

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peschel 20H-302**

Surface Location: Peschel 4N65W20B Pad Sec.20-T4N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4802.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1350754.37	3225069.08	40.293410	-104.693140	
RKB - 15' WELL @ 4817.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1010'FSL & 950'FWL	1.0	0.0	0.0	Point
BHL 1504'FSL & 500'FEL	7071.0	506.7	3793.8	Point



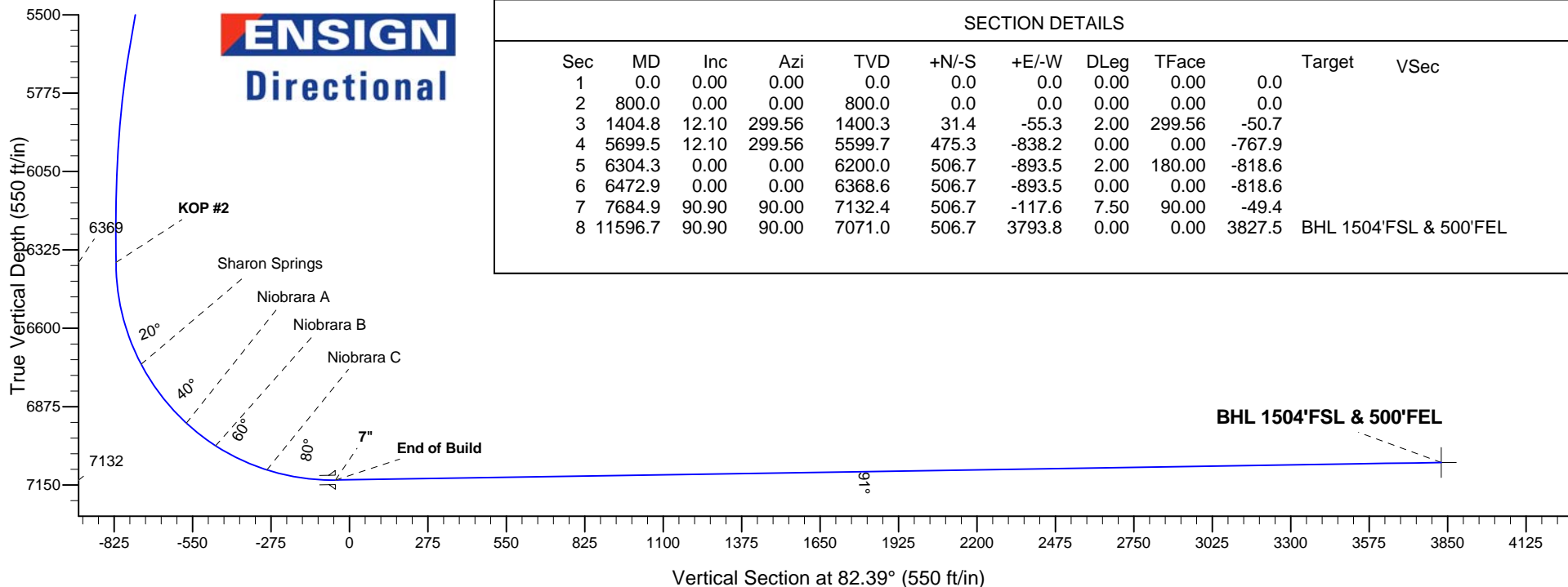
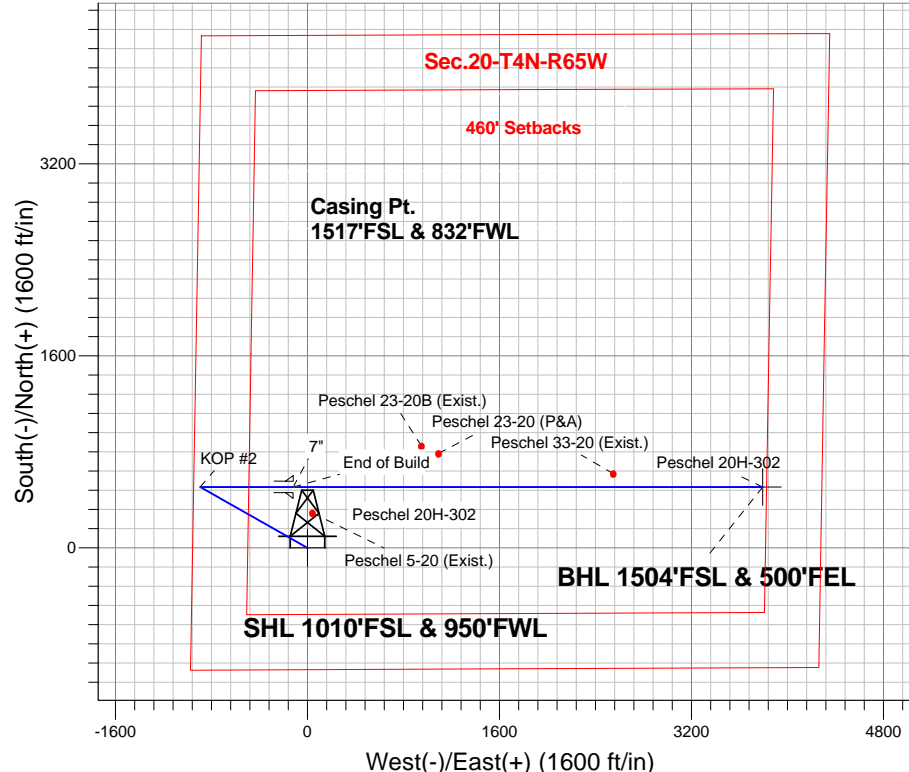
Azimuths to True North
 Magnetic North: 8.39°

Magnetic Field
 Strength: 52746.0snT
 Dip Angle: 66.87°
 Date: 8/27/2014
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP #1
6368.6	6472.9	KOP #2
7132.4	7684.9	End of Build

Peschel 4N65W20B Pad Sec.20-T4N-R65W
 Peschel 20H-302
 Plan #1 (8-22-14)
 13:18, August 28 2014



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1404.8	12.10	299.56	1400.3	31.4	-55.3	2.00	299.56	-50.7	
4	5699.5	12.10	299.56	5599.7	475.3	-838.2	0.00	0.00	-767.9	
5	6304.3	0.00	0.00	6200.0	506.7	-893.5	2.00	180.00	-818.6	
6	6472.9	0.00	0.00	6368.6	506.7	-893.5	0.00	0.00	-818.6	
7	7684.9	90.90	90.00	7132.4	506.7	-117.6	7.50	90.00	-49.4	
8	11596.7	90.90	90.00	7071.0	506.7	3793.8	0.00	0.00	3827.5	BHL 1504'FSL & 500'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W

Peschel 4N65W20B Pad Sec.20-T4N-R65W

Peschel 20H-302

Wellbore #1

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

Standard Planning Report

28 August, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20H-302
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-14)		

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

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

Well	Peschel 20H-302		
Well Position	+N/-S	-87.4 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			ft
			Latitude:
			40.293410
			Longitude:
			-104.693140
			Ground Level:
			4,802.0 ft

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

Design	Plan #1 (8-22-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	82.39

Plan Sections										
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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,404.8	12.10	299.56	1,400.3	31.4	-55.3	2.00	2.00	0.00	299.56	
5,699.5	12.10	299.56	5,599.7	475.3	-838.2	0.00	0.00	0.00	0.00	
6,304.3	0.00	0.00	6,200.0	506.7	-893.5	2.00	-2.00	0.00	180.00	
6,472.9	0.00	0.00	6,368.6	506.7	-893.5	0.00	0.00	0.00	0.00	
7,684.9	90.90	90.00	7,132.4	506.7	-117.6	7.50	7.50	0.00	90.00	
11,596.7	90.90	90.00	7,071.0	506.7	3,793.8	0.00	0.00	0.00	0.00	BHL 1504'FSL & 5C

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Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
900.0	2.00	299.56	900.0	0.9	-1.5	-1.4	2.00	2.00	0.00
1,000.0	4.00	299.56	999.8	3.4	-6.1	-5.6	2.00	2.00	0.00
1,100.0	6.00	299.56	1,099.5	7.7	-13.7	-12.5	2.00	2.00	0.00
1,200.0	8.00	299.56	1,198.7	13.8	-24.3	-22.2	2.00	2.00	0.00
1,300.0	10.00	299.56	1,297.5	21.5	-37.9	-34.7	2.00	2.00	0.00
1,400.0	12.00	299.56	1,395.6	30.9	-54.5	-49.9	2.00	2.00	0.00
1,404.8	12.10	299.56	1,400.3	31.4	-55.3	-50.7	2.00	2.00	0.00
1,500.0	12.10	299.56	1,493.4	41.2	-72.7	-66.6	0.00	0.00	0.00
1,600.0	12.10	299.56	1,591.2	51.6	-90.9	-83.3	0.00	0.00	0.00
1,700.0	12.10	299.56	1,689.0	61.9	-109.1	-100.0	0.00	0.00	0.00
1,800.0	12.10	299.56	1,786.7	72.2	-127.4	-116.7	0.00	0.00	0.00
1,900.0	12.10	299.56	1,884.5	82.6	-145.6	-133.4	0.00	0.00	0.00
2,000.0	12.10	299.56	1,982.3	92.9	-163.8	-150.1	0.00	0.00	0.00
2,100.0	12.10	299.56	2,080.1	103.2	-182.0	-166.8	0.00	0.00	0.00
2,200.0	12.10	299.56	2,177.9	113.6	-200.3	-183.5	0.00	0.00	0.00
2,300.0	12.10	299.56	2,275.6	123.9	-218.5	-200.2	0.00	0.00	0.00
2,400.0	12.10	299.56	2,373.4	134.3	-236.7	-216.9	0.00	0.00	0.00
2,500.0	12.10	299.56	2,471.2	144.6	-255.0	-233.6	0.00	0.00	0.00
2,600.0	12.10	299.56	2,569.0	154.9	-273.2	-250.3	0.00	0.00	0.00
2,700.0	12.10	299.56	2,666.8	165.3	-291.4	-267.0	0.00	0.00	0.00
2,800.0	12.10	299.56	2,764.5	175.6	-309.6	-283.7	0.00	0.00	0.00
2,900.0	12.10	299.56	2,862.3	185.9	-327.9	-300.4	0.00	0.00	0.00
3,000.0	12.10	299.56	2,960.1	196.3	-346.1	-317.1	0.00	0.00	0.00
3,100.0	12.10	299.56	3,057.9	206.6	-364.3	-333.8	0.00	0.00	0.00
3,200.0	12.10	299.56	3,155.7	216.9	-382.6	-350.5	0.00	0.00	0.00
3,300.0	12.10	299.56	3,253.4	227.3	-400.8	-367.2	0.00	0.00	0.00
3,400.0	12.10	299.56	3,351.2	237.6	-419.0	-383.9	0.00	0.00	0.00
3,500.0	12.10	299.56	3,449.0	248.0	-437.2	-400.6	0.00	0.00	0.00
3,600.0	12.10	299.56	3,546.8	258.3	-455.5	-417.3	0.00	0.00	0.00
3,700.0	12.10	299.56	3,644.6	268.6	-473.7	-434.0	0.00	0.00	0.00
3,797.6	12.10	299.56	3,740.0	278.7	-491.5	-450.3	0.00	0.00	0.00
Parkman									
3,800.0	12.10	299.56	3,742.3	279.0	-491.9	-450.7	0.00	0.00	0.00
3,900.0	12.10	299.56	3,840.1	289.3	-510.2	-467.4	0.00	0.00	0.00
4,000.0	12.10	299.56	3,937.9	299.6	-528.4	-484.1	0.00	0.00	0.00
4,100.0	12.10	299.56	4,035.7	310.0	-546.6	-500.8	0.00	0.00	0.00
4,200.0	12.10	299.56	4,133.5	320.3	-564.8	-517.5	0.00	0.00	0.00
4,300.0	12.10	299.56	4,231.2	330.7	-583.1	-534.2	0.00	0.00	0.00
4,400.0	12.10	299.56	4,329.0	341.0	-601.3	-550.9	0.00	0.00	0.00
4,447.0	12.10	299.56	4,375.0	345.9	-609.9	-558.7	0.00	0.00	0.00
Sussex									
4,500.0	12.10	299.56	4,426.8	351.3	-619.5	-567.6	0.00	0.00	0.00
4,600.0	12.10	299.56	4,524.6	361.7	-637.8	-584.3	0.00	0.00	0.00

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Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	12.10	299.56	4,622.4	372.0	-656.0	-601.0	0.00	0.00	0.00
4,800.0	12.10	299.56	4,720.1	382.3	-674.2	-617.7	0.00	0.00	0.00
4,900.0	12.10	299.56	4,817.9	392.7	-692.4	-634.4	0.00	0.00	0.00
5,000.0	12.10	299.56	4,915.7	403.0	-710.7	-651.1	0.00	0.00	0.00
5,100.0	12.10	299.56	5,013.5	413.4	-728.9	-667.8	0.00	0.00	0.00
5,200.0	12.10	299.56	5,111.3	423.7	-747.1	-684.5	0.00	0.00	0.00
5,290.8	12.10	299.56	5,200.0	433.1	-763.7	-699.6	0.00	0.00	0.00
Shannon									
5,300.0	12.10	299.56	5,209.0	434.0	-765.3	-701.2	0.00	0.00	0.00
5,400.0	12.10	299.56	5,306.8	444.4	-783.6	-717.9	0.00	0.00	0.00
5,500.0	12.10	299.56	5,404.6	454.7	-801.8	-734.6	0.00	0.00	0.00
5,600.0	12.10	299.56	5,502.4	465.0	-820.0	-751.3	0.00	0.00	0.00
5,699.5	12.10	299.56	5,599.7	475.3	-838.2	-767.9	0.00	0.00	0.00
5,700.0	12.09	299.56	5,600.2	475.4	-838.3	-768.0	2.00	-2.00	0.00
5,800.0	10.09	299.56	5,698.3	484.9	-855.0	-783.3	2.00	-2.00	0.00
5,900.0	8.09	299.56	5,797.0	492.6	-868.7	-795.9	2.00	-2.00	0.00
6,000.0	6.09	299.56	5,896.3	498.7	-879.5	-805.7	2.00	-2.00	0.00
6,100.0	4.09	299.56	5,995.9	503.1	-887.2	-812.8	2.00	-2.00	0.00
6,200.0	2.09	299.56	6,095.7	505.8	-891.8	-817.0	2.00	-2.00	0.00
6,300.0	0.09	299.56	6,195.7	506.7	-893.5	-818.6	2.00	-2.00	0.00
6,304.3	0.00	0.00	6,200.0	506.7	-893.5	-818.6	2.00	-2.00	0.00
6,400.0	0.00	0.00	6,295.7	506.7	-893.5	-818.6	0.00	0.00	0.00
6,472.9	0.00	0.00	6,368.6	506.7	-893.5	-818.6	0.00	0.00	0.00
KOP #2									
6,500.0	2.03	90.00	6,395.7	506.7	-893.0	-818.1	7.50	7.50	0.00
6,600.0	9.53	90.00	6,495.1	506.7	-883.0	-808.1	7.50	7.50	0.00
6,700.0	17.03	90.00	6,592.4	506.7	-860.0	-785.3	7.50	7.50	0.00
6,800.0	24.53	90.00	6,685.8	506.7	-824.5	-750.2	7.50	7.50	0.00
6,844.8	27.89	90.00	6,726.0	506.7	-804.7	-730.6	7.50	7.50	0.00
Sharon Springs									
6,900.0	32.03	90.00	6,773.8	506.7	-777.2	-703.3	7.50	7.50	0.00
7,000.0	39.53	90.00	6,854.8	506.7	-718.8	-645.4	7.50	7.50	0.00
7,100.0	47.03	90.00	6,927.6	506.7	-650.3	-577.5	7.50	7.50	0.00
7,108.0	47.63	90.00	6,933.0	506.7	-644.4	-571.6	7.50	7.50	0.00
Niobrara A									
7,200.0	54.53	90.00	6,990.8	506.7	-572.8	-500.7	7.50	7.50	0.00
7,237.9	57.37	90.00	7,012.0	506.7	-541.4	-469.6	7.50	7.50	0.00
Niobrara B									
7,300.0	62.03	90.00	7,043.3	506.7	-487.8	-416.5	7.50	7.50	0.00
7,400.0	69.53	90.00	7,084.3	506.7	-396.7	-326.1	7.50	7.50	0.00
7,439.0	72.45	90.00	7,097.0	506.7	-359.9	-289.6	7.50	7.50	0.00
Niobrara C									
7,500.0	77.03	90.00	7,113.1	506.7	-301.0	-231.3	7.50	7.50	0.00
7,600.0	84.53	90.00	7,129.1	506.7	-202.4	-133.5	7.50	7.50	0.00
7,684.9	90.90	90.00	7,132.4	506.7	-117.6	-49.5	7.50	7.50	0.00
End of Build - 7"									
7,700.0	90.90	90.00	7,132.2	506.7	-102.5	-34.5	0.01	0.01	0.00
7,800.0	90.90	90.00	7,130.6	506.7	-2.5	64.6	0.00	0.00	0.00
7,900.0	90.90	90.00	7,129.1	506.7	97.5	163.7	0.00	0.00	0.00
8,000.0	90.90	90.00	7,127.5	506.7	197.5	262.8	0.00	0.00	0.00
8,100.0	90.90	90.00	7,125.9	506.7	297.5	361.9	0.00	0.00	0.00
8,200.0	90.90	90.00	7,124.4	506.7	397.5	461.0	0.00	0.00	0.00

