

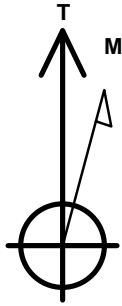
# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Dunn 71-221**

Surface Location: Dunn 5N64W7 Pad Sec.7-T5N-R64W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4625.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1392935.84 3251104.47 40.408506 -104.598273  
 Original Well Elev WELL @ 4638.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 780'FSL & 981'FWL, Sec. 7	1.0	0.0	0.0	Point
BHL 200'FNL & 596'FWL, Sec.6	6723.0	9498.0	-356.0	Point



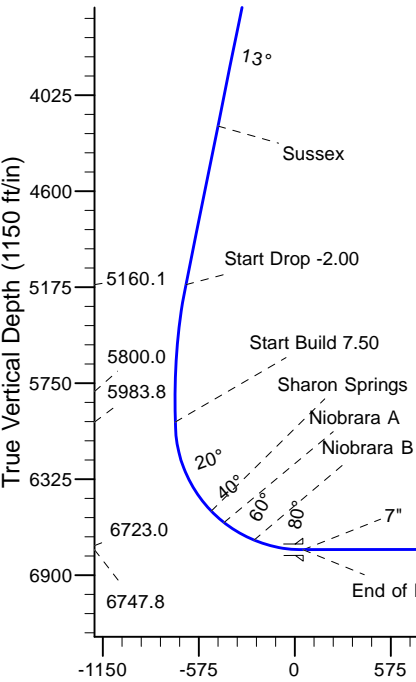
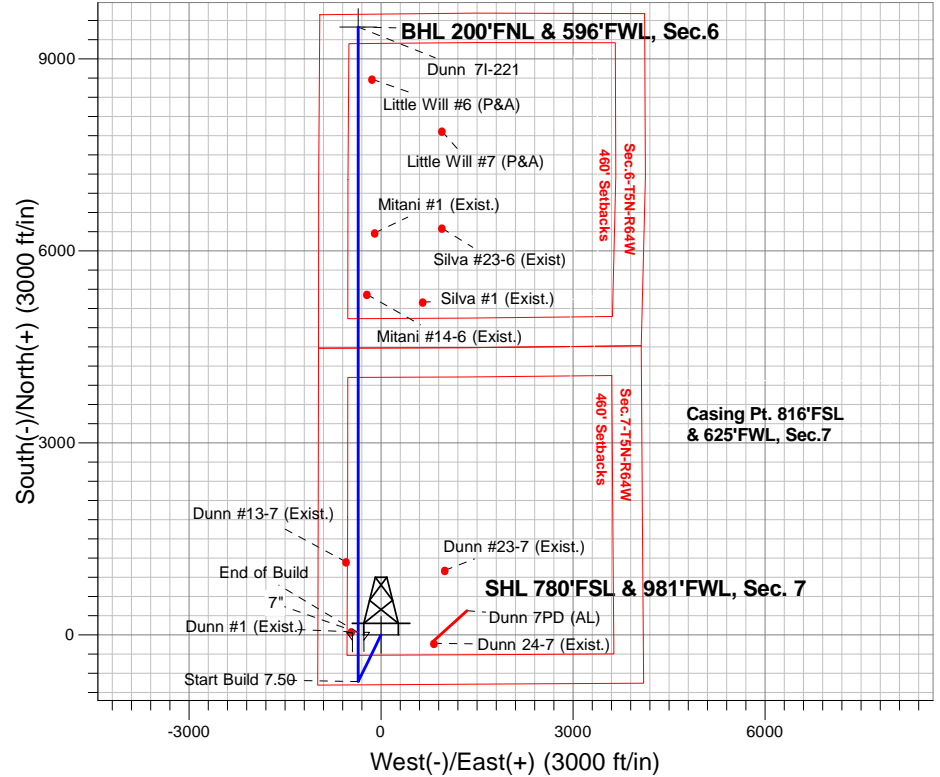
Azimuths to True North  
 Magnetic North: 8.20°

Magnetic Field  
 Strength: 52704.0snT  
 Dip Angle: 66.93°  
 Date: 9/24/2015  
 Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP - Start Build 1.50
5160.0	5240.1	Start Drop -2.00
5800.0	5885.5	Start 183.8 hold at 5885.5 MD
5983.8	6069.3	Start Build 7.50
6747.8	7271.3	End of Build
6723.0	16733.4	TD at 16733.4

Dunn 5N64W7 Pad Sec.7-T5N-R64W  
 Dunn 71-221  
 Plan #1 (9-10-15)  
 5:17, September 24 2015



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	2360.6	12.91	206.00	2353.3	-86.8	-42.3	1.50	206.00	-85.1	
4	5240.1	12.91	206.00	5160.0	-664.9	-324.3	0.00	0.00	-652.3	
5	5885.5	0.00	0.00	5800.0	-730.0	-356.0	2.00	180.00	-716.2	
6	6069.3	0.00	0.00	5983.8	-730.0	-356.0	0.00	0.00	-716.2	
7	7271.3	90.15	360.00	6747.8	35.9	-356.0	7.50	360.00	49.3	
8	16733.4	90.15	360.00	6723.0	9498.0	-356.0	0.00	0.00	9504.7	BHL 200'FNL & 596'FWL, Sec.6

BHL 200'FNL & 596'FWL, Sec.6

TD at 16733.4

Vertical Section at 357.85° (1150 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

**Dunn 5N64W7 Pad Sec.7-T5N-R64W**

**Dunn 7I-221**

**Wellbore #1**

**Plan: Plan #1 (9-10-15)**

## **Standard Planning Report**

**24 September, 2015**



<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

<b>Project</b>	SEC.7-T5N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W				
<b>Site Position:</b>		<b>Northing:</b>	1,392,981.02 usft	<b>Latitude:</b>	40.408630
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,251,104.57 usft	<b>Longitude:</b>	-104.598271
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.58 °

<b>Well</b>	Dunn 71-221					
<b>Well Position</b>	<b>+N/-S</b>	-45.2 ft	<b>Northing:</b>	1,392,935.84 usft	<b>Latitude:</b>	40.408506
	<b>+E/-W</b>	-0.6 ft	<b>Easting:</b>	3,251,104.47 usft	<b>Longitude:</b>	-104.598273
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	0.0 ft	<b>Ground Level:</b>	4,625.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/24/2015	8.20	66.93	52,704

<b>Design</b>	Plan #1 (9-10-15)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	357.85

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,360.6	12.91	206.00	2,353.3	-86.8	-42.3	1.50	1.50	0.00	206.00	
5,240.1	12.91	206.00	5,160.0	-664.9	-324.3	0.00	0.00	0.00	0.00	
5,885.5	0.00	0.00	5,800.0	-730.0	-356.0	2.00	-2.00	0.00	180.00	
6,069.3	0.00	0.00	5,983.8	-730.0	-356.0	0.00	0.00	0.00	0.00	
7,271.3	90.15	360.00	6,747.8	35.9	-356.0	7.50	7.50	0.00	360.00	
16,733.4	90.15	360.00	6,723.0	9,498.0	-356.0	0.00	0.00	0.00	0.00	BHL 200'FNL & 596'F

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>SHL 780'FSL &amp; 981'FWL, Sec. 7</b>										
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>KOP - Start Build 1.50</b>										
1,600.0	1.50	206.00	1,600.0	-1.2	-0.6	-1.2	1.50	1.50	0.00	
1,700.0	3.00	206.00	1,699.9	-4.7	-2.3	-4.6	1.50	1.50	0.00	
1,800.0	4.50	206.00	1,799.7	-10.6	-5.2	-10.4	1.50	1.50	0.00	
1,900.0	6.00	206.00	1,899.3	-18.8	-9.2	-18.4	1.50	1.50	0.00	
2,000.0	7.50	206.00	1,998.6	-29.4	-14.3	-28.8	1.50	1.50	0.00	
2,100.0	9.00	206.00	2,097.5	-42.3	-20.6	-41.5	1.50	1.50	0.00	
2,200.0	10.50	206.00	2,196.1	-57.5	-28.0	-56.4	1.50	1.50	0.00	
2,300.0	12.00	206.00	2,294.2	-75.0	-36.6	-73.6	1.50	1.50	0.00	
2,360.6	12.91	206.00	2,353.3	-86.8	-42.3	-85.1	1.50	1.50	0.00	
2,400.0	12.91	206.00	2,391.7	-94.7	-46.2	-92.9	0.00	0.00	0.00	
2,500.0	12.91	206.00	2,489.2	-114.8	-56.0	-112.6	0.00	0.00	0.00	
2,600.0	12.91	206.00	2,586.7	-134.8	-65.8	-132.3	0.00	0.00	0.00	
2,700.0	12.91	206.00	2,684.2	-154.9	-75.5	-152.0	0.00	0.00	0.00	
2,800.0	12.91	206.00	2,781.6	-175.0	-85.3	-171.7	0.00	0.00	0.00	
2,900.0	12.91	206.00	2,879.1	-195.1	-95.1	-191.4	0.00	0.00	0.00	
3,000.0	12.91	206.00	2,976.6	-215.2	-104.9	-211.1	0.00	0.00	0.00	
3,100.0	12.91	206.00	3,074.1	-235.2	-114.7	-230.8	0.00	0.00	0.00	
3,200.0	12.91	206.00	3,171.5	-255.3	-124.5	-250.5	0.00	0.00	0.00	
3,300.0	12.91	206.00	3,269.0	-275.4	-134.3	-270.2	0.00	0.00	0.00	
3,400.0	12.91	206.00	3,366.5	-295.5	-144.1	-289.9	0.00	0.00	0.00	
3,500.0	12.91	206.00	3,463.9	-315.5	-153.9	-309.6	0.00	0.00	0.00	
3,526.7	12.91	206.00	3,490.0	-320.9	-156.5	-314.8	0.00	0.00	0.00	
<b>Parkman</b>										
3,600.0	12.91	206.00	3,561.4	-335.6	-163.7	-329.3	0.00	0.00	0.00	
3,700.0	12.91	206.00	3,658.9	-355.7	-173.5	-349.0	0.00	0.00	0.00	
3,800.0	12.91	206.00	3,756.4	-375.8	-183.3	-368.7	0.00	0.00	0.00	
3,900.0	12.91	206.00	3,853.8	-395.9	-193.1	-388.4	0.00	0.00	0.00	
4,000.0	12.91	206.00	3,951.3	-415.9	-202.8	-408.0	0.00	0.00	0.00	
4,100.0	12.91	206.00	4,048.8	-436.0	-212.6	-427.7	0.00	0.00	0.00	
4,200.0	12.91	206.00	4,146.3	-456.1	-222.4	-447.4	0.00	0.00	0.00	
4,265.4	12.91	206.00	4,210.0	-469.2	-228.8	-460.3	0.00	0.00	0.00	
<b>Sussex</b>										
4,300.0	12.91	206.00	4,243.7	-476.2	-232.2	-467.1	0.00	0.00	0.00	
4,400.0	12.91	206.00	4,341.2	-496.3	-242.0	-486.8	0.00	0.00	0.00	

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<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	12.91	206.00	4,438.7	-516.3	-251.8	-506.5	0.00	0.00	0.00
4,600.0	12.91	206.00	4,536.1	-536.4	-261.6	-526.2	0.00	0.00	0.00
4,700.0	12.91	206.00	4,633.6	-556.5	-271.4	-545.9	0.00	0.00	0.00
4,800.0	12.91	206.00	4,731.1	-576.6	-281.2	-565.6	0.00	0.00	0.00
4,900.0	12.91	206.00	4,828.6	-596.6	-291.0	-585.3	0.00	0.00	0.00
5,000.0	12.91	206.00	4,926.0	-616.7	-300.8	-605.0	0.00	0.00	0.00
5,100.0	12.91	206.00	5,023.5	-636.8	-310.6	-624.7	0.00	0.00	0.00
5,200.0	12.91	206.00	5,121.0	-656.9	-320.3	-644.4	0.00	0.00	0.00
5,240.1	12.91	206.00	5,160.1	-664.9	-324.3	-652.3	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,300.0	11.71	206.00	5,218.6	-676.4	-329.9	-663.6	2.00	-2.00	0.00
5,400.0	9.71	206.00	5,316.8	-693.1	-338.0	-680.0	2.00	-2.00	0.00
5,500.0	7.71	206.00	5,415.7	-706.7	-344.6	-693.3	2.00	-2.00	0.00
5,600.0	5.71	206.00	5,515.0	-717.2	-349.8	-703.6	2.00	-2.00	0.00
5,700.0	3.71	206.00	5,614.7	-724.6	-353.4	-710.9	2.00	-2.00	0.00
5,800.0	1.71	206.00	5,714.5	-728.9	-355.4	-715.0	2.00	-2.00	0.00
5,885.5	0.00	0.00	5,800.0	-730.0	-356.0	-716.2	2.00	-2.00	0.00
<b>Start 183.8 hold at 5885.5 MD</b>									
5,900.0	0.00	0.00	5,814.5	-730.0	-356.0	-716.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,914.5	-730.0	-356.0	-716.2	0.00	0.00	0.00
6,069.3	0.00	0.00	5,983.8	-730.0	-356.0	-716.2	0.00	0.00	0.00
<b>Start Build 7.50</b>									
6,100.0	2.30	360.00	6,014.5	-729.4	-356.0	-715.5	7.50	7.50	0.00
6,200.0	9.80	360.00	6,113.9	-718.8	-356.0	-705.0	7.50	7.50	0.00
6,300.0	17.30	360.00	6,211.0	-695.4	-356.0	-681.6	7.50	7.50	0.00
6,400.0	24.80	360.00	6,304.3	-659.5	-356.0	-645.7	7.50	7.50	0.00
6,500.0	32.30	360.00	6,392.1	-611.8	-356.0	-598.0	7.50	7.50	0.00
6,600.0	39.80	360.00	6,472.9	-553.0	-356.0	-539.2	7.50	7.50	0.00
6,658.0	44.16	360.00	6,516.0	-514.1	-356.0	-500.5	7.50	7.50	0.00
<b>Sharon Springs</b>									
6,700.0	47.30	360.00	6,545.3	-484.1	-356.0	-470.4	7.50	7.50	0.00
6,761.3	51.90	360.00	6,585.0	-437.4	-356.0	-423.8	7.50	7.50	0.00
<b>Niobrara A</b>									
6,800.0	54.80	360.00	6,608.1	-406.4	-356.0	-392.8	7.50	7.50	0.00
6,900.0	62.30	360.00	6,660.2	-321.1	-356.0	-307.6	7.50	7.50	0.00
6,970.3	67.57	360.00	6,690.0	-257.5	-356.0	-244.0	7.50	7.50	0.00
<b>Niobrara B</b>									
7,000.0	69.80	360.00	6,700.8	-229.8	-356.0	-216.3	7.50	7.50	0.00
7,100.0	77.30	360.00	6,729.1	-134.0	-356.0	-120.5	7.50	7.50	0.00
7,200.0	84.80	360.00	6,744.6	-35.3	-356.0	-21.9	7.50	7.50	0.00
7,271.3	90.15	360.00	6,747.8	35.9	-356.0	49.2	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,300.0	90.15	360.00	6,747.7	64.6	-356.0	77.9	0.00	0.00	0.00
7,400.0	90.15	360.00	6,747.4	164.6	-356.0	177.9	0.00	0.00	0.00
7,500.0	90.15	360.00	6,747.2	264.6	-356.0	277.8	0.00	0.00	0.00
7,600.0	90.15	360.00	6,746.9	364.6	-356.0	377.7	0.00	0.00	0.00
7,700.0	90.15	360.00	6,746.6	464.6	-356.0	477.6	0.00	0.00	0.00
7,800.0	90.15	360.00	6,746.4	564.6	-356.0	577.6	0.00	0.00	0.00
7,900.0	90.15	360.00	6,746.1	664.6	-356.0	677.5	0.00	0.00	0.00
8,000.0	90.15	360.00	6,745.9	764.6	-356.0	777.4	0.00	0.00	0.00
8,100.0	90.15	360.00	6,745.6	864.6	-356.0	877.4	0.00	0.00	0.00
8,200.0	90.15	360.00	6,745.3	964.6	-356.0	977.3	0.00	0.00	0.00

