PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peschel 20G-232**

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

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1350783.51	3225068.81	40.293490	-104.693140	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1040'FSL & 950'FWL	1.0	0.0	0.0	Point
BHL 1993'FSL & 500'FEL	6999.0	965.7	3802.1	Point

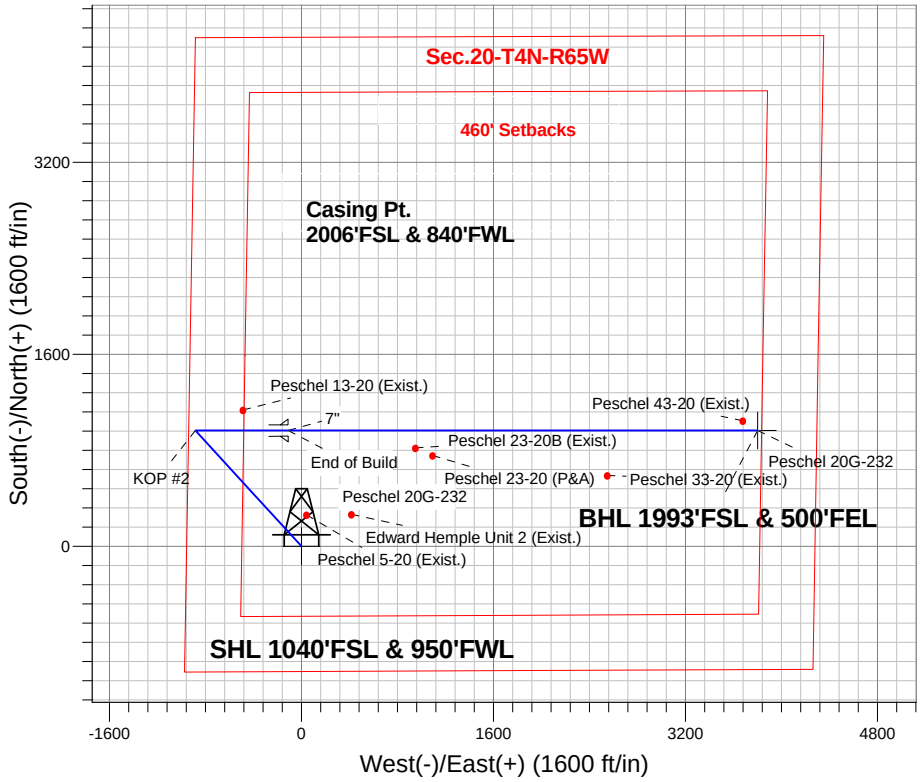
Azimuths to True North
Magnetic North: 8.39°

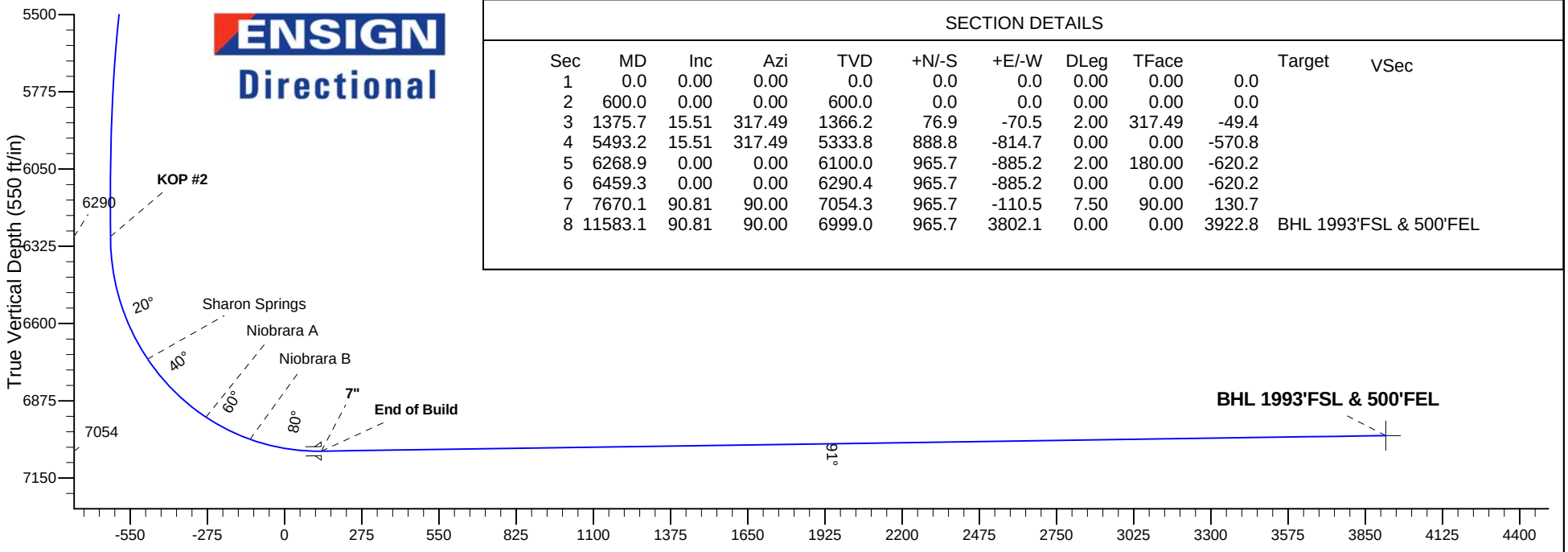
Magnetic Field
Strength: 52746.1snT
Dip Angle: 66.87°
Date: 8/27/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
600.0	600.0	KOP #1
6290.4	6459.3	KOP #2
7054.3	7670.1	End of Build

Peschel 4N65W20B Pad Sec.20-T4N-R65W
Peschel 20G-232
Plan #1 ((8-22-14)
11:51, 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	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0		
3	1375.7	15.51	317.49	1366.2	76.9	-70.5	2.00	317.49	-49.4		
4	5493.2	15.51	317.49	5333.8	888.8	-814.7	0.00	0.00	-570.8		
5	6268.9	0.00	0.00	6100.0	965.7	-885.2	2.00	180.00	-620.2		
6	6459.3	0.00	0.00	6290.4	965.7	-885.2	0.00	0.00	-620.2		
7	7670.1	90.81	90.00	7054.3	965.7	-110.5	7.50	90.00	130.7		
8	11583.1	90.81	90.00	6999.0	965.7	3802.1	0.00	0.00	3922.8	BHL 1993'FSL & 500'FEL	

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W
Peschel 4N65W20B Pad Sec.20-T4N-R65W
Peschel 20G-232

Wellbore #1

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

Standard Planning Report

28 August, 2014

Database:	Landmark	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**North Reference:**	True
Well:	Peschel 20G-232	**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	**Latitude:**	40.293650
From:	Lat/Long	**Easting:**	3,225,068.28 ft	**Longitude:**	-104.693140
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.52 °

Well Peschel 20G-232

Well Position	**+N/-S**	-58.3 ft	**Northing:**	1,350,783.51 ft	**Latitude:**	40.293490
	+E/-W	0.0 ft	**Easting:**	3,225,068.81 ft	**Longitude:**	-104.693140
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,801.0 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	75.75

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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,375.7	15.51	317.49	1,366.2	76.9	-70.5	2.00	2.00	0.00	317.49	
5,493.2	15.51	317.49	5,333.8	888.8	-814.7	0.00	0.00	0.00	0.00	
6,268.9	0.00	0.00	6,100.0	965.7	-885.2	2.00	-2.00	0.00	180.00	
6,459.3	0.00	0.00	6,290.4	965.7	-885.2	0.00	0.00	0.00	0.00	
7,670.1	90.81	90.00	7,054.3	965.7	-110.5	7.50	7.50	0.00	90.00	
11,583.1	90.81	90.00	6,999.0	965.7	3,802.1	0.00	0.00	0.00	0.00	BHL 1993'FSL & 5(

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Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**North Reference:**	True
Well:	Peschel 20G-232	**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
KOP #1									
700.0	2.00	317.49	700.0	1.3	-1.2	-0.8	2.00	2.00	0.00
800.0	4.00	317.49	799.8	5.1	-4.7	-3.3	2.00	2.00	0.00
900.0	6.00	317.49	899.5	11.6	-10.6	-7.4	2.00	2.00	0.00
1,000.0	8.00	317.49	998.7	20.6	-18.8	-13.2	2.00	2.00	0.00
1,100.0	10.00	317.49	1,097.5	32.1	-29.4	-20.6	2.00	2.00	0.00
1,200.0	12.00	317.49	1,195.6	46.1	-42.3	-29.6	2.00	2.00	0.00
1,300.0	14.00	317.49	1,293.1	62.7	-57.5	-40.3	2.00	2.00	0.00
1,375.7	15.51	317.49	1,366.2	76.9	-70.5	-49.4	2.00	2.00	0.00
1,400.0	15.51	317.49	1,389.7	81.7	-74.9	-52.5	0.00	0.00	0.00
1,500.0	15.51	317.49	1,486.0	101.5	-93.0	-65.2	0.00	0.00	0.00
1,600.0	15.51	317.49	1,582.4	121.2	-111.1	-77.8	0.00	0.00	0.00
1,700.0	15.51	317.49	1,678.7	140.9	-129.1	-90.5	0.00	0.00	0.00
1,800.0	15.51	317.49	1,775.1	160.6	-147.2	-103.1	0.00	0.00	0.00
1,900.0	15.51	317.49	1,871.5	180.3	-165.3	-115.8	0.00	0.00	0.00
2,000.0	15.51	317.49	1,967.8	200.0	-183.4	-128.5	0.00	0.00	0.00
2,100.0	15.51	317.49	2,064.2	219.7	-201.4	-141.1	0.00	0.00	0.00
2,200.0	15.51	317.49	2,160.5	239.5	-219.5	-153.8	0.00	0.00	0.00
2,300.0	15.51	317.49	2,256.9	259.2	-237.6	-166.5	0.00	0.00	0.00
2,400.0	15.51	317.49	2,353.2	278.9	-255.6	-179.1	0.00	0.00	0.00
2,500.0	15.51	317.49	2,449.6	298.6	-273.7	-191.8	0.00	0.00	0.00
2,600.0	15.51	317.49	2,546.0	318.3	-291.8	-204.4	0.00	0.00	0.00
2,700.0	15.51	317.49	2,642.3	338.0	-309.9	-217.1	0.00	0.00	0.00
2,800.0	15.51	317.49	2,738.7	357.8	-327.9	-229.8	0.00	0.00	0.00
2,900.0	15.51	317.49	2,835.0	377.5	-346.0	-242.4	0.00	0.00	0.00
3,000.0	15.51	317.49	2,931.4	397.2	-364.1	-255.1	0.00	0.00	0.00
3,100.0	15.51	317.49	3,027.7	416.9	-382.2	-267.8	0.00	0.00	0.00
3,200.0	15.51	317.49	3,124.1	436.6	-400.2	-280.4	0.00	0.00	0.00
3,300.0	15.51	317.49	3,220.5	456.3	-418.3	-293.1	0.00	0.00	0.00
3,400.0	15.51	317.49	3,316.8	476.1	-436.4	-305.7	0.00	0.00	0.00
3,500.0	15.51	317.49	3,413.2	495.8	-454.4	-318.4	0.00	0.00	0.00
3,600.0	15.51	317.49	3,509.5	515.5	-472.5	-331.1	0.00	0.00	0.00
3,700.0	15.51	317.49	3,605.9	535.2	-490.6	-343.7	0.00	0.00	0.00
3,800.0	15.51	317.49	3,702.2	554.9	-508.7	-356.4	0.00	0.00	0.00
3,839.2	15.51	317.49	3,740.0	562.7	-515.7	-361.4	0.00	0.00	0.00
Parkman									
3,900.0	15.51	317.49	3,798.6	574.6	-526.7	-369.1	0.00	0.00	0.00
4,000.0	15.51	317.49	3,895.0	594.4	-544.8	-381.7	0.00	0.00	0.00
4,100.0	15.51	317.49	3,991.3	614.1	-562.9	-394.4	0.00	0.00	0.00
4,200.0	15.51	317.49	4,087.7	633.8	-581.0	-407.1	0.00	0.00	0.00
4,300.0	15.51	317.49	4,184.0	653.5	-599.0	-419.7	0.00	0.00	0.00
4,400.0	15.51	317.49	4,280.4	673.2	-617.1	-432.4	0.00	0.00	0.00
4,498.2	15.51	317.49	4,375.0	692.6	-634.8	-444.8	0.00	0.00	0.00
Sussex									
4,500.0	15.51	317.49	4,376.7	692.9	-635.2	-445.0	0.00	0.00	0.00
4,600.0	15.51	317.49	4,473.1	712.7	-653.2	-457.7	0.00	0.00	0.00

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Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**North Reference:**	True
Well:	Peschel 20G-232	**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	15.51	317.49	4,569.4	732.4	-671.3	-470.4	0.00	0.00	0.00
4,800.0	15.51	317.49	4,665.8	752.1	-689.4	-483.0	0.00	0.00	0.00
4,900.0	15.51	317.49	4,762.2	771.8	-707.5	-495.7	0.00	0.00	0.00
5,000.0	15.51	317.49	4,858.5	791.5	-725.5	-508.4	0.00	0.00	0.00
5,100.0	15.51	317.49	4,954.9	811.2	-743.6	-521.0	0.00	0.00	0.00
5,200.0	15.51	317.49	5,051.2	830.9	-761.7	-533.7	0.00	0.00	0.00
5,300.0	15.51	317.49	5,147.6	850.7	-779.8	-546.3	0.00	0.00	0.00
5,354.4	15.51	317.49	5,200.0	861.4	-789.6	-553.2	0.00	0.00	0.00
Shannon									
5,400.0	15.51	317.49	5,243.9	870.4	-797.8	-559.0	0.00	0.00	0.00
5,493.2	15.51	317.49	5,333.8	888.8	-814.7	-570.8	0.00	0.00	0.00
5,500.0	15.38	317.49	5,340.3	890.1	-815.9	-571.7	2.00	-2.00	0.00
5,600.0	13.38	317.49	5,437.2	908.4	-832.7	-583.4	2.00	-2.00	0.00
5,700.0	11.38	317.49	5,534.8	924.2	-847.2	-593.6	2.00	-2.00	0.00
5,800.0	9.38	317.49	5,633.2	937.5	-859.3	-602.1	2.00	-2.00	0.00
5,900.0	7.38	317.49	5,732.1	948.2	-869.2	-609.0	2.00	-2.00	0.00
6,000.0	5.38	317.49	5,831.5	956.4	-876.7	-614.3	2.00	-2.00	0.00
6,100.0	3.38	317.49	5,931.2	962.0	-881.8	-617.9	2.00	-2.00	0.00
6,200.0	1.38	317.49	6,031.1	965.1	-884.6	-619.8	2.00	-2.00	0.00
6,268.9	0.00	0.00	6,100.0	965.7	-885.2	-620.2	2.00	-2.00	0.00
6,300.0	0.00	0.00	6,131.1	965.7	-885.2	-620.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,231.1	965.7	-885.2	-620.2	0.00	0.00	0.00
6,459.3	0.00	0.00	6,290.4	965.7	-885.2	-620.2	0.00	0.00	0.00
KOP #2									
6,500.0	3.05	90.00	6,331.1	965.7	-884.1	-619.2	7.49	7.49	0.00
6,600.0	10.55	90.00	6,430.3	965.7	-872.3	-607.7	7.50	7.50	0.00
6,700.0	18.05	90.00	6,527.1	965.7	-847.6	-583.8	7.50	7.50	0.00
6,800.0	25.55	90.00	6,619.9	965.7	-810.5	-547.8	7.50	7.50	0.00
6,900.0	33.05	90.00	6,707.1	965.7	-761.6	-500.4	7.50	7.50	0.00
6,922.8	34.76	90.00	6,726.0	965.7	-748.9	-488.1	7.50	7.50	0.00
Sharon Springs									
7,000.0	40.55	90.00	6,787.1	965.7	-701.7	-442.4	7.50	7.50	0.00
7,100.0	48.05	90.00	6,858.6	965.7	-631.9	-374.8	7.50	7.50	0.00
7,200.0	55.55	90.00	6,920.4	965.7	-553.4	-298.6	7.50	7.50	0.00
7,222.8	57.26	90.00	6,933.0	965.7	-534.5	-280.3	7.50	7.50	0.00
Niobrara A									
7,300.0	63.05	90.00	6,971.4	965.7	-467.5	-215.4	7.50	7.50	0.00
7,400.0	70.55	90.00	7,010.8	965.7	-375.6	-126.3	7.50	7.50	0.00
7,403.6	70.82	90.00	7,012.0	965.7	-372.2	-123.0	7.50	7.50	0.00
Niobrara B									
7,500.0	78.05	90.00	7,037.8	965.7	-279.4	-33.1	7.50	7.50	0.00
7,600.0	85.55	90.00	7,052.1	965.7	-180.5	62.8	7.50	7.50	0.00
7,670.1	90.81	90.00	7,054.3	965.7	-110.5	130.6	7.50	7.50	0.00
End of Build - 7"									
7,700.0	90.81	90.00	7,053.9	965.7	-80.6	159.6	0.01	0.01	0.00
7,800.0	90.81	90.00	7,052.5	965.7	19.4	256.5	0.00	0.00	0.00
7,900.0	90.81	90.00	7,051.1	965.7	119.4	353.4	0.00	0.00	0.00
8,000.0	90.81	90.00	7,049.7	965.7	219.4	450.4	0.00	0.00	0.00
8,100.0	90.81	90.00	7,048.2	965.7	319.4	547.3	0.00	0.00	0.00
8,200.0	90.81	90.00	7,046.8	965.7	419.4	644.2	0.00	0.00	0.00
8,300.0	90.81	90.00	7,045.4	965.7	519.3	741.1	0.00	0.00	0.00
8,400.0	90.81	90.00	7,044.0	965.7	619.3	838.0	0.00	0.00	0.00

