.4	35.2	83.15		-545.4	-1,040.9	370.6	301.1	69.49	5.333	
8,000.0	6,821.7	7,913.7	6,778.3	38.8	37.8	83.11		-545.4	-1,140.9	370.6	296.1	74.49	4.975	
8,100.0	6,821.1	8,013.7	6,777.4	41.3	40.3	83.08		-545.4	-1,240.9	370.7	291.1	79.57	4.658	
8,200.0	6,820.4	8,113.7	6,776.5	43.9	42.9	83.04		-545.4	-1,340.9	370.7	286.0	84.71	4.376	
8,300.0	6,819.7	8,213.7	6,775.6	46.4	45.5	83.01		-545.4	-1,440.9	370.7	280.8	89.90	4.123	
8,400.0	6,819.1	8,313.7	6,774.7	49.0	48.1	82.97		-545.4	-1,540.9	370.7	275.6	95.14	3.897	
8,500.0	6,818.4	8,413.7	6,773.8	51.7	50.8	82.94		-545.4	-1,640.9	370.8	270.4	100.40	3.693	
8,600.0	6,817.8	8,513.7	6,772.9	54.3	53.5	82.90		-545.4	-1,740.9	370.8	265.1	105.70	3.508	
8,700.0	6,817.1	8,613.7	6,772.1	56.9	56.1	82.87		-545.4	-1,840.9	370.8	259.8	111.03	3.340	
8,800.0	6,816.4	8,713.7	6,771.2	59.6	58.8	82.83		-545.4	-1,940.9	370.8	254.5	116.38	3.187	
8,900.0	6,815.8	8,813.7	6,770.3	62.3	61.5	82.80		-545.4	-2,040.9	370.9	249.1	121.75	3.046	
9,000.0	6,815.1	8,913.7	6,769.4	65.0	64.3	82.76		-545.4	-2,140.9	370.9	243.8	127.13	2.918	
9,100.0	6,814.4	9,013.7	6,768.5	67.7	67.0	82.73		-545.4	-2,240.9	370.9	238.4	132.53	2.799	
9,200.0	6,813.8	9,113.7	6,767.6	70.4	69.7	82.69		-545.4	-2,340.9	371.0	233.0	137.94	2.689	
9,300.0	6,813.1	9,213.7	6,766.7	73.1	72.4	82.66		-545.4	-2,440.9	371.0	227.6	143.36	2.588	
9,400.0	6,812.5	9,313.7	6,765.8	75.8	75.2	82.62		-545.4	-2,540.9	371.0	222.2	148.79	2.494	
9,500.0	6,811.8	9,413.7	6,764.9	78.6	77.9	82.59		-545.4	-2,640.8	371.0	216.8	154.23	2.406	
9,600.0	6,811.1	9,513.7	6,764.0	81.3	80.7	82.55		-545.4	-2,740.8	371.1	211.4	159.68	2.324	
9,700.0	6,810.5	9,613.7	6,763.2	84.0	83.4	82.52		-545.4	-2,840.8	371.1	206.0	165.14	2.247	
9,800.0	6,809.8	9,713.7	6,762.3	86.8	86.2	82.49		-545.4	-2,940.8	371.1	200.5	170.60	2.176	
9,900.0	6,809.1	9,813.7	6,761.4	89.5	88.9	82.45		-545.4	-3,040.8	371.2	195.1	176.06	2.108	
10,000.0	6,808.5	9,913.7	6,760.5	92.3	91.7	82.42		-545.4	-3,140.8	371.2	189.7	181.54	2.045	
10,100.0	6,807.8	10,013.7	6,759.6	95.0	94.5	82.38		-545.4	-3,240.8	371.2	184.2	187.01	1.985	

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)													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	Semi Major Axis	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
10,200.0	6,807.1	10,113.7	6,758.7	97.8	97.2	82.35		-545.4	-3,340.8	371.3	178.8	192.49	1.929	
10,300.0	6,806.5	10,213.7	6,757.8	100.5	100.0	82.31		-545.4	-3,440.8	371.3	173.3	197.98	1.875	
10,400.0	6,805.8	10,313.7	6,756.9	103.3	102.8	82.28		-545.4	-3,540.8	371.3	167.9	203.46	1.825	
10,500.0	6,805.2	10,413.7	6,756.0	106.1	105.5	82.24		-545.4	-3,640.8	371.3	162.4	208.95	1.777	
10,600.0	6,804.5	10,513.7	6,755.1	108.8	108.3	82.21		-545.4	-3,740.8	371.4	156.9	214.44	1.732	
10,700.0	6,803.8	10,613.7	6,754.2	111.6	111.1	82.17		-545.4	-3,840.8	371.4	151.5	219.94	1.689	
10,800.0	6,803.2	10,713.7	6,753.4	114.4	113.9	82.14		-545.4	-3,940.8	371.4	146.0	225.43	1.648	
10,900.0	6,802.5	10,813.7	6,752.5	117.2	116.7	82.10		-545.4	-4,040.8	371.5	140.5	230.93	1.609	
11,000.0	6,801.8	10,913.7	6,751.6	119.9	119.4	82.07		-545.4	-4,140.8	371.5	135.1	236.43	1.571	
11,100.0	6,801.2	11,013.7	6,750.7	122.7	122.2	82.03		-545.4	-4,240.8	371.5	129.6	241.93	1.536	
11,200.0	6,800.5	11,113.7	6,749.8	125.5	125.0	82.00		-545.4	-4,340.8	371.6	124.1	247.44	1.502	
11,300.0	6,799.8	11,213.7	6,748.9	128.3	127.8	81.96		-545.4	-4,440.8	371.6	118.7	252.94	1.469 Level 3	
11,400.0	6,799.2	11,313.7	6,748.0	131.0	130.6	81.93		-545.4	-4,540.8	371.6	113.2	258.44	1.438 Level 3	
11,500.0	6,798.5	11,413.7	6,747.1	133.8	133.4	81.90		-545.4	-4,640.8	371.7	107.7	263.95	1.408 Level 3	
11,600.0	6,797.9	11,513.7	6,746.2	136.6	136.2	81.86		-545.4	-4,740.8	371.7	102.2	269.45	1.379 Level 3	
11,700.0	6,797.2	11,613.7	6,745.3	139.4	138.9	81.83		-545.4	-4,840.8	371.7	96.8	274.96	1.352 Level 3	
11,800.0	6,796.5	11,713.7	6,744.5	142.2	141.7	81.79		-545.4	-4,940.7	371.8	91.3	280.47	1.325 Level 3	
11,900.0	6,795.9	11,813.7	6,743.6	145.0	144.5	81.76		-545.4	-5,040.7	371.8	85.8	285.98	1.300 Level 3	
12,000.0	6,795.2	11,913.6	6,742.7	147.7	147.3	81.72		-545.4	-5,140.7	371.8	80.3	291.48	1.276 Level 3	
12,100.0	6,794.5	12,013.6	6,741.8	150.5	150.1	81.69		-545.4	-5,240.7	371.9	74.9	296.99	1.252 Level 3	
12,200.0	6,793.9	12,113.6	6,740.9	153.3	152.9	81.65		-545.4	-5,340.7	371.9	69.4	302.50	1.229 Level 2	
12,300.0	6,793.2	12,213.6	6,740.0	156.1	155.7	81.62		-545.4	-5,440.7	371.9	63.9	308.01	1.208 Level 2	
12,400.0	6,792.6	12,313.6	6,739.1	158.9	158.5	81.58		-545.4	-5,540.7	372.0	58.4	313.52	1.186 Level 2	
12,500.0	6,791.9	12,413.6	6,738.2	161.7	161.3	81.55		-545.4	-5,640.7	372.0	53.0	319.03	1.166 Level 2	
12,600.0	6,791.2	12,513.6	6,737.3	164.5	164.1	81.52		-545.4	-5,740.7	372.0	47.5	324.54	1.146 Level 2	
12,700.0	6,790.6	12,613.6	6,736.4	167.3	166.9	81.48		-545.4	-5,840.7	372.1	42.0	330.04	1.127 Level 2	
12,800.0	6,789.9	12,713.6	6,735.6	170.1	169.7	81.45		-545.4	-5,940.7	372.1	36.5	335.55	1.109 Level 2	
12,900.0	6,789.2	12,813.6	6,734.7	172.9	172.5	81.41		-545.4	-6,040.7	372.1	31.1	341.06	1.091 Level 2	
13,000.0	6,788.6	12,913.6	6,733.8	175.7	175.3	81.38		-545.4	-6,140.7	372.2	25.6	346.57	1.074 Level 2	
13,100.0	6,787.9	13,013.6	6,732.9	178.4	178.1	81.34		-545.4	-6,240.7	372.2	20.1	352.08	1.057 Level 2	
13,200.0	6,787.2	13,113.6	6,732.0	181.2	180.9	81.31		-545.4	-6,340.7	372.2	14.6	357.58	1.041 Level 2	
13,300.0	6,786.6	13,213.6	6,731.1	184.0	183.7	81.27		-545.4	-6,440.7	372.3	9.2	363.09	1.025 Level 2	
13,400.0	6,785.9	13,313.6	6,730.2	186.8	186.5	81.24		-545.4	-6,540.7	372.3	3.7	368.60	1.010 Level 2	
13,500.0	6,785.3	13,413.6	6,729.3	189.6	189.3	81.20		-545.4	-6,640.7	372.3	-1.8	374.10	0.995 Level 1	
13,600.0	6,784.6	13,513.6	6,728.4	192.4	192.0	81.17		-545.4	-6,740.7	372.4	-7.2	379.61	0.981 Level 1	
13,700.0	6,783.9	13,613.6	6,727.5	195.2	194.8	81.14		-545.4	-6,840.7	372.4	-12.7	385.11	0.967 Level 1	
13,800.0	6,783.3	13,713.6	6,726.7	198.0	197.6	81.10		-545.4	-6,940.7	372.4	-18.2	390.62	0.953 Level 1	
13,900.0	6,782.6	13,813.6	6,725.8	200.8	200.4	81.07		-545.4	-7,040.7	372.5	-23.7	396.12	0.940 Level 1	
13,952.2	6,782.3	13,865.8	6,725.3	202.3	201.9	81.05		-545.4	-7,092.8	372.5	-26.5	398.99	0.934 Level 1	
