

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peschel 20G-332**

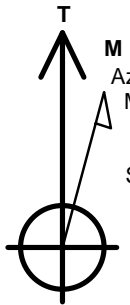
Surface Location: Peschel 4N65W20B Pad Sec.20-T4N-R65W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4801.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1350812.65	3225068.55	40.293570	-104.693140	

RKB - 15' WELL @ 4816.0ft (RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1070'FSL & 950'FWL	1.0	0.0	0.0	Point
BHL 2233'FSL & 500'FEL	7071.0	1177.0	3807.6	Point



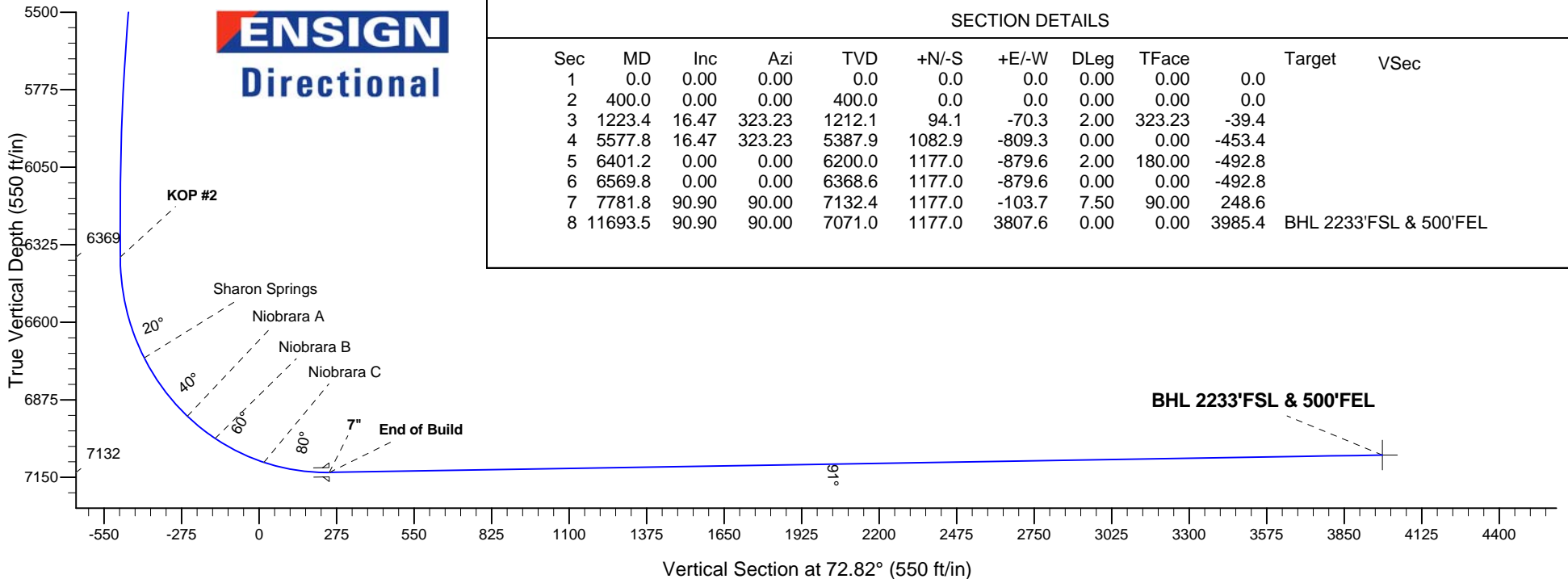
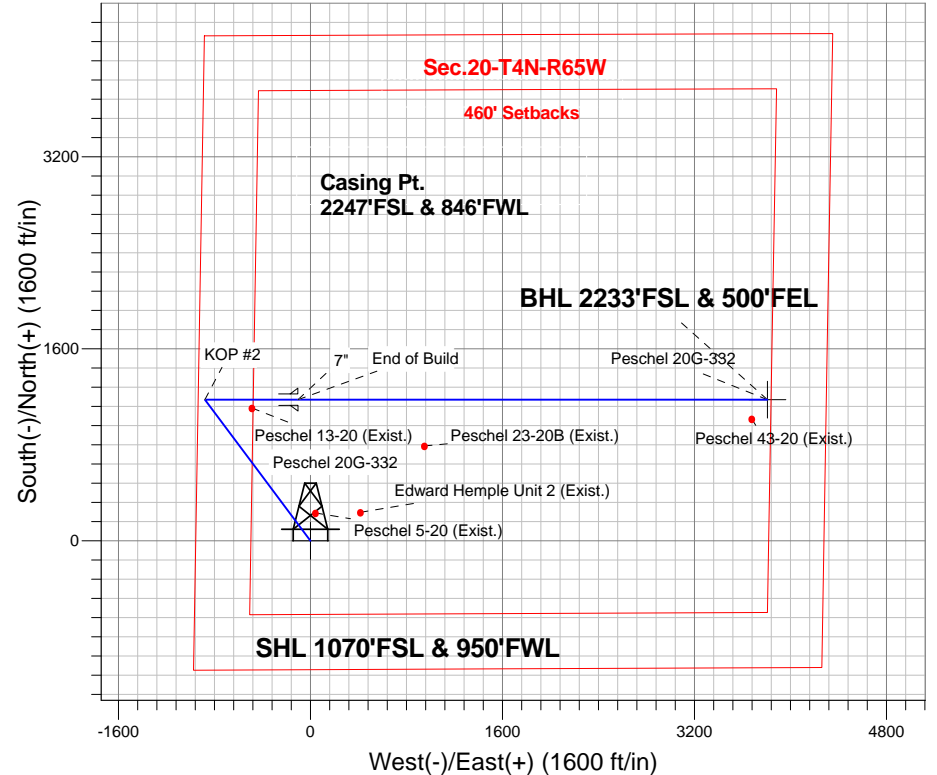
Azimuths to True North  
Magnetic North: 8.39°

Magnetic Field  
Strength: 52746.1snT  
Dip Angle: 66.87°  
Date: 8/27/2014  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
400.0	400.0	KOP #1
6368.6	6569.8	KOP #2
7132.4	7781.8	End of Build

Peschel 4N65W20B Pad Sec.20-T4N-R65W  
Peschel 20G-332  
Plan #1 (8-22-14)  
11:15, August 28 2014





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.20-T4N-R65W**

**Peschel 4N65W20B Pad Sec.20-T4N-R65W**

**Peschel 20G-332**

**Wellbore #1**

**Plan: Plan #1 (8-22-14)**

## **Standard Planning Report**

**28 August, 2014**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Project:</b>	SEC.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Peschel 20G-332	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-22-14)		

<b>Project</b>	SEC.20-T4N-R65W, Weld, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Peschel 4N65W20B Pad Sec.20-T4N-R65W											
<b>Site Position:</b>						<b>Northing:</b>			1,350,841.81 ft			<b>Latitude:</b>			40.293650		
<b>From:</b>			Lat/Long			<b>Easting:</b>			3,225,068.28 ft			<b>Longitude:</b>			-104.693140		
<b>Position Uncertainty:</b>			0.0 ft			<b>Slot Radius:</b>			"			<b>Grid Convergence:</b>			0.52 °		

Well	Peschel 20G-332					
Well Position	+N/-S	-29.2 ft	Northing:	1,350,812.65 ft	Latitude:	40.293570
	+E/-W	0.0 ft	Easting:	3,225,068.55 ft	Longitude:	-104.693140
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,801.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/27/2014	8.39	66.87	52,746

<b>Design</b>	Plan #1 (8-22-14)			
<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	72.82

<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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,223.4	16.47	323.23	1,212.1	94.1	-70.3	2.00	2.00	0.00	323.23	
5,577.8	16.47	323.23	5,387.9	1,082.9	-809.3	0.00	0.00	0.00	0.00	
6,401.2	0.00	0.00	6,200.0	1,177.0	-879.6	2.00	-2.00	0.00	180.00	
6,569.8	0.00	0.00	6,368.6	1,177.0	-879.6	0.00	0.00	0.00	0.00	
7,781.8	90.90	90.00	7,132.4	1,177.0	-103.7	7.50	7.50	0.00	90.00	
11,693.5	90.90	90.00	7,071.0	1,177.0	3,807.6	0.00	0.00	0.00	0.00	BHL 2233'FSL & 5C

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Project:</b>	SEC.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Peschel 20G-332	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-22-14)		

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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
500.0	2.00	323.23	500.0	1.4	-1.0	-0.6	2.00	2.00	0.00
600.0	4.00	323.23	599.8	5.6	-4.2	-2.3	2.00	2.00	0.00
700.0	6.00	323.23	699.5	12.6	-9.4	-5.3	2.00	2.00	0.00
800.0	8.00	323.23	798.7	22.3	-16.7	-9.3	2.00	2.00	0.00
900.0	10.00	323.23	897.5	34.9	-26.1	-14.6	2.00	2.00	0.00
1,000.0	12.00	323.23	995.6	50.1	-37.5	-21.0	2.00	2.00	0.00
1,100.0	14.00	323.23	1,093.1	68.2	-50.9	-28.5	2.00	2.00	0.00
1,200.0	16.00	323.23	1,189.6	88.9	-66.4	-37.2	2.00	2.00	0.00
1,223.4	16.47	323.23	1,212.1	94.1	-70.3	-39.4	2.00	2.00	0.00
1,300.0	16.47	323.23	1,285.6	111.5	-83.3	-46.7	0.00	0.00	0.00
1,400.0	16.47	323.23	1,381.5	134.2	-100.3	-56.2	0.00	0.00	0.00
1,500.0	16.47	323.23	1,477.4	156.9	-117.3	-65.7	0.00	0.00	0.00
1,600.0	16.47	323.23	1,573.3	179.6	-134.3	-75.2	0.00	0.00	0.00
1,700.0	16.47	323.23	1,669.2	202.4	-151.2	-84.7	0.00	0.00	0.00
1,800.0	16.47	323.23	1,765.1	225.1	-168.2	-94.2	0.00	0.00	0.00
1,900.0	16.47	323.23	1,861.0	247.8	-185.2	-103.7	0.00	0.00	0.00
2,000.0	16.47	323.23	1,956.9	270.5	-202.1	-113.2	0.00	0.00	0.00
2,100.0	16.47	323.23	2,052.8	293.2	-219.1	-122.7	0.00	0.00	0.00
2,200.0	16.47	323.23	2,148.7	315.9	-236.1	-132.2	0.00	0.00	0.00
2,300.0	16.47	323.23	2,244.5	338.6	-253.0	-141.8	0.00	0.00	0.00
2,400.0	16.47	323.23	2,340.4	361.3	-270.0	-151.3	0.00	0.00	0.00
2,500.0	16.47	323.23	2,436.3	384.0	-287.0	-160.8	0.00	0.00	0.00
2,600.0	16.47	323.23	2,532.2	406.7	-303.9	-170.3	0.00	0.00	0.00
2,700.0	16.47	323.23	2,628.1	429.4	-320.9	-179.8	0.00	0.00	0.00
2,800.0	16.47	323.23	2,724.0	452.1	-337.9	-189.3	0.00	0.00	0.00
2,900.0	16.47	323.23	2,819.9	474.8	-354.9	-198.8	0.00	0.00	0.00
3,000.0	16.47	323.23	2,915.8	497.5	-371.8	-208.3	0.00	0.00	0.00
3,100.0	16.47	323.23	3,011.7	520.2	-388.8	-217.8	0.00	0.00	0.00
3,200.0	16.47	323.23	3,107.6	543.0	-405.8	-227.3	0.00	0.00	0.00
3,300.0	16.47	323.23	3,203.5	565.7	-422.7	-236.8	0.00	0.00	0.00
3,400.0	16.47	323.23	3,299.4	588.4	-439.7	-246.3	0.00	0.00	0.00
3,500.0	16.47	323.23	3,395.3	611.1	-456.7	-255.8	0.00	0.00	0.00
3,600.0	16.47	323.23	3,491.2	633.8	-473.6	-265.3	0.00	0.00	0.00
3,700.0	16.47	323.23	3,587.1	656.5	-490.6	-274.8	0.00	0.00	0.00
3,800.0	16.47	323.23	3,683.0	679.2	-507.6	-284.3	0.00	0.00	0.00
3,859.4	16.47	323.23	3,740.0	692.7	-517.7	-290.0	0.00	0.00	0.00
Parkman									
3,900.0	16.47	323.23	3,778.9	701.9	-524.5	-293.9	0.00	0.00	0.00
4,000.0	16.47	323.23	3,874.8	724.6	-541.5	-303.4	0.00	0.00	0.00
4,100.0	16.47	323.23	3,970.7	747.3	-558.5	-312.9	0.00	0.00	0.00
4,200.0	16.47	323.23	4,066.6	770.0	-575.5	-322.4	0.00	0.00	0.00
4,300.0	16.47	323.23	4,162.5	792.7	-592.4	-331.9	0.00	0.00	0.00
4,400.0	16.47	323.23	4,258.4	815.4	-609.4	-341.4	0.00	0.00	0.00
4,500.0	16.47	323.23	4,354.3	838.1	-626.4	-350.9	0.00	0.00	0.00
4,521.6	16.47	323.23	4,375.0	843.0	-630.0	-352.9	0.00	0.00	0.00
Sussex									
4,600.0	16.47	323.23	4,450.2	860.8	-643.3	-360.4	0.00	0.00	0.00

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<b>Project:</b>	SEC.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Peschel 20G-332	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-22-14)		

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	16.47	323.23	4,546.1	883.5	-660.3	-369.9	0.00	0.00	0.00
4,800.0	16.47	323.23	4,642.0	906.3	-677.3	-379.4	0.00	0.00	0.00
4,900.0	16.47	323.23	4,737.9	929.0	-694.2	-388.9	0.00	0.00	0.00
5,000.0	16.47	323.23	4,833.8	951.7	-711.2	-398.4	0.00	0.00	0.00
5,100.0	16.47	323.23	4,929.7	974.4	-728.2	-407.9	0.00	0.00	0.00
5,200.0	16.47	323.23	5,025.6	997.1	-745.1	-417.4	0.00	0.00	0.00
5,300.0	16.47	323.23	5,121.5	1,019.8	-762.1	-426.9	0.00	0.00	0.00
5,381.9	16.47	323.23	5,200.0	1,038.4	-776.0	-434.7	0.00	0.00	0.00
<b>Shannon</b>									
5,400.0	16.47	323.23	5,217.4	1,042.5	-779.1	-436.4	0.00	0.00	0.00
5,500.0	16.47	323.23	5,313.3	1,065.2	-796.1	-446.0	0.00	0.00	0.00
5,577.8	16.47	323.23	5,387.9	1,082.9	-809.3	-453.4	0.00	0.00	0.00
5,600.0	16.02	323.23	5,409.2	1,087.8	-813.0	-455.4	2.00	-2.00	0.00
5,700.0	14.02	323.23	5,505.8	1,108.6	-828.5	-464.1	2.00	-2.00	0.00
5,800.0	12.02	323.23	5,603.2	1,126.7	-842.0	-471.7	2.00	-2.00	0.00
5,900.0	10.02	323.23	5,701.4	1,142.0	-853.4	-478.1	2.00	-2.00	0.00
6,000.0	8.02	323.23	5,800.1	1,154.5	-862.8	-483.4	2.00	-2.00	0.00
6,100.0	6.02	323.23	5,899.4	1,164.3	-870.1	-487.5	2.00	-2.00	0.00
6,200.0	4.02	323.23	5,999.0	1,171.3	-875.4	-490.4	2.00	-2.00	0.00
6,300.0	2.02	323.23	6,098.8	1,175.6	-878.5	-492.2	2.00	-2.00	0.00
6,400.0	0.02	323.23	6,198.8	1,177.0	-879.6	-492.8	2.00	-2.00	0.00
6,401.2	0.00	0.00	6,200.0	1,177.0	-879.6	-492.8	2.00	-2.00	0.00
6,500.0	0.00	0.00	6,298.8	1,177.0	-879.6	-492.8	0.00	0.00	0.00
6,569.8	0.00	0.00	6,368.6	1,177.0	-879.6	-492.8	0.00	0.00	0.00
<b>KOP #2</b>									
6,600.0	2.27	90.00	6,398.8	1,177.0	-879.0	-492.2	7.50	7.50	0.00
6,700.0	9.77	90.00	6,498.2	1,177.0	-868.5	-482.2	7.50	7.50	0.00
6,800.0	17.27	90.00	6,595.3	1,177.0	-845.2	-459.9	7.50	7.50	0.00
6,900.0	24.77	90.00	6,688.6	1,177.0	-809.3	-425.6	7.50	7.50	0.00
6,941.7	27.89	90.00	6,726.0	1,177.0	-790.8	-408.0	7.50	7.50	0.00
<b>Sharon Springs</b>									
7,000.0	32.27	90.00	6,776.4	1,177.0	-761.6	-380.0	7.50	7.50	0.00
7,100.0	39.77	90.00	6,857.3	1,177.0	-702.9	-323.9	7.50	7.50	0.00
7,200.0	47.27	90.00	6,929.7	1,177.0	-634.1	-258.2	7.50	7.50	0.00
7,204.8	47.63	90.00	6,933.0	1,177.0	-630.5	-254.8	7.50	7.50	0.00
<b>Niobrara A</b>									
7,300.0	54.77	90.00	6,992.6	1,177.0	-556.4	-184.0	7.50	7.50	0.00
7,334.8	57.37	90.00	7,012.0	1,177.0	-527.5	-156.4	7.50	7.50	0.00
<b>Niobrara B</b>									
7,400.0	62.27	90.00	7,044.8	1,177.0	-471.2	-102.5	7.50	7.50	0.00
7,500.0	69.77	90.00	7,085.4	1,177.0	-379.9	-15.3	7.50	7.50	0.00
7,535.9	72.46	90.00	7,097.0	1,177.0	-345.9	17.1	7.50	7.50	0.00
<b>Niobrara C</b>									
7,600.0	77.27	90.00	7,113.7	1,177.0	-284.0	76.2	7.50	7.50	0.00
7,700.0	84.77	90.00	7,129.4	1,177.0	-185.3	170.5	7.50	7.50	0.00
7,781.8	90.90	90.00	7,132.4	1,177.0	-103.6	248.6	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,800.0	90.90	90.00	7,132.2	1,177.0	-85.4	266.0	0.00	0.00	0.00
7,900.0	90.90	90.00	7,130.6	1,177.0	14.5	361.5	0.00	0.00	0.00
8,000.0	90.90	90.00	7,129.0	1,177.0	114.5	457.0	0.00	0.00	0.00
8,100.0	90.90	90.00	7,127.4	1,177.0	214.5	552.6	0.00	0.00	0.00
8,200.0	90.90	90.00	7,125.9	1,177.0	314.5	648.1	0.00	0.00	0.00