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Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**North Reference:**	True
Well:	Peschel 20G-232	**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)
8,500.0	90.81	90.00	7,042.6	965.7	719.3	934.9	0.00	0.00	0.00
8,600.0	90.81	90.00	7,041.2	965.7	819.3	1,031.8	0.00	0.00	0.00
8,700.0	90.81	90.00	7,039.8	965.7	919.3	1,128.7	0.00	0.00	0.00
8,800.0	90.81	90.00	7,038.3	965.7	1,019.3	1,225.7	0.00	0.00	0.00
8,900.0	90.81	90.00	7,036.9	965.7	1,119.3	1,322.6	0.00	0.00	0.00
9,000.0	90.81	90.00	7,035.5	965.7	1,219.3	1,419.5	0.00	0.00	0.00
9,100.0	90.81	90.00	7,034.1	965.7	1,319.3	1,516.4	0.00	0.00	0.00
9,200.0	90.81	90.00	7,032.7	965.7	1,419.3	1,613.3	0.00	0.00	0.00
9,300.0	90.81	90.00	7,031.3	965.7	1,519.2	1,710.2	0.00	0.00	0.00
9,400.0	90.81	90.00	7,029.9	965.7	1,619.2	1,807.1	0.00	0.00	0.00
9,500.0	90.81	90.00	7,028.4	965.7	1,719.2	1,904.0	0.00	0.00	0.00
9,600.0	90.81	90.00	7,027.0	965.7	1,819.2	2,001.0	0.00	0.00	0.00
9,700.0	90.81	90.00	7,025.6	965.7	1,919.2	2,097.9	0.00	0.00	0.00
9,800.0	90.81	90.00	7,024.2	965.7	2,019.2	2,194.8	0.00	0.00	0.00
9,900.0	90.81	90.00	7,022.8	965.7	2,119.2	2,291.7	0.00	0.00	0.00
10,000.0	90.81	90.00	7,021.4	965.7	2,219.2	2,388.6	0.00	0.00	0.00
10,100.0	90.81	90.00	7,020.0	965.7	2,319.2	2,485.5	0.00	0.00	0.00
10,200.0	90.81	90.00	7,018.6	965.7	2,419.2	2,582.4	0.00	0.00	0.00
10,300.0	90.81	90.00	7,017.1	965.7	2,519.1	2,679.4	0.00	0.00	0.00
10,400.0	90.81	90.00	7,015.7	965.7	2,619.1	2,776.3	0.00	0.00	0.00
10,500.0	90.81	90.00	7,014.3	965.7	2,719.1	2,873.2	0.00	0.00	0.00
10,600.0	90.81	90.00	7,012.9	965.7	2,819.1	2,970.1	0.00	0.00	0.00
10,700.0	90.81	90.00	7,011.5	965.7	2,919.1	3,067.0	0.00	0.00	0.00
10,800.0	90.81	90.00	7,010.1	965.7	3,019.1	3,163.9	0.00	0.00	0.00
10,900.0	90.81	90.00	7,008.7	965.7	3,119.1	3,260.8	0.00	0.00	0.00
11,000.0	90.81	90.00	7,007.2	965.7	3,219.1	3,357.7	0.00	0.00	0.00
11,100.0	90.81	90.00	7,005.8	965.7	3,319.1	3,454.7	0.00	0.00	0.00
11,200.0	90.81	90.00	7,004.4	965.7	3,419.1	3,551.6	0.00	0.00	0.00
11,300.0	90.81	90.00	7,003.0	965.7	3,519.0	3,648.5	0.00	0.00	0.00
11,400.0	90.81	90.00	7,001.6	965.7	3,619.0	3,745.4	0.00	0.00	0.00
11,500.0	90.81	90.00	7,000.2	965.7	3,719.0	3,842.3	0.00	0.00	0.00
11,583.1	90.81	90.00	6,999.0	965.7	3,802.1	3,922.8	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
BHL 1993'FSL & 500'I - plan hits target center - Point	0.00	0.00	6,999.0	965.7	3,802.1	1,351,783.74	3,228,861.78	40.296140	-104.679510
SHL 1040'FSL & 950'I - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,350,783.53	3,225,068.81	40.293490	-104.693140

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,670.1	7,054.3	7"	7	7-1/2

Database:	Landmark	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**North Reference:**	True
Well:	Peschel 20G-232	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 ((8-22-14)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,839.2	3,740.0	Parkman		0.00	
4,498.2	4,375.0	Sussex		0.00	
5,354.4	5,200.0	Shannon		0.00	
6,922.8	6,726.0	Sharon Springs		0.00	
7,222.8	6,933.0	Niobrara A		0.00	
7,403.6	7,012.0	Niobrara B		0.00	
	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 +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
600.0	600.0	0.0	0.0	KOP #1
6,459.3	6,290.4	76.9	-70.5	KOP #2
7,670.1	7,054.3	888.8	-814.7	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W
Peschel 4N65W20B Pad Sec.20-T4N-R65W
Peschel 20G-232

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

Anticollision Report

28 August, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 8/28/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,583.1	Plan #1 ((8-22-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing wells Sec.20-T4N-R65W						
Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #	600.0	594.0	493.4	480.3	37.621	CC
Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #	900.0	893.5	496.4	476.6	25.096	ES
Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #	3,900.0	3,792.6	991.7	905.7	11.532	SF
Peschel 13-20 (Exist.) - Wellbore #1 - Wellbore #1	7,276.6	6,930.5	170.9	10.1	1.063	Level 2, CC, ES, SF
Peschel 23-20 (P&A) - Wellbore #1 - Wellbore #1	8,871.4	6,639.3	207.9	24.0	1.131	Level 2, CC, ES, SF
Peschel 23-20B (Exist.) - Wellbore #1 - Wellbore #1	8,729.1	7,046.3	146.0	-42.5	0.775	Level 1, CC, ES, SF
Peschel 33-20 (Exist.) - Wellbore #1 - Wellbore #1	10,327.7	7,042.7	375.4	144.9	1.629	CC, ES, SF
Peschel 43-20 (Exist.) - Wellbore #1 - Wellbore #1	11,457.5	7,014.8	80.1	-180.8	0.307	Level 1, CC, ES, SF
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	1,602.7	1,571.0	208.1	172.0	5.769	CC
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	1,700.0	1,664.7	209.7	171.3	5.461	ES
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	7,900.0	7,037.1	707.7	537.7	4.164	SF
Peschel 4N65W20B Pad Sec.20-T4N-R65W						
Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)	200.0	200.0	58.3	57.6	86.438	CC, ES
Peschel 20G-202 - Wellbore #1 - Plan #1 (8-22-14)	11,583.1	11,649.1	462.7	214.6	1.865	SF
Peschel 20G-332 - Wellbore #1 - Plan #1 (8-22-14)	400.0	400.0	29.1	27.6	18.524	CC
Peschel 20G-332 - Wellbore #1 - Plan #1 (8-22-14)	11,583.1	11,689.1	251.0	14.9	1.063	Level 2, ES, SF
Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)	600.0	600.0	61.9	59.5	25.049	CC, ES
Peschel 20H-202 - Wellbore #1 - Plan #1 (8-22-14)	11,583.1	11,500.4	623.2	376.4	2.525	SF
Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)	600.0	601.0	29.1	26.7	11.775	CC, ES
Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)	11,583.1	11,596.7	493.4	248.2	2.012	SF
Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)	600.0	601.0	91.1	88.6	36.819	CC, ES
Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)	11,553.6	11,568.8	999.9	753.1	4.051	SF