13,991.3	6,782.0	13,899.8	6,725.0	203.4	202.9	81.04		-545.4	-7,126.8	372.5	-28.5	401.00	0.929 Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)													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)	Semi Major Axis 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	1.0	1.0	0.0	0.0	-43.05	65.6	-61.2	89.7	89.7	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-43.05	65.6	-61.2	89.7	89.5	0.23	395.241		
200.0	200.0	201.0	201.0	0.3	0.3	-43.05	65.6	-61.2	89.7	89.0	0.68	132.623 CC, ES		
300.0	300.0	301.0	301.0	0.5	0.6	154.16	65.6	-61.2	91.3	90.2	1.11	82.332		
400.0	399.8	400.8	400.8	0.8	0.8	155.48	65.6	-61.2	96.0	94.5	1.54	62.234		
500.0	499.5	500.5	500.5	1.0	1.0	157.41	65.6	-61.2	104.0	102.0	1.99	52.177		
600.0	598.7	599.7	599.7	1.3	1.2	159.65	65.6	-61.2	115.4	112.9	2.45	47.012		
700.0	697.5	698.5	698.5	1.6	1.5	161.95	65.6	-61.2	130.2	127.3	2.92	44.564		
800.0	795.8	796.8	796.8	2.0	1.7	164.12	65.6	-61.2	147.7	144.3	3.39	43.629		
900.0	894.0	895.0	895.0	2.4	1.9	165.87	65.6	-61.2	165.6	161.8	3.85	43.006		
1,000.0	992.3	993.3	993.3	2.8	2.1	167.28	65.6	-61.2	183.6	179.3	4.32	42.525		
1,100.0	1,090.6	1,091.6	1,091.6	3.2	2.3	168.44	65.6	-61.2	201.7	197.0	4.79	42.145		
1,200.0	1,188.9	1,189.9	1,189.9	3.6	2.6	169.40	65.6	-61.2	219.9	214.7	5.26	41.835		
1,300.0	1,287.1	1,288.1	1,288.1	4.0	2.8	170.22	65.6	-61.2	238.1	232.4	5.73	41.579		
1,400.0	1,385.4	1,386.4	1,386.4	4.5	3.0	170.92	65.6	-61.2	256.4	250.2	6.20	41.363		
1,500.0	1,483.7	1,484.7	1,484.7	4.9	3.2	171.53	65.6	-61.2	274.7	268.0	6.67	41.179		
1,600.0	1,582.0	1,583.0	1,583.0	5.3	3.4	172.06	65.6	-61.2	293.0	285.9	7.14	41.019		
1,700.0	1,680.2	1,690.5	1,690.5	5.7	3.7	172.66	64.5	-60.3	310.1	302.5	7.61	40.749		
1,800.0	1,778.5	1,801.1	1,801.0	6.1	3.9	173.44	60.4	-56.5	323.8	315.7	8.06	40.190		
1,900.0	1,876.8	1,912.5	1,911.9	6.6	4.1	174.41	53.0	-49.7	333.8	325.3	8.51	39.230		
2,000.0	1,975.0	2,017.3	2,015.9	7.0	4.3	175.47	43.6	-41.1	340.9	332.0	8.96	38.046		
2,100.0	2,073.3	2,116.9	2,114.7	7.4	4.5	176.46	34.4	-32.7	347.8	338.4	9.41	36.950		
2,200.0	2,171.6	2,216.5	2,213.5	7.8	4.8	177.41	25.2	-24.3	354.8	344.9	9.87	35.938		
2,300.0	2,269.9	2,316.1	2,312.3	8.2	5.0	178.32	16.0	-15.9	361.8	351.5	10.34	35.000		
2,400.0	2,368.1	2,415.7	2,411.1	8.7	5.3	179.19	6.8	-7.4	369.0	358.2	10.81	34.135		
2,500.0	2,466.4	2,515.2	2,509.9	9.1	5.5	-179.96	-2.4	1.0	376.2	365.0	11.29	33.327		
2,600.0	2,564.7	2,614.8	2,608.7	9.5	5.8	-179.15	-11.6	9.4	383.6	371.8	11.78	32.575		
2,700.0	2,663.0	2,714.4	2,707.5	9.9	6.1	-178.37	-20.8	17.8	391.0	378.7	12.27	31.873		
2,800.0	2,761.2	2,814.0	2,806.3	10.4	6.4	-177.62	-30.0	26.2	398.4	385.7	12.76	31.217		
2,900.0	2,859.5	2,913.6	2,905.1	10.8	6.7	-176.90	-39.2	34.7	406.0	392.7	13.27	30.602		
3,000.0	2,957.8	3,013.2	3,003.9	11.2	7.0	-176.20	-48.4	43.1	413.6	399.8	13.77	30.025		
3,100.0	3,056.1	3,112.8	3,102.7	11.6	7.3	-175.53	-57.6	51.5	421.2	406.9	14.29	29.483		
3,200.0	3,154.3	3,212.4	3,201.5	12.0	7.5	-174.88	-66.8	59.9	428.9	414.1	14.80	28.973		
3,300.0	3,252.6	3,311.9	3,300.3	12.5	7.9	-174.25	-76.0	68.4	436.7	421.3	15.33	28.492		
3,400.0	3,350.9	3,411.5	3,399.1	12.9	8.2	-173.65	-85.2	76.8	444.5	428.6	15.85	28.039		
3,500.0	3,449.1	3,511.1	3,497.9	13.3	8.5	-173.07	-94.4	85.2	452.3	436.0	16.38	27.610		
3,600.0	3,547.4	3,610.7	3,596.7	13.7	8.8	-172.51	-103.6	93.6	460.2	443.3	16.92	27.204		
3,700.0	3,645.7	3,710.3	3,695.6	14.2	9.1	-171.96	-112.8	102.1	468.2	450.7	17.46	26.819		
3,800.0	3,744.0	3,809.9	3,794.4	14.6	9.4	-171.44	-122.0	110.5	476.2	458.2	18.00	26.454		
3,900.0	3,842.2	3,909.5	3,893.2	15.0	9.7	-170.93	-131.2	118.9	484.2	465.7	18.55	26.108		
4,000.0	3,940.5	4,009.0	3,992.0	15.4	10.0	-170.44	-140.4	127.3	492.3	473.2	19.10	25.779		
4,100.0	4,038.8	4,108.6	4,090.8	15.9	10.3	-169.96	-149.6	135.8	500.4	480.7	19.65	25.466		
4,200.0	4,137.1	4,208.2	4,189.6	16.3	10.6	-169.50	-158.8	144.2	508.5	488.3	20.20	25.167		
4,300.0	4,235.3	4,307.8	4,288.4	16.7	11.0	-169.06	-168.0	152.6	516.6	495.9	20.76	24.883		
4,400.0	4,333.6	4,407.4	4,387.2	17.1	11.3	-168.62	-177.2	161.0	524.8	503.5	21.32	24.612		
4,500.0	4,431.9	4,507.0	4,486.0	17.5	11.6	-168.20	-186.4	169.5	533.1	511.2	21.89	24.353		
4,600.0	4,530.1	4,606.6	4,584.8	18.0	11.9	-167.80	-195.6	177.9	541.3	518.8	22.46	24.105		
4,700.0	4,628.4	4,706.2	4,683.6	18.4	12.2	-167.40	-204.8	186.3	549.6	526.6	23.03	23.868		
4,800.0	4,726.7	4,805.7	4,782.4	18.8	12.5	-167.02	-214.1	194.7	557.9	534.3	23.60	23.641		
4,900.0	4,825.0	4,905.3	4,881.2	19.2	12.9	-166.65	-223.3	203.2	566.2	542.0	24.17	23.424		
5,000.0	4,923.2	5,004.9	4,980.0	19.7	13.2	-166.29	-232.5	211.6	574.5	549.8	24.75	23.216		

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)											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)				
5,100.0	5,021.5	5,104.5	5,078.8	20.1	13.5	-165.94	-241.7	220.0	582.9	557.6	25.33	23.016			
5,200.0	5,119.8	5,204.1	5,177.6	20.5	13.8	-165.60	-250.9	228.4	591.3	565.4	25.91	22.824			
5,300.0	5,218.1	5,303.7	5,276.4	20.9	14.2	-165.27	-260.1	236.8	599.7	573.2	26.49	22.640			
5,400.0	5,316.4	5,403.3	5,375.2	21.3	14.5	-164.96	-269.3	245.3	607.8	580.7	27.08	22.445			
5,500.0	5,415.2	5,503.1	5,474.2	21.6	14.8	-164.59	-278.5	253.7	612.9	585.3	27.63	22.183			
5,600.0	5,514.5	5,600.0	5,570.4	21.8	15.1	-164.14	-287.3	261.8	614.9	586.8	28.14	21.849			
5,700.0	5,614.2	5,684.5	5,654.5	22.0	15.3	-163.80	-293.6	267.5	615.3	586.8	28.53	21.566			
5,800.0	5,714.1	5,770.7	5,740.4	22.1	15.5	-163.52	-298.1	271.7	614.6	585.7	28.86	21.294			
5,900.0	5,814.1	5,857.0	5,826.7	22.3	15.6	-0.05	-300.7	274.0	612.8	576.6	36.18	16.936			
6,000.0	5,914.1	5,945.4	5,915.1	22.4	15.8	0.01	-301.4	274.7	612.0	575.6	36.43	16.799			
6,100.0	6,014.1	6,045.4	6,015.1	22.5	15.9	0.01	-301.4	274.7	612.0	575.3	36.71	16.674			
6,144.7	6,058.8	6,090.1	6,059.8	22.5	16.0	90.07	-301.4	274.7	612.0	582.1	29.96	20.425			
6,200.0	6,114.0	6,145.4	6,115.1	22.6	16.1	90.16	-301.4	274.6	612.0	581.9	30.16	20.295			
6,300.0	6,213.1	6,245.8	6,215.1	22.6	16.2	90.65	-301.4	266.4	612.1	581.6	30.43	20.113			
6,400.0	6,309.5	6,347.0	6,313.9	22.7	16.3	91.13	-301.4	245.0	612.1	581.6	30.57	20.021			
6,500.0	6,401.8	6,448.8	6,409.6	22.7	16.3	91.59	-301.4	210.5	612.3	581.6	30.63	19.987			
6,600.0	6,488.2	6,551.3	6,500.4	22.6	16.2	92.02	-301.4	163.2	612.4	581.7	30.70	19.950			
6,700.0	6,567.3	6,654.4	6,584.6	22.6	16.2	92.42	-301.4	103.8	612.6	581.7	30.90	19.821			
6,800.0	6,637.8	6,758.1	6,660.4	22.6	16.2	92.78	-301.4	33.2	612.7	581.3	31.43	19.495			