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<b>Project:</b>	SEC.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Peschel 20G-332	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-22-14)		

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)
8,300.0	90.90	90.00	7,124.3	1,177.0	414.5	743.6	0.00	0.00	0.00
8,400.0	90.90	90.00	7,122.7	1,177.0	514.5	839.1	0.00	0.00	0.00
8,500.0	90.90	90.00	7,121.2	1,177.0	614.5	934.7	0.00	0.00	0.00
8,600.0	90.90	90.00	7,119.6	1,177.0	714.5	1,030.2	0.00	0.00	0.00
8,700.0	90.90	90.00	7,118.0	1,177.0	814.4	1,125.7	0.00	0.00	0.00
8,800.0	90.90	90.00	7,116.4	1,177.0	914.4	1,221.3	0.00	0.00	0.00
8,900.0	90.90	90.00	7,114.9	1,177.0	1,014.4	1,316.8	0.00	0.00	0.00
9,000.0	90.90	90.00	7,113.3	1,177.0	1,114.4	1,412.3	0.00	0.00	0.00
9,100.0	90.90	90.00	7,111.7	1,177.0	1,214.4	1,507.8	0.00	0.00	0.00
9,200.0	90.90	90.00	7,110.2	1,177.0	1,314.4	1,603.4	0.00	0.00	0.00
9,300.0	90.90	90.00	7,108.6	1,177.0	1,414.4	1,698.9	0.00	0.00	0.00
9,400.0	90.90	90.00	7,107.0	1,177.0	1,514.4	1,794.4	0.00	0.00	0.00
9,500.0	90.90	90.00	7,105.5	1,177.0	1,614.3	1,889.9	0.00	0.00	0.00
9,600.0	90.90	90.00	7,103.9	1,177.0	1,714.3	1,985.5	0.00	0.00	0.00
9,700.0	90.90	90.00	7,102.3	1,177.0	1,814.3	2,081.0	0.00	0.00	0.00
9,800.0	90.90	90.00	7,100.7	1,177.0	1,914.3	2,176.5	0.00	0.00	0.00
9,900.0	90.90	90.00	7,099.2	1,177.0	2,014.3	2,272.1	0.00	0.00	0.00
10,000.0	90.90	90.00	7,097.6	1,177.0	2,114.3	2,367.6	0.00	0.00	0.00
10,100.0	90.90	90.00	7,096.0	1,177.0	2,214.3	2,463.1	0.00	0.00	0.00
10,200.0	90.90	90.00	7,094.5	1,177.0	2,314.3	2,558.6	0.00	0.00	0.00
10,300.0	90.90	90.00	7,092.9	1,177.0	2,414.3	2,654.2	0.00	0.00	0.00
10,400.0	90.90	90.00	7,091.3	1,177.0	2,514.2	2,749.7	0.00	0.00	0.00
10,500.0	90.90	90.00	7,089.7	1,177.0	2,614.2	2,845.2	0.00	0.00	0.00
10,600.0	90.90	90.00	7,088.2	1,177.0	2,714.2	2,940.8	0.00	0.00	0.00
10,700.0	90.90	90.00	7,086.6	1,177.0	2,814.2	3,036.3	0.00	0.00	0.00
10,800.0	90.90	90.00	7,085.0	1,177.0	2,914.2	3,131.8	0.00	0.00	0.00
10,900.0	90.90	90.00	7,083.5	1,177.0	3,014.2	3,227.3	0.00	0.00	0.00
11,000.0	90.90	90.00	7,081.9	1,177.0	3,114.2	3,322.9	0.00	0.00	0.00
11,100.0	90.90	90.00	7,080.3	1,177.0	3,214.2	3,418.4	0.00	0.00	0.00
11,200.0	90.90	90.00	7,078.8	1,177.0	3,314.1	3,513.9	0.00	0.00	0.00
11,300.0	90.90	90.00	7,077.2	1,177.0	3,414.1	3,609.4	0.00	0.00	0.00
11,400.0	90.90	90.00	7,075.6	1,177.0	3,514.1	3,705.0	0.00	0.00	0.00
11,500.0	90.90	90.00	7,074.0	1,177.0	3,614.1	3,800.5	0.00	0.00	0.00
11,600.0	90.90	90.00	7,072.5	1,177.0	3,714.1	3,896.0	0.00	0.00	0.00
11,693.5	90.90	90.00	7,071.0	1,177.0	3,807.6	3,985.4	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 1070'FSL & 950'I	0.00	0.00	1.0	0.0	0.0	1,350,812.67	3,225,068.55	40.293570	-104.693140
- plan hits target center									
- Point									
BHL 2233'FSL & 500'I	0.00	0.00	7,071.0	1,177.0	3,807.6	1,352,024.21	3,228,865.13	40.296800	-104.679490
- plan hits target center									
- Point									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Project:</b>	SEC.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Peschel 20G-332	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (8-22-14)		

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,781.8	7,132.4	7"	7	7-1/2

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,859.4	3,740.0	Parkman		0.00	
4,521.6	4,375.0	Sussex		0.00	
5,381.9	5,200.0	Shannon		0.00	
6,941.7	6,726.0	Sharon Springs		0.00	
7,204.8	6,933.0	Niobrara A		0.00	
7,334.8	7,012.0	Niobrara B		0.00	
7,535.9	7,097.0	Niobrara C		0.00	
	7,212.0	Ft. Hays		0.00	
	7,229.0	Codell		0.00	

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
400.0	400.0	0.0	0.0	KOP #1
6,569.8	6,368.6	1,177.0	-879.6	KOP #2
7,781.8	7,132.4	1,177.0	-103.6	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.20-T4N-R65W**

**Peschel 4N65W20B Pad Sec.20-T4N-R65W**

**Peschel 20G-332**

**Wellbore #1**

**Plan #1 (8-22-14)**

## **Anticollision Report**

**28 August, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (8-22-14)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 8/28/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,692.9	Plan #1 (8-22-14) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Existing wells Sec.20-T4N-R65W						
Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #	400.0	394.0	478.4	469.7	55.195	CC
Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #	800.0	792.7	482.6	465.0	27.435	ES
Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #	3,700.0	3,581.1	998.7	917.2	12.249	SF
Peschel 13-20 (Exist.) - Wellbore #1 - Wellbore #1	7,380.7	7,005.6	69.5	-93.2	0.427	Level 1, CC, ES, SF
Peschel 23-20B (Exist.) - Wellbore #1 - Wellbore #1	8,834.0	7,122.9	386.4	196.4	2.034	CC, ES, SF
Peschel 43-20 (Exist.) - Wellbore #1 - Wellbore #1	11,562.4	7,087.1	160.3	-101.9	0.611	Level 1, CC, ES, SF
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	1,379.3	1,347.7	173.1	141.9	5.549	CC
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	1,400.0	1,367.5	173.2	141.5	5.463	ES
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	1,600.0	1,559.3	184.1	147.7	5.066	SF
Peschel 4N65W20B Pad Sec.20-T4N-R65W						
Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)	200.0	200.0	29.1	28.5	43.216	CC
Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)	11,693.5	11,653.7	233.6	-4.8	0.980	Level 1, ES, SF
Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14)	400.0	400.0	29.1	27.6	18.524	CC
Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14)	11,693.5	11,583.1	251.1	14.9	1.063	Level 2, ES, SF
Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)	400.0	400.0	91.1	89.5	57.886	CC, ES
Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)	11,693.5	11,500.4	867.7	623.3	3.549	SF
Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)	400.0	401.0	58.3	56.7	36.992	CC, ES
Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)	11,693.5	11,596.7	728.7	482.8	2.963	SF

Offset Design		Existing wells Sec.20-T4N-R65W - Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft
Survey Program: 4560-UNKNOWN												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	60.33	236.8	415.6	478.4					
100.0	100.0	94.0	94.0	0.1	1.9	60.33	236.8	415.6	478.4	476.4	1.99	240.077		
200.0	200.0	194.0	194.0	0.3	3.9	60.33	236.8	415.6	478.4	474.2	4.22	113.430		
300.0	300.0	294.0	294.0	0.6	5.9	60.33	236.8	415.6	478.4	471.9	6.44	74.257		
400.0	400.0	394.0	394.0	0.8	7.9	60.33	236.8	415.6	478.4	469.7	8.67	55.195	CC	
500.0	500.0	494.0	494.0	1.0	9.9	97.30	236.8	415.6	478.6	467.7	10.89	43.953		
600.0	599.8	593.8	593.8	1.2	11.9	97.91	236.8	415.6	479.3	466.2	13.11	36.556		
700.0	699.5	693.5	693.5	1.5	13.9	98.91	236.8	415.6	480.6	465.2	15.34	31.322		