Offset Design Existing wells Sec.20-T4N-R65W - Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 4560-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	57.39	266.0	415.6	493.5				
100.0	100.0	94.0	94.0	0.1	1.9	57.39	266.0	415.6	493.4	491.5	1.99	247.643	
200.0	200.0	194.0	194.0	0.3	3.9	57.39	266.0	415.6	493.4	489.2	4.22	117.005	
300.0	300.0	294.0	294.0	0.6	5.9	57.39	266.0	415.6	493.4	487.0	6.44	76.597	
400.0	400.0	394.0	394.0	0.8	7.9	57.39	266.0	415.6	493.4	484.8	8.67	56.935	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 - Edward Hemple Unit 2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 4560-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
500.0	500.0	494.0	494.0	1.0	9.9	57.39	266.0	415.6	493.4	482.6	10.89	45.305	
600.0	600.0	594.0	594.0	1.2	11.9	57.39	266.0	415.6	493.4	480.3	13.12	37.621	CC
700.0	700.0	694.0	694.0	1.5	13.9	100.09	266.0	415.6	493.8	478.4	15.34	32.194	
800.0	799.8	793.8	793.8	1.7	15.9	100.67	266.0	415.6	494.7	477.1	17.56	28.179	
900.0	899.5	893.5	893.5	1.9	17.9	101.62	266.0	415.6	496.4	476.6	19.78	25.096	ES
1,000.0	998.7	992.7	992.7	2.2	19.9	102.93	266.0	415.6	499.0	477.0	22.02	22.666	
1,100.0	1,097.5	1,091.5	1,091.5	2.5	21.8	104.57	266.0	415.6	502.8	478.5	24.27	20.719	
1,200.0	1,195.6	1,189.6	1,189.6	2.8	23.8	106.52	266.0	415.6	508.0	481.4	26.53	19.145	
1,300.0	1,293.1	1,287.1	1,287.1	3.2	25.7	108.73	266.0	415.6	514.9	486.1	28.81	17.873	
1,400.0	1,389.7	1,383.7	1,383.7	3.7	27.7	111.20	266.0	415.6	524.0	492.9	31.10	16.849	
1,500.0	1,486.0	1,480.0	1,480.0	4.1	29.6	113.79	266.0	415.6	534.6	501.2	33.41	15.999	
1,600.0	1,582.4	1,576.4	1,576.4	4.6	31.5	116.29	266.0	415.6	546.3	510.5	35.72	15.291	
1,700.0	1,678.7	1,672.7	1,672.7	5.2	33.5	118.68	266.0	415.6	559.0	520.9	38.02	14.701	
1,800.0	1,775.1	1,769.1	1,769.1	5.7	35.4	120.96	266.0	415.6	572.6	532.3	40.31	14.206	
1,900.0	1,871.5	1,865.5	1,865.5	6.2	37.3	123.14	266.0	415.6	587.2	544.6	42.58	13.790	
2,000.0	1,967.8	1,961.8	1,961.8	6.7	39.2	125.22	266.0	415.6	602.6	557.8	44.84	13.439	
2,100.0	2,064.2	2,058.2	2,058.2	7.3	41.2	127.20	266.0	415.6	618.8	571.7	47.09	13.142	
2,200.0	2,160.5	2,154.5	2,154.5	7.8	43.1	129.08	266.0	415.6	635.7	586.4	49.32	12.890	
2,300.0	2,256.9	2,250.9	2,250.9	8.4	45.0	130.86	266.0	415.6	653.3	601.7	51.54	12.676	
2,400.0	2,353.2	2,347.2	2,347.2	8.9	46.9	132.55	266.0	415.6	671.4	617.7	53.74	12.493	
2,500.0	2,449.6	2,443.6	2,443.6	9.5	48.9	134.16	266.0	415.6	690.1	634.2	55.94	12.338	
2,600.0	2,546.0	2,540.0	2,540.0	10.0	50.8	135.68	266.0	415.6	709.4	651.3	58.12	12.205	
2,700.0	2,642.3	2,636.3	2,636.3	10.6	52.7	137.13	266.0	415.6	729.1	668.8	60.30	12.091	
2,800.0	2,738.7	2,732.7	2,732.7	11.1	54.7	138.50	266.0	415.6	749.2	686.8	62.47	11.994	
2,900.0	2,835.0	2,829.0	2,829.0	11.7	56.6	139.80	266.0	415.6	769.8	705.2	64.63	11.911	
3,000.0	2,931.4	2,925.4	2,925.4	12.2	58.5	141.03	266.0	415.6	790.7	723.9	66.78	11.840	
3,100.0	3,027.7	3,021.7	3,021.7	12.8	60.4	142.20	266.0	415.6	812.0	743.0	68.93	11.779	
3,200.0	3,124.1	3,118.1	3,118.1	13.3	62.4	143.31	266.0	415.6	833.5	762.5	71.08	11.728	
3,300.0	3,220.5	3,214.5	3,214.5	13.9	64.3	144.37	266.0	415.6	855.4	782.2	73.21	11.683	
3,400.0	3,316.8	3,310.8	3,310.8	14.5	66.2	145.37	266.0	415.6	877.5	802.2	75.35	11.646	
3,500.0	3,413.2	3,407.2	3,407.2	15.0	68.1	146.33	266.0	415.6	899.9	822.5	77.48	11.614	
3,600.0	3,509.5	3,503.5	3,503.5	15.6	70.1	147.24	266.0	415.6	922.6	842.9	79.61	11.588	
3,700.0	3,605.9	3,599.9	3,599.9	16.1	72.0	148.11	266.0	415.6	945.4	863.7	81.74	11.566	
3,800.0	3,702.2	3,696.2	3,696.2	16.7	73.9	148.94	266.0	415.6	968.4	884.6	83.87	11.547	
3,900.0	3,798.6	3,792.6	3,792.6	17.2	75.9	149.73	266.0	415.6	991.7	905.7	85.99	11.532	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 13-20 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7312-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
2,000.0	1,967.8	1,937.8	1,937.8	6.7	38.8	25.29	1,136.6	-488.2	985.0	942.2	42.78	23.024	
2,100.0	2,064.2	2,034.2	2,034.2	7.3	40.7	25.97	1,136.6	-488.2	960.7	915.6	45.03	21.333	
2,200.0	2,160.5	2,130.5	2,130.5	7.8	42.6	26.68	1,136.6	-488.2	936.5	889.2	47.30	19.801	
2,300.0	2,256.9	2,226.9	2,226.9	8.4	44.5	27.43	1,136.6	-488.2	912.5	863.0	49.58	18.407	
2,400.0	2,353.2	2,323.2	2,323.2	8.9	46.5	28.22	1,136.6	-488.2	888.7	836.8	51.87	17.134	
2,500.0	2,449.6	2,419.6	2,419.6	9.5	48.4	29.05	1,136.6	-488.2	865.0	810.9	54.17	15.968	
2,600.0	2,546.0	2,516.0	2,516.0	10.0	50.3	29.93	1,136.6	-488.2	841.5	785.0	56.49	14.896	
2,700.0	2,642.3	2,612.3	2,612.3	10.6	52.2	30.85	1,136.6	-488.2	818.3	759.4	58.83	13.909	
2,800.0	2,738.7	2,708.7	2,708.7	11.1	54.2	31.83	1,136.6	-488.2	795.2	734.0	61.19	12.996	
2,900.0	2,835.0	2,805.0	2,805.0	11.7	56.1	32.87	1,136.6	-488.2	772.4	708.8	63.56	12.152	
3,000.0	2,931.4	2,901.4	2,901.4	12.2	58.0	33.96	1,136.6	-488.2	749.8	683.8	65.95	11.368	
3,100.0	3,027.7	2,997.7	2,997.7	12.8	60.0	35.13	1,136.6	-488.2	727.5	659.1	68.37	10.640	
3,200.0	3,124.1	3,094.1	3,094.1	13.3	61.9	36.36	1,136.6	-488.2	705.5	634.7	70.81	9.963	
3,300.0	3,220.5	3,190.5	3,190.5	13.9	63.8	37.67	1,136.6	-488.2	683.9	610.6	73.28	9.333	
3,400.0	3,316.8	3,286.8	3,286.8	14.5	65.7	39.06	1,136.6	-488.2	662.6	586.8	75.77	8.745	
3,500.0	3,413.2	3,383.2	3,383.2	15.0	67.7	40.55	1,136.6	-488.2	641.8	563.5	78.30	8.196	
3,600.0	3,509.5	3,479.5	3,479.5	15.6	69.6	42.12	1,136.6	-488.2	621.3	540.5	80.85	7.685	
3,700.0	3,605.9	3,575.9	3,575.9	16.1	71.5	43.80	1,136.6	-488.2	601.4	518.0	83.44	7.208	
3,800.0	3,702.2	3,672.2	3,672.2	16.7	73.4	45.59	1,136.6	-488.2	582.1	496.0	86.06	6.763	
3,900.0	3,798.6	3,768.6	3,768.6	17.2	75.4	47.50	1,136.6	-488.2	563.3	474.6	88.72	6.349	
4,000.0	3,895.0	3,865.0	3,865.0	17.8	77.3	49.53	1,136.6	-488.2	545.2	453.8	91.41	5.965	
4,100.0	3,991.3	3,961.3	3,961.3	18.4	79.2	51.69	1,136.6	-488.2	527.9	433.7	94.14	5.607	
4,200.0	4,087.7	4,057.7	4,057.7	18.9	81.2	53.98	1,136.6	-488.2	511.3	414.4	96.90	5.277	
4,300.0	4,184.0	4,154.0	4,154.0	19.5	83.1	56.42	1,136.6	-488.2	495.7	396.0	99.70	4.972	
4,400.0	4,280.4	4,250.4	4,250.4	20.0	85.0	59.01	1,136.6	-488.2	481.0	378.5	102.52	4.692	
4,500.0	4,376.7	4,346.7	4,346.7	20.6	86.9	61.74	1,136.6	-488.2	467.4	362.1	105.36	4.437	
4,600.0	4,473.1	4,443.1	4,443.1	21.2	88.9	64.62	1,136.6	-488.2	455.0	346.8	108.21	4.205	
4,700.0	4,569.4	4,539.4	4,539.4	21.7	90.8	67.64	1,136.6	-488.2	443.8	332.8	111.06	3.996	
4,800.0	4,665.8	4,635.8	4,635.8	22.3	92.7	70.80	1,136.6	-488.2	434.0	320.1	113.91	3.810	
4,900.0	4,762.2	4,732.2	4,732.2	22.8	94.6	74.09	1,136.6	-488.2	425.7	309.0	116.72	3.647	
5,000.0	4,858.5	4,828.5	4,828.5	23.4	96.6	77.49	1,136.6	-488.2	418.9	299.4	119.50	3.505	
5,100.0	4,954.9	4,924.9	4,924.9	24.0	98.5	80.98	1,136.6	-488.2	413.7	291.5	122.21	3.385	
5,200.0	5,051.2	5,021.2	5,021.2	24.5	100.4	84.54	1,136.6	-488.2	410.2	285.3	124.86	3.285	
5,300.0	5,147.6	5,117.6	5,117.6	25.1	102.4	88.14	1,136.6	-488.2	408.4	281.0	127.42	3.205	
5,351.5	5,197.2	5,167.2	5,167.2	25.4	103.3	90.00	1,136.6	-488.2	408.2	279.5	128.70	3.172	
5,400.0	5,243.9	5,213.9	5,213.9	25.6	104.3	91.75	1,136.6	-488.2	408.4	278.5	129.89	3.144	
5,500.0	5,340.3	5,310.3	5,310.3	26.2	106.2	95.36	1,136.6	-488.2	410.1	277.9	132.25	3.101	
5,600.0	5,437.2	5,407.2	5,407.2	26.6	108.1	98.74	1,136.6	-488.2	413.3	278.8	134.41	3.075	
5,700.0	5,534.8	5,504.8	5,504.8	27.0	110.1	101.67	1,136.6	-488.2	417.1	280.6	136.53	3.055	
5,800.0	5,633.2	5,603.2	5,603.2	27.3	112.1	104.11	1,136.6	-488.2	421.2	282.6	138.63	3.039	
5,900.0	5,732.1	5,702.1	5,702.1	27.6	114.0	106.07	1,136.6	-488.2	425.1	284.3	140.72	3.021	
6,000.0	5,831.5	5,801.5	5,801.5	27.8	116.0	107.55	1,136.6	-488.2	428.3	285.5	142.82	2.999	
6,100.0	5,931.2	5,901.2	5,901.2	28.0	118.0	108.56	1,136.6	-488.2	430.7	285.8	144.91	2.972	
6,200.0	6,031.1	6,001.1	6,001.1	28.1	120.0	109.11	1,136.6	-488.2	432.0	285.0	147.00	2.939	
6,300.0	6,131.1	6,101.1	6,101.1	28.2	122.0	66.71	1,136.6	-488.2	432.3	292.4	139.91	3.090	
6,400.0	6,231.1	6,201.1	6,201.1	28.3	124.0	66.71	1,136.6	-488.2	432.3	290.2	142.07	3.043	
6,500.0	6,331.1	6,301.1	6,301.1	28.4	126.0	-23.38	1,136.6	-488.2	431.3	278.2	153.11	2.817	
6,600.0	6,430.3	6,400.3	6,400.3	28.4	128.0	-24.35	1,136.6	-488.2	420.4	267.2	153.24	2.744	
6,700.0	6,527.1	6,497.1	6,497.1	28.3	129.9	-26.57	1,136.6	-488.2	398.0	246.6	151.45	2.628	
6,800.0	6,619.9	6,589.9	6,589.9	28.2	131.8	-30.45	1,136.6	-488.2	364.9	216.5	148.38	2.459	
6,900.0	6,707.1	6,677.1	6,677.1	27.9	133.5	-36.72	1,136.6	-488.2	322.5	176.9	145.53	2.216	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 13-20 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7312-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
7,000.0	6,787.1	6,757.1	6,757.1	27.7	135.1	-46.49	1,136.6	-488.2	273.6	127.8	145.72	1.877	
7,100.0	6,858.6	6,828.6	6,828.6	27.4	136.6	-60.65	1,136.6	-488.2	223.4	71.9	151.43	1.475	Level 3
7,200.0	6,920.4	6,890.4	6,890.4	27.2	137.8	-77.81	1,136.6	-488.2	183.0	24.1	158.91	1.151	Level 2
7,276.6	6,960.5	6,930.5	6,930.5	27.0	138.6	-90.00	1,136.6	-488.2	170.9	10.1	160.80	1.063	Level 2, CC, ES, SF
7,300.0	6,971.4	6,941.4	6,941.4	27.0	138.8	-93.14	1,136.6	-488.2	172.2	11.6	160.54	1.073	Level 2
7,400.0	7,010.8	6,980.8	6,980.8	26.9	139.6	-102.36	1,136.6	-488.2	204.6	46.7	157.96	1.296	Level 3
7,500.0	7,037.8	7,007.8	7,007.8	26.8	140.2	-104.19	1,136.6	-488.2	269.8	111.8	158.00	1.707	
7,600.0	7,052.1	7,022.1	7,022.1	27.0	140.4	-97.95	1,136.6	-488.2	351.9	188.8	163.09	2.158	
7,700.0	7,053.9	7,023.9	7,023.9	27.4	140.5	-88.07	1,136.6	-488.2	442.0	275.5	166.45	2.655	
7,800.0	7,052.5	7,022.5	7,022.5	28.2	140.4	-87.60	1,136.6	-488.2	535.6	367.6	167.91	3.190	
7,900.0	7,051.1	7,021.1	7,021.1	29.5	140.4	-87.12	1,136.6	-488.2	631.1	461.6	169.55	3.722	
8,000.0	7,049.7	7,019.7	7,019.7	31.2	140.4	-86.65	1,136.6	-488.2	727.9	556.5	171.34	4.248	
8,100.0	7,048.2	7,018.2	7,018.2	33.1	140.4	-86.18	1,136.6	-488.2	825.4	652.2	173.25	4.764	
8,200.0	7,046.8	7,016.8	7,016.8	35.2	140.3	-85.71	1,136.6	-488.2	923.5	748.2	175.25	5.269	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
7,900.0	7,051.1	6,653.1	6,653.1	29.5	133.1	93.78	757.8	1,090.7	993.3	831.2	162.11	6.128	
8,000.0	7,049.7	6,651.7	6,651.7	31.2	133.0	93.39	757.8	1,090.7	895.8	731.8	163.99	5.462	
8,100.0	7,048.2	6,650.2	6,650.2	33.1	133.0	93.00	757.8	1,090.7	798.9	632.9	166.00	4.812	
8,200.0	7,046.8	6,648.8	6,648.8	35.2	133.0	92.61	757.8	1,090.7	702.8	534.7	168.11	4.181	
8,300.0	7,045.4	6,647.4	6,647.4	37.4	132.9	92.22	757.8	1,090.7	608.0	437.7	170.31	3.570	
8,400.0	7,044.0	6,646.0	6,646.0	39.7	132.9	91.84	757.8	1,090.7	515.2	342.6	172.58	2.985	
8,500.0	7,042.6	6,644.6	6,644.6	42.0	132.9	91.45	757.8	1,090.7	425.6	250.7	174.91	2.433	
8,600.0	7,041.2	6,643.2	6,643.2	44.4	132.9	91.06	757.8	1,090.7	341.9	164.6	177.28	1.928	
8,700.0	7,039.8	6,641.8	6,641.8	46.9	132.8	90.67	757.8	1,090.7	269.5	89.8	179.69	1.500	Level 3
8,800.0	7,038.3	6,640.3	6,640.3	49.4	132.8	90.28	757.8	1,090.7	219.8	37.7	182.14	1.207	Level 2
8,871.4	7,037.3	6,639.3	6,639.3	51.2	132.8	90.00	757.8	1,090.7	207.9	24.0	183.90	1.131	Level 2, CC, ES, SF
8,900.0	7,036.9	6,638.9	6,638.9	51.9	132.8	89.89	757.8	1,090.7	209.9	25.3	184.61	1.137	Level 2
9,000.0	7,035.5	6,637.5	6,637.5	54.5	132.8	89.50	757.8	1,090.7	244.5	57.4	187.10	1.307	Level 3
9,100.0	7,034.1	6,636.1	6,636.1	57.0	132.7	89.11	757.8	1,090.7	309.0	119.4	189.60	1.630	
9,200.0	7,032.7	6,634.7	6,634.7	59.6	132.7	88.72	757.8	1,090.7	388.8	196.7	192.12	2.024	
9,300.0	7,031.3	6,633.3	6,633.3	62.3	132.7	88.33	757.8	1,090.7	476.3	281.7	194.65	2.447	
9,400.0	7,029.9	6,631.9	6,631.9	64.9	132.6	87.94	757.8	1,090.7	568.0	370.8	197.19	2.880	
9,500.0	7,028.4	6,630.4	6,630.4	67.5	132.6	87.55	757.8	1,090.7	662.0	462.3	199.73	3.315	
9,600.0	7,027.0	6,629.0	6,629.0	70.2	132.6	87.16	757.8	1,090.7	757.6	555.3	202.27	3.745	
9,700.0	7,025.6	6,627.6	6,627.6	72.9	132.6	86.78	757.8	1,090.7	854.2	649.4	204.82	4.170	
9,800.0	7,024.2	6,626.2	6,626.2	75.5	132.5	86.39	757.8	1,090.7	951.5	744.1	207.36	4.588	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
7,800.0	7,052.5	7,059.5	7,059.5	28.2	141.2	95.14	819.7	948.4	940.4	772.2	168.28	5.589	
7,900.0	7,051.1	7,058.1	7,058.1	29.5	141.2	94.59	819.7	948.4	841.8	671.8	170.06	4.950	
8,000.0	7,049.7	7,056.7	7,056.7	31.2	141.1	94.04	819.7	948.4	743.5	571.6	171.99	4.323	
8,100.0	7,048.2	7,055.2	7,055.2	33.1	141.1	93.49	819.7	948.4	645.8	471.8	174.03	3.711	
8,200.0	7,046.8	7,053.8	7,053.8	35.2	141.1	92.93	819.7	948.4	548.9	372.7	176.18	3.115	
8,300.0	7,045.4	7,052.4	7,052.4	37.4	141.0	92.38	819.7	948.4	453.3	274.9	178.40	2.541	
8,400.0	7,044.0	7,051.0	7,051.0	39.7	141.0	91.83	819.7	948.4	360.0	179.4	180.68	1.993	
8,500.0	7,042.6	7,049.6	7,049.6	42.0	141.0	91.27	819.7	948.4	271.7	88.7	183.01	1.484	Level 3
8,600.0	7,041.2	7,048.2	7,048.2	44.4	141.0	90.72	819.7	948.4	194.9	9.5	185.38	1.051	Level 2
8,700.0	7,039.8	7,046.8	7,046.8	46.9	140.9	90.16	819.7	948.4	148.9	-38.9	187.78	0.793	Level 1
8,729.1	7,039.3	7,046.3	7,046.3	47.6	140.9	90.00	819.7	948.4	146.0	-42.5	188.49	0.775	Level 1, CC, ES, SF
8,800.0	7,038.3	7,045.3	7,045.3	49.4	140.9	89.61	819.7	948.4	162.3	-27.9	190.20	0.853	Level 1
8,900.0	7,036.9	7,043.9	7,043.9	51.9	140.9	89.05	819.7	948.4	224.7	32.1	192.64	1.167	Level 2
9,000.0	7,035.5	7,042.5	7,042.5	54.5	140.9	88.50	819.7	948.4	307.7	112.6	195.09	1.577	
9,100.0	7,034.1	7,041.1	7,041.1	57.0	140.8	87.94	819.7	948.4	398.5	201.0	197.55	2.017	
9,200.0	7,032.7	7,039.7	7,039.7	59.6	140.8	87.39	819.7	948.4	492.9	292.9	200.00	2.465	
9,300.0	7,031.3	7,038.3	7,038.3	62.3	140.8	86.84	819.7	948.4	589.2	386.7	202.46	2.910	
9,400.0	7,029.9	7,036.9	7,036.9	64.9	140.7	86.28	819.7	948.4	686.5	481.6	204.91	3.350	
9,500.0	7,028.4	7,035.4	7,035.4	67.5	140.7	85.73	819.7	948.4	784.5	577.1	207.36	3.783	
9,600.0	7,027.0	7,034.0	7,034.0	70.2	140.7	85.18	819.7	948.4	882.9	673.1	209.80	4.208	
9,700.0	7,025.6	7,032.6	7,032.6	72.9	140.7	84.63	819.7	948.4	981.7	769.5	212.23	4.626	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
9,500.0	7,028.4	7,054.4	7,054.4	67.5	141.1	91.79	590.3	2,546.8	908.8	700.3	208.49	4.359	
9,600.0	7,027.0	7,053.0	7,053.0	70.2	141.1	91.57	590.3	2,546.8	818.8	607.6	211.12	3.878	
9,700.0	7,025.6	7,051.6	7,051.6	72.9	141.0	91.35	590.3	2,546.8	731.3	517.6	213.77	3.421	
9,800.0	7,024.2	7,050.2	7,050.2	75.5	141.0	91.14	590.3	2,546.8	647.6	431.2	216.42	2.992	
9,900.0	7,022.8	7,048.8	7,048.8	78.2	141.0	90.92	590.3	2,546.8	569.1	350.0	219.08	2.597	
10,000.0	7,021.4	7,047.4	7,047.4	80.9	140.9	90.71	590.3	2,546.8	498.3	276.6	221.75	2.247	
10,100.0	7,020.0	7,046.0	7,046.0	83.6	140.9	90.49	590.3	2,546.8	439.1	214.6	224.42	1.956	
10,200.0	7,018.6	7,044.6	7,044.6	86.3	140.9	90.28	590.3	2,546.8	396.5	169.4	227.09	1.746	
10,300.0	7,017.1	7,043.1	7,043.1	89.0	140.9	90.06	590.3	2,546.8	376.4	146.7	229.77	1.638	
10,327.7	7,016.7	7,042.7	7,042.7	89.8	140.9	90.00	590.3	2,546.8	375.4	144.9	230.51	1.629	CC, ES, SF
10,400.0	7,015.7	7,041.7	7,041.7	91.8	140.8	89.84	590.3	2,546.8	382.3	149.9	232.45	1.645	
10,500.0	7,014.3	7,040.3	7,040.3	94.5	140.8	89.63	590.3	2,546.8	413.0	177.9	235.13	1.757	
10,600.0	7,012.9	7,038.9	7,038.9	97.2	140.8	89.41	590.3	2,546.8	463.7	225.9	237.81	1.950	
10,700.0	7,011.5	7,037.5	7,037.5	99.9	140.7	89.20	590.3	2,546.8	528.7	288.2	240.50	2.198	
10,800.0	7,010.1	7,036.1	7,036.1	102.7	140.7	88.98	590.3	2,546.8	603.3	360.1	243.18	2.481	
10,900.0	7,008.7	7,034.7	7,034.7	105.4	140.7	88.77	590.3	2,546.8	684.4	438.5	245.87	2.784	
11,000.0	7,007.2	7,033.2	7,033.2	108.2	140.7	88.55	590.3	2,546.8	769.9	521.4	248.55	3.098	
11,100.0	7,005.8	7,031.8	7,031.8	110.9	140.6	88.33	590.3	2,546.8	858.6	607.4	251.24	3.418	
11,200.0	7,004.4	7,030.4	7,030.4	113.7	140.6	88.12	590.3	2,546.8	949.6	695.6	253.92	3.740	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 43-20 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7348-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
10,500.0	7,014.3	7,028.3	7,028.3	94.5	140.6	-99.59	1,045.8	3,676.5	960.8	729.4	231.32	4.153	
10,600.0	7,012.9	7,026.9	7,026.9	97.2	140.5	-98.60	1,045.8	3,676.5	861.2	626.5	234.65	3.670	
10,700.0	7,011.5	7,025.5	7,025.5	99.9	140.5	-97.61	1,045.8	3,676.5	761.7	523.7	237.94	3.201	
10,800.0	7,010.1	7,024.1	7,024.1	102.7	140.5	-96.62	1,045.8	3,676.5	662.3	421.1	241.17	2.746	
10,900.0	7,008.7	7,022.7	7,022.7	105.4	140.5	-95.62	1,045.8	3,676.5	563.2	318.8	244.35	2.305	
11,000.0	7,007.2	7,021.2	7,021.2	108.2	140.4	-94.62	1,045.8	3,676.5	464.4	217.0	247.47	1.877	
11,100.0	7,005.8	7,019.8	7,019.8	110.9	140.4	-93.61	1,045.8	3,676.5	366.4	115.8	250.53	1.462	Level 3
11,200.0	7,004.4	7,018.4	7,018.4	113.7	140.4	-92.60	1,045.8	3,676.5	269.7	16.1	253.53	1.064	Level 2
11,300.0	7,003.0	7,017.0	7,017.0	116.4	140.3	-91.59	1,045.8	3,676.5	176.7	-79.7	256.46	0.689	Level 1
11,400.0	7,001.6	7,015.6	7,015.6	119.2	140.3	-90.58	1,045.8	3,676.5	98.6	-160.7	259.31	0.380	Level 1
11,457.5	7,000.8	7,014.8	7,014.8	120.8	140.3	-90.00	1,045.8	3,676.5	80.1	-180.8	260.92	0.307	Level 1, CC, ES, SF
11,500.0	7,000.2	7,014.2	7,014.2	121.9	140.3	-89.57	1,045.8	3,676.5	90.7	-171.4	262.09	0.346	Level 1
11,583.1	6,999.0	7,013.0	7,013.0	124.2	140.3	-88.73	1,045.8	3,676.5	148.9	-115.4	264.34	0.563	Level 1