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,300.0	90.15	360.00	6,745.1	1,064.6	-356.0	1,077.2	0.00	0.00	0.00	
8,400.0	90.15	360.00	6,744.8	1,164.6	-356.0	1,177.2	0.00	0.00	0.00	
8,500.0	90.15	360.00	6,744.6	1,264.6	-356.0	1,277.1	0.00	0.00	0.00	
8,600.0	90.15	360.00	6,744.3	1,364.6	-356.0	1,377.0	0.00	0.00	0.00	
8,700.0	90.15	360.00	6,744.0	1,464.6	-356.0	1,476.9	0.00	0.00	0.00	
8,800.0	90.15	360.00	6,743.8	1,564.6	-356.0	1,576.9	0.00	0.00	0.00	
8,900.0	90.15	360.00	6,743.5	1,664.6	-356.0	1,676.8	0.00	0.00	0.00	
9,000.0	90.15	360.00	6,743.2	1,764.6	-356.0	1,776.7	0.00	0.00	0.00	
9,100.0	90.15	360.00	6,743.0	1,864.6	-356.0	1,876.7	0.00	0.00	0.00	
9,200.0	90.15	360.00	6,742.7	1,964.6	-356.0	1,976.6	0.00	0.00	0.00	
9,300.0	90.15	360.00	6,742.5	2,064.6	-356.0	2,076.5	0.00	0.00	0.00	
9,400.0	90.15	360.00	6,742.2	2,164.6	-356.0	2,176.4	0.00	0.00	0.00	
9,500.0	90.15	360.00	6,741.9	2,264.6	-356.0	2,276.4	0.00	0.00	0.00	
9,600.0	90.15	360.00	6,741.7	2,364.6	-356.0	2,376.3	0.00	0.00	0.00	
9,700.0	90.15	360.00	6,741.4	2,464.6	-356.0	2,476.2	0.00	0.00	0.00	
9,800.0	90.15	360.00	6,741.2	2,564.6	-356.0	2,576.2	0.00	0.00	0.00	
9,900.0	90.15	360.00	6,740.9	2,664.6	-356.0	2,676.1	0.00	0.00	0.00	
10,000.0	90.15	360.00	6,740.6	2,764.6	-356.0	2,776.0	0.00	0.00	0.00	
10,100.0	90.15	360.00	6,740.4	2,864.6	-356.0	2,876.0	0.00	0.00	0.00	
10,200.0	90.15	360.00	6,740.1	2,964.6	-356.0	2,975.9	0.00	0.00	0.00	
10,300.0	90.15	360.00	6,739.8	3,064.6	-356.0	3,075.8	0.00	0.00	0.00	
10,400.0	90.15	360.00	6,739.6	3,164.6	-356.0	3,175.7	0.00	0.00	0.00	
10,500.0	90.15	360.00	6,739.3	3,264.6	-356.0	3,275.7	0.00	0.00	0.00	
10,600.0	90.15	360.00	6,739.1	3,364.6	-356.0	3,375.6	0.00	0.00	0.00	
10,700.0	90.15	360.00	6,738.8	3,464.6	-356.0	3,475.5	0.00	0.00	0.00	
10,800.0	90.15	360.00	6,738.5	3,564.6	-356.0	3,575.5	0.00	0.00	0.00	
10,900.0	90.15	360.00	6,738.3	3,664.6	-356.0	3,675.4	0.00	0.00	0.00	
11,000.0	90.15	360.00	6,738.0	3,764.6	-356.0	3,775.3	0.00	0.00	0.00	
11,100.0	90.15	360.00	6,737.7	3,864.6	-356.0	3,875.2	0.00	0.00	0.00	
11,200.0	90.15	360.00	6,737.5	3,964.6	-356.0	3,975.2	0.00	0.00	0.00	
11,300.0	90.15	360.00	6,737.2	4,064.6	-356.0	4,075.1	0.00	0.00	0.00	
11,400.0	90.15	360.00	6,737.0	4,164.6	-356.0	4,175.0	0.00	0.00	0.00	
11,500.0	90.15	360.00	6,736.7	4,264.6	-356.0	4,275.0	0.00	0.00	0.00	
11,600.0	90.15	360.00	6,736.4	4,364.6	-356.0	4,374.9	0.00	0.00	0.00	
11,700.0	90.15	360.00	6,736.2	4,464.6	-356.0	4,474.8	0.00	0.00	0.00	
11,800.0	90.15	360.00	6,735.9	4,564.6	-356.0	4,574.8	0.00	0.00	0.00	
11,900.0	90.15	360.00	6,735.7	4,664.6	-356.0	4,674.7	0.00	0.00	0.00	
12,000.0	90.15	360.00	6,735.4	4,764.6	-356.0	4,774.6	0.00	0.00	0.00	
12,100.0	90.15	360.00	6,735.1	4,864.6	-356.0	4,874.5	0.00	0.00	0.00	
12,200.0	90.15	360.00	6,734.9	4,964.6	-356.0	4,974.5	0.00	0.00	0.00	
12,300.0	90.15	360.00	6,734.6	5,064.6	-356.0	5,074.4	0.00	0.00	0.00	
12,400.0	90.15	360.00	6,734.3	5,164.6	-356.0	5,174.3	0.00	0.00	0.00	
12,500.0	90.15	360.00	6,734.1	5,264.6	-356.0	5,274.3	0.00	0.00	0.00	
12,600.0	90.15	360.00	6,733.8	5,364.6	-356.0	5,374.2	0.00	0.00	0.00	
12,700.0	90.15	360.00	6,733.6	5,464.6	-356.0	5,474.1	0.00	0.00	0.00	
12,800.0	90.15	360.00	6,733.3	5,564.6	-356.0	5,574.1	0.00	0.00	0.00	
12,900.0	90.15	360.00	6,733.0	5,664.6	-356.0	5,674.0	0.00	0.00	0.00	
13,000.0	90.15	360.00	6,732.8	5,764.6	-356.0	5,773.9	0.00	0.00	0.00	
13,100.0	90.15	360.00	6,732.5	5,864.6	-356.0	5,873.8	0.00	0.00	0.00	
13,200.0	90.15	360.00	6,732.3	5,964.6	-356.0	5,973.8	0.00	0.00	0.00	
13,300.0	90.15	360.00	6,732.0	6,064.6	-356.0	6,073.7	0.00	0.00	0.00	
13,400.0	90.15	360.00	6,731.7	6,164.6	-356.0	6,173.6	0.00	0.00	0.00	
13,500.0	90.15	360.00	6,731.5	6,264.6	-356.0	6,273.6	0.00	0.00	0.00	

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,600.0	90.15	360.00	6,731.2	6,364.6	-356.0	6,373.5	0.00	0.00	0.00	
13,700.0	90.15	360.00	6,730.9	6,464.6	-356.0	6,473.4	0.00	0.00	0.00	
13,800.0	90.15	360.00	6,730.7	6,564.6	-356.0	6,573.3	0.00	0.00	0.00	
13,900.0	90.15	360.00	6,730.4	6,664.6	-356.0	6,673.3	0.00	0.00	0.00	
14,000.0	90.15	360.00	6,730.2	6,764.6	-356.0	6,773.2	0.00	0.00	0.00	
14,100.0	90.15	360.00	6,729.9	6,864.6	-356.0	6,873.1	0.00	0.00	0.00	
14,200.0	90.15	360.00	6,729.6	6,964.6	-356.0	6,973.1	0.00	0.00	0.00	
14,300.0	90.15	360.00	6,729.4	7,064.6	-356.0	7,073.0	0.00	0.00	0.00	
14,400.0	90.15	360.00	6,729.1	7,164.6	-356.0	7,172.9	0.00	0.00	0.00	
14,500.0	90.15	360.00	6,728.8	7,264.6	-356.0	7,272.9	0.00	0.00	0.00	
14,600.0	90.15	360.00	6,728.6	7,364.6	-356.0	7,372.8	0.00	0.00	0.00	
14,700.0	90.15	360.00	6,728.3	7,464.6	-356.0	7,472.7	0.00	0.00	0.00	
14,800.0	90.15	360.00	6,728.1	7,564.6	-356.0	7,572.6	0.00	0.00	0.00	
14,900.0	90.15	360.00	6,727.8	7,664.6	-356.0	7,672.6	0.00	0.00	0.00	
15,000.0	90.15	360.00	6,727.5	7,764.6	-356.0	7,772.5	0.00	0.00	0.00	
15,100.0	90.15	360.00	6,727.3	7,864.6	-356.0	7,872.4	0.00	0.00	0.00	
15,200.0	90.15	360.00	6,727.0	7,964.6	-356.0	7,972.4	0.00	0.00	0.00	
15,300.0	90.15	360.00	6,726.8	8,064.6	-356.0	8,072.3	0.00	0.00	0.00	
15,400.0	90.15	360.00	6,726.5	8,164.6	-356.0	8,172.2	0.00	0.00	0.00	
15,500.0	90.15	360.00	6,726.2	8,264.6	-356.0	8,272.1	0.00	0.00	0.00	
15,600.0	90.15	360.00	6,726.0	8,364.6	-356.0	8,372.1	0.00	0.00	0.00	
15,700.0	90.15	360.00	6,725.7	8,464.6	-356.0	8,472.0	0.00	0.00	0.00	
15,800.0	90.15	360.00	6,725.4	8,564.6	-356.0	8,571.9	0.00	0.00	0.00	
15,900.0	90.15	360.00	6,725.2	8,664.6	-356.0	8,671.9	0.00	0.00	0.00	
16,000.0	90.15	360.00	6,724.9	8,764.6	-356.0	8,771.8	0.00	0.00	0.00	
16,100.0	90.15	360.00	6,724.7	8,864.6	-356.0	8,871.7	0.00	0.00	0.00	
16,200.0	90.15	360.00	6,724.4	8,964.6	-356.0	8,971.7	0.00	0.00	0.00	
16,300.0	90.15	360.00	6,724.1	9,064.6	-356.0	9,071.6	0.00	0.00	0.00	
16,400.0	90.15	360.00	6,723.9	9,164.6	-356.0	9,171.5	0.00	0.00	0.00	
16,500.0	90.15	360.00	6,723.6	9,264.6	-356.0	9,271.4	0.00	0.00	0.00	
16,600.0	90.15	360.00	6,723.3	9,364.6	-356.0	9,371.4	0.00	0.00	0.00	
16,700.0	90.15	360.00	6,723.1	9,464.6	-356.0	9,471.3	0.00	0.00	0.00	
16,733.4	90.15	360.00	6,723.0	9,498.0	-356.0	9,504.7	0.00	0.00	0.00	
TD at 16733.4 - BHL 200'FNL & 596'FWL, Sec.6										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 780'FSL & 981'FWL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,392,935.85	3,251,104.47	40.408506	-104.598273	
BHL 200'FNL & 596'FWL - plan hits target center - Point	0.00	0.00	6,723.0	9,498.0	-356.0	1,402,429.37	3,250,651.88	40.434577	-104.599552	

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,271.3	6,747.8	7"	7	7-1/2	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,526.7	3,490.0	Parkman		0.00	
4,265.4	4,210.0	Sussex		0.00	
6,658.0	6,516.0	Sharon Springs		0.00	
6,761.3	6,585.0	Niobrara A		0.00	
6,970.3	6,690.0	Niobrara B		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 1.50	
5,240.1	5,160.0	-86.8	-42.3	Start Drop -2.00	
5,885.5	5,800.0	-664.9	-324.3	Start 183.8 hold at 5885.5 MD	
6,069.3	5,983.8	-730.0	-356.0	Start Build 7.50	
7,271.3	6,747.8	-730.0	-356.0	End of Build	
16,733.4	6,723.0	35.9	-356.0	TD at 16733.4	



# Directional

## **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

**Dunn 5N64W7 Pad Sec.7-T5N-R64W**

**Dunn 7I-221**

**Wellbore #1**

**Plan #1 (9-10-15)**

## **Anticollision Report**

**24 September, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (9-10-15)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 800.0 ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	9/24/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	16,733.4	Plan #1 (9-10-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
Dunn 5N64W7 Pad Sec.7-T5N-R64W						
Dunn 71-201 - Wellbore #1 - Plan #1 (9-8-15)	1,500.0	1,500.0	30.2	23.7	4.640	CC, ES
Dunn 71-201 - Wellbore #1 - Plan #1 (9-8-15)	16,733.4	16,822.3	420.9	49.1	1.132	Level 2, SF
Dunn 71-321 - Wellbore #1 - Plan #1 (9-10-15)	1,500.0	1,500.0	15.3	8.8	2.348	CC
Dunn 71-321 - Wellbore #1 - Plan #1 (9-10-15)	16,733.4	16,839.0	238.5	-119.8	0.666	Level 1, ES, SF
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)	1,400.0	1,400.0	14.9	8.9	2.461	CC, ES
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)	16,733.4	16,707.2	598.2	224.3	1.600	SF
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	500.0	500.0	44.8	42.8	22.150	CC, ES
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	800.0	797.0	53.4	50.1	16.225	SF
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	1,200.0	1,200.0	29.9	24.7	5.779	CC, ES
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	1,300.0	1,299.3	31.0	25.4	5.535	SF
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	1,500.0	1,500.0	45.2	38.7	6.931	CC
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	16,733.4	16,830.6	341.3	-24.7	0.932	Level 1, ES, SF
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	200.0	200.0	104.9	104.3	155.612	CC
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	300.0	299.1	105.3	104.2	95.106	ES
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	1,000.0	982.0	152.3	148.0	35.392	SF
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	600.0	600.0	74.7	72.2	30.208	CC, ES
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	1,100.0	1,092.9	93.6	89.0	20.234	SF
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	400.0	400.0	90.0	88.4	57.196	CC, ES
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	1,100.0	1,086.4	127.7	123.1	27.366	SF
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	800.0	800.0	59.7	56.4	17.722	CC, ES
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	1,100.0	1,096.9	66.7	62.0	14.381	SF
<b>Dunn Pad Sec.7-T5N-R64W</b>						
Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Dunn 7PD (AL) - Wellbore #1 - Design #1						Out of range
<b>Existing Wells - Sec.7-T5N-R64W</b>						
Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1	7,283.1	6,734.7	108.5	-43.5	0.714	Level 1, CC, ES, SF
Dunn #13-7 (Exist.) - Wellbore #1 - Wellbore #1	8,374.2	6,729.9	191.5	26.4	1.160	Level 2, CC, ES, SF
Dunn #23-7 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Little Will #6 (P&A) - Wellbore #1 - Wellbore #1	15,916.6	6,714.1	216.0	-89.3	0.707	Level 1, CC, ES, SF
Little Will #7 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Mitani #1 (Exist.) - Wellbore #1 - Wellbore #1	13,514.3	6,703.4	255.5	-3.8	0.985	Level 1, CC, ES, SF
Mitani #14-6 (Exist.) - Wellbore #1 - Wellbore #1	12,554.0	6,695.9	134.7	-106.2	0.559	Level 1, CC, ES, SF
Silva #1 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Silva #23-6 (Exist.) - Wellbore #1 - Wellbore #1						Out of range