6,900.0	6,698.4	6,862.3	6,726.3	22.6	16.2	93.09	-301.4	-47.5	612.9	580.5	32.46	18.881			
7,000.0	6,748.1	6,967.0	6,780.8	22.7	16.6	93.34	-301.4	-136.7	613.1	578.9	34.14	17.955			
7,100.0	6,786.1	7,072.0	6,822.7	22.9	17.7	93.53	-301.4	-233.0	613.2	576.6	36.54	16.779			
7,200.0	6,811.7	7,177.3	6,851.1	23.3	19.3	93.67	-301.4	-334.3	613.3	573.7	39.63	15.475			
7,300.0	6,824.5	7,282.8	6,865.4	24.2	21.2	93.73	-301.4	-438.7	613.3	570.0	43.28	14.172			
7,400.0	6,825.7	7,385.9	6,866.5	25.6	23.2	93.72	-301.4	-541.8	613.3	566.1	47.26	12.977			
7,500.0	6,825.1	7,485.9	6,865.4	27.4	25.4	93.68	-301.4	-641.8	613.3	561.8	51.48	11.914			
7,600.0	6,824.4	7,585.9	6,864.3	29.5	27.6	93.63	-301.4	-741.7	613.3	557.3	55.93	10.965			
7,700.0	6,823.7	7,685.9	6,863.1	31.7	30.0	93.59	-301.4	-841.7	613.2	552.7	60.58	10.123			
7,800.0	6,823.1	7,785.9	6,862.0	34.0	32.4	93.55	-301.4	-941.7	613.2	547.8	65.38	9.380			
7,900.0	6,822.4	7,885.9	6,860.9	36.4	34.8	93.51	-301.4	-1,041.7	613.2	542.9	70.30	8.723			
8,000.0	6,821.7	7,985.9	6,859.8	38.8	37.4	93.47	-301.4	-1,141.7	613.1	537.8	75.31	8.141			
8,100.0	6,821.1	8,085.9	6,858.7	41.3	39.9	93.42	-301.4	-1,241.7	613.1	532.7	80.41	7.625			
8,200.0	6,820.4	8,185.9	6,857.6	43.9	42.5	93.38	-301.4	-1,341.7	613.1	527.5	85.57	7.165			
8,300.0	6,819.7	8,285.9	6,856.4	46.4	45.1	93.34	-301.4	-1,441.7	613.1	522.3	90.78	6.753			
8,400.0	6,819.1	8,385.9	6,855.3	49.0	47.8	93.30	-301.4	-1,541.7	613.0	517.0	96.04	6.383			
8,500.0	6,818.4	8,485.9	6,854.2	51.7	50.4	93.25	-301.4	-1,641.7	613.0	511.7	101.34	6.049			
8,600.0	6,817.8	8,585.9	6,853.1	54.3	53.1	93.21	-301.4	-1,741.7	613.0	506.3	106.67	5.747			
8,700.0	6,817.1	8,685.9	6,852.0	56.9	55.8	93.17	-301.4	-1,841.7	613.0	500.9	112.03	5.472			
8,800.0	6,816.4	8,785.9	6,850.9	59.6	58.5	93.13	-301.4	-1,941.7	612.9	495.5	117.41	5.221			
8,900.0	6,815.8	8,885.9	6,849.7	62.3	61.2	93.08	-301.4	-2,041.7	612.9	490.1	122.81	4.991			
9,000.0	6,815.1	8,985.9	6,848.6	65.0	63.9	93.04	-301.4	-2,141.6	612.9	484.7	128.23	4.779			
9,100.0	6,814.4	9,085.9	6,847.5	67.7	66.6	93.00	-301.4	-2,241.6	612.9	479.2	133.67	4.585			
9,200.0	6,813.8	9,185.9	6,846.4	70.4	69.3	92.96	-301.4	-2,341.6	612.8	473.7	139.12	4.405			
9,300.0	6,813.1	9,285.9	6,845.3	73.1	72.1	92.91	-301.4	-2,441.6	612.8	468.2	144.59	4.238			
9,400.0	6,812.5	9,385.9	6,844.2	75.8	74.8	92.87	-301.4	-2,541.6	612.8	462.7	150.06	4.084			
9,500.0	6,811.8	9,485.9	6,843.0	78.6	77.6	92.83	-301.4	-2,641.6	612.8	457.2	155.55	3.939			
9,600.0	6,811.1	9,585.9	6,841.9	81.3	80.3	92.79	-301.4	-2,741.6	612.8	451.7	161.05	3.805			
9,700.0	6,810.5	9,685.9	6,840.8	84.0	83.1	92.75	-301.4	-2,841.6	612.7	446.2	166.55	3.679			
9,800.0	6,809.8	9,785.9	6,839.7	86.8	85.8	92.70	-301.4	-2,941.6	612.7	440.6	172.06	3.561			
9,900.0	6,809.1	9,885.9	6,838.6	89.5	88.6	92.66	-301.4	-3,041.6	612.7	435.1	177.58	3.450			
10,000.0	6,808.5	9,985.9	6,837.5	92.3	91.4	92.62	-301.4	-3,141.6	612.7	429.6	183.11	3.346			

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)													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	Semi Major Axis	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
10,100.0	6,807.8	10,085.9	6,836.3	95.0	94.1	92.58		-301.4	-3,241.6	612.6	424.0	188.64	3.248	
10,200.0	6,807.1	10,185.9	6,835.2	97.8	96.9	92.53		-301.4	-3,341.6	612.6	418.5	194.17	3.155	
10,300.0	6,806.5	10,285.9	6,834.1	100.5	99.7	92.49		-301.4	-3,441.6	612.6	412.9	199.71	3.067	
10,400.0	6,805.8	10,385.9	6,833.0	103.3	102.4	92.45		-301.4	-3,541.5	612.6	407.3	205.26	2.984	
10,500.0	6,805.2	10,485.9	6,831.9	106.1	105.2	92.41		-301.4	-3,641.5	612.6	401.8	210.81	2.906	
10,600.0	6,804.5	10,585.9	6,830.8	108.8	108.0	92.36		-301.4	-3,741.5	612.5	396.2	216.36	2.831	
10,700.0	6,803.8	10,685.9	6,829.6	111.6	110.8	92.32		-301.4	-3,841.5	612.5	390.6	221.92	2.760	
10,800.0	6,803.2	10,785.9	6,828.5	114.4	113.5	92.28		-301.4	-3,941.5	612.5	385.0	227.48	2.693	
10,900.0	6,802.5	10,885.9	6,827.4	117.2	116.3	92.24		-301.4	-4,041.5	612.5	379.5	233.04	2.628	
11,000.0	6,801.8	10,985.9	6,826.3	119.9	119.1	92.19		-301.4	-4,141.5	612.5	373.9	238.60	2.567	
11,100.0	6,801.2	11,085.9	6,825.2	122.7	121.9	92.15		-301.4	-4,241.5	612.5	368.3	244.17	2.508	
11,200.0	6,800.5	11,185.9	6,824.1	125.5	124.7	92.11		-301.4	-4,341.5	612.4	362.7	249.74	2.452	
11,300.0	6,799.8	11,285.9	6,822.9	128.3	127.5	92.07		-301.4	-4,441.5	612.4	357.1	255.32	2.399	
11,400.0	6,799.2	11,385.9	6,821.8	131.0	130.3	92.02		-301.4	-4,541.5	612.4	351.5	260.89	2.347	
11,500.0	6,798.5	11,485.9	6,820.7	133.8	133.0	91.98		-301.4	-4,641.5	612.4	345.9	266.47	2.298	
11,600.0	6,797.9	11,585.9	6,819.6	136.6	135.8	91.94		-301.4	-4,741.5	612.4	340.3	272.05	2.251	
11,700.0	6,797.2	11,685.9	6,818.5	139.4	138.6	91.90		-301.4	-4,841.5	612.4	334.7	277.63	2.206	
11,800.0	6,796.5	11,785.9	6,817.3	142.2	141.4	91.85		-301.4	-4,941.4	612.3	329.1	283.21	2.162	
11,900.0	6,795.9	11,885.9	6,816.2	145.0	144.2	91.81		-301.4	-5,041.4	612.3	323.5	288.80	2.120	
12,000.0	6,795.2	11,985.9	6,815.1	147.7	147.0	91.77		-301.4	-5,141.4	612.3	317.9	294.38	2.080	
12,100.0	6,794.5	12,085.9	6,814.0	150.5	149.8	91.73		-301.4	-5,241.4	612.3	312.3	299.97	2.041	
12,200.0	6,793.9	12,185.9	6,812.9	153.3	152.6	91.68		-301.4	-5,341.4	612.3	306.7	305.56	2.004	
12,300.0	6,793.2	12,285.9	6,811.8	156.1	155.4	91.64		-301.4	-5,441.4	612.3	301.1	311.15	1.968	
12,400.0	6,792.6	12,385.9	6,810.6	158.9	158.2	91.60		-301.4	-5,541.4	612.3	295.5	316.74	1.933	
12,500.0	6,791.9	12,485.9	6,809.5	161.7	161.0	91.56		-301.4	-5,641.4	612.3	289.9	322.33	1.899	
12,600.0	6,791.2	12,585.8	6,808.4	164.5	163.8	91.51		-301.4	-5,741.4	612.2	284.3	327.92	1.867	
12,700.0	6,790.6	12,685.8	6,807.3	167.3	166.6	91.47		-301.4	-5,841.4	612.2	278.7	333.52	1.836	
12,800.0	6,789.9	12,785.8	6,806.2	170.1	169.4	91.43		-301.4	-5,941.4	612.2	273.1	339.11	1.805	
12,900.0	6,789.2	12,885.8	6,805.1	172.9	172.1	91.39		-301.4	-6,041.4	612.2	267.5	344.71	1.776	
13,000.0	6,788.6	12,985.8	6,803.9	175.7	174.9	91.35		-301.4	-6,141.4	612.2	261.9	350.31	1.748	
13,100.0	6,787.9	13,085.8	6,802.8	178.4	177.7	91.30		-301.4	-6,241.3	612.2	256.3	355.90	1.720	
13,200.0	6,787.2	13,185.8	6,801.7	181.2	180.5	91.26		-301.4	-6,341.3	612.2	250.7	361.50	1.693	
13,300.0	6,786.6	13,285.8	6,800.6	184.0	183.3	91.22		-301.4	-6,441.3	612.2	245.1	367.10	1.668	
13,400.0	6,785.9	13,385.8	6,799.5	186.8	186.1	91.18		-301.4	-6,541.3	612.2	239.5	372.70	1.642	