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	9.06	262.3	41.8	266.0				
100.0	100.0	86.0	86.0	0.1	1.7	9.06	262.3	41.8	265.6	263.8	1.83	144.946	
200.0	200.0	186.0	186.0	0.3	3.7	9.06	262.3	41.8	265.6	261.6	4.06	65.468	
300.0	300.0	286.0	286.0	0.6	5.7	9.06	262.3	41.8	265.6	259.3	6.28	42.283	
400.0	400.0	386.0	386.0	0.8	7.7	9.06	262.3	41.8	265.6	257.1	8.51	31.225	
500.0	500.0	486.0	486.0	1.0	9.7	9.06	262.3	41.8	265.6	254.9	10.73	24.752	
600.0	600.0	586.0	586.0	1.2	11.7	9.06	262.3	41.8	265.6	252.7	12.96	20.501	
700.0	700.0	686.0	686.0	1.5	13.7	51.89	262.3	41.8	264.5	249.4	15.17	17.433	
800.0	799.8	785.8	785.8	1.7	15.7	52.84	262.3	41.8	261.3	244.0	17.38	15.033	
900.0	899.5	885.5	885.5	1.9	17.7	54.47	262.3	41.8	256.2	236.6	19.59	13.075	
1,000.0	998.7	984.7	984.7	2.2	19.7	56.86	262.3	41.8	249.3	227.5	21.80	11.431	
1,100.0	1,097.5	1,083.5	1,083.5	2.5	21.7	60.09	262.3	41.8	241.0	217.0	24.04	10.025	
1,200.0	1,195.6	1,181.6	1,181.6	2.8	23.6	64.28	262.3	41.8	232.0	205.6	26.32	8.814	
1,300.0	1,293.1	1,279.1	1,279.1	3.2	25.6	69.54	262.3	41.8	222.9	194.3	28.66	7.779	
1,400.0	1,389.7	1,375.7	1,375.7	3.7	27.5	75.91	262.3	41.8	215.0	184.0	31.09	6.917	
1,500.0	1,486.0	1,472.0	1,472.0	4.1	29.4	82.75	262.3	41.8	209.9	176.3	33.56	6.255	
1,600.0	1,582.4	1,568.4	1,568.4	4.6	31.4	89.81	262.3	41.8	208.1	172.1	36.01	5.779	
1,602.7	1,585.0	1,571.0	1,571.0	4.7	31.4	90.00	262.3	41.8	208.1	172.0	36.07	5.769	CC
1,700.0	1,678.7	1,664.7	1,664.7	5.2	33.3	96.87	262.3	41.8	209.7	171.3	38.40	5.461	ES
1,800.0	1,775.1	1,761.1	1,761.1	5.7	35.2	103.73	262.3	41.8	214.7	173.9	40.73	5.271	
1,900.0	1,871.5	1,857.5	1,857.5	6.2	37.1	110.21	262.3	41.8	222.8	179.8	42.97	5.184	
2,000.0	1,967.8	1,953.8	1,953.8	6.7	39.1	116.20	262.3	41.8	233.7	188.5	45.15	5.175	
2,100.0	2,064.2	2,050.2	2,050.2	7.3	41.0	121.63	262.3	41.8	247.0	199.7	47.26	5.225	
2,200.0	2,160.5	2,146.5	2,146.5	7.8	42.9	126.49	262.3	41.8	262.3	213.0	49.34	5.317	
2,300.0	2,256.9	2,242.9	2,242.9	8.4	44.9	130.81	262.3	41.8	279.4	228.1	51.38	5.438	
2,400.0	2,353.2	2,339.2	2,339.2	8.9	46.8	134.64	262.3	41.8	298.0	244.5	53.41	5.578	
2,500.0	2,449.6	2,435.6	2,435.6	9.5	48.7	138.02	262.3	41.8	317.6	262.2	55.44	5.730	
2,600.0	2,546.0	2,532.0	2,532.0	10.0	50.6	141.01	262.3	41.8	338.3	280.8	57.46	5.888	
2,700.0	2,642.3	2,628.3	2,628.3	10.6	52.6	143.65	262.3	41.8	359.8	300.3	59.48	6.048	
2,800.0	2,738.7	2,724.7	2,724.7	11.1	54.5	146.00	262.3	41.8	381.9	320.4	61.51	6.208	
2,900.0	2,835.0	2,821.0	2,821.0	11.7	56.4	148.10	262.3	41.8	404.6	341.0	63.55	6.366	
3,000.0	2,931.4	2,917.4	2,917.4	12.2	58.3	149.98	262.3	41.8	427.8	362.2	65.60	6.521	
3,100.0	3,027.7	3,013.7	3,013.7	12.8	60.3	151.66	262.3	41.8	451.3	383.7	67.65	6.671	
3,200.0	3,124.1	3,110.1	3,110.1	13.3	62.2	153.18	262.3	41.8	475.2	405.5	69.71	6.817	
3,300.0	3,220.5	3,206.5	3,206.5	13.9	64.1	154.56	262.3	41.8	499.4	427.6	71.77	6.958	
3,400.0	3,316.8	3,302.8	3,302.8	14.5	66.1	155.81	262.3	41.8	523.8	450.0	73.84	7.094	
3,500.0	3,413.2	3,399.2	3,399.2	15.0	68.0	156.95	262.3	41.8	548.5	472.5	75.92	7.224	
3,600.0	3,509.5	3,495.5	3,495.5	15.6	69.9	157.99	262.3	41.8	573.3	495.3	78.00	7.350	
3,700.0	3,605.9	3,591.9	3,591.9	16.1	71.8	158.94	262.3	41.8	598.3	518.2	80.09	7.470	
3,800.0	3,702.2	3,688.2	3,688.2	16.7	73.8	159.82	262.3	41.8	623.4	541.3	82.18	7.586	
3,900.0	3,798.6	3,784.6	3,784.6	17.2	75.7	160.63	262.3	41.8	648.7	564.4	84.28	7.698	
4,000.0	3,895.0	3,881.0	3,881.0	17.8	77.6	161.39	262.3	41.8	674.1	587.7	86.37	7.804	
4,100.0	3,991.3	3,977.3	3,977.3	18.4	79.5	162.08	262.3	41.8	699.6	611.1	88.48	7.907	
4,200.0	4,087.7	4,073.7	4,073.7	18.9	81.5	162.73	262.3	41.8	725.2	634.6	90.58	8.006	
4,300.0	4,184.0	4,170.0	4,170.0	19.5	83.4	163.33	262.3	41.8	750.8	658.1	92.69	8.100	
4,400.0	4,280.4	4,266.4	4,266.4	20.0	85.3	163.90	262.3	41.8	776.6	681.8	94.80	8.191	
4,500.0	4,376.7	4,362.7	4,362.7	20.6	87.3	164.43	262.3	41.8	802.4	705.5	96.92	8.279	
4,600.0	4,473.1	4,459.1	4,459.1	21.2	89.2	164.92	262.3	41.8	828.2	729.2	99.03	8.363	
4,700.0	4,569.4	4,555.4	4,555.4	21.7	91.1	165.39	262.3	41.8	854.1	753.0	101.15	8.444	
4,800.0	4,665.8	4,651.8	4,651.8	22.3	93.0	165.83	262.3	41.8	880.1	776.8	103.27	8.522	
4,900.0	4,762.2	4,748.2	4,748.2	22.8	95.0	166.24	262.3	41.8	906.1	800.7	105.39	8.598	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
5,000.0	4,858.5	4,844.5	4,844.5	23.4	96.9	166.63	262.3	41.8	932.2	824.7	107.52	8.670	
5,100.0	4,954.9	4,940.9	4,940.9	24.0	98.8	167.00	262.3	41.8	958.3	848.6	109.64	8.740	
5,200.0	5,051.2	5,037.2	5,037.2	24.5	100.7	167.35	262.3	41.8	984.4	872.6	111.77	8.808	
7,100.0	6,858.6	6,844.6	6,844.6	27.4	136.9	57.37	262.3	41.8	974.0	832.9	141.13	6.902	
7,200.0	6,920.4	6,906.4	6,906.4	27.2	138.1	64.42	262.3	41.8	921.5	775.0	146.50	6.290	
7,300.0	6,971.4	6,957.4	6,957.4	27.0	139.1	71.83	262.3	41.8	868.4	715.3	153.12	5.672	
7,400.0	7,010.8	6,996.8	6,996.8	26.9	139.9	78.82	262.3	41.8	818.0	659.0	158.98	5.145	
7,500.0	7,037.8	7,023.8	7,023.8	26.8	140.5	84.60	262.3	41.8	773.3	610.3	162.98	4.745	
7,600.0	7,052.1	7,038.1	7,038.1	27.0	140.8	88.59	262.3	41.8	737.7	572.4	165.29	4.463	
7,700.0	7,053.9	7,039.9	7,039.9	27.4	140.8	90.14	262.3	41.8	714.0	547.2	166.77	4.281	
7,800.0	7,052.5	7,038.5	7,038.5	28.2	140.8	90.03	262.3	41.8	703.8	535.5	168.25	4.183	
7,822.5	7,052.2	7,038.2	7,038.2	28.5	140.8	90.00	262.3	41.8	703.4	534.8	168.63	4.171	
7,900.0	7,051.1	7,037.1	7,037.1	29.5	140.7	89.91	262.3	41.8	707.7	537.7	169.93	4.164 SF	
8,000.0	7,049.7	7,035.7	7,035.7	31.2	140.7	89.80	262.3	41.8	725.5	553.7	171.76	4.224	
8,100.0	7,048.2	7,034.2	7,034.2	33.1	140.7	89.68	262.3	41.8	756.2	582.4	173.72	4.353	
8,200.0	7,046.8	7,032.8	7,032.8	35.2	140.7	89.57	262.3	41.8	798.3	622.5	175.80	4.541	
8,300.0	7,045.4	7,031.4	7,031.4	37.4	140.6	89.45	262.3	41.8	850.2	672.2	177.97	4.777	
8,400.0	7,044.0	7,030.0	7,030.0	39.7	140.6	89.34	262.3	41.8	910.1	729.9	180.21	5.050	
8,500.0	7,042.6	7,028.6	7,028.6	42.0	140.6	89.22	262.3	41.8	976.6	794.1	182.51	5.351	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	0.00	58.3	0.0	58.3				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	58.3	0.0	58.3	58.1	0.22	259.313	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.67	86.438	CC, ES
300.0	300.0	298.3	298.3	0.6	0.6	-0.87	59.7	-0.9	59.7	58.6	1.12	53.382	
400.0	400.0	396.3	396.2	0.8	0.8	-3.24	63.9	-3.6	64.2	62.6	1.57	40.840	
500.0	500.0	493.9	493.4	1.0	1.0	-6.53	71.0	-8.1	71.7	69.7	2.04	35.155	
600.0	600.0	590.8	589.6	1.2	1.3	-10.08	80.7	-14.3	82.6	80.1	2.53	32.599	
700.0	700.0	687.1	684.8	1.5	1.6	29.43	93.1	-22.3	95.4	92.4	2.97	32.177	
800.0	799.8	782.9	778.9	1.7	2.0	27.43	108.1	-31.9	108.5	105.0	3.43	31.618	
900.0	899.5	878.4	872.0	1.9	2.4	26.12	125.6	-43.1	121.7	117.8	3.91	31.128	
1,000.0	998.7	973.4	964.0	2.2	2.8	25.31	145.7	-55.9	135.0	130.6	4.41	30.642	
1,100.0	1,097.5	1,068.0	1,054.7	2.5	3.3	24.85	168.2	-70.3	148.4	143.5	4.93	30.123	
1,200.0	1,195.6	1,165.4	1,147.4	2.8	3.9	24.72	193.4	-86.5	161.2	155.7	5.48	29.410	
1,300.0	1,293.1	1,264.9	1,242.0	3.2	4.5	25.09	219.4	-103.1	171.0	164.9	6.07	28.161	
1,400.0	1,389.7	1,364.6	1,336.8	3.7	5.1	25.91	245.5	-119.8	177.8	171.1	6.71	26.506	
1,500.0	1,486.0	1,464.4	1,431.7	4.1	5.7	26.86	271.5	-136.5	183.7	176.3	7.40	24.825	
1,600.0	1,582.4	1,564.1	1,526.6	4.6	6.4	27.75	297.6	-153.1	189.7	181.6	8.12	23.372	
1,700.0	1,678.7	1,663.9	1,621.4	5.2	7.0	28.59	323.6	-169.8	195.8	186.9	8.86	22.105	
1,800.0	1,775.1	1,763.7	1,716.3	5.7	7.6	29.37	349.7	-186.5	201.8	192.2	9.61	20.996	
1,900.0	1,871.5	1,863.5	1,811.2	6.2	8.2	30.11	375.7	-203.1	208.0	197.6	10.39	20.020	
2,000.0	1,967.8	1,963.3	1,906.0	6.7	8.9	30.81	401.8	-219.8	214.1	202.9	11.18	19.156	
2,100.0	2,064.2	2,063.0	2,000.9	7.3	9.5	31.46	427.8	-236.5	220.3	208.3	11.98	18.387	
2,200.0	2,160.5	2,162.8	2,095.7	7.8	10.1	32.09	453.8	-253.1	226.5	213.7	12.79	17.700	
2,300.0	2,256.9	2,262.6	2,190.6	8.4	10.7	32.67	479.9	-269.8	232.7	219.1	13.62	17.083	
2,400.0	2,353.2	2,362.4	2,285.5	8.9	11.4	33.23	505.9	-286.5	238.9	224.5	14.46	16.527	
2,500.0	2,449.6	2,462.2	2,380.3	9.5	12.0	33.76	532.0	-303.2	245.2	229.9	15.30	16.023	
2,600.0	2,546.0	2,561.9	2,475.2	10.0	12.6	34.26	558.0	-319.8	251.5	235.3	16.16	15.565	
2,700.0	2,642.3	2,661.7	2,570.1	10.6	13.3	34.74	584.1	-336.5	257.8	240.8	17.02	15.148	
2,800.0	2,738.7	2,761.5	2,664.9	11.1	13.9	35.20	610.1	-353.2	264.1	246.2	17.89	14.765	
2,900.0	2,835.0	2,861.3	2,759.8	11.7	14.5	35.63	636.2	-369.8	270.5	251.7	18.76	14.414	
3,000.0	2,931.4	2,961.0	2,854.7	12.2	15.2	36.05	662.2	-386.5	276.8	257.2	19.65	14.091	
3,100.0	3,027.7	3,060.8	2,949.5	12.8	15.8	36.44	688.3	-403.2	283.2	262.7	20.53	13.792	
3,200.0	3,124.1	3,160.6	3,044.4	13.3	16.4	36.82	714.3	-419.8	289.6	268.2	21.43	13.516	
3,300.0	3,220.5	3,260.4	3,139.3	13.9	17.1	37.18	740.4	-436.5	296.0	273.7	22.32	13.259	
3,400.0	3,316.8	3,360.2	3,234.1	14.5	17.7	37.53	766.4	-453.2	302.4	279.2	23.22	13.021	
3,500.0	3,413.2	3,459.9	3,329.0	15.0	18.3	37.86	792.5	-469.9	308.8	284.7	24.13	12.798	
3,600.0	3,509.5	3,559.7	3,423.9	15.6	19.0	38.18	818.5	-486.5	315.2	290.2	25.04	12.590	
3,700.0	3,605.9	3,659.5	3,518.7	16.1	19.6	38.49	844.6	-503.2	321.7	295.7	25.95	12.395	
3,800.0	3,702.2	3,759.3	3,613.6	16.7	20.2	38.78	870.6	-519.9	328.1	301.2	26.87	12.212	
3,900.0	3,798.6	3,859.0	3,708.4	17.2	20.9	39.06	896.7	-536.5	334.6	306.8	27.79	12.040	
4,000.0	3,895.0	3,958.8	3,803.3	17.8	21.5	39.33	922.7	-553.2	341.0	312.3	28.71	11.879	
4,100.0	3,991.3	4,058.6	3,898.2	18.4	22.2	39.60	948.8	-569.9	347.5	317.9	29.63	11.726	
4,200.0	4,087.7	4,158.4	3,993.0	18.9	22.8	39.85	974.8	-586.5	354.0	323.4	30.56	11.582	
4,300.0	4,184.0	4,258.2	4,087.9	19.5	23.4	40.09	1,000.9	-603.2	360.4	329.0	31.49	11.446	
4,400.0	4,280.4	4,357.9	4,182.8	20.0	24.1	40.33	1,026.9	-619.9	366.9	334.5	32.42	11.317	
4,500.0	4,376.7	4,457.7	4,277.6	20.6	24.7	40.55	1,053.0	-636.6	373.4	340.1	33.36	11.195	
4,600.0	4,473.1	4,557.5	4,372.5	21.2	25.3	40.77	1,079.0	-653.2	379.9	345.6	34.29	11.079	
4,700.0	4,569.4	4,657.3	4,467.4	21.7	26.0	40.98	1,105.1	-669.9	386.4	351.2	35.23	10.968	
4,800.0	4,665.8	4,757.1	4,562.2	22.3	26.6	41.19	1,131.1	-686.6	392.9	356.8	36.17	10.863	
4,900.0	4,762.2	4,856.8	4,657.1	22.8	27.2	41.38	1,157.2	-703.2	399.5	362.3	37.11	10.763	
5,000.0	4,858.5	4,956.6	4,752.0	23.4	27.9	41.57	1,183.2	-719.9	406.0	367.9	38.06	10.668	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
5,100.0	4,954.9	5,056.4	4,846.8	24.0	28.5	41.76	1,209.3	-736.6	412.5	373.5	39.00	10.577	
5,200.0	5,051.2	5,156.2	4,941.7	24.5	29.1	41.94	1,235.3	-753.2	419.0	379.1	39.95	10.490	
5,300.0	5,147.6	5,255.9	5,036.5	25.1	29.8	42.11	1,261.4	-769.9	425.6	384.7	40.89	10.406	
5,400.0	5,243.9	5,355.7	5,131.4	25.6	30.4	42.28	1,287.4	-786.6	432.1	390.2	41.84	10.327	
5,500.0	5,340.3	5,457.7	5,228.4	26.2	31.0	42.46	1,314.0	-803.6	438.6	395.8	42.79	10.249	
5,600.0	5,437.2	5,572.3	5,338.2	26.6	31.6	42.73	1,341.5	-821.2	444.4	400.8	43.60	10.194	
5,700.0	5,534.8	5,687.2	5,449.6	27.0	32.1	42.96	1,365.4	-836.5	449.5	405.2	44.29	10.148	
5,800.0	5,633.2	5,802.2	5,562.1	27.3	32.5	43.15	1,385.5	-849.3	453.7	408.8	44.89	10.106	
5,900.0	5,732.1	5,917.5	5,675.7	27.6	32.8	43.30	1,401.8	-859.8	457.1	411.8	45.40	10.070	
6,000.0	5,831.5	6,032.8	5,790.1	27.8	33.1	43.42	1,414.2	-867.7	459.8	414.0	45.80	10.038	
6,100.0	5,931.2	6,148.3	5,905.1	28.0	33.3	43.50	1,422.8	-873.2	461.6	415.5	46.12	10.009	
6,200.0	6,031.1	6,263.8	6,020.4	28.1	33.5	43.54	1,427.5	-876.2	462.6	416.2	46.33	9.984	
6,300.0	6,131.1	6,374.5	6,131.1	28.2	33.6	1.04	1,428.4	-876.8	462.8	410.3	52.49	8.815	
6,400.0	6,231.1	6,474.5	6,231.1	28.3	33.7	1.04	1,428.4	-876.8	462.8	410.1	52.71	8.779	
6,500.0	6,331.1	6,574.0	6,330.6	28.4	33.8	-88.96	1,428.4	-875.7	462.8	415.8	46.97	9.852	
6,600.0	6,430.3	6,672.9	6,428.8	28.4	33.8	-88.98	1,428.4	-864.2	462.8	415.8	46.96	9.855	
6,700.0	6,527.1	6,771.9	6,524.7	28.3	33.7	-89.01	1,428.4	-840.0	462.8	416.0	46.71	9.907	
6,800.0	6,619.9	6,870.9	6,616.7	28.2	33.5	-89.06	1,428.4	-803.6	462.7	416.5	46.29	9.997	
6,900.0	6,707.1	6,969.9	6,703.3	27.9	33.3	-89.13	1,428.4	-755.7	462.7	417.0	45.78	10.107	
7,000.0	6,787.1	7,069.0	6,783.0	27.7	33.1	-89.21	1,428.4	-696.8	462.7	417.4	45.30	10.215	
7,100.0	6,858.6	7,168.3	6,854.4	27.4	32.9	-89.30	1,428.4	-628.1	462.7	417.8	44.97	10.290	
7,200.0	6,920.4	7,267.6	6,916.5	27.2	32.6	-89.41	1,428.4	-550.7	462.7	417.8	44.94	10.296	
7,300.0	6,971.4	7,367.0	6,968.0	27.0	32.4	-89.52	1,428.4	-465.7	462.7	417.3	45.35	10.203	
7,400.0	7,010.8	7,466.6	7,008.1	26.9	32.1	-89.65	1,428.4	-374.7	462.7	416.4	46.30	9.993	
7,500.0	7,037.8	7,566.3	7,036.1	26.8	31.9	-89.78	1,428.4	-279.1	462.7	414.9	47.84	9.672	
7,600.0	7,052.1	7,666.1	7,051.4	27.0	31.7	-89.91	1,428.4	-180.5	462.7	412.8	49.91	9.270	
7,700.0	7,053.9	7,766.1	7,054.0	27.4	31.6	-90.01	1,428.4	-80.6	462.7	410.2	52.45	8.821	
7,800.0	7,052.5	7,866.1	7,052.6	28.2	31.5	-90.01	1,428.4	19.4	462.7	407.2	55.44	8.345	
7,900.0	7,051.1	7,966.1	7,051.2	29.5	31.6	-90.01	1,428.4	119.4	462.7	403.9	58.81	7.868	
8,000.0	7,049.7	8,066.1	7,049.8	31.2	32.1	-90.01	1,428.4	219.4	462.7	400.2	62.49	7.404	
8,100.0	7,048.2	8,166.1	7,048.4	33.1	33.5	-90.01	1,428.4	319.4	462.7	396.2	66.45	6.963	
8,200.0	7,046.8	8,266.1	7,046.9	35.2	35.5	-90.01	1,428.4	419.4	462.7	392.0	70.63	6.551	