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Wellbore:	Wellbore #1		
Design:	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	7,122.8	506.7	497.5	560.2	0.00	0.00	0.00
8,400.0	90.90	90.00	7,121.2	506.7	597.4	659.3	0.00	0.00	0.00
8,500.0	90.90	90.00	7,119.6	506.7	697.4	758.4	0.00	0.00	0.00
8,600.0	90.90	90.00	7,118.1	506.7	797.4	857.5	0.00	0.00	0.00
8,700.0	90.90	90.00	7,116.5	506.7	897.4	956.6	0.00	0.00	0.00
8,800.0	90.90	90.00	7,114.9	506.7	997.4	1,055.7	0.00	0.00	0.00
8,900.0	90.90	90.00	7,113.4	506.7	1,097.4	1,154.8	0.00	0.00	0.00
9,000.0	90.90	90.00	7,111.8	506.7	1,197.4	1,253.9	0.00	0.00	0.00
9,100.0	90.90	90.00	7,110.2	506.7	1,297.4	1,353.0	0.00	0.00	0.00
9,200.0	90.90	90.00	7,108.6	506.7	1,397.3	1,452.1	0.00	0.00	0.00
9,300.0	90.90	90.00	7,107.1	506.7	1,497.3	1,551.2	0.00	0.00	0.00
9,400.0	90.90	90.00	7,105.5	506.7	1,597.3	1,650.3	0.00	0.00	0.00
9,500.0	90.90	90.00	7,103.9	506.7	1,697.3	1,749.4	0.00	0.00	0.00
9,600.0	90.90	90.00	7,102.4	506.7	1,797.3	1,848.6	0.00	0.00	0.00
9,700.0	90.90	90.00	7,100.8	506.7	1,897.3	1,947.7	0.00	0.00	0.00
9,800.0	90.90	90.00	7,099.2	506.7	1,997.3	2,046.8	0.00	0.00	0.00
9,900.0	90.90	90.00	7,097.7	506.7	2,097.3	2,145.9	0.00	0.00	0.00
10,000.0	90.90	90.00	7,096.1	506.7	2,197.2	2,245.0	0.00	0.00	0.00
10,100.0	90.90	90.00	7,094.5	506.7	2,297.2	2,344.1	0.00	0.00	0.00
10,200.0	90.90	90.00	7,092.9	506.7	2,397.2	2,443.2	0.00	0.00	0.00
10,300.0	90.90	90.00	7,091.4	506.7	2,497.2	2,542.3	0.00	0.00	0.00
10,400.0	90.90	90.00	7,089.8	506.7	2,597.2	2,641.4	0.00	0.00	0.00
10,500.0	90.90	90.00	7,088.2	506.7	2,697.2	2,740.5	0.00	0.00	0.00
10,600.0	90.90	90.00	7,086.7	506.7	2,797.2	2,839.6	0.00	0.00	0.00
10,700.0	90.90	90.00	7,085.1	506.7	2,897.2	2,938.7	0.00	0.00	0.00
10,800.0	90.90	90.00	7,083.5	506.7	2,997.1	3,037.8	0.00	0.00	0.00
10,900.0	90.90	90.00	7,081.9	506.7	3,097.1	3,137.0	0.00	0.00	0.00
11,000.0	90.90	90.00	7,080.4	506.7	3,197.1	3,236.1	0.00	0.00	0.00
11,100.0	90.90	90.00	7,078.8	506.7	3,297.1	3,335.2	0.00	0.00	0.00
11,200.0	90.90	90.00	7,077.2	506.7	3,397.1	3,434.3	0.00	0.00	0.00
11,300.0	90.90	90.00	7,075.7	506.7	3,497.1	3,533.4	0.00	0.00	0.00
11,400.0	90.90	90.00	7,074.1	506.7	3,597.1	3,632.5	0.00	0.00	0.00
11,500.0	90.90	90.00	7,072.5	506.7	3,697.1	3,731.6	0.00	0.00	0.00
11,596.7	90.90	90.00	7,071.0	506.7	3,793.8	3,827.5	0.00	0.00	0.00

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 1010'FSL & 950'I - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,350,754.39	3,225,069.08	40.293410	-104.693140
BHL 1504'FSL & 500'I - plan hits target center - Point	0.00	0.00	7,071.0	506.7	3,793.8	1,351,295.54	3,228,857.93	40.294800	-104.679540

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20H-302
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-14)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,684.9	7,132.4	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,797.6	3,740.0	Parkman		0.00	
4,447.0	4,375.0	Sussex		0.00	
5,290.8	5,200.0	Shannon		0.00	
6,844.8	6,726.0	Sharon Springs		0.00	
7,108.0	6,933.0	Niobrara A		0.00	
7,237.9	7,012.0	Niobrara B		0.00	
7,439.0	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)	
800.0	800.0	0.0	0.0	KOP #1
6,472.9	6,368.6	31.4	-55.3	KOP #2
7,684.9	7,132.4	475.3	-838.2	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W

Peschel 4N65W20B Pad Sec.20-T4N-R65W

Peschel 20H-302

Wellbore #1

Plan #1 (8-22-14)

Anticollision Report

28 August, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	8/28/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,596.0	Plan #1 (8-22-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing wells Sec.20-T4N-R65W						
Peschel 23-20 (P&A) - Wellbore #1 - Wellbore #1	8,893.3	6,714.5	280.2	95.0	1.512	CC
Peschel 23-20 (P&A) - Wellbore #1 - Wellbore #1	8,900.0	6,714.4	280.3	94.9	1.512	ES, SF
Peschel 23-20B (Exist.) - Wellbore #1 - Wellbore #1	8,751.0	7,121.7	342.2	152.3	1.802	CC, ES, SF
Peschel 33-20 (Exist.) - Wellbore #1 - Wellbore #1	10,349.6	7,115.6	112.8	-119.2	0.486	Level 1, CC, ES, SF
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	7,844.3	7,114.9	215.2	45.3	1.267	Level 3, CC, ES, SF
Peschel 4N65W20B Pad Sec.20-T4N-R65W						
Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)	200.0	199.0	87.4	86.8	130.087	CC, ES
Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)	11,596.7	11,639.8	953.5	707.2	3.871	SF
Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14)	600.0	599.0	29.1	26.7	11.797	CC, ES
Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14)	11,596.7	11,573.8	493.3	248.4	2.014	SF
Peschel 20G-332 - Wellbore #1 - Plan #1 (8-22-14)	400.0	399.0	58.3	56.7	37.098	CC, ES
Peschel 20G-332 - Wellbore #1 - Plan #1 (8-22-14)	11,596.7	11,679.7	728.6	482.9	2.965	SF
Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)	800.0	799.0	32.8	29.4	9.733	CC
Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)	11,596.7	11,500.4	158.8	-51.5	0.755	Level 1, ES, SF
Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)	800.0	800.0	62.0	58.6	18.388	CC, ES
Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)	11,596.7	11,580.7	510.3	263.5	2.068	SF

Offset Design	Existing wells Sec.20-T4N-R65W - Peschel 23-20 (P&A) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program:	7368-UNKNOWN											Offset Well Error:	0.0 ft
Reference	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,000.0	7,127.5	6,728.5	6,728.5	30.4	134.6	-92.87	786.9	1,090.7	936.1	771.5	164.69	5.684	
8,100.0	7,125.9	6,726.9	6,726.9	32.4	134.5	-92.55	786.9	1,090.7	841.3	674.6	166.70	5.047	
8,200.0	7,124.4	6,725.4	6,725.4	34.5	134.5	-92.23	786.9	1,090.7	747.7	578.9	168.82	4.429	
8,300.0	7,122.8	6,723.8	6,723.8	36.7	134.5	-91.90	786.9	1,090.7	656.1	485.1	171.03	3.836	
8,400.0	7,121.2	6,722.2	6,722.2	39.0	134.4	-91.58	786.9	1,090.7	567.3	394.0	173.31	3.273	
8,500.0	7,119.6	6,720.6	6,720.6	41.3	134.4	-91.26	786.9	1,090.7	482.9	307.2	175.66	2.749	
8,600.0	7,118.1	6,719.1	6,719.1	43.7	134.4	-90.94	786.9	1,090.7	405.6	227.6	178.05	2.278	
8,700.0	7,116.5	6,717.5	6,717.5	46.2	134.4	-90.62	786.9	1,090.7	340.4	159.9	180.48	1.886	
8,800.0	7,114.9	6,715.9	6,715.9	48.7	134.3	-90.30	786.9	1,090.7	295.4	112.4	182.95	1.614	
8,893.3	7,113.5	6,714.5	6,714.5	51.0	134.3	-90.00	786.9	1,090.7	280.2	95.0	185.28	1.512	CC