13,500.0	6,785.3	13,485.8	6,798.4	189.6	188.9	91.13		-301.4	-6,641.3	612.1	233.8	378.30	1.618	
13,600.0	6,784.6	13,585.8	6,797.2	192.4	191.7	91.09		-301.4	-6,741.3	612.1	228.2	383.90	1.595	
13,700.0	6,783.9	13,685.8	6,796.1	195.2	194.5	91.05		-301.4	-6,841.3	612.1	222.6	389.50	1.572	
13,800.0	6,783.3	13,785.8	6,795.0	198.0	197.3	91.01		-301.4	-6,941.3	612.1	217.0	395.11	1.549	
13,900.0	6,782.6	13,885.8	6,793.9	200.8	200.1	90.96		-301.4	-7,041.3	612.1	211.4	400.71	1.528	
13,961.7	6,782.2	13,947.6	6,793.2	202.5	201.9	90.94		-301.4	-7,103.0	612.1	207.9	404.17	1.514	
13,991.3	6,782.0	13,965.7	6,793.0	203.4	202.4	90.93		-301.4	-7,121.1	612.2	206.7	405.50	1.510 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)													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	Semi Major Axis	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	1.0	1.0	0.0	0.0	-43.69		43.7	-41.8	60.5	60.5	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-43.69		43.7	-41.8	60.5	60.2	0.23	266.297	
200.0	200.0	201.0	201.0	0.3	0.3	-43.69		43.7	-41.8	60.5	59.8	0.68	89.355 CC, ES	
300.0	300.0	301.0	301.0	0.5	0.6	153.76		43.7	-41.8	62.0	60.9	1.11	55.929	
400.0	399.8	400.8	400.8	0.8	0.8	155.71		43.7	-41.8	66.7	65.2	1.54	43.256	
500.0	499.5	500.5	500.5	1.0	1.0	158.40		43.7	-41.8	74.8	72.8	1.99	37.511	
600.0	598.7	599.7	599.7	1.3	1.2	161.30		43.7	-41.8	86.2	83.8	2.45	35.156	
700.0	697.5	698.5	698.5	1.6	1.5	164.06		43.7	-41.8	101.2	98.3	2.92	34.687	
800.0	795.8	796.8	796.8	2.0	1.7	166.45		43.7	-41.8	118.9	115.5	3.38	35.198	
900.0	894.0	895.0	895.0	2.4	1.9	168.26		43.7	-41.8	137.0	133.2	3.84	35.667	
1,000.0	992.3	993.3	993.3	2.8	2.1	169.65		43.7	-41.8	155.2	150.9	4.31	36.037	
1,100.0	1,090.6	1,097.4	1,097.4	3.2	2.3	170.89		42.3	-40.8	171.9	167.1	4.75	36.148	
1,200.0	1,188.9	1,203.0	1,202.8	3.6	2.5	172.09		37.7	-37.8	185.1	179.9	5.18	35.700	
1,300.0	1,287.1	1,309.4	1,308.8	4.0	2.7	173.34		29.8	-32.5	194.7	189.1	5.63	34.599	
1,400.0	1,385.4	1,412.3	1,410.9	4.5	3.0	174.61		19.5	-25.6	201.3	195.3	6.08	33.128	
1,500.0	1,483.7	1,512.0	1,509.9	4.9	3.2	175.78		9.2	-18.7	207.7	201.2	6.53	31.790	
1,600.0	1,582.0	1,611.7	1,608.8	5.3	3.5	176.89		-1.1	-11.8	214.1	207.1	7.00	30.605	
1,700.0	1,680.2	1,711.4	1,707.7	5.7	3.7	177.93		-11.4	-4.9	220.7	213.2	7.47	29.551	
1,800.0	1,778.5	1,811.1	1,806.7	6.1	4.0	178.90		-21.7	2.0	227.2	219.3	7.94	28.607	
1,900.0	1,876.8	1,910.8	1,905.6	6.6	4.3	179.83		-32.0	8.9	233.9	225.5	8.42	27.763	
2,000.0	1,975.0	2,010.5	2,004.5	7.0	4.6	-179.30		-42.3	15.8	240.6	231.7	8.91	26.997	
2,100.0	2,073.3	2,110.2	2,103.5	7.4	4.9	-178.48		-52.6	22.7	247.4	238.0	9.40	26.303	
2,200.0	2,171.6	2,210.0	2,202.4	7.8	5.2	-177.69		-62.9	29.5	254.2	244.3	9.90	25.670	
2,300.0	2,269.9	2,309.7	2,301.4	8.2	5.5	-176.95		-73.2	36.4	261.0	250.6	10.40	25.092	
2,400.0	2,368.1	2,409.4	2,400.3	8.7	5.8	-176.25		-83.5	43.3	267.9	257.0	10.91	24.561	
2,500.0	2,466.4	2,509.1	2,499.2	9.1	6.1	-175.59		-93.8	50.2	274.8	263.4	11.42	24.072	
2,600.0	2,564.7	2,608.8	2,598.2	9.5	6.4	-174.95		-104.1	57.1	281.8	269.9	11.93	23.620	
2,700.0	2,663.0	2,708.5	2,697.1	9.9	6.7	-174.35		-114.4	64.0	288.8	276.4	12.45	23.202	
2,800.0	2,761.2	2,808.2	2,796.0	10.4	7.0	-173.77		-124.7	70.9	295.8	282.9	12.97	22.814	
2,900.0	2,859.5	2,907.9	2,895.0	10.8	7.4	-173.23		-135.0	77.8	302.9	289.4	13.49	22.452	
3,000.0	2,957.8	3,007.6	2,993.9	11.2	7.7	-172.70		-145.2	84.7	310.0	296.0	14.02	22.115	
3,100.0	3,056.1	3,107.3	3,092.9	11.6	8.0	-172.20		-155.5	91.6	317.1	302.5	14.55	21.799	
3,200.0	3,154.3	3,207.1	3,191.8	12.0	8.3	-171.73		-165.8	98.5	324.2	309.1	15.08	21.504	
3,300.0	3,252.6	3,306.8	3,290.7	12.5	8.6	-171.27		-176.1	105.3	331.4	315.8	15.61	21.226	
3,400.0	3,350.9	3,406.5	3,389.7	12.9	9.0	-170.83		-186.4	112.2	338.5	322.4	16.15	20.965	
3,500.0	3,449.1	3,506.2	3,488.6	13.3	9.3	-170.41		-196.7	119.1	345.7	329.0	16.69	20.719	
3,600.0	3,547.4	3,605.9	3,587.5	13.7	9.6	-170.01		-207.0	126.0	352.9	335.7	17.23	20.487	
3,700.0	3,645.7	3,705.6	3,686.5	14.2	9.9	-169.62		-217.3	132.9	360.2	342.4	17.77	20.268	
3,800.0	3,744.0	3,805.3	3,785.4	14.6	10.3	-169.25		-227.6	139.8	367.4	349.1	18.31	20.061	
3,900.0	3,842.2	3,905.0	3,884.3	15.0	10.6	-168.89		-237.9	146.7	374.7	355.8	18.86	19.864	
4,000.0	3,940.5	4,004.7	3,983.3	15.4	10.9	-168.55		-248.2	153.6	381.9	362.5	19.41	19.678	
4,100.0	4,038.8	4,104.4	4,082.2	15.9	11.2	-168.22		-258.5	160.5	389.2	369.3	19.96	19.501	
4,200.0	4,137.1	4,204.2	4,181.2	16.3	11.5	-167.90		-268.8	167.4	396.5	376.0	20.51	19.332	
4,300.0	4,235.3	4,303.9	4,280.1	16.7	11.9	-167.60		-279.1	174.3	403.8	382.8	21.06	19.172	
4,400.0	4,333.6	4,403.6	4,379.0	17.1	12.2	-167.30		-289.4	181.2	411.1	389.5	21.62	19.019	
4,500.0	4,431.9	4,503.3	4,478.0	17.5	12.5	-167.01		-299.7	188.0	418.5	396.3	22.17	18.873	
4,600.0	4,530.1	4,603.0	4,576.9	18.0	12.9	-166.74		-310.0	194.9	425.8	403.1	22.73	18.734	
4,700.0	4,628.4	4,702.7	4,675.8	18.4	13.2	-166.47		-320.3	201.8	433.2	409.9	23.29	18.600	
4,800.0	4,726.7	4,802.4	4,774.8	18.8	13.5	-166.21		-330.6	208.7	440.5	416.7	23.85	18.473	
4,900.0	4,825.0	4,902.1	4,873.7	19.2	13.8	-165.97		-340.9	215.6	447.9	423.5	24.41	18.351	
5,000.0	4,923.2	5,001.8	4,972.6	19.7	14.2	-165.72		-351.2	222.5	455.3	430.3	24.97	18.234	

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)													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	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,021.5	5,101.5	5,071.6	20.1	14.5	-165.49	-361.5	229.4	462.6	437.1	25.53	18.121		
5,200.0	5,119.8	5,201.2	5,170.5	20.5	14.8	-165.27	-371.8	236.3	470.0	443.9	26.09	18.013		
5,300.0	5,218.1	5,301.0	5,269.5	20.9	15.1	-165.05	-382.1	243.2	477.4	450.8	26.66	17.910		
5,400.0	5,316.4	5,400.7	5,368.4	21.3	15.5	-164.84	-392.4	250.1	484.4	457.2	27.22	17.795		
5,500.0	5,415.2	5,500.6	5,467.5	21.6	15.8	-164.55	-402.8	257.0	488.6	460.8	27.75	17.604		
5,600.0	5,514.5	5,597.6	5,563.8	21.8	16.1	-164.15	-412.7	263.6	489.5	461.2	28.25	17.326		
5,700.0	5,614.2	5,685.0	5,650.8	22.0	16.3	-163.81	-420.1	268.6	488.8	460.2	28.63	17.073		
5,800.0	5,714.1	5,772.5	5,738.1	22.1	16.5	-163.53	-425.4	272.1	487.3	458.4	28.95	16.833		
5,900.0	5,814.1	5,860.1	5,825.6	22.3	16.6	-0.06	-428.4	274.1	485.1	447.7	37.40	12.970		
6,000.0	5,914.1	5,949.6	5,915.1	22.4	16.8	0.01	-429.2	274.6	484.2	446.6	37.64	12.864		
6,100.0	6,014.1	6,049.6	6,015.1	22.5	16.9	0.01	-429.2	274.6	484.2	446.3	37.90	12.777		