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-201 - Wellbore #1 - Plan #1 (9-8-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	1.06	30.2	0.6	30.2	30.2	0.00	N/A				
100.0	100.0	100.0	100.0	0.1	0.1	1.06	30.2	0.6	30.2	30.0	0.22	134.584				
200.0	200.0	200.0	200.0	0.3	0.3	1.06	30.2	0.6	30.2	29.6	0.67	44.859				
300.0	300.0	300.0	300.0	0.6	0.6	1.06	30.2	0.6	30.2	29.1	1.12	26.915				
400.0	400.0	400.0	400.0	0.8	0.8	1.06	30.2	0.6	30.2	28.7	1.57	19.225				
500.0	500.0	500.0	500.0	1.0	1.0	1.06	30.2	0.6	30.2	28.2	2.02	14.953				
600.0	600.0	600.0	600.0	1.2	1.2	1.06	30.2	0.6	30.2	27.8	2.47	12.234				
700.0	700.0	700.0	700.0	1.5	1.5	1.06	30.2	0.6	30.2	27.3	2.92	10.352				
800.0	800.0	800.0	800.0	1.7	1.7	1.06	30.2	0.6	30.2	26.9	3.37	8.972				
900.0	900.0	900.0	900.0	1.9	1.9	1.06	30.2	0.6	30.2	26.4	3.82	7.916				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	1.06	30.2	0.6	30.2	26.0	4.27	7.083				
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	1.06	30.2	0.6	30.2	25.5	4.72	6.408				
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	1.06	30.2	0.6	30.2	25.1	5.17	5.851				
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	1.06	30.2	0.6	30.2	24.6	5.62	5.383				
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	1.06	30.2	0.6	30.2	24.2	6.07	4.984				
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	1.06	30.2	0.6	30.2	23.7	6.52	4.640 CC, ES				
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	156.06	30.2	0.6	31.4	24.5	6.94	4.530				
1,700.0	1,699.9	1,699.9	1,699.9	3.6	3.7	158.64	30.2	0.6	35.1	27.7	7.34	4.780				
1,800.0	1,799.7	1,799.7	1,799.7	3.8	3.9	161.92	30.2	0.6	41.2	33.5	7.73	5.331				
1,900.0	1,899.3	1,900.3	1,900.3	4.0	4.1	164.30	29.3	-0.4	48.9	40.8	8.11	6.035				
2,000.0	1,998.6	2,001.1	2,001.1	4.2	4.3	165.19	26.5	-3.2	57.1	48.6	8.46	6.741				
2,100.0	2,097.5	2,102.1	2,101.8	4.5	4.5	165.11	21.9	-8.0	65.5	56.7	8.83	7.425				
2,200.0	2,196.1	2,203.2	2,202.5	4.7	4.7	164.41	15.4	-14.6	74.4	65.2	9.20	8.083				
2,300.0	2,294.2	2,304.5	2,303.0	5.0	4.9	163.27	7.0	-23.2	83.6	74.0	9.59	8.715				
2,360.6	2,353.3	2,365.9	2,363.8	5.2	5.1	162.44	1.0	-29.4	89.3	79.5	9.83	9.083				
2,400.0	2,391.7	2,405.9	2,403.4	5.3	5.2	161.83	-3.3	-33.7	93.0	83.0	10.01	9.285				
2,500.0	2,489.2	2,507.6	2,503.5	5.7	5.4	159.80	-15.4	-46.2	100.8	90.3	10.50	9.606				
2,600.0	2,586.7	2,609.4	2,603.3	6.1	5.7	157.11	-29.5	-60.5	106.8	95.8	11.03	9.685				
2,700.0	2,684.2	2,711.2	2,702.6	6.4	6.1	153.73	-45.4	-76.8	111.1	99.5	11.62	9.561				
2,800.0	2,781.6	2,812.8	2,801.0	6.8	6.4	149.61	-63.1	-94.9	114.0	101.7	12.30	9.269				
2,900.0	2,879.1	2,914.2	2,898.5	7.3	6.8	144.65	-82.5	-114.8	115.9	102.8	13.09	8.854				
3,000.0	2,976.6	3,015.2	2,994.8	7.7	7.3	138.79	-103.7	-136.5	117.2	103.2	14.01	8.366				
3,100.0	3,074.1	3,115.6	3,089.7	8.1	7.8	132.00	-126.6	-159.9	118.7	103.6	15.09	7.867				
3,200.0	3,171.5	3,215.3	3,183.1	8.5	8.4	124.33	-150.9	-184.8	121.1	104.8	16.30	7.429				
3,300.0	3,269.0	3,313.9	3,274.8	9.0	9.0	116.19	-176.5	-210.9	125.3	107.7	17.58	7.124				
3,400.0	3,366.5	3,412.2	3,366.0	9.4	9.6	108.62	-202.1	-237.1	131.8	113.0	18.82	7.003				
3,500.0	3,463.9	3,510.5	3,457.2	9.9	10.3	101.86	-227.7	-263.3	140.5	120.5	19.98	7.031				
3,600.0	3,561.4	3,608.8	3,548.4	10.3	10.9	95.93	-253.3	-289.5	150.9	129.9	21.06	7.168				
3,700.0	3,658.9	3,707.1	3,639.6	10.8	11.6	90.80	-278.9	-315.7	162.8	140.7	22.05	7.382				
3,800.0	3,756.4	3,805.4	3,730.8	11.2	12.3	86.39	-304.5	-341.9	175.8	152.8	22.98	7.648				
3,900.0	3,853.8	3,903.7	3,822.1	11.7	13.0	82.59	-330.1	-368.0	189.6	165.8	23.86	7.947				
4,000.0	3,951.3	4,002.0	3,913.3	12.1	13.7	79.31	-355.7	-394.2	204.2	179.5	24.71	8.265				
4,100.0	4,048.8	4,100.3	4,004.5	12.6	14.4	76.48	-381.3	-420.4	219.4	193.9	25.53	8.593				
4,200.0	4,146.3	4,198.6	4,095.7	13.1	15.1	74.01	-406.8	-446.6	235.0	208.7	26.34	8.923				
4,300.0	4,243.7	4,296.9	4,186.9	13.5	15.8	71.85	-432.4	-472.8	251.0	223.9	27.13	9.251				
4,400.0	4,341.2	4,395.2	4,278.2	14.0	16.5	69.95	-458.0	-499.0	267.3	239.4	27.92	9.575				
4,500.0	4,438.7	4,493.5	4,369.4	14.5	17.3	68.27	-483.6	-525.2	283.9	255.2	28.70	9.891				
4,600.0	4,536.1	4,591.7	4,460.6	14.9	18.0	66.78	-509.2	-551.4	300.7	271.2	29.48	10.198				
4,700.0	4,633.6	4,690.0	4,551.8	15.4	18.7	65.44	-534.8	-577.5	317.6	287.4	30.26	10.496				
4,800.0	4,731.1	4,788.3	4,643.0	15.9	19.5	64.24	-560.4	-603.7	334.7	303.7	31.04	10.784				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-201 - Wellbore #1 - Plan #1 (9-8-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,828.6	4,886.8	4,734.4	16.4	20.2	63.15	-586.1	-630.0	352.0	320.2	31.82	11.062				
5,000.0	4,926.0	4,995.3	4,835.8	16.8	20.8	62.30	-612.9	-657.4	367.9	335.4	32.55	11.303				
5,100.0	5,023.5	5,104.8	4,939.7	17.3	21.3	61.94	-637.3	-682.4	381.2	347.8	33.35	11.430				
5,200.0	5,121.0	5,215.2	5,045.5	17.8	21.9	62.03	-659.1	-704.6	391.6	357.4	34.21	11.447				
5,240.1	5,160.0	5,259.5	5,088.4	18.0	22.0	62.18	-667.0	-712.8	395.0	360.5	34.58	11.424				
5,300.0	5,218.6	5,326.0	5,153.0	18.2	22.3	62.52	-678.0	-724.0	399.6	364.5	35.09	11.387				
5,400.0	5,316.8	5,437.1	5,261.7	18.5	22.7	63.01	-694.1	-740.5	406.2	370.4	35.82	11.341				
5,500.0	5,415.7	5,548.4	5,371.3	18.8	23.1	63.39	-707.2	-753.9	411.6	375.2	36.45	11.292				
5,600.0	5,515.0	5,659.8	5,481.9	19.0	23.4	63.69	-717.4	-764.3	415.8	378.8	37.00	11.239				
5,700.0	5,614.7	5,771.4	5,593.0	19.3	23.6	63.89	-724.5	-771.6	418.8	381.3	37.45	11.183				
5,800.0	5,714.5	5,883.1	5,704.5	19.4	23.8	64.00	-728.6	-775.8	420.5	382.7	37.80	11.124				
5,885.5	5,800.0	5,978.6	5,800.0	19.5	23.9	-89.97	-729.8	-777.0	421.0	382.9	38.04	11.065				
5,900.0	5,814.5	5,993.2	5,814.5	19.6	23.9	-89.97	-729.8	-777.0	421.0	382.9	38.08	11.054				
6,000.0	5,914.5	6,093.2	5,914.5	19.7	24.1	-89.97	-729.8	-777.0	421.0	382.6	38.34	10.981				
6,046.2	5,960.7	6,139.4	5,960.7	19.7	24.1	-89.97	-729.8	-777.0	421.0	382.5	38.45	10.947				
6,069.3	5,983.8	6,162.5	5,983.8	19.8	24.1	-89.97	-729.8	-777.0	421.0	382.4	38.51	10.930				
6,100.0	6,014.5	6,193.2	6,014.5	19.8	24.2	-89.97	-729.1	-777.0	421.0	382.4	38.58	10.912				
6,150.0	6,064.4	6,243.1	6,064.3	19.8	24.2	-89.97	-725.5	-777.0	421.0	382.3	38.63	10.897				
6,200.0	6,113.9	6,293.1	6,113.8	19.8	24.2	-89.97	-718.6	-777.0	421.0	382.3	38.61	10.902				
6,250.0	6,162.8	6,343.1	6,162.8	19.8	24.1	-89.97	-708.5	-777.0	421.0	382.4	38.53	10.926				
6,300.0	6,211.0	6,393.1	6,211.0	19.7	24.1	-89.97	-695.2	-777.0	421.0	382.6	38.38	10.968				
6,350.0	6,258.3	6,443.1	6,258.2	19.6	24.0	-89.97	-678.8	-777.0	421.0	382.8	38.17	11.027				
6,400.0	6,304.3	6,493.1	6,304.2	19.5	23.9	-89.97	-659.3	-777.0	421.0	383.0	37.91	11.103				
6,450.0	6,349.0	6,543.0	6,348.9	19.4	23.7	-89.97	-636.9	-777.0	421.0	383.4	37.60	11.194				
6,500.0	6,392.1	6,593.0	6,392.0	19.2	23.6	-89.97	-611.6	-777.0	421.0	383.7	37.25	11.299				
6,550.0	6,433.4	6,643.0	6,433.3	19.0	23.4	-89.97	-583.5	-777.0	421.0	384.1	36.87	11.416				
6,600.0	6,472.9	6,693.0	6,472.7	18.9	23.2	-89.97	-552.8	-777.0	421.0	384.5	36.47	11.543				
6,650.0	6,510.2	6,743.0	6,510.1	18.7	23.0	-89.97	-519.6	-777.0	421.0	384.9	36.05	11.676				
6,700.0	6,545.3	6,793.0	6,545.2	18.5	22.8	-89.98	-484.0	-777.0	421.0	385.3	35.64	11.812				
6,750.0	6,578.0	6,843.0	6,577.8	18.3	22.6	-89.98	-446.2	-777.0	421.0	385.7	35.23	11.948				
6,800.0	6,608.1	6,893.0	6,608.0	18.1	22.4	-89.98	-406.3	-777.0	421.0	386.1	34.85	12.079				
6,850.0	6,635.6	6,943.0	6,635.4	17.9	22.1	-89.98	-364.6	-777.0	421.0	386.4	34.51	12.199				
6,900.0	6,660.2	6,992.9	6,660.1	17.7	21.9	-89.98	-321.1	-777.0	421.0	386.7	34.21	12.305				
6,950.0	6,682.0	7,042.9	6,681.9	17.6	21.7	-89.99	-276.1	-777.0	421.0	387.0	33.98	12.390				
7,000.0	6,700.8	7,092.9	6,700.7	17.4	21.5	-89.99	-229.8	-777.0	421.0	387.1	33.81	12.450				
7,050.0	6,716.5	7,142.9	6,716.4	17.3	21.3	-89.99	-182.3	-777.0	421.0	387.2	33.73	12.480				
7,100.0	6,729.1	7,192.9	6,729.0	17.3	21.1	-89.99	-134.0	-777.0	421.0	387.2	33.74	12.478				
7,150.0	6,738.5	7,242.9	6,738.4	17.2	20.9	-89.99	-84.9	-777.0	421.0	387.1	33.84	12.441				
7,200.0	6,744.6	7,292.9	6,744.6	17.2	20.7	-90.00	-35.3	-777.0	421.0	386.9	34.03	12.369				
7,250.0	6,747.5	7,342.9	6,747.5	17.3	20.6	-90.00	14.6	-777.0	421.0	386.6	34.33	12.263				
7,271.3	6,747.8	7,364.2	6,747.8	17.4	20.5	-90.00	35.9	-777.0	421.0	386.5	34.48	12.209				
7,300.0	6,747.7	7,392.9	6,747.7	17.5	20.5	-90.00	64.6	-777.0	421.0	386.2	34.72	12.125				
7,400.0	6,747.4	7,492.9	6,747.4	18.1	20.4	-90.00	164.6	-777.0	421.0	385.2	35.80	11.758				
7,500.0	6,747.2	7,592.9	6,747.2	18.9	20.6	-90.00	264.6	-777.0	421.0	383.7	37.24	11.302				
7,600.0	6,746.9	7,692.9	6,746.9	19.8	21.1	-90.00	364.6	-777.0	421.0	381.9	39.01	10.790				
7,700.0	6,746.6	7,792.9	6,746.6	21.0	22.0	-90.00	464.6	-777.0	421.0	379.9	41.07	10.250				
7,800.0	6,746.4	7,892.9	6,746.4	22.2	23.0	-90.00	564.6	-777.0	421.0	377.6	43.37	9.707				
7,900.0	6,746.1	7,992.9	6,746.1	23.5	24.2	-90.00	664.6	-777.0	421.0	375.1	45.87	9.177				
8,000.0	6,745.9	8,092.9	6,745.9	24.9	25.5	-90.00	764.6	-777.0	421.0	372.4	48.55	8.670				
8,100.0	6,745.6	8,192.9	6,745.6	26.4	26.8	-90.00	864.6	-777.0	421.0	369.6	51.38	8.193				
8,200.0	6,745.3	8,292.9	6,745.3	27.9	28.3	-90.00	964.6	-777.0	421.0	366.6	54.33	7.748				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-201 - Wellbore #1 - Plan #1 (9-8-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,300.0	6,745.1	8,392.9	6,745.1	29.4	29.7	-90.00	1,064.6	-777.0	420.9	363.6	57.39	7.335				
8,400.0	6,744.8	8,492.9	6,744.8	31.0	31.3	-90.00	1,164.6	-777.0	420.9	360.4	60.54	6.954				
8,500.0	6,744.6	8,592.9	6,744.5	32.7	32.8	-90.00	1,264.6	-777.0	420.9	357.2	63.76	6.602				
8,600.0	6,744.3	8,692.9	6,744.3	34.3	34.4	-90.00	1,364.6	-777.0	420.9	353.9	67.05	6.278				
8,700.0	6,744.0	8,792.9	6,744.0	36.0	36.0	-90.00	1,464.6	-777.0	420.9	350.6	70.39	5.980				
8,800.0	6,743.8	8,892.9	6,743.8	37.7	37.7	-90.00	1,564.6	-777.0	420.9	347.2	73.79	5.705				
8,900.0	6,743.5	8,992.9	6,743.5	39.4	39.3	-90.00	1,664.6	-777.0	420.9	343.7	77.22	5.451				
9,000.0	6,743.2	9,092.9	6,743.2	41.2	41.0	-90.00	1,764.6	-777.0	420.9	340.3	80.69	5.217				
9,100.0	6,743.0	9,192.9	6,743.0	42.9	42.7	-90.00	1,864.6	-777.0	420.9	336.7	84.20	5.000				
9,200.0	6,742.7	9,292.9	6,742.7	44.7	44.5	-90.00	1,964.6	-777.0	420.9	333.2	87.73	4.798				
9,300.0	6,742.5	9,392.9	6,742.5	46.5	46.2	-90.00	2,064.6	-777.0	420.9	329.7	91.29	4.611				
9,400.0	6,742.2	9,492.9	6,742.2	48.3	48.0	-90.00	2,164.6	-777.0	420.9	326.1	94.86	4.437				
9,500.0	6,741.9	9,592.9	6,741.9	50.1	49.7	-90.00	2,264.6	-777.0	420.9	322.5	98.46	4.275				
9,600.0	6,741.7	9,692.9	6,741.7	51.9	51.5	-90.00	2,364.6	-777.0	420.9	318.9	102.08	4.124				
9,700.0	6,741.4	9,792.9	6,741.4	53.7	53.3	-90.00	2,464.6	-777.0	420.9	315.2	105.71	3.982				
9,800.0	6,741.2	9,892.9	6,741.1	55.5	55.1	-90.00	2,564.6	-777.0	420.9	311.6	109.36	3.849				