8,300.0	7,045.4	8,366.1	7,045.5	37.4	37.6	-90.01	1,428.4	519.3	462.7	387.7	75.00	6.169	
8,400.0	7,044.0	8,466.1	7,044.1	39.7	39.9	-90.01	1,428.4	619.3	462.7	383.2	79.53	5.818	
8,500.0	7,042.6	8,566.1	7,042.7	42.0	42.3	-90.01	1,428.4	719.3	462.7	378.5	84.19	5.496	
8,600.0	7,041.2	8,666.1	7,041.3	44.4	44.7	-90.01	1,428.4	819.3	462.7	373.7	88.95	5.201	
8,700.0	7,039.8	8,766.1	7,039.9	46.9	47.1	-90.01	1,428.4	919.3	462.7	368.9	93.82	4.932	
8,800.0	7,038.3	8,866.1	7,038.5	49.4	49.6	-90.01	1,428.4	1,019.3	462.7	363.9	98.76	4.685	
8,900.0	7,036.9	8,966.1	7,037.0	51.9	52.1	-90.01	1,428.4	1,119.3	462.7	358.9	103.77	4.459	
9,000.0	7,035.5	9,066.1	7,035.6	54.5	54.7	-90.01	1,428.4	1,219.3	462.7	353.8	108.84	4.251	
9,100.0	7,034.1	9,166.1	7,034.2	57.0	57.3	-90.01	1,428.4	1,319.3	462.7	348.7	113.96	4.060	
9,200.0	7,032.7	9,266.1	7,032.8	59.6	59.8	-90.01	1,428.4	1,419.3	462.7	343.6	119.12	3.884	
9,300.0	7,031.3	9,366.1	7,031.4	62.3	62.5	-90.01	1,428.4	1,519.2	462.7	338.3	124.33	3.721	
9,400.0	7,029.9	9,466.1	7,030.0	64.9	65.1	-90.01	1,428.4	1,619.2	462.7	333.1	129.57	3.571	
9,500.0	7,028.4	9,566.1	7,028.6	67.5	67.7	-90.01	1,428.4	1,719.2	462.7	327.8	134.84	3.431	
9,600.0	7,027.0	9,666.1	7,027.2	70.2	70.4	-90.01	1,428.4	1,819.2	462.7	322.5	140.13	3.302	
9,700.0	7,025.6	9,766.1	7,025.7	72.9	73.0	-90.01	1,428.4	1,919.2	462.7	317.2	145.45	3.181	
9,800.0	7,024.2	9,866.1	7,024.3	75.5	75.7	-90.01	1,428.4	2,019.2	462.7	311.9	150.79	3.068	
9,900.0	7,022.8	9,966.1	7,022.9	78.2	78.4	-90.01	1,428.4	2,119.2	462.7	306.5	156.15	2.963	
10,000.0	7,021.4	10,066.1	7,021.5	80.9	81.1	-90.01	1,428.4	2,219.2	462.7	301.1	161.53	2.864	
10,100.0	7,020.0	10,166.1	7,020.1	83.6	83.7	-90.01	1,428.4	2,319.2	462.7	295.8	166.92	2.772	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
10,200.0	7,018.6	10,266.1	7,018.7	86.3	86.4	-90.01	1,428.4	2,419.2	462.7	290.3	172.33	2.685	
10,300.0	7,017.1	10,366.1	7,017.3	89.0	89.2	-90.01	1,428.4	2,519.1	462.7	284.9	177.75	2.603	
10,400.0	7,015.7	10,466.1	7,015.8	91.8	91.9	-90.01	1,428.4	2,619.1	462.7	279.5	183.18	2.526	
10,500.0	7,014.3	10,566.1	7,014.4	94.5	94.6	-90.01	1,428.4	2,719.1	462.7	274.0	188.63	2.453	
10,600.0	7,012.9	10,666.1	7,013.0	97.2	97.3	-90.01	1,428.4	2,819.1	462.7	268.6	194.08	2.384	
10,700.0	7,011.5	10,766.1	7,011.6	99.9	100.0	-90.01	1,428.4	2,919.1	462.7	263.1	199.54	2.319	
10,800.0	7,010.1	10,866.1	7,010.2	102.7	102.8	-90.01	1,428.4	3,019.1	462.7	257.7	205.01	2.257	
10,900.0	7,008.7	10,966.1	7,008.8	105.4	105.5	-90.01	1,428.4	3,119.1	462.7	252.2	210.49	2.198	
11,000.0	7,007.2	11,066.1	7,007.4	108.2	108.2	-90.01	1,428.4	3,219.1	462.7	246.7	215.97	2.142	
11,100.0	7,005.8	11,166.1	7,005.9	110.9	111.0	-90.01	1,428.4	3,319.1	462.7	241.2	221.46	2.089	
11,200.0	7,004.4	11,266.1	7,004.5	113.7	113.7	-90.01	1,428.4	3,419.1	462.7	235.7	226.96	2.039	
11,300.0	7,003.0	11,366.1	7,003.1	116.4	116.5	-90.01	1,428.4	3,519.0	462.7	230.2	232.46	1.990	
11,400.0	7,001.6	11,466.1	7,001.7	119.2	119.2	-90.01	1,428.4	3,619.0	462.7	224.7	237.97	1.944	
11,500.0	7,000.2	11,566.1	7,000.3	121.9	122.0	-90.01	1,428.4	3,719.0	462.7	219.2	243.48	1.900	
11,583.1	6,999.0	11,649.1	6,999.1	124.2	124.3	-90.01	1,428.4	3,802.1	462.7	214.6	248.06	1.865 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.666	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.222	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.933	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524	CC
500.0	500.0	499.2	499.1	1.0	1.0	-1.93	30.5	-1.0	30.5	28.5	2.02	15.131	
600.0	600.0	598.1	597.9	1.2	1.2	-6.75	34.6	-4.1	34.9	32.5	2.47	14.150	
700.0	700.0	696.7	696.1	1.5	1.5	31.15	41.4	-9.2	41.1	38.2	2.92	14.077	
800.0	799.8	795.0	793.8	1.7	1.7	28.15	50.9	-16.3	47.6	44.2	3.37	14.108	
900.0	899.5	893.2	890.7	1.9	2.0	26.23	63.1	-25.3	54.3	50.4	3.84	14.141	
1,000.0	998.7	991.1	986.9	2.2	2.4	25.03	77.8	-36.4	61.0	56.7	4.32	14.145	
1,100.0	1,097.5	1,088.8	1,082.2	2.5	2.8	24.36	95.2	-49.3	67.9	63.1	4.81	14.104	
1,200.0	1,195.6	1,186.2	1,176.4	2.8	3.2	24.06	115.0	-64.2	74.8	69.4	5.34	14.012	
1,300.0	1,293.1	1,285.1	1,271.3	3.2	3.7	24.19	137.3	-80.8	81.1	75.2	5.90	13.751	
1,400.0	1,389.7	1,385.0	1,367.1	3.7	4.3	25.22	160.0	-97.8	84.6	78.1	6.52	12.980	
1,500.0	1,486.0	1,485.0	1,462.9	4.1	4.8	26.47	182.7	-114.7	87.2	80.0	7.19	12.128	
1,600.0	1,582.4	1,584.9	1,558.8	4.6	5.4	27.66	205.4	-131.7	89.8	81.9	7.90	11.370	
1,700.0	1,678.7	1,684.9	1,654.6	5.2	5.9	28.77	228.1	-148.7	92.5	83.9	8.64	10.712	
1,800.0	1,775.1	1,784.8	1,750.5	5.7	6.5	29.82	250.8	-165.6	95.2	85.9	9.40	10.134	
1,900.0	1,871.5	1,884.8	1,846.3	6.2	7.1	30.82	273.5	-182.6	98.0	87.8	10.18	9.625	
2,000.0	1,967.8	1,984.7	1,942.2	6.7	7.7	31.76	296.1	-199.5	100.8	89.8	10.98	9.175	
2,100.0	2,064.2	2,084.7	2,038.0	7.3	8.2	32.64	318.8	-216.5	103.6	91.8	11.80	8.775	
2,200.0	2,160.5	2,184.6	2,133.9	7.8	8.8	33.48	341.5	-233.5	106.4	93.8	12.64	8.418	
2,300.0	2,256.9	2,284.6	2,229.7	8.4	9.4	34.28	364.2	-250.4	109.3	95.8	13.49	8.098	
2,400.0	2,353.2	2,384.5	2,325.6	8.9	10.0	35.04	386.9	-267.4	112.1	97.8	14.36	7.810	
2,500.0	2,449.6	2,484.4	2,421.4	9.5	10.6	35.76	409.6	-284.3	115.0	99.8	15.23	7.550	
2,600.0	2,546.0	2,584.4	2,517.3	10.0	11.1	36.44	432.3	-301.3	117.9	101.8	16.12	7.314	
2,700.0	2,642.3	2,684.3	2,613.1	10.6	11.7	37.09	455.0	-318.3	120.8	103.8	17.02	7.100	
2,800.0	2,738.7	2,784.3	2,709.0	11.1	12.3	37.71	477.7	-335.2	123.8	105.8	17.93	6.904	
2,900.0	2,835.0	2,884.2	2,804.8	11.7	12.9	38.30	500.4	-352.2	126.7	107.9	18.84	6.725	
3,000.0	2,931.4	2,984.2	2,900.7	12.2	13.5	38.87	523.1	-369.1	129.7	109.9	19.77	6.561	
3,100.0	3,027.7	3,084.1	2,996.5	12.8	14.1	39.41	545.8	-386.1	132.7	112.0	20.70	6.410	
3,200.0	3,124.1	3,184.1	3,092.4	13.3	14.6	39.92	568.5	-403.1	135.6	114.0	21.63	6.270	
3,300.0	3,220.5	3,284.0	3,188.2	13.9	15.2	40.41	591.2	-420.0	138.6	116.1	22.58	6.141	
3,400.0	3,316.8	3,384.0	3,284.1	14.5	15.8	40.89	613.9	-437.0	141.7	118.1	23.53	6.021	
3,500.0	3,413.2	3,483.9	3,379.9	15.0	16.4	41.34	636.6	-453.9	144.7	120.2	24.48	5.910	
3,600.0	3,509.5	3,583.9	3,475.8	15.6	17.0	41.77	659.3	-470.9	147.7	122.3	25.44	5.806	
3,700.0	3,605.9	3,683.8	3,571.6	16.1	17.6	42.19	682.0	-487.9	150.7	124.3	26.40	5.709	
3,800.0	3,702.2	3,783.8	3,667.5	16.7	18.2	42.59	704.7	-504.8	153.8	126.4	27.37	5.619	
3,900.0	3,798.6	3,883.7	3,763.3	17.2	18.8	42.97	727.3	-521.8	156.8	128.5	28.34	5.534	
4,000.0	3,895.0	3,983.7	3,859.2	17.8	19.3	43.34	750.0	-538.7	159.9	130.5	29.31	5.454	
4,100.0	3,991.3	4,083.6	3,955.0	18.4	19.9	43.70	772.7	-555.7	162.9	132.6	30.29	5.379	
4,200.0	4,087.7	4,183.6	4,050.9	18.9	20.5	44.04	795.4	-572.7	166.0	134.7	31.27	5.308	
4,300.0	4,184.0	4,283.5	4,146.7	19.5	21.1	44.37	818.1	-589.6	169.1	136.8	32.25	5.242	
4,400.0	4,280.4	4,383.5	4,242.6	20.0	21.7	44.69	840.8	-606.6	172.1	138.9	33.24	5.179	
4,500.0	4,376.7	4,483.4	4,338.4	20.6	22.3	45.00	863.5	-623.5	175.2	141.0	34.23	5.119	
4,600.0	4,473.1	4,583.4	4,434.3	21.2	22.9	45.29	886.2	-640.5	178.3	143.1	35.22	5.063	
4,700.0	4,569.4	4,683.3	4,530.1	21.7	23.4	45.58	908.9	-657.5	181.4	145.2	36.21	5.010	
4,800.0	4,665.8	4,783.3	4,625.9	22.3	24.0	45.86	931.6	-674.4	184.5	147.3	37.20	4.959	
4,900.0	4,762.2	4,883.2	4,721.8	22.8	24.6	46.13	954.3	-691.4	187.6	149.4	38.20	4.911	
5,000.0	4,858.5	4,983.2	4,817.6	23.4	25.2	46.39	977.0	-708.3	190.7	151.5	39.20	4.865	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
5,100.0	4,954.9	5,083.1	4,913.5	24.0	25.8	46.64	999.7	-725.3	193.8	153.6	40.20	4.821	
5,200.0	5,051.2	5,183.0	5,009.3	24.5	26.4	46.88	1,022.4	-742.3	196.9	155.7	41.20	4.779	
5,300.0	5,147.6	5,283.0	5,105.2	25.1	27.0	47.11	1,045.1	-759.2	200.0	157.8	42.20	4.740	
5,400.0	5,243.9	5,382.9	5,201.0	25.6	27.6	47.34	1,067.8	-776.2	203.2	159.9	43.21	4.702	
5,500.0	5,340.3	5,482.9	5,296.9	26.2	28.2	47.57	1,090.5	-793.1	206.3	162.1	44.21	4.666	
5,600.0	5,437.2	5,583.1	5,393.0	26.6	28.7	47.45	1,113.2	-810.1	210.7	165.8	44.94	4.689	
5,700.0	5,534.8	5,688.8	5,494.9	27.0	29.2	47.00	1,135.6	-826.9	216.1	170.7	45.39	4.760	
5,800.0	5,633.2	5,794.8	5,598.1	27.3	29.6	46.53	1,154.9	-841.3	221.0	175.2	45.75	4.830	
5,900.0	5,732.1	5,900.9	5,702.3	27.6	30.0	46.05	1,171.2	-853.5	225.6	179.5	46.02	4.901	
6,000.0	5,831.5	6,007.3	5,807.3	27.8	30.3	45.56	1,184.5	-863.4	229.7	183.5	46.20	4.973	
6,100.0	5,931.2	6,113.8	5,913.1	28.0	30.5	45.05	1,194.6	-871.0	233.5	187.2	46.29	5.045	
6,200.0	6,031.1	6,220.5	6,019.5	28.1	30.7	44.52	1,201.6	-876.2	236.9	190.6	46.29	5.119	
6,300.0	6,131.1	6,327.4	6,126.3	28.2	30.9	1.47	1,205.4	-879.0	239.8	190.6	49.18	4.876	
6,400.0	6,231.1	6,432.3	6,231.1	28.3	31.0	1.33	1,206.1	-879.6	240.5	191.0	49.48	4.861	
6,500.0	6,331.1	6,532.3	6,331.1	28.4	31.1	-88.92	1,206.1	-879.6	240.5	193.9	46.55	5.166	
6,553.2	6,384.1	6,585.3	6,384.1	28.4	31.1	-90.00	1,206.1	-879.4	240.4	194.3	46.13	5.213	
6,600.0	6,430.3	6,632.0	6,430.7	28.4	31.1	-91.14	1,206.1	-877.1	240.5	194.9	45.63	5.270	
6,700.0	6,527.1	6,732.7	6,530.3	28.3	31.1	-93.56	1,206.1	-862.3	240.9	196.5	44.42	5.424	
6,800.0	6,619.9	6,834.9	6,628.4	28.2	31.0	-95.92	1,206.1	-834.0	241.7	198.6	43.11	5.608	
6,900.0	6,707.1	6,938.5	6,723.2	27.9	30.8	-98.17	1,206.1	-792.3	242.9	201.1	41.84	5.807	
7,000.0	6,787.1	7,043.5	6,812.5	27.7	30.6	-100.28	1,206.1	-737.4	244.4	203.7	40.73	6.000	
7,100.0	6,858.6	7,149.8	6,894.5	27.4	30.3	-102.20	1,206.1	-669.8	246.0	206.1	39.94	6.160	
7,200.0	6,920.4	7,257.4	6,967.1	27.2	30.1	-103.88	1,206.1	-590.4	247.7	208.1	39.63	6.251	
7,300.0	6,971.4	7,366.2	7,028.4	27.0	29.8	-105.31	1,206.1	-500.7	249.3	209.4	39.94	6.243	
7,400.0	7,010.8	7,475.9	7,076.7	26.9	29.5	-106.46	1,206.1	-402.3	250.7	209.8	40.98	6.119	
7,500.0	7,037.8	7,586.4	7,110.6	26.8	29.3	-107.31	1,206.1	-297.3	251.9	209.1	42.76	5.890	
7,600.0	7,052.1	7,697.5	7,129.1	27.0	29.2	-107.84	1,206.1	-187.9	252.6	207.4	45.21	5.586	
7,700.0	7,053.9	7,806.1	7,132.1	27.4	29.2	-108.01	1,206.1	-79.4	252.8	204.8	48.05	5.262	
7,800.0	7,052.5	7,906.1	7,130.5	28.2	29.5	-107.98	1,206.1	20.6	252.8	201.9	50.90	4.966	
7,900.0	7,051.1	8,006.1	7,128.9	29.5	30.2	-107.94	1,206.1	120.6	252.7	198.6	54.14	4.669	
8,000.0	7,049.7	8,106.1	7,127.3	31.2	31.5	-107.91	1,206.1	220.6	252.7	195.0	57.69	4.380	
8,100.0	7,048.2	8,206.1	7,125.8	33.1	33.3	-107.88	1,206.1	320.6	252.6	191.1	61.51	4.107	
8,200.0	7,046.8	8,306.1	7,124.2	35.2	35.3	-107.84	1,206.1	420.6	252.6	187.0	65.55	3.853	
8,300.0	7,045.4	8,406.1	7,122.6	37.4	37.5	-107.81	1,206.1	520.6	252.5	182.8	69.77	3.620	
8,400.0	7,044.0	8,506.1	7,121.1	39.7	39.8	-107.77	1,206.1	620.5	252.5	178.4	74.14	3.406	
8,500.0	7,042.6	8,606.1	7,119.5	42.0	42.1	-107.74	1,206.1	720.5	252.4	173.8	78.64	3.210	
8,600.0	7,041.2	8,706.1	7,117.9	44.4	44.5	-107.71	1,206.2	820.5	252.4	169.2	83.24	3.032	
8,700.0	7,039.8	8,806.1	7,116.4	46.9	47.0	-107.67	1,206.2	920.5	252.4	164.4	87.93	2.870	
8,800.0	7,038.3	8,906.1	7,114.8	49.4	49.5	-107.64	1,206.2	1,020.5	252.3	159.6	92.70	2.722	
8,900.0	7,036.9	9,006.1	7,113.2	51.9	52.0	-107.60	1,206.2	1,120.5	252.3	154.7	97.54	2.586	
9,000.0	7,035.5	9,106.1	7,111.6	54.5	54.5	-107.57	1,206.2	1,220.5	252.2	149.8	102.43	2.462	
9,100.0	7,034.1	9,206.1	7,110.1	57.0	57.1	-107.54	1,206.2	1,320.5	252.2	144.8	107.37	2.349	
9,200.0	7,032.7	9,306.1	7,108.5	59.6	59.7	-107.50	1,206.2	1,420.4	252.1	139.8	112.35	2.244	
9,300.0	7,031.3	9,406.1	7,106.9	62.3	62.3	-107.47	1,206.2	1,520.4	252.1	134.7	117.37	2.148	
9,400.0	7,029.9	9,506.1	7,105.4	64.9	64.9	-107.43	1,206.2	1,620.4	252.0	129.6	122.42	2.059	
9,500.0	7,028.4	9,606.1	7,103.8	67.5	67.6	-107.40	1,206.2	1,720.4	252.0	124.5	127.51	1.976	
9,600.0	7,027.0	9,706.1	7,102.2	70.2	70.2	-107.37	1,206.2	1,820.4	251.9	119.3	132.62	1.900	
9,700.0	7,025.6	9,806.1	7,100.6	72.9	72.9	-107.33	1,206.2	1,920.4	251.9	114.1	137.75	1.829	
9,800.0	7,024.2	9,906.1	7,099.1	75.5	75.6	-107.30	1,206.2	2,020.4	251.8	108.9	142.90	1.762	
9,900.0	7,022.8	10,006.1	7,097.5	78.2	78.3	-107.26	1,206.2	2,120.4	251.8	103.7	148.08	1.700	
10,000.0	7,021.4	10,106.1	7,095.9	80.9	80.9	-107.23	1,206.2	2,220.3	251.7	98.5	153.27	1.642	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
10,100.0	7,020.0	10,206.1	7,094.4	83.6	83.6	-107.20	1,206.2	2,320.3	251.7	93.2	158.47	1.588	
10,200.0	7,018.6	10,306.1	7,092.8	86.3	86.3	-107.16	1,206.2	2,420.3	251.6	88.0	163.70	1.537	
10,300.0	7,017.1	10,406.1	7,091.2	89.0	89.1	-107.13	1,206.2	2,520.3	251.6	82.7	168.93	1.489	Level 3
10,400.0	7,015.7	10,506.1	7,089.7	91.8	91.8	-107.09	1,206.2	2,620.3	251.6	77.4	174.18	1.444	Level 3
10,500.0	7,014.3	10,606.1	7,088.1	94.5	94.5	-107.06	1,206.2	2,720.3	251.5	72.1	179.44	1.402	Level 3
10,600.0	7,012.9	10,706.1	7,086.5	97.2	97.2	-107.02	1,206.2	2,820.3	251.5	66.8	184.70	1.361	Level 3
10,700.0	7,011.5	10,806.1	7,084.9	99.9	99.9	-106.99	1,206.2	2,920.3	251.4	61.4	189.98	1.323	Level 3
10,800.0	7,010.1	10,906.1	7,083.4	102.7	102.7	-106.96	1,206.2	3,020.2	251.4	56.1	195.27	1.287	Level 3
10,900.0	7,008.7	11,006.1	7,081.8	105.4	105.4	-106.92	1,206.2	3,120.2	251.3	50.8	200.57	1.253	Level 3
11,000.0	7,007.2	11,106.1	7,080.2	108.2	108.2	-106.89	1,206.2	3,220.2	251.3	45.4	205.87	1.221	Level 2
11,100.0	7,005.8	11,206.1	7,078.7	110.9	110.9	-106.85	1,206.2	3,320.2	251.2	40.0	211.19	1.190	Level 2
11,200.0	7,004.4	11,306.1	7,077.1	113.7	113.6	-106.82	1,206.2	3,420.2	251.2	34.7	216.51	1.160	Level 2