6,144.9	6,058.9	6,094.5	6,059.9	22.5	17.0	90.09	-429.2	274.6	484.2	454.2	30.04	16.119		
6,200.0	6,114.0	6,149.6	6,115.1	22.6	17.1	90.20	-429.2	274.5	484.2	454.0	30.23	16.017		
6,300.0	6,213.1	6,250.1	6,215.1	22.6	17.2	90.82	-429.2	266.4	484.3	453.7	30.53	15.861		
6,400.0	6,309.5	6,351.2	6,313.9	22.7	17.2	91.42	-429.2	245.0	484.4	453.7	30.70	15.779		
6,500.0	6,401.8	6,453.0	6,409.6	22.7	17.2	92.00	-429.2	210.5	484.5	453.7	30.77	15.745		
6,600.0	6,488.2	6,555.5	6,500.4	22.6	17.2	92.55	-429.2	163.2	484.7	453.9	30.85	15.714		
6,700.0	6,567.3	6,658.6	6,584.6	22.6	17.1	93.06	-429.2	103.8	484.9	453.9	31.05	15.616		
6,800.0	6,637.8	6,762.3	6,660.4	22.6	17.1	93.51	-429.2	33.2	485.1	453.6	31.57	15.367		
6,900.0	6,698.4	6,866.5	6,726.3	22.6	17.1	93.90	-429.2	-47.5	485.3	452.8	32.58	14.895		
7,000.0	6,748.1	6,971.2	6,780.8	22.7	17.0	94.22	-429.2	-136.7	485.5	451.3	34.25	14.175		
7,100.0	6,786.1	7,076.3	6,822.8	22.9	17.8	94.47	-429.2	-233.0	485.7	449.1	36.64	13.254		
7,200.0	6,811.7	7,181.6	6,851.2	23.3	19.4	94.63	-429.2	-334.3	485.8	446.1	39.73	12.228		
7,300.0	6,824.5	7,287.0	6,865.4	24.2	21.4	94.71	-429.2	-438.7	485.9	442.5	43.38	11.199		
7,400.0	6,825.7	7,389.5	6,867.3	25.6	23.4	94.79	-429.2	-541.1	485.9	438.6	47.37	10.259		
7,500.0	6,825.1	7,489.5	6,867.7	27.4	25.5	94.92	-429.2	-641.1	486.0	434.4	51.58	9.423		
7,600.0	6,824.4	7,589.5	6,868.2	29.5	27.8	95.05	-429.2	-741.1	486.1	430.1	56.03	8.676		
7,700.0	6,823.7	7,689.5	6,868.7	31.7	30.1	95.18	-429.2	-841.1	486.2	425.5	60.67	8.014		
7,800.0	6,823.1	7,789.5	6,869.1	34.0	32.6	95.31	-429.2	-941.1	486.3	420.9	65.46	7.430		
7,900.0	6,822.4	7,889.5	6,869.6	36.4	35.0	95.45	-429.2	-1,041.1	486.4	416.1	70.36	6.913		
8,000.0	6,821.7	7,989.5	6,870.0	38.8	37.5	95.58	-429.2	-1,141.1	486.5	411.2	75.36	6.456		
8,100.0	6,821.1	8,089.5	6,870.5	41.3	40.1	95.71	-429.2	-1,241.1	486.6	406.2	80.43	6.051		
8,200.0	6,820.4	8,189.5	6,870.9	43.9	42.7	95.84	-429.2	-1,341.1	486.7	401.2	85.56	5.689		
8,300.0	6,819.7	8,289.5	6,871.4	46.4	45.3	95.97	-429.2	-1,441.1	486.9	396.1	90.74	5.365		
8,400.0	6,819.1	8,389.4	6,871.8	49.0	47.9	96.10	-429.2	-1,541.1	487.0	391.0	95.97	5.074		
8,500.0	6,818.4	8,489.4	6,872.3	51.7	50.6	96.23	-429.2	-1,641.1	487.1	385.9	101.23	4.812		
8,600.0	6,817.8	8,589.4	6,872.7	54.3	53.3	96.36	-429.2	-1,741.0	487.2	380.7	106.52	4.574		
8,700.0	6,817.1	8,689.4	6,873.2	56.9	55.9	96.49	-429.2	-1,841.0	487.3	375.5	111.83	4.358		
8,800.0	6,816.4	8,789.4	6,873.6	59.6	58.6	96.62	-429.2	-1,941.0	487.5	370.3	117.16	4.161		
8,900.0	6,815.8	8,889.4	6,874.1	62.3	61.3	96.75	-429.2	-2,041.0	487.6	365.1	122.51	3.980		
9,000.0	6,815.1	8,989.4	6,874.6	65.0	64.1	96.88	-429.2	-2,141.0	487.7	359.9	127.88	3.814		
9,100.0	6,814.4	9,089.4	6,875.0	67.7	66.8	97.01	-429.2	-2,241.0	487.9	354.6	133.25	3.661		
9,200.0	6,813.8	9,189.4	6,875.5	70.4	69.5	97.14	-429.2	-2,341.0	488.0	349.4	138.64	3.520		
9,300.0	6,813.1	9,289.4	6,875.9	73.1	72.2	97.27	-429.2	-2,441.0	488.2	344.1	144.03	3.389		
9,400.0	6,812.5	9,389.4	6,876.4	75.8	75.0	97.40	-429.2	-2,541.0	488.3	338.9	149.44	3.268		
9,500.0	6,811.8	9,489.4	6,876.8	78.6	77.7	97.53	-429.2	-2,641.0	488.4	333.6	154.85	3.154		
9,600.0	6,811.1	9,589.4	6,877.3	81.3	80.5	97.66	-429.2	-2,741.0	488.6	328.3	160.26	3.049		
9,700.0	6,810.5	9,689.4	6,877.7	84.0	83.2	97.79	-429.2	-2,841.0	488.7	323.1	165.68	2.950		
9,800.0	6,809.8	9,789.4	6,878.2	86.8	86.0	97.92	-429.2	-2,941.0	488.9	317.8	171.10	2.857		
9,900.0	6,809.1	9,889.4	6,878.6	89.5	88.7	98.05	-429.2	-3,041.0	489.0	312.5	176.52	2.770		
10,000.0	6,808.5	9,989.3	6,879.1	92.3	91.5	98.18	-429.2	-3,140.9	489.2	307.3	181.95	2.689		

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	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	6,807.8	10,089.3	6,879.5	95.0	94.3	98.31	-429.2	-3,240.9	489.4	302.0	187.38	2.612		
10,200.0	6,807.1	10,189.3	6,880.0	97.8	97.0	98.44	-429.2	-3,340.9	489.5	296.7	192.80	2.539		
10,300.0	6,806.5	10,289.3	6,880.5	100.5	99.8	98.57	-429.2	-3,440.9	489.7	291.5	198.23	2.470		
10,400.0	6,805.8	10,389.3	6,880.9	103.3	102.6	98.70	-429.2	-3,540.9	489.9	286.2	203.66	2.405		
10,500.0	6,805.2	10,489.3	6,881.4	106.1	105.4	98.83	-429.2	-3,640.9	490.0	280.9	209.09	2.344		
10,600.0	6,804.5	10,589.3	6,881.8	108.8	108.1	98.96	-429.2	-3,740.9	490.2	275.7	214.51	2.285		
10,700.0	6,803.8	10,689.3	6,882.3	111.6	110.9	99.09	-429.2	-3,840.9	490.4	270.4	219.94	2.230		
10,800.0	6,803.2	10,789.3	6,882.7	114.4	113.7	99.21	-429.2	-3,940.9	490.6	265.2	225.36	2.177		
10,900.0	6,802.5	10,889.3	6,883.2	117.2	116.5	99.34	-429.2	-4,040.9	490.7	260.0	230.78	2.126		
11,000.0	6,801.8	10,989.3	6,883.6	119.9	119.3	99.47	-429.2	-4,140.9	490.9	254.7	236.20	2.078		
11,100.0	6,801.2	11,089.3	6,884.1	122.7	122.0	99.60	-429.2	-4,240.9	491.1	249.5	241.61	2.033		
11,200.0	6,800.5	11,189.3	6,884.5	125.5	124.8	99.73	-429.2	-4,340.9	491.3	244.3	247.03	1.989		
11,300.0	6,799.8	11,289.3	6,885.0	128.3	127.6	99.86	-429.2	-4,440.9	491.5	239.0	252.44	1.947		
11,400.0	6,799.2	11,389.3	6,885.4	131.0	130.4	99.99	-429.2	-4,540.8	491.7	233.8	257.84	1.907		
11,500.0	6,798.5	11,489.3	6,885.9	133.8	133.2	100.11	-429.2	-4,640.8	491.9	228.6	263.25	1.868		
11,600.0	6,797.9	11,589.2	6,886.4	136.6	136.0	100.24	-429.2	-4,740.8	492.1	223.4	268.65	1.832		
11,700.0	6,797.2	11,689.2	6,886.8	139.4	138.8	100.37	-429.2	-4,840.8	492.3	218.2	274.05	1.796		
11,800.0	6,796.5	11,789.2	6,887.3	142.2	141.5	100.50	-429.2	-4,940.8	492.5	213.0	279.44	1.762		
11,900.0	6,795.9	11,889.2	6,887.7	145.0	144.3	100.63	-429.2	-5,040.8	492.7	207.8	284.83	1.730		
12,000.0	6,795.2	11,989.2	6,888.2	147.7	147.1	100.75	-429.2	-5,140.8	492.9	202.7	290.21	1.698		
12,100.0	6,794.5	12,089.2	6,888.6	150.5	149.9	100.88	-429.2	-5,240.8	493.1	197.5	295.59	1.668		
12,200.0	6,793.9	12,189.2	6,889.1	153.3	152.7	101.01	-429.2	-5,340.8	493.3	192.3	300.97	1.639		
12,300.0	6,793.2	12,289.2	6,889.5	156.1	155.5	101.13	-429.2	-5,440.8	493.5	187.2	306.34	1.611		
12,400.0	6,792.6	12,389.2	6,890.0	158.9	158.3	101.26	-429.2	-5,540.8	493.7	182.0	311.71	1.584		
12,500.0	6,791.9	12,489.2	6,890.4	161.7	161.1	101.39	-429.2	-5,640.8	494.0	176.9	317.07	1.558		
12,600.0	6,791.2	12,589.2	6,890.9	164.5	163.9	101.52	-429.2	-5,740.8	494.2	171.7	322.42	1.533		
12,700.0	6,790.6	12,689.2	6,891.3	167.3	166.7	101.64	-429.2	-5,840.7	494.4	166.6	327.78	1.508		