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 23-20 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7368-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				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)	Between Centres (ft)	Between Ellipses (ft)			Minimum Separation (ft)
8,900.0	7,113.4	6,714.4	6,714.4	51.2	134.3	-89.98	786.9	1,090.7	280.3	94.9	185.45	1.512	ES, SF
9,000.0	7,111.8	6,712.8	6,712.8	53.7	134.3	-89.66	786.9	1,090.7	299.8	111.9	187.97	1.595	
9,100.0	7,110.2	6,711.2	6,711.2	56.3	134.2	-89.34	786.9	1,090.7	348.2	157.7	190.51	1.828	
9,200.0	7,108.6	6,709.6	6,709.6	58.9	134.2	-89.02	786.9	1,090.7	415.4	222.3	193.06	2.152	
9,300.0	7,107.1	6,708.1	6,708.1	61.5	134.2	-88.69	786.9	1,090.7	493.8	298.2	195.63	2.524	
9,400.0	7,105.5	6,706.5	6,706.5	64.1	134.1	-88.37	786.9	1,090.7	579.0	380.8	198.20	2.921	
9,500.0	7,103.9	6,704.9	6,704.9	66.8	134.1	-88.05	786.9	1,090.7	668.2	467.4	200.79	3.328	
9,600.0	7,102.4	6,703.4	6,703.4	69.4	134.1	-87.73	786.9	1,090.7	760.1	556.8	203.38	3.738	
9,700.0	7,100.8	6,701.8	6,701.8	72.1	134.0	-87.41	786.9	1,090.7	853.9	647.9	205.97	4.146	
9,800.0	7,099.2	6,700.2	6,700.2	74.8	134.0	-87.09	786.9	1,090.7	948.9	740.3	208.57	4.550	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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	
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	
7,900.0	7,129.1	7,135.1	7,135.1	28.6	142.7	-92.24	848.8	948.4	917.1	746.1	171.05	5.362	
8,000.0	7,127.5	7,133.5	7,133.5	30.4	142.7	-91.97	848.8	948.4	825.2	652.3	172.91	4.772	
8,100.0	7,125.9	7,131.9	7,131.9	32.4	142.6	-91.71	848.8	948.4	735.4	560.5	174.91	4.205	
8,200.0	7,124.4	7,130.4	7,130.4	34.5	142.6	-91.45	848.8	948.4	648.6	471.6	177.01	3.664	
8,300.0	7,122.8	7,128.8	7,128.8	36.7	142.6	-91.19	848.8	948.4	566.1	386.9	179.20	3.159	
8,400.0	7,121.2	7,127.2	7,127.2	39.0	142.5	-90.92	848.8	948.4	490.2	308.7	181.47	2.701	
8,500.0	7,119.6	7,125.6	7,125.6	41.3	142.5	-90.66	848.8	948.4	424.3	240.5	183.80	2.309	
8,600.0	7,118.1	7,124.1	7,124.1	43.7	142.5	-90.40	848.8	948.4	374.0	187.8	186.18	2.009	
8,700.0	7,116.5	7,122.5	7,122.5	46.2	142.5	-90.13	848.8	948.4	345.9	157.3	188.61	1.834	
8,751.0	7,115.7	7,121.7	7,121.7	47.4	142.4	-90.00	848.8	948.4	342.2	152.3	189.86	1.802 CC, ES, SF	
8,800.0	7,114.9	7,120.9	7,120.9	48.7	142.4	-89.87	848.8	948.4	345.6	154.6	191.07	1.809	
8,900.0	7,113.4	7,119.4	7,119.4	51.2	142.4	-89.61	848.8	948.4	373.2	179.6	193.55	1.928	
9,000.0	7,111.8	7,117.8	7,117.8	53.7	142.4	-89.35	848.8	948.4	423.1	227.1	196.07	2.158	
9,100.0	7,110.2	7,116.2	7,116.2	56.3	142.3	-89.08	848.8	948.4	488.7	290.1	198.60	2.461	
9,200.0	7,108.6	7,114.6	7,114.6	58.9	142.3	-88.82	848.8	948.4	564.4	363.3	201.15	2.806	
9,300.0	7,107.1	7,113.1	7,113.1	61.5	142.3	-88.56	848.8	948.4	646.8	443.1	203.72	3.175	
9,400.0	7,105.5	7,111.5	7,111.5	64.1	142.2	-88.29	848.8	948.4	733.6	527.3	206.29	3.556	
9,500.0	7,103.9	7,109.9	7,109.9	66.8	142.2	-88.03	848.8	948.4	823.3	614.5	208.88	3.942	
9,600.0	7,102.4	7,108.4	7,108.4	69.4	142.2	-87.77	848.8	948.4	915.2	703.7	211.48	4.328	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 33-20 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7355-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,400.0	7,105.5	7,130.5	7,130.5	64.1	142.6	-97.53	619.5	2,546.8	956.2	751.4	204.79	4.669	
9,500.0	7,103.9	7,128.9	7,128.9	66.8	142.6	-96.75	619.5	2,546.8	857.0	649.2	207.75	4.125	
9,600.0	7,102.4	7,127.4	7,127.4	69.4	142.5	-95.96	619.5	2,546.8	758.0	547.3	210.69	3.598	
9,700.0	7,100.8	7,125.8	7,125.8	72.1	142.5	-95.17	619.5	2,546.8	659.3	445.7	213.61	3.086	
9,800.0	7,099.2	7,124.2	7,124.2	74.8	142.5	-94.38	619.5	2,546.8	561.0	344.5	216.51	2.591	
9,900.0	7,097.7	7,122.7	7,122.7	77.5	142.5	-93.58	619.5	2,546.8	463.5	244.1	219.38	2.113	
10,000.0	7,096.1	7,121.1	7,121.1	80.2	142.4	-92.79	619.5	2,546.8	367.3	145.1	222.22	1.653	
10,100.0	7,094.5	7,119.5	7,119.5	82.9	142.4	-91.99	619.5	2,546.8	273.9	48.9	225.04	1.217	Level 2
10,200.0	7,092.9	7,117.9	7,117.9	85.6	142.4	-91.19	619.5	2,546.8	187.4	-40.5	227.82	0.822	Level 1
10,300.0	7,091.4	7,116.4	7,116.4	88.3	142.3	-90.40	619.5	2,546.8	123.2	-107.4	230.57	0.534	Level 1
10,349.6	7,090.6	7,115.6	7,115.6	89.6	142.3	-90.00	619.5	2,546.8	112.8	-119.2	231.92	0.486	Level 1, CC, ES, SF
10,400.0	7,089.8	7,114.8	7,114.8	91.0	142.3	-89.60	619.5	2,546.8	123.5	-109.8	233.28	0.529	Level 1
10,500.0	7,088.2	7,113.2	7,113.2	93.7	142.3	-88.80	619.5	2,546.8	187.9	-48.0	235.95	0.796	Level 1
10,600.0	7,086.7	7,111.7	7,111.7	96.5	142.2	-88.00	619.5	2,546.8	274.5	36.0	238.58	1.151	Level 2
10,700.0	7,085.1	7,110.1	7,110.1	99.2	142.2	-87.21	619.5	2,546.8	368.0	126.8	241.16	1.526	
10,800.0	7,083.5	7,108.5	7,108.5	101.9	142.2	-86.41	619.5	2,546.8	464.2	220.5	243.71	1.905	
10,900.0	7,081.9	7,106.9	7,106.9	104.7	142.1	-85.62	619.5	2,546.8	561.7	315.5	246.20	2.282	
11,000.0	7,080.4	7,105.4	7,105.4	107.4	142.1	-84.82	619.5	2,546.8	660.0	411.3	248.65	2.654	
11,100.0	7,078.8	7,103.8	7,103.8	110.2	142.1	-84.03	619.5	2,546.8	758.7	507.6	251.06	3.022	
11,200.0	7,077.2	7,102.2	7,102.2	112.9	142.0	-83.25	619.5	2,546.8	857.7	604.3	253.41	3.385	
11,300.0	7,075.7	7,100.7	7,100.7	115.7	142.0	-82.46	619.5	2,546.8	956.9	701.2	255.71	3.742	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	8.17	291.4	41.8	294.8					
100.0	100.0	85.0	85.0	0.1	1.7	8.17	291.4	41.8	294.4	292.6	1.81	162.441		
200.0	200.0	185.0	185.0	0.3	3.7	8.17	291.4	41.8	294.4	290.4	4.04	72.928		
300.0	300.0	285.0	285.0	0.6	5.7	8.17	291.4	41.8	294.4	288.2	6.26	47.019		
400.0	400.0	385.0	385.0	0.8	7.7	8.17	291.4	41.8	294.4	286.0	8.49	34.693		
500.0	500.0	485.0	485.0	1.0	9.7	8.17	291.4	41.8	294.4	283.7	10.71	27.488		
600.0	600.0	585.0	585.0	1.2	11.7	8.17	291.4	41.8	294.4	281.5	12.94	22.760		
700.0	700.0	685.0	685.0	1.5	13.7	8.17	291.4	41.8	294.4	279.3	15.16	19.420		
800.0	800.0	785.0	785.0	1.7	15.7	8.17	291.4	41.8	294.4	277.1	17.39	16.935		
900.0	900.0	885.0	885.0	1.9	17.7	68.94	291.4	41.8	293.8	274.2	19.60	14.988		
1,000.0	999.8	984.8	984.8	2.1	19.7	69.93	291.4	41.8	292.0	270.2	21.81	13.384		
1,100.0	1,099.5	1,084.5	1,084.5	2.4	21.7	71.60	291.4	41.8	289.1	265.1	24.03	12.030		
1,200.0	1,198.7	1,183.7	1,183.7	2.6	23.7	73.98	291.4	41.8	285.5	259.2	26.26	10.869		
1,300.0	1,297.5	1,282.5	1,282.5	2.9	25.6	77.08	291.4	41.8	281.5	253.0	28.52	9.870		
1,400.0	1,395.6	1,380.6	1,380.6	3.2	27.6	80.92	291.4	41.8	277.8	247.0	30.82	9.014		
1,500.0	1,493.4	1,478.4	1,478.4	3.6	29.6	85.14	291.4	41.8	275.2	242.0	33.15	8.302		
1,600.0	1,591.2	1,576.2	1,576.2	4.0	31.5	89.41	291.4	41.8	274.2	238.7	35.49	7.725		
1,613.7	1,604.5	1,589.5	1,589.5	4.0	31.8	90.00	291.4	41.8	274.2	238.3	35.81	7.655		
1,700.0	1,689.0	1,674.0	1,674.0	4.4	33.5	93.69	291.4	41.8	274.8	236.9	37.84	7.262		
1,800.0	1,786.7	1,771.7	1,771.7	4.8	35.4	97.93	291.4	41.8	276.9	236.8	40.17	6.893		
1,900.0	1,884.5	1,869.5	1,869.5	5.2	37.4	102.08	291.4	41.8	280.7	238.2	42.49	6.604		
2,000.0	1,982.3	1,967.3	1,967.3	5.6	39.3	106.11	291.4	41.8	285.9	241.1	44.80	6.382		
2,100.0	2,080.1	2,065.1	2,065.1	6.1	41.3	109.97	291.4	41.8	292.5	245.4	47.07	6.213		
2,200.0	2,177.9	2,162.9	2,162.9	6.5	43.3	113.66	291.4	41.8	300.4	251.1	49.33	6.090		
2,300.0	2,275.6	2,260.6	2,260.6	6.9	45.2	117.16	291.4	41.8	309.6	258.0	51.56	6.004		
2,400.0	2,373.4	2,358.4	2,358.4	7.4	47.2	120.44	291.4	41.8	319.9	266.1	53.78	5.948		
2,500.0	2,471.2	2,456.2	2,456.2	7.8	49.1	123.52	291.4	41.8	331.2	275.2	55.97	5.916		
2,600.0	2,569.0	2,554.0	2,554.0	8.3	51.1	126.40	291.4	41.8	343.3	285.2	58.15	5.904		
2,700.0	2,666.8	2,651.8	2,651.8	8.7	53.0	129.07	291.4	41.8	356.4	296.0	60.32	5.908		
2,800.0	2,764.5	2,749.5	2,749.5	9.2	55.0	131.56	291.4	41.8	370.1	307.6	62.47	5.924		
2,900.0	2,862.3	2,847.3	2,847.3	9.6	56.9	133.87	291.4	41.8	384.5	319.9	64.62	5.950		
3,000.0	2,960.1	2,945.1	2,945.1	10.1	58.9	136.02	291.4	41.8	399.4	332.7	66.76	5.983		
3,100.0	3,057.9	3,042.9	3,042.9	10.5	60.9	138.01	291.4	41.8	414.9	346.0	68.90	6.023		
3,200.0	3,155.7	3,140.7	3,140.7	11.0	62.8	139.85	291.4	41.8	430.9	359.9	71.03	6.066		
3,300.0	3,253.4	3,238.4	3,238.4	11.4	64.8	141.57	291.4	41.8	447.3	374.1	73.16	6.113		
3,400.0	3,351.2	3,336.2	3,336.2	11.9	66.7	143.17	291.4	41.8	464.0	388.7	75.29	6.163		
3,500.0	3,449.0	3,434.0	3,434.0	12.3	68.7	144.65	291.4	41.8	481.1	403.6	77.42	6.213		
3,600.0	3,546.8	3,531.8	3,531.8	12.8	70.6	146.04	291.4	41.8	498.4	418.9	79.55	6.265		
3,700.0	3,644.6	3,629.6	3,629.6	13.2	72.6	147.33	291.4	41.8	516.0	434.4	81.68	6.318		
3,800.0	3,742.3	3,727.3	3,727.3	13.7	74.5	148.53	291.4	41.8	533.9	450.1	83.81	6.370		
3,900.0	3,840.1	3,825.1	3,825.1	14.1	76.5	149.66	291.4	41.8	552.0	466.1	85.94	6.423		
4,000.0	3,937.9	3,922.9	3,922.9	14.6	78.5	150.72	291.4	41.8	570.3	482.2	88.08	6.475		
4,100.0	4,035.7	4,020.7	4,020.7	15.1	80.4	151.71	291.4	41.8	588.7	498.5	90.21	6.526		
4,200.0	4,133.5	4,118.5	4,118.5	15.5	82.4	152.65	291.4	41.8	607.4	515.0	92.35	6.577		
4,300.0	4,231.2	4,216.2	4,216.2	16.0	84.3	153.52	291.4	41.8	626.1	531.7	94.48	6.627		
4,400.0	4,329.0	4,314.0	4,314.0	16.4	86.3	154.35	291.4	41.8	645.0	548.4	96.62	6.676		
4,500.0	4,426.8	4,411.8	4,411.8	16.9	88.2	155.13	291.4	41.8	664.1	565.3	98.76	6.724		
4,600.0	4,524.6	4,509.6	4,509.6	17.3	90.2	155.87	291.4	41.8	683.2	582.3	100.90	6.771		
4,700.0	4,622.4	4,607.4	4,607.4	17.8	92.1	156.56	291.4	41.8	702.5	599.4	103.05	6.817		
4,800.0	4,720.1	4,705.1	4,705.1	18.3	94.1	157.22	291.4	41.8	721.8	616.6	105.19	6.862		
4,900.0	4,817.9	4,802.9	4,802.9	18.7	96.1	157.85	291.4	41.8	741.2	633.9	107.34	6.906		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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 (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
5,000.0	4,915.7	4,900.7	4,900.7	19.2	98.0	158.44	291.4	41.8	760.7	651.2	109.48	6.948	
5,100.0	5,013.5	4,998.5	4,998.5	19.6	100.0	159.00	291.4	41.8	780.3	668.7	111.63	6.990	
5,200.0	5,111.3	5,096.3	5,096.3	20.1	101.9	159.54	291.4	41.8	800.0	686.2	113.78	7.031	
5,300.0	5,209.0	5,194.0	5,194.0	20.5	103.9	160.05	291.4	41.8	819.7	703.8	115.93	7.070	
5,400.0	5,306.8	5,291.8	5,291.8	21.0	105.8	160.54	291.4	41.8	839.5	721.4	118.08	7.109	
5,500.0	5,404.6	5,389.6	5,389.6	21.5	107.8	161.00	291.4	41.8	859.3	739.1	120.24	7.147	
5,600.0	5,502.4	5,487.4	5,487.4	21.9	109.7	161.45	291.4	41.8	879.2	756.8	122.39	7.183	
5,700.0	5,600.2	5,585.2	5,585.2	22.4	111.7	161.87	291.4	41.8	899.1	774.6	124.55	7.219	
5,800.0	5,698.3	5,683.3	5,683.3	22.8	113.7	162.36	291.4	41.8	917.4	790.1	127.37	7.203	
5,900.0	5,797.0	5,782.0	5,782.0	23.1	115.6	162.74	291.4	41.8	932.5	802.5	130.07	7.170	
6,000.0	5,896.3	5,881.3	5,881.3	23.3	117.6	163.03	291.4	41.8	944.3	811.7	132.65	7.119	
6,100.0	5,995.9	5,980.9	5,980.9	23.5	119.6	163.24	291.4	41.8	952.8	817.7	135.11	7.052	
6,200.0	6,095.7	6,080.7	6,080.7	23.7	121.6	163.36	291.4	41.8	958.0	820.6	137.42	6.971	
6,300.0	6,195.7	6,180.7	6,180.7	23.8	123.6	163.40	291.4	41.8	959.8	820.2	139.59	6.876	
6,400.0	6,295.7	6,280.7	6,280.7	23.9	125.6	102.96	291.4	41.8	959.8	810.8	149.03	6.440	
6,500.0	6,395.7	6,380.7	6,380.7	24.0	127.6	12.97	291.4	41.8	959.3	815.6	143.77	6.673	
6,600.0	6,495.1	6,480.1	6,480.1	24.0	129.6	13.28	291.4	41.8	949.5	805.7	143.81	6.603	
6,700.0	6,592.4	6,577.4	6,577.4	23.9	131.5	14.02	291.4	41.8	927.2	785.8	141.41	6.557	
6,800.0	6,685.8	6,670.8	6,670.8	23.8	133.4	15.27	291.4	41.8	892.7	756.1	136.66	6.532	
6,900.0	6,773.8	6,758.8	6,758.8	23.5	135.2	17.22	291.4	41.8	846.9	716.9	129.93	6.518	
7,000.0	6,854.8	6,839.8	6,839.8	23.3	136.8	20.15	291.4	41.8	790.5	668.5	122.02	6.478	