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 4560-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
800.0	798.7	792.7	792.7	1.7	15.9	100.29	236.8	415.6	482.6	465.0	17.59	27.435	ES	
900.0	897.5	891.5	891.5	2.1	17.8	102.02	236.8	415.6	485.7	465.8	19.86	24.453		
1,000.0	995.6	989.6	989.6	2.4	19.8	104.08	236.8	415.6	490.1	467.9	22.16	22.120		
1,100.0	1,093.1	1,087.1	1,087.1	2.8	21.7	106.43	236.8	415.6	496.1	471.7	24.47	20.277		
1,200.0	1,189.6	1,183.6	1,183.6	3.3	23.7	109.01	236.8	415.6	504.3	477.5	26.79	18.822		
1,300.0	1,285.6	1,279.6	1,279.6	3.8	25.6	111.84	236.8	415.6	514.5	485.4	29.13	17.661		
1,400.0	1,381.5	1,375.5	1,375.5	4.4	27.5	114.61	236.8	415.6	526.1	494.6	31.47	16.718		
1,500.0	1,477.4	1,471.4	1,471.4	4.9	29.4	117.26	236.8	415.6	538.9	505.1	33.79	15.949		
1,600.0	1,573.3	1,567.3	1,567.3	5.5	31.3	119.79	236.8	415.6	552.9	516.8	36.09	15.319		
1,700.0	1,669.2	1,663.2	1,663.2	6.0	33.3	122.20	236.8	415.6	567.9	529.5	38.38	14.799		
1,800.0	1,765.1	1,759.1	1,759.1	6.6	35.2	124.49	236.8	415.6	584.0	543.3	40.64	14.369		
1,900.0	1,861.0	1,855.0	1,855.0	7.2	37.1	126.66	236.8	415.6	600.9	558.0	42.89	14.011		
2,000.0	1,956.9	1,950.9	1,950.9	7.8	39.0	128.71	236.8	415.6	618.7	573.6	45.12	13.713		
2,100.0	2,052.8	2,046.8	2,046.8	8.3	40.9	130.66	236.8	415.6	637.2	589.9	47.33	13.464		
2,200.0	2,148.7	2,142.7	2,142.7	8.9	42.9	132.49	236.8	415.6	656.5	607.0	49.53	13.255		
2,300.0	2,244.5	2,238.5	2,238.5	9.5	44.8	134.23	236.8	415.6	676.4	624.7	51.71	13.079		
2,400.0	2,340.4	2,334.4	2,334.4	10.1	46.7	135.86	236.8	415.6	696.9	643.0	53.89	12.932		
2,500.0	2,436.3	2,430.3	2,430.3	10.6	48.6	137.41	236.8	415.6	717.9	661.8	56.05	12.808		
2,600.0	2,532.2	2,526.2	2,526.2	11.2	50.5	138.87	236.8	415.6	739.4	681.2	58.20	12.703		
2,700.0	2,628.1	2,622.1	2,622.1	11.8	52.4	140.25	236.8	415.6	761.3	701.0	60.35	12.616		
2,800.0	2,724.0	2,718.0	2,718.0	12.4	54.4	141.56	236.8	415.6	783.7	721.2	62.49	12.542		
2,900.0	2,819.9	2,813.9	2,813.9	13.0	56.3	142.79	236.8	415.6	806.4	741.8	64.62	12.480		
3,000.0	2,915.8	2,909.8	2,909.8	13.6	58.2	143.96	236.8	415.6	829.5	762.8	66.74	12.428		
3,100.0	3,011.7	3,005.7	3,005.7	14.2	60.1	145.06	236.8	415.6	852.9	784.0	68.87	12.385		
3,200.0	3,107.6	3,101.6	3,101.6	14.7	62.0	146.11	236.8	415.6	876.6	805.6	70.98	12.349		
3,300.0	3,203.5	3,197.5	3,197.5	15.3	64.0	147.10	236.8	415.6	900.6	827.5	73.10	12.320		
3,400.0	3,299.4	3,293.4	3,293.4	15.9	65.9	148.05	236.8	415.6	924.8	849.6	75.21	12.296		
3,500.0	3,395.3	3,389.3	3,389.3	16.5	67.8	148.94	236.8	415.6	949.2	871.9	77.32	12.276		
3,600.0	3,491.2	3,485.2	3,485.2	17.1	69.7	149.79	236.8	415.6	973.9	894.4	79.43	12.261		
3,700.0	3,587.1	3,581.1	3,581.1	17.7	71.6	150.61	236.8	415.6	998.7	917.2	81.54	12.249	SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing wells Sec.20-T4N-R65W - Peschel 13-20 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 7312-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
1,600.0	1,573.3	1,543.3	1,543.3	5.5	30.9	16.54	1,107.5	-488.2	993.1	959.4	33.65	29.510		
1,700.0	1,669.2	1,639.2	1,639.2	6.0	32.8	17.01	1,107.5	-488.2	965.8	930.0	35.84	26.951		
1,800.0	1,765.1	1,735.1	1,735.1	6.6	34.7	17.52	1,107.5	-488.2	938.7	900.6	38.03	24.683		
1,900.0	1,861.0	1,831.0	1,831.0	7.2	36.6	18.05	1,107.5	-488.2	911.6	871.3	40.23	22.659		
2,000.0	1,956.9	1,926.9	1,926.9	7.8	38.5	18.62	1,107.5	-488.2	884.5	842.1	42.44	20.843		
2,100.0	2,052.8	2,022.8	2,022.8	8.3	40.5	19.22	1,107.5	-488.2	857.6	813.0	44.66	19.204		
2,200.0	2,148.7	2,118.7	2,118.7	8.9	42.4	19.86	1,107.5	-488.2	830.8	783.9	46.89	17.718		
2,300.0	2,244.5	2,214.5	2,214.5	9.5	44.3	20.54	1,107.5	-488.2	804.0	754.9	49.13	16.366		
2,400.0	2,340.4	2,310.4	2,310.4	10.1	46.2	21.27	1,107.5	-488.2	777.4	726.0	51.38	15.130		
2,500.0	2,436.3	2,406.3	2,406.3	10.6	48.1	22.05	1,107.5	-488.2	750.9	697.3	53.65	13.996		
2,600.0	2,532.2	2,502.2	2,502.2	11.2	50.0	22.89	1,107.5	-488.2	724.6	668.7	55.94	12.954		
2,700.0	2,628.1	2,598.1	2,598.1	11.8	52.0	23.79	1,107.5	-488.2	698.4	640.2	58.24	11.992		
2,800.0	2,724.0	2,694.0	2,694.0	12.4	53.9	24.76	1,107.5	-488.2	672.4	611.8	60.56	11.103		
2,900.0	2,819.9	2,789.9	2,789.9	13.0	55.8	25.80	1,107.5	-488.2	646.6	583.7	62.91	10.278		
3,000.0	2,915.8	2,885.8	2,885.8	13.6	57.7	26.93	1,107.5	-488.2	621.0	555.7	65.28	9.513		
3,100.0	3,011.7	2,981.7	2,981.7	14.2	59.6	28.15	1,107.5	-488.2	595.6	527.9	67.68	8.801		
3,200.0	3,107.6	3,077.6	3,077.6	14.7	61.6	29.48	1,107.5	-488.2	570.5	500.4	70.11	8.138		
3,300.0	3,203.5	3,173.5	3,173.5	15.3	63.5	30.93	1,107.5	-488.2	545.8	473.2	72.58	7.520		
3,400.0	3,299.4	3,269.4	3,269.4	15.9	65.4	32.52	1,107.5	-488.2	521.4	446.3	75.09	6.943		
3,500.0	3,395.3	3,365.3	3,365.3	16.5	67.3	34.25	1,107.5	-488.2	497.4	419.8	77.66	6.405		
3,600.0	3,491.2	3,461.2	3,461.2	17.1	69.2	36.15	1,107.5	-488.2	473.9	393.7	80.27	5.904		
3,700.0	3,587.1	3,557.1	3,557.1	17.7	71.1	38.24	1,107.5	-488.2	451.0	368.1	82.95	5.437		
3,800.0	3,683.0	3,653.0	3,653.0	18.3	73.1	40.55	1,107.5	-488.2	428.7	343.1	85.69	5.003		
3,900.0	3,778.9	3,748.9	3,748.9	18.8	75.0	43.09	1,107.5	-488.2	407.2	318.7	88.51	4.601		
4,000.0	3,874.8	3,844.8	3,844.8	19.4	76.9	45.90	1,107.5	-488.2	386.6	295.2	91.41	4.229		
4,100.0	3,970.7	3,940.7	3,940.7	20.0	78.8	49.01	1,107.5	-488.2	367.0	272.6	94.38	3.888		
4,200.0	4,066.6	4,036.6	4,036.6	20.6	80.7	52.44	1,107.5	-488.2	348.6	251.2	97.43	3.578		
4,300.0	4,162.5	4,132.5	4,132.5	21.2	82.7	56.22	1,107.5	-488.2	331.6	231.0	100.55	3.298		
4,400.0	4,258.4	4,228.4	4,228.4	21.8	84.6	60.36	1,107.5	-488.2	316.2	212.5	103.71	3.049		
4,500.0	4,354.3	4,324.3	4,324.3	22.4	86.5	64.87	1,107.5	-488.2	302.7	195.9	106.89	2.832		
4,600.0	4,450.2	4,420.2	4,420.2	23.0	88.4	69.74	1,107.5	-488.2	291.4	181.4	110.05	2.648		
4,700.0	4,546.1	4,516.1	4,516.1	23.5	90.3	74.93	1,107.5	-488.2	282.5	169.3	113.13	2.497		
4,800.0	4,642.0	4,612.0	4,612.0	24.1	92.2	80.39	1,107.5	-488.2	276.2	160.1	116.08	2.379		
4,900.0	4,737.9	4,707.9	4,707.9	24.7	94.2	86.04	1,107.5	-488.2	272.7	153.8	118.84	2.294		
4,969.3	4,804.4	4,774.4	4,774.4	25.1	95.5	90.00	1,107.5	-488.2	271.9	151.3	120.62	2.255		
5,000.0	4,833.8	4,803.8	4,803.8	25.3	96.1	91.76	1,107.5	-488.2	272.1	150.7	121.36	2.242		
5,100.0	4,929.7	4,899.7	4,899.7	25.9	98.0	97.44	1,107.5	-488.2	274.5	150.8	123.63	2.220		
5,200.0	5,025.6	4,995.6	4,995.6	26.5	99.9	102.99	1,107.5	-488.2	279.7	154.1	125.65	2.226		
5,300.0	5,121.5	5,091.5	5,091.5	27.1	101.8	108.29	1,107.5	-488.2	287.7	160.2	127.44	2.257		
5,400.0	5,217.4	5,187.4	5,187.4	27.7	103.7	113.29	1,107.5	-488.2	298.1	169.0	129.06	2.310		
5,500.0	5,313.3	5,283.3	5,283.3	28.3	105.7	117.94	1,107.5	-488.2	310.8	180.2	130.55	2.381		
5,600.0	5,409.2	5,379.2	5,379.2	28.8	107.6	122.28	1,107.5	-488.2	325.4	193.4	132.00	2.465		
5,700.0	5,505.8	5,475.8	5,475.8	29.3	109.5	126.13	1,107.5	-488.2	340.3	206.7	133.63	2.547		
5,800.0	5,603.2	5,573.2	5,573.2	29.6	111.5	129.25	1,107.5	-488.2	354.3	218.9	135.42	2.617		
5,900.0	5,701.4	5,671.4	5,671.4	30.0	113.4	131.73	1,107.5	-488.2	366.9	229.5	137.34	2.671		
6,000.0	5,800.1	5,770.1	5,770.1	30.3	115.4	133.65	1,107.5	-488.2	377.6	238.2	139.35	2.710		
6,100.0	5,899.4	5,869.4	5,869.4	30.5	117.4	135.08	1,107.5	-488.2	386.2	244.8	141.42	2.731		
6,200.0	5,999.0	5,969.0	5,969.0	30.7	119.4	136.06	1,107.5	-488.2	392.4	248.9	143.50	2.735		
6,300.0	6,098.8	6,068.8	6,068.8	30.8	121.4	136.65	1,107.5	-488.2	396.3	250.7	145.59	2.722		
6,400.0	6,198.8	6,168.8	6,168.8	30.9	123.4	136.84	1,107.5	-488.2	397.6	249.9	147.66	2.692		
6,500.0	6,298.8	6,268.8	6,268.8	31.0	125.4	100.07	1,107.5	-488.2	397.6	246.6	150.97	2.633		

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing wells Sec.20-T4N-R65W - Peschel 13-20 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7312-UNKNOWN												<b>Offset Well Error:</b>	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
6,600.0	6,398.8	6,368.8	6,368.8	31.1	127.4	10.09	1,107.5	-488.2	397.0	245.3	151.69	2.617	
6,700.0	6,498.2	6,468.2	6,468.2	31.1	129.4	10.50	1,107.5	-488.2	386.7	235.3	151.41	2.554	
6,800.0	6,595.3	6,565.3	6,565.3	31.1	131.3	11.52	1,107.5	-488.2	363.7	215.3	148.39	2.451	
6,900.0	6,688.6	6,658.6	6,658.6	30.9	133.2	13.40	1,107.5	-488.2	328.6	185.9	142.70	2.303	
7,000.0	6,776.4	6,746.4	6,746.4	30.7	134.9	16.73	1,107.5	-488.2	282.2	147.4	134.78	2.094	
7,100.0	6,857.3	6,827.3	6,827.3	30.5	136.5	22.84	1,107.5	-488.2	225.7	99.4	126.24	1.788	
7,200.0	6,929.7	6,899.7	6,899.7	30.2	138.0	35.07	1,107.5	-488.2	161.6	38.0	123.64	1.307	Level 3
7,300.0	6,992.6	6,962.6	6,962.6	29.9	139.3	60.48	1,107.5	-488.2	97.4	-46.6	143.95	0.677	Level 1
7,380.7	7,035.6	7,005.6	7,005.6	29.7	140.1	90.00	1,107.5	-488.2	69.5	-93.2	162.72	0.427	Level 1, CC, ES, SF
7,400.0	7,044.8	7,014.8	7,014.8	29.7	140.3	96.49	1,107.5	-488.2	71.6	-91.5	163.00	0.439	Level 1
7,500.0	7,085.4	7,055.4	7,055.4	29.5	141.1	118.32	1,107.5	-488.2	128.7	-21.6	150.27	0.856	Level 1
7,600.0	7,113.7	7,083.7	7,083.7	29.3	141.7	122.92	1,107.5	-488.2	215.6	72.0	143.61	1.501	
7,700.0	7,129.4	7,099.4	7,099.4	29.2	142.0	111.67	1,107.5	-488.2	310.7	153.7	157.02	1.979	
7,800.0	7,132.2	7,102.2	7,102.2	29.2	142.0	84.80	1,107.5	-488.2	408.7	241.5	167.21	2.444	
7,900.0	7,130.6	7,100.6	7,100.6	29.4	142.0	83.52	1,107.5	-488.2	507.5	339.3	168.18	3.018	
8,000.0	7,129.0	7,099.0	7,099.0	30.1	142.0	82.24	1,107.5	-488.2	606.7	437.4	169.26	3.584	
8,100.0	7,127.4	7,097.4	7,097.4	31.4	141.9	80.98	1,107.5	-488.2	706.1	535.7	170.42	4.143	
8,200.0	7,125.9	7,095.9	7,095.9	33.2	141.9	79.72	1,107.5	-488.2	805.7	634.0	171.63	4.694	
8,300.0	7,124.3	7,094.3	7,094.3	35.2	141.9	78.47	1,107.5	-488.2	905.3	732.5	172.86	5.237	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 23-20B (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7445-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,000.0	7,129.0	7,136.0	7,136.0	30.1	142.7	91.94	790.6	948.4	919.1	747.0	172.05	5.342		
8,100.0	7,127.4	7,134.4	7,134.4	31.4	142.7	91.71	790.6	948.4	829.4	655.6	173.86	4.771		
8,200.0	7,125.9	7,132.9	7,132.9	33.2	142.7	91.48	790.6	948.4	742.4	566.6	175.80	4.223		
8,300.0	7,124.3	7,131.3	7,131.3	35.2	142.6	91.24	790.6	948.4	659.1	481.3	177.85	3.706		
8,400.0	7,122.7	7,129.7	7,129.7	37.4	142.6	91.01	790.6	948.4	581.1	401.1	179.99	3.228		
8,500.0	7,121.2	7,128.2	7,128.2	39.6	142.6	90.78	790.6	948.4	510.8	328.5	182.21	2.803		
8,600.0	7,119.6	7,126.6	7,126.6	42.0	142.5	90.54	790.6	948.4	451.8	267.3	184.49	2.449		
8,700.0	7,118.0	7,125.0	7,125.0	44.4	142.5	90.31	790.6	948.4	409.0	222.2	186.83	2.189		
8,800.0	7,116.4	7,123.4	7,123.4	46.8	142.5	90.08	790.6	948.4	387.9	198.7	189.21	2.050		
8,834.0	7,115.9	7,122.9	7,122.9	47.7	142.5	90.00	790.6	948.4	386.4	196.4	190.04	2.034 CC, ES, SF		
8,900.0	7,114.9	7,121.9	7,121.9	49.3	142.4	89.85	790.6	948.4	392.0	200.4	191.63	2.046		
9,000.0	7,113.3	7,120.3	7,120.3	51.8	142.4	89.61	790.6	948.4	420.6	226.5	194.09	2.167		
9,100.0	7,111.7	7,118.7	7,118.7	54.4	142.4	89.38	790.6	948.4	469.1	272.6	196.57	2.387		
9,200.0	7,110.2	7,117.2	7,117.2	57.0	142.3	89.15	790.6	948.4	532.2	333.2	199.07	2.674		
9,300.0	7,108.6	7,115.6	7,115.6	59.6	142.3	88.92	790.6	948.4	605.3	403.8	201.59	3.003		
9,400.0	7,107.0	7,114.0	7,114.0	62.2	142.3	88.68	790.6	948.4	685.3	481.2	204.13	3.357		
9,500.0	7,105.5	7,112.5	7,112.5	64.8	142.2	88.45	790.6	948.4	769.9	563.2	206.68	3.725		
9,600.0	7,103.9	7,110.9	7,110.9	67.4	142.2	88.22	790.6	948.4	857.9	648.6	209.24	4.100		
9,700.0	7,102.3	7,109.3	7,109.3	70.1	142.2	87.98	790.6	948.4	948.2	736.4	211.81	4.477		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 43-20 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 7348-UNKNOWN													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,600.0	7,088.2	7,102.2	7,102.2	94.3	142.0	95.39	1,016.7	3,676.5	975.6	740.2	235.44	4.144		
10,700.0	7,086.6	7,100.6	7,100.6	97.1	142.0	94.83	1,016.7	3,676.5	877.1	638.8	238.29	3.681		
10,800.0	7,085.0	7,099.0	7,099.0	99.8	142.0	94.27	1,016.7	3,676.5	779.0	537.9	241.13	3.231		
10,900.0	7,083.5	7,097.5	7,097.5	102.5	141.9	93.71	1,016.7	3,676.5	681.5	437.5	243.95	2.794		
11,000.0	7,081.9	7,095.9	7,095.9	105.2	141.9	93.15	1,016.7	3,676.5	584.8	338.0	246.76	2.370		
11,100.0	7,080.3	7,094.3	7,094.3	108.0	141.9	92.59	1,016.7	3,676.5	489.4	239.8	249.56	1.961		
11,200.0	7,078.8	7,092.8	7,092.8	110.7	141.9	92.03	1,016.7	3,676.5	396.3	144.0	252.33	1.570		
11,300.0	7,077.2	7,091.2	7,091.2	113.5	141.8	91.47	1,016.7	3,676.5	307.5	52.4	255.09	1.206 Level 2		
11,400.0	7,075.6	7,089.6	7,089.6	116.2	141.8	90.91	1,016.7	3,676.5	228.2	-29.6	257.83	0.885 Level 1		
11,500.0	7,074.0	7,088.0	7,088.0	119.0	141.8	90.35	1,016.7	3,676.5	172.1	-88.5	260.55	0.660 Level 1		
11,562.4	7,073.1	7,087.1	7,087.1	120.7	141.7	90.00	1,016.7	3,676.5	160.3	-101.9	262.23	0.611 Level 1, CC, ES, SF		
11,600.0	7,072.5	7,086.5	7,086.5	121.7	141.7	89.79	1,016.7	3,676.5	164.7	-98.6	263.24	0.626 Level 1		
11,693.5	7,071.0	7,085.0	7,085.0	123.4	141.7	89.26	1,016.7	3,676.5	207.1	-57.7	264.79	0.782 Level 1		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7456-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	10.17	10.17	233.2	41.8	237.3				
100.0	100.0	86.0	86.0	0.1	1.7	10.17	10.17	233.2	41.8	236.9	235.1	1.83	129.265	
200.0	200.0	186.0	186.0	0.3	3.7	10.17	10.17	233.2	41.8	236.9	232.8	4.06	58.385	
300.0	300.0	286.0	286.0	0.6	5.7	10.17	10.17	233.2	41.8	236.9	230.6	6.28	37.708	
400.0	400.0	386.0	386.0	0.8	7.7	10.17	10.17	233.2	41.8	236.9	228.4	8.51	27.847	
500.0	500.0	486.0	486.0	1.0	9.7	47.27	47.27	233.2	41.8	235.7	225.0	10.73	21.972	
600.0	599.8	585.8	585.8	1.2	11.7	48.27	48.27	233.2	41.8	232.2	219.2	12.94	17.942	
700.0	699.5	685.5	685.5	1.5	13.7	50.00	50.00	233.2	41.8	226.5	211.3	15.15	14.947	
800.0	798.7	784.7	784.7	1.7	15.7	52.56	52.56	233.2	41.8	218.8	201.4	17.37	12.598	
900.0	897.5	883.5	883.5	2.1	17.7	56.08	56.08	233.2	41.8	209.6	190.0	19.61	10.689	
1,000.0	995.6	981.6	981.6	2.4	19.6	60.75	60.75	233.2	41.8	199.5	177.6	21.90	9.110	
1,100.0	1,093.1	1,079.1	1,079.1	2.8	21.6	66.76	66.76	233.2	41.8	189.3	165.0	24.26	7.804	
1,200.0	1,189.6	1,175.6	1,175.6	3.3	23.5	74.26	74.26	233.2	41.8	180.4	153.7	26.71	6.753	
1,300.0	1,285.6	1,271.6	1,271.6	3.8	25.4	82.90	82.90	233.2	41.8	174.6	145.3	29.23	5.972	
1,379.3	1,361.7	1,347.7	1,347.7	4.2	27.0	90.00	90.00	233.2	41.8	173.1	141.9	31.20	5.549 CC	
1,400.0	1,381.5	1,367.5	1,367.5	4.4	27.3	91.86	91.86	233.2	41.8	173.2	141.5	31.70	5.463 ES	
1,500.0	1,477.4	1,463.4	1,463.4	4.9	29.3	100.73	100.73	233.2	41.8	176.4	142.4	34.08	5.178	
1,600.0	1,573.3	1,559.3	1,559.3	5.5	31.2	109.11	109.11	233.2	41.8	184.1	147.7	36.33	5.066 SF	
1,700.0	1,669.2	1,655.2	1,655.2	6.0	33.1	116.73	116.73	233.2	41.8	195.5	157.0	38.48	5.081	
1,800.0	1,765.1	1,751.1	1,751.1	6.6	35.0	123.45	123.45	233.2	41.8	210.2	169.6	40.54	5.184	
1,900.0	1,861.0	1,847.0	1,847.0	7.2	36.9	129.27	129.27	233.2	41.8	227.5	184.9	42.56	5.345	
2,000.0	1,956.9	1,942.9	1,942.9	7.8	38.9	134.27	134.27	233.2	41.8	246.8	202.3	44.54	5.541	
2,100.0	2,052.8	2,038.8	2,038.8	8.3	40.8	138.54	138.54	233.2	41.8	267.8	221.2	46.52	5.755	
2,200.0	2,148.7	2,134.7	2,134.7	8.9	42.7	142.19	142.19	233.2	41.8	290.0	241.5	48.51	5.978	
2,300.0	2,244.5	2,230.5	2,230.5	9.5	44.6	145.33	145.33	233.2	41.8	313.2	262.7	50.50	6.202	
2,400.0	2,340.4	2,326.4	2,326.4	10.1	46.5	148.04	148.04	233.2	41.8	337.2	284.7	52.50	6.422	
2,500.0	2,436.3	2,422.3	2,422.3	10.6	48.4	150.39	150.39	233.2	41.8	361.8	307.3	54.51	6.636	
2,600.0	2,532.2	2,518.2	2,518.2	11.2	50.4	152.45	152.45	233.2	41.8	386.9	330.4	56.54	6.843	
2,700.0	2,628.1	2,614.1	2,614.1	11.8	52.3	154.26	154.26	233.2	41.8	412.4	353.9	58.57	7.042	
2,800.0	2,724.0	2,710.0	2,710.0	12.4	54.2	155.86	155.86	233.2	41.8	438.3	377.7	60.62	7.231	
2,900.0	2,819.9	2,805.9	2,805.9	13.0	56.1	157.28	157.28	233.2	41.8	464.5	401.8	62.67	7.412	
3,000.0	2,915.8	2,901.8	2,901.8	13.6	58.0	158.55	158.55	233.2	41.8	490.9	426.2	64.74	7.584	
3,100.0	3,011.7	2,997.7	2,997.7	14.2	60.0	159.69	159.69	233.2	41.8	517.6	450.7	66.81	7.747	
3,200.0	3,107.6	3,093.6	3,093.6	14.7	61.9	160.72	160.72	233.2	41.8	544.4	475.5	68.88	7.903	
3,300.0	3,203.5	3,189.5	3,189.5	15.3	63.8	161.66	161.66	233.2	41.8	571.3	500.3	70.96	8.051	
3,400.0	3,299.4	3,285.4	3,285.4	15.9	65.7	162.51	162.51	233.2	41.8	598.4	525.3	73.05	8.191	
3,500.0	3,395.3	3,381.3	3,381.3	16.5	67.6	163.29	163.29	233.2	41.8	625.6	550.4	75.14	8.325	
3,600.0	3,491.2	3,477.2	3,477.2	17.1	69.5	164.00	164.00	233.2	41.8	652.8	575.6	77.24	8.453	
3,700.0	3,587.1	3,573.1	3,573.1	17.7	71.5	164.66	164.66	233.2	41.8	680.2	600.9	79.33	8.574	
3,800.0	3,683.0	3,669.0	3,669.0	18.3	73.4	165.26	165.26	233.2	41.8	707.7	626.2	81.44	8.690	
3,900.0	3,778.9	3,764.9	3,764.9	18.8	75.3	165.82	165.82	233.2	41.8	735.2	651.7	83.54	8.800	
4,000.0	3,874.8	3,860.8	3,860.8	19.4	77.2	166.34	166.34	233.2	41.8	762.8	677.1	85.65	8.906	
4,100.0	3,970.7	3,956.7	3,956.7	20.0	79.1	166.83	166.83	233.2	41.8	790.4	702.6	87.76	9.007	
4,200.0	4,066.6	4,052.6	4,052.6	20.6	81.1	167.28	167.28	233.2	41.8	818.1	728.2	89.87	9.103	
4,300.0	4,162.5	4,148.5	4,148.5	21.2	83.0	167.70	167.70	233.2	41.8	845.8	753.8	91.98	9.195	
4,400.0	4,258.4	4,244.4	4,244.4	21.8	84.9	168.10	168.10	233.2	41.8	873.6	779.5	94.10	9.284	
4,500.0	4,354.3	4,340.3	4,340.3	22.4	86.8	168.47	168.47	233.2	41.8	901.4	805.2	96.21	9.369	
4,600.0	4,450.2	4,436.2	4,436.2	23.0	88.7	168.82	168.82	233.2	41.8	929.2	830.9	98.33	9.450	
4,700.0	4,546.1	4,532.1	4,532.1	23.5	90.6	169.14	169.14	233.2	41.8	957.1	856.6	100.45	9.528	
4,800.0	4,642.0	4,628.0	4,628.0	24.1	92.6	169.46	169.46	233.2	41.8	985.0	882.4	102.57	9.603	
7,600.0	7,113.7	7,099.7	7,099.7	29.3	142.0	85.65	85.65	233.2	41.8	998.5	833.5	165.03	6.050	