12,800.0	6,789.9	12,789.2	6,891.8	170.1	169.5	101.77	-429.2	-5,940.7	494.6	161.5	333.12	1.485 Level 3		
12,900.0	6,789.2	12,834.6	6,892.0	172.9	170.7	101.83	-429.2	-5,986.1	497.9	160.8	337.04	1.477 Level 3, SF		
13,000.0	6,788.6	12,834.6	6,892.0	175.7	170.7	101.83	-429.2	-5,986.1	518.7	178.9	339.77	1.526		
13,100.0	6,787.9	12,834.6	6,892.0	178.4	170.7	101.83	-429.2	-5,986.1	556.9	214.4	342.52	1.626		
13,200.0	6,787.2	12,834.6	6,892.0	181.2	170.7	101.83	-429.2	-5,986.1	609.3	264.1	345.26	1.765		
13,300.0	6,786.6	12,834.6	6,892.0	184.0	170.7	101.83	-429.2	-5,986.1	672.6	324.6	348.00	1.933		
13,400.0	6,785.9	12,834.6	6,892.0	186.8	170.7	101.83	-429.2	-5,986.1	744.0	393.3	350.74	2.121		
13,500.0	6,785.3	12,834.6	6,892.0	189.6	170.7	101.83	-429.2	-5,986.1	821.4	467.9	353.48	2.324		
13,600.0	6,784.6	12,834.6	6,892.0	192.4	170.7	101.83	-429.2	-5,986.1	903.3	547.0	356.22	2.536		
13,700.0	6,783.9	12,834.6	6,892.0	195.2	170.7	101.83	-429.2	-5,986.1	988.4	629.5	358.96	2.754		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-434 - Wellbore #1 - Plan #1 (9-4-14)											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 (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
2,600.0	2,564.7	2,687.1	2,670.6	9.5	7.2	17.86	-1,347.7	106.9	978.2	965.3	12.87	76.012			
2,700.0	2,663.0	2,782.3	2,764.6	9.9	7.5	17.73	-1,335.1	114.4	947.6	934.2	13.39	70.759			
2,800.0	2,761.2	2,877.5	2,858.7	10.4	7.8	17.60	-1,322.6	121.9	917.0	903.1	13.92	65.898			
2,900.0	2,859.5	2,972.6	2,952.8	10.8	8.2	17.46	-1,310.0	129.4	886.5	872.0	14.44	61.388			
3,000.0	2,957.8	3,067.8	3,046.8	11.2	8.5	17.31	-1,297.5	136.9	855.9	840.9	14.97	57.192			
3,100.0	3,056.1	3,163.0	3,140.9	11.6	8.8	17.15	-1,284.9	144.4	825.3	809.9	15.49	53.280			
3,200.0	3,154.3	3,258.2	3,234.9	12.0	9.2	16.97	-1,272.4	151.8	794.8	778.8	16.02	49.623			
3,300.0	3,252.6	3,353.4	3,329.0	12.5	9.5	16.78	-1,259.8	159.3	764.3	747.7	16.54	46.199			
3,400.0	3,350.9	3,448.6	3,423.1	12.9	9.8	16.58	-1,247.3	166.8	733.7	716.7	17.07	42.986			
3,500.0	3,449.1	3,543.8	3,517.1	13.3	10.2	16.36	-1,234.7	174.3	703.2	685.6	17.60	39.965			
3,600.0	3,547.4	3,639.0	3,611.2	13.7	10.5	16.11	-1,222.2	181.8	672.7	654.6	18.12	37.120			
3,700.0	3,645.7	3,734.2	3,705.3	14.2	10.8	15.85	-1,209.6	189.2	642.2	623.5	18.65	34.435			
3,800.0	3,744.0	3,829.4	3,799.3	14.6	11.2	15.56	-1,197.1	196.7	611.7	592.5	19.18	31.899			
3,900.0	3,842.2	3,924.6	3,893.4	15.0	11.5	15.23	-1,184.5	204.2	581.2	561.5	19.70	29.499			
4,000.0	3,940.5	4,019.7	3,987.5	15.4	11.8	14.88	-1,172.0	211.7	550.8	530.6	20.23	27.224			
4,100.0	4,038.8	4,114.9	4,081.5	15.9	12.2	14.48	-1,159.4	219.2	520.4	499.6	20.76	25.066			
4,200.0	4,137.1	4,210.1	4,175.6	16.3	12.5	14.03	-1,146.9	226.7	490.0	468.7	21.29	23.016			
4,300.0	4,235.3	4,305.3	4,269.6	16.7	12.9	13.52	-1,134.3	234.1	459.6	437.8	21.82	21.065			
4,400.0	4,333.6	4,400.5	4,363.7	17.1	13.2	12.94	-1,121.8	241.6	429.2	406.9	22.35	19.207			
4,500.0	4,431.9	4,495.7	4,457.8	17.5	13.5	12.27	-1,109.2	249.1	399.0	376.1	22.88	17.436			
4,600.0	4,530.1	4,590.9	4,551.8	18.0	13.9	11.49	-1,096.7	256.6	368.7	345.3	23.42	15.746			
4,700.0	4,628.4	4,678.6	4,638.7	18.4	14.2	10.77	-1,086.1	262.9	339.5	315.6	23.90	14.205			
4,800.0	4,726.7	4,766.9	4,726.4	18.8	14.4	10.23	-1,077.7	267.9	312.7	288.3	24.35	12.841			
4,900.0	4,825.0	4,856.4	4,815.6	19.2	14.6	9.94	-1,071.5	271.6	288.3	263.5	24.78	11.632			
5,000.0	4,923.2	4,947.0	4,906.1	19.7	14.7	9.98	-1,067.7	273.9	266.3	241.1	25.20	10.566			
5,100.0	5,021.5	5,038.6	4,997.7	20.1	14.9	10.45	-1,066.4	274.6	246.7	221.1	25.60	9.637			
5,200.0	5,119.8	5,136.7	5,095.8	20.5	15.0	11.29	-1,066.4	274.6	228.6	202.5	26.04	8.777			
5,300.0	5,218.1	5,235.0	5,194.1	20.9	15.2	12.28	-1,066.4	274.6	210.4	183.9	26.50	7.941			
5,400.0	5,316.4	5,333.3	5,292.4	21.3	15.3	13.38	-1,066.4	274.6	192.8	165.7	27.01	7.137			
5,500.0	5,415.2	5,432.2	5,391.2	21.6	15.5	14.44	-1,066.4	274.6	178.0	150.5	27.51	6.472			
5,600.0	5,514.5	5,531.5	5,490.5	21.8	15.7	15.38	-1,066.4	274.6	166.7	138.7	27.98	5.959			
5,700.0	5,614.2	5,631.1	5,590.2	22.0	15.8	16.12	-1,066.4	274.6	158.8	130.4	28.41	5.589			
5,800.0	5,714.1	5,731.0	5,690.1	22.1	16.0	16.58	-1,066.4	274.6	154.2	125.5	28.80	5.356			
5,900.0	5,814.1	5,831.0	5,790.1	22.3	16.2	179.98	-1,066.4	274.6	153.0	115.9	37.13	4.121			
6,000.0	5,914.1	5,931.0	5,890.1	22.4	16.3	179.98	-1,066.4	274.6	153.0	115.6	37.41	4.091			
6,100.0	6,014.1	6,031.0	5,990.1	22.5	16.5	179.98	-1,066.4	274.6	153.0	115.3	37.69	4.060 CC			
6,149.0	6,063.0	6,080.0	6,039.0	22.5	16.6	-90.32	-1,066.4	274.6	153.0	123.0	30.01	5.098			
6,200.0	6,114.0	6,130.9	6,090.0	22.6	16.7	-90.68	-1,066.4	274.6	153.0	122.8	30.18	5.071			
6,300.0	6,213.1	6,231.3	6,190.2	22.6	16.8	-94.03	-1,066.4	270.3	153.4	123.1	30.33	5.057			
6,400.0	6,309.5	6,332.9	6,290.3	22.7	16.9	-97.39	-1,066.4	252.8	154.3	123.9	30.41	5.073			
6,500.0	6,401.8	6,435.8	6,388.3	22.7	16.9	-100.59	-1,066.4	221.7	155.7	125.2	30.45	5.113			
6,600.0	6,488.2	6,540.0	6,482.3	22.6	16.9	-103.58	-1,066.4	177.1	157.4	127.0	30.47	5.166			
6,700.0	6,567.3	6,645.3	6,570.4	22.6	16.9	-106.28	-1,066.4	119.4	159.4	128.9	30.55	5.218			
6,800.0	6,637.8	6,751.8	6,650.5	22.6	16.9	-108.65	-1,066.4	49.4	161.5	130.7	30.81	5.242			
6,900.0	6,698.4	6,859.4	6,720.7	22.6	16.9	-110.66	-1,066.4	-32.0	163.6	132.1	31.42	5.205			
7,000.0	6,748.1	6,967.8	6,779.2	22.7	17.0	-112.28	-1,066.4	-123.1	165.4	132.8	32.56	5.080			
7,100.0	6,786.1	7,077.0	6,824.5	22.9	18.3	-113.51	-1,066.4	-222.4	166.9	132.5	34.33	4.861			
7,200.0	6,811.7	7,186.7	6,855.4	23.3	20.0	-114.33	-1,066.4	-327.6	167.9	131.1	36.80	4.563			
7,300.0	6,824.5	7,296.8	6,870.9	24.2	21.9	-114.73	-1,066.4	-436.5	168.5	128.6	39.91	4.221			
7,400.0	6,825.7	7,401.6	6,872.7	25.6	24.0	-114.89	-1,066.4	-541.3	168.7	125.2	43.45	3.882			
7,500.0	6,825.1	7,501.6	6,872.7	27.4	26.1	-115.10	-1,066.4	-641.3	169.0	121.7	47.23	3.578			

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-434 - Wellbore #1 - Plan #1 (9-4-14)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,600.0	6,824.4	7,601.6	6,872.8	29.5	28.4	-115.31	-1,066.4	-741.3	169.3	118.0	51.22	3.305	
7,700.0	6,823.7	7,701.6	6,872.8	31.7	30.7	-115.53	-1,066.4	-841.3	169.6	114.2	55.38	3.062	
7,800.0	6,823.1	7,801.6	6,872.8	34.0	33.1	-115.74	-1,066.4	-941.3	169.9	110.2	59.65	2.848	
7,900.0	6,822.4	7,901.6	6,872.9	36.4	35.6	-115.95	-1,066.4	-1,041.3	170.2	106.2	64.02	2.658	