7,100.0	6,927.6	6,912.6	6,912.6	23.1	138.3	24.53	291.4	41.8	724.8	610.0	114.76	6.316	
7,200.0	6,990.8	6,975.8	6,975.8	22.9	139.5	31.11	291.4	41.8	651.3	539.5	111.81	5.825	
7,300.0	7,043.3	7,028.3	7,028.3	23.0	140.6	40.91	291.4	41.8	571.7	453.4	118.36	4.831	
7,400.0	7,084.3	7,069.3	7,069.3	23.2	141.4	54.53	291.4	41.8	488.5	352.6	135.93	3.594	
7,500.0	7,113.1	7,098.1	7,098.1	23.7	142.0	70.33	291.4	41.8	404.8	249.6	155.23	2.608	
7,600.0	7,129.1	7,114.1	7,114.1	24.5	142.3	83.83	291.4	41.8	325.5	160.3	165.23	1.970	
7,700.0	7,132.2	7,117.2	7,117.2	25.6	142.3	90.60	291.4	41.8	259.2	91.4	167.71	1.545	
7,800.0	7,130.6	7,115.6	7,115.6	27.0	142.3	90.19	291.4	41.8	219.8	50.6	169.17	1.299	Level 3
7,844.3	7,129.9	7,114.9	7,114.9	27.7	142.3	90.00	291.4	41.8	215.2	45.3	169.90	1.267	Level 3, CC, ES, SF
7,900.0	7,129.1	7,114.1	7,114.1	28.6	142.3	89.77	291.4	41.8	222.3	51.5	170.82	1.302	Level 3
8,000.0	7,127.5	7,112.5	7,112.5	30.4	142.2	89.35	291.4	41.8	265.6	93.0	172.62	1.539	
8,100.0	7,125.9	7,110.9	7,110.9	32.4	142.2	88.93	291.4	41.8	334.2	159.6	174.55	1.915	
8,200.0	7,124.4	7,109.4	7,109.4	34.5	142.2	88.51	291.4	41.8	415.7	239.1	176.58	2.354	
8,300.0	7,122.8	7,107.8	7,107.8	36.7	142.2	88.10	291.4	41.8	503.9	325.2	178.70	2.820	
8,400.0	7,121.2	7,106.2	7,106.2	39.0	142.1	87.68	291.4	41.8	595.8	414.9	180.89	3.294	
8,500.0	7,119.6	7,104.6	7,104.6	41.3	142.1	87.26	291.4	41.8	690.0	506.9	183.13	3.768	
8,600.0	7,118.1	7,103.1	7,103.1	43.7	142.1	86.84	291.4	41.8	785.6	600.2	185.42	4.237	
8,700.0	7,116.5	7,101.5	7,101.5	46.2	142.0	86.43	291.4	41.8	882.2	694.5	187.74	4.699	
8,800.0	7,114.9	7,099.9	7,099.9	48.7	142.0	86.01	291.4	41.8	979.5	789.4	190.09	5.153	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+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	0.00	0.00	87.4	0.0	87.4				
100.0	100.0	99.0	99.0	0.1	0.1	0.00	0.00	87.4	0.0	87.4	87.2	0.22	390.911	
200.0	200.0	199.0	199.0	0.3	0.3	0.00	0.00	87.4	0.0	87.4	86.8	0.67	130.087 CC, ES	
300.0	300.0	296.5	296.5	0.6	0.6	-0.57	88.8	-0.9	88.8	87.7	87.7	1.11	79.705	
400.0	400.0	393.7	393.6	0.8	0.8	-2.17	92.9	-3.5	93.2	91.6	91.6	1.56	59.595	
500.0	500.0	490.5	490.0	1.0	1.0	-4.54	99.8	-7.9	100.5	98.5	98.5	2.03	49.524	
600.0	600.0	586.6	585.5	1.2	1.3	-7.32	109.4	-14.0	111.1	108.6	108.6	2.53	43.986	
700.0	700.0	681.9	679.6	1.5	1.6	-10.17	121.5	-21.8	124.9	121.9	121.9	3.06	40.879	
800.0	800.0	776.1	772.2	1.7	1.9	-12.88	136.1	-31.1	142.1	138.5	138.5	3.63	39.202	
900.0	900.0	869.4	863.3	1.9	2.3	45.25	153.0	-42.0	161.4	157.5	157.5	3.91	41.260	
1,000.0	999.8	962.0	953.0	2.1	2.8	43.85	172.3	-54.3	181.5	177.1	177.1	4.38	41.387	
1,100.0	1,099.5	1,053.9	1,041.3	2.4	3.3	43.08	193.8	-68.1	202.1	197.2	197.2	4.88	41.442	
1,200.0	1,198.7	1,148.3	1,131.1	2.6	3.8	42.82	218.1	-83.6	223.0	217.6	217.6	5.40	41.276	
1,300.0	1,297.5	1,246.4	1,224.5	2.9	4.4	43.12	243.8	-100.0	241.8	235.8	235.8	5.97	40.475	
1,400.0	1,395.6	1,345.0	1,318.2	3.2	5.0	43.91	269.5	-116.5	258.1	251.5	251.5	6.58	39.202	
1,500.0	1,493.4	1,443.7	1,412.0	3.6	5.6	45.08	295.3	-133.0	273.2	265.9	265.9	7.26	37.635	
1,600.0	1,591.2	1,542.4	1,505.9	4.0	6.2	46.14	321.0	-149.5	288.4	280.4	280.4	7.96	36.217	
1,700.0	1,689.0	1,641.1	1,599.7	4.4	6.8	47.10	346.8	-166.0	303.6	294.9	294.9	8.69	34.946	
1,800.0	1,786.7	1,739.8	1,693.6	4.8	7.5	47.96	372.6	-182.5	319.0	309.5	309.5	9.43	33.809	
1,900.0	1,884.5	1,838.5	1,787.4	5.2	8.1	48.74	398.3	-199.0	334.3	324.2	324.2	10.20	32.791	
2,000.0	1,982.3	1,937.2	1,881.3	5.6	8.7	49.46	424.1	-215.5	349.8	338.8	338.8	10.97	31.880	
2,100.0	2,080.1	2,036.0	1,975.1	6.1	9.3	50.11	449.9	-231.9	365.3	353.5	353.5	11.76	31.062	
2,200.0	2,177.9	2,134.7	2,069.0	6.5	9.9	50.71	475.6	-248.4	380.9	368.3	368.3	12.56	30.326	
2,300.0	2,275.6	2,233.4	2,162.8	6.9	10.6	51.27	501.4	-264.9	396.4	383.1	383.1	13.37	29.661	
2,400.0	2,373.4	2,332.1	2,256.7	7.4	11.2	51.78	527.2	-281.4	412.1	397.9	397.9	14.18	29.058	
2,500.0	2,471.2	2,430.8	2,350.5	7.8	11.8	52.26	552.9	-297.9	427.7	412.7	412.7	15.00	28.511	
2,600.0	2,569.0	2,529.5	2,444.4	8.3	12.4	52.70	578.7	-314.4	443.4	427.5	427.5	15.83	28.011	
2,700.0	2,666.8	2,628.2	2,538.2	8.7	13.1	53.11	604.5	-330.9	459.1	442.4	442.4	16.66	27.554	
2,800.0	2,764.5	2,726.9	2,632.1	9.2	13.7	53.49	630.3	-347.4	474.8	457.3	457.3	17.50	27.135	
2,900.0	2,862.3	2,825.6	2,725.9	9.6	14.3	53.85	656.0	-363.9	490.5	472.2	472.2	18.34	26.749	
3,000.0	2,960.1	2,924.3	2,819.8	10.1	14.9	54.19	681.8	-380.4	506.3	487.1	487.1	19.18	26.393	
3,100.0	3,057.9	3,023.0	2,913.6	10.5	15.6	54.51	707.6	-396.9	522.1	502.0	502.0	20.03	26.064	
3,200.0	3,155.7	3,121.7	3,007.5	11.0	16.2	54.80	733.3	-413.4	537.8	517.0	517.0	20.88	25.758	
3,300.0	3,253.4	3,220.5	3,101.3	11.4	16.8	55.08	759.1	-429.8	553.6	531.9	531.9	21.73	25.474	
3,400.0	3,351.2	3,319.2	3,195.1	11.9	17.5	55.35	784.9	-446.3	569.5	546.9	546.9	22.59	25.209	
3,500.0	3,449.0	3,417.9	3,289.0	12.3	18.1	55.60	810.6	-462.8	585.3	561.8	561.8	23.45	24.962	
3,600.0	3,546.8	3,516.6	3,382.8	12.8	18.7	55.84	836.4	-479.3	601.1	576.8	576.8	24.31	24.731	
3,700.0	3,644.6	3,615.3	3,476.7	13.2	19.3	56.06	862.2	-495.8	617.0	591.8	591.8	25.17	24.514	
3,800.0	3,742.3	3,714.0	3,570.5	13.7	20.0	56.28	888.0	-512.3	632.8	606.8	606.8	26.03	24.310	
3,900.0	3,840.1	3,812.7	3,664.4	14.1	20.6	56.48	913.7	-528.8	648.7	621.8	621.8	26.90	24.118	
4,000.0	3,937.9	3,911.4	3,758.2	14.6	21.2	56.68	939.5	-545.3	664.5	636.8	636.8	27.76	23.938	
4,100.0	4,035.7	4,010.1	3,852.1	15.1	21.8	56.86	965.3	-561.8	680.4	651.8	651.8	28.63	23.767	
4,200.0	4,133.5	4,108.8	3,945.9	15.5	22.5	57.04	991.0	-578.3	696.3	666.8	666.8	29.50	23.606	
4,300.0	4,231.2	4,207.5	4,039.8	16.0	23.1	57.21	1,016.8	-594.8	712.2	681.8	681.8	30.37	23.453	
4,400.0	4,329.0	4,306.3	4,133.6	16.4	23.7	57.37	1,042.6	-611.2	728.1	696.8	696.8	31.24	23.308	
4,500.0	4,426.8	4,405.0	4,227.5	16.9	24.4	57.52	1,068.3	-627.7	744.0	711.9	711.9	32.11	23.171	
4,600.0	4,524.6	4,503.7	4,321.3	17.3	25.0	57.67	1,094.1	-644.2	759.9	726.9	726.9	32.98	23.040	
4,700.0	4,622.4	4,602.4	4,415.2	17.8	25.6	57.81	1,119.9	-660.7	775.8	741.9	741.9	33.85	22.916	
4,800.0	4,720.1	4,701.1	4,509.0	18.3	26.2	57.95	1,145.6	-677.2	791.7	757.0	757.0	34.73	22.797	
4,900.0	4,817.9	4,799.8	4,602.9	18.7	26.9	58.08	1,171.4	-693.7	807.6	772.0	772.0	35.60	22.684	
5,000.0	4,915.7	4,898.5	4,696.7	19.2	27.5	58.21	1,197.2	-710.2	823.5	787.1	787.1	36.48	22.577	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
5,100.0	5,013.5	4,997.2	4,790.6	19.6	28.1	58.33	1,223.0	-726.7	839.5	802.1	37.35	22.473			
5,200.0	5,111.3	5,095.9	4,884.4	20.1	28.8	58.45	1,248.7	-743.2	855.4	817.2	38.23	22.375			
5,300.0	5,209.0	5,194.6	4,978.3	20.5	29.4	58.56	1,274.5	-759.7	871.3	832.2	39.11	22.280			
5,400.0	5,306.8	5,293.3	5,072.1	21.0	30.0	58.67	1,300.3	-776.2	887.3	847.3	39.99	22.190			
5,500.0	5,404.6	5,392.0	5,165.9	21.5	30.6	58.77	1,326.0	-792.6	903.2	862.3	40.86	22.103			
5,600.0	5,502.4	5,509.5	5,277.9	21.9	31.3	58.92	1,356.0	-811.8	918.6	876.8	41.80	21.979			
5,700.0	5,600.2	5,646.0	5,409.5	22.4	31.9	59.27	1,386.4	-831.3	930.6	887.8	42.76	21.763			
5,800.0	5,698.3	5,783.3	5,543.5	22.8	32.4	59.85	1,411.6	-847.4	939.4	895.8	43.64	21.527			
5,900.0	5,797.0	5,921.2	5,679.3	23.1	32.8	60.34	1,431.4	-860.1	946.0	901.6	44.35	21.329			
6,000.0	5,896.3	6,059.4	5,816.5	23.3	33.2	60.76	1,445.7	-869.2	950.3	905.3	44.95	21.140			
6,100.0	5,995.9	6,197.7	5,954.4	23.5	33.4	61.10	1,454.4	-874.8	952.2	906.8	45.44	20.958			
6,200.0	6,095.7	6,336.0	6,092.7	23.7	33.6	61.36	1,457.5	-876.8	951.9	906.1	45.80	20.782			
6,300.0	6,195.7	6,438.0	6,194.7	23.8	33.6	61.45	1,457.5	-876.8	951.0	905.0	46.02	20.665			
6,342.0	6,237.7	6,480.1	6,236.7	23.8	33.7	61.45	1,457.5	-876.8	950.9	904.8	46.12	20.618			
6,400.0	6,295.7	6,537.9	6,294.6	23.9	33.7	1.01	1,457.5	-876.8	951.0	903.9	47.12	20.184			
6,500.0	6,395.7	6,635.3	6,391.6	24.0	33.8	-88.61	1,457.5	-870.1	951.1	904.5	46.58	20.420			
6,600.0	6,495.1	6,731.3	6,485.8	24.0	33.7	-88.04	1,457.5	-851.4	951.4	904.6	46.74	20.354			
6,700.0	6,592.4	6,826.3	6,575.8	23.9	33.6	-87.51	1,457.5	-821.5	951.7	905.1	46.68	20.390			
6,800.0	6,685.8	6,920.3	6,660.7	23.8	33.4	-87.02	1,457.5	-781.1	952.1	905.7	46.43	20.507			
6,900.0	6,773.8	7,013.6	6,739.3	23.5	33.2	-86.58	1,457.5	-731.0	952.5	906.5	46.07	20.677			
7,000.0	6,854.8	7,106.0	6,810.7	23.3	33.0	-86.19	1,457.5	-672.3	952.9	907.3	45.69	20.858			
7,100.0	6,927.6	7,200.0	6,875.4	23.1	32.8	-85.86	1,457.5	-604.3	953.3	907.9	45.40	20.996			
7,200.0	6,990.8	7,289.3	6,928.7	22.9	32.6	-85.61	1,457.5	-532.7	953.6	908.3	45.36	21.022			
7,300.0	7,043.3	7,380.4	6,974.1	23.0	32.3	-85.42	1,457.5	-453.8	953.9	908.2	45.69	20.879			
7,400.0	7,084.3	7,471.2	7,009.7	23.2	32.1	-85.30	1,457.5	-370.3	954.0	907.6	46.47	20.529			
7,500.0	7,113.1	7,561.8	7,035.1	23.7	31.9	-85.25	1,457.5	-283.4	954.1	906.3	47.78	19.969			
7,600.0	7,129.1	7,652.5	7,050.1	24.5	31.7	-85.28	1,457.5	-194.0	954.1	904.5	49.59	19.237			
7,700.0	7,132.2	7,744.6	7,054.3	25.6	31.6	-85.38	1,457.5	-102.1	953.9	902.0	51.89	18.383			
7,738.1	7,131.6	7,781.2	7,053.8	26.1	31.5	-85.38	1,457.5	-65.4	953.9	901.0	52.96	18.012			
7,800.0	7,130.6	7,843.1	7,052.9	27.0	31.5	-85.39	1,457.5	-3.6	953.9	899.1	54.80	17.408			
7,900.0	7,129.1	7,943.1	7,051.5	28.6	31.5	-85.40	1,457.5	96.4	953.9	895.8	58.09	16.420			
8,000.0	7,127.5	8,043.1	7,050.1	30.4	31.9	-85.41	1,457.5	196.4	953.9	892.2	61.72	15.455			
8,100.0	7,125.9	8,143.1	7,048.7	32.4	33.1	-85.42	1,457.5	296.4	953.9	888.3	65.63	14.535			
8,200.0	7,124.4	8,243.1	7,047.3	34.5	35.0	-85.42	1,457.5	396.4	953.9	884.1	69.76	13.673			
8,300.0	7,122.8	8,343.1	7,045.9	36.7	37.1	-85.43	1,457.5	496.4	953.9	879.8	74.09	12.874			
8,400.0	7,121.2	8,443.1	7,044.4	39.0	39.4	-85.44	1,457.5	596.4	953.8	875.3	78.58	12.138			
8,500.0	7,119.6	8,543.1	7,043.0	41.3	41.7	-85.45	1,457.5	696.4	953.8	870.6	83.21	11.463			
8,600.0	7,118.1	8,643.1	7,041.6	43.7	44.1	-85.46	1,457.5	796.4	953.8	865.9	87.95	10.846			
8,700.0	7,116.5	8,743.1	7,040.2	46.2	46.6	-85.47	1,457.5	896.3	953.8	861.0	92.78	10.280			
8,800.0	7,114.9	8,843.1	7,038.8	48.7	49.0	-85.48	1,457.5	996.3	953.8	856.1	97.70	9.763			
8,900.0	7,113.4	8,943.1	7,037.4	51.2	51.6	-85.49	1,457.5	1,096.3	953.8	851.1	102.68	9.289			
9,000.0	7,111.8	9,043.1	7,036.0	53.7	54.1	-85.50	1,457.5	1,196.3	953.8	846.0	107.73	8.853			
9,100.0	7,110.2	9,143.1	7,034.5	56.3	56.7	-85.51	1,457.5	1,296.3	953.8	840.9	112.83	8.453			
9,200.0	7,108.6	9,243.1	7,033.1	58.9	59.2	-85.52	1,457.5	1,396.3	953.7	835.8	117.97	8.084			
9,300.0	7,107.1	9,343.1	7,031.7	61.5	61.9	-85.53	1,457.5	1,496.3	953.7	830.6	123.16	7.744			
9,400.0	7,105.5	9,443.1	7,030.3	64.1	64.5	-85.54	1,457.5	1,596.3	953.7	825.3	128.38	7.429			
9,500.0	7,103.9	9,543.1	7,028.9	66.8	67.1	-85.55	1,457.5	1,696.3	953.7	820.1	133.63	7.137			
9,600.0	7,102.4	9,643.1	7,027.5	69.4	69.7	-85.56	1,457.5	1,796.2	953.7	814.8	138.91	6.866			
9,700.0	7,100.8	9,743.1	7,026.1	72.1	72.4	-85.57	1,457.5	1,896.2	953.7	809.5	144.21	6.613			
9,800.0	7,099.2	9,843.1	7,024.6	74.8	75.1	-85.57	1,457.5	1,996.2	953.7	804.1	149.53	6.378			
9,900.0	7,097.7	9,943.1	7,023.2	77.5	77.7	-85.58	1,457.5	2,096.2	953.7	798.8	154.88	6.158			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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						
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
10,000.0	7,096.1	10,043.1	7,021.8	80.2	80.4	-85.59	1,457.5	2,196.2	953.7	793.4	160.24	5.951	
10,100.0	7,094.5	10,143.1	7,020.4	82.9	83.1	-85.60	1,457.5	2,296.2	953.6	788.0	165.62	5.758	