9,900.0	6,740.9	9,992.9	6,740.9	57.4	56.9	-90.00	2,664.6	-777.0	420.9	307.9	113.02	3.724				
10,000.0	6,740.6	10,092.9	6,740.6	59.2	58.7	-90.00	2,764.6	-777.0	420.9	304.3	116.69	3.607				
10,100.0	6,740.4	10,192.9	6,740.4	61.0	60.5	-90.00	2,864.6	-777.0	420.9	300.6	120.37	3.497				
10,200.0	6,740.1	10,292.9	6,740.1	62.9	62.3	-90.00	2,964.6	-777.0	420.9	296.9	124.07	3.393				
10,300.0	6,739.8	10,392.9	6,739.8	64.7	64.1	-90.00	3,064.6	-777.0	420.9	293.2	127.77	3.295				
10,400.0	6,739.6	10,492.9	6,739.6	66.6	66.0	-90.00	3,164.6	-777.0	420.9	289.5	131.47	3.202				
10,500.0	6,739.3	10,592.9	6,739.3	68.5	67.8	-90.00	3,264.6	-777.0	420.9	285.7	135.19	3.114				
10,600.0	6,739.1	10,692.9	6,739.0	70.3	69.6	-90.00	3,364.6	-777.0	420.9	282.0	138.91	3.030				
10,700.0	6,738.8	10,792.9	6,738.8	72.2	71.5	-90.00	3,464.6	-777.0	420.9	278.3	142.64	2.951				
10,800.0	6,738.5	10,892.9	6,738.5	74.0	73.3	-90.00	3,564.6	-777.0	420.9	274.6	146.38	2.876				
10,900.0	6,738.3	10,992.9	6,738.3	75.9	75.2	-90.00	3,664.6	-777.0	420.9	270.8	150.12	2.804				
11,000.0	6,738.0	11,092.9	6,738.0	77.8	77.0	-90.00	3,764.6	-777.0	420.9	267.1	153.86	2.736				
11,100.0	6,737.7	11,192.9	6,737.7	79.7	78.9	-90.00	3,864.6	-777.0	420.9	263.3	157.61	2.671				
11,200.0	6,737.5	11,292.9	6,737.5	81.5	80.7	-90.00	3,964.6	-777.0	420.9	259.6	161.37	2.609				
11,300.0	6,737.2	11,392.9	6,737.2	83.4	82.6	-90.00	4,064.6	-777.0	420.9	255.8	165.13	2.549				
11,400.0	6,737.0	11,492.9	6,737.0	85.3	84.5	-90.00	4,164.6	-777.0	420.9	252.0	168.89	2.492				
11,500.0	6,736.7	11,592.9	6,736.7	87.2	86.3	-90.00	4,264.6	-777.0	420.9	248.3	172.65	2.438				
11,600.0	6,736.4	11,692.9	6,736.4	89.1	88.2	-90.00	4,364.6	-777.0	420.9	244.5	176.42	2.386				
11,700.0	6,736.2	11,792.9	6,736.2	90.9	90.1	-90.00	4,464.6	-777.0	420.9	240.7	180.19	2.336				
11,800.0	6,735.9	11,892.9	6,735.9	92.8	92.0	-90.00	4,564.6	-777.0	420.9	237.0	183.97	2.288				
11,900.0	6,735.7	11,992.9	6,735.6	94.7	93.8	-90.00	4,664.6	-777.0	420.9	233.2	187.74	2.242				
12,000.0	6,735.4	12,092.9	6,735.4	96.6	95.7	-90.00	4,764.6	-777.0	420.9	229.4	191.52	2.198				
12,100.0	6,735.1	12,192.9	6,735.1	98.5	97.6	-90.00	4,864.6	-777.0	420.9	225.6	195.31	2.155				
12,200.0	6,734.9	12,292.9	6,734.9	100.4	99.5	-90.00	4,964.6	-777.0	420.9	221.8	199.09	2.114				
12,300.0	6,734.6	12,392.9	6,734.6	102.3	101.3	-90.00	5,064.6	-777.0	420.9	218.1	202.88	2.075				
12,400.0	6,734.3	12,492.9	6,734.3	104.2	103.2	-90.00	5,164.6	-777.0	420.9	214.3	206.67	2.037				
12,500.0	6,734.1	12,592.9	6,734.1	106.1	105.1	-90.00	5,264.6	-777.0	420.9	210.5	210.46	2.000				
12,600.0	6,733.8	12,692.9	6,733.8	108.0	107.0	-90.00	5,364.6	-777.0	420.9	206.7	214.25	1.965				
12,700.0	6,733.6	12,792.9	6,733.5	109.9	108.9	-90.00	5,464.6	-777.0	420.9	202.9	218.04	1.930				
12,800.0	6,733.3	12,892.9	6,733.3	111.8	110.8	-90.00	5,564.6	-777.0	420.9	199.1	221.84	1.897				
12,900.0	6,733.0	12,992.9	6,733.0	113.7	112.7	-90.00	5,664.6	-777.0	420.9	195.3	225.64	1.866				
13,000.0	6,732.8	13,092.9	6,732.8	115.6	114.6	-90.00	5,764.6	-777.0	420.9	191.5	229.44	1.835				
13,100.0	6,732.5	13,192.9	6,732.5	117.5	116.4	-90.00	5,864.6	-777.0	420.9	187.7	233.24	1.805				
13,200.0	6,732.3	13,292.9	6,732.2	119.4	118.3	-90.00	5,964.6	-777.0	420.9	183.9	237.04	1.776				
13,300.0	6,732.0	13,392.9	6,732.0	121.3	120.2	-90.00	6,064.6	-777.0	420.9	180.1	240.84	1.748				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-201 - Wellbore #1 - Plan #1 (9-8-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
13,400.0	6,731.7	13,492.9	6,731.7	123.2	122.1	-90.00	6,164.6	-777.0	420.9	176.3	244.64	1.721				
13,500.0	6,731.5	13,592.9	6,731.5	125.1	124.0	-90.00	6,264.6	-777.0	420.9	172.5	248.45	1.694				
13,600.0	6,731.2	13,692.9	6,731.2	127.0	125.9	-90.00	6,364.6	-777.0	420.9	168.7	252.26	1.669				
13,700.0	6,730.9	13,792.9	6,730.9	128.9	127.8	-90.00	6,464.6	-777.0	420.9	164.9	256.06	1.644				
13,800.0	6,730.7	13,892.9	6,730.7	130.8	129.7	-90.00	6,564.6	-777.0	420.9	161.1	259.87	1.620				
13,900.0	6,730.4	13,992.9	6,730.4	132.7	131.6	-90.00	6,664.6	-777.0	420.9	157.2	263.68	1.596				
14,000.0	6,730.2	14,092.9	6,730.1	134.6	133.5	-90.00	6,764.6	-777.0	420.9	153.4	267.49	1.574				
14,100.0	6,729.9	14,192.9	6,729.9	136.5	135.4	-90.00	6,864.6	-777.0	420.9	149.6	271.30	1.551				
14,200.0	6,729.6	14,292.9	6,729.6	138.4	137.3	-90.00	6,964.6	-777.0	420.9	145.8	275.11	1.530				
14,300.0	6,729.4	14,392.9	6,729.4	140.3	139.2	-90.00	7,064.6	-777.0	420.9	142.0	278.93	1.509				
14,400.0	6,729.1	14,492.9	6,729.1	142.2	141.1	-90.00	7,164.6	-777.0	420.9	138.2	282.74	1.489	Level 3			
14,500.0	6,728.8	14,592.9	6,728.8	144.1	143.0	-90.00	7,264.6	-777.0	420.9	134.4	286.55	1.469	Level 3			
14,600.0	6,728.6	14,692.9	6,728.6	146.0	144.9	-90.00	7,364.6	-777.0	420.9	130.6	290.37	1.450	Level 3			
14,700.0	6,728.3	14,792.9	6,728.3	147.9	146.8	-90.00	7,464.6	-777.0	420.9	126.7	294.18	1.431	Level 3			
14,800.0	6,728.1	14,892.9	6,728.1	149.8	148.7	-90.00	7,564.6	-777.0	420.9	122.9	298.00	1.412	Level 3			
14,900.0	6,727.8	14,992.9	6,727.8	151.7	150.6	-90.00	7,664.6	-777.0	420.9	119.1	301.82	1.395	Level 3			
15,000.0	6,727.5	15,092.9	6,727.5	153.6	152.5	-90.00	7,764.6	-777.0	420.9	115.3	305.63	1.377	Level 3			
15,100.0	6,727.3	15,192.9	6,727.3	155.5	154.4	-90.00	7,864.6	-777.0	420.9	111.5	309.45	1.360	Level 3			
15,200.0	6,727.0	15,292.9	6,727.0	157.5	156.3	-90.00	7,964.6	-777.0	420.9	107.6	313.27	1.344	Level 3			
15,300.0	6,726.8	15,392.9	6,726.7	159.4	158.2	-90.00	8,064.6	-777.0	420.9	103.8	317.09	1.327	Level 3			
15,400.0	6,726.5	15,492.9	6,726.5	161.3	160.1	-90.00	8,164.6	-777.0	420.9	100.0	320.91	1.312	Level 3			
15,500.0	6,726.2	15,592.9	6,726.2	163.2	162.0	-90.00	8,264.6	-777.0	420.9	96.2	324.73	1.296	Level 3			
15,600.0	6,726.0	15,692.9	6,726.0	165.1	163.9	-90.00	8,364.6	-777.0	420.9	92.4	328.55	1.281	Level 3			
15,700.0	6,725.7	15,792.9	6,725.7	167.0	165.8	-90.00	8,464.6	-777.0	420.9	88.5	332.37	1.266	Level 3			
15,800.0	6,725.4	15,892.9	6,725.4	168.9	167.8	-90.00	8,564.6	-777.0	420.9	84.7	336.19	1.252	Level 3			
15,900.0	6,725.2	15,992.9	6,725.2	170.8	169.7	-90.00	8,664.6	-777.0	420.9	80.9	340.01	1.238	Level 2			
16,000.0	6,724.9	16,092.9	6,724.9	172.7	171.6	-90.00	8,764.6	-777.0	420.9	77.1	343.84	1.224	Level 2			
16,100.0	6,724.7	16,192.9	6,724.6	174.6	173.5	-90.00	8,864.6	-777.0	420.9	73.3	347.66	1.211	Level 2			
16,200.0	6,724.4	16,292.9	6,724.4	176.6	175.4	-90.00	8,964.6	-777.0	420.9	69.4	351.48	1.198	Level 2			
16,300.0	6,724.1	16,392.9	6,724.1	178.5	177.3	-90.00	9,064.6	-777.0	420.9	65.6	355.31	1.185	Level 2			
16,400.0	6,723.9	16,492.9	6,723.9	180.4	179.2	-90.00	9,164.6	-777.0	420.9	61.8	359.13	1.172	Level 2			
16,500.0	6,723.6	16,592.9	6,723.6	182.3	181.1	-90.00	9,264.6	-777.0	420.9	58.0	362.96	1.160	Level 2			
16,600.0	6,723.3	16,692.9	6,723.3	184.2	183.0	-90.00	9,364.6	-777.0	420.9	54.1	366.78	1.148	Level 2			
16,700.0	6,723.1	16,792.9	6,723.1	186.1	184.9	-90.00	9,464.6	-777.0	420.9	50.3	370.61	1.136	Level 2			
16,725.8	6,723.0	16,818.7	6,723.0	186.6	185.4	-90.00	9,490.4	-777.0	420.9	49.3	371.59	1.133	Level 2			
16,733.4	6,723.0	16,822.3	6,723.0	186.8	185.5	-90.00	9,494.0	-777.0	420.9	49.1	371.81	1.132	Level 2, SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-321 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	1.04	15.3	0.3	15.3	15.3	0.00	N/A				
100.0	100.0	100.0	100.0	0.1	0.1	1.04	15.3	0.3	15.3	15.1	0.22	68.093				
200.0	200.0	200.0	200.0	0.3	0.3	1.04	15.3	0.3	15.3	14.6	0.67	22.696				
300.0	300.0	300.0	300.0	0.6	0.6	1.04	15.3	0.3	15.3	14.2	1.12	13.618				
400.0	400.0	400.0	400.0	0.8	0.8	1.04	15.3	0.3	15.3	13.7	1.57	9.727				
500.0	500.0	500.0	500.0	1.0	1.0	1.04	15.3	0.3	15.3	13.3	2.02	7.565				
600.0	600.0	600.0	600.0	1.2	1.2	1.04	15.3	0.3	15.3	12.8	2.47	6.190				
700.0	700.0	700.0	700.0	1.5	1.5	1.04	15.3	0.3	15.3	12.4	2.92	5.238				
800.0	800.0	800.0	800.0	1.7	1.7	1.04	15.3	0.3	15.3	11.9	3.37	4.539				
900.0	900.0	900.0	900.0	1.9	1.9	1.04	15.3	0.3	15.3	11.5	3.82	4.005				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	1.04	15.3	0.3	15.3	11.0	4.27	3.584				
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	1.04	15.3	0.3	15.3	10.6	4.72	3.242				
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	1.04	15.3	0.3	15.3	10.1	5.17	2.960				
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	1.04	15.3	0.3	15.3	9.7	5.62	2.723				
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	1.04	15.3	0.3	15.3	9.2	6.07	2.522				
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	1.04	15.3	0.3	15.3	8.8	6.52	2.348 CC				
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	156.96	15.3	0.3	16.5	9.6	6.94	2.378				
1,700.0	1,699.9	1,700.3	1,700.3	3.6	3.7	159.30	14.3	-0.5	19.1	11.7	7.31	2.607				
1,800.0	1,799.7	1,800.8	1,800.7	3.8	3.9	159.75	11.2	-3.0	21.9	14.2	7.66	2.853				
1,900.0	1,899.3	1,901.2	1,900.9	4.0	4.1	158.94	6.0	-7.0	24.9	16.9	8.02	3.105				
2,000.0	1,998.6	2,001.7	2,001.0	4.2	4.2	157.29	-1.3	-12.7	28.2	19.8	8.40	3.360				
2,100.0	2,097.5	2,102.3	2,100.9	4.5	4.5	155.11	-10.6	-20.1	31.8	23.0	8.79	3.619				
2,200.0	2,196.1	2,202.9	2,200.4	4.7	4.7	152.60	-22.1	-29.0	35.7	26.5	9.20	3.880				
2,300.0	2,294.2	2,303.6	2,299.6	5.0	5.0	149.92	-35.5	-39.6	40.0	30.3	9.65	4.140				
2,360.6	2,353.3	2,364.6	2,359.5	5.2	5.1	148.27	-44.7	-46.8	42.7	32.8	9.95	4.295				
2,400.0	2,391.7	2,404.3	2,398.3	5.3	5.3	147.06	-51.1	-51.8	44.5	34.3	10.17	4.373				
2,500.0	2,489.2	2,505.0	2,496.5	5.7	5.6	142.74	-68.7	-65.6	47.7	36.9	10.78	4.422				
2,600.0	2,586.7	2,605.6	2,594.0	6.1	6.0	136.55	-88.3	-80.9	49.5	38.0	11.51	4.306				
2,700.0	2,684.2	2,705.6	2,690.4	6.4	6.4	128.84	-109.3	-97.5	51.0	38.6	12.37	4.120				
2,800.0	2,781.6	2,805.4	2,786.5	6.8	6.8	121.51	-130.5	-114.1	53.2	39.9	13.31	3.997				
2,900.0	2,879.1	2,905.1	2,882.5	7.3	7.3	114.86	-151.7	-130.7	56.2	41.9	14.28	3.936				
3,000.0	2,976.6	3,004.9	2,978.6	7.7	7.7	108.96	-172.8	-147.3	59.9	44.6	15.26	3.925				
3,100.0	3,074.1	3,104.7	3,074.6	8.1	8.2	103.79	-194.0	-163.9	64.2	47.9	16.24	3.951				
3,200.0	3,171.5	3,204.4	3,170.7	8.5	8.7	99.29	-215.1	-180.5	68.9	51.7	17.20	4.004				
3,300.0	3,269.0	3,304.2	3,266.8	9.0	9.2	95.39	-236.3	-197.1	74.0	55.8	18.15	4.076				
3,400.0	3,366.5	3,403.9	3,362.8	9.4	9.7	92.00	-257.5	-213.6	79.3	60.3	19.07	4.160				
3,500.0	3,463.9	3,503.7	3,458.9	9.9	10.2	89.05	-278.6	-230.2	85.0	65.0	19.99	4.251				
3,600.0	3,561.4	3,603.4	3,554.9	10.3	10.8	86.47	-299.8	-246.8	90.8	69.9	20.89	4.347				
3,700.0	3,658.9	3,703.2	3,651.0	10.8	11.3	84.21	-320.9	-263.4	96.8	75.0	21.78	4.444				
3,800.0	3,756.4	3,802.9	3,747.1	11.2	11.8	82.21	-342.1	-280.0	102.9	80.2	22.66	4.540				
3,900.0	3,853.8	3,902.7	3,843.1	11.7	12.4	80.44	-363.3	-296.6	109.1	85.6	23.54	4.636				