8,000.0	6,821.7	8,001.6	6,872.9	38.8	38.1	-116.16	-1,066.4	-1,141.3	170.5	102.0	68.47	2.490	
8,100.0	6,821.1	8,101.6	6,872.9	41.3	40.6	-116.37	-1,066.4	-1,241.3	170.8	97.8	72.96	2.341	
8,200.0	6,820.4	8,201.6	6,873.0	43.9	43.2	-116.58	-1,066.4	-1,341.3	171.1	93.6	77.51	2.208	
8,300.0	6,819.7	8,301.6	6,873.0	46.4	45.8	-116.79	-1,066.4	-1,441.3	171.4	89.3	82.08	2.088	
8,400.0	6,819.1	8,401.6	6,873.0	49.0	48.4	-117.00	-1,066.4	-1,541.3	171.7	85.1	86.68	1.981	
8,500.0	6,818.4	8,501.6	6,873.1	51.7	51.1	-117.21	-1,066.4	-1,641.3	172.0	80.8	91.30	1.885	
8,600.0	6,817.8	8,601.6	6,873.1	54.3	53.7	-117.41	-1,066.4	-1,741.3	172.4	76.4	95.92	1.797	
8,700.0	6,817.1	8,701.6	6,873.2	56.9	56.4	-117.62	-1,066.4	-1,841.3	172.7	72.1	100.56	1.717	
8,800.0	6,816.4	8,801.6	6,873.2	59.6	59.1	-117.82	-1,066.4	-1,941.3	173.0	67.8	105.20	1.645	
8,900.0	6,815.8	8,901.6	6,873.2	62.3	61.8	-118.03	-1,066.4	-2,041.3	173.3	63.5	109.85	1.578	
9,000.0	6,815.1	9,001.6	6,873.3	65.0	64.5	-118.23	-1,066.4	-2,141.3	173.7	59.2	114.49	1.517	
9,100.0	6,814.4	9,101.6	6,873.3	67.7	67.2	-118.43	-1,066.4	-2,241.3	174.0	54.9	119.13	1.461 Level 3	
9,200.0	6,813.8	9,201.6	6,873.3	70.4	70.0	-118.64	-1,066.4	-2,341.2	174.3	50.6	123.76	1.409 Level 3	
9,300.0	6,813.1	9,301.6	6,873.4	73.1	72.7	-118.84	-1,066.4	-2,441.2	174.7	46.3	128.39	1.361 Level 3	
9,400.0	6,812.5	9,401.6	6,873.4	75.8	75.4	-119.04	-1,066.4	-2,541.2	175.0	42.0	133.01	1.316 Level 3	
9,500.0	6,811.8	9,501.6	6,873.4	78.6	78.2	-119.24	-1,066.4	-2,641.2	175.4	37.7	137.62	1.274 Level 3	
9,600.0	6,811.1	9,601.6	6,873.5	81.3	80.9	-119.43	-1,066.4	-2,741.2	175.7	33.5	142.22	1.235 Level 2	
9,700.0	6,810.5	9,701.6	6,873.5	84.0	83.7	-119.63	-1,066.4	-2,841.2	176.0	29.2	146.81	1.199 Level 2	
9,800.0	6,809.8	9,801.6	6,873.5	86.8	86.4	-119.83	-1,066.4	-2,941.2	176.4	25.0	151.39	1.165 Level 2	
9,900.0	6,809.1	9,901.6	6,873.6	89.5	89.2	-120.03	-1,066.4	-3,041.2	176.7	20.8	155.96	1.133 Level 2	
10,000.0	6,808.5	10,001.6	6,873.6	92.3	91.9	-120.22	-1,066.4	-3,141.2	177.1	16.6	160.52	1.103 Level 2	
10,100.0	6,807.8	10,101.6	6,873.6	95.0	94.7	-120.42	-1,066.4	-3,241.2	177.4	12.4	165.06	1.075 Level 2	
10,200.0	6,807.1	10,201.6	6,873.7	97.8	97.5	-120.61	-1,066.4	-3,341.2	177.8	8.2	169.59	1.048 Level 2	
10,300.0	6,806.5	10,301.6	6,873.7	100.5	100.2	-120.80	-1,066.4	-3,441.2	178.1	4.0	174.10	1.023 Level 2	
10,400.0	6,805.8	10,401.6	6,873.7	103.3	103.0	-121.00	-1,066.4	-3,541.2	178.5	-0.1	178.60	0.999 Level 1	
10,500.0	6,805.2	10,501.6	6,873.8	106.1	105.8	-121.19	-1,066.4	-3,641.2	178.9	-4.2	183.09	0.977 Level 1	
10,600.0	6,804.5	10,601.6	6,873.8	108.8	108.5	-121.38	-1,066.4	-3,741.2	179.2	-8.3	187.56	0.956 Level 1	
10,700.0	6,803.8	10,701.6	6,873.9	111.6	111.3	-121.57	-1,066.4	-3,841.2	179.6	-12.4	192.01	0.935 Level 1	
10,800.0	6,803.2	10,801.6	6,873.9	114.4	114.1	-121.76	-1,066.4	-3,941.2	180.0	-16.5	196.46	0.916 Level 1	
10,900.0	6,802.5	10,901.6	6,873.9	117.2	116.9	-121.95	-1,066.4	-4,041.2	180.3	-20.6	200.88	0.898 Level 1	
11,000.0	6,801.8	11,001.6	6,874.0	119.9	119.7	-122.13	-1,066.4	-4,141.2	180.7	-24.6	205.29	0.880 Level 1	
11,100.0	6,801.2	11,101.6	6,874.0	122.7	122.4	-122.32	-1,066.4	-4,241.2	181.1	-28.6	209.68	0.864 Level 1	
11,200.0	6,800.5	11,201.6	6,874.0	125.5	125.2	-122.51	-1,066.4	-4,341.2	181.4	-32.6	214.06	0.848 Level 1	
11,300.0	6,799.8	11,301.5	6,874.1	128.3	128.0	-122.69	-1,066.4	-4,441.2	181.8	-36.6	218.42	0.832 Level 1	
11,400.0	6,799.2	11,401.5	6,874.1	131.0	130.8	-122.88	-1,066.4	-4,541.2	182.2	-40.6	222.76	0.818 Level 1	
11,500.0	6,798.5	11,501.5	6,874.1	133.8	133.6	-123.06	-1,066.4	-4,641.2	182.6	-44.5	227.09	0.804 Level 1	
11,600.0	6,797.9	11,601.5	6,874.2	136.6	136.4	-123.25	-1,066.4	-4,741.2	183.0	-48.4	231.40	0.791 Level 1	
11,700.0	6,797.2	11,701.5	6,874.2	139.4	139.2	-123.43	-1,066.4	-4,841.2	183.3	-52.4	235.70	0.778 Level 1	
11,800.0	6,796.5	11,801.5	6,874.2	142.2	142.0	-123.61	-1,066.4	-4,941.2	183.7	-56.2	239.98	0.766 Level 1	
11,900.0	6,795.9	11,901.5	6,874.3	145.0	144.7	-123.79	-1,066.4	-5,041.2	184.1	-60.1	244.24	0.754 Level 1	
12,000.0	6,795.2	12,001.5	6,874.3	147.7	147.5	-123.97	-1,066.4	-5,141.2	184.5	-64.0	248.48	0.743 Level 1	
12,100.0	6,794.5	12,101.5	6,874.3	150.5	150.3	-124.15	-1,066.4	-5,241.2	184.9	-67.8	252.71	0.732 Level 1	
12,200.0	6,793.9	12,201.5	6,874.4	153.3	153.1	-124.33	-1,066.4	-5,341.2	185.3	-71.6	256.92	0.721 Level 1	
12,300.0	6,793.2	12,301.5	6,874.4	156.1	155.9	-124.51	-1,066.4	-5,441.2	185.7	-75.4	261.11	0.711 Level 1	
12,400.0	6,792.6	12,401.5	6,874.4	158.9	158.7	-124.68	-1,066.4	-5,541.2	186.1	-79.2	265.29	0.701 Level 1	
12,500.0	6,791.9	12,501.5	6,874.5	161.7	161.5	-124.86	-1,066.4	-5,641.2	186.5	-83.0	269.45	0.692 Level 1	
12,600.0	6,791.2	12,601.5	6,874.5	164.5	164.3	-125.04	-1,066.4	-5,741.2	186.9	-86.7	273.59	0.683 Level 1	

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 LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-434 - Wellbore #1 - Plan #1 (9-4-14)													<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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
12,700.0	6,790.6	12,701.5	6,874.5	167.3	167.1	-125.21	-1,066.4	-5,841.2	187.3	-90.4	277.71	0.674	Level 1	
12,800.0	6,789.9	12,801.5	6,874.6	170.1	169.9	-125.38	-1,066.4	-5,941.2	187.7	-94.1	281.82	0.666	Level 1	
12,900.0	6,789.2	12,901.5	6,874.6	172.9	172.7	-125.56	-1,066.4	-6,041.2	188.1	-97.8	285.91	0.658	Level 1	
13,000.0	6,788.6	13,001.5	6,874.7	175.7	175.5	-125.73	-1,066.4	-6,141.2	188.5	-101.5	289.99	0.650	Level 1	
13,100.0	6,787.9	13,101.5	6,874.7	178.4	178.3	-125.90	-1,066.4	-6,241.2	188.9	-105.1	294.04	0.642	Level 1	
13,200.0	6,787.2	13,201.5	6,874.7	181.2	181.1	-126.07	-1,066.4	-6,341.2	189.3	-108.8	298.08	0.635	Level 1	
13,300.0	6,786.6	13,301.5	6,874.8	184.0	183.9	-126.24	-1,066.4	-6,441.1	189.7	-112.4	302.11	0.628	Level 1	
13,400.0	6,785.9	13,401.5	6,874.8	186.8	186.7	-126.41	-1,066.4	-6,541.1	190.1	-116.0	306.11	0.621	Level 1	
13,500.0	6,785.3	13,501.5	6,874.8	189.6	189.5	-126.58	-1,066.4	-6,641.1	190.6	-119.5	310.10	0.614	Level 1	
13,600.0	6,784.6	13,601.5	6,874.9	192.4	192.3	-126.75	-1,066.4	-6,741.1	191.0	-123.1	314.07	0.608	Level 1	
13,700.0	6,783.9	13,701.5	6,874.9	195.2	195.1	-126.92	-1,066.4	-6,841.1	191.4	-126.6	318.03	0.602	Level 1	
13,800.0	6,783.3	13,801.5	6,874.9	198.0	197.9	-127.09	-1,066.4	-6,941.1	191.8	-130.2	321.97	0.596	Level 1	