10,200.0	7,092.9	10,243.1	7,019.0	85.6	85.8	-85.61	1,457.5	2,396.2	953.6	782.6	171.01	5.577	
10,300.0	7,091.4	10,343.1	7,017.6	88.3	88.5	-85.62	1,457.5	2,496.2	953.6	777.2	176.41	5.406	
10,400.0	7,089.8	10,443.1	7,016.2	91.0	91.2	-85.63	1,457.5	2,596.2	953.6	771.8	181.83	5.245	
10,500.0	7,088.2	10,543.1	7,014.8	93.7	94.0	-85.64	1,457.5	2,696.2	953.6	766.3	187.26	5.092	
10,600.0	7,086.7	10,643.1	7,013.3	96.5	96.7	-85.65	1,457.5	2,796.1	953.6	760.9	192.70	4.949	
10,700.0	7,085.1	10,743.1	7,011.9	99.2	99.4	-85.66	1,457.5	2,896.1	953.6	755.4	198.14	4.813	
10,800.0	7,083.5	10,843.1	7,010.5	101.9	102.1	-85.67	1,457.5	2,996.1	953.6	750.0	203.60	4.684	
10,900.0	7,081.9	10,943.1	7,009.1	104.7	104.9	-85.68	1,457.5	3,096.1	953.5	744.5	209.06	4.561	
11,000.0	7,080.4	11,043.1	7,007.7	107.4	107.6	-85.69	1,457.5	3,196.1	953.5	739.0	214.53	4.445	
11,100.0	7,078.8	11,143.1	7,006.3	110.2	110.3	-85.70	1,457.5	3,296.1	953.5	733.5	220.01	4.334	
11,200.0	7,077.2	11,243.1	7,004.9	112.9	113.1	-85.71	1,457.5	3,396.1	953.5	728.0	225.50	4.229	
11,300.0	7,075.7	11,343.1	7,003.4	115.7	115.8	-85.72	1,457.5	3,496.1	953.5	722.5	230.99	4.128	
11,400.0	7,074.1	11,443.1	7,002.0	118.4	118.6	-85.73	1,457.5	3,596.1	953.5	717.0	236.48	4.032	
11,500.0	7,072.5	11,543.1	7,000.6	121.2	121.3	-85.73	1,457.5	3,696.1	953.5	711.5	241.98	3.940	
11,596.7	7,071.0	11,639.8	6,999.2	122.9	124.0	-85.74	1,457.5	3,792.8	953.5	707.2	246.32	3.871 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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 (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	0.00	29.1	0.0	29.2					
100.0	100.0	99.0	99.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	130.298		
200.0	200.0	199.0	199.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.360		
300.0	300.0	299.0	299.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.981		
400.0	400.0	399.0	399.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.548		
500.0	500.0	499.0	499.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.421		
600.0	600.0	599.0	599.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.47	11.797 CC, ES		
700.0	700.0	698.2	698.2	1.5	1.5	-2.14	30.4	-1.1	30.4	27.5	2.91	10.435		
800.0	800.0	797.2	797.1	1.7	1.7	-7.65	34.1	-4.6	34.5	31.1	3.36	10.269		
900.0	900.0	895.9	895.3	1.9	1.9	47.78	40.4	-10.3	40.7	36.9	3.81	10.676		
1,000.0	999.8	994.3	993.0	2.1	2.2	45.17	49.1	-18.3	47.6	43.4	4.26	11.191		
1,100.0	1,099.5	1,092.4	1,090.0	2.4	2.5	44.14	60.3	-28.5	55.2	50.5	4.72	11.701		
1,200.0	1,198.7	1,190.3	1,186.1	2.6	2.8	44.15	73.8	-40.9	63.4	58.2	5.21	12.167		
1,300.0	1,297.5	1,287.8	1,281.2	2.9	3.2	44.84	89.7	-55.5	72.1	66.4	5.74	12.562		
1,400.0	1,395.6	1,385.3	1,375.5	3.2	3.6	45.97	108.0	-72.3	81.4	75.1	6.33	12.863		
1,500.0	1,493.4	1,484.9	1,471.4	3.6	4.1	47.45	127.6	-90.3	90.6	83.6	6.99	12.965		
1,600.0	1,591.2	1,584.4	1,567.4	4.0	4.6	48.67	147.2	-108.2	99.9	92.2	7.68	12.998		
1,700.0	1,689.0	1,684.0	1,663.3	4.4	5.1	49.67	166.9	-126.2	109.2	100.8	8.41	12.986		
1,800.0	1,786.7	1,783.5	1,759.2	4.8	5.6	50.52	186.5	-144.2	118.5	109.4	9.15	12.948		
1,900.0	1,884.5	1,883.1	1,855.1	5.2	6.1	51.24	206.1	-162.2	127.9	117.9	9.92	12.894		
2,000.0	1,982.3	1,982.6	1,951.0	5.6	6.6	51.87	225.7	-180.2	137.2	126.5	10.69	12.833		
2,100.0	2,080.1	2,082.2	2,047.0	6.1	7.2	52.41	245.4	-198.2	146.6	135.1	11.48	12.768		
2,200.0	2,177.9	2,181.7	2,142.9	6.5	7.7	52.89	265.0	-216.2	156.0	143.7	12.28	12.703		
2,300.0	2,275.6	2,281.3	2,238.8	6.9	8.3	53.32	284.6	-234.2	165.4	152.3	13.09	12.639		
2,400.0	2,373.4	2,380.8	2,334.7	7.4	8.8	53.70	304.3	-252.2	174.8	160.9	13.90	12.576		
2,500.0	2,471.2	2,480.4	2,430.7	7.8	9.4	54.04	323.9	-270.2	184.2	169.5	14.72	12.517		
2,600.0	2,569.0	2,579.9	2,526.6	8.3	9.9	54.35	343.5	-288.2	193.7	178.1	15.54	12.460		
2,700.0	2,666.8	2,679.5	2,622.5	8.7	10.5	54.63	363.1	-306.2	203.1	186.7	16.37	12.406		
2,800.0	2,764.5	2,779.0	2,718.4	9.2	11.0	54.88	382.8	-324.1	212.5	195.3	17.20	12.355		
2,900.0	2,862.3	2,878.6	2,814.4	9.6	11.6	55.11	402.4	-342.1	221.9	203.9	18.04	12.306		
3,000.0	2,960.1	2,978.1	2,910.3	10.1	12.1	55.33	422.0	-360.1	231.4	212.5	18.87	12.261		
3,100.0	3,057.9	3,077.6	3,006.2	10.5	12.7	55.52	441.6	-378.1	240.8	221.1	19.71	12.218		
3,200.0	3,155.7	3,177.2	3,102.1	11.0	13.2	55.71	461.3	-396.1	250.3	229.7	20.55	12.177		
3,300.0	3,253.4	3,276.7	3,198.0	11.4	13.8	55.88	480.9	-414.1	259.7	238.3	21.40	12.139		
3,400.0	3,351.2	3,376.3	3,294.0	11.9	14.3	56.03	500.5	-432.1	269.2	246.9	22.24	12.103		
3,500.0	3,449.0	3,475.8	3,389.9	12.3	14.9	56.18	520.2	-450.1	278.6	255.5	23.09	12.068		
3,600.0	3,546.8	3,575.4	3,485.8	12.8	15.4	56.32	539.8	-468.1	288.1	264.1	23.93	12.036		
3,700.0	3,644.6	3,674.9	3,581.7	13.2	16.0	56.44	559.4	-486.1	297.5	272.7	24.78	12.005		
3,800.0	3,742.3	3,774.5	3,677.7	13.7	16.5	56.56	579.0	-504.1	307.0	281.4	25.63	11.976		
3,900.0	3,840.1	3,874.0	3,773.6	14.1	17.1	56.68	598.7	-522.0	316.4	290.0	26.48	11.948		
4,000.0	3,937.9	3,973.6	3,869.5	14.6	17.7	56.78	618.3	-540.0	325.9	298.6	27.34	11.922		
4,100.0	4,035.7	4,073.1	3,965.4	15.1	18.2	56.88	637.9	-558.0	335.4	307.2	28.19	11.897		
4,200.0	4,133.5	4,172.7	4,061.4	15.5	18.8	56.98	657.5	-576.0	344.8	315.8	29.04	11.873		
4,300.0	4,231.2	4,272.2	4,157.3	16.0	19.3	57.07	677.2	-594.0	354.3	324.4	29.90	11.850		
4,400.0	4,329.0	4,371.8	4,253.2	16.4	19.9	57.15	696.8	-612.0	363.7	333.0	30.75	11.829		
4,500.0	4,426.8	4,471.3	4,349.1	16.9	20.4	57.23	716.4	-630.0	373.2	341.6	31.61	11.808		
4,600.0	4,524.6	4,570.9	4,445.1	17.3	21.0	57.31	736.1	-648.0	382.7	350.2	32.46	11.788		
4,700.0	4,622.4	4,670.4	4,541.0	17.8	21.5	57.38	755.7	-666.0	392.1	358.8	33.32	11.769		
4,800.0	4,720.1	4,770.0	4,636.9	18.3	22.1	57.45	775.3	-684.0	401.6	367.4	34.18	11.751		
4,900.0	4,817.9	4,869.5	4,732.8	18.7	22.7	57.52	794.9	-702.0	411.1	376.0	35.03	11.734		
5,000.0	4,915.7	4,969.1	4,828.7	19.2	23.2	57.58	814.6	-720.0	420.5	384.6	35.89	11.717		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference													
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
5,100.0	5,013.5	5,068.6	4,924.7	19.6	23.8	57.64	834.2	-737.9	430.0	393.3	36.75	11.701	
5,200.0	5,111.3	5,168.2	5,020.6	20.1	24.3	57.70	853.8	-755.9	439.5	401.9	37.61	11.686	
5,300.0	5,209.0	5,267.7	5,116.5	20.5	24.9	57.76	873.4	-773.9	448.9	410.5	38.46	11.671	
5,400.0	5,306.8	5,367.3	5,212.4	21.0	25.5	57.81	893.1	-791.9	458.4	419.1	39.32	11.657	
5,500.0	5,404.6	5,466.8	5,308.4	21.5	26.0	57.86	912.7	-809.9	467.9	427.7	40.18	11.644	
5,600.0	5,502.4	5,577.0	5,414.8	21.9	26.5	58.01	933.5	-829.0	476.5	435.5	41.03	11.615	
5,700.0	5,600.2	5,691.2	5,526.3	22.4	26.9	58.50	952.1	-846.0	482.3	440.4	41.93	11.503	
5,800.0	5,698.3	5,805.6	5,638.7	22.8	27.3	59.19	967.3	-859.9	486.0	443.2	42.76	11.366	
5,900.0	5,797.0	5,920.0	5,751.9	23.1	27.6	59.80	979.2	-870.9	488.5	445.1	43.43	11.248	
6,000.0	5,896.3	6,034.3	5,865.7	23.3	27.9	60.35	987.8	-878.7	489.9	445.9	44.01	11.131	
6,100.0	5,995.9	6,148.7	5,979.8	23.5	28.0	60.82	993.0	-883.5	490.1	445.6	44.50	11.015	
6,200.0	6,095.7	6,262.8	6,094.0	23.7	28.2	61.24	994.8	-885.2	489.1	444.2	44.89	10.897	
6,300.0	6,195.7	6,363.6	6,194.7	23.8	28.3	61.42	994.8	-885.2	488.2	443.1	45.15	10.813	
6,342.0	6,237.7	6,405.6	6,236.7	23.8	28.3	61.42	994.8	-885.2	488.2	442.9	45.26	10.787	
6,400.0	6,295.7	6,463.5	6,294.6	23.9	28.4	0.98	994.8	-885.2	488.2	447.4	40.82	11.960	
6,500.0	6,395.7	6,561.9	6,392.7	24.0	28.4	-88.27	994.8	-878.3	488.4	442.6	45.81	10.662	
6,600.0	6,495.1	6,658.9	6,487.8	24.0	28.4	-87.14	994.8	-859.3	488.8	442.7	46.09	10.604	
6,700.0	6,592.4	6,754.8	6,578.6	23.9	28.2	-86.06	994.8	-828.8	489.3	443.2	46.13	10.608	
6,800.0	6,685.8	6,850.0	6,664.3	23.8	28.0	-85.06	994.8	-787.5	490.0	444.0	45.95	10.663	
6,900.0	6,773.8	6,943.7	6,743.0	23.5	27.8	-84.14	994.8	-736.7	490.7	445.1	45.63	10.755	
7,000.0	6,854.8	7,036.9	6,814.5	23.3	27.6	-83.32	994.8	-677.1	491.5	446.2	45.26	10.859	
7,100.0	6,927.6	7,129.4	6,877.8	23.1	27.3	-82.61	994.8	-609.7	492.2	447.3	44.96	10.948	
7,200.0	6,990.8	7,221.3	6,932.2	22.9	27.1	-82.02	994.8	-535.7	492.9	448.1	44.88	10.984	
7,300.0	7,043.3	7,312.8	6,977.1	23.0	27.0	-81.55	994.8	-456.1	493.5	448.4	45.14	10.933	
7,400.0	7,084.3	7,403.9	7,012.1	23.2	26.9	-81.22	994.8	-372.0	493.9	448.1	45.87	10.769	
7,500.0	7,113.1	7,494.8	7,036.7	23.7	26.8	-81.03	994.8	-284.5	494.2	447.1	47.12	10.487	
7,600.0	7,129.1	7,585.6	7,050.8	24.5	27.0	-80.97	994.8	-194.9	494.3	445.4	48.91	10.106	
7,700.0	7,132.2	7,677.0	7,054.2	25.6	27.3	-81.04	994.8	-103.6	494.2	443.0	51.19	9.655	
7,800.0	7,130.6	7,777.0	7,052.8	27.0	28.0	-81.05	994.8	-3.6	494.2	440.0	54.14	9.127	
7,900.0	7,129.1	7,877.0	7,051.4	28.6	29.2	-81.07	994.8	96.4	494.1	436.7	57.46	8.599	
8,000.0	7,127.5	7,977.0	7,050.0	30.4	30.8	-81.09	994.8	196.4	494.1	433.0	61.11	8.085	
8,100.0	7,125.9	8,077.0	7,048.6	32.4	32.7	-81.11	994.8	296.4	494.1	429.1	65.03	7.598	
8,200.0	7,124.4	8,177.0	7,047.2	34.5	34.7	-81.13	994.8	396.4	494.1	424.9	69.18	7.142	
8,300.0	7,122.8	8,277.0	7,045.7	36.7	36.9	-81.14	994.8	496.4	494.0	420.5	73.51	6.721	
8,400.0	7,121.2	8,377.0	7,044.3	39.0	39.1	-81.16	994.8	596.4	494.0	416.0	77.99	6.334	
8,500.0	7,119.6	8,477.0	7,042.9	41.3	41.5	-81.18	994.8	696.4	494.0	411.4	82.61	5.980	
8,600.0	7,118.1	8,577.0	7,041.5	43.7	43.9	-81.20	994.8	796.3	494.0	406.6	87.34	5.656	
8,700.0	7,116.5	8,677.0	7,040.1	46.2	46.3	-81.22	994.8	896.3	493.9	401.8	92.16	5.360	
8,800.0	7,114.9	8,777.0	7,038.7	48.7	48.8	-81.23	994.8	996.3	493.9	396.9	97.06	5.089	
8,900.0	7,113.4	8,877.0	7,037.3	51.2	51.3	-81.25	994.8	1,096.3	493.9	391.9	102.02	4.841	
9,000.0	7,111.8	8,977.0	7,035.8	53.7	53.9	-81.27	994.8	1,196.3	493.9	386.8	107.05	4.613	
9,100.0	7,110.2	9,077.0	7,034.4	56.3	56.5	-81.29	994.8	1,296.3	493.9	381.7	112.13	4.404	
9,200.0	7,108.6	9,177.0	7,033.0	58.9	59.0	-81.31	994.8	1,396.3	493.8	376.6	117.25	4.212	
9,300.0	7,107.1	9,277.0	7,031.6	61.5	61.7	-81.32	994.8	1,496.3	493.8	371.4	122.41	4.034	
9,400.0	7,105.5	9,377.0	7,030.2	64.1	64.3	-81.34	994.8	1,596.3	493.8	366.2	127.60	3.870	
9,500.0	7,103.9	9,477.0	7,028.8	66.8	66.9	-81.36	994.9	1,696.3	493.8	360.9	132.83	3.717	
9,600.0	7,102.4	9,577.0	7,027.4	69.4	69.6	-81.38	994.9	1,796.2	493.7	355.7	138.08	3.576	
9,700.0	7,100.8	9,677.0	7,025.9	72.1	72.2	-81.40	994.9	1,896.2	493.7	350.4	143.35	3.444	
9,800.0	7,099.2	9,777.0	7,024.5	74.8	74.9	-81.41	994.9	1,996.2	493.7	345.0	148.65	3.321	
9,900.0	7,097.7	9,877.0	7,023.1	77.5	77.6	-81.43	994.9	2,096.2	493.7	339.7	153.96	3.206	
10,000.0	7,096.1	9,977.0	7,021.7	80.2	80.3	-81.45	994.9	2,196.2	493.6	334.4	159.30	3.099	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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)						
10,100.0	7,094.5	10,077.0	7,020.3	82.9	83.0	-81.47	994.9	2,296.2	493.6	329.0	164.64	2.998					
10,200.0	7,092.9	10,177.0	7,018.9	85.6	85.7	-81.49	994.9	2,396.2	493.6	323.6	170.01	2.903					
10,300.0	7,091.4	10,277.0	7,017.5	88.3	88.4	-81.51	994.9	2,496.2	493.6	318.2	175.38	2.814					
10,400.0	7,089.8	10,377.0	7,016.0	91.0	91.1	-81.52	994.9	2,596.2	493.6	312.8	180.77	2.730					
10,500.0	7,088.2	10,477.0	7,014.6	93.7	93.9	-81.54	994.9	2,696.2	493.5	307.4	186.17	2.651					
10,600.0	7,086.7	10,577.0	7,013.2	96.5	96.6	-81.56	994.9	2,796.1	493.5	301.9	191.58	2.576					
10,700.0	7,085.1	10,677.0	7,011.8	99.2	99.3	-81.58	994.9	2,896.1	493.5	296.5	196.99	2.505					
10,800.0	7,083.5	10,777.0	7,010.4	101.9	102.1	-81.60	994.9	2,996.1	493.5	291.0	202.42	2.438					
10,900.0	7,081.9	10,877.0	7,009.0	104.7	104.8	-81.61	994.9	3,096.1	493.4	285.6	207.85	2.374					