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:		0.0 ft	
Survey Program: 7456-UNKNOWN													Offset Well Error:		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				
7,700.0	7,129.4	7,115.4	7,115.4	29.2	142.3	88.74	233.2	41.8	970.8	803.7	167.09	5.810				
7,800.0	7,132.2	7,118.2	7,118.2	29.2	142.4	90.12	233.2	41.8	952.4	783.8	168.54	5.651				
7,900.0	7,130.6	7,116.6	7,116.6	29.4	142.3	90.03	233.2	41.8	944.2	774.3	169.97	5.555				
7,927.3	7,130.2	7,116.2	7,116.2	29.6	142.3	90.00	233.2	41.8	943.8	773.4	170.42	5.538				
8,000.0	7,129.0	7,115.0	7,115.0	30.1	142.3	89.93	233.2	41.8	946.6	775.0	171.60	5.517				
8,100.0	7,127.4	7,113.4	7,113.4	31.4	142.3	89.84	233.2	41.8	959.5	786.1	173.39	5.534				
8,200.0	7,125.9	7,111.9	7,111.9	33.2	142.2	89.74	233.2	41.8	982.4	807.1	175.32	5.604				



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)											Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.647		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.216 CC		
300.0	300.0	299.1	299.1	0.6	0.6	-1.73	30.6	-0.9	30.6	29.5	1.12	27.303		
400.0	400.0	398.0	397.8	0.8	0.8	-6.03	34.9	-3.7	35.2	33.6	1.58	22.309		
500.0	500.0	496.5	496.0	1.0	1.0	26.63	42.1	-8.3	41.5	39.5	2.03	20.404		
600.0	599.8	594.9	593.6	1.2	1.3	23.91	52.0	-14.6	48.0	45.5	2.49	19.261		
700.0	699.5	693.0	690.6	1.5	1.6	22.10	64.8	-22.8	54.6	51.7	2.96	18.442		
800.0	798.7	790.9	786.7	1.7	2.0	20.92	80.3	-32.7	61.3	57.9	3.45	17.786		
900.0	897.5	888.5	881.9	2.1	2.4	20.18	98.5	-44.4	68.0	64.1	3.95	17.214		
1,000.0	995.6	986.0	976.1	2.4	2.9	19.76	119.4	-57.8	74.7	70.3	4.48	16.681		
1,100.0	1,093.1	1,083.2	1,069.3	2.8	3.4	19.58	142.9	-72.8	81.4	76.4	5.04	16.163		
1,200.0	1,189.6	1,182.5	1,163.7	3.3	4.0	19.79	168.8	-89.4	87.1	81.4	5.64	15.448		
1,300.0	1,285.6	1,282.4	1,258.7	3.8	4.6	20.53	194.9	-106.1	90.5	84.2	6.29	14.376		
1,400.0	1,381.5	1,382.3	1,353.7	4.4	5.2	21.23	221.0	-122.7	93.8	86.8	6.98	13.442		
1,500.0	1,477.4	1,482.3	1,448.7	4.9	5.8	21.89	247.0	-139.4	97.1	89.4	7.68	12.640		
1,600.0	1,573.3	1,582.2	1,543.7	5.5	6.5	22.51	273.1	-156.1	100.4	92.0	8.40	11.953		
1,700.0	1,669.2	1,682.2	1,638.8	6.0	7.1	23.08	299.2	-172.8	103.8	94.7	9.14	11.358		
1,800.0	1,765.1	1,782.1	1,733.8	6.6	7.7	23.62	325.3	-189.5	107.2	97.3	9.89	10.839		
1,900.0	1,861.0	1,882.0	1,828.8	7.2	8.3	24.13	351.4	-206.2	110.5	99.9	10.65	10.384		
2,000.0	1,956.9	1,982.0	1,923.8	7.8	9.0	24.61	377.5	-222.9	113.9	102.5	11.41	9.981		
2,100.0	2,052.8	2,081.9	2,018.8	8.3	9.6	25.05	403.6	-239.6	117.3	105.1	12.19	9.622		
2,200.0	2,148.7	2,181.9	2,113.8	8.9	10.2	25.48	429.7	-256.3	120.7	107.7	12.98	9.301		
2,300.0	2,244.5	2,281.8	2,208.9	9.5	10.9	25.88	455.8	-273.0	124.1	110.3	13.77	9.013		
2,400.0	2,340.4	2,381.7	2,303.9	10.1	11.5	26.26	481.9	-289.7	127.5	112.9	14.57	8.753		
2,500.0	2,436.3	2,481.7	2,398.9	10.6	12.1	26.62	507.9	-306.4	130.9	115.6	15.37	8.516		
2,600.0	2,532.2	2,581.6	2,493.9	11.2	12.8	26.96	534.0	-323.1	134.3	118.2	16.18	8.301		
2,700.0	2,628.1	2,681.5	2,588.9	11.8	13.4	27.28	560.1	-339.8	137.8	120.8	17.00	8.104		
2,800.0	2,724.0	2,781.5	2,683.9	12.4	14.0	27.59	586.2	-356.5	141.2	123.4	17.82	7.923		
2,900.0	2,819.9	2,881.4	2,779.0	13.0	14.7	27.89	612.3	-373.2	144.6	126.0	18.64	7.757		
3,000.0	2,915.8	2,981.4	2,874.0	13.6	15.3	28.17	638.4	-389.9	148.1	128.6	19.47	7.603		
3,100.0	3,011.7	3,081.3	2,969.0	14.2	15.9	28.43	664.5	-406.6	151.5	131.2	20.31	7.461		
3,200.0	3,107.6	3,181.2	3,064.0	14.7	16.6	28.69	690.6	-423.3	154.9	133.8	21.14	7.328		
3,300.0	3,203.5	3,281.2	3,159.0	15.3	17.2	28.93	716.7	-440.0	158.4	136.4	21.98	7.205		
3,400.0	3,299.4	3,381.1	3,254.1	15.9	17.8	29.17	742.8	-456.7	161.8	139.0	22.82	7.091		
3,500.0	3,395.3	3,481.1	3,349.1	16.5	18.5	29.39	768.9	-473.4	165.3	141.6	23.67	6.983		
3,600.0	3,491.2	3,581.0	3,444.1	17.1	19.1	29.61	794.9	-490.1	168.7	144.2	24.51	6.883		
3,700.0	3,587.1	3,680.9	3,539.1	17.7	19.7	29.81	821.0	-506.8	172.2	146.8	25.36	6.788		
3,800.0	3,683.0	3,780.9	3,634.1	18.3	20.4	30.01	847.1	-523.5	175.6	149.4	26.21	6.700		
3,900.0	3,778.9	3,880.8	3,729.1	18.8	21.0	30.20	873.2	-540.2	179.1	152.0	27.07	6.616		
4,000.0	3,874.8	3,980.7	3,824.2	19.4	21.7	30.39	899.3	-556.9	182.5	154.6	27.92	6.537		
4,100.0	3,970.7	4,080.7	3,919.2	20.0	22.3	30.56	925.4	-573.6	186.0	157.2	28.78	6.463		
4,200.0	4,066.6	4,180.6	4,014.2	20.6	22.9	30.73	951.5	-590.3	189.5	159.8	29.64	6.392		
4,300.0	4,162.5	4,280.6	4,109.2	21.2	23.6	30.90	977.6	-607.0	192.9	162.4	30.50	6.325		
4,400.0	4,258.4	4,380.5	4,204.2	21.8	24.2	31.06	1,003.7	-623.7	196.4	165.0	31.37	6.262		
4,500.0	4,354.3	4,480.4	4,299.2	22.4	24.8	31.21	1,029.8	-640.3	199.9	167.6	32.23	6.201		
4,600.0	4,450.2	4,580.4	4,394.3	23.0	25.5	31.36	1,055.8	-657.0	203.3	170.2	33.09	6.144		
4,700.0	4,546.1	4,680.3	4,489.3	23.5	26.1	31.50	1,081.9	-673.7	206.8	172.8	33.96	6.089		
4,800.0	4,642.0	4,780.3	4,584.3	24.1	26.7	31.64	1,108.0	-690.4	210.3	175.4	34.83	6.037		
4,900.0	4,737.9	4,880.2	4,679.3	24.7	27.4	31.77	1,134.1	-707.1	213.8	178.1	35.70	5.988		
5,000.0	4,833.8	4,980.1	4,774.3	25.3	28.0	31.90	1,160.2	-723.8	217.2	180.7	36.57	5.940		