13,900.0	6,782.6	13,901.5	6,875.0	200.8	200.7	-127.25	-1,066.4	-7,041.1	192.2	-133.7	325.89	0.590	Level 1	
13,991.3	6,782.0	13,992.8	6,875.0	203.4	203.2	-127.40	-1,066.4	-7,132.4	192.6	-136.8	329.45	0.585	Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 2C (Vert.) - Wellbore #1 - Design #1												<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 (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,100.0	6,794.5	6,802.5	6,802.5	150.5	15.2	90.75	-472.9	-6,106.7	971.2	805.7	165.46	5.869	
12,200.0	6,793.9	6,801.9	6,801.9	153.3	15.2	90.66	-472.9	-6,106.7	883.2	715.0	168.26	5.249	
12,300.0	6,793.2	6,801.2	6,801.2	156.1	15.2	90.57	-472.9	-6,106.7	798.1	627.1	171.05	4.666	
12,400.0	6,792.6	6,800.6	6,800.6	158.9	15.2	90.49	-472.9	-6,106.7	716.9	543.0	173.84	4.124	
12,500.0	6,791.9	6,799.9	6,799.9	161.7	15.2	90.40	-472.9	-6,106.7	640.9	464.3	176.63	3.629	
12,600.0	6,791.2	6,799.2	6,799.2	164.5	15.2	90.32	-472.9	-6,106.7	572.4	393.0	179.42	3.190	
12,700.0	6,790.6	6,798.6	6,798.6	167.3	15.2	90.23	-472.9	-6,106.7	514.4	332.2	182.22	2.823	
12,800.0	6,789.9	6,797.9	6,797.9	170.1	15.2	90.14	-472.9	-6,106.7	470.6	285.6	185.01	2.544	
12,900.0	6,789.2	6,797.2	6,797.2	172.9	15.2	90.06	-472.9	-6,106.7	445.4	257.6	187.80	2.372	
12,965.5	6,788.8	6,796.8	6,796.8	174.7	15.2	90.00	-472.9	-6,106.7	440.5	250.9	189.63	2.323 CC, ES	
13,000.0	6,788.6	6,796.6	6,796.6	175.7	15.2	89.97	-472.9	-6,106.7	441.9	251.3	190.60	2.318 SF	
13,100.0	6,787.9	6,795.9	6,795.9	178.4	15.2	89.88	-472.9	-6,106.7	460.6	267.2	193.39	2.382	
13,200.0	6,787.2	6,795.2	6,795.2	181.2	15.2	89.80	-472.9	-6,106.7	499.0	302.9	196.18	2.544	
13,300.0	6,786.6	6,794.6	6,794.6	184.0	15.2	89.71	-472.9	-6,106.7	553.1	354.1	198.98	2.780	
13,400.0	6,785.9	6,793.9	6,793.9	186.8	15.2	89.63	-472.9	-6,106.7	618.7	417.0	201.77	3.067	
13,500.0	6,785.3	6,793.3	6,793.3	189.6	15.2	89.54	-472.9	-6,106.7	692.6	488.0	204.56	3.386	
13,600.0	6,784.6	6,792.6	6,792.6	192.4	15.2	89.45	-472.9	-6,106.7	772.4	565.0	207.35	3.725	
13,700.0	6,783.9	6,791.9	6,791.9	195.2	15.2	89.37	-472.9	-6,106.7	856.4	646.3	210.15	4.075	
13,800.0	6,783.3	6,791.3	6,791.3	198.0	15.2	89.28	-472.9	-6,106.7	943.6	730.7	212.94	4.431	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design      Noffsinger Pad Sec.2-T5N-R65W -   Noffsinger 2VD - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 700-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)			
11,000.0	6,801.8	6,962.7	6,828.9	119.9	23.3	97.50	-722.5	-5,056.3	935.0	793.3	141.68	6.599		
11,100.0	6,801.2	6,960.1	6,826.3	122.7	23.3	96.72	-722.5	-5,056.4	837.3	692.7	144.63	5.789		
11,200.0	6,800.5	6,957.5	6,823.6	125.5	23.3	95.94	-722.5	-5,056.4	740.4	592.8	147.57	5.017		
11,300.0	6,799.8	6,954.8	6,821.0	128.3	23.3	95.15	-722.5	-5,056.5	644.3	493.8	150.49	4.281		
11,400.0	6,799.2	6,952.1	6,818.3	131.0	23.3	94.36	-722.5	-5,056.5	549.6	396.2	153.40	3.583		
11,500.0	6,798.5	6,949.5	6,815.6	133.8	23.3	93.56	-722.5	-5,056.6	457.2	300.9	156.28	2.926		
11,600.0	6,797.9	6,946.8	6,812.9	136.6	23.3	92.75	-722.5	-5,056.6	368.8	209.6	159.14	2.317		
11,700.0	6,797.2	6,944.0	6,810.2	139.4	23.3	91.92	-722.5	-5,056.7	287.9	125.9	161.98	1.778		
11,800.0	6,796.5	6,941.3	6,807.5	142.2	23.3	91.12	-722.4	-5,056.7	223.2	58.4	164.80	1.354	Level 3	
11,900.0	6,795.9	6,938.7	6,804.8	145.0	23.3	90.32	-722.4	-5,056.8	191.6	24.0	167.58	1.143	Level 2	
11,915.5	6,795.8	6,938.3	6,804.4	145.4	23.3	90.20	-722.4	-5,056.8	191.0	22.9	168.01	1.137	Level 2, CC, ES, SF	
12,000.0	6,795.2	6,936.1	6,802.2	147.7	23.3	89.54	-722.4	-5,056.8	208.8	38.4	170.34	1.226	Level 2	
12,100.0	6,794.5	6,933.5	6,799.7	150.5	23.3	88.78	-722.4	-5,056.9	265.4	92.4	173.07	1.534		
12,200.0	6,793.9	6,931.1	6,797.2	153.3	23.3	88.04	-722.4	-5,056.9	342.5	166.7	175.78	1.949		
12,300.0	6,793.2	6,928.6	6,794.8	156.1	23.3	87.32	-722.4	-5,057.0	429.1	250.7	178.46	2.405		
12,400.0	6,792.6	6,926.3	6,792.5	158.9	23.3	86.61	-722.4	-5,057.0	520.6	339.4	181.11	2.874		
12,500.0	6,791.9	6,924.0	6,790.1	161.7	23.3	85.92	-722.4	-5,057.1	614.6	430.9	183.74	3.345		
12,600.0	6,791.2	6,921.7	6,787.9	164.5	23.3	85.25	-722.4	-5,057.1	710.3	524.0	186.35	3.812		
12,700.0	6,790.6	6,919.5	6,785.7	167.3	23.3	84.59	-722.4	-5,057.2	807.1	618.2	188.93	4.272		
12,800.0	6,789.9	6,917.4	6,783.5	170.1	23.3	83.96	-722.3	-5,057.2	904.5	713.0	191.50	4.723		



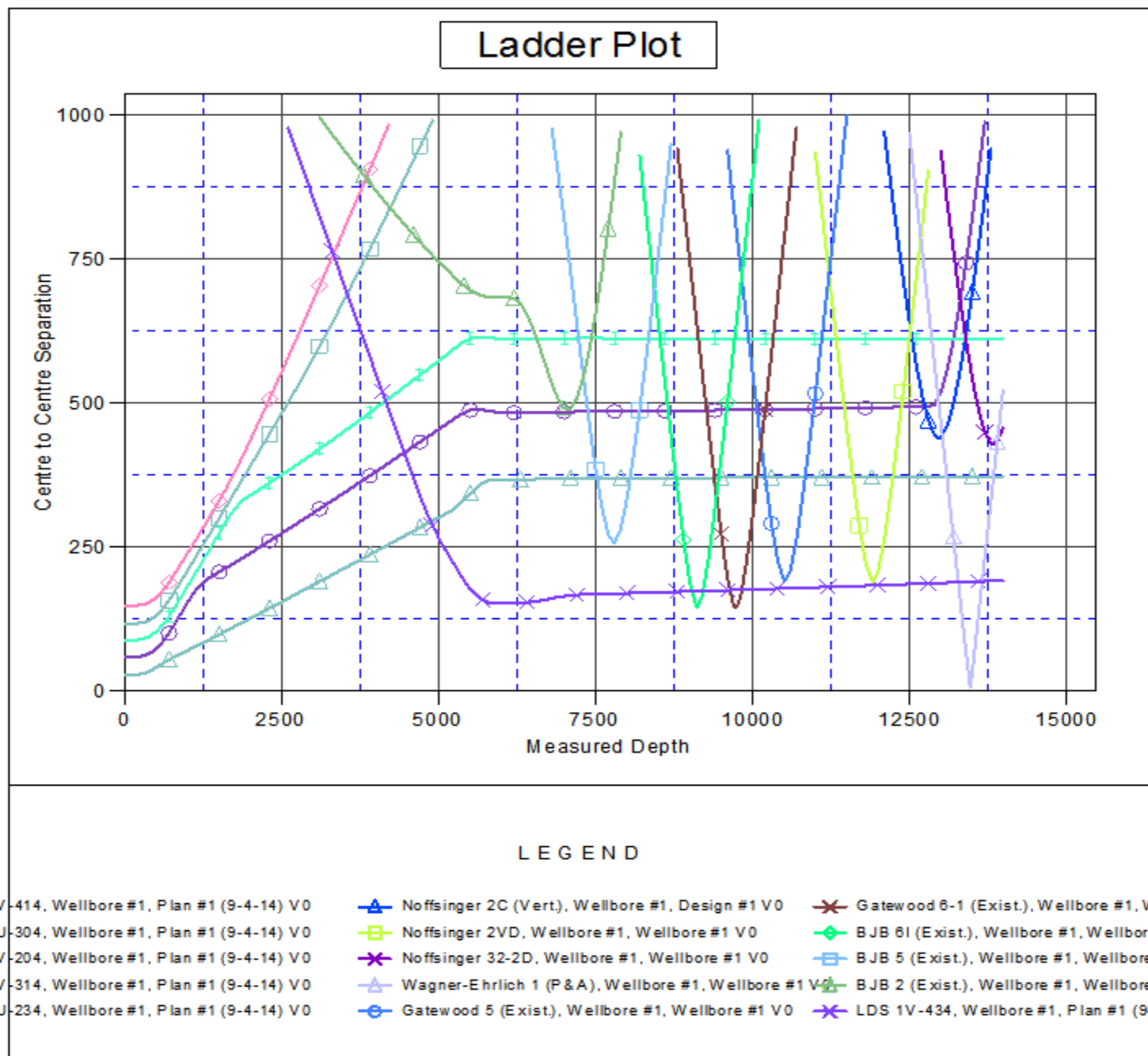
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 32-2D - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 668-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
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	
13,000.0	6,788.6	6,937.3	6,772.2	175.7	25.7	-87.48	-1,342.4	-6,975.4	938.4	741.8	196.61	4.773	
13,100.0	6,787.9	6,937.8	6,772.6	178.4	25.7	-87.54	-1,342.5	-6,975.4	850.7	651.3	199.41	4.266	
13,200.0	6,787.2	6,938.2	6,773.1	181.2	25.7	-87.60	-1,342.5	-6,975.4	766.0	563.8	202.21	3.788	
13,300.0	6,786.6	6,938.7	6,773.5	184.0	25.7	-87.66	-1,342.5	-6,975.4	685.5	480.5	205.01	3.344	
13,400.0	6,785.9	6,939.1	6,774.0	186.8	25.7	-87.73	-1,342.5	-6,975.4	610.8	403.0	207.81	2.939	
13,500.0	6,785.3	6,939.6	6,774.5	189.6	25.7	-87.79	-1,342.5	-6,975.4	544.2	333.6	210.61	2.584	
13,600.0	6,784.6	6,940.1	6,775.0	192.4	25.7	-87.86	-1,342.5	-6,975.4	489.2	275.8	213.42	2.292	
13,700.0	6,783.9	6,940.6	6,775.5	195.2	25.7	-87.92	-1,342.6	-6,975.4	450.0	233.7	216.22	2.081	
13,800.0	6,783.3	6,941.1	6,776.0	198.0	25.7	-87.99	-1,342.6	-6,975.4	430.8	211.8	219.02	1.967	
13,834.3	6,783.0	6,941.3	6,776.2	199.0	25.7	-88.02	-1,342.6	-6,975.4	429.4	209.5	219.99	1.952 CC, ES, SF	
13,900.0	6,782.6	6,941.7	6,776.5	200.8	25.7	-88.06	-1,342.6	-6,975.4	434.4	212.6	221.83	1.958	
13,991.3	6,782.0	6,942.2	6,777.0	203.4	25.7	-88.13	-1,342.6	-6,975.4	457.2	232.8	224.39	2.038	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4652.0ft (Original Well Elev) Coordinates are relative to: LDS 1V-304  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.58°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4652.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-304	<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 #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4652.0ft (Original Well Elev) Coordinates are relative to: LDS 1V-304  
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