11,300.0	7,003.0	11,406.1	7,075.5	116.4	116.4	-106.78	1,206.2	3,520.2	251.1	29.3	221.83	1.132	Level 2
11,400.0	7,001.6	11,506.1	7,073.9	119.2	119.1	-106.75	1,206.2	3,620.2	251.1	23.9	227.17	1.105	Level 2
11,500.0	7,000.2	11,606.1	7,072.4	121.9	121.8	-106.72	1,206.2	3,720.2	251.1	18.6	232.45	1.080	Level 2
11,583.1	6,999.0	11,689.1	7,071.1	124.2	123.3	-106.69	1,206.2	3,803.2	251.0	14.9	236.07	1.063	Level 2, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-61.9	0.0	61.9				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-61.9	0.0	61.9	61.7	0.22	275.539	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-61.9	0.0	61.9	61.3	0.67	91.846	
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-61.9	0.0	61.9	60.8	1.12	55.108	
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-61.9	0.0	61.9	60.4	1.57	39.363	
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-61.9	0.0	61.9	59.9	2.02	30.615	
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-61.9	0.0	61.9	59.5	2.47	25.049	CC, ES
700.0	700.0	700.0	700.0	1.5	1.5	-138.54	-61.9	0.0	63.2	60.3	2.92	21.654	
800.0	799.8	799.8	799.8	1.7	1.7	-141.44	-61.9	0.0	67.2	63.9	3.37	19.964	
900.0	899.5	899.5	899.5	1.9	1.9	-145.55	-61.9	0.0	74.3	70.4	3.82	19.439	
1,000.0	998.7	998.7	998.7	2.2	2.1	-150.11	-61.9	0.0	84.6	80.3	4.28	19.791	
1,100.0	1,097.5	1,099.7	1,099.7	2.5	2.4	-153.85	-61.2	-1.6	97.4	92.7	4.73	20.607	
1,200.0	1,195.6	1,201.1	1,201.0	2.8	2.6	-156.09	-59.0	-6.4	111.2	106.1	5.18	21.493	
1,300.0	1,293.1	1,302.9	1,302.4	3.2	2.8	-157.26	-55.3	-14.6	126.0	120.3	5.64	22.318	
1,400.0	1,389.7	1,405.1	1,403.8	3.7	3.1	-157.68	-50.1	-26.0	141.3	135.2	6.15	22.994	
1,500.0	1,486.0	1,507.9	1,505.2	4.1	3.3	-157.26	-43.4	-40.9	155.1	148.4	6.71	23.114	
1,600.0	1,582.4	1,611.2	1,606.6	4.6	3.7	-156.00	-35.1	-59.2	166.5	159.1	7.33	22.700	
1,700.0	1,678.7	1,710.9	1,703.9	5.2	4.0	-154.46	-26.3	-78.6	176.5	168.5	8.00	22.051	
1,800.0	1,775.1	1,810.3	1,801.0	5.7	4.4	-153.08	-17.6	-97.9	186.7	178.0	8.71	21.438	
1,900.0	1,871.5	1,909.6	1,898.1	6.2	4.8	-151.85	-8.8	-117.3	196.9	187.5	9.44	20.862	
2,000.0	1,967.8	2,009.0	1,995.2	6.7	5.2	-150.74	0.0	-136.7	207.3	197.1	10.20	20.328	
2,100.0	2,064.2	2,108.4	2,092.3	7.3	5.6	-149.73	8.7	-156.0	217.7	206.7	10.97	19.838	
2,200.0	2,160.5	2,207.8	2,189.4	7.8	6.0	-148.82	17.5	-175.4	228.1	216.4	11.77	19.390	
2,300.0	2,256.9	2,307.2	2,286.5	8.4	6.5	-147.99	26.3	-194.8	238.6	226.1	12.57	18.980	
2,400.0	2,353.2	2,406.6	2,383.5	8.9	6.9	-147.22	35.0	-214.1	249.2	235.8	13.39	18.606	
2,500.0	2,449.6	2,506.0	2,480.6	9.5	7.3	-146.52	43.8	-233.5	259.8	245.6	14.23	18.264	
2,600.0	2,546.0	2,605.4	2,577.7	10.0	7.8	-145.88	52.6	-252.8	270.5	255.4	15.07	17.951	
2,700.0	2,642.3	2,704.7	2,674.8	10.6	8.2	-145.28	61.4	-272.2	281.1	265.2	15.91	17.664	
2,800.0	2,738.7	2,804.1	2,771.9	11.1	8.7	-144.73	70.1	-291.6	291.8	275.0	16.77	17.401	
2,900.0	2,835.0	2,903.5	2,869.0	11.7	9.1	-144.21	78.9	-310.9	302.5	284.9	17.63	17.159	
3,000.0	2,931.4	3,002.9	2,966.1	12.2	9.6	-143.74	87.7	-330.3	313.3	294.8	18.50	16.936	
3,100.0	3,027.7	3,102.3	3,063.2	12.8	10.0	-143.29	96.4	-349.7	324.1	304.7	19.37	16.729	
3,200.0	3,124.1	3,201.7	3,160.3	13.3	10.5	-142.87	105.2	-369.0	334.8	314.6	20.25	16.538	
3,300.0	3,220.5	3,301.1	3,257.3	13.9	10.9	-142.48	114.0	-388.4	345.6	324.5	21.13	16.361	
3,400.0	3,316.8	3,400.5	3,354.4	14.5	11.4	-142.11	122.8	-407.7	356.5	334.4	22.01	16.196	
3,500.0	3,413.2	3,499.8	3,451.5	15.0	11.8	-141.76	131.5	-427.1	367.3	344.4	22.90	16.042	
3,600.0	3,509.5	3,599.2	3,548.6	15.6	12.3	-141.44	140.3	-446.5	378.1	354.3	23.78	15.899	
3,700.0	3,605.9	3,698.6	3,645.7	16.1	12.8	-141.13	149.1	-465.8	389.0	364.3	24.67	15.764	
3,800.0	3,702.2	3,798.0	3,742.8	16.7	13.2	-140.84	157.8	-485.2	399.8	374.3	25.57	15.639	
3,900.0	3,798.6	3,897.4	3,839.9	17.2	13.7	-140.56	166.6	-504.6	410.7	384.3	26.46	15.520	
4,000.0	3,895.0	3,996.8	3,937.0	17.8	14.1	-140.30	175.4	-523.9	421.6	394.2	27.36	15.409	
4,100.0	3,991.3	4,096.2	4,034.1	18.4	14.6	-140.05	184.1	-543.3	432.5	404.2	28.26	15.305	
4,200.0	4,087.7	4,195.6	4,131.1	18.9	15.0	-139.81	192.9	-562.7	443.4	414.2	29.16	15.206	
4,300.0	4,184.0	4,295.0	4,228.2	19.5	15.5	-139.59	201.7	-582.0	454.3	424.2	30.06	15.113	
4,400.0	4,280.4	4,394.3	4,325.3	20.0	16.0	-139.37	210.5	-601.4	465.2	434.2	30.96	15.025	
4,500.0	4,376.7	4,493.7	4,422.4	20.6	16.4	-139.17	219.2	-620.7	476.1	444.3	31.87	14.941	
4,600.0	4,473.1	4,593.1	4,519.5	21.2	16.9	-138.97	228.0	-640.1	487.1	454.3	32.77	14.862	
4,700.0	4,569.4	4,692.5	4,616.6	21.7	17.4	-138.78	236.8	-659.5	498.0	464.3	33.68	14.786	
4,800.0	4,665.8	4,791.9	4,713.7	22.3	17.8	-138.61	245.5	-678.8	508.9	474.3	34.59	14.715	
4,900.0	4,762.2	4,891.3	4,810.8	22.8	18.3	-138.43	254.3	-698.2	519.9	484.4	35.49	14.647	
5,000.0	4,858.5	4,990.7	4,907.8	23.4	18.7	-138.27	263.1	-717.6	530.8	494.4	36.40	14.582	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
5,100.0	4,954.9	5,090.1	5,004.9	24.0	19.2	-138.11	271.8	-736.9	541.7	504.4	37.31	14.520	
5,200.0	5,051.2	5,189.4	5,102.0	24.5	19.7	-137.96	280.6	-756.3	552.7	514.5	38.22	14.461	
5,300.0	5,147.6	5,288.8	5,199.1	25.1	20.1	-137.81	289.4	-775.6	563.7	524.5	39.13	14.404	
5,400.0	5,243.9	5,388.2	5,296.2	25.6	20.6	-137.67	298.2	-795.0	574.6	534.6	40.04	14.350	
5,500.0	5,340.3	5,487.6	5,393.3	26.2	21.1	-137.55	306.9	-814.4	585.6	544.6	40.95	14.299	
5,600.0	5,437.2	5,586.9	5,490.2	26.6	21.5	-137.42	315.7	-833.7	595.1	553.3	41.80	14.237	
5,700.0	5,534.8	5,678.5	5,580.1	27.0	21.8	-137.22	323.1	-850.2	602.8	560.3	42.48	14.190	
5,800.0	5,633.2	5,770.3	5,670.6	27.3	22.1	-137.06	329.4	-864.0	609.2	566.2	43.06	14.147	
5,900.0	5,732.1	5,862.1	5,761.6	27.6	22.3	-136.93	334.5	-875.2	614.5	570.9	43.57	14.104	
6,000.0	5,831.5	5,954.0	5,853.0	27.8	22.6	-136.83	338.4	-883.8	618.5	574.5	43.98	14.062	
6,100.0	5,931.2	6,046.0	5,944.7	28.0	22.7	-136.77	341.0	-889.7	621.2	576.9	44.31	14.020	
6,200.0	6,031.1	6,137.9	6,036.6	28.1	22.9	-136.73	342.5	-892.9	622.7	578.1	44.55	13.978	
6,300.0	6,131.1	6,232.4	6,131.1	28.2	23.0	-179.24	342.8	-893.5	623.0	583.6	39.43	15.799	
6,400.0	6,231.1	6,332.4	6,231.1	28.3	23.1	-179.24	342.8	-893.5	623.0	583.3	39.72	15.685	
6,500.0	6,331.1	6,433.0	6,331.6	28.4	23.2	90.69	342.8	-891.6	623.0	577.8	45.20	13.783	
6,600.0	6,430.3	6,533.8	6,431.5	28.4	23.2	90.53	342.8	-877.9	623.0	577.8	45.13	13.804	
6,700.0	6,527.1	6,634.5	6,528.4	28.3	23.1	90.36	342.8	-851.3	622.9	578.1	44.84	13.893	
6,800.0	6,619.9	6,734.8	6,620.8	28.2	22.9	90.19	342.8	-812.3	622.9	578.5	44.40	14.031	
6,897.6	6,705.0	6,832.5	6,705.1	27.9	22.6	90.01	342.8	-763.0	622.9	579.0	43.91	14.188	
6,900.0	6,707.1	6,835.0	6,707.1	27.9	22.6	90.01	342.8	-761.7	622.9	579.0	43.89	14.192	
7,000.0	6,787.1	6,934.8	6,785.8	27.7	22.4	89.83	342.8	-700.3	622.9	579.5	43.44	14.339	
7,100.0	6,858.6	7,034.4	6,855.8	27.4	22.2	89.65	342.8	-629.5	622.9	579.8	43.18	14.426	
7,200.0	6,920.4	7,133.8	6,915.7	27.2	22.2	89.48	342.8	-550.3	623.0	579.7	43.26	14.401	
7,300.0	6,971.4	7,232.9	6,964.8	27.0	22.3	89.32	342.8	-464.3	623.0	579.2	43.80	14.223	
7,400.0	7,010.8	7,331.9	7,002.3	26.9	22.7	89.17	342.8	-372.8	623.0	578.1	44.90	13.876	
7,500.0	7,037.8	7,430.6	7,027.6	26.8	23.4	89.04	342.8	-277.4	623.0	576.4	46.57	13.377	
7,600.0	7,052.1	7,529.2	7,040.4	27.0	24.4	88.92	342.8	-179.8	623.0	574.3	48.78	12.774	
7,700.0	7,053.9	7,628.2	7,041.4	27.4	25.7	88.85	342.8	-80.8	623.1	571.6	51.43	12.114	
7,800.0	7,052.5	7,728.2	7,040.0	28.2	27.2	88.85	342.8	19.2	623.1	568.6	54.50	11.432	
7,900.0	7,051.1	7,828.2	7,038.6	29.5	28.9	88.85	342.8	119.2	623.1	565.1	57.95	10.751	
8,000.0	7,049.7	7,928.2	7,037.1	31.2	30.8	88.85	342.8	219.2	623.1	561.3	61.73	10.094	
8,100.0	7,048.2	8,028.2	7,035.7	33.1	32.8	88.85	342.8	319.2	623.1	557.3	65.76	9.475	
8,200.0	7,046.8	8,128.2	7,034.3	35.2	34.9	88.84	342.8	419.2	623.1	553.1	70.01	8.899	
8,300.0	7,045.4	8,228.2	7,032.8	37.4	37.2	88.84	342.8	519.2	623.1	548.6	74.45	8.369	
8,400.0	7,044.0	8,328.2	7,031.4	39.7	39.5	88.84	342.8	619.1	623.1	544.0	79.03	7.884	
8,500.0	7,042.6	8,428.2	7,030.0	42.0	41.8	88.84	342.8	719.1	623.1	539.3	83.74	7.441	
8,600.0	7,041.2	8,528.2	7,028.5	44.4	44.3	88.84	342.8	819.1	623.1	534.5	88.55	7.036	
8,700.0	7,039.8	8,628.2	7,027.1	46.9	46.7	88.84	342.8	919.1	623.1	529.6	93.46	6.667	
8,800.0	7,038.3	8,728.2	7,025.7	49.4	49.2	88.83	342.8	1,019.1	623.1	524.6	98.44	6.330	
8,900.0	7,036.9	8,828.2	7,024.2	51.9	51.8	88.83	342.8	1,119.1	623.1	519.6	103.48	6.021	
9,000.0	7,035.5	8,928.2	7,022.8	54.5	54.3	88.83	342.8	1,219.1	623.1	514.5	108.58	5.738	
9,100.0	7,034.1	9,028.2	7,021.4	57.0	56.9	88.83	342.8	1,319.1	623.1	509.3	113.73	5.479	
9,200.0	7,032.7	9,128.2	7,019.9	59.6	59.5	88.83	342.8	1,419.1	623.1	504.2	118.92	5.239	
9,300.0	7,031.3	9,228.2	7,018.5	62.3	62.1	88.83	342.8	1,519.1	623.1	498.9	124.15	5.019	
9,400.0	7,029.9	9,328.2	7,017.1	64.9	64.8	88.83	342.8	1,619.0	623.1	493.7	129.41	4.815	
9,500.0	7,028.4	9,428.2	7,015.7	67.5	67.4	88.82	342.8	1,719.0	623.1	488.4	134.70	4.626	
9,600.0	7,027.0	9,528.2	7,014.2	70.2	70.1	88.82	342.8	1,819.0	623.1	483.1	140.01	4.450	
9,700.0	7,025.6	9,628.2	7,012.8	72.9	72.7	88.82	342.8	1,919.0	623.1	477.7	145.35	4.287	
9,800.0	7,024.2	9,728.2	7,011.4	75.5	75.4	88.82	342.8	2,019.0	623.1	472.4	150.70	4.134	
9,900.0	7,022.8	9,828.2	7,009.9	78.2	78.1	88.82	342.8	2,119.0	623.1	467.0	156.08	3.992	
10,000.0	7,021.4	9,928.2	7,008.5	80.9	80.8	88.82	342.8	2,219.0	623.1	461.6	161.47	3.859	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
10,100.0	7,020.0	10,028.2	7,007.1	83.6	83.5	88.81	342.8	2,319.0	623.1	456.2	166.87	3.734	
10,200.0	7,018.6	10,128.2	7,005.6	86.3	86.2	88.81	342.8	2,419.0	623.1	450.8	172.29	3.616	
10,300.0	7,017.1	10,228.2	7,004.2	89.0	89.0	88.81	342.8	2,519.0	623.1	445.4	177.72	3.506	
10,400.0	7,015.7	10,328.2	7,002.8	91.8	91.7	88.81	342.8	2,618.9	623.1	439.9	183.17	3.402	
10,500.0	7,014.3	10,428.2	7,001.3	94.5	94.4	88.81	342.8	2,718.9	623.1	434.5	188.62	3.303	
10,600.0	7,012.9	10,528.2	6,999.9	97.2	97.1	88.81	342.8	2,818.9	623.1	429.0	194.08	3.211	
10,700.0	7,011.5	10,628.2	6,998.5	99.9	99.9	88.80	342.8	2,918.9	623.1	423.5	199.55	3.123	
10,800.0	7,010.1	10,728.2	6,997.1	102.7	102.6	88.80	342.8	3,018.9	623.1	418.1	205.02	3.039	
10,900.0	7,008.7	10,828.2	6,995.6	105.4	105.4	88.80	342.8	3,118.9	623.1	412.6	210.51	2.960	
11,000.0	7,007.2	10,928.2	6,994.2	108.2	108.1	88.80	342.8	3,218.9	623.1	407.1	216.00	2.885	
11,100.0	7,005.8	11,028.2	6,992.8	110.9	110.9	88.80	342.8	3,318.9	623.1	401.6	221.50	2.813	
11,200.0	7,004.4	11,128.2	6,991.3	113.7	113.6	88.80	342.8	3,418.9	623.1	396.1	227.00	2.745	
11,300.0	7,003.0	11,228.2	6,989.9	116.4	116.4	88.79	342.8	3,518.9	623.1	390.6	232.51	2.680	
11,400.0	7,001.6	11,328.2	6,988.5	119.2	119.1	88.79	342.8	3,618.8	623.1	385.1	238.02	2.618	
11,500.0	7,000.2	11,428.2	6,987.0	121.9	121.6	88.79	342.8	3,718.8	623.1	379.9	243.25	2.562	
11,545.6	6,999.5	11,473.8	6,986.4	123.2	122.4	88.79	342.8	3,764.5	623.1	377.8	245.30	2.540	
11,583.1	6,999.0	11,500.4	6,986.0	124.2	122.9	88.79	342.8	3,791.0	623.2	376.4	246.80	2.525	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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-302 - Wellbore #1 - Plan #1 (8-22-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-29.1	0.0	29.1	29.1	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-29.1	0.0	29.1	28.9	0.23	128.364	
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.68	43.072	
300.0	300.0	301.0	301.0	0.6	0.6	-180.00	-29.1	0.0	29.1	28.0	1.13	25.878	
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-29.1	0.0	29.1	27.6	1.58	18.495	
500.0	500.0	501.0	501.0	1.0	1.0	-180.00	-29.1	0.0	29.1	27.1	2.03	14.389	
600.0	600.0	601.0	601.0	1.2	1.2	-180.00	-29.1	0.0	29.1	26.7	2.47	11.775	CC, ES
700.0	700.0	701.0	701.0	1.5	1.5	-139.69	-29.1	0.0	30.4	27.5	2.92	10.420	
800.0	799.8	800.8	800.8	1.7	1.7	-145.26	-29.1	0.0	34.6	31.2	3.37	10.269	
900.0	899.5	901.4	901.4	1.9	1.9	-150.22	-28.3	-1.6	40.8	37.0	3.81	10.708	
1,000.0	998.7	1,002.3	1,002.1	2.2	2.1	-152.74	-25.6	-6.2	47.9	43.7	4.26	11.253	
1,100.0	1,097.5	1,103.3	1,102.7	2.5	2.4	-153.65	-21.2	-13.9	55.7	50.9	4.72	11.794	
1,200.0	1,195.6	1,204.4	1,203.1	2.8	2.6	-153.49	-15.1	-24.8	64.0	58.8	5.21	12.290	
1,300.0	1,293.1	1,305.7	1,303.1	3.2	2.9	-152.62	-7.2	-38.7	72.9	67.2	5.74	12.711	
1,400.0	1,389.7	1,407.2	1,402.6	3.7	3.2	-151.29	2.5	-55.8	82.4	76.1	6.33	13.012	
1,500.0	1,486.0	1,506.7	1,500.0	4.1	3.6	-149.83	12.8	-73.9	91.6	84.6	7.00	13.090	
1,600.0	1,582.4	1,606.3	1,597.3	4.6	4.0	-148.65	23.1	-92.0	100.9	93.2	7.70	13.100	
1,700.0	1,678.7	1,705.8	1,694.6	5.2	4.4	-147.66	33.4	-110.2	110.2	101.8	8.43	13.073	
1,800.0	1,775.1	1,805.4	1,792.0	5.7	4.8	-146.83	43.6	-128.3	119.5	110.4	9.18	13.022	
1,900.0	1,871.5	1,904.9	1,889.3	6.2	5.2	-146.11	53.9	-146.5	128.9	118.9	9.95	12.958	
2,000.0	1,967.8	2,004.5	1,986.7	6.7	5.6	-145.50	64.2	-164.6	138.3	127.5	10.73	12.889	
2,100.0	2,064.2	2,104.0	2,084.0	7.3	6.1	-144.96	74.5	-182.8	147.6	136.1	11.52	12.817	
2,200.0	2,160.5	2,203.6	2,181.3	7.8	6.5	-144.49	84.8	-200.9	157.0	144.7	12.32	12.747	
2,300.0	2,256.9	2,303.1	2,278.7	8.4	6.9	-144.07	95.1	-219.1	166.4	153.3	13.13	12.678	
2,400.0	2,353.2	2,402.7	2,376.0	8.9	7.4	-143.69	105.4	-237.2	175.8	161.9	13.94	12.612	
2,500.0	2,449.6	2,502.2	2,473.4	9.5	7.8	-143.36	115.7	-255.4	185.3	170.5	14.76	12.549	