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.0	4,929.7	5,080.1	4,869.3		25.9	28.7	32.03	1,186.3	-740.5	220.7	183.3	37.44	5.895		
5,200.0	5,025.6	5,180.0	4,964.4		26.5	29.3	32.15	1,212.4	-757.2	224.2	185.9	38.31	5.851		
5,300.0	5,121.5	5,279.9	5,059.4		27.1	29.9	32.26	1,238.5	-773.9	227.7	188.5	39.19	5.809		
5,400.0	5,217.4	5,379.9	5,154.4		27.7	30.6	32.38	1,264.6	-790.6	231.1	191.1	40.06	5.769		
5,500.0	5,313.3	5,482.9	5,252.4		28.3	31.2	32.53	1,291.2	-807.7	234.4	193.4	40.95	5.723		
5,600.0	5,409.2	5,590.6	5,355.9		28.8	31.7	33.05	1,316.4	-823.8	235.0	193.0	41.94	5.603		
5,700.0	5,505.8	5,698.2	5,460.3		29.3	32.1	33.70	1,338.3	-837.8	234.4	191.5	42.85	5.469		
5,800.0	5,603.2	5,805.8	5,565.6		29.6	32.5	34.33	1,356.9	-849.7	233.4	189.7	43.68	5.343		
5,900.0	5,701.4	5,913.3	5,671.6		30.0	32.8	34.94	1,372.1	-859.4	232.1	187.7	44.44	5.224		
6,000.0	5,800.1	6,020.7	5,778.0		30.3	33.1	35.54	1,384.0	-867.0	230.5	185.4	45.11	5.110		
6,100.0	5,899.4	6,128.0	5,884.8		30.5	33.3	36.12	1,392.4	-872.4	228.6	182.9	45.71	5.000		
6,200.0	5,999.0	6,235.1	5,991.8		30.7	33.5	36.68	1,397.5	-875.7	226.3	180.1	46.23	4.895		
6,300.0	6,098.8	6,342.1	6,098.8		30.8	33.6	37.23	1,399.2	-876.8	223.7	177.0	46.67	4.793		
6,400.0	6,198.8	6,442.2	6,198.8		30.9	33.7	37.49	1,399.2	-876.8	222.3	175.3	46.91	4.738		
6,444.9	6,243.8	6,487.1	6,243.8		31.0	33.7	37.50	1,399.2	-876.8	222.2	175.2	47.02	4.727		
6,500.0	6,298.8	6,542.1	6,298.8		31.0	33.7	0.73	1,399.2	-876.8	222.3	166.1	56.19	3.955		
6,600.0	6,398.8	6,641.1	6,397.4		31.1	33.8	-87.48	1,399.2	-869.3	222.5	174.2	48.25	4.611		
6,700.0	6,498.2	6,738.8	6,492.9		31.1	33.7	-84.94	1,399.2	-849.5	223.1	173.6	49.51	4.507		
6,800.0	6,595.3	6,835.2	6,584.1		31.1	33.6	-82.52	1,399.2	-818.1	224.2	173.8	50.39	4.449		
6,900.0	6,688.6	6,930.6	6,669.6		30.9	33.4	-80.25	1,399.2	-776.1	225.5	174.7	50.86	4.434		
7,000.0	6,776.4	7,025.0	6,748.5		30.7	33.2	-78.18	1,399.2	-724.3	227.1	176.2	50.91	4.460		
7,100.0	6,857.3	7,118.5	6,819.7		30.5	33.0	-76.32	1,399.2	-663.8	228.8	178.1	50.63	4.518		
7,200.0	6,929.7	7,211.3	6,882.5		30.2	32.8	-74.71	1,399.2	-595.6	230.4	180.3	50.12	4.597		
7,300.0	6,992.6	7,303.4	6,936.3		29.9	32.5	-73.35	1,399.2	-520.8	232.0	182.4	49.57	4.680		
7,400.0	7,044.8	7,395.0	6,980.5		29.7	32.3	-72.26	1,399.2	-440.6	233.4	184.2	49.18	4.744		
7,500.0	7,085.4	7,486.3	7,014.6		29.5	32.1	-71.44	1,399.2	-356.1	234.4	185.3	49.17	4.768		
7,600.0	7,113.7	7,577.2	7,038.4		29.3	31.9	-70.90	1,399.2	-268.4	235.2	185.5	49.69	4.733		
7,700.0	7,129.4	7,668.0	7,051.6		29.2	31.7	-70.64	1,399.2	-178.6	235.6	184.7	50.84	4.633		
7,800.0	7,132.2	7,760.1	7,054.1		29.2	31.6	-70.64	1,399.2	-86.5	235.6	182.8	52.72	4.468		
7,900.0	7,130.6	7,860.1	7,052.7		29.4	31.5	-70.68	1,399.2	13.4	235.5	179.9	55.56	4.239		
8,000.0	7,129.0	7,960.1	7,051.3		30.1	31.6	-70.72	1,399.2	113.4	235.4	176.7	58.72	4.010		
8,100.0	7,127.4	8,060.1	7,049.9		31.4	32.1	-70.75	1,399.2	213.4	235.4	173.2	62.18	3.786		
8,200.0	7,125.9	8,160.1	7,048.4		33.2	33.4	-70.79	1,399.2	313.4	235.3	169.4	65.89	3.572		
8,300.0	7,124.3	8,260.1	7,047.0		35.2	35.3	-70.82	1,399.2	413.4	235.3	165.5	69.82	3.370		
8,400.0	7,122.7	8,360.1	7,045.6		37.4	37.5	-70.86	1,399.2	513.4	235.2	161.3	73.92	3.182		
8,500.0	7,121.2	8,460.1	7,044.2		39.6	39.8	-70.90	1,399.2	613.4	235.2	157.0	78.18	3.008		
8,600.0	7,119.6	8,560.1	7,042.8		42.0	42.1	-70.93	1,399.2	713.4	235.1	152.6	82.56	2.848		
8,700.0	7,118.0	8,660.1	7,041.4		44.4	44.5	-70.97	1,399.2	813.4	235.1	148.0	87.05	2.701		
8,800.0	7,116.4	8,760.1	7,040.0		46.8	47.0	-71.01	1,399.2	913.4	235.0	143.4	91.63	2.565		
8,900.0	7,114.9	8,860.1	7,038.5		49.3	49.5	-71.04	1,399.2	1,013.3	235.0	138.7	96.30	2.440		
9,000.0	7,113.3	8,960.1	7,037.1		51.8	52.0	-71.08	1,399.2	1,113.3	234.9	133.9	101.03	2.325		
9,100.0	7,111.7	9,060.1	7,035.7		54.4	54.5	-71.11	1,399.2	1,213.3	234.9	129.1	105.82	2.220		
9,200.0	7,110.2	9,160.1	7,034.3		57.0	57.1	-71.15	1,399.2	1,313.3	234.8	124.2	110.67	2.122		
9,300.0	7,108.6	9,260.1	7,032.9		59.6	59.7	-71.19	1,399.2	1,413.3	234.8	119.2	115.57	2.032		
9,400.0	7,107.0	9,360.1	7,031.5		62.2	62.3	-71.22	1,399.2	1,513.3	234.7	114.2	120.50	1.948		
9,500.0	7,105.5	9,460.1	7,030.1		64.8	64.9	-71.26	1,399.2	1,613.3	234.7	109.2	125.47	1.870		
9,600.0	7,103.9	9,560.1	7,028.6		67.4	67.6	-71.30	1,399.2	1,713.3	234.6	104.1	130.48	1.798		
9,700.0	7,102.3	9,660.1	7,027.2		70.1	70.2	-71.33	1,399.2	1,813.3	234.6	99.1	135.51	1.731		
9,800.0	7,100.7	9,760.1	7,025.8		72.7	72.9	-71.37	1,399.2	1,913.3	234.5	94.0	140.57	1.668		
9,900.0	7,099.2	9,860.1	7,024.4		75.4	75.5	-71.40	1,399.2	2,013.2	234.5	88.8	145.65	1.610		
10,000.0	7,097.6	9,960.1	7,023.0		78.1	78.2	-71.44	1,399.2	2,113.2	234.4	83.7	150.76	1.555		

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)												<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 0-MWD												<b>Offset Well Error:</b>	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	7,096.0	10,060.1	7,021.6	80.8	80.9	-71.48	1,399.2	2,213.2	234.4	78.5	155.88	1.504	
10,200.0	7,094.5	10,160.1	7,020.2	83.5	83.6	-71.51	1,399.2	2,313.2	234.3	73.3	161.03	1.455	Level 3
10,300.0	7,092.9	10,260.1	7,018.8	86.2	86.3	-71.55	1,399.2	2,413.2	234.3	68.1	166.19	1.410	Level 3
10,400.0	7,091.3	10,360.1	7,017.3	88.9	89.0	-71.59	1,399.2	2,513.2	234.2	62.9	171.36	1.367	Level 3
10,500.0	7,089.7	10,460.1	7,015.9	91.6	91.7	-71.62	1,399.2	2,613.2	234.2	57.6	176.55	1.326	Level 3
10,600.0	7,088.2	10,560.1	7,014.5	94.3	94.4	-71.66	1,399.2	2,713.2	234.1	52.4	181.75	1.288	Level 3
10,700.0	7,086.6	10,660.1	7,013.1	97.1	97.1	-71.70	1,399.2	2,813.2	234.1	47.1	186.96	1.252	Level 3
10,800.0	7,085.0	10,760.1	7,011.7	99.8	99.9	-71.73	1,399.2	2,913.2	234.0	41.8	192.19	1.218	Level 2
10,900.0	7,083.5	10,860.1	7,010.3	102.5	102.6	-71.77	1,399.2	3,013.1	234.0	36.5	197.43	1.185	Level 2
11,000.0	7,081.9	10,960.1	7,008.9	105.2	105.3	-71.81	1,399.2	3,113.1	233.9	31.3	202.67	1.154	Level 2
11,100.0	7,080.3	11,060.1	7,007.4	108.0	108.1	-71.84	1,399.2	3,213.1	233.9	25.9	207.93	1.125	Level 2
11,200.0	7,078.8	11,160.1	7,006.0	110.7	110.8	-71.88	1,399.2	3,313.1	233.8	20.6	213.19	1.097	Level 2
11,300.0	7,077.2	11,260.1	7,004.6	113.5	113.6	-71.91	1,399.2	3,413.1	233.8	15.3	218.46	1.070	Level 2
11,400.0	7,075.6	11,360.1	7,003.2	116.2	116.3	-71.95	1,399.2	3,513.1	233.7	10.0	223.74	1.045	Level 2
11,500.0	7,074.0	11,460.1	7,001.8	119.0	119.1	-71.99	1,399.2	3,613.1	233.7	4.7	229.03	1.020	Level 2
11,600.0	7,072.5	11,560.1	7,000.4	121.7	121.8	-72.02	1,399.2	3,713.1	233.6	-0.7	234.32	0.997	Level 1
11,693.5	7,071.0	11,653.7	6,999.1	123.4	124.4	-72.06	1,399.2	3,806.6	233.6	-4.8	238.37	0.980	Level 1, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14))		Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Distance								Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-29.1	0.0	29.1							
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-29.1	0.0	29.1	28.9	0.22	129.666				
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.67	43.222				
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-29.1	0.0	29.1	28.0	1.12	25.933				
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-29.1	0.0	29.1	27.6	1.57	18.524 CC				
500.0	500.0	500.0	500.0	1.0	1.0	-145.17	-29.1	0.0	30.6	28.5	2.02	15.104				
600.0	599.8	599.8	599.8	1.2	1.2	-150.03	-29.1	0.0	35.0	32.5	2.48	14.128				
700.0	699.5	700.7	700.7	1.5	1.5	-154.65	-27.8	-1.2	41.3	38.3	2.93	14.085				
800.0	798.7	801.8	801.7	1.7	1.7	-157.64	-23.9	-4.8	47.8	44.5	3.38	14.146				
900.0	897.5	903.2	902.6	2.1	1.9	-159.53	-17.3	-10.8	54.6	50.8	3.84	14.205				
1,000.0	995.6	1,004.8	1,003.5	2.4	2.2	-160.68	-8.1	-19.3	61.5	57.2	4.32	14.229				
1,100.0	1,093.1	1,106.7	1,104.0	2.8	2.5	-161.30	3.8	-30.2	68.5	63.7	4.82	14.204				
1,200.0	1,189.6	1,208.8	1,204.2	3.3	2.8	-161.52	18.4	-43.5	75.6	70.2	5.35	14.121				
1,300.0	1,285.6	1,311.2	1,303.9	3.8	3.3	-161.26	35.6	-59.3	81.7	75.8	5.94	13.761				
1,400.0	1,381.5	1,412.8	1,402.0	4.4	3.7	-160.12	55.1	-77.2	84.9	78.4	6.59	12.897				
1,500.0	1,477.4	1,512.7	1,498.3	4.9	4.2	-158.87	74.8	-95.3	87.6	80.3	7.27	12.042				
1,600.0	1,573.3	1,612.7	1,594.6	5.5	4.7	-157.70	94.5	-113.4	90.2	82.2	7.98	11.304				
1,700.0	1,669.2	1,712.6	1,690.9	6.0	5.2	-156.59	114.2	-131.4	92.9	84.2	8.72	10.653				
1,800.0	1,765.1	1,812.6	1,787.2	6.6	5.7	-155.55	133.9	-149.5	95.6	86.1	9.49	10.082				
1,900.0	1,861.0	1,912.5	1,883.5	7.2	6.3	-154.57	153.6	-167.5	98.4	88.1	10.27	9.578				
2,000.0	1,956.9	2,012.5	1,979.8	7.8	6.8	-153.63	173.3	-185.6	101.2	90.1	11.08	9.133				
2,100.0	2,052.8	2,112.4	2,076.1	8.3	7.3	-152.75	193.1	-203.7	104.0	92.1	11.90	8.737				
2,200.0	2,148.7	2,212.4	2,172.4	8.9	7.9	-151.92	212.8	-221.7	106.8	94.1	12.74	8.383				
2,300.0	2,244.5	2,312.3	2,268.7	9.5	8.4	-151.13	232.5	-239.8	109.7	96.1	13.59	8.067				
2,400.0	2,340.4	2,412.3	2,365.1	10.1	9.0	-150.38	252.2	-257.9	112.5	98.1	14.46	7.782				
2,500.0	2,436.3	2,512.2	2,461.4	10.6	9.5	-149.66	271.9	-275.9	115.4	100.1	15.34	7.524				
2,600.0	2,532.2	2,612.2	2,557.7	11.2	10.1	-148.98	291.6	-294.0	118.3	102.1	16.23	7.291				
2,700.0	2,628.1	2,712.1	2,654.0	11.8	10.6	-148.34	311.3	-312.1	121.2	104.1	17.13	7.079				
2,800.0	2,724.0	2,812.1	2,750.3	12.4	11.2	-147.72	331.0	-330.1	124.2	106.1	18.04	6.885				
2,900.0	2,819.9	2,912.0	2,846.6	13.0	11.7	-147.13	350.7	-348.2	127.1	108.2	18.95	6.708				
3,000.0	2,915.8	3,012.0	2,942.9	13.6	12.3	-146.57	370.4	-366.2	130.1	110.2	19.88	6.545				
3,100.0	3,011.7	3,111.9	3,039.2	14.2	12.9	-146.04	390.1	-384.3	133.1	112.3	20.81	6.395				
3,200.0	3,107.6	3,211.8	3,135.5	14.7	13.4	-145.53	409.8	-402.4	136.1	114.3	21.75	6.256				
3,300.0	3,203.5	3,311.8	3,231.8	15.3	14.0	-145.04	429.5	-420.4	139.1	116.4	22.69	6.128				
3,400.0	3,299.4	3,411.7	3,328.1	15.9	14.5	-144.57	449.2	-438.5	142.1	118.4	23.64	6.009				
3,500.0	3,395.3	3,511.7	3,424.4	16.5	15.1	-144.12	468.9	-456.6	145.1	120.5	24.60	5.899				
3,600.0	3,491.2	3,611.6	3,520.7	17.1	15.6	-143.69	488.6	-474.6	148.1	122.6	25.56	5.796				
3,700.0	3,587.1	3,711.6	3,617.0	17.7	16.2	-143.27	508.3	-492.7	151.1	124.6	26.52	5.699				
3,800.0	3,683.0	3,811.5	3,713.4	18.3	16.7	-142.87	528.1	-510.8	154.2	126.7	27.49	5.609				
3,900.0	3,778.9	3,911.5	3,809.7	18.8	17.3	-142.49	547.8	-528.8	157.2	128.8	28.46	5.525				
4,000.0	3,874.8	4,011.4	3,906.0	19.4	17.9	-142.12	567.5	-546.9	160.3	130.9	29.43	5.446				
4,100.0	3,970.7	4,111.4	4,002.3	20.0	18.4	-141.77	587.2	-564.9	163.3	132.9	30.41	5.371				
4,200.0	4,066.6	4,211.3	4,098.6	20.6	19.0	-141.43	606.9	-583.0	166.4	135.0	31.39	5.301				
4,300.0	4,162.5	4,311.3	4,194.9	21.2	19.5	-141.10	626.6	-601.1	169.5	137.1	32.37	5.235				
4,400.0	4,258.4	4,411.2	4,291.2	21.8	20.1	-140.78	646.3	-619.1	172.6	139.2	33.36	5.173				
4,500.0	4,354.3	4,511.2	4,387.5	22.4	20.7	-140.48	666.0	-637.2	175.6	141.3	34.35	5.114				
4,600.0	4,450.2	4,611.1	4,483.8	23.0	21.2	-140.18	685.7	-655.3	178.7	143.4	35.34	5.058				
4,700.0	4,546.1	4,711.1	4,580.1	23.5	21.8	-139.90	705.4	-673.3	181.8	145.5	36.33	5.004				
4,800.0	4,642.0	4,811.0	4,676.4	24.1	22.3	-139.62	725.1	-691.4	184.9	147.6	37.33	4.954				
4,900.0	4,737.9	4,911.0	4,772.7	24.7	22.9	-139.35	744.8	-709.4	188.0	149.7	38.33	4.906				
5,000.0	4,833.8	5,010.9	4,869.0	25.3	23.5	-139.10	764.5	-727.5	191.1	151.8	39.32	4.860				