11,000.0	7,080.4	10,977.0	7,007.6	107.4	107.5	-81.63	994.9	3,196.1	493.4	280.1	213.30	2.313					
11,100.0	7,078.8	11,077.0	7,006.2	110.2	110.3	-81.65	994.9	3,296.1	493.4	274.7	218.74	2.256					
11,200.0	7,077.2	11,177.0	7,004.7	112.9	113.0	-81.67	994.9	3,396.1	493.4	269.2	224.20	2.201					
11,300.0	7,075.7	11,277.0	7,003.3	115.7	115.8	-81.69	994.9	3,496.1	493.4	263.7	229.66	2.148					
11,400.0	7,074.1	11,377.0	7,001.9	118.4	118.5	-81.70	994.9	3,596.1	493.3	258.2	235.13	2.098					
11,500.0	7,072.5	11,477.0	7,000.5	121.2	121.3	-81.72	994.9	3,696.1	493.3	252.7	240.60	2.050					
11,596.7	7,071.0	11,573.8	6,999.1	122.9	124.0	-81.74	994.9	3,792.8	493.3	248.4	244.91	2.014 SF					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-332 - 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)	+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	0.00	0.00	58.3	0.0	58.3				
100.0	100.0	99.0	99.0	0.1	0.1	0.00	0.00	58.3	0.0	58.3	58.1	0.22	260.614	
200.0	200.0	199.0	199.0	0.3	0.3	0.00	0.00	58.3	0.0	58.3	57.6	0.67	86.727	
300.0	300.0	299.0	299.0	0.6	0.6	0.00	0.00	58.3	0.0	58.3	57.2	1.12	51.967	
400.0	400.0	399.0	399.0	0.8	0.8	0.00	0.00	58.3	0.0	58.3	56.7	1.57	37.098 CC, ES	
500.0	500.0	497.4	497.4	1.0	1.0	-0.95		59.6	-1.0	59.6	57.6	2.01	29.605	
600.0	600.0	595.5	595.4	1.2	1.2	-3.59		63.6	-4.0	63.9	61.4	2.46	25.948	
700.0	700.0	693.2	692.7	1.5	1.5	-7.27		70.3	-9.0	71.1	68.2	2.92	24.352	
800.0	800.0	790.2	789.0	1.7	1.7	-11.29		79.5	-15.9	81.7	78.3	3.41	23.989	
900.0	900.0	886.5	884.2	1.9	2.0	45.87		91.3	-24.7	94.5	90.7	3.84	24.609	
1,000.0	999.8	982.4	978.4	2.1	2.3	43.99		105.5	-35.3	108.2	103.9	4.30	25.146	
1,100.0	1,099.5	1,077.7	1,071.4	2.4	2.7	43.07		122.2	-47.8	122.5	117.7	4.78	25.619	
1,200.0	1,198.7	1,172.6	1,163.2	2.6	3.2	42.82		141.2	-62.0	137.3	132.0	5.29	25.984	
1,300.0	1,297.5	1,269.0	1,255.9	2.9	3.7	43.10		162.8	-78.1	152.4	146.6	5.83	26.135	
1,400.0	1,395.6	1,368.1	1,350.9	3.2	4.2	44.10		185.3	-94.9	165.5	159.1	6.43	25.719	
1,500.0	1,493.4	1,467.3	1,446.0	3.6	4.7	45.54		207.8	-111.7	177.3	170.2	7.09	24.993	
1,600.0	1,591.2	1,566.6	1,541.2	4.0	5.3	46.81		230.3	-128.6	189.2	181.4	7.79	24.272	
1,700.0	1,689.0	1,665.8	1,636.3	4.4	5.8	47.93		252.9	-145.4	201.1	192.6	8.52	23.613	
1,800.0	1,786.7	1,765.0	1,731.5	4.8	6.4	48.92		275.4	-162.2	213.2	203.9	9.26	23.012	
1,900.0	1,884.5	1,864.2	1,826.6	5.2	7.0	49.81		297.9	-179.1	225.3	215.2	10.03	22.465	
2,000.0	1,982.3	1,963.4	1,921.7	5.6	7.5	50.61		320.4	-195.9	237.4	226.6	10.81	21.970	
2,100.0	2,080.1	2,062.6	2,016.9	6.1	8.1	51.33		343.0	-212.8	249.6	238.0	11.60	21.521	
2,200.0	2,177.9	2,161.8	2,112.0	6.5	8.7	51.98		365.5	-229.6	261.8	249.4	12.40	21.114	
2,300.0	2,275.6	2,261.0	2,207.2	6.9	9.3	52.57		388.0	-246.4	274.0	260.8	13.21	20.745	
2,400.0	2,373.4	2,360.2	2,302.3	7.4	9.8	53.12		410.6	-263.3	286.3	272.3	14.03	20.409	
2,500.0	2,471.2	2,459.4	2,397.4	7.8	10.4	53.62		433.1	-280.1	298.6	283.7	14.85	20.102	
2,600.0	2,569.0	2,558.6	2,492.6	8.3	11.0	54.07		455.6	-296.9	310.9	295.2	15.68	19.822	
2,700.0	2,666.8	2,657.9	2,587.7	8.7	11.6	54.50		478.1	-313.8	323.2	306.7	16.52	19.565	
2,800.0	2,764.5	2,757.1	2,682.9	9.2	12.1	54.89		500.7	-330.6	335.6	318.2	17.36	19.329	
2,900.0	2,862.3	2,856.3	2,778.0	9.6	12.7	55.26		523.2	-347.4	347.9	329.7	18.21	19.112	
3,000.0	2,960.1	2,955.5	2,873.1	10.1	13.3	55.60		545.7	-364.3	360.3	341.3	19.05	18.910	
3,100.0	3,057.9	3,054.7	2,968.3	10.5	13.9	55.91		568.2	-381.1	372.7	352.8	19.90	18.724	
3,200.0	3,155.7	3,153.9	3,063.4	11.0	14.5	56.21		590.8	-397.9	385.1	364.3	20.76	18.551	
3,300.0	3,253.4	3,253.1	3,158.6	11.4	15.1	56.49		613.3	-414.8	397.5	375.9	21.61	18.391	
3,400.0	3,351.2	3,352.3	3,253.7	11.9	15.6	56.75		635.8	-431.6	409.9	387.5	22.47	18.241	
3,500.0	3,449.0	3,451.5	3,348.8	12.3	16.2	57.00		658.4	-448.4	422.3	399.0	23.33	18.100	
3,600.0	3,546.8	3,550.7	3,444.0	12.8	16.8	57.23		680.9	-465.3	434.8	410.6	24.20	17.969	
3,700.0	3,644.6	3,649.9	3,539.1	13.2	17.4	57.45		703.4	-482.1	447.2	422.2	25.06	17.846	
3,800.0	3,742.3	3,749.2	3,634.3	13.7	18.0	57.66		725.9	-498.9	459.7	433.7	25.92	17.731	
3,900.0	3,840.1	3,848.4	3,729.4	14.1	18.5	57.85		748.5	-515.8	472.1	445.3	26.79	17.622	
4,000.0	3,937.9	3,947.6	3,824.5	14.6	19.1	58.04		771.0	-532.6	484.6	456.9	27.66	17.519	
4,100.0	4,035.7	4,046.8	3,919.7	15.1	19.7	58.22		793.5	-549.5	497.0	468.5	28.53	17.422	
4,200.0	4,133.5	4,146.0	4,014.8	15.5	20.3	58.39		816.0	-566.3	509.5	480.1	29.40	17.331	
4,300.0	4,231.2	4,245.2	4,110.0	16.0	20.9	58.55		838.6	-583.1	522.0	491.7	30.27	17.244	
4,400.0	4,329.0	4,344.4	4,205.1	16.4	21.5	58.70		861.1	-600.0	534.4	503.3	31.14	17.162	
4,500.0	4,426.8	4,443.6	4,300.2	16.9	22.0	58.84		883.6	-616.8	546.9	514.9	32.01	17.084	
4,600.0	4,524.6	4,542.8	4,395.4	17.3	22.6	58.98		906.1	-633.6	559.4	526.5	32.89	17.009	
4,700.0	4,622.4	4,642.0	4,490.5	17.8	23.2	59.12		928.7	-650.5	571.9	538.1	33.76	16.939	
4,800.0	4,720.1	4,741.3	4,585.7	18.3	23.8	59.25		951.2	-667.3	584.3	549.7	34.64	16.871	
4,900.0	4,817.9	4,840.5	4,680.8	18.7	24.4	59.37		973.7	-684.1	596.8	561.3	35.51	16.807	
5,000.0	4,915.7	4,939.7	4,775.9	19.2	25.0	59.48		996.3	-701.0	609.3	572.9	36.39	16.746	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-332 - 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	5,013.5	5,038.9	4,871.1	19.6	25.5	59.60	1,018.8	-717.8	621.8	584.6	37.26	16.687	
5,200.0	5,111.3	5,138.1	4,966.2	20.1	26.1	59.71	1,041.3	-734.6	634.3	596.2	38.14	16.631	
5,300.0	5,209.0	5,237.3	5,061.4	20.5	26.7	59.81	1,063.8	-751.5	646.8	607.8	39.02	16.577	
5,400.0	5,306.8	5,336.5	5,156.5	21.0	27.3	59.91	1,086.4	-768.3	659.3	619.4	39.90	16.526	
5,500.0	5,404.6	5,435.7	5,251.6	21.5	27.9	60.01	1,108.9	-785.1	671.8	631.0	40.77	16.476	
5,600.0	5,502.4	5,534.9	5,346.8	21.9	28.5	60.10	1,131.4	-802.0	684.3	642.7	41.65	16.429	
5,700.0	5,600.2	5,647.6	5,455.1	22.4	29.0	60.24	1,156.4	-820.6	696.3	653.7	42.54	16.367	
5,800.0	5,698.3	5,771.2	5,575.0	22.8	29.5	60.64	1,180.0	-838.3	706.0	662.7	43.36	16.284	
5,900.0	5,797.0	5,895.2	5,696.6	23.1	30.0	60.97	1,199.6	-852.9	714.1	670.0	44.02	16.222	
6,000.0	5,896.3	6,019.7	5,819.6	23.3	30.3	61.22	1,215.0	-864.4	720.4	675.8	44.57	16.163	
6,100.0	5,995.9	6,144.4	5,943.6	23.5	30.6	61.39	1,226.1	-872.7	724.9	679.9	45.02	16.103	
6,200.0	6,095.7	6,269.4	6,068.3	23.7	30.8	61.50	1,232.9	-877.8	727.7	682.3	45.36	16.042	
6,300.0	6,195.7	6,394.5	6,193.3	23.8	30.9	61.54	1,235.3	-879.6	728.7	683.1	45.60	15.980	
6,400.0	6,295.7	6,495.9	6,294.7	23.9	31.0	1.09	1,235.3	-879.6	728.7	684.7	43.98	16.570	
6,500.0	6,395.7	6,595.4	6,394.2	24.0	31.1	-88.91	1,235.3	-879.2	728.7	682.6	46.09	15.812	
6,600.0	6,495.1	6,693.6	6,491.9	24.0	31.1	-88.93	1,235.3	-869.6	728.7	682.6	46.11	15.805	
6,700.0	6,592.4	6,791.9	6,587.6	23.9	31.1	-88.98	1,235.3	-847.5	728.7	682.8	45.90	15.877	
6,800.0	6,685.8	6,890.3	6,679.8	23.8	30.9	-89.04	1,235.3	-813.3	728.7	683.2	45.51	16.013	
6,900.0	6,773.8	6,988.8	6,766.9	23.5	30.7	-89.11	1,235.3	-767.6	728.7	683.7	45.02	16.186	
7,000.0	6,854.8	7,087.4	6,847.5	23.3	30.5	-89.20	1,235.3	-710.9	728.7	684.1	44.54	16.361	
7,100.0	6,927.6	7,186.1	6,920.2	23.1	30.2	-89.31	1,235.3	-644.2	728.6	684.5	44.19	16.489	
7,200.0	6,990.8	7,285.1	6,983.9	22.9	30.0	-89.42	1,235.3	-568.5	728.6	684.5	44.12	16.515	
7,300.0	7,043.3	7,384.2	7,037.3	23.0	29.7	-89.55	1,235.3	-485.1	728.6	684.1	44.47	16.384	
7,400.0	7,084.3	7,483.6	7,079.5	23.2	29.5	-89.68	1,235.3	-395.2	728.6	683.2	45.35	16.066	
7,500.0	7,113.1	7,583.1	7,109.9	23.7	29.3	-89.82	1,235.3	-300.4	728.6	681.8	46.81	15.566	
7,600.0	7,129.1	7,682.9	7,127.6	24.5	29.2	-89.96	1,235.3	-202.3	728.6	679.8	48.82	14.924	
7,610.7	7,130.0	7,693.7	7,128.8	24.6	29.2	-89.98	1,235.3	-191.6	728.6	679.5	49.07	14.847	
7,700.0	7,132.2	7,783.0	7,132.4	25.6	29.2	-90.10	1,235.3	-102.5	728.6	677.3	51.30	14.204	
7,800.0	7,130.6	7,883.0	7,130.9	27.0	29.4	-90.10	1,235.3	-2.5	728.6	674.4	54.23	13.434	
7,900.0	7,129.1	7,983.0	7,129.3	28.6	30.0	-90.10	1,235.3	97.5	728.6	671.0	57.55	12.659	
8,000.0	7,127.5	8,083.0	7,127.7	30.4	31.2	-90.10	1,235.3	197.5	728.6	667.4	61.21	11.903	
8,100.0	7,125.9	8,183.0	7,126.1	32.4	32.9	-90.10	1,235.3	297.5	728.6	663.4	65.15	11.184	
8,200.0	7,124.4	8,283.0	7,124.6	34.5	34.8	-90.10	1,235.3	397.5	728.6	659.3	69.31	10.511	
8,300.0	7,122.8	8,383.0	7,123.0	36.7	37.0	-90.10	1,235.3	497.5	728.6	654.9	73.67	9.889	
8,400.0	7,121.2	8,483.0	7,121.4	39.0	39.2	-90.10	1,235.3	597.5	728.6	650.4	78.19	9.318	
8,500.0	7,119.6	8,583.0	7,119.9	41.3	41.6	-90.10	1,235.3	697.4	728.6	645.7	82.85	8.794	
8,600.0	7,118.1	8,683.0	7,118.3	43.7	44.0	-90.10	1,235.3	797.4	728.6	641.0	87.62	8.316	
8,700.0	7,116.5	8,783.0	7,116.7	46.2	46.4	-90.10	1,235.3	897.4	728.6	636.1	92.48	7.879	
8,800.0	7,114.9	8,883.0	7,115.1	48.7	48.9	-90.10	1,235.3	997.4	728.6	631.2	97.42	7.479	
8,900.0	7,113.4	8,983.0	7,113.6	51.2	51.4	-90.10	1,235.3	1,097.4	728.6	626.2	102.43	7.113	
9,000.0	7,111.8	9,083.0	7,112.0	53.7	54.0	-90.10	1,235.3	1,197.4	728.6	621.1	107.51	6.777	
9,100.0	7,110.2	9,183.0	7,110.4	56.3	56.5	-90.10	1,235.3	1,297.4	728.6	616.0	112.63	6.469	
9,200.0	7,108.6	9,283.0	7,108.9	58.9	59.1	-90.10	1,235.3	1,397.4	728.6	610.8	117.80	6.185	
9,300.0	7,107.1	9,383.0	7,107.3	61.5	61.7	-90.10	1,235.3	1,497.3	728.6	605.6	123.00	5.923	
9,400.0	7,105.5	9,483.0	7,105.7	64.1	64.3	-90.10	1,235.3	1,597.3	728.6	600.4	128.25	5.681	
9,500.0	7,103.9	9,583.0	7,104.2	66.8	67.0	-90.10	1,235.3	1,697.3	728.6	595.1	133.52	5.457	
9,600.0	7,102.4	9,683.0	7,102.6	69.4	69.6	-90.10	1,235.3	1,797.3	728.6	589.8	138.82	5.249	
9,700.0	7,100.8	9,783.0	7,101.0	72.1	72.3	-90.10	1,235.3	1,897.3	728.6	584.5	144.14	5.055	
9,800.0	7,099.2	9,883.0	7,099.4	74.8	75.0	-90.10	1,235.3	1,997.3	728.6	579.1	149.48	4.874	
9,900.0	7,097.7	9,983.0	7,097.9	77.5	77.6	-90.10	1,235.3	2,097.3	728.6	573.8	154.85	4.705	
10,000.0	7,096.1	10,083.0	7,096.3	80.2	80.3	-90.10	1,235.3	2,197.3	728.6	568.4	160.23	4.547	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-332 - 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						
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	7,094.5	10,183.0	7,094.7	82.9	83.0	-90.10	1,235.3	2,297.2	728.6	563.0	165.62	4.399	
10,200.0	7,092.9	10,283.0	7,093.2	85.6	85.7	-90.10	1,235.3	2,397.2	728.6	557.6	171.03	4.260	
10,300.0	7,091.4	10,383.0	7,091.6	88.3	88.4	-90.10	1,235.3	2,497.2	728.6	552.1	176.46	4.129	
10,400.0	7,089.8	10,483.0	7,090.0	91.0	91.1	-90.10	1,235.3	2,597.2	728.6	546.7	181.89	4.006	
10,500.0	7,088.2	10,583.0	7,088.4	93.7	93.9	-90.10	1,235.3	2,697.2	728.6	541.3	187.34	3.889	
10,600.0	7,086.7	10,683.0	7,086.9	96.5	96.6	-90.10	1,235.3	2,797.2	728.6	535.8	192.79	3.779	
10,700.0	7,085.1	10,783.0	7,085.3	99.2	99.3	-90.10	1,235.3	2,897.2	728.6	530.4	198.25	3.675	
10,800.0	7,083.5	10,883.0	7,083.7	101.9	102.0	-90.10	1,235.3	2,997.2	728.6	524.9	203.73	3.576	
10,900.0	7,081.9	10,983.0	7,082.2	104.7	104.8	-90.10	1,235.3	3,097.2	728.6	519.4	209.21	3.483	
11,000.0	7,080.4	11,083.0	7,080.6	107.4	107.5	-90.10	1,235.3	3,197.1	728.6	513.9	214.69	3.394	
11,100.0	7,078.8	11,183.0	7,079.0	110.2	110.3	-90.10	1,235.3	3,297.1	728.6	508.4	220.19	3.309	
11,200.0	7,077.2	11,283.0	7,077.4	112.9	113.0	-90.10	1,235.3	3,397.1	728.6	502.9	225.68	3.228	
11,300.0	7,075.7	11,383.0	7,075.9	115.7	115.8	-90.10	1,235.3	3,497.1	728.6	497.4	231.19	3.152	
11,400.0	7,074.1	11,483.0	7,074.3	118.4	118.5	-90.10	1,235.3	3,597.1	728.6	491.9	236.70	3.078	
11,500.0	7,072.5	11,583.0	7,072.7	121.2	121.3	-90.10	1,235.3	3,697.1	728.6	486.4	242.21	3.008	