2,600.0	2,546.0	2,601.8	2,570.7	10.0	8.3	-143.05	126.0	-273.5	194.7	179.1	15.59	12.489	
2,700.0	2,642.3	2,701.3	2,668.0	10.6	8.7	-142.77	136.3	-291.7	204.1	187.7	16.42	12.433	
2,800.0	2,738.7	2,800.9	2,765.4	11.1	9.2	-142.52	146.5	-309.8	213.5	196.3	17.25	12.380	
2,900.0	2,835.0	2,900.4	2,862.7	11.7	9.6	-142.29	156.8	-327.9	223.0	204.9	18.08	12.330	
3,000.0	2,931.4	3,000.0	2,960.1	12.2	10.1	-142.08	167.1	-346.1	232.4	213.5	18.92	12.283	
3,100.0	3,027.7	3,099.5	3,057.4	12.8	10.5	-141.89	177.4	-364.2	241.9	222.1	19.76	12.238	
3,200.0	3,124.1	3,199.1	3,154.7	13.3	11.0	-141.70	187.7	-382.4	251.3	230.7	20.61	12.196	
3,300.0	3,220.5	3,298.6	3,252.1	13.9	11.4	-141.54	198.0	-400.5	260.8	239.3	21.45	12.157	
3,400.0	3,316.8	3,398.2	3,349.4	14.5	11.9	-141.38	208.3	-418.7	270.2	247.9	22.30	12.120	
3,500.0	3,413.2	3,497.7	3,446.8	15.0	12.3	-141.24	218.6	-436.8	279.7	256.5	23.14	12.084	
3,600.0	3,509.5	3,597.3	3,544.1	15.6	12.8	-141.10	228.9	-455.0	289.1	265.1	23.99	12.051	
3,700.0	3,605.9	3,696.8	3,641.4	16.1	13.2	-140.97	239.2	-473.1	298.6	273.7	24.84	12.020	
3,800.0	3,702.2	3,796.4	3,738.8	16.7	13.7	-140.85	249.5	-491.3	308.0	282.3	25.69	11.990	
3,900.0	3,798.6	3,895.9	3,836.1	17.2	14.1	-140.74	259.7	-509.4	317.5	290.9	26.54	11.961	
4,000.0	3,895.0	3,995.5	3,933.5	17.8	14.6	-140.64	270.0	-527.6	326.9	299.5	27.39	11.934	
4,100.0	3,991.3	4,095.0	4,030.8	18.4	15.0	-140.54	280.3	-545.7	336.4	308.2	28.25	11.909	
4,200.0	4,087.7	4,194.6	4,128.1	18.9	15.5	-140.44	290.6	-563.8	345.9	316.8	29.10	11.884	
4,300.0	4,184.0	4,294.1	4,225.5	19.5	15.9	-140.35	300.9	-582.0	355.3	325.4	29.96	11.861	
4,400.0	4,280.4	4,393.7	4,322.8	20.0	16.4	-140.27	311.2	-600.1	364.8	334.0	30.81	11.839	
4,500.0	4,376.7	4,493.2	4,420.2	20.6	16.9	-140.19	321.5	-618.3	374.2	342.6	31.67	11.818	
4,600.0	4,473.1	4,592.8	4,517.5	21.2	17.3	-140.11	331.8	-636.4	383.7	351.2	32.52	11.798	
4,700.0	4,569.4	4,692.3	4,614.8	21.7	17.8	-140.04	342.1	-654.6	393.2	359.8	33.38	11.779	
4,800.0	4,665.8	4,791.9	4,712.2	22.3	18.2	-139.97	352.4	-672.7	402.6	368.4	34.24	11.760	
4,900.0	4,762.2	4,891.4	4,809.5	22.8	18.7	-139.90	362.6	-690.9	412.1	377.0	35.10	11.743	
5,000.0	4,858.5	4,991.0	4,906.9	23.4	19.1	-139.84	372.9	-709.0	421.6	385.6	35.95	11.726	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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-302 - Wellbore #1 - Plan #1 (8-22-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
5,100.0	4,954.9	5,090.5	5,004.2	24.0	19.6	-139.78	383.2	-727.2	431.0	394.2	36.81	11.709	
5,200.0	5,051.2	5,190.1	5,101.5	24.5	20.0	-139.72	393.5	-745.3	440.5	402.8	37.67	11.694	
5,300.0	5,147.6	5,289.6	5,198.9	25.1	20.5	-139.67	403.8	-763.5	450.0	411.4	38.53	11.679	
5,400.0	5,243.9	5,389.2	5,296.2	25.6	21.0	-139.61	414.1	-781.6	459.4	420.0	39.39	11.664	
5,500.0	5,340.3	5,488.7	5,393.5	26.2	21.4	-139.57	424.4	-799.7	468.9	428.7	40.25	11.651	
5,600.0	5,437.2	5,588.4	5,491.0	26.6	21.9	-139.47	434.7	-817.9	476.9	435.8	41.06	11.615	
5,700.0	5,534.8	5,688.1	5,588.6	27.0	22.3	-139.07	445.0	-836.1	482.2	440.3	41.91	11.505	
5,800.0	5,633.2	5,780.9	5,679.4	27.3	22.7	-138.56	454.0	-852.0	485.6	442.9	42.68	11.378	
5,900.0	5,732.1	5,872.8	5,770.1	27.6	23.0	-138.09	461.6	-865.3	488.1	444.8	43.31	11.269	
6,000.0	5,831.5	5,964.8	5,861.3	27.8	23.2	-137.66	467.6	-876.0	489.6	445.8	43.85	11.165	
6,100.0	5,931.2	6,056.9	5,952.9	28.0	23.4	-137.26	472.3	-884.2	490.2	445.9	44.30	11.064	
6,200.0	6,031.1	6,149.2	6,045.0	28.1	23.6	-136.90	475.5	-889.8	489.8	445.1	44.67	10.965	
6,300.0	6,131.1	6,241.6	6,137.2	28.2	23.7	-179.10	477.2	-892.9	488.6	448.2	40.40	12.092	
6,400.0	6,231.1	6,336.4	6,232.1	28.3	23.8	-179.03	477.6	-893.5	488.2	447.6	40.65	12.011	
6,440.4	6,271.5	6,376.8	6,272.5	28.4	23.9	91.03	477.6	-893.5	488.2	442.9	45.35	10.765	
6,500.0	6,331.1	6,436.4	6,332.1	28.4	24.0	91.10	477.6	-893.5	488.2	442.7	45.52	10.725	
6,600.0	6,430.3	6,537.3	6,432.9	28.4	24.0	92.17	477.6	-890.8	488.5	442.6	45.94	10.633	
6,700.0	6,527.1	6,639.9	6,534.3	28.3	24.0	93.31	477.6	-875.3	489.0	442.8	46.12	10.603	
6,800.0	6,619.9	6,744.0	6,634.0	28.2	23.9	94.40	477.6	-845.9	489.6	443.6	46.03	10.636	
6,900.0	6,707.1	6,849.5	6,730.1	27.9	23.7	95.42	477.6	-802.6	490.4	444.6	45.74	10.721	
7,000.0	6,787.1	6,956.2	6,820.3	27.7	23.4	96.35	477.6	-745.7	491.2	445.8	45.34	10.834	
7,100.0	6,858.6	7,064.2	6,902.6	27.4	23.1	97.16	477.6	-675.9	492.0	447.0	44.96	10.942	
7,200.0	6,920.4	7,173.2	6,974.8	27.2	23.0	97.84	477.6	-594.4	492.8	448.0	44.79	11.001	
7,300.0	6,971.4	7,283.1	7,035.2	27.0	22.9	98.38	477.6	-502.6	493.4	448.4	45.01	10.963	
7,400.0	7,010.8	7,393.8	7,082.1	26.9	23.2	98.76	477.6	-402.5	493.9	448.1	45.77	10.790	
7,500.0	7,037.8	7,504.8	7,114.1	26.8	23.7	98.98	477.6	-296.3	494.2	447.0	47.19	10.473	
7,600.0	7,052.1	7,616.1	7,130.4	27.0	24.7	99.03	477.6	-186.3	494.3	445.0	49.25	10.037	
7,700.0	7,053.9	7,723.1	7,131.8	27.4	25.9	98.96	477.6	-79.4	494.2	442.3	51.84	9.532	
7,800.0	7,052.5	7,823.1	7,130.3	28.2	27.3	98.94	477.6	20.6	494.2	439.3	54.87	9.005	
7,900.0	7,051.1	7,923.1	7,128.7	29.5	29.0	98.92	477.6	120.6	494.1	435.9	58.28	8.479	
8,000.0	7,049.7	8,023.1	7,127.1	31.2	30.9	98.91	477.6	220.6	494.1	432.1	61.99	7.970	
8,100.0	7,048.2	8,123.1	7,125.6	33.1	32.9	98.89	477.6	320.6	494.1	428.1	65.97	7.490	
8,200.0	7,046.8	8,223.1	7,124.0	35.2	35.0	98.87	477.6	420.5	494.1	423.9	70.16	7.042	
8,300.0	7,045.4	8,323.1	7,122.4	37.4	37.2	98.85	477.6	520.5	494.0	419.5	74.53	6.629	
8,400.0	7,044.0	8,423.1	7,120.8	39.7	39.5	98.83	477.6	620.5	494.0	415.0	79.04	6.250	
8,500.0	7,042.6	8,523.1	7,119.3	42.0	41.9	98.82	477.6	720.5	494.0	410.3	83.69	5.903	
8,600.0	7,041.2	8,623.1	7,117.7	44.4	44.3	98.80	477.6	820.5	494.0	405.5	88.44	5.585	
8,700.0	7,039.8	8,723.1	7,116.1	46.9	46.7	98.78	477.6	920.5	493.9	400.7	93.28	5.295	
8,800.0	7,038.3	8,823.1	7,114.6	49.4	49.2	98.76	477.6	1,020.5	493.9	395.7	98.19	5.030	
8,900.0	7,036.9	8,923.1	7,113.0	51.9	51.8	98.74	477.6	1,120.5	493.9	390.7	103.18	4.787	
9,000.0	7,035.5	9,023.1	7,111.4	54.5	54.3	98.73	477.6	1,220.4	493.9	385.7	108.21	4.564	
9,100.0	7,034.1	9,123.1	7,109.9	57.0	56.9	98.71	477.6	1,320.4	493.8	380.5	113.30	4.359	
9,200.0	7,032.7	9,223.1	7,108.3	59.6	59.5	98.69	477.6	1,420.4	493.8	375.4	118.43	4.170	
9,300.0	7,031.3	9,323.1	7,106.7	62.3	62.1	98.67	477.6	1,520.4	493.8	370.2	123.60	3.995	
9,400.0	7,029.9	9,423.1	7,105.1	64.9	64.8	98.65	477.6	1,620.4	493.8	365.0	128.80	3.834	
9,500.0	7,028.4	9,523.1	7,103.6	67.5	67.4	98.64	477.6	1,720.4	493.8	359.7	134.03	3.684	
9,600.0	7,027.0	9,623.1	7,102.0	70.2	70.1	98.62	477.6	1,820.4	493.7	354.4	139.29	3.545	
9,700.0	7,025.6	9,723.1	7,100.4	72.9	72.7	98.60	477.6	1,920.4	493.7	349.1	144.57	3.415	
9,800.0	7,024.2	9,823.1	7,098.9	75.5	75.4	98.58	477.6	2,020.3	493.7	343.8	149.87	3.294	
9,900.0	7,022.8	9,923.1	7,097.3	78.2	78.1	98.56	477.6	2,120.3	493.7	338.5	155.19	3.181	
10,000.0	7,021.4	10,023.1	7,095.7	80.9	80.8	98.54	477.6	2,220.3	493.6	333.1	160.52	3.075	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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-302 - Wellbore #1 - Plan #1 (8-22-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
10,100.0	7,020.0	10,123.1	7,094.1	83.6	83.5	98.53	477.6	2,320.3	493.6	327.7	165.88	2.976	
10,200.0	7,018.6	10,223.1	7,092.6	86.3	86.2	98.51	477.6	2,420.3	493.6	322.4	171.24	2.882	
10,300.0	7,017.1	10,323.1	7,091.0	89.0	88.9	98.49	477.6	2,520.3	493.6	317.0	176.62	2.795	
10,400.0	7,015.7	10,423.1	7,089.4	91.8	91.6	98.47	477.6	2,620.3	493.5	311.5	182.01	2.712	
10,500.0	7,014.3	10,523.1	7,087.9	94.5	94.4	98.45	477.6	2,720.3	493.5	306.1	187.41	2.633	
10,600.0	7,012.9	10,623.1	7,086.3	97.2	97.1	98.44	477.6	2,820.2	493.5	300.7	192.82	2.559	
10,700.0	7,011.5	10,723.1	7,084.7	99.9	99.8	98.42	477.5	2,920.2	493.5	295.2	198.24	2.489	
10,800.0	7,010.1	10,823.1	7,083.2	102.7	102.6	98.40	477.5	3,020.2	493.5	289.8	203.67	2.423	
10,900.0	7,008.7	10,923.1	7,081.6	105.4	105.3	98.38	477.5	3,120.2	493.4	284.3	209.10	2.360	
11,000.0	7,007.2	11,023.1	7,080.0	108.2	108.1	98.36	477.5	3,220.2	493.4	278.9	214.55	2.300	
11,100.0	7,005.8	11,123.1	7,078.4	110.9	110.8	98.35	477.5	3,320.2	493.4	273.4	220.00	2.243	
11,200.0	7,004.4	11,223.1	7,076.9	113.7	113.6	98.33	477.5	3,420.2	493.4	267.9	225.45	2.188	
11,300.0	7,003.0	11,323.1	7,075.3	116.4	116.3	98.31	477.5	3,520.2	493.3	262.4	230.92	2.136	
11,400.0	7,001.6	11,423.1	7,073.7	119.2	119.1	98.29	477.5	3,620.1	493.3	256.9	236.38	2.087	
11,500.0	7,000.2	11,523.1	7,072.2	121.9	121.6	98.27	477.5	3,720.1	493.3	251.7	241.62	2.042	
11,557.4	6,999.4	11,580.5	7,071.3	123.5	122.6	98.26	477.5	3,777.5	493.3	249.1	244.18	2.020	
11,583.1	6,999.0	11,596.7	7,071.0	124.2	122.9	98.26	477.5	3,793.8	493.4	248.2	245.16	2.012	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
0.0	0.0	1.0	1.0	0.0	0.0	-178.25	-91.1	-2.8	91.1	91.1	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-178.25	-91.1	-2.8	91.1	90.9	0.23	401.363	
200.0	200.0	201.0	201.0	0.3	0.3	-178.25	-91.1	-2.8	91.1	90.4	0.68	134.677	
300.0	300.0	301.0	301.0	0.6	0.6	-178.25	-91.1	-2.8	91.1	90.0	1.13	80.914	
400.0	400.0	401.0	401.0	0.8	0.8	-178.25	-91.1	-2.8	91.1	89.5	1.58	57.828	
500.0	500.0	501.0	501.0	1.0	1.0	-178.25	-91.1	-2.8	91.1	89.1	2.03	44.992	
600.0	600.0	601.0	601.0	1.2	1.2	-178.25	-91.1	-2.8	91.1	88.6	2.47	36.819	CC, ES
700.0	700.0	701.0	701.0	1.5	1.5	-136.47	-91.1	-2.8	92.4	89.5	2.92	31.611	
800.0	799.8	800.8	800.8	1.7	1.7	-138.57	-91.1	-2.8	96.2	92.9	3.37	28.553	
900.0	899.5	900.5	900.5	1.9	1.9	-141.69	-91.1	-2.8	102.9	99.1	3.82	26.921	
1,000.0	998.7	999.7	999.7	2.2	2.1	-145.41	-91.1	-2.8	112.8	108.5	4.28	26.335	
1,100.0	1,097.5	1,098.5	1,098.5	2.5	2.4	-149.30	-91.1	-2.8	126.0	121.3	4.74	26.562	
1,200.0	1,195.6	1,196.6	1,196.6	2.8	2.6	-153.05	-91.1	-2.8	142.8	137.6	5.21	27.434	
1,300.0	1,293.1	1,294.1	1,294.1	3.2	2.8	-156.45	-91.1	-2.8	163.2	157.6	5.66	28.819	
1,400.0	1,389.7	1,390.7	1,390.7	3.7	3.0	-159.46	-91.1	-2.8	187.3	181.1	6.13	30.570	
1,500.0	1,486.0	1,487.0	1,487.0	4.1	3.2	-161.98	-91.1	-2.8	212.6	206.0	6.60	32.199	
1,600.0	1,582.4	1,587.1	1,587.0	4.6	3.4	-163.75	-91.0	-4.1	237.6	230.5	7.08	33.561	
1,700.0	1,678.7	1,688.8	1,688.6	5.2	3.7	-164.52	-90.7	-9.0	261.0	253.5	7.56	34.516	
1,800.0	1,775.1	1,791.5	1,791.0	5.7	3.9	-164.51	-90.1	-17.6	282.6	274.6	8.07	35.026	
1,900.0	1,871.5	1,894.9	1,893.6	6.2	4.1	-163.89	-89.3	-29.9	302.4	293.8	8.61	35.123	
2,000.0	1,967.8	1,998.7	1,996.2	6.7	4.4	-162.76	-88.3	-46.0	320.5	311.3	9.20	34.846	
2,100.0	2,064.2	2,102.8	2,098.3	7.3	4.7	-161.19	-87.0	-65.8	337.0	327.1	9.84	34.230	
2,200.0	2,160.5	2,202.2	2,195.4	7.8	5.0	-159.47	-85.6	-87.2	352.6	342.0	10.54	33.460	
2,300.0	2,256.9	2,300.4	2,291.3	8.4	5.4	-157.91	-84.2	-108.4	368.4	357.1	11.26	32.714	
2,400.0	2,353.2	2,398.7	2,387.3	8.9	5.7	-156.48	-82.8	-129.5	384.5	372.5	12.01	32.001	
2,500.0	2,449.6	2,496.9	2,483.2	9.5	6.1	-155.16	-81.4	-150.7	400.8	388.0	12.79	31.327	
2,600.0	2,546.0	2,595.2	2,579.1	10.0	6.5	-153.94	-80.1	-171.9	417.3	403.7	13.59	30.696	
2,700.0	2,642.3	2,693.4	2,675.1	10.6	6.9	-152.81	-78.7	-193.0	433.9	419.5	14.41	30.109	
2,800.0	2,738.7	2,791.7	2,771.0	11.1	7.3	-151.77	-77.3	-214.2	450.8	435.5	15.25	29.565	
2,900.0	2,835.0	2,890.0	2,867.0	11.7	7.7	-150.81	-75.9	-235.4	467.7	451.6	16.09	29.061	
3,000.0	2,931.4	2,988.2	2,962.9	12.2	8.1	-149.91	-74.5	-256.6	484.8	467.8	16.95	28.595	
3,100.0	3,027.7	3,086.5	3,058.8	12.8	8.6	-149.07	-73.2	-277.7	502.0	484.1	17.82	28.164	
3,200.0	3,124.1	3,184.7	3,154.8	13.3	9.0	-148.28	-71.8	-298.9	519.2	500.5	18.70	27.766	
3,300.0	3,220.5	3,283.0	3,250.7	13.9	9.4	-147.55	-70.4	-320.1	536.6	517.0	19.59	27.398	
3,400.0	3,316.8	3,381.2	3,346.6	14.5	9.9	-146.86	-69.0	-341.3	554.1	533.6	20.48	27.057	
3,500.0	3,413.2	3,479.5	3,442.6	15.0	10.3	-146.22	-67.6	-362.4	571.6	550.2	21.37	26.741	
3,600.0	3,509.5	3,577.7	3,538.5	15.6	10.7	-145.61	-66.3	-383.6	589.2	566.9	22.28	26.447	
3,700.0	3,605.9	3,676.0	3,634.5	16.1	11.2	-145.04	-64.9	-404.8	606.8	583.6	23.18	26.174	
3,800.0	3,702.2	3,774.2	3,730.4	16.7	11.6	-144.50	-63.5	-425.9	624.5	600.4	24.09	25.919	
3,900.0	3,798.6	3,872.5	3,826.3	17.2	12.1	-143.99	-62.1	-447.1	642.3	617.3	25.01	25.682	
4,000.0	3,895.0	3,970.8	3,922.3	17.8	12.5	-143.51	-60.7	-468.3	660.1	634.1	25.93	25.460	
4,100.0	3,991.3	4,069.0	4,018.2	18.4	13.0	-143.05	-59.4	-489.5	677.9	651.1	26.85	25.252	
4,200.0	4,087.7	4,167.3	4,114.1	18.9	13.4	-142.62	-58.0	-510.6	695.8	668.0	27.77	25.058	
4,300.0	4,184.0	4,265.5	4,210.1	19.5	13.9	-142.21	-56.6	-531.8	713.7	685.0	28.69	24.875	
4,400.0	4,280.4	4,363.8	4,306.0	20.0	14.3	-141.82	-55.2	-553.0	731.7	702.0	29.62	24.703	
4,500.0	4,376.7	4,462.0	4,401.9	20.6	14.8	-141.44	-53.8	-574.1	749.6	719.1	30.55	24.542	
4,600.0	4,473.1	4,560.3	4,497.9	21.2	15.3	-141.09	-52.5	-595.3	767.7	736.2	31.48	24.389	
4,700.0	4,569.4	4,658.5	4,593.8	21.7	15.7	-140.75	-51.1	-616.5	785.7	753.3	32.41	24.245	
4,800.0	4,665.8	4,756.8	4,689.8	22.3	16.2	-140.42	-49.7	-637.7	803.8	770.4	33.34	24.109	
4,900.0	4,762.2	4,855.0	4,785.7	22.8	16.6	-140.11	-48.3	-658.8	821.9	787.6	34.27	23.981	
5,000.0	4,858.5	4,953.3	4,881.6	23.4	17.1	-139.82	-46.9	-680.0	840.0	804.8	35.21	23.859	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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