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14))													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
5,100.0	4,929.7	5,110.9	4,965.3	25.9	24.0	-138.85		784.2	-745.6	194.2	153.9	40.32	4.817	
5,200.0	5,025.6	5,210.8	5,061.6	26.5	24.6	-138.60		803.9	-763.6	197.3	156.0	41.33	4.775	
5,300.0	5,121.5	5,310.8	5,158.0	27.1	25.1	-138.37		823.6	-781.7	200.5	158.1	42.33	4.736	
5,400.0	5,217.4	5,410.7	5,254.3	27.7	25.7	-138.14		843.3	-799.8	203.6	160.2	43.34	4.698	
5,500.0	5,313.3	5,509.8	5,349.8	28.3	26.2	-137.93		862.9	-817.6	206.7	162.4	44.32	4.665	
5,600.0	5,409.2	5,605.0	5,442.1	28.8	26.6	-138.16		880.1	-833.5	211.3	166.3	44.99	4.696	
5,700.0	5,505.8	5,700.0	5,534.8	29.3	27.0	-138.63		895.1	-847.2	216.3	170.9	45.44	4.761	
5,800.0	5,603.2	5,795.0	5,628.3	29.6	27.3	-139.11		907.7	-858.8	221.0	175.2	45.79	4.826	
5,900.0	5,701.4	5,889.8	5,722.0	30.0	27.5	-139.60		918.1	-868.3	225.3	179.3	46.07	4.891	
6,000.0	5,800.1	5,984.5	5,816.0	30.3	27.8	-140.09		926.2	-875.7	229.3	183.0	46.26	4.957	
6,100.0	5,899.4	6,079.0	5,910.3	30.5	27.9	-140.59		931.9	-880.9	232.9	186.6	46.37	5.023	
6,200.0	5,999.0	6,173.5	6,004.6	30.7	28.1	-141.09		935.4	-884.1	236.2	189.8	46.39	5.091	
6,300.0	6,098.8	6,268.9	6,100.0	30.8	28.2	-141.62		936.6	-885.2	239.1	192.8	46.34	5.160	
6,400.0	6,198.8	6,367.7	6,198.8	30.9	28.3	-141.89		936.6	-885.2	240.5	194.2	46.35	5.189	
6,500.0	6,298.8	6,467.8	6,298.9	31.0	28.4	-178.68		936.6	-885.2	240.5	190.9	49.63	4.846	
6,592.2	6,391.0	6,560.3	6,391.1	31.1	28.4	90.15		936.6	-878.5	240.4	194.2	46.21	5.203	
6,600.0	6,398.8	6,567.8	6,398.6	31.1	28.4	89.64		936.6	-877.5	240.4	194.5	45.99	5.229	
6,700.0	6,498.2	6,666.5	6,495.1	31.1	28.4	87.24		936.6	-857.3	240.7	195.9	44.83	5.370	
6,800.0	6,595.3	6,763.9	6,587.0	31.1	28.2	84.90		936.6	-825.3	241.4	197.9	43.54	5.544	
6,900.0	6,688.6	6,860.1	6,673.1	30.9	28.0	82.68		936.6	-782.5	242.4	200.2	42.25	5.738	
7,000.0	6,776.4	6,955.3	6,752.3	30.7	27.8	80.60		936.6	-729.8	243.7	202.7	41.08	5.933	
7,100.0	6,857.3	7,050.0	6,824.0	30.5	27.5	78.69		936.6	-668.0	245.2	205.1	40.15	6.108	
7,200.0	6,929.7	7,142.9	6,886.4	30.2	27.3	77.01		936.6	-599.3	246.8	207.2	39.59	6.233	
7,300.0	6,992.6	7,235.5	6,939.8	29.9	27.1	75.55		936.6	-523.7	248.3	208.8	39.52	6.284	
7,400.0	7,044.8	7,327.5	6,983.5	29.7	26.9	74.32		936.6	-442.7	249.8	209.7	40.02	6.241	
7,500.0	7,085.4	7,419.1	7,016.9	29.5	26.8	73.34		936.6	-357.6	251.0	209.8	41.15	6.099	
7,600.0	7,113.7	7,510.2	7,039.9	29.3	26.8	72.62		936.6	-269.4	252.0	209.1	42.90	5.873	
7,700.0	7,129.4	7,600.0	7,052.1	29.2	27.0	72.16		936.6	-180.5	252.6	207.4	45.19	5.590	
7,800.0	7,132.2	7,694.1	7,054.0	29.2	27.4	71.99		936.6	-86.5	252.8	204.9	47.89	5.280	
7,900.0	7,130.6	7,794.1	7,052.6	29.4	28.2	72.02		936.6	13.4	252.8	202.1	50.72	4.984	
8,000.0	7,129.0	7,894.1	7,051.2	30.1	29.4	72.05		936.6	113.4	252.7	198.8	53.94	4.686	
8,100.0	7,127.4	7,994.1	7,049.7	31.4	31.1	72.09		936.6	213.4	252.7	195.2	57.47	4.397	
8,200.0	7,125.9	8,094.1	7,048.3	33.2	33.0	72.12		936.6	313.4	252.6	191.4	61.28	4.123	
8,300.0	7,124.3	8,194.1	7,046.9	35.2	35.1	72.16		936.6	413.4	252.6	187.3	65.30	3.868	
8,400.0	7,122.7	8,294.1	7,045.5	37.4	37.2	72.19		936.6	513.4	252.5	183.0	69.51	3.633	
8,500.0	7,121.2	8,394.1	7,044.1	39.6	39.5	72.22		936.6	613.4	252.5	178.6	73.88	3.418	
8,600.0	7,119.6	8,494.1	7,042.7	42.0	41.9	72.26		936.6	713.4	252.5	174.1	78.36	3.221	
8,700.0	7,118.0	8,594.1	7,041.3	44.4	44.3	72.29		936.6	813.4	252.4	169.4	82.96	3.042	
8,800.0	7,116.4	8,694.1	7,039.8	46.8	46.7	72.33		936.6	913.4	252.4	164.7	87.65	2.879	
8,900.0	7,114.9	8,794.1	7,038.4	49.3	49.2	72.36		936.6	1,013.3	252.3	159.9	92.41	2.730	
9,000.0	7,113.3	8,894.1	7,037.0	51.8	51.8	72.39		936.6	1,113.3	252.3	155.0	97.24	2.594	
9,100.0	7,111.7	8,994.1	7,035.6	54.4	54.3	72.43		936.6	1,213.3	252.2	150.1	102.13	2.470	
9,200.0	7,110.2	9,094.1	7,034.2	57.0	56.9	72.46		936.6	1,313.3	252.2	145.1	107.07	2.355	
9,300.0	7,108.6	9,194.1	7,032.8	59.6	59.5	72.50		936.6	1,413.3	252.1	140.1	112.05	2.250	
9,400.0	7,107.0	9,294.1	7,031.4	62.2	62.1	72.53		936.6	1,513.3	252.1	135.0	117.06	2.153	
9,500.0	7,105.5	9,394.1	7,029.9	64.8	64.7	72.56		936.6	1,613.3	252.0	129.9	122.12	2.064	
9,600.0	7,103.9	9,494.1	7,028.5	67.4	67.4	72.60		936.6	1,713.3	252.0	124.8	127.20	1.981	
9,700.0	7,102.3	9,594.1	7,027.1	70.1	70.0	72.63		936.6	1,813.3	251.9	119.6	132.30	1.904	
9,800.0	7,100.7	9,694.1	7,025.7	72.7	72.7	72.67		936.6	1,913.3	251.9	114.4	137.44	1.833	
9,900.0	7,099.2	9,794.1	7,024.3	75.4	75.4	72.70		936.6	2,013.2	251.8	109.2	142.59	1.766	
10,000.0	7,097.6	9,894.1	7,022.9	78.1	78.1	72.73		936.6	2,113.2	251.8	104.0	147.76	1.704	

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14)												<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 0-MWD												<b>Offset Well Error:</b>	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	7,096.0	9,994.1	7,021.5	80.8	80.8	72.77	936.6	2,213.2	251.7	98.8	152.95	1.646	
10,200.0	7,094.5	10,094.1	7,020.0	83.5	83.5	72.80	936.6	2,313.2	251.7	93.5	158.16	1.591	
10,300.0	7,092.9	10,194.1	7,018.6	86.2	86.2	72.84	936.6	2,413.2	251.6	88.3	163.38	1.540	
10,400.0	7,091.3	10,294.1	7,017.2	88.9	88.9	72.87	936.6	2,513.2	251.6	83.0	168.61	1.492 Level 3	
10,500.0	7,089.7	10,394.1	7,015.8	91.6	91.6	72.91	936.6	2,613.2	251.6	77.7	173.86	1.447 Level 3	
10,600.0	7,088.2	10,494.1	7,014.4	94.3	94.3	72.94	936.6	2,713.2	251.5	72.4	179.11	1.404 Level 3	
10,700.0	7,086.6	10,594.1	7,013.0	97.1	97.0	72.97	936.6	2,813.2	251.5	67.1	184.38	1.364 Level 3	
10,800.0	7,085.0	10,694.1	7,011.6	99.8	99.8	73.01	936.6	2,913.2	251.4	61.8	189.66	1.326 Level 3	
10,900.0	7,083.5	10,794.1	7,010.2	102.5	102.5	73.04	936.6	3,013.1	251.4	56.4	194.95	1.289 Level 3	
11,000.0	7,081.9	10,894.1	7,008.7	105.2	105.3	73.08	936.6	3,113.1	251.3	51.1	200.25	1.255 Level 3	
11,100.0	7,080.3	10,994.1	7,007.3	108.0	108.0	73.11	936.6	3,213.1	251.3	45.7	205.55	1.222 Level 2	
11,200.0	7,078.8	11,094.1	7,005.9	110.7	110.7	73.14	936.6	3,313.1	251.2	40.4	210.86	1.191 Level 2	
11,300.0	7,077.2	11,194.0	7,004.5	113.5	113.5	73.18	936.6	3,413.1	251.2	35.0	216.18	1.162 Level 2	
11,400.0	7,075.6	11,294.0	7,003.1	116.2	116.3	73.21	936.6	3,513.1	251.1	29.6	221.51	1.134 Level 2	
11,500.0	7,074.0	11,394.0	7,001.7	119.0	119.0	73.25	936.6	3,613.1	251.1	24.3	226.84	1.107 Level 2	
11,600.0	7,072.5	11,494.0	7,000.3	121.7	121.8	73.28	936.6	3,713.1	251.1	18.9	232.18	1.081 Level 2	
11,667.0	7,071.4	11,561.1	6,999.3	122.9	123.6	73.31	936.6	3,780.1	251.0	15.9	235.10	1.068 Level 2	
11,693.5	7,071.0	11,583.1	6,999.0	123.4	124.2	73.31	936.6	3,802.1	251.1	14.9	236.14	1.063 Level 2, ES, SF	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-91.1	0.0	91.1					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-91.1	0.0	91.1	90.9	0.22	405.205		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-91.1	0.0	91.1	90.4	0.67	135.068		
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-91.1	0.0	91.1	90.0	1.12	81.041		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-91.1	0.0	91.1	89.5	1.57	57.886 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-143.86	-91.1	0.0	92.5	90.5	2.02	45.708		
600.0	599.8	599.8	599.8	1.2	1.2	-145.64	-91.1	0.0	96.8	94.3	2.48	39.075		
700.0	699.5	699.5	699.5	1.5	1.5	-148.27	-91.1	0.0	104.1	101.1	2.93	35.465		
800.0	798.7	798.7	798.7	1.7	1.7	-151.37	-91.1	0.0	114.6	111.2	3.40	33.736		
900.0	897.5	897.5	897.5	2.1	1.9	-154.58	-91.1	0.0	128.6	124.7	3.86	33.278		
1,000.0	995.6	995.6	995.6	2.4	2.1	-157.65	-91.1	0.0	146.1	141.8	4.33	33.724		
1,100.0	1,093.1	1,096.8	1,096.8	2.8	2.3	-160.11	-90.4	-1.5	166.1	161.3	4.80	34.624		
1,200.0	1,189.6	1,198.7	1,198.5	3.3	2.6	-161.56	-88.2	-6.3	187.3	182.0	5.27	35.569		
1,300.0	1,285.6	1,301.3	1,300.7	3.8	2.8	-162.28	-84.5	-14.4	208.4	202.6	5.77	36.124		
1,400.0	1,381.5	1,405.0	1,403.6	4.4	3.1	-162.21	-79.3	-26.0	227.2	220.8	6.31	35.987		
1,500.0	1,477.4	1,509.5	1,506.8	4.9	3.3	-161.51	-72.4	-41.2	243.5	236.6	6.90	35.277		
1,600.0	1,573.3	1,614.6	1,609.9	5.5	3.7	-160.26	-64.0	-59.8	257.4	249.8	7.55	34.104		
1,700.0	1,669.2	1,713.8	1,706.8	6.0	4.0	-158.89	-55.2	-79.1	270.1	261.9	8.23	32.813		
1,800.0	1,765.1	1,812.8	1,803.5	6.6	4.4	-157.66	-46.5	-98.4	283.0	274.0	8.95	31.636		
1,900.0	1,861.0	1,911.8	1,900.2	7.2	4.8	-156.53	-37.8	-117.7	296.0	286.3	9.69	30.561		
2,000.0	1,956.9	2,010.8	1,996.9	7.8	5.2	-155.49	-29.0	-137.0	309.1	298.7	10.45	29.585		
2,100.0	2,052.8	2,109.8	2,093.6	8.3	5.6	-154.54	-20.3	-156.3	322.3	311.1	11.23	28.701		
2,200.0	2,148.7	2,208.7	2,190.3	8.9	6.0	-153.66	-11.6	-175.6	335.6	323.5	12.03	27.902		
2,300.0	2,244.5	2,307.7	2,287.0	9.5	6.5	-152.85	-2.8	-194.9	348.9	336.1	12.84	27.177		
2,400.0	2,340.4	2,406.7	2,383.7	10.1	6.9	-152.10	5.9	-214.1	362.3	348.7	13.66	26.520		
2,500.0	2,436.3	2,505.7	2,480.4	10.6	7.3	-151.41	14.7	-233.4	375.8	361.3	14.50	25.923		
2,600.0	2,532.2	2,604.7	2,577.1	11.2	7.8	-150.76	23.4	-252.7	389.3	374.0	15.34	25.380		
2,700.0	2,628.1	2,703.7	2,673.8	11.8	8.2	-150.15	32.1	-272.0	402.9	386.7	16.19	24.883		
2,800.0	2,724.0	2,802.7	2,770.5	12.4	8.7	-149.59	40.9	-291.3	416.5	399.4	17.05	24.428		
2,900.0	2,819.9	2,901.7	2,867.2	13.0	9.1	-149.06	49.6	-310.6	430.1	412.2	17.91	24.011		
3,000.0	2,915.8	3,000.7	2,963.9	13.6	9.6	-148.56	58.3	-329.9	443.8	425.0	18.78	23.627		
3,100.0	3,011.7	3,099.6	3,060.6	14.2	10.0	-148.09	67.1	-349.1	457.5	437.9	19.66	23.273		
3,200.0	3,107.6	3,198.6	3,157.3	14.7	10.5	-147.65	75.8	-368.4	471.3	450.7	20.54	22.945		
3,300.0	3,203.5	3,297.6	3,254.0	15.3	10.9	-147.24	84.5	-387.7	485.0	463.6	21.42	22.641		
3,400.0	3,299.4	3,396.6	3,350.7	15.9	11.4	-146.85	93.3	-407.0	498.8	476.5	22.31	22.359		
3,500.0	3,395.3	3,495.6	3,447.4	16.5	11.8	-146.48	102.0	-426.3	512.6	489.4	23.20	22.097		
3,600.0	3,491.2	3,594.6	3,544.1	17.1	12.3	-146.12	110.7	-445.6	526.5	502.4	24.09	21.852		
3,700.0	3,587.1	3,693.6	3,640.8	17.7	12.7	-145.79	119.5	-464.9	540.3	515.3	24.99	21.623		
3,800.0	3,683.0	3,792.6	3,737.5	18.3	13.2	-145.47	128.2	-484.1	554.2	528.3	25.89	21.408		
3,900.0	3,778.9	3,891.6	3,834.2	18.8	13.6	-145.17	136.9	-503.4	568.0	541.3	26.79	21.207		
4,000.0	3,874.8	3,990.5	3,930.9	19.4	14.1	-144.88	145.7	-522.7	581.9	554.2	27.69	21.018		
4,100.0	3,970.7	4,089.5	4,027.6	20.0	14.6	-144.61	154.4	-542.0	595.8	567.3	28.59	20.840		
4,200.0	4,066.6	4,188.5	4,124.3	20.6	15.0	-144.35	163.1	-561.3	609.8	580.3	29.50	20.673		
4,300.0	4,162.5	4,287.5	4,221.0	21.2	15.5	-144.10	171.9	-580.6	623.7	593.3	30.40	20.514		
4,400.0	4,258.4	4,386.5	4,317.7	21.8	15.9	-143.86	180.6	-599.8	637.6	606.3	31.31	20.364		
4,500.0	4,354.3	4,485.5	4,414.4	22.4	16.4	-143.63	189.4	-619.1	651.6	619.4	32.22	20.223		
4,600.0	4,450.2	4,584.5	4,511.1	23.0	16.9	-143.41	198.1	-638.4	665.6	632.4	33.13	20.088		
4,700.0	4,546.1	4,683.5	4,607.8	23.5	17.3	-143.20	206.8	-657.7	679.5	645.5	34.04	19.961		
4,800.0	4,642.0	4,782.5	4,704.5	24.1	17.8	-143.00	215.6	-677.0	693.5	658.6	34.96	19.839		
4,900.0	4,737.9	4,881.4	4,801.2	24.7	18.2	-142.81	224.3	-696.3	707.5	671.6	35.87	19.724		
5,000.0	4,833.8	4,980.4	4,897.8	25.3	18.7	-142.62	233.0	-715.6	721.5	684.7	36.79	19.614		