4,000.0	3,951.3	4,002.4	3,939.2	12.1	12.9	78.86	-384.4	-313.2	115.4	91.0	24.41	4.729				
4,100.0	4,048.8	4,102.2	4,035.2	12.6	13.4	77.44	-405.6	-329.8	121.8	96.6	25.28	4.820				
4,200.0	4,146.3	4,201.9	4,131.3	13.1	14.0	76.17	-426.7	-346.4	128.3	102.2	26.14	4.908				
4,300.0	4,243.7	4,301.7	4,227.4	13.5	14.5	75.02	-447.9	-363.0	134.8	107.8	27.00	4.992				
4,400.0	4,341.2	4,401.4	4,323.4	14.0	15.1	73.98	-469.1	-379.6	141.4	113.5	27.87	5.074				
4,500.0	4,438.7	4,501.2	4,419.5	14.5	15.6	73.02	-490.2	-396.2	148.0	119.3	28.72	5.152				
4,600.0	4,536.1	4,600.9	4,515.5	14.9	16.2	72.15	-511.4	-412.8	154.6	125.1	29.58	5.228				
4,700.0	4,633.6	4,700.7	4,611.6	15.4	16.7	71.36	-532.6	-429.4	161.3	130.9	30.44	5.300				
4,800.0	4,731.1	4,800.4	4,707.7	15.9	17.3	70.62	-553.7	-446.0	168.0	136.7	31.30	5.369				
4,900.0	4,828.6	4,900.2	4,803.7	16.4	17.8	69.94	-574.9	-462.6	174.8	142.6	32.15	5.435				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-321 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,000.0	4,926.0	4,999.9	4,899.8	16.8	18.4	69.32	-596.0	-479.2	181.5	148.5	33.01	5.499				
5,100.0	5,023.5	5,099.7	4,995.8	17.3	18.9	68.74	-617.2	-495.8	188.3	154.4	33.87	5.560				
5,200.0	5,121.0	5,199.5	5,091.9	17.8	19.5	68.19	-638.4	-512.4	195.1	160.4	34.72	5.619				
5,240.1	5,160.0	5,239.5	5,130.5	18.0	19.7	67.99	-646.9	-519.0	197.8	162.8	35.07	5.642				
5,300.0	5,218.6	5,301.8	5,190.6	18.2	20.0	67.75	-659.5	-529.0	201.8	166.3	35.51	5.682				
5,400.0	5,316.8	5,405.7	5,291.8	18.5	20.4	67.32	-678.3	-543.7	207.8	171.7	36.07	5.760				
5,500.0	5,415.7	5,510.0	5,394.0	18.8	20.7	66.84	-694.3	-556.2	213.0	176.5	36.55	5.828				
5,600.0	5,515.0	5,614.4	5,497.1	19.0	21.0	66.30	-707.3	-566.5	217.6	180.7	36.96	5.889				
5,700.0	5,614.7	5,719.0	5,600.9	19.3	21.3	65.71	-717.4	-574.4	221.5	184.3	37.28	5.943				
5,800.0	5,714.5	5,823.8	5,705.3	19.4	21.5	65.06	-724.5	-579.9	224.7	187.2	37.51	5.991				
5,885.5	5,800.0	5,913.5	5,794.9	19.5	21.7	-89.54	-728.2	-582.8	226.9	189.2	37.65	6.027				
5,900.0	5,814.5	5,928.8	5,810.2	19.6	21.7	-89.64	-728.6	-583.2	227.2	189.5	37.67	6.031				
6,000.0	5,914.5	6,033.1	5,914.5	19.7	21.8	-89.92	-729.7	-584.0	228.0	190.1	37.89	6.018				
6,069.3	5,983.8	6,102.4	5,983.8	19.8	21.9	-89.92	-729.7	-584.0	228.0	190.0	38.07	5.990				
6,090.8	6,005.3	6,123.9	6,005.3	19.8	21.9	-89.92	-729.7	-584.0	228.0	189.9	38.11	5.984				
6,100.0	6,014.5	6,133.1	6,014.5	19.8	21.9	-90.08	-729.7	-584.0	228.0	189.9	38.11	5.983				
6,150.0	6,064.4	6,183.0	6,064.4	19.8	22.0	-90.98	-729.7	-584.0	228.1	190.0	38.02	5.998				
6,200.0	6,113.9	6,233.2	6,114.5	19.8	22.0	-92.21	-727.7	-584.0	228.2	190.4	37.80	6.036				
6,250.0	6,162.8	6,283.7	6,164.7	19.8	22.0	-93.43	-722.3	-584.0	228.4	190.9	37.52	6.088				
6,300.0	6,211.0	6,334.5	6,214.8	19.7	22.0	-94.63	-713.6	-584.0	228.8	191.6	37.18	6.154				
6,350.0	6,258.3	6,385.7	6,264.5	19.6	22.0	-95.81	-701.5	-584.0	229.2	192.4	36.78	6.232				
6,400.0	6,304.3	6,437.2	6,313.6	19.5	21.9	-96.97	-685.9	-584.0	229.7	193.4	36.33	6.323				
6,450.0	6,349.0	6,489.1	6,361.9	19.4	21.8	-98.10	-667.0	-584.0	230.3	194.5	35.85	6.425				
6,500.0	6,392.1	6,541.3	6,409.0	19.2	21.7	-99.19	-644.7	-584.0	231.0	195.7	35.33	6.538				
6,550.0	6,433.4	6,593.8	6,454.8	19.0	21.5	-100.23	-619.0	-584.0	231.7	196.9	34.80	6.659				
6,600.0	6,472.9	6,646.6	6,499.0	18.9	21.3	-101.23	-590.1	-584.0	232.5	198.2	34.25	6.788				
6,650.0	6,510.2	6,699.7	6,541.4	18.7	21.1	-102.17	-558.0	-584.0	233.3	199.6	33.71	6.921				
6,700.0	6,545.3	6,753.2	6,581.6	18.5	20.9	-103.06	-522.8	-584.0	234.1	200.9	33.18	7.056				
6,750.0	6,578.0	6,806.9	6,619.4	18.3	20.7	-103.89	-484.7	-584.0	234.9	202.2	32.68	7.189				
6,800.0	6,608.1	6,860.9	6,654.7	18.1	20.5	-104.65	-443.8	-584.0	235.7	203.5	32.22	7.317				
6,850.0	6,635.6	6,915.2	6,687.1	17.9	20.2	-105.35	-400.3	-584.0	236.5	204.7	31.81	7.434				
6,900.0	6,660.2	6,969.7	6,716.5	17.7	20.0	-105.97	-354.4	-584.0	237.2	205.7	31.47	7.537				
6,950.0	6,682.0	7,024.4	6,742.6	17.6	19.8	-106.52	-306.3	-584.0	237.9	206.6	31.21	7.620				
7,000.0	6,700.8	7,079.3	6,765.3	17.4	19.5	-106.99	-256.3	-584.0	238.4	207.4	31.05	7.680				
7,050.0	6,716.5	7,134.4	6,784.4	17.3	19.3	-107.39	-204.7	-584.0	239.0	208.0	30.98	7.712				
7,100.0	6,729.1	7,189.6	6,799.7	17.3	19.1	-107.71	-151.7	-584.0	239.4	208.3	31.03	7.715				
7,150.0	6,738.5	7,244.9	6,811.3	17.2	18.9	-107.95	-97.6	-584.0	239.7	208.5	31.18	7.686				
7,200.0	6,744.6	7,300.2	6,818.8	17.2	18.7	-108.11	-42.8	-584.0	239.9	208.4	31.46	7.627				
7,250.0	6,747.5	7,355.7	6,822.4	17.3	18.5	-108.19	12.5	-584.0	240.0	208.2	31.84	7.537				
7,271.3	6,747.8	7,379.3	6,822.7	17.4	18.5	-108.20	36.1	-584.0	240.0	208.0	32.04	7.491				
7,300.0	6,747.7	7,408.0	6,822.6	17.5	18.4	-108.19	64.9	-584.0	240.0	207.7	32.29	7.432				
7,400.0	6,747.4	7,508.0	6,822.3	18.1	18.2	-108.18	164.9	-584.0	240.0	206.6	33.40	7.185				
7,500.0	6,747.2	7,608.0	6,822.0	18.9	19.0	-108.17	264.9	-584.0	240.0	205.1	34.87	6.883				
7,600.0	6,746.9	7,708.0	6,821.7	19.8	20.1	-108.16	364.9	-584.0	240.0	203.3	36.64	6.549				
7,700.0	6,746.6	7,808.0	6,821.4	21.0	21.2	-108.14	464.9	-584.0	239.9	201.3	38.69	6.202				
7,800.0	6,746.4	7,908.0	6,821.1	22.2	22.4	-108.13	564.9	-584.0	239.9	199.0	40.97	5.857				
7,900.0	6,746.1	8,008.0	6,820.7	23.5	23.8	-108.12	664.9	-584.0	239.9	196.5	43.43	5.524				
8,000.0	6,745.9	8,108.0	6,820.4	24.9	25.1	-108.11	764.9	-584.0	239.9	193.8	46.07	5.208				
8,100.0	6,745.6	8,208.0	6,820.1	26.4	26.6	-108.10	864.9	-584.0	239.9	191.0	48.83	4.912				
8,200.0	6,745.3	8,308.0	6,819.8	27.9	28.1	-108.08	964.9	-584.0	239.9	188.2	51.72	4.638				
8,300.0	6,745.1	8,408.0	6,819.5	29.4	29.6	-108.07	1,064.9	-584.0	239.9	185.2	54.70	4.385				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-321 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,400.0	6,744.8	8,508.0	6,819.2	31.0	31.2	-108.06	1,164.9	-584.0	239.8	182.1	57.76	4.153				
8,500.0	6,744.6	8,608.0	6,818.9	32.7	32.8	-108.05	1,264.9	-584.0	239.8	178.9	60.89	3.939				
8,600.0	6,744.3	8,708.0	6,818.5	34.3	34.4	-108.04	1,364.9	-584.0	239.8	175.7	64.08	3.742				
8,700.0	6,744.0	8,808.0	6,818.2	36.0	36.1	-108.03	1,464.9	-584.0	239.8	172.5	67.32	3.562				
8,800.0	6,743.8	8,908.0	6,817.9	37.7	37.7	-108.01	1,564.9	-584.0	239.8	169.2	70.60	3.396				
8,900.0	6,743.5	9,008.0	6,817.6	39.4	39.4	-108.00	1,664.9	-584.0	239.8	165.8	73.92	3.243				
9,000.0	6,743.2	9,108.0	6,817.3	41.2	41.2	-107.99	1,764.9	-584.0	239.7	162.5	77.28	3.102				
9,100.0	6,743.0	9,208.0	6,817.0	42.9	42.9	-107.98	1,864.9	-584.0	239.7	159.1	80.66	2.972				
9,200.0	6,742.7	9,308.0	6,816.7	44.7	44.7	-107.97	1,964.9	-584.0	239.7	155.6	84.07	2.851				
9,300.0	6,742.5	9,408.0	6,816.3	46.5	46.4	-107.95	2,064.9	-584.0	239.7	152.2	87.51	2.739				
9,400.0	6,742.2	9,508.0	6,816.0	48.3	48.2	-107.94	2,164.9	-584.0	239.7	148.7	90.96	2.635				
9,500.0	6,741.9	9,608.0	6,815.7	50.1	50.0	-107.93	2,264.9	-584.0	239.7	145.2	94.43	2.538				
9,600.0	6,741.7	9,708.0	6,815.4	51.9	51.8	-107.92	2,364.9	-584.0	239.6	141.7	97.92	2.447				
9,700.0	6,741.4	9,808.0	6,815.1	53.7	53.6	-107.91	2,464.9	-584.0	239.6	138.2	101.43	2.363				
9,800.0	6,741.2	9,908.0	6,814.8	55.5	55.4	-107.89	2,564.9	-584.0	239.6	134.7	104.94	2.283				
9,900.0	6,740.9	10,008.0	6,814.5	57.4	57.2	-107.88	2,664.9	-584.0	239.6	131.1	108.47	2.209				
10,000.0	6,740.6	10,108.0	6,814.1	59.2	59.0	-107.87	2,764.9	-584.0	239.6	127.6	112.01	2.139				
10,100.0	6,740.4	10,208.0	6,813.8	61.0	60.8	-107.86	2,864.9	-584.0	239.6	124.0	115.56	2.073				
10,200.0	6,740.1	10,308.0	6,813.5	62.9	62.7	-107.85	2,964.9	-584.0	239.5	120.4	119.11	2.011				
10,300.0	6,739.8	10,408.0	6,813.2	64.7	64.5	-107.84	3,064.9	-584.0	239.5	116.8	122.68	1.952				
10,400.0	6,739.6	10,508.0	6,812.9	66.6	66.4	-107.82	3,164.9	-584.0	239.5	113.3	126.25	1.897				
10,500.0	6,739.3	10,608.0	6,812.6	68.5	68.2	-107.81	3,264.9	-584.0	239.5	109.7	129.83	1.845				
10,600.0	6,739.1	10,708.0	6,812.3	70.3	70.1	-107.80	3,364.9	-584.0	239.5	106.1	133.42	1.795				
10,700.0	6,738.8	10,808.0	6,811.9	72.2	71.9	-107.79	3,464.9	-584.0	239.5	102.4	137.01	1.748				
10,800.0	6,738.5	10,908.0	6,811.6	74.0	73.8	-107.78	3,564.9	-584.0	239.4	98.8	140.61	1.703				
10,900.0	6,738.3	11,008.0	6,811.3	75.9	75.6	-107.76	3,664.9	-584.0	239.4	95.2	144.22	1.660				
11,000.0	6,738.0	11,108.0	6,811.0	77.8	77.5	-107.75	3,764.9	-584.0	239.4	91.6	147.82	1.620				
11,100.0	6,737.7	11,208.0	6,810.7	79.7	79.4	-107.74	3,864.9	-584.0	239.4	88.0	151.44	1.581				
11,200.0	6,737.5	11,308.0	6,810.4	81.5	81.2	-107.73	3,964.9	-584.0	239.4	84.3	155.05	1.544				
11,300.0	6,737.2	11,408.0	6,810.1	83.4	83.1	-107.72	4,064.9	-584.0	239.4	80.7	158.68	1.508				
11,400.0	6,737.0	11,508.0	6,809.7	85.3	85.0	-107.70	4,164.9	-584.0	239.3	77.0	162.30	1.475	Level 3			
11,500.0	6,736.7	11,608.0	6,809.4	87.2	86.9	-107.69	4,264.9	-584.0	239.3	73.4	165.93	1.442	Level 3			
11,600.0	6,736.4	11,708.0	6,809.1	89.1	88.7	-107.68	4,364.9	-584.0	239.3	69.7	169.56	1.411	Level 3			
11,700.0	6,736.2	11,808.0	6,808.8	90.9	90.6	-107.67	4,464.9	-584.0	239.3	66.1	173.20	1.382	Level 3			
11,800.0	6,735.9	11,908.0	6,808.5	92.8	92.5	-107.66	4,564.9	-584.0	239.3	62.4	176.83	1.353	Level 3			
11,900.0	6,735.7	12,008.0	6,808.2	94.7	94.4	-107.64	4,664.8	-584.0	239.3	58.8	180.48	1.326	Level 3			
12,000.0	6,735.4	12,108.0	6,807.9	96.6	96.3	-107.63	4,764.8	-584.0	239.2	55.1	184.12	1.299	Level 3			
12,100.0	6,735.1	12,208.0	6,807.5	98.5	98.1	-107.62	4,864.8	-584.0	239.2	51.5	187.77	1.274	Level 3			
12,200.0	6,734.9	12,308.0	6,807.2	100.4	100.0	-107.61	4,964.8	-584.0	239.2	47.8	191.41	1.250	Level 2			
12,300.0	6,734.6	12,408.0	6,806.9	102.3	101.9	-107.60	5,064.8	-584.0	239.2	44.1	195.06	1.226	Level 2			
12,400.0	6,734.3	12,508.0	6,806.6	104.2	103.8	-107.58	5,164.8	-584.0	239.2	40.5	198.72	1.204	Level 2			
12,500.0	6,734.1	12,608.0	6,806.3	106.1	105.7	-107.57	5,264.8	-584.0	239.2	36.8	202.37	1.182	Level 2			
12,600.0	6,733.8	12,708.0	6,806.0	108.0	107.6	-107.56	5,364.8	-584.0	239.2	33.1	206.03	1.161	Level 2			
12,700.0	6,733.6	12,808.0	6,805.7	109.9	109.5	-107.55	5,464.8	-584.0	239.1	29.4	209.69	1.140	Level 2			
12,800.0	6,733.3	12,908.0	6,805.3	111.8	111.4	-107.54	5,564.8	-584.0	239.1	25.8	213.35	1.121	Level 2			
12,900.0	6,733.0	13,008.0	6,805.0	113.7	113.3	-107.53	5,664.8	-584.0	239.1	22.1	217.01	1.102	Level 2			
13,000.0	6,732.8	13,108.0	6,804.7	115.6	115.2	-107.51	5,764.8	-584.0	239.1	18.4	220.68	1.083	Level 2			
13,100.0	6,732.5	13,208.0	6,804.4	117.5	117.1	-107.50	5,864.8	-584.0	239.1	14.7	224.34	1.066	Level 2			
13,200.0	6,732.3	13,308.0	6,804.1	119.4	119.0	-107.49	5,964.8	-584.0	239.1	11.0	228.01	1.048	Level 2			
13,300.0	6,732.0	13,408.0	6,803.8	121.3	120.9	-107.48	6,064.8	-584.0	239.0	7.4	231.68	1.032	Level 2			
13,400.0	6,731.7	13,508.0	6,803.5	123.2	122.7	-107.47	6,164.8	-584.0	239.0	3.7	235.35	1.016	Level 2			