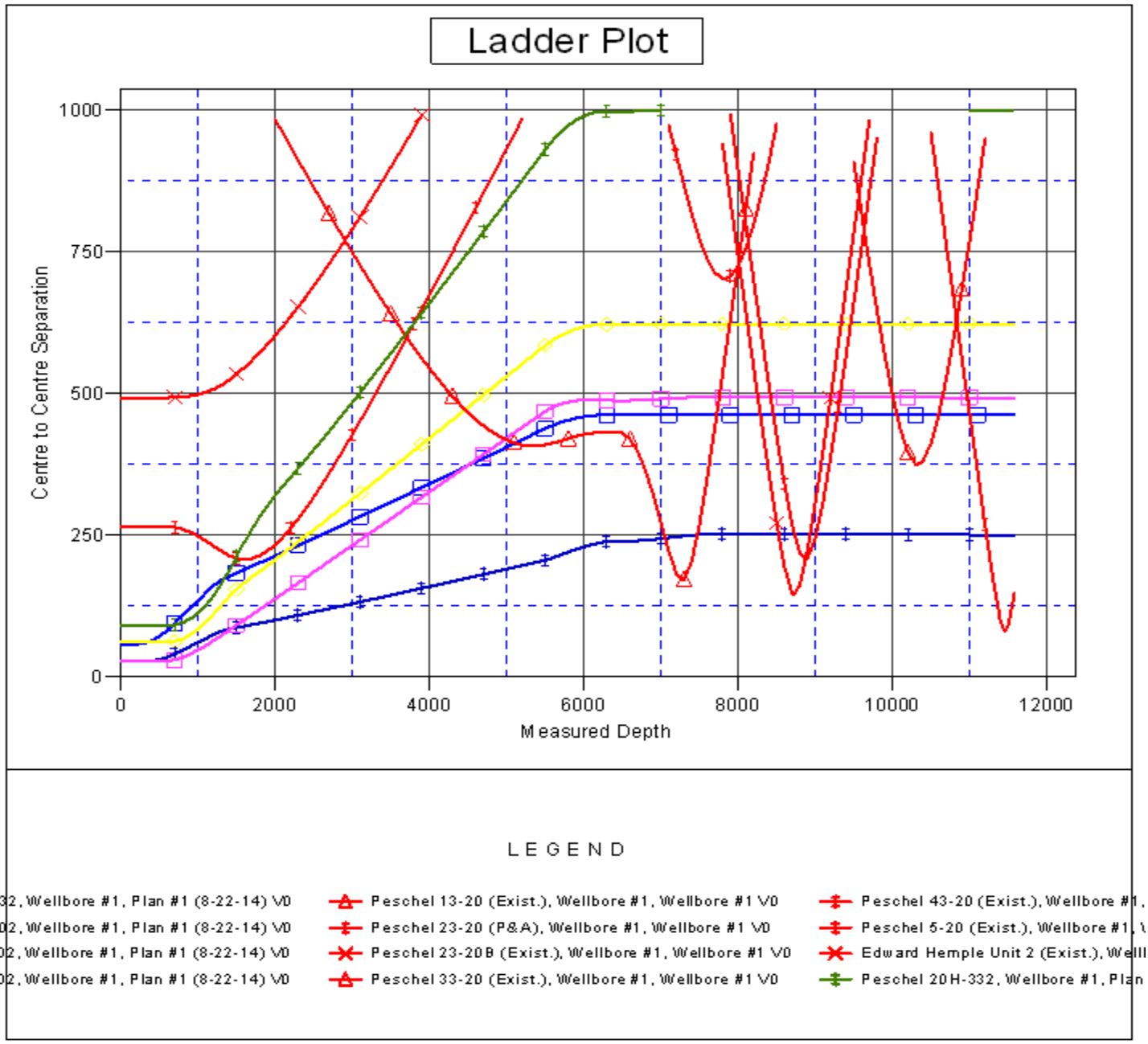
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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
5,100.0	4,954.9	5,051.6	4,977.6	24.0	17.6	-139.53	-45.6	-701.2	858.1	822.0	36.14	23.743	
5,200.0	5,051.2	5,149.8	5,073.5	24.5	18.0	-139.26	-44.2	-722.4	876.3	839.2	37.08	23.633	
5,300.0	5,147.6	5,248.1	5,169.4	25.1	18.5	-139.00	-42.8	-743.5	894.4	856.4	38.01	23.529	
5,400.0	5,243.9	5,346.3	5,265.4	25.6	18.9	-138.75	-41.4	-764.7	912.6	873.7	38.95	23.429	
5,500.0	5,340.3	5,444.6	5,361.3	26.2	19.4	-138.52	-40.0	-785.9	930.8	890.9	39.89	23.335	
5,600.0	5,437.2	5,543.0	5,457.4	26.6	19.9	-138.44	-38.7	-807.1	947.6	906.8	40.77	23.244	
5,700.0	5,534.8	5,641.7	5,553.8	27.0	20.3	-138.19	-37.3	-828.4	961.8	920.2	41.63	23.101	
5,800.0	5,633.2	5,738.8	5,648.7	27.3	20.7	-137.84	-36.0	-848.5	973.6	931.2	42.39	22.966	
5,900.0	5,732.1	5,835.6	5,744.0	27.6	21.0	-137.53	-34.8	-865.4	983.1	940.1	43.02	22.855	
6,000.0	5,831.5	5,932.9	5,840.3	27.8	21.3	-137.24	-33.9	-879.3	990.4	946.8	43.55	22.742	
6,100.0	5,931.2	6,030.6	5,937.4	28.0	21.5	-136.99	-33.3	-889.9	995.3	951.3	43.99	22.626	
6,200.0	6,031.1	6,128.5	6,035.1	28.1	21.7	-136.77	-32.8	-897.2	998.0	953.6	44.34	22.507	
6,300.0	6,131.1	6,226.7	6,133.3	28.2	21.8	-179.09	-32.5	-901.1	998.4	960.7	37.65	26.518	
6,400.0	6,231.1	6,325.6	6,232.1	28.3	22.0	-179.04	-32.5	-901.9	998.3	960.4	37.94	26.315	
6,439.4	6,270.5	6,365.0	6,271.5	28.4	22.0	90.98	-32.5	-901.9	998.3	953.3	44.99	22.190	
6,500.0	6,331.1	6,425.6	6,332.1	28.4	22.1	91.02	-32.5	-901.9	998.3	953.2	45.15	22.111	
6,600.0	6,430.3	6,527.4	6,433.8	28.4	22.2	91.51	-32.5	-898.6	998.5	953.2	45.34	22.023	
6,700.0	6,527.1	6,631.2	6,536.2	28.3	22.1	92.02	-32.5	-882.0	998.8	953.5	45.28	22.058	
6,800.0	6,619.9	6,736.3	6,636.6	28.2	22.0	92.50	-32.5	-851.3	999.1	954.1	45.01	22.197	
6,900.0	6,707.1	6,842.6	6,732.9	27.9	21.8	92.93	-32.5	-806.4	999.5	954.9	44.61	22.407	
7,000.0	6,787.1	6,950.1	6,823.0	27.7	21.6	93.31	-32.5	-748.0	999.9	955.7	44.17	22.635	
11,000.0	7,007.2	11,015.2	7,068.0	108.2	108.5	93.42	-32.5	3,220.1	1,000.0	783.6	216.34	4.622	
11,100.0	7,005.8	11,115.2	7,066.2	110.9	111.2	93.40	-32.5	3,320.1	1,000.0	778.1	221.83	4.508	
11,200.0	7,004.4	11,215.2	7,064.4	113.7	114.0	93.38	-32.5	3,420.1	999.9	772.6	227.33	4.399	
11,300.0	7,003.0	11,315.2	7,062.7	116.4	116.7	93.36	-32.5	3,520.1	999.9	767.1	232.83	4.295	
11,400.0	7,001.6	11,415.2	7,060.9	119.2	119.5	93.34	-32.5	3,620.1	999.9	761.6	238.34	4.195	
11,500.0	7,000.2	11,515.2	7,059.2	121.9	122.3	93.32	-32.5	3,720.0	999.9	756.0	243.85	4.100	
11,553.6	6,999.4	11,568.8	7,058.2	123.4	123.7	93.31	-32.5	3,773.6	999.9	753.1	246.81	4.051	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 @ 4816.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Peschel 20G-232
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.52°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peschel 20G-232
Project:	SEC.20-T4N-R65W	**TVD Reference:**	WELL @ 4816.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	**MD Reference:**	WELL @ 4816.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peschel 20G-232	**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 @ 4816.0ft (RKB - 15')	Coordinates are relative to: Peschel 20G-232
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°