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)													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
5,100.0	4,929.7	5,079.4	4,994.5	25.9	19.2	-142.44		241.8	-734.8	735.5	697.8	37.70	19.509	
5,200.0	5,025.6	5,178.4	5,091.2	26.5	19.6	-142.27		250.5	-754.1	749.5	710.9	38.62	19.409	
5,300.0	5,121.5	5,277.4	5,187.9	27.1	20.1	-142.11		259.2	-773.4	763.5	724.0	39.53	19.313	
5,400.0	5,217.4	5,376.4	5,284.6	27.7	20.5	-141.95		268.0	-792.7	777.6	737.1	40.45	19.222	
5,500.0	5,313.3	5,475.4	5,381.3	28.3	21.0	-141.79		276.7	-812.0	791.6	750.2	41.37	19.134	
5,600.0	5,409.2	5,574.4	5,478.0	28.8	21.5	-141.68		285.4	-831.3	805.6	763.3	42.29	19.050	
5,700.0	5,505.8	5,664.5	5,566.3	29.3	21.8	-141.68		292.9	-847.8	818.1	775.2	42.98	19.036	
5,800.0	5,603.2	5,753.7	5,654.2	29.6	22.1	-141.71		299.2	-861.7	829.2	785.7	43.57	19.032	
5,900.0	5,701.4	5,842.9	5,742.6	30.0	22.3	-141.76		304.4	-873.1	838.8	794.8	44.07	19.032	
6,000.0	5,800.1	5,932.3	5,831.4	30.3	22.5	-141.84		308.4	-882.0	846.9	802.4	44.49	19.035	
6,100.0	5,899.4	6,021.6	5,920.4	30.5	22.7	-141.94		311.3	-888.4	853.5	808.7	44.82	19.041	
6,200.0	5,999.0	6,111.0	6,009.7	30.7	22.8	-142.07		313.0	-892.2	858.5	813.5	45.07	19.049	
6,300.0	6,098.8	6,201.3	6,100.0	30.8	22.9	-142.22		313.6	-893.5	862.1	816.8	45.23	19.060	
6,400.0	6,198.8	6,300.1	6,198.8	30.9	23.1	-142.31		313.6	-893.5	863.5	818.1	45.37	19.033	
6,500.0	6,298.8	6,400.5	6,299.2	31.0	23.2	-179.10		313.6	-893.2	863.5	820.4	43.07	20.048	
6,600.0	6,398.8	6,501.4	6,399.6	31.1	23.2	90.32		313.6	-883.8	863.4	817.8	45.55	18.954	
6,640.3	6,439.1	6,541.6	6,439.1	31.1	23.2	90.00		313.6	-876.3	863.4	818.0	45.42	19.007	
6,700.0	6,498.2	6,600.5	6,496.2	31.1	23.1	89.53		313.6	-861.7	863.4	818.2	45.21	19.098	
6,800.0	6,595.3	6,698.2	6,587.7	31.1	22.9	88.76		313.6	-827.9	863.6	818.9	44.68	19.326	
6,900.0	6,688.6	6,794.5	6,673.0	30.9	22.7	88.01		313.6	-783.5	863.9	819.8	44.06	19.606	
7,000.0	6,776.4	6,889.4	6,751.1	30.7	22.5	87.30		313.6	-729.5	864.3	820.9	43.45	19.894	
7,100.0	6,857.3	6,983.3	6,821.0	30.5	22.3	86.64		313.6	-667.0	864.9	821.9	42.95	20.136	
7,200.0	6,929.7	7,076.1	6,882.2	30.2	22.2	86.03		313.6	-597.2	865.5	822.8	42.70	20.268	
7,300.0	6,992.6	7,168.0	6,933.9	29.9	22.2	85.49		313.6	-521.3	866.1	823.3	42.82	20.228	
7,400.0	7,044.8	7,259.2	6,975.9	29.7	22.4	85.02		313.6	-440.5	866.7	823.3	43.40	19.969	
7,500.0	7,085.4	7,350.0	7,007.8	29.5	22.8	84.63		313.6	-355.5	867.2	822.7	44.51	19.481	
7,600.0	7,113.7	7,439.8	7,029.3	29.3	23.5	84.32		313.6	-268.4	867.6	821.5	46.17	18.791	
7,700.0	7,129.4	7,529.4	7,040.4	29.2	24.4	84.11		313.6	-179.5	868.0	819.7	48.31	17.965	
7,800.0	7,132.2	7,622.2	7,041.5	29.2	25.6	84.01		313.6	-86.7	868.1	817.2	50.89	17.060	
7,900.0	7,130.6	7,722.2	7,040.1	29.4	27.1	84.01		313.6	13.2	868.1	814.2	53.88	16.112	
8,000.0	7,129.0	7,822.2	7,038.6	30.1	28.8	84.02		313.6	113.2	868.1	810.8	57.26	15.160	
8,100.0	7,127.4	7,922.2	7,037.2	31.4	30.7	84.03		313.6	213.2	868.1	807.1	60.97	14.238	
8,200.0	7,125.9	8,022.2	7,035.8	33.2	32.7	84.04		313.6	313.2	868.1	803.1	64.95	13.366	
8,300.0	7,124.3	8,122.2	7,034.3	35.2	34.8	84.05		313.6	413.2	868.1	798.9	69.15	12.554	
8,400.0	7,122.7	8,222.2	7,032.9	37.4	37.0	84.06		313.6	513.2	868.0	794.5	73.53	11.805	
8,500.0	7,121.2	8,322.2	7,031.5	39.6	39.3	84.07		313.6	613.2	868.0	790.0	78.07	11.118	
8,600.0	7,119.6	8,422.2	7,030.1	42.0	41.7	84.08		313.6	713.2	868.0	785.3	82.74	10.491	
8,700.0	7,118.0	8,522.2	7,028.6	44.4	44.1	84.09		313.6	813.2	868.0	780.5	87.52	9.918	
8,800.0	7,116.4	8,622.2	7,027.2	46.8	46.6	84.10		313.6	913.2	868.0	775.6	92.38	9.396	
8,900.0	7,114.9	8,722.2	7,025.8	49.3	49.1	84.11		313.6	1,013.1	868.0	770.7	97.33	8.918	
9,000.0	7,113.3	8,822.2	7,024.3	51.8	51.6	84.12		313.6	1,113.1	868.0	765.6	102.34	8.481	
9,100.0	7,111.7	8,922.2	7,022.9	54.4	54.2	84.12		313.6	1,213.1	867.9	760.5	107.41	8.081	
9,200.0	7,110.2	9,022.2	7,021.5	57.0	56.7	84.13		313.6	1,313.1	867.9	755.4	112.52	7.713	
9,300.0	7,108.6	9,122.2	7,020.0	59.6	59.3	84.14		313.6	1,413.1	867.9	750.2	117.68	7.375	
9,400.0	7,107.0	9,222.2	7,018.6	62.2	62.0	84.15		313.6	1,513.1	867.9	745.0	122.88	7.063	
9,500.0	7,105.5	9,322.2	7,017.2	64.8	64.6	84.16		313.6	1,613.1	867.9	739.8	128.11	6.774	
9,600.0	7,103.9	9,422.2	7,015.7	67.4	67.3	84.17		313.6	1,713.1	867.9	734.5	133.37	6.507	
9,700.0	7,102.3	9,522.2	7,014.3	70.1	69.9	84.18		313.6	1,813.1	867.9	729.2	138.66	6.259	
9,800.0	7,100.7	9,622.2	7,012.9	72.7	72.6	84.19		313.6	1,913.1	867.9	723.9	143.97	6.028	
9,900.0	7,099.2	9,722.2	7,011.4	75.4	75.3	84.20		313.6	2,013.0	867.8	718.5	149.30	5.813	
10,000.0	7,097.6	9,822.2	7,010.0	78.1	78.0	84.21		313.6	2,113.0	867.8	713.2	154.65	5.612	

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)												<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
10,100.0	7,096.0	9,922.2	7,008.6	80.8	80.7	84.22	313.6	2,213.0	867.8	707.8	160.01	5.423	
10,200.0	7,094.5	10,022.2	7,007.2	83.5	83.4	84.23	313.6	2,313.0	867.8	702.4	165.39	5.247	
10,300.0	7,092.9	10,122.2	7,005.7	86.2	86.1	84.23	313.6	2,413.0	867.8	697.0	170.78	5.081	
10,400.0	7,091.3	10,222.2	7,004.3	88.9	88.8	84.24	313.6	2,513.0	867.8	691.6	176.19	4.925	
10,500.0	7,089.7	10,322.2	7,002.9	91.6	91.5	84.25	313.6	2,613.0	867.8	686.2	181.61	4.778	
10,600.0	7,088.2	10,422.2	7,001.4	94.3	94.2	84.26	313.6	2,713.0	867.7	680.7	187.04	4.639	
10,700.0	7,086.6	10,522.2	7,000.0	97.1	97.0	84.27	313.6	2,813.0	867.7	675.3	192.47	4.508	
10,800.0	7,085.0	10,622.2	6,998.6	99.8	99.7	84.28	313.6	2,912.9	867.7	669.8	197.92	4.384	
10,900.0	7,083.5	10,722.2	6,997.1	102.5	102.5	84.29	313.6	3,012.9	867.7	664.3	203.37	4.267	
11,000.0	7,081.9	10,822.2	6,995.7	105.2	105.2	84.30	313.6	3,112.9	867.7	658.9	208.83	4.155	
11,100.0	7,080.3	10,922.2	6,994.3	108.0	108.0	84.31	313.6	3,212.9	867.7	653.4	214.30	4.049	
11,200.0	7,078.8	11,022.2	6,992.8	110.7	110.7	84.32	313.6	3,312.9	867.7	647.9	219.78	3.948	
11,300.0	7,077.2	11,122.2	6,991.4	113.5	113.5	84.33	313.6	3,412.9	867.7	642.4	225.26	3.852	
11,400.0	7,075.6	11,222.2	6,990.0	116.2	116.2	84.34	313.6	3,512.9	867.6	636.9	230.74	3.760	
11,500.0	7,074.0	11,322.2	6,988.5	119.0	119.0	84.34	313.6	3,612.9	867.6	631.4	236.23	3.673	
11,600.0	7,072.5	11,422.2	6,987.1	121.7	121.5	84.35	313.6	3,712.9	867.6	626.1	241.50	3.593	
11,661.7	7,071.5	11,483.9	6,986.2	122.8	122.6	84.36	313.6	3,774.5	867.6	624.0	243.64	3.561	
11,693.5	7,071.0	11,500.4	6,986.0	123.4	122.9	84.36	313.6	3,791.0	867.7	623.3	244.48	3.549 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-58.3	0.0	58.3	58.3	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-58.3	0.0	58.3	58.1	0.23	256.745	
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-58.3	0.0	58.3	57.6	0.68	86.150	
300.0	300.0	301.0	301.0	0.6	0.6	-180.00	-58.3	0.0	58.3	57.2	1.13	51.759	
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-58.3	0.0	58.3	56.7	1.58	36.992 CC, ES	
500.0	500.0	501.0	501.0	1.0	1.0	-144.21	-58.3	0.0	59.7	57.7	2.03	29.470	
600.0	599.8	600.8	600.8	1.2	1.2	-146.91	-58.3	0.0	64.0	61.5	2.48	25.827	
700.0	699.5	700.5	700.5	1.5	1.5	-150.65	-58.3	0.0	71.5	68.5	2.94	24.343	
800.0	798.7	799.7	799.7	1.7	1.7	-154.71	-58.3	0.0	82.3	78.9	3.40	24.235	
900.0	897.5	900.8	900.8	2.1	1.9	-157.89	-57.4	-1.5	95.5	91.6	3.85	24.775	
1,000.0	995.6	1,002.4	1,002.2	2.4	2.1	-159.62	-54.8	-6.2	109.6	105.3	4.31	25.412	
1,100.0	1,093.1	1,104.3	1,103.7	2.8	2.4	-160.35	-50.3	-14.0	124.5	119.7	4.79	25.976	
1,200.0	1,189.6	1,206.5	1,205.2	3.3	2.6	-160.37	-44.1	-25.0	140.0	134.7	5.30	26.417	
1,300.0	1,285.6	1,309.2	1,306.5	3.8	2.9	-159.83	-36.0	-39.3	155.3	149.4	5.87	26.459	
1,400.0	1,381.5	1,412.2	1,407.6	4.4	3.3	-158.55	-26.1	-56.7	168.1	161.6	6.50	25.856	
1,500.0	1,477.4	1,511.4	1,504.6	4.9	3.6	-157.14	-15.9	-74.8	179.9	172.7	7.18	25.073	
1,600.0	1,573.3	1,610.6	1,601.6	5.5	4.0	-155.91	-5.6	-92.8	191.8	183.9	7.88	24.335	
1,700.0	1,669.2	1,709.8	1,698.6	6.0	4.4	-154.82	4.6	-110.9	203.8	195.2	8.61	23.663	
1,800.0	1,765.1	1,809.0	1,795.6	6.6	4.8	-153.85	14.9	-129.0	215.8	206.5	9.36	23.048	
1,900.0	1,861.0	1,908.3	1,892.6	7.2	5.2	-152.98	25.1	-147.1	227.9	217.8	10.13	22.492	
2,000.0	1,956.9	2,007.5	1,989.6	7.8	5.7	-152.20	35.4	-165.2	240.1	229.2	10.92	21.991	
2,100.0	2,052.8	2,106.7	2,086.6	8.3	6.1	-151.50	45.6	-183.3	252.3	240.6	11.71	21.537	
2,200.0	2,148.7	2,205.9	2,183.6	8.9	6.5	-150.86	55.9	-201.3	264.5	252.0	12.52	21.127	
2,300.0	2,244.5	2,305.1	2,280.6	9.5	7.0	-150.28	66.2	-219.4	276.7	263.4	13.33	20.755	
2,400.0	2,340.4	2,404.3	2,377.6	10.1	7.4	-149.74	76.4	-237.5	289.0	274.9	14.16	20.417	
2,500.0	2,436.3	2,503.5	2,474.6	10.6	7.8	-149.25	86.7	-255.6	301.3	286.3	14.98	20.109	
2,600.0	2,532.2	2,602.7	2,571.6	11.2	8.3	-148.80	96.9	-273.7	313.6	297.8	15.82	19.828	
2,700.0	2,628.1	2,701.9	2,668.6	11.8	8.7	-148.39	107.2	-291.8	326.0	309.3	16.66	19.570	
2,800.0	2,724.0	2,801.1	2,765.6	12.4	9.2	-148.00	117.4	-309.9	338.3	320.8	17.50	19.333	
2,900.0	2,819.9	2,900.3	2,862.7	13.0	9.6	-147.64	127.7	-327.9	350.7	332.3	18.35	19.115	
3,000.0	2,915.8	2,999.6	2,959.7	13.6	10.1	-147.31	137.9	-346.0	363.1	343.9	19.20	18.914	
3,100.0	3,011.7	3,098.8	3,056.7	14.2	10.5	-146.99	148.2	-364.1	375.4	355.4	20.05	18.727	
3,200.0	3,107.6	3,198.0	3,153.7	14.7	10.9	-146.70	158.5	-382.2	387.8	366.9	20.90	18.554	
3,300.0	3,203.5	3,297.2	3,250.7	15.3	11.4	-146.43	168.7	-400.3	400.3	378.5	21.76	18.393	
3,400.0	3,299.4	3,396.4	3,347.7	15.9	11.8	-146.17	179.0	-418.4	412.7	390.1	22.62	18.243	
3,500.0	3,395.3	3,495.6	3,444.7	16.5	12.3	-145.92	189.2	-436.4	425.1	401.6	23.48	18.103	
3,600.0	3,491.2	3,594.8	3,541.7	17.1	12.8	-145.70	199.5	-454.5	437.5	413.2	24.35	17.971	
3,700.0	3,587.1	3,694.0	3,638.7	17.7	13.2	-145.48	209.7	-472.6	450.0	424.8	25.21	17.848	
3,800.0	3,683.0	3,793.2	3,735.7	18.3	13.7	-145.27	220.0	-490.7	462.4	436.3	26.08	17.732	
3,900.0	3,778.9	3,892.4	3,832.7	18.8	14.1	-145.08	230.2	-508.8	474.9	447.9	26.95	17.623	
4,000.0	3,874.8	3,991.6	3,929.7	19.4	14.6	-144.90	240.5	-526.9	487.3	459.5	27.81	17.521	
4,100.0	3,970.7	4,090.9	4,026.7	20.0	15.0	-144.72	250.8	-544.9	499.8	471.1	28.68	17.424	
4,200.0	4,066.6	4,190.1	4,123.7	20.6	15.5	-144.55	261.0	-563.0	512.2	482.7	29.56	17.332	
4,300.0	4,162.5	4,289.3	4,220.8	21.2	15.9	-144.39	271.3	-581.1	524.7	494.3	30.43	17.245	
4,400.0	4,258.4	4,388.5	4,317.8	21.8	16.4	-144.24	281.5	-599.2	537.2	505.9	31.30	17.163	
4,500.0	4,354.3	4,487.7	4,414.8	22.4	16.8	-144.10	291.8	-617.3	549.7	517.5	32.17	17.084	
4,600.0	4,450.2	4,586.9	4,511.8	23.0	17.3	-143.96	302.0	-635.4	562.1	529.1	33.05	17.010	
4,700.0	4,546.1	4,686.1	4,608.8	23.5	17.7	-143.83	312.3	-653.4	574.6	540.7	33.92	16.939	
4,800.0	4,642.0	4,785.3	4,705.8	24.1	18.2	-143.70	322.5	-671.5	587.1	552.3	34.80	16.872	
4,900.0	4,737.9	4,884.5	4,802.8	24.7	18.6	-143.58	332.8	-689.6	599.6	563.9	35.67	16.808	
5,000.0	4,833.8	4,983.7	4,899.8	25.3	19.1	-143.47	343.0	-707.7	612.1	575.5	36.55	16.746	