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-321 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
13,500.0	6,731.5	13,608.0	6,803.2	125.1	124.6	-107.45	6,264.8	-584.0	239.0	0.0	239.02	1.000	Level 1			
13,600.0	6,731.2	13,708.0	6,802.8	127.0	126.5	-107.44	6,364.8	-584.0	239.0	-3.7	242.70	0.985	Level 1			
13,700.0	6,730.9	13,808.0	6,802.5	128.9	128.4	-107.43	6,464.8	-584.0	239.0	-7.4	246.37	0.970	Level 1			
13,800.0	6,730.7	13,908.0	6,802.2	130.8	130.3	-107.42	6,564.8	-584.0	239.0	-11.1	250.05	0.956	Level 1			
13,900.0	6,730.4	14,008.0	6,801.9	132.7	132.2	-107.41	6,664.8	-584.0	238.9	-14.8	253.72	0.942	Level 1			
14,000.0	6,730.2	14,108.0	6,801.6	134.6	134.1	-107.39	6,764.8	-584.0	238.9	-18.5	257.40	0.928	Level 1			
14,100.0	6,729.9	14,208.0	6,801.3	136.5	136.1	-107.38	6,864.8	-584.0	238.9	-22.2	261.08	0.915	Level 1			
14,200.0	6,729.6	14,308.0	6,801.0	138.4	138.0	-107.37	6,964.8	-584.0	238.9	-25.9	264.76	0.902	Level 1			
14,300.0	6,729.4	14,408.0	6,800.6	140.3	139.9	-107.36	7,064.8	-584.0	238.9	-29.6	268.44	0.890	Level 1			
14,400.0	6,729.1	14,508.0	6,800.3	142.2	141.8	-107.35	7,164.8	-584.0	238.9	-33.3	272.13	0.878	Level 1			
14,500.0	6,728.8	14,608.0	6,800.0	144.1	143.7	-107.33	7,264.8	-584.0	238.8	-37.0	275.81	0.866	Level 1			
14,600.0	6,728.6	14,708.0	6,799.7	146.0	145.6	-107.32	7,364.8	-584.0	238.8	-40.7	279.50	0.855	Level 1			
14,700.0	6,728.3	14,808.0	6,799.4	147.9	147.5	-107.31	7,464.8	-584.0	238.8	-44.4	283.18	0.843	Level 1			
14,800.0	6,728.1	14,908.0	6,799.1	149.8	149.4	-107.30	7,564.8	-584.0	238.8	-48.1	286.87	0.832	Level 1			
14,900.0	6,727.8	15,008.0	6,798.8	151.7	151.3	-107.29	7,664.8	-584.0	238.8	-51.8	290.56	0.822	Level 1			
15,000.0	6,727.5	15,108.0	6,798.4	153.6	153.2	-107.27	7,764.8	-584.0	238.8	-55.5	294.25	0.811	Level 1			
15,100.0	6,727.3	15,208.0	6,798.1	155.5	155.1	-107.26	7,864.8	-584.0	238.8	-59.2	297.94	0.801	Level 1			
15,200.0	6,727.0	15,308.0	6,797.8	157.5	157.0	-107.25	7,964.8	-584.0	238.7	-62.9	301.63	0.791	Level 1			
15,300.0	6,726.8	15,408.0	6,797.5	159.4	158.9	-107.24	8,064.8	-584.0	238.7	-66.6	305.32	0.782	Level 1			
15,400.0	6,726.5	15,508.0	6,797.2	161.3	160.8	-107.23	8,164.8	-584.0	238.7	-70.3	309.01	0.772	Level 1			
15,500.0	6,726.2	15,608.0	6,796.9	163.2	162.7	-107.21	8,264.8	-584.0	238.7	-74.0	312.71	0.763	Level 1			
15,600.0	6,726.0	15,708.0	6,796.6	165.1	164.6	-107.20	8,364.8	-584.0	238.7	-77.7	316.40	0.754	Level 1			
15,700.0	6,725.7	15,808.0	6,796.2	167.0	166.5	-107.19	8,464.8	-584.0	238.7	-81.4	320.10	0.746	Level 1			
15,800.0	6,725.4	15,908.0	6,795.9	168.9	168.4	-107.18	8,564.8	-584.0	238.6	-85.2	323.79	0.737	Level 1			
15,900.0	6,725.2	16,008.0	6,795.6	170.8	170.4	-107.17	8,664.8	-584.0	238.6	-88.9	327.49	0.729	Level 1			
16,000.0	6,724.9	16,108.0	6,795.3	172.7	172.3	-107.15	8,764.8	-584.0	238.6	-92.6	331.19	0.720	Level 1			
16,100.0	6,724.7	16,208.0	6,795.0	174.6	174.2	-107.14	8,864.8	-584.0	238.6	-96.3	334.88	0.712	Level 1			
16,200.0	6,724.4	16,308.0	6,794.7	176.6	176.1	-107.13	8,964.8	-584.0	238.6	-100.0	338.58	0.705	Level 1			
16,300.0	6,724.1	16,408.0	6,794.4	178.5	178.0	-107.12	9,064.8	-584.0	238.6	-103.7	342.28	0.697	Level 1			
16,400.0	6,723.9	16,508.0	6,794.0	180.4	179.9	-107.11	9,164.8	-584.0	238.5	-107.4	345.98	0.689	Level 1			
16,500.0	6,723.6	16,608.0	6,793.7	182.3	181.8	-107.09	9,264.8	-584.0	238.5	-111.2	349.68	0.682	Level 1			
16,600.0	6,723.3	16,708.0	6,793.4	184.2	183.7	-107.08	9,364.8	-584.0	238.5	-114.9	353.39	0.675	Level 1			
16,700.0	6,723.1	16,808.0	6,793.1	186.1	185.6	-107.07	9,464.8	-584.0	238.5	-118.6	357.09	0.668	Level 1			
16,726.8	6,723.0	16,834.8	6,793.0	186.6	186.1	-107.07	9,491.6	-584.0	238.5	-119.6	358.08	0.666	Level 1			
16,733.4	6,723.0	16,839.0	6,793.0	186.8	186.2	-107.07	9,495.9	-584.0	238.5	-119.8	358.28	0.666	Level 1, ES, SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-14.9	0.0	14.9	14.9	0.00	N/A				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-14.9	0.0	14.9	14.7	0.22	66.443				
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-14.9	0.0	14.9	14.3	0.67	22.146				
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-14.9	0.0	14.9	13.8	1.12	13.288				
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-14.9	0.0	14.9	13.4	1.57	9.491				
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-14.9	0.0	14.9	12.9	2.02	7.382				
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-14.9	0.0	14.9	12.5	2.47	6.040				
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-14.9	0.0	14.9	12.0	2.92	5.111				
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-14.9	0.0	14.9	11.6	3.37	4.429				
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-14.9	0.0	14.9	11.1	3.82	3.908				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-14.9	0.0	14.9	10.7	4.27	3.497				
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-180.00	-14.9	0.0	14.9	10.2	4.72	3.164				
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-180.00	-14.9	0.0	14.9	9.8	5.17	2.889				
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-180.00	-14.9	0.0	14.9	9.3	5.62	2.657				
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-180.00	-14.9	0.0	14.9	8.9	6.07	2.461 CC, ES				
1,500.0	1,500.0	1,499.6	1,499.6	3.3	3.2	178.52	-16.2	0.4	16.2	9.7	6.49	2.492				
1,600.0	1,600.0	1,599.1	1,599.0	3.5	3.4	-32.81	-19.8	1.7	18.8	12.0	6.86	2.744				
1,700.0	1,699.9	1,698.5	1,698.2	3.6	3.6	-41.74	-26.0	3.7	22.2	15.0	7.21	3.074				
1,800.0	1,799.7	1,797.6	1,796.9	3.8	3.8	-51.98	-34.5	6.6	26.8	19.3	7.58	3.541				
1,900.0	1,899.3	1,896.5	1,895.2	4.0	4.0	-61.71	-45.4	10.4	33.3	25.3	7.96	4.182				
2,000.0	1,998.6	1,995.1	1,992.7	4.2	4.2	-69.98	-58.7	14.9	41.8	33.4	8.38	4.993				
2,100.0	2,097.5	2,093.4	2,089.6	4.5	4.5	-76.61	-74.4	20.2	52.5	43.7	8.83	5.944				
2,200.0	2,196.1	2,191.6	2,185.9	4.7	4.8	-81.87	-92.2	26.2	65.2	55.9	9.34	6.980				
2,300.0	2,294.2	2,290.4	2,282.9	5.0	5.1	-86.97	-110.7	32.5	78.6	68.7	9.91	7.929				
2,360.6	2,353.3	2,350.2	2,341.5	5.2	5.3	-90.09	-121.9	36.3	87.0	76.7	10.29	8.449				
2,400.0	2,391.7	2,389.2	2,379.6	5.3	5.4	-92.08	-129.2	38.8	92.5	82.0	10.55	8.774				
2,500.0	2,489.2	2,487.8	2,476.4	5.7	5.8	-96.19	-147.7	45.1	107.1	95.8	11.22	9.544				
2,600.0	2,586.7	2,586.5	2,573.1	6.1	6.1	-99.31	-166.2	51.4	122.0	110.1	11.92	10.239				
2,700.0	2,684.2	2,685.2	2,669.8	6.4	6.5	-101.75	-184.7	57.6	137.2	124.6	12.64	10.859				
2,800.0	2,781.6	2,783.9	2,766.6	6.8	6.9	-103.69	-203.2	63.9	152.6	139.3	13.38	11.411				
2,900.0	2,879.1	2,882.6	2,863.3	7.3	7.3	-105.28	-221.7	70.2	168.2	154.1	14.13	11.902				
3,000.0	2,976.6	2,981.3	2,960.0	7.7	7.6	-106.60	-240.2	76.5	183.9	169.0	14.90	12.340				
3,100.0	3,074.1	3,080.0	3,056.8	8.1	8.0	-107.71	-258.7	82.7	199.6	183.9	15.68	12.731				
3,200.0	3,171.5	3,178.6	3,153.5	8.5	8.4	-108.66	-277.2	89.0	215.4	198.9	16.47	13.081				
3,300.0	3,269.0	3,277.3	3,250.2	9.0	8.8	-109.48	-295.6	95.3	231.3	214.0	17.26	13.396				
3,400.0	3,366.5	3,376.0	3,347.0	9.4	9.2	-110.20	-314.1	101.6	247.1	229.1	18.07	13.681				
3,500.0	3,463.9	3,474.7	3,443.7	9.9	9.7	-110.83	-332.6	107.9	263.1	244.2	18.87	13.938				
3,600.0	3,561.4	3,573.4	3,540.4	10.3	10.1	-111.38	-351.1	114.1	279.0	259.3	19.69	14.172				
3,700.0	3,658.9	3,672.1	3,637.2	10.8	10.5	-111.88	-369.6	120.4	295.0	274.5	20.51	14.385				
3,800.0	3,756.4	3,770.7	3,733.9	11.2	10.9	-112.32	-388.1	126.7	311.0	289.7	21.33	14.580				
3,900.0	3,853.8	3,869.4	3,830.6	11.7	11.3	-112.73	-406.6	133.0	327.0	304.9	22.16	14.759				
4,000.0	3,951.3	3,968.1	3,927.4	12.1	11.7	-113.09	-425.1	139.2	343.0	320.1	22.99	14.924				
4,100.0	4,048.8	4,066.8	4,024.1	12.6	12.2	-113.42	-443.6	145.5	359.1	335.3	23.82	15.075				
4,200.0	4,146.3	4,165.5	4,120.8	13.1	12.6	-113.72	-462.1	151.8	375.1	350.5	24.65	15.216				
4,300.0	4,243.7	4,264.2	4,217.6	13.5	13.0	-114.00	-480.6	158.1	391.2	365.7	25.49	15.346				
4,400.0	4,341.2	4,362.9	4,314.3	14.0	13.4	-114.26	-499.1	164.4	407.3	380.9	26.33	15.466				
4,500.0	4,438.7	4,461.5	4,411.0	14.5	13.9	-114.50	-517.5	170.6	423.3	396.2	27.17	15.579				
4,600.0	4,536.1	4,560.2	4,507.8	14.9	14.3	-114.72	-536.0	176.9	439.4	411.4	28.02	15.684				
4,700.0	4,633.6	4,658.9	4,604.5	15.4	14.7	-114.92	-554.5	183.2	455.5	426.6	28.86	15.782				
4,800.0	4,731.1	4,757.6	4,701.2	15.9	15.1	-115.11	-573.0	189.5	471.6	441.9	29.71	15.874				
4,900.0	4,828.6	4,856.3	4,798.0	16.4	15.6	-115.29	-591.5	195.7	487.7	457.1	30.56	15.961				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,000.0	4,926.0	4,955.0	4,894.7	16.8	16.0	-115.45	-610.0	202.0	503.8	472.4	31.40	16.042				
5,100.0	5,023.5	5,053.7	4,991.4	17.3	16.4	-115.61	-628.5	208.3	519.9	487.7	32.26	16.119				
5,200.0	5,121.0	5,152.3	5,088.2	17.8	16.8	-115.76	-647.0	214.6	536.0	502.9	33.11	16.191				
5,240.1	5,160.0	5,191.9	5,126.9	18.0	17.0	-115.81	-654.4	217.1	542.5	509.0	33.45	16.219				
5,300.0	5,218.6	5,251.1	5,184.9	18.2	17.3	-116.01	-665.5	220.9	551.9	517.9	33.94	16.260				
5,400.0	5,316.8	5,353.3	5,285.2	18.5	17.7	-116.08	-684.2	227.2	566.2	531.5	34.66	16.335				
5,500.0	5,415.7	5,459.1	5,389.7	18.8	18.0	-116.11	-700.4	232.7	578.0	542.7	35.27	16.385				
5,600.0	5,515.0	5,565.5	5,495.3	19.0	18.3	-116.13	-712.9	237.0	587.1	551.3	35.79	16.404				
5,700.0	5,614.7	5,672.3	5,601.6	19.3	18.5	-116.15	-721.8	240.0	593.5	557.3	36.23	16.382				
5,800.0	5,714.5	5,779.3	5,708.5	19.4	18.7	-116.15	-726.9	241.7	597.2	560.6	36.59	16.321				
5,885.5	5,800.0	5,870.9	5,800.0	19.5	18.8	89.84	-728.3	242.2	598.2	561.3	36.86	16.229				
5,900.0	5,814.5	5,885.4	5,814.5	19.6	18.9	89.84	-728.3	242.2	598.2	561.3	36.90	16.212				
6,000.0	5,914.5	5,985.4	5,914.5	19.7	19.0	89.84	-728.3	242.2	598.2	561.0	37.15	16.100				
6,042.4	5,957.0	6,027.8	5,957.0	19.7	19.0	89.84	-728.3	242.2	598.2	560.9	37.26	16.053				
6,069.3	5,983.8	6,054.7	5,983.8	19.8	19.1	89.83	-728.3	242.2	598.2	560.9	37.33	16.024				
6,100.0	6,014.5	6,085.3	6,014.4	19.8	19.1	89.80	-727.3	242.2	598.2	560.8	37.39	15.999				
6,150.0	6,064.4	6,135.1	6,064.0	19.8	19.1	89.74	-723.0	242.2	598.2	560.8	37.44	15.978				
6,200.0	6,113.9	6,184.9	6,113.3	19.8	19.1	89.68	-715.5	242.2	598.2	560.8	37.42	15.986				
6,250.0	6,162.8	6,234.7	6,161.9	19.8	19.1	89.62	-704.9	242.2	598.2	560.9	37.34	16.020				
6,300.0	6,211.0	6,284.4	6,209.6	19.7	19.0	89.56	-691.1	242.2	598.2	561.0	37.20	16.079				
6,350.0	6,258.3	6,334.1	6,256.3	19.6	18.9	89.51	-674.2	242.2	598.2	561.2	37.01	16.162				
6,400.0	6,304.3	6,383.7	6,301.8	19.5	18.8	89.45	-654.4	242.2	598.2	561.4	36.78	16.267				
6,450.0	6,349.0	6,433.3	6,345.9	19.4	18.7	89.40	-631.6	242.2	598.2	561.7	36.50	16.391				
6,500.0	6,392.1	6,482.9	6,388.4	19.2	18.5	89.36	-606.1	242.2	598.2	562.0	36.19	16.532				
6,550.0	6,433.4	6,532.4	6,429.1	19.0	18.4	89.31	-577.9	242.2	598.2	562.4	35.85	16.686				
6,600.0	6,472.9	6,582.0	6,467.9	18.9	18.2	89.27	-547.1	242.2	598.2	562.7	35.51	16.849				
6,650.0	6,510.2	6,631.5	6,504.6	18.7	18.0	89.23	-513.9	242.2	598.2	563.1	35.15	17.017				
6,700.0	6,545.3	6,680.9	6,539.0	18.5	17.9	89.19	-478.4	242.2	598.3	563.4	34.81	17.184				
6,750.0	6,578.0	6,730.4	6,571.1	18.3	17.7	89.16	-440.8	242.2	598.3	563.8	34.49	17.344				
6,800.0	6,608.1	6,779.8	6,600.7	18.1	17.6	89.13	-401.2	242.2	598.3	564.1	34.20	17.491				
6,850.0	6,635.6	6,829.2	6,627.6	17.9	17.4	89.11	-359.8	242.2	598.3	564.3	33.96	17.616				
6,900.0	6,660.2	6,878.6	6,651.8	17.7	17.3	89.09	-316.7	242.2	598.3	564.5	33.77	17.714				
6,950.0	6,682.0	6,928.0	6,673.1	17.6	17.2	89.07	-272.2	242.2	598.3	564.6	33.65	17.778				
7,000.0	6,700.8	6,977.3	6,691.5	17.4	17.2	89.05	-226.4	242.2	598.3	564.7	33.61	17.802				
7,050.0	6,716.5	7,026.7	6,706.9	17.3	17.2	89.05	-179.6	242.2	598.3	564.6	33.65	17.782				
7,100.0	6,729.1	7,076.0	6,719.3	17.3	17.2	89.04	-131.8	242.2	598.3	564.5	33.77	17.714				
7,150.0	6,738.5	7,125.4	6,728.6	17.2	17.3	89.04	-83.3	242.2	598.3	564.3	34.00	17.599				
7,200.0	6,744.6	7,174.7	6,734.7	17.2	17.4	89.04	-34.3	242.2	598.3	564.0	34.31	17.437				