11,596.7	7,071.0	11,679.7	7,071.2	122.9	123.1	-90.10	1,235.3	3,793.8	728.6	482.9	245.75	2.965 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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)	+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	180.00	-32.8	0.0	32.8				
100.0	100.0	99.0	99.0	0.1	0.1	180.00	180.00	-32.8	0.0	32.8	32.6	0.22	146.624	
200.0	200.0	199.0	199.0	0.3	0.3	180.00	180.00	-32.8	0.0	32.8	32.1	0.67	48.793	
300.0	300.0	299.0	299.0	0.6	0.6	180.00	180.00	-32.8	0.0	32.8	31.7	1.12	29.237	
400.0	400.0	399.0	399.0	0.8	0.8	180.00	180.00	-32.8	0.0	32.8	31.2	1.57	20.872	
500.0	500.0	499.0	499.0	1.0	1.0	180.00	180.00	-32.8	0.0	32.8	30.8	2.02	16.228	
600.0	600.0	599.0	599.0	1.2	1.2	180.00	180.00	-32.8	0.0	32.8	30.3	2.47	13.275	
700.0	700.0	699.0	699.0	1.5	1.5	180.00	180.00	-32.8	0.0	32.8	29.9	2.92	11.231	
800.0	800.0	799.0	799.0	1.7	1.7	180.00	180.00	-32.8	0.0	32.8	29.4	3.37	9.733 CC	
900.0	900.0	899.0	899.0	1.9	1.9	-122.12	-122.12	-32.8	0.0	33.7	29.9	3.81	8.835	
1,000.0	999.8	998.8	998.8	2.1	2.1	-129.00	-129.00	-32.8	0.0	36.7	32.5	4.25	8.636	
1,100.0	1,099.5	1,099.4	1,099.4	2.4	2.4	-136.37	-136.37	-32.1	-1.6	41.6	36.9	4.69	8.868	
1,200.0	1,198.7	1,200.3	1,200.1	2.6	2.6	-141.81	-141.81	-29.9	-6.4	47.2	42.1	5.13	9.202	
1,300.0	1,297.5	1,301.4	1,300.8	2.9	2.8	-145.76	-145.76	-26.3	-14.4	53.3	47.8	5.58	9.552	
1,400.0	1,395.6	1,402.7	1,401.4	3.2	3.1	-148.61	-148.61	-21.1	-25.7	59.8	53.7	6.05	9.878	
1,500.0	1,493.4	1,504.3	1,501.7	3.6	3.3	-150.00	-150.00	-14.5	-40.3	65.1	58.5	6.57	9.915	
1,600.0	1,591.2	1,606.2	1,601.7	4.0	3.7	-149.48	-149.48	-6.4	-58.2	67.6	60.4	7.13	9.477	
1,700.0	1,689.0	1,706.4	1,699.6	4.4	4.0	-147.94	-147.94	2.4	-77.7	68.3	60.5	7.74	8.826	
1,800.0	1,786.7	1,806.4	1,797.3	4.8	4.4	-146.42	-146.42	11.2	-97.2	69.0	60.6	8.37	8.242	
1,900.0	1,884.5	1,906.4	1,894.9	5.2	4.8	-144.93	-144.93	20.1	-116.7	69.8	60.8	9.04	7.721	
2,000.0	1,982.3	2,006.4	1,992.6	5.6	5.2	-143.48	-143.48	28.9	-136.1	70.7	60.9	9.74	7.255	
2,100.0	2,080.1	2,106.4	2,090.3	6.1	5.6	-142.07	-142.07	37.7	-155.6	71.5	61.1	10.46	6.838	
2,200.0	2,177.9	2,206.3	2,187.9	6.5	6.0	-140.69	-140.69	46.5	-175.1	72.5	61.3	11.21	6.465	
2,300.0	2,275.6	2,306.3	2,285.6	6.9	6.5	-139.35	-139.35	55.3	-194.6	73.4	61.5	11.98	6.131	
2,400.0	2,373.4	2,406.3	2,383.3	7.4	6.9	-138.04	-138.04	64.2	-214.1	74.5	61.7	12.77	5.832	
2,500.0	2,471.2	2,506.3	2,480.9	7.8	7.3	-136.77	-136.77	73.0	-233.5	75.5	61.9	13.57	5.562	
2,600.0	2,569.0	2,606.3	2,578.6	8.3	7.8	-135.53	-135.53	81.8	-253.0	76.6	62.2	14.40	5.319	
2,700.0	2,666.8	2,706.2	2,676.3	8.7	8.2	-134.33	-134.33	90.6	-272.5	77.7	62.5	15.24	5.099	
2,800.0	2,764.5	2,806.2	2,773.9	9.2	8.7	-133.16	-133.16	99.5	-292.0	78.9	62.8	16.09	4.900	
2,900.0	2,862.3	2,906.2	2,871.6	9.6	9.1	-132.03	-132.03	108.3	-311.5	80.0	63.1	16.96	4.720	
3,000.0	2,960.1	3,006.2	2,969.3	10.1	9.6	-130.93	-130.93	117.1	-330.9	81.3	63.4	17.84	4.556	
3,100.0	3,057.9	3,106.2	3,066.9	10.5	10.0	-129.86	-129.86	125.9	-350.4	82.5	63.8	18.72	4.406	
3,200.0	3,155.7	3,206.1	3,164.6	11.0	10.5	-128.82	-128.82	134.7	-369.9	83.8	64.1	19.62	4.269	
3,300.0	3,253.4	3,306.1	3,262.3	11.4	10.9	-127.82	-127.82	143.6	-389.4	85.1	64.5	20.53	4.144	
3,400.0	3,351.2	3,406.1	3,359.9	11.9	11.4	-126.85	-126.85	152.4	-408.8	86.4	64.9	21.44	4.029	
3,500.0	3,449.0	3,506.1	3,457.6	12.3	11.9	-125.90	-125.90	161.2	-428.3	87.7	65.4	22.36	3.924	
3,600.0	3,546.8	3,606.1	3,555.3	12.8	12.3	-124.99	-124.99	170.0	-447.8	89.1	65.8	23.28	3.827	
3,700.0	3,644.6	3,706.0	3,652.9	13.2	12.8	-124.10	-124.10	178.9	-467.3	90.5	66.3	24.22	3.737	
3,800.0	3,742.3	3,806.0	3,750.6	13.7	13.2	-123.24	-123.24	187.7	-486.8	91.9	66.8	25.15	3.654	
3,900.0	3,840.1	3,906.0	3,848.3	14.1	13.7	-122.41	-122.41	196.5	-506.2	93.3	67.2	26.09	3.577	
4,000.0	3,937.9	4,006.0	3,945.9	14.6	14.2	-121.60	-121.60	205.3	-525.7	94.8	67.8	27.03	3.506	
4,100.0	4,035.7	4,106.0	4,043.6	15.1	14.6	-120.81	-120.81	214.1	-545.2	96.3	68.3	27.98	3.440	
4,200.0	4,133.5	4,205.9	4,141.3	15.5	15.1	-120.05	-120.05	223.0	-564.7	97.7	68.8	28.93	3.379	
4,300.0	4,231.2	4,305.9	4,239.0	16.0	15.6	-119.31	-119.31	231.8	-584.2	99.3	69.4	29.88	3.321	
4,400.0	4,329.0	4,405.9	4,336.6	16.4	16.0	-118.60	-118.60	240.6	-603.6	100.8	69.9	30.84	3.268	
4,500.0	4,426.8	4,505.9	4,434.3	16.9	16.5	-117.91	-117.91	249.4	-623.1	102.3	70.5	31.79	3.218	
4,600.0	4,524.6	4,605.9	4,532.0	17.3	17.0	-117.23	-117.23	258.3	-642.6	103.9	71.1	32.75	3.171	
4,700.0	4,622.4	4,705.9	4,629.6	17.8	17.4	-116.58	-116.58	267.1	-662.1	105.4	71.7	33.71	3.128	
4,800.0	4,720.1	4,805.8	4,727.3	18.3	17.9	-115.94	-115.94	275.9	-681.5	107.0	72.3	34.67	3.086	
4,900.0	4,817.9	4,905.8	4,825.0	18.7	18.3	-115.33	-115.33	284.7	-701.0	108.6	73.0	35.63	3.048	
5,000.0	4,915.7	5,005.8	4,922.6	19.2	18.8	-114.73	-114.73	293.6	-720.5	110.2	73.6	36.59	3.012	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference													
Measured Depth		Vertical Depth		Measured Depth		Vertical Depth		Semi Major Axis		Distance		Warning	
Reference	Offset	Reference	Offset	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)		
5,100.0	5,013.5	5,105.8	5,020.3	19.6	19.3	-114.15	302.4	-740.0	111.8	74.3	37.55	2.978	
5,200.0	5,111.3	5,205.8	5,118.0	20.1	19.7	-113.59	311.2	-759.5	113.4	74.9	38.51	2.945	
5,300.0	5,209.0	5,305.7	5,215.6	20.5	20.2	-113.04	320.0	-778.9	115.1	75.6	39.47	2.915	
5,400.0	5,306.8	5,405.7	5,313.3	21.0	20.7	-112.51	328.8	-798.4	116.7	76.3	40.43	2.886	
5,500.0	5,404.6	5,505.7	5,411.0	21.5	21.1	-111.99	337.7	-817.9	118.4	77.0	41.40	2.859	
5,600.0	5,502.4	5,605.4	5,508.4	21.9	21.6	-111.52	346.4	-837.2	120.1	77.7	42.33	2.836	
5,700.0	5,600.2	5,704.2	5,605.4	22.4	21.9	-112.14	354.2	-854.3	122.4	79.4	43.00	2.847	
5,800.0	5,698.3	5,802.8	5,702.8	22.8	22.2	-113.53	360.5	-868.3	125.2	81.8	43.44	2.882	
5,900.0	5,797.0	5,901.3	5,800.5	23.1	22.4	-114.89	365.4	-879.2	127.7	84.0	43.74	2.920	
6,000.0	5,896.3	6,000.0	5,898.8	23.3	22.6	-116.23	369.0	-887.1	130.0	86.1	43.94	2.959	
6,100.0	5,995.9	6,098.0	5,996.7	23.5	22.8	-117.53	371.1	-891.8	132.1	88.0	44.05	2.998	
6,200.0	6,095.7	6,196.1	6,094.8	23.7	22.9	-118.84	371.9	-893.5	133.9	89.8	44.07	3.037	
6,300.0	6,195.7	6,296.0	6,194.7	23.8	23.0	-119.56	371.9	-893.5	134.8	90.6	44.16	3.052	
6,400.0	6,295.7	6,396.0	6,294.7	23.9	23.2	179.92	371.9	-893.3	134.8	100.4	34.35	3.924	
6,500.0	6,395.7	6,495.2	6,393.4	24.0	23.2	86.47	371.9	-884.7	135.1	91.2	43.83	3.081	
6,600.0	6,495.1	6,592.7	6,488.6	24.0	23.1	81.69	371.9	-863.9	136.2	93.6	42.66	3.194	
6,700.0	6,592.4	6,688.9	6,579.2	23.9	23.0	77.19	371.9	-831.7	138.3	97.0	41.27	3.350	
6,800.0	6,685.8	6,783.9	6,663.9	23.8	22.7	73.05	371.9	-788.9	141.0	101.2	39.80	3.542	
6,900.0	6,773.8	6,877.7	6,741.8	23.5	22.5	69.35	371.9	-736.7	144.1	105.7	38.37	3.756	
7,000.0	6,854.8	6,970.6	6,812.0	23.3	22.3	66.13	371.9	-675.9	147.5	110.4	37.10	3.975	
7,100.0	6,927.6	7,062.6	6,873.8	23.1	22.2	63.38	371.9	-607.9	150.9	114.7	36.12	4.176	
7,200.0	6,990.8	7,153.8	6,926.5	22.9	22.2	61.12	371.9	-533.4	154.0	118.4	35.56	4.331	
7,300.0	7,043.3	7,244.5	6,969.8	23.0	22.4	59.31	371.9	-453.8	156.8	121.2	35.57	4.408	
7,400.0	7,084.3	7,334.7	7,003.2	23.2	22.8	57.96	371.9	-370.1	159.1	122.8	36.23	4.390	
7,500.0	7,113.1	7,424.5	7,026.4	23.7	23.4	57.03	371.9	-283.4	160.7	123.1	37.56	4.278	
7,600.0	7,129.1	7,514.1	7,039.2	24.5	24.3	56.52	371.9	-194.8	161.6	122.1	39.53	4.088	
7,700.0	7,132.2	7,605.2	7,041.7	25.6	25.4	56.42	371.9	-103.8	161.8	119.8	41.98	3.854	
7,800.0	7,130.6	7,705.2	7,040.3	27.0	26.8	56.47	371.9	-3.8	161.7	117.2	44.52	3.632	
7,900.0	7,129.1	7,805.2	7,038.9	28.6	28.5	56.51	371.9	96.2	161.6	114.2	47.41	3.409	
8,000.0	7,127.5	7,905.2	7,037.5	30.4	30.3	56.55	371.9	196.2	161.6	111.0	50.58	3.194	
8,100.0	7,125.9	8,005.2	7,036.0	32.4	32.3	56.59	371.9	296.2	161.5	107.5	53.99	2.991	
8,200.0	7,124.4	8,105.2	7,034.6	34.5	34.4	56.63	371.9	396.2	161.4	103.8	57.60	2.802	
8,300.0	7,122.8	8,205.2	7,033.2	36.7	36.6	56.67	371.9	496.2	161.3	100.0	61.37	2.629	
8,400.0	7,121.2	8,305.2	7,031.7	39.0	38.9	56.71	371.9	596.2	161.2	96.0	65.27	2.470	
8,500.0	7,119.6	8,405.2	7,030.3	41.3	41.3	56.76	371.9	696.2	161.2	91.9	69.29	2.326	
8,600.0	7,118.1	8,505.2	7,028.9	43.7	43.7	56.80	371.9	796.2	161.1	87.7	73.40	2.195	
8,700.0	7,116.5	8,605.2	7,027.4	46.2	46.2	56.84	371.9	896.1	161.0	83.4	77.59	2.075	
8,800.0	7,114.9	8,705.2	7,026.0	48.7	48.6	56.88	371.9	996.1	160.9	79.1	81.85	1.966	
8,900.0	7,113.4	8,805.2	7,024.6	51.2	51.2	56.92	371.9	1,096.1	160.9	74.7	86.17	1.867	
9,000.0	7,111.8	8,905.2	7,023.1	53.7	53.7	56.96	371.9	1,196.1	160.8	70.2	90.55	1.776	
9,100.0	7,110.2	9,005.2	7,021.7	56.3	56.3	57.01	371.9	1,296.1	160.7	65.7	94.96	1.692	
9,200.0	7,108.6	9,105.2	7,020.3	58.9	58.9	57.05	371.9	1,396.1	160.6	61.2	99.42	1.616	
9,300.0	7,107.1	9,205.2	7,018.8	61.5	61.5	57.09	371.9	1,496.1	160.6	56.6	103.92	1.545	
9,400.0	7,105.5	9,305.2	7,017.4	64.1	64.2	57.13	371.9	1,596.1	160.5	52.0	108.44	1.480 Level 3	
9,500.0	7,103.9	9,405.2	7,016.0	66.8	66.8	57.17	371.9	1,696.1	160.4	47.4	112.99	1.420 Level 3	
9,600.0	7,102.4	9,505.2	7,014.6	69.4	69.5	57.21	371.9	1,796.1	160.3	42.8	117.57	1.364 Level 3	
9,700.0	7,100.8	9,605.2	7,013.1	72.1	72.1	57.26	371.9	1,896.0	160.3	38.1	122.17	1.312 Level 3	
9,800.0	7,099.2	9,705.2	7,011.7	74.8	74.8	57.30	371.9	1,996.0	160.2	33.4	126.80	1.263 Level 3	
9,900.0	7,097.7	9,805.2	7,010.3	77.5	77.5	57.34	371.9	2,096.0	160.1	28.7	131.44	1.218 Level 2	
10,000.0	7,096.1	9,905.2	7,008.8	80.2	80.2	57.38	371.9	2,196.0	160.0	23.9	136.10	1.176 Level 2	
10,100.0	7,094.5	10,005.2	7,007.4	82.9	82.9	57.43	371.9	2,296.0	160.0	19.2	140.77	1.136 Level 2	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	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
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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	7,092.9	10,105.2	7,006.0	85.6	85.6	57.47	371.9	2,396.0	159.9	14.4	145.46	1.099	Level 2
10,300.0	7,091.4	10,205.2	7,004.5	88.3	88.3	57.51	371.9	2,496.0	159.8	9.6	150.17	1.064	Level 2
10,400.0	7,089.8	10,305.2	7,003.1	91.0	91.1	57.55	371.9	2,596.0	159.7	4.8	154.89	1.031	Level 2
10,500.0	7,088.2	10,405.2	7,001.7	93.7	93.8	57.59	371.9	2,696.0	159.7	0.0	159.62	1.000	Level 2
10,600.0	7,086.7	10,505.2	7,000.2	96.5	96.5	57.64	371.9	2,795.9	159.6	-4.8	164.36	0.971	Level 1
10,700.0	7,085.1	10,605.2	6,998.8	99.2	99.3	57.68	371.9	2,895.9	159.5	-9.6	169.11	0.943	Level 1
10,800.0	7,083.5	10,705.2	6,997.4	101.9	102.0	57.72	371.9	2,995.9	159.4	-14.4	173.88	0.917	Level 1
10,900.0	7,081.9	10,805.2	6,995.9	104.7	104.7	57.76	371.9	3,095.9	159.4	-19.3	178.65	0.892	Level 1
11,000.0	7,080.4	10,905.2	6,994.5	107.4	107.5	57.81	371.9	3,195.9	159.3	-24.2	183.43	0.868	Level 1
11,100.0	7,078.8	11,005.2	6,993.1	110.2	110.2	57.85	371.9	3,295.9	159.2	-29.0	188.23	0.846	Level 1
11,200.0	7,077.2	11,105.2	6,991.7	112.9	113.0	57.89	371.9	3,395.9	159.1	-33.9	193.03	0.824	Level 1
11,300.0	7,075.7	11,205.2	6,990.2	115.7	115.7	57.93	371.9	3,495.9	159.1	-38.8	197.84	0.804	Level 1
11,400.0	7,074.1	11,305.2	6,988.8	118.4	118.5	57.98	371.9	3,595.9	159.0	-43.7	202.66	0.785	Level 1
11,500.0	7,072.5	11,405.2	6,987.4	121.2	121.2	58.02	371.9	3,695.9	158.9	-48.5	207.44	0.766	Level 1
11,567.5	7,071.5	11,472.7	6,986.4	122.4	122.4	58.05	371.9	3,763.3	158.9	-50.6	209.50	0.758	Level 1
11,596.7	7,071.0	11,500.4	6,986.0	122.9	122.9	58.06	371.9	3,791.0	158.8	-51.5	210.37	0.755	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-332 - 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	-177.42	-61.9	-2.8	62.0					
100.0	100.0	100.0	100.0	0.1	0.1	-177.42	-61.9	-2.8	62.0	61.8	0.22	275.819		
200.0	200.0	200.0	200.0	0.3	0.3	-177.42	-61.9	-2.8	62.0	61.3	0.67	91.940		