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	4,929.7	5,082.9	4,996.8	25.9	19.6	-143.35	353.3	-725.8	624.6	587.2	37.43	16.688		
5,200.0	5,025.6	5,182.2	5,093.8	26.5	20.0	-143.25	363.6	-743.9	637.1	598.8	38.31	16.631		
5,300.0	5,121.5	5,281.4	5,190.8	27.1	20.5	-143.14	373.8	-762.0	649.6	610.4	39.18	16.578		
5,400.0	5,217.4	5,380.6	5,287.8	27.7	20.9	-143.04	384.1	-780.0	662.1	622.0	40.06	16.526		
5,500.0	5,313.3	5,479.8	5,384.8	28.3	21.4	-142.95	394.3	-798.1	674.6	633.6	40.94	16.477		
5,600.0	5,409.2	5,579.0	5,481.8	28.8	21.8	-142.89	404.6	-816.2	687.0	645.2	41.82	16.429		
5,700.0	5,505.8	5,678.4	5,579.0	29.3	22.3	-142.80	414.9	-834.3	697.5	654.9	42.65	16.356		
5,800.0	5,603.2	5,769.6	5,668.3	29.6	22.7	-142.61	423.9	-850.2	705.8	662.4	43.38	16.270		
5,900.0	5,701.4	5,858.5	5,756.0	30.0	22.9	-142.46	431.3	-863.4	712.7	668.7	43.98	16.207		
6,000.0	5,800.1	5,947.6	5,844.2	30.3	23.2	-142.34	437.5	-874.2	718.4	674.0	44.48	16.154		
6,100.0	5,899.4	6,036.7	5,932.7	30.5	23.4	-142.25	442.3	-882.6	722.9	678.0	44.89	16.105		
6,200.0	5,999.0	6,125.8	6,021.6	30.7	23.5	-142.18	445.7	-888.7	726.1	680.9	45.21	16.059		
6,300.0	6,098.8	6,215.0	6,110.7	30.8	23.7	-142.15	447.7	-892.3	728.1	682.6	45.45	16.017		
6,400.0	6,198.8	6,304.3	6,200.0	30.9	23.8	-142.14	448.4	-893.5	728.7	683.1	45.61	15.976		
6,500.0	6,298.8	6,404.1	6,299.8	31.0	23.9	-178.91	448.4	-893.5	728.7	684.7	43.99	16.566		
6,600.0	6,398.8	6,504.7	6,400.4	31.1	24.0	91.09	448.4	-892.8	728.7	682.6	46.09	15.810		
6,700.0	6,498.2	6,606.5	6,501.5	31.1	24.0	91.06	448.4	-881.8	728.7	682.6	46.10	15.807		
6,800.0	6,595.3	6,708.3	6,600.3	31.1	23.9	91.02	448.4	-857.5	728.7	682.8	45.87	15.886		
6,900.0	6,688.6	6,810.0	6,694.8	30.9	23.7	90.96	448.4	-820.3	728.7	683.2	45.46	16.028		
7,000.0	6,776.4	6,911.5	6,783.5	30.7	23.5	90.88	448.4	-771.0	728.7	683.7	44.96	16.206		
7,100.0	6,857.3	7,012.9	6,864.7	30.5	23.3	90.79	448.4	-710.5	728.7	684.2	44.48	16.380		
7,200.0	6,929.7	7,114.1	6,937.1	30.2	23.0	90.68	448.4	-639.8	728.6	684.5	44.16	16.500		
7,300.0	6,992.6	7,215.2	6,999.5	29.9	22.9	90.56	448.4	-560.4	728.6	684.5	44.14	16.505		
7,400.0	7,044.8	7,316.0	7,050.7	29.7	23.0	90.43	448.4	-473.6	728.6	684.0	44.58	16.346		
7,500.0	7,085.4	7,416.6	7,089.9	29.5	23.3	90.30	448.4	-381.1	728.6	683.0	45.55	15.995		
7,600.0	7,113.7	7,516.9	7,116.7	29.3	23.8	90.15	448.4	-284.4	728.6	681.5	47.11	15.465		
7,694.8	7,128.9	7,611.8	7,130.1	29.2	24.6	90.02	448.4	-190.6	728.6	679.5	49.10	14.840		
7,700.0	7,129.4	7,617.1	7,130.5	29.2	24.7	90.01	448.4	-185.4	728.6	679.4	49.21	14.805		
7,800.0	7,132.2	7,717.0	7,131.9	29.2	25.8	89.90	448.4	-85.5	728.6	676.8	51.78	14.072		
7,900.0	7,130.6	7,817.0	7,130.4	29.4	27.3	89.90	448.4	14.5	728.6	673.8	54.77	13.303		
8,000.0	7,129.0	7,917.0	7,128.8	30.1	28.9	89.90	448.4	114.5	728.6	670.4	58.15	12.529		
8,100.0	7,127.4	8,017.0	7,127.2	31.4	30.8	89.90	448.4	214.5	728.6	666.7	61.86	11.778		
8,200.0	7,125.9	8,117.0	7,125.7	33.2	32.8	89.90	448.4	314.5	728.6	662.8	65.84	11.066		
8,300.0	7,124.3	8,217.0	7,124.1	35.2	34.9	89.90	448.4	414.5	728.6	658.6	70.04	10.402		
8,400.0	7,122.7	8,317.0	7,122.5	37.4	37.1	89.90	448.4	514.5	728.6	654.2	74.43	9.789		
8,500.0	7,121.2	8,417.0	7,120.9	39.6	39.4	89.90	448.4	614.5	728.6	649.6	78.98	9.225		
8,600.0	7,119.6	8,517.0	7,119.4	42.0	41.7	89.90	448.4	714.4	728.6	644.9	83.65	8.710		
8,700.0	7,118.0	8,617.0	7,117.8	44.4	44.1	89.90	448.4	814.4	728.6	640.2	88.44	8.239		
8,800.0	7,116.4	8,717.0	7,116.2	46.8	46.6	89.90	448.4	914.4	728.6	635.3	93.31	7.808		
8,900.0	7,114.9	8,817.0	7,114.7	49.3	49.1	89.90	448.4	1,014.4	728.6	630.3	98.27	7.414		
9,000.0	7,113.3	8,917.0	7,113.1	51.8	51.6	89.90	448.4	1,114.4	728.6	625.3	103.29	7.054		
9,100.0	7,111.7	9,017.0	7,111.5	54.4	54.2	89.90	448.4	1,214.4	728.6	620.2	108.37	6.723		
9,200.0	7,110.2	9,117.0	7,109.9	57.0	56.7	89.90	448.4	1,314.4	728.6	615.1	113.51	6.419		
9,300.0	7,108.6	9,217.0	7,108.4	59.6	59.3	89.90	448.4	1,414.4	728.6	609.9	118.68	6.139		
9,400.0	7,107.0	9,317.0	7,106.8	62.2	62.0	89.90	448.4	1,514.3	728.6	604.7	123.89	5.881		
9,500.0	7,105.5	9,417.0	7,105.2	64.8	64.6	89.90	448.4	1,614.3	728.6	599.5	129.14	5.642		
9,600.0	7,103.9	9,517.0	7,103.7	67.4	67.2	89.90	448.4	1,714.3	728.6	594.2	134.42	5.420		
9,700.0	7,102.3	9,617.0	7,102.1	70.1	69.9	89.90	448.4	1,814.3	728.6	588.9	139.72	5.215		
9,800.0	7,100.7	9,717.0	7,100.5	72.7	72.6	89.90	448.4	1,914.3	728.6	583.6	145.05	5.023		
9,900.0	7,099.2	9,817.0	7,099.0	75.4	75.2	89.90	448.4	2,014.3	728.6	578.2	150.40	4.845		
10,000.0	7,097.6	9,917.0	7,097.4	78.1	77.9	89.90	448.4	2,114.3	728.6	572.8	155.76	4.678		

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 Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)												<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 0-MWD												<b>Offset Well Error:</b>	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	7,096.0	10,017.0	7,095.8	80.8	80.6	89.90	448.4	2,214.3	728.6	567.5	161.15	4.521	
10,200.0	7,094.5	10,117.0	7,094.2	83.5	83.3	89.90	448.4	2,314.2	728.6	562.1	166.54	4.375	
10,300.0	7,092.9	10,217.0	7,092.7	86.2	86.0	89.90	448.4	2,414.2	728.6	556.6	171.96	4.237	
10,400.0	7,091.3	10,317.0	7,091.1	88.9	88.8	89.90	448.4	2,514.2	728.6	551.2	177.38	4.108	
10,500.0	7,089.7	10,417.0	7,089.5	91.6	91.5	89.90	448.4	2,614.2	728.6	545.8	182.82	3.985	
10,600.0	7,088.2	10,517.0	7,088.0	94.3	94.2	89.90	448.4	2,714.2	728.6	540.3	188.26	3.870	
10,700.0	7,086.6	10,617.0	7,086.4	97.1	96.9	89.90	448.4	2,814.2	728.6	534.9	193.72	3.761	
10,800.0	7,085.0	10,717.0	7,084.8	99.8	99.7	89.90	448.4	2,914.2	728.6	529.4	199.19	3.658	
10,900.0	7,083.5	10,817.0	7,083.2	102.5	102.4	89.90	448.4	3,014.2	728.6	524.0	204.66	3.560	
11,000.0	7,081.9	10,917.0	7,081.7	105.2	105.2	89.90	448.4	3,114.1	728.6	518.5	210.14	3.467	
11,100.0	7,080.3	11,017.0	7,080.1	108.0	107.9	89.90	448.4	3,214.1	728.6	513.0	215.63	3.379	
11,200.0	7,078.8	11,117.0	7,078.5	110.7	110.6	89.90	448.4	3,314.1	728.6	507.5	221.12	3.295	
11,300.0	7,077.2	11,217.0	7,077.0	113.5	113.4	89.90	448.4	3,414.1	728.6	502.0	226.62	3.215	
11,400.0	7,075.6	11,317.0	7,075.4	116.2	116.2	89.90	448.4	3,514.1	728.6	496.5	232.13	3.139	
11,500.0	7,074.0	11,417.0	7,073.8	119.0	118.9	89.90	448.4	3,614.1	728.6	491.0	237.64	3.066	
11,600.0	7,072.5	11,517.0	7,072.3	121.7	121.5	89.90	448.4	3,714.1	728.6	485.6	242.98	2.999	
11,651.4	7,071.7	11,568.4	7,071.4	122.6	122.4	89.90	448.4	3,765.5	728.6	483.9	244.76	2.977	
11,693.5	7,071.0	11,596.7	7,071.0	123.4	122.9	89.90	448.4	3,793.8	728.7	482.8	245.99	2.963 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4816.0ft (RKB - 15')

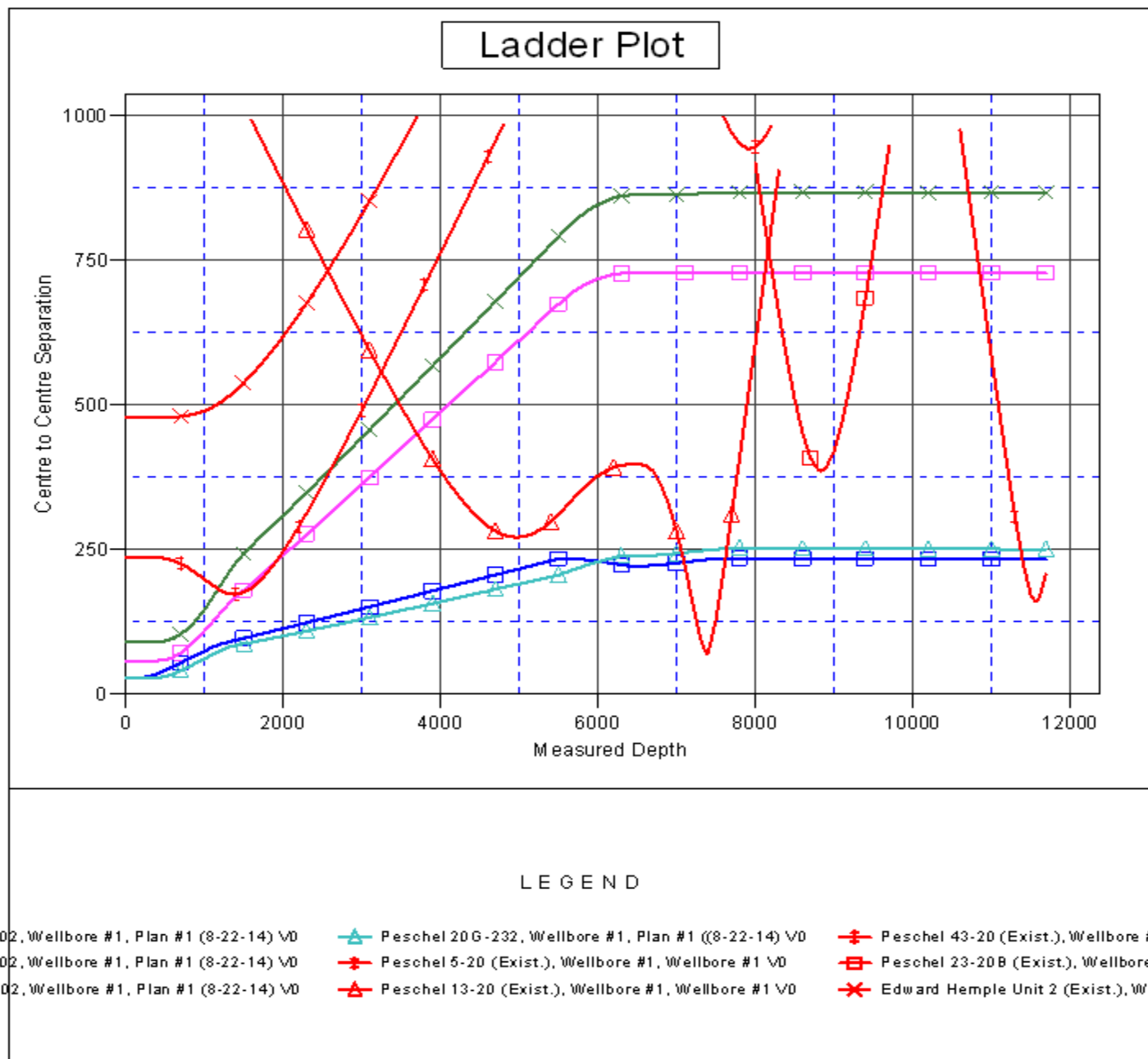
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Peschel 20G-332

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.52°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Peschel 20G-332
<b>Project:</b>	SEC.20-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Reference Site:</b>	Peschel 4N65W20B Pad Sec.20-T4N-R65W	<b>MD Reference:</b>	WELL @ 4816.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peschel 20G-332	<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 (8-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

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