7,250.0	6,747.5	7,224.1	6,737.6	17.3	17.6	89.05	14.9	242.2	598.3	563.6	34.72	17.233				
7,271.3	6,747.8	7,245.1	6,737.9	17.4	17.7	89.05	35.9	242.2	598.3	563.4	34.91	17.136				
7,300.0	6,747.7	7,273.8	6,737.8	17.5	17.8	89.05	64.6	242.2	598.3	563.1	35.22	16.987				
7,400.0	6,747.4	7,373.8	6,737.7	18.1	18.5	89.06	164.6	242.2	598.3	561.8	36.52	16.384				
7,500.0	6,747.2	7,473.8	6,737.5	18.9	19.3	89.07	264.6	242.2	598.3	560.1	38.15	15.684				
7,600.0	6,746.9	7,573.8	6,737.4	19.8	20.3	89.08	364.6	242.2	598.3	558.2	40.08	14.927				
7,700.0	6,746.6	7,673.8	6,737.2	21.0	21.4	89.09	464.6	242.2	598.3	556.0	42.27	14.153				
7,800.0	6,746.4	7,773.8	6,737.0	22.2	22.7	89.10	564.6	242.2	598.3	553.6	44.69	13.387				
7,900.0	6,746.1	7,873.8	6,736.9	23.5	24.0	89.11	664.6	242.2	598.3	551.0	47.30	12.649				
8,000.0	6,745.9	7,973.8	6,736.7	24.9	25.4	89.13	764.6	242.2	598.3	548.2	50.06	11.951				
8,100.0	6,745.6	8,073.8	6,736.6	26.4	26.8	89.14	864.6	242.2	598.3	545.3	52.96	11.296				
8,200.0	6,745.3	8,173.8	6,736.4	27.9	28.4	89.15	964.6	242.2	598.3	542.3	55.98	10.688				
8,300.0	6,745.1	8,273.8	6,736.3	29.4	29.9	89.16	1,064.6	242.2	598.3	539.2	59.09	10.125				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,400.0	6,744.8	8,373.8	6,736.1	31.0	31.5	89.17	1,164.6	242.2	598.3	536.0	62.28	9.607				
8,500.0	6,744.6	8,473.8	6,735.9	32.7	33.2	89.18	1,264.6	242.2	598.3	532.7	65.54	9.128				
8,600.0	6,744.3	8,573.8	6,735.8	34.3	34.8	89.19	1,364.6	242.2	598.3	529.4	68.86	8.688				
8,700.0	6,744.0	8,673.8	6,735.6	36.0	36.5	89.20	1,464.6	242.2	598.3	526.0	72.23	8.282				
8,800.0	6,743.8	8,773.8	6,735.5	37.7	38.2	89.21	1,564.6	242.2	598.3	522.6	75.65	7.908				
8,900.0	6,743.5	8,873.8	6,735.3	39.4	39.9	89.22	1,664.6	242.2	598.3	519.2	79.11	7.563				
9,000.0	6,743.2	8,973.8	6,735.2	41.2	41.7	89.23	1,764.6	242.2	598.3	515.7	82.60	7.243				
9,100.0	6,743.0	9,073.8	6,735.0	42.9	43.4	89.24	1,864.6	242.2	598.3	512.1	86.12	6.947				
9,200.0	6,742.7	9,173.8	6,734.8	44.7	45.2	89.25	1,964.6	242.2	598.3	508.6	89.66	6.672				
9,300.0	6,742.5	9,273.8	6,734.7	46.5	47.0	89.26	2,064.6	242.2	598.3	505.0	93.23	6.417				
9,400.0	6,742.2	9,373.8	6,734.5	48.3	48.8	89.27	2,164.6	242.2	598.3	501.4	96.82	6.179				
9,500.0	6,741.9	9,473.8	6,734.4	50.1	50.6	89.28	2,264.6	242.2	598.3	497.8	100.43	5.957				
9,600.0	6,741.7	9,573.8	6,734.2	51.9	52.4	89.29	2,364.6	242.2	598.3	494.2	104.06	5.749				
9,700.0	6,741.4	9,673.8	6,734.1	53.7	54.2	89.30	2,464.6	242.2	598.3	490.5	107.70	5.555				
9,800.0	6,741.2	9,773.8	6,733.9	55.5	56.1	89.31	2,564.6	242.2	598.2	486.9	111.36	5.372				
9,900.0	6,740.9	9,873.8	6,733.7	57.4	57.9	89.32	2,664.6	242.2	598.2	483.2	115.02	5.201				
10,000.0	6,740.6	9,973.8	6,733.6	59.2	59.7	89.33	2,764.6	242.2	598.2	479.5	118.70	5.040				
10,100.0	6,740.4	10,073.8	6,733.4	61.0	61.6	89.34	2,864.6	242.2	598.2	475.9	122.39	4.888				
10,200.0	6,740.1	10,173.8	6,733.3	62.9	63.4	89.35	2,964.6	242.2	598.2	472.2	126.08	4.745				
10,300.0	6,739.8	10,273.8	6,733.1	64.7	65.3	89.36	3,064.6	242.2	598.2	468.5	129.79	4.609				
10,400.0	6,739.6	10,373.8	6,733.0	66.6	67.1	89.37	3,164.6	242.2	598.2	464.7	133.50	4.481				
10,500.0	6,739.3	10,473.8	6,732.8	68.5	69.0	89.38	3,264.6	242.2	598.2	461.0	137.22	4.360				
10,600.0	6,739.1	10,573.8	6,732.6	70.3	70.8	89.39	3,364.6	242.2	598.2	457.3	140.95	4.244				
10,700.0	6,738.8	10,673.8	6,732.5	72.2	72.7	89.40	3,464.6	242.2	598.2	453.6	144.68	4.135				
10,800.0	6,738.5	10,773.8	6,732.3	74.0	74.6	89.41	3,564.6	242.2	598.2	449.8	148.42	4.031				
10,900.0	6,738.3	10,873.8	6,732.2	75.9	76.4	89.42	3,664.6	242.2	598.2	446.1	152.16	3.932				
11,000.0	6,738.0	10,973.8	6,732.0	77.8	78.3	89.43	3,764.6	242.2	598.2	442.3	155.91	3.837				
11,100.0	6,737.7	11,073.8	6,731.9	79.7	80.2	89.44	3,864.6	242.2	598.2	438.6	159.66	3.747				
11,200.0	6,737.5	11,173.8	6,731.7	81.5	82.1	89.45	3,964.6	242.2	598.2	434.8	163.42	3.661				
11,300.0	6,737.2	11,273.8	6,731.5	83.4	84.0	89.46	4,064.6	242.2	598.2	431.1	167.18	3.578				
11,400.0	6,737.0	11,373.8	6,731.4	85.3	85.8	89.47	4,164.6	242.2	598.2	427.3	170.94	3.500				
11,500.0	6,736.7	11,473.8	6,731.2	87.2	87.7	89.48	4,264.6	242.2	598.2	423.5	174.71	3.424				
11,600.0	6,736.4	11,573.8	6,731.1	89.1	89.6	89.49	4,364.6	242.2	598.2	419.8	178.48	3.352				
11,700.0	6,736.2	11,673.8	6,730.9	90.9	91.5	89.50	4,464.6	242.2	598.2	416.0	182.26	3.282				
11,800.0	6,735.9	11,773.8	6,730.8	92.8	93.4	89.51	4,564.6	242.2	598.2	412.2	186.03	3.216				
11,900.0	6,735.7	11,873.8	6,730.6	94.7	95.3	89.52	4,664.6	242.2	598.2	408.4	189.81	3.152				
12,000.0	6,735.4	11,973.8	6,730.4	96.6	97.2	89.53	4,764.6	242.2	598.2	404.6	193.59	3.090				
12,100.0	6,735.1	12,073.8	6,730.3	98.5	99.0	89.54	4,864.6	242.2	598.2	400.9	197.38	3.031				
12,200.0	6,734.9	12,173.8	6,730.1	100.4	100.9	89.55	4,964.6	242.2	598.2	397.1	201.16	2.974				
12,300.0	6,734.6	12,273.8	6,730.0	102.3	102.8	89.56	5,064.6	242.2	598.2	393.3	204.95	2.919				
12,400.0	6,734.3	12,373.8	6,729.8	104.2	104.7	89.57	5,164.6	242.2	598.2	389.5	208.74	2.866				
12,500.0	6,734.1	12,473.8	6,729.7	106.1	106.6	89.58	5,264.6	242.2	598.2	385.7	212.53	2.815				
12,600.0	6,733.8	12,573.8	6,729.5	108.0	108.5	89.59	5,364.6	242.2	598.2	381.9	216.33	2.765				
12,700.0	6,733.6	12,673.8	6,729.3	109.9	110.4	89.60	5,464.6	242.2	598.2	378.1	220.12	2.718				
12,800.0	6,733.3	12,773.8	6,729.2	111.8	112.3	89.61	5,564.6	242.2	598.2	374.3	223.92	2.672				
12,900.0	6,733.0	12,873.8	6,729.0	113.7	114.2	89.62	5,664.6	242.2	598.2	370.5	227.72	2.627				
13,000.0	6,732.8	12,973.8	6,728.9	115.6	116.1	89.63	5,764.6	242.2	598.2	366.7	231.52	2.584				
13,100.0	6,732.5	13,073.8	6,728.7	117.5	118.0	89.64	5,864.6	242.2	598.2	362.9	235.32	2.542				
13,200.0	6,732.3	13,173.8	6,728.6	119.4	119.9	89.65	5,964.6	242.2	598.2	359.1	239.12	2.502				
13,300.0	6,732.0	13,273.8	6,728.4	121.3	121.8	89.66	6,064.6	242.2	598.2	355.3	242.92	2.463				
13,400.0	6,731.7	13,373.8	6,728.2	123.2	123.7	89.67	6,164.6	242.2	598.2	351.5	246.73	2.425				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
13,500.0	6,731.5	13,473.8	6,728.1	125.1	125.6	89.68	6,264.6	242.2	598.2	347.7	250.53	2.388				
13,600.0	6,731.2	13,573.8	6,727.9	127.0	127.5	89.69	6,364.6	242.2	598.2	343.9	254.34	2.352				
13,700.0	6,730.9	13,673.8	6,727.8	128.9	129.4	89.70	6,464.6	242.2	598.2	340.1	258.15	2.317				
13,800.0	6,730.7	13,773.8	6,727.6	130.8	131.3	89.71	6,564.6	242.2	598.2	336.3	261.96	2.284				
13,900.0	6,730.4	13,873.8	6,727.5	132.7	133.2	89.72	6,664.6	242.2	598.2	332.5	265.77	2.251				
14,000.0	6,730.2	13,973.8	6,727.3	134.6	135.1	89.73	6,764.6	242.2	598.2	328.7	269.58	2.219				
14,100.0	6,729.9	14,073.8	6,727.1	136.5	137.0	89.74	6,864.6	242.2	598.2	324.8	273.39	2.188				
14,175.0	6,729.7	14,148.8	6,727.0	137.9	138.5	89.74	6,939.6	242.2	598.2	322.0	276.25	2.166				
14,200.0	6,729.6	14,173.8	6,727.0	138.4	138.9	89.75	6,964.6	242.2	598.2	321.0	277.20	2.158				
14,300.0	6,729.4	14,273.8	6,726.8	140.3	140.8	89.76	7,064.6	242.2	598.2	317.2	281.02	2.129				
14,400.0	6,729.1	14,373.8	6,726.7	142.2	142.8	89.77	7,164.6	242.2	598.2	313.4	284.83	2.100				
14,500.0	6,728.8	14,473.8	6,726.5	144.1	144.7	89.78	7,264.6	242.2	598.2	309.6	288.64	2.073				
14,600.0	6,728.6	14,573.8	6,726.4	146.0	146.6	89.79	7,364.6	242.2	598.2	305.8	292.46	2.046				
14,700.0	6,728.3	14,673.8	6,726.2	147.9	148.5	89.80	7,464.6	242.2	598.2	302.0	296.28	2.019				
14,800.0	6,728.1	14,773.8	6,726.0	149.8	150.4	89.81	7,564.6	242.2	598.2	298.1	300.09	1.993				
14,900.0	6,727.8	14,873.8	6,725.9	151.7	152.3	89.82	7,664.6	242.2	598.2	294.3	303.91	1.968				
15,000.0	6,727.5	14,973.8	6,725.7	153.6	154.2	89.83	7,764.6	242.2	598.2	290.5	307.73	1.944				
15,100.0	6,727.3	15,073.8	6,725.6	155.5	156.1	89.84	7,864.6	242.2	598.2	286.7	311.55	1.920				
15,200.0	6,727.0	15,173.8	6,725.4	157.5	158.0	89.85	7,964.6	242.2	598.2	282.9	315.37	1.897				
15,300.0	6,726.8	15,273.8	6,725.3	159.4	159.9	89.86	8,064.6	242.2	598.2	279.0	319.19	1.874				
15,400.0	6,726.5	15,373.8	6,725.1	161.3	161.8	89.87	8,164.6	242.2	598.2	275.2	323.01	1.852				
15,500.0	6,726.2	15,473.8	6,724.9	163.2	163.7	89.88	8,264.6	242.2	598.2	271.4	326.83	1.830				
15,600.0	6,726.0	15,573.8	6,724.8	165.1	165.7	89.89	8,364.6	242.2	598.2	267.6	330.65	1.809				
15,700.0	6,725.7	15,673.8	6,724.6	167.0	167.6	89.90	8,464.6	242.2	598.2	263.8	334.47	1.789				
15,800.0	6,725.4	15,773.8	6,724.5	168.9	169.5	89.91	8,564.6	242.2	598.2	259.9	338.29	1.768				
15,900.0	6,725.2	15,873.8	6,724.3	170.8	171.4	89.92	8,664.6	242.2	598.2	256.1	342.11	1.749				
16,000.0	6,724.9	15,973.8	6,724.2	172.7	173.3	89.93	8,764.6	242.2	598.2	252.3	345.94	1.729				
16,100.0	6,724.7	16,073.8	6,724.0	174.6	175.2	89.94	8,864.6	242.2	598.2	248.5	349.76	1.710				
16,200.0	6,724.4	16,173.8	6,723.8	176.6	177.1	89.95	8,964.6	242.2	598.2	244.7	353.58	1.692				
16,300.0	6,724.1	16,273.8	6,723.7	178.5	179.0	89.96	9,064.6	242.2	598.2	240.8	357.41	1.674				
16,400.0	6,723.9	16,373.8	6,723.5	180.4	180.9	89.97	9,164.6	242.2	598.2	237.0	361.23	1.656				
16,500.0	6,723.6	16,473.8	6,723.4	182.3	182.9	89.98	9,264.6	242.2	598.2	233.2	365.06	1.639				
16,600.0	6,723.3	16,573.8	6,723.2	184.2	184.8	89.99	9,364.6	242.2	598.2	229.4	368.88	1.622				
16,700.0	6,723.1	16,673.8	6,723.1	186.1	186.7	90.00	9,464.6	242.2	598.2	225.5	372.71	1.605				
16,733.4	6,723.0	16,707.2	6,723.0	186.8	187.3	90.00	9,498.0	242.2	598.2	224.3	373.98	1.600 SF				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-179.64	-44.8	-0.3	44.8							
100.0	100.0	100.0	100.0	0.1	0.1	-179.64	-44.8	-0.3	44.8	44.6	0.22	199.369				
200.0	200.0	200.0	200.0	0.3	0.3	-179.64	-44.8	-0.3	44.8	44.1	0.67	66.452				
300.0	300.0	300.0	300.0	0.6	0.6	-179.64	-44.8	-0.3	44.8	43.7	1.12	39.871				
400.0	400.0	400.0	400.0	0.8	0.8	-179.64	-44.8	-0.3	44.8	43.2	1.57	28.479				
500.0	500.0	500.0	500.0	1.0	1.0	-179.64	-44.8	-0.3	44.8	42.8	2.02	22.150	CC, ES			
600.0	600.0	599.2	599.2	1.2	1.2	179.17	-45.7	0.7	45.7	43.2	2.45	18.661				
700.0	700.0	698.2	698.2	1.5	1.4	175.88	-48.3	3.5	48.5	45.6	2.87	16.920				
800.0	800.0	797.0	796.7	1.7	1.6	171.20	-52.7	8.2	53.4	50.1	3.29	16.225	SF			
900.0	900.0	895.4	894.7	1.9	1.8	165.99	-58.8	14.7	60.8	57.1	3.73	16.318				
1,000.0	1,000.0	993.3	991.9	2.1	2.1	160.95	-66.5	23.0	70.8	66.7	4.17	17.007				
1,100.0	1,100.0	1,090.5	1,088.2	2.4	2.4	156.50	-75.9	33.0	83.6	79.0	4.61	18.138				
1,200.0	1,200.0	1,187.0	1,183.3	2.6	2.7	152.75	-86.9	44.7	99.1	94.1	5.06	19.583				
1,300.0	1,300.0	1,282.6	1,277.1	2.8	3.1	149.68	-99.3	58.1	117.3	111.8	5.52	21.245				
1,400.0	1,400.0	1,379.2	1,371.6	3.0	3.4	147.20	-113.3	73.0	137.7	131.7	6.00	22.961				
1,500.0	1,500.0	1,476.9	1,467.1	3.3	3.9	145.32	-127.4	88.2	158.4	152.0	6.48	24.461				
1,600.0	1,600.0	1,574.7	1,562.6	3.5	4.3	-62.22	-141.6	103.4	178.7	171.8	6.89	25.919				
1,700.0	1,699.9	1,672.6	1,658.2	3.6	4.7	-64.10	-155.8	118.6	198.0	190.7	7.31	27.098				
1,800.0	1,799.7	1,770.5	1,753.9	3.8	5.2	-66.23	-170.1	133.8	216.4	208.7	7.72	28.015				
1,900.0	1,899.3	1,868.4	1,849.5	4.0	5.6	-68.60	-184.3	149.0	234.2	226.1	8.16	28.713				
2,000.0	1,998.6	1,966.1	1,945.1	4.2	6.0	-71.15	-198.5	164.2	251.6	243.0	8.61	29.221				
2,100.0	2,097.5	2,063.7	2,040.4	4.5	6.5	-73.86	-212.6	179.4	268.8	259.7	9.10	29.557				
2,200.0	2,196.1	2,161.1	2,135.6	4.7	6.9	-76.72	-226.8	194.5	286.1	276.4	9.62	29.737				
2,300.0	2,294.2	2,258.1	2,230.4	5.0	7.4	-79.68	-240.8	209.6	303.6	293.4	10.19	29.779				
2,360.6	2,353.3	2,316.7	2,287.6	5.2	7.7	-81.52	-249.4	218.7	314.4	303.8	10.57	29.746				
2,400.0	2,391.7	2,354.8	2,324.9	5.3	7.8	-82.80	-254.9	224.6	321.6	310.8	10.83	29.708				
2,500.0	2,489.2	2,451.5	2,419.3	5.7	8.3	-85.81	-268.9	239.6	340.6	329.1	11.50	29.606				
2,600.0	2,586.7	2,548.1	2,513.7	6.1	8.7	-88.51	-282.9	254.6	360.4	348.2	12.22	29.504				
2,700.0	2,684.2	2,644.7	2,608.2	6.4	9.2	-90.93	-297.0	269.6	380.9	368.0	12.95	29.409				