300.0	300.0	300.0	300.0	0.6	0.6	-177.42	-61.9	-2.8	62.0	60.9	1.12	55.164		
400.0	400.0	400.0	400.0	0.8	0.8	-177.42	-61.9	-2.8	62.0	60.4	1.57	39.403		
500.0	500.0	500.0	500.0	1.0	1.0	-177.42	-61.9	-2.8	62.0	60.0	2.02	30.647		
600.0	600.0	600.0	600.0	1.2	1.2	-177.42	-61.9	-2.8	62.0	59.5	2.47	25.074		
700.0	700.0	700.0	700.0	1.5	1.5	-177.42	-61.9	-2.8	62.0	59.1	2.92	21.217		
800.0	800.0	800.0	800.0	1.7	1.7	-177.42	-61.9	-2.8	62.0	58.6	3.37	18.388	CC, ES	
900.0	900.0	900.0	900.0	1.9	1.9	-118.38	-61.9	-2.8	62.8	59.0	3.82	16.462		
1,000.0	999.8	999.8	999.8	2.1	2.1	-122.37	-61.9	-2.8	65.5	61.2	4.26	15.376		
1,100.0	1,099.5	1,099.5	1,099.5	2.4	2.4	-128.26	-61.9	-2.8	70.5	65.8	4.71	14.983		
1,200.0	1,198.7	1,198.7	1,198.7	2.6	2.6	-135.11	-61.9	-2.8	78.7	73.5	5.16	15.242		
1,300.0	1,297.5	1,297.5	1,297.5	2.9	2.8	-141.94	-61.9	-2.8	90.5	84.9	5.62	16.107		
1,400.0	1,395.6	1,395.6	1,395.6	3.2	3.0	-148.10	-61.9	-2.8	106.2	100.2	6.07	17.503		
1,500.0	1,493.4	1,493.4	1,493.4	3.6	3.2	-153.16	-61.9	-2.8	124.6	118.1	6.53	19.080		
1,600.0	1,591.2	1,594.3	1,594.3	4.0	3.5	-156.56	-61.8	-4.3	142.7	135.7	6.99	20.417		
1,700.0	1,689.0	1,696.5	1,696.3	4.4	3.7	-158.24	-61.5	-9.5	158.8	151.3	7.45	21.313		
1,800.0	1,786.7	1,799.6	1,799.1	4.8	3.9	-158.73	-60.9	-18.4	172.5	164.5	7.93	21.745		
1,900.0	1,884.5	1,903.4	1,902.0	5.2	4.1	-158.30	-60.1	-31.1	183.8	175.3	8.45	21.757		
2,000.0	1,982.3	2,007.5	2,004.8	5.6	4.4	-157.09	-59.0	-47.5	192.6	183.6	9.00	21.400		
2,100.0	2,080.1	2,111.7	2,107.1	6.1	4.7	-155.15	-57.7	-67.7	199.3	189.6	9.61	20.730		
2,200.0	2,177.9	2,211.8	2,204.8	6.5	5.0	-152.93	-56.3	-89.3	204.7	194.4	10.27	19.936		
2,300.0	2,275.6	2,311.3	2,302.0	6.9	5.4	-150.84	-54.9	-110.7	210.4	199.5	10.96	19.202		
2,400.0	2,373.4	2,410.9	2,399.2	7.4	5.8	-148.86	-53.5	-132.2	216.5	204.8	11.68	18.524		
2,500.0	2,471.2	2,510.4	2,496.4	7.8	6.2	-146.98	-52.1	-153.6	222.7	210.3	12.44	17.902		
2,600.0	2,569.0	2,610.0	2,593.6	8.3	6.5	-145.21	-50.7	-175.1	229.2	215.9	13.22	17.333		
2,700.0	2,666.8	2,709.5	2,690.8	8.7	7.0	-143.54	-49.3	-196.5	235.8	221.8	14.03	16.815		
2,800.0	2,764.5	2,809.1	2,788.0	9.2	7.4	-141.96	-47.9	-218.0	242.7	227.9	14.85	16.344		
2,900.0	2,862.3	2,908.6	2,885.2	9.6	7.8	-140.47	-46.5	-239.4	249.8	234.1	15.69	15.916		
3,000.0	2,960.1	3,008.2	2,982.4	10.1	8.2	-139.06	-45.1	-260.9	257.0	240.4	16.55	15.528		
3,100.0	3,057.9	3,107.7	3,079.6	10.5	8.7	-137.73	-43.7	-282.3	264.3	246.9	17.42	15.175		
3,200.0	3,155.7	3,207.3	3,176.8	11.0	9.1	-136.47	-42.3	-303.8	271.8	253.5	18.30	14.854		
3,300.0	3,253.4	3,306.8	3,274.0	11.4	9.5	-135.28	-40.9	-325.2	279.4	260.2	19.19	14.562		
3,400.0	3,351.2	3,406.4	3,371.2	11.9	10.0	-134.15	-39.5	-346.7	287.1	267.0	20.08	14.296		
3,500.0	3,449.0	3,505.9	3,468.4	12.3	10.4	-133.08	-38.1	-368.1	294.9	274.0	20.99	14.054		
3,600.0	3,546.8	3,605.4	3,565.6	12.8	10.9	-132.07	-36.7	-389.6	302.9	281.0	21.90	13.832		
3,700.0	3,644.6	3,705.0	3,662.8	13.2	11.3	-131.11	-35.3	-411.0	310.9	288.1	22.81	13.629		
3,800.0	3,742.3	3,804.5	3,760.0	13.7	11.8	-130.20	-33.9	-432.5	319.0	295.3	23.73	13.444		
3,900.0	3,840.1	3,904.1	3,857.2	14.1	12.2	-129.33	-32.5	-453.9	327.2	302.5	24.65	13.273		
4,000.0	3,937.9	4,003.6	3,954.4	14.6	12.7	-128.50	-31.1	-475.4	335.4	309.8	25.57	13.116		
4,100.0	4,035.7	4,103.2	4,051.6	15.1	13.1	-127.72	-29.7	-496.8	343.7	317.2	26.50	12.971		
4,200.0	4,133.5	4,202.7	4,148.7	15.5	13.6	-126.97	-28.3	-518.3	352.1	324.7	27.43	12.837		
4,300.0	4,231.2	4,302.3	4,245.9	16.0	14.1	-126.25	-26.9	-539.7	360.5	332.2	28.36	12.713		
4,400.0	4,329.0	4,401.8	4,343.1	16.4	14.5	-125.57	-25.5	-561.2	369.0	339.7	29.29	12.599		
4,500.0	4,426.8	4,501.4	4,440.3	16.9	15.0	-124.92	-24.1	-582.6	377.5	347.3	30.22	12.493		
4,600.0	4,524.6	4,600.9	4,537.5	17.3	15.4	-124.30	-22.7	-604.1	386.1	354.9	31.15	12.394		
4,700.0	4,622.4	4,700.4	4,634.7	17.8	15.9	-123.71	-21.3	-625.5	394.7	362.6	32.09	12.302		
4,800.0	4,720.1	4,800.0	4,731.9	18.3	16.4	-123.14	-19.9	-647.0	403.4	370.4	33.02	12.216		
4,900.0	4,817.9	4,899.5	4,829.1	18.7	16.8	-122.59	-18.5	-668.4	412.1	378.1	33.95	12.136		
5,000.0	4,915.7	4,999.1	4,926.3	19.2	17.3	-122.07	-17.2	-689.9	420.8	385.9	34.89	12.061		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-332 - 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	5,013.5	5,098.6	5,023.5	19.6	17.8	-121.57	-121.57	-15.8	-711.3	429.6	393.8	35.82	11.991	
5,200.0	5,111.3	5,198.2	5,120.7	20.1	18.2	-121.09	-121.09	-14.4	-732.8	438.4	401.6	36.76	11.926	
5,300.0	5,209.0	5,297.7	5,217.9	20.5	18.7	-120.62	-120.62	-13.0	-754.2	447.2	409.5	37.69	11.864	
5,400.0	5,306.8	5,397.3	5,315.1	21.0	19.2	-120.18	-120.18	-11.6	-775.7	456.1	417.4	38.63	11.806	
5,500.0	5,404.6	5,496.8	5,412.3	21.5	19.6	-119.75	-119.75	-10.2	-797.1	464.9	425.4	39.56	11.752	
5,600.0	5,502.4	5,596.4	5,509.5	21.9	20.1	-119.34	-119.34	-8.8	-818.6	473.9	433.4	40.50	11.700	
5,700.0	5,600.2	5,695.6	5,606.5	22.4	20.6	-118.96	-118.96	-7.4	-839.9	482.8	441.4	41.41	11.658	
5,800.0	5,698.3	5,794.2	5,703.3	22.8	20.9	-118.85	-118.85	-6.2	-858.6	491.1	448.9	42.13	11.656	
5,900.0	5,797.0	5,893.0	5,800.8	23.1	21.2	-118.76	-118.76	-5.1	-874.0	497.8	455.1	42.70	11.658	
6,000.0	5,896.3	5,992.0	5,899.0	23.3	21.4	-118.70	-118.70	-4.4	-886.1	503.1	460.0	43.19	11.649	
6,100.0	5,995.9	6,091.0	5,997.7	23.5	21.6	-118.65	-118.65	-3.8	-894.7	507.0	463.4	43.60	11.627	
6,200.0	6,095.7	6,190.1	6,096.6	23.7	21.8	-118.62	-118.62	-3.5	-900.0	509.3	465.4	43.93	11.594	
6,300.0	6,195.7	6,289.2	6,195.7	23.8	21.9	-118.62	-118.62	-3.3	-901.9	510.1	465.9	44.17	11.548	
6,400.0	6,295.7	6,389.2	6,295.7	23.9	22.0	-118.62	-118.62	-3.3	-901.9	510.1	465.9	44.17	11.548	
6,500.0	6,395.7	6,489.5	6,396.0	24.0	22.2	-90.92	-90.92	-3.3	-901.2	510.1	465.4	44.67	11.418	
6,600.0	6,495.1	6,590.6	6,496.4	24.0	22.2	-90.82	-90.82	-3.3	-890.2	510.1	465.4	44.69	11.415	
6,700.0	6,592.4	6,691.5	6,594.3	23.9	22.1	-90.72	-90.72	-3.3	-866.1	510.1	465.6	44.47	11.470	
6,800.0	6,685.8	6,792.2	6,688.0	23.8	21.9	-90.60	-90.60	-3.3	-829.3	510.1	466.0	44.09	11.569	
6,900.0	6,773.8	6,892.8	6,776.0	23.5	21.7	-90.47	-90.47	-3.3	-780.7	510.0	466.4	43.63	11.690	
7,000.0	6,854.8	6,993.3	6,856.7	23.3	21.5	-90.33	-90.33	-3.3	-721.0	510.0	466.8	43.20	11.807	
7,100.0	6,927.6	7,093.6	6,928.8	23.1	21.4	-90.18	-90.18	-3.3	-651.4	510.0	467.1	42.93	11.880	
7,200.0	6,990.8	7,193.7	6,991.0	22.9	21.4	-90.04	-90.04	-3.3	-573.0	510.0	467.1	42.98	11.868	
7,227.1	7,006.1	7,220.9	7,006.1	22.9	21.5	-90.00	-90.00	-3.3	-550.5	510.0	466.9	43.09	11.837	
7,300.0	7,043.3	7,293.7	7,042.4	23.0	21.7	-89.89	-89.89	-3.3	-487.4	510.0	466.6	43.47	11.734	
7,400.0	7,084.3	7,393.4	7,082.2	23.2	22.3	-89.74	-89.74	-3.3	-395.9	510.0	465.5	44.50	11.462	
7,500.0	7,113.1	7,493.1	7,109.6	23.7	23.1	-89.60	-89.60	-3.3	-300.2	510.0	463.9	46.11	11.062	
7,600.0	7,129.1	7,592.5	7,124.4	24.5	24.2	-89.47	-89.47	-3.3	-202.0	510.1	461.8	48.25	10.570	
7,700.0	7,132.2	7,692.0	7,126.5	25.6	25.5	-89.36	-89.36	-3.3	-102.6	510.1	459.2	50.84	10.032	
7,800.0	7,130.6	7,792.0	7,124.8	27.0	27.0	-89.34	-89.34	-3.3	-2.6	510.1	456.2	53.87	9.468	
7,900.0	7,129.1	7,892.0	7,123.0	28.6	28.8	-89.32	-89.32	-3.3	97.4	510.1	452.8	57.28	8.904	
8,000.0	7,127.5	7,992.0	7,121.3	30.4	30.7	-89.30	-89.30	-3.3	197.4	510.1	449.0	61.02	8.359	
8,100.0	7,125.9	8,092.0	7,119.5	32.4	32.7	-89.28	-89.28	-3.3	297.4	510.1	445.0	65.03	7.843	
8,200.0	7,124.4	8,192.0	7,117.7	34.5	34.8	-89.26	-89.26	-3.3	397.3	510.1	440.8	69.27	7.364	
8,300.0	7,122.8	8,292.0	7,116.0	36.7	37.0	-89.23	-89.23	-3.3	497.3	510.1	436.4	73.68	6.923	
8,400.0	7,121.2	8,392.0	7,114.2	39.0	39.3	-89.21	-89.21	-3.3	597.3	510.1	431.8	78.25	6.518	
8,500.0	7,119.6	8,492.0	7,112.4	41.3	41.7	-89.19	-89.19	-3.3	697.3	510.1	427.1	82.95	6.149	
8,600.0	7,118.1	8,592.0	7,110.7	43.7	44.1	-89.17	-89.17	-3.3	797.3	510.1	422.3	87.76	5.812	
8,700.0	7,116.5	8,692.0	7,108.9	46.2	46.5	-89.15	-89.15	-3.3	897.3	510.1	417.4	92.66	5.505	
8,800.0	7,114.9	8,792.0	7,107.2	48.7	49.0	-89.13	-89.13	-3.3	997.3	510.1	412.5	97.63	5.225	
8,900.0	7,113.4	8,892.0	7,105.4	51.2	51.6	-89.11	-89.11	-3.3	1,097.2	510.1	407.4	102.67	4.968	
9,000.0	7,111.8	8,992.0	7,103.6	53.7	54.1	-89.08	-89.08	-3.3	1,197.2	510.1	402.3	107.77	4.733	
9,100.0	7,110.2	9,092.0	7,101.9	56.3	56.7	-89.06	-89.06	-3.3	1,297.2	510.1	397.2	112.91	4.518	
9,200.0	7,108.6	9,192.0	7,100.1	58.9	59.3	-89.04	-89.04	-3.3	1,397.2	510.1	392.0	118.10	4.319	
9,300.0	7,107.1	9,292.0	7,098.3	61.5	61.9	-89.02	-89.02	-3.3	1,497.2	510.1	386.8	123.32	4.136	
9,400.0	7,105.5	9,392.0	7,096.6	64.1	64.5	-89.00	-89.00	-3.3	1,597.2	510.1	381.5	128.58	3.967	
9,500.0	7,103.9	9,492.0	7,094.8	66.8	67.2	-88.98	-88.98	-3.3	1,697.1	510.1	376.2	133.87	3.811	
9,600.0	7,102.4	9,592.0	7,093.1	69.4	69.8	-88.95	-88.95	-3.3	1,797.1	510.1	370.9	139.18	3.665	
9,700.0	7,100.8	9,692.0	7,091.3	72.1	72.5	-88.93	-88.93	-3.3	1,897.1	510.1	365.6	144.51	3.530	
9,800.0	7,099.2	9,792.0	7,089.5	74.8	75.2	-88.91	-88.91	-3.3	1,997.1	510.1	360.3	149.87	3.404	
9,900.0	7,097.7	9,892.0	7,087.8	77.5	77.9	-88.89	-88.89	-3.3	2,097.1	510.1	354.9	155.24	3.286	
10,000.0	7,096.1	9,992.0	7,086.0	80.2	80.6	-88.87	-88.87	-3.3	2,197.1	510.1	349.5	160.63	3.176	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design										Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-332 - 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 (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			
10,100.0	7,094.5	10,092.0	7,084.2	82.9	83.3	88.85	-3.3	2,297.1	510.1	344.1	166.03	3.072			
10,200.0	7,092.9	10,192.0	7,082.5	85.6	86.0	88.82	-3.3	2,397.0	510.1	338.7	171.45	2.975			
10,300.0	7,091.4	10,292.0	7,080.7	88.3	88.7	88.80	-3.3	2,497.0	510.1	333.3	176.88	2.884			
10,400.0	7,089.8	10,392.0	7,079.0	91.0	91.4	88.78	-3.3	2,597.0	510.1	327.8	182.32	2.798			
10,500.0	7,088.2	10,492.0	7,077.2	93.7	94.1	88.76	-3.3	2,697.0	510.1	322.4	187.77	2.717			
10,600.0	7,086.7	10,592.0	7,075.4	96.5	96.9	88.74	-3.3	2,797.0	510.2	316.9	193.23	2.640			
10,700.0	7,085.1	10,692.0	7,073.7	99.2	99.6	88.72	-3.3	2,897.0	510.2	311.5	198.69	2.568			
10,800.0	7,083.5	10,792.0	7,071.9	101.9	102.4	88.70	-3.3	2,996.9	510.2	306.0	204.17	2.499			
10,900.0	7,081.9	10,892.0	7,070.1	104.7	105.1	88.67	-3.3	3,096.9	510.2	300.5	209.65	2.433			
11,000.0	7,080.4	10,992.0	7,068.4	107.4	107.8	88.65	-3.3	3,196.9	510.2	295.0	215.14	2.371			
11,100.0	7,078.8	11,092.0	7,066.6	110.2	110.6	88.63	-3.3	3,296.9	510.2	289.5	220.63	2.312			
11,200.0	7,077.2	11,192.0	7,064.9	112.9	113.3	88.61	-3.3	3,396.9	510.2	284.0	226.13	2.256			
11,300.0	7,075.7	11,292.0	7,063.1	115.7	116.1	88.59	-3.3	3,496.9	510.2	278.5	231.64	2.203			
11,400.0	7,074.1	11,392.0	7,061.3	118.4	118.9	88.57	-3.3	3,596.8	510.2	273.0	237.15	2.151			
11,500.0	7,072.5	11,492.0	7,059.6	121.2	121.6	88.54	-3.3	3,696.8	510.2	267.5	242.66	2.102			
11,555.8	7,071.6	11,547.8	7,058.6	122.2	123.2	88.53	-3.3	3,752.7	510.2	265.0	245.17	2.081			
11,596.7	7,071.0	11,580.7	7,058.0	122.9	124.1	88.53	-3.3	3,785.5	510.3	263.5	246.79	2.068 SF			

Reference Depths are relative to WELL @ 4817.0ft (RKB - 15')	Coordinates are relative to: Peschel 20H-302
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.52°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-302
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Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-302	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4817.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Peschel 20H-302

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.52°