2,800.0	2,781.6	2,741.4	2,702.6	6.8	9.6	-93.10	-311.0	284.7	402.0	388.3	13.71	29.323				
2,900.0	2,879.1	2,838.0	2,797.0	7.3	10.1	-95.06	-325.0	299.7	423.7	409.2	14.48	29.249				
3,000.0	2,976.6	2,934.7	2,891.4	7.7	10.5	-96.83	-339.1	314.7	445.7	430.5	15.27	29.188				
3,100.0	3,074.1	3,031.3	2,985.9	8.1	11.0	-98.44	-353.1	329.7	468.2	452.1	16.07	29.139				
3,200.0	3,171.5	3,127.9	3,080.3	8.5	11.4	-99.90	-367.1	344.7	490.9	474.0	16.87	29.101				
3,300.0	3,269.0	3,224.6	3,174.7	9.0	11.9	-101.23	-381.1	359.7	513.9	496.3	17.68	29.073				
3,400.0	3,366.5	3,321.2	3,269.1	9.4	12.4	-102.45	-395.2	374.8	537.2	518.7	18.49	29.054				
3,500.0	3,463.9	3,417.8	3,363.6	9.9	12.8	-103.56	-409.2	389.8	560.7	541.4	19.31	29.043				
3,600.0	3,561.4	3,514.5	3,458.0	10.3	13.3	-104.59	-423.2	404.8	584.4	564.3	20.12	29.038				
3,700.0	3,658.9	3,611.1	3,552.4	10.8	13.7	-105.54	-437.3	419.8	608.2	587.3	20.95	29.039				
3,800.0	3,756.4	3,707.7	3,646.9	11.2	14.2	-106.42	-451.3	434.8	632.2	610.5	21.77	29.045				
3,900.0	3,853.8	3,804.4	3,741.3	11.7	14.6	-107.23	-465.3	449.8	656.3	633.8	22.59	29.055				
4,000.0	3,951.3	3,901.0	3,835.7	12.1	15.1	-107.99	-479.4	464.8	680.6	657.2	23.41	29.068				
4,100.0	4,048.8	3,997.7	3,930.1	12.6	15.5	-108.69	-493.4	479.9	704.9	680.7	24.24	29.083				
4,200.0	4,146.3	4,094.3	4,024.6	13.1	16.0	-109.35	-507.4	494.9	729.4	704.3	25.06	29.101				
4,300.0	4,243.7	4,190.9	4,119.0	13.5	16.5	-109.97	-521.4	509.9	753.9	728.0	25.89	29.121				
4,400.0	4,341.2	4,287.6	4,213.4	14.0	16.9	-110.54	-535.5	524.9	778.5	751.8	26.71	29.142				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-179.47	-29.9	-0.3	29.9	29.9	0.00	N/A				
100.0	100.0	100.0	100.0	0.1	0.1	-179.47	-29.9	-0.3	29.9	29.7	0.22	132.928				
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-29.9	-0.3	29.9	29.2	0.67	44.307				
300.0	300.0	300.0	300.0	0.6	0.6	-179.47	-29.9	-0.3	29.9	28.8	1.12	26.584				
400.0	400.0	400.0	400.0	0.8	0.8	-179.47	-29.9	-0.3	29.9	28.3	1.57	18.988				
500.0	500.0	500.0	500.0	1.0	1.0	-179.47	-29.9	-0.3	29.9	27.9	2.02	14.769				
600.0	600.0	600.0	600.0	1.2	1.2	-179.47	-29.9	-0.3	29.9	27.4	2.47	12.083				
700.0	700.0	700.0	700.0	1.5	1.5	-179.47	-29.9	-0.3	29.9	27.0	2.92	10.224				
800.0	800.0	800.0	800.0	1.7	1.7	-179.47	-29.9	-0.3	29.9	26.5	3.37	8.861				
900.0	900.0	900.0	900.0	1.9	1.9	-179.47	-29.9	-0.3	29.9	26.1	3.82	7.819				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-179.47	-29.9	-0.3	29.9	25.6	4.27	6.996				
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-179.47	-29.9	-0.3	29.9	25.2	4.72	6.329				
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-179.47	-29.9	-0.3	29.9	24.7	5.17	5.779 CC, ES				
1,300.0	1,300.0	1,299.3	1,299.3	2.8	2.8	179.17	-30.9	0.5	31.0	25.4	5.59	5.535 SF				
1,400.0	1,400.0	1,398.5	1,398.5	3.0	3.0	175.59	-34.1	2.6	34.3	28.3	6.00	5.716				
1,500.0	1,500.0	1,497.5	1,497.2	3.3	3.1	170.99	-39.4	6.3	40.0	33.6	6.40	6.249				
1,600.0	1,600.0	1,596.1	1,595.4	3.5	3.3	-40.49	-46.8	11.3	47.4	40.6	6.79	6.973				
1,700.0	1,699.9	1,694.3	1,692.9	3.6	3.6	-47.00	-56.2	17.7	55.7	48.6	7.16	7.782				
1,800.0	1,799.7	1,792.0	1,789.6	3.8	3.8	-53.80	-67.7	25.6	65.6	58.1	7.54	8.701				
1,900.0	1,899.3	1,889.1	1,885.4	4.0	4.1	-60.35	-81.1	34.7	77.4	69.5	7.93	9.757				
2,000.0	1,998.6	1,985.6	1,980.0	4.2	4.4	-66.35	-96.3	45.1	91.4	83.1	8.35	10.948				
2,100.0	2,097.5	2,083.7	2,076.0	4.5	4.7	-71.91	-113.0	56.6	106.9	98.1	8.81	12.128				
2,200.0	2,196.1	2,181.8	2,172.1	4.7	5.1	-77.17	-129.8	68.0	122.6	113.2	9.32	13.148				
2,300.0	2,294.2	2,279.8	2,267.9	5.0	5.4	-82.22	-146.5	79.4	138.7	128.8	9.89	14.028				
2,360.6	2,353.3	2,339.0	2,325.9	5.2	5.7	-85.18	-156.5	86.3	148.9	138.6	10.26	14.504				
2,400.0	2,391.7	2,377.5	2,363.5	5.3	5.8	-87.11	-163.1	90.8	155.7	145.1	10.52	14.798				
2,500.0	2,489.2	2,475.1	2,459.1	5.7	6.2	-91.31	-179.7	102.1	173.6	162.4	11.19	15.508				
2,600.0	2,586.7	2,572.8	2,554.6	6.1	6.6	-94.71	-196.4	113.5	192.2	180.3	11.90	16.160				
2,700.0	2,684.2	2,670.5	2,650.2	6.4	7.0	-97.52	-213.0	124.9	211.4	198.8	12.62	16.752				
2,800.0	2,781.6	2,768.1	2,745.7	6.8	7.4	-99.86	-229.7	136.2	231.0	217.7	13.36	17.287				
2,900.0	2,879.1	2,865.8	2,841.3	7.3	7.8	-101.83	-246.3	147.6	251.0	236.8	14.12	17.770				
3,000.0	2,976.6	2,963.4	2,936.9	7.7	8.2	-103.51	-262.9	159.0	271.1	256.2	14.89	18.207				
3,100.0	3,074.1	3,061.1	3,032.4	8.1	8.7	-104.96	-279.6	170.4	291.5	275.8	15.67	18.602				
3,200.0	3,171.5	3,158.7	3,128.0	8.5	9.1	-106.22	-296.2	181.7	312.0	295.6	16.46	18.959				
3,300.0	3,269.0	3,256.4	3,223.5	9.0	9.5	-107.32	-312.9	193.1	332.7	315.4	17.25	19.285				
3,400.0	3,366.5	3,354.1	3,319.1	9.4	9.9	-108.30	-329.5	204.5	353.4	335.4	18.05	19.581				
3,500.0	3,463.9	3,451.7	3,414.6	9.9	10.4	-109.16	-346.1	215.8	374.2	355.4	18.85	19.852				
3,600.0	3,561.4	3,549.4	3,510.2	10.3	10.8	-109.94	-362.8	227.2	395.2	375.5	19.66	20.100				
3,700.0	3,658.9	3,647.0	3,605.7	10.8	11.2	-110.64	-379.4	238.6	416.1	395.7	20.47	20.328				
3,800.0	3,756.4	3,744.7	3,701.3	11.2	11.7	-111.27	-396.0	250.0	437.2	415.9	21.29	20.539				
3,900.0	3,853.8	3,842.3	3,796.8	11.7	12.1	-111.84	-412.7	261.3	458.2	436.1	22.10	20.733				
4,000.0	3,951.3	3,940.0	3,892.4	12.1	12.6	-112.37	-429.3	272.7	479.4	456.4	22.92	20.913				
4,100.0	4,048.8	4,037.6	3,987.9	12.6	13.0	-112.84	-446.0	284.1	500.5	476.8	23.74	21.080				
4,200.0	4,146.3	4,135.3	4,083.5	13.1	13.4	-113.28	-462.6	295.4	521.7	497.1	24.57	21.235				
4,300.0	4,243.7	4,233.0	4,179.1	13.5	13.9	-113.69	-479.2	306.8	542.9	517.5	25.39	21.380				
4,400.0	4,341.2	4,330.6	4,274.6	14.0	14.3	-114.07	-495.9	318.2	564.1	537.9	26.22	21.516				
4,500.0	4,438.7	4,428.3	4,370.2	14.5	14.8	-114.41	-512.5	329.5	585.4	558.3	27.05	21.642				
4,600.0	4,536.1	4,525.9	4,465.7	14.9	15.2	-114.74	-529.2	340.9	606.7	578.8	27.88	21.761				
4,700.0	4,633.6	4,623.6	4,561.3	15.4	15.6	-115.04	-545.8	352.3	627.9	599.2	28.71	21.873				
4,800.0	4,731.1	4,721.2	4,656.8	15.9	16.1	-115.32	-562.4	363.7	649.2	619.7	29.54	21.978				
4,900.0	4,828.6	4,818.9	4,752.4	16.4	16.5	-115.59	-579.1	375.0	670.6	640.2	30.37	22.077				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,000.0	4,926.0	4,916.5	4,847.9	16.8	17.0	-115.83	-595.7	386.4	691.9	660.7	31.21	22.171				
5,100.0	5,023.5	5,014.2	4,943.5	17.3	17.4	-116.07	-612.3	397.8	713.2	681.2	32.04	22.259				
5,200.0	5,121.0	5,111.9	5,039.0	17.8	17.9	-116.29	-629.0	409.1	734.6	701.7	32.88	22.343				
5,240.1	5,160.0	5,151.0	5,077.3	18.0	18.0	-116.37	-635.7	413.7	743.2	709.9	33.21	22.376				
5,300.0	5,218.6	5,209.6	5,134.7	18.2	18.3	-116.68	-645.6	420.5	755.7	722.0	33.71	22.418				
5,400.0	5,316.8	5,307.6	5,230.6	18.5	18.8	-116.98	-662.3	431.9	775.4	740.9	34.45	22.505				
5,500.0	5,415.7	5,409.1	5,329.9	18.8	19.2	-117.01	-679.6	443.7	793.5	758.3	35.16	22.570				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance			Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	0.71	45.2	0.6	45.2							
100.0	100.0	100.0	100.0	0.1	0.1	0.71	45.2	0.6	45.2	45.0	0.22	201.020				
200.0	200.0	200.0	200.0	0.3	0.3	0.71	45.2	0.6	45.2	44.5	0.67	67.002				
300.0	300.0	300.0	300.0	0.6	0.6	0.71	45.2	0.6	45.2	44.1	1.12	40.201				
400.0	400.0	400.0	400.0	0.8	0.8	0.71	45.2	0.6	45.2	43.6	1.57	28.715				
500.0	500.0	500.0	500.0	1.0	1.0	0.71	45.2	0.6	45.2	43.2	2.02	22.334				
600.0	600.0	600.0	600.0	1.2	1.2	0.71	45.2	0.6	45.2	42.7	2.47	18.273				
700.0	700.0	700.0	700.0	1.5	1.5	0.71	45.2	0.6	45.2	42.3	2.92	15.462				
800.0	800.0	800.0	800.0	1.7	1.7	0.71	45.2	0.6	45.2	41.8	3.37	13.400				
900.0	900.0	900.0	900.0	1.9	1.9	0.71	45.2	0.6	45.2	41.4	3.82	11.824				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.71	45.2	0.6	45.2	40.9	4.27	10.579				
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.71	45.2	0.6	45.2	40.5	4.72	9.572				
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.71	45.2	0.6	45.2	40.0	5.17	8.739				
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.71	45.2	0.6	45.2	39.6	5.62	8.040				
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.71	45.2	0.6	45.2	39.1	6.07	7.445				
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	0.71	45.2	0.6	45.2	38.7	6.52	6.931 CC				
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	155.39	45.2	0.6	46.4	39.4	6.94	6.681				
1,700.0	1,699.9	1,699.9	1,699.9	3.6	3.7	157.25	45.2	0.6	50.0	42.6	7.34	6.811				
1,800.0	1,799.7	1,799.7	1,799.7	3.8	3.9	159.80	45.2	0.6	56.0	48.3	7.73	7.247				
1,900.0	1,899.3	1,899.3	1,899.3	4.0	4.2	162.56	45.2	0.6	64.7	56.6	8.13	7.958				
2,000.0	1,998.6	1,998.6	1,998.6	4.2	4.4	165.17	45.2	0.6	76.0	67.5	8.53	8.913				
2,100.0	2,097.5	2,097.5	2,097.5	4.5	4.6	167.46	45.2	0.6	90.0	81.0	8.92	10.082				
2,200.0	2,196.1	2,196.1	2,196.1	4.7	4.8	169.39	45.2	0.6	106.6	97.3	9.32	11.439				
2,300.0	2,294.2	2,294.2	2,294.2	5.0	5.0	170.98	45.2	0.6	125.8	116.1	9.71	12.962				
2,360.6	2,353.3	2,353.3	2,353.3	5.2	5.2	171.80	45.2	0.6	138.7	128.8	9.94	13.956				
2,400.0	2,391.7	2,391.7	2,391.7	5.3	5.3	172.29	45.2	0.6	147.5	137.3	10.11	14.586				
2,500.0	2,489.2	2,489.2	2,489.2	5.7	5.5	173.30	45.2	0.6	169.6	159.1	10.54	16.089				
2,600.0	2,586.7	2,591.0	2,591.0	6.1	5.7	174.21	44.1	0.5	190.9	179.9	10.96	17.409				
2,700.0	2,684.2	2,694.3	2,694.2	6.4	5.9	175.20	40.2	0.4	209.7	198.3	11.36	18.454				
2,800.0	2,781.6	2,798.4	2,798.1	6.8	6.0	176.28	33.5	0.2	226.0	214.2	11.77	19.207				
2,900.0	2,879.1	2,903.3	2,902.6	7.3	6.2	177.47	23.9	0.0	239.9	227.7	12.18	19.691				
3,000.0	2,976.6	3,008.8	3,007.3	7.7	6.4	178.78	11.4	-0.4	251.3	238.7	12.61	19.931				
3,100.0	3,074.1	3,114.7	3,112.1	8.1	6.7	-179.76	-4.2	-0.8	260.4	247.3	13.05	19.952				
3,200.0	3,171.5	3,220.9	3,216.6	8.5	6.9	-178.13	-22.6	-1.4	267.1	253.6	13.51	19.774				
3,300.0	3,269.0	3,327.2	3,320.7	9.0	7.2	-176.30	-44.0	-2.0	271.5	257.5	13.99	19.414				
3,400.0	3,366.5	3,433.4	3,424.1	9.4	7.5	-174.23	-68.2	-2.7	273.8	259.3	14.49	18.890				
3,500.0	3,463.9	3,539.3	3,526.6	9.9	7.8	-171.88	-95.3	-3.4	274.0	258.9	15.04	18.217				
3,600.0	3,561.4	3,644.9	3,627.9	10.3	8.2	-169.21	-125.1	-4.3	272.3	256.7	15.64	17.411				
3,700.0	3,658.9	3,749.3	3,727.2	10.8	8.6	-166.17	-157.2	-5.2	269.0	252.7	16.31	16.494				
3,800.0	3,756.4	3,848.2	3,820.9	11.2	9.1	-163.08	-188.7	-6.1	265.6	248.6	17.04	15.590				
3,900.0	3,853.8	3,947.1	3,914.6	11.7	9.5	-159.93	-220.2	-7.0	263.0	245.2	17.84	14.744				
4,000.0	3,951.3	4,046.0	4,008.4	12.1	10.0	-156.72	-251.7	-7.9	261.2	242.5	18.72	13.958				
4,100.0	4,048.8	4,144.8	4,102.1	12.6	10.5	-153.47	-283.2	-8.8	260.3	240.6	19.67	13.234				
4,158.1	4,105.4	4,202.2	4,156.5	12.9	10.8	-151.59	-301.5	-9.3	260.2	239.9	20.26	12.845				
4,200.0	4,146.3	4,243.7	4,195.8	13.1	11.0	-150.22	-314.7	-9.7	260.2	239.6	20.69	12.575				
4,300.0	4,243.7	4,342.6	4,289.5	13.5	11.6	-146.98	-346.2	-10.5	261.0	239.2	21.79	11.982				
4,400.0	4,341.2	4,441.5	4,383.2	14.0	12.1	-143.76	-377.7	-11.4	262.7	239.7	22.93	11.453				
4,500.0	4,438.7	4,540.3	4,477.0	14.5	12.6	-140.59	-409.1	-12.3	265.1	241.0	24.13	10.988				
4,600.0	4,536.1	4,639.2	4,570.7	14.9	13.2	-137.49	-440.6	-13.2	268.4	243.1	25.36	10.584				
4,700.0	4,633.6	4,738.1	4,664.4	15.4	13.8	-134.47	-472.1	-14.1	272.5	245.9	26.62	10.237				
4,800.0	4,731.1	4,837.0	4,758.1	15.9	14.3	-131.55	-503.6	-15.0	277.3	249.4	27.89	9.942				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,828.6	4,935.8	4,851.9	16.4	14.9	-128.73	-535.1	-15.9	282.8	253.6	29.17	9.695				
5,000.0	4,926.0	5,034.7	4,945.6	16.8	15.5	-126.02	-566.6	-16.8	289.0	258.6	30.45	9.490				
5,100.0	5,023.5	5,132.7	5,038.6	17.3	16.0	-123.55	-597.3	-17.7	295.9	264.3	31.64	9.351				
5,200.0	5,121.0	5,230.3	5,132.2	17.8	16.4	-121.76	-625.1	-18.5	303.8	271.1	32.67	9.297				
5,240.1	5,160.0	5,269.6	5,170.1	18.0	16.6	-121.24	-635.3	-18.8	307.1	274.1	33.06	9.290				
5,300.0	5,218.6	5,328.4	5,227.2	18.2	16.8	-120.65	-649.7	-19.2	312.0	278.4	33.59	9.288				
5,400.0	5,316.8	5,426.9	5,323.2	18.5	17.2	-119.75	-671.2	-19.8	319.1	284.7	34.36	9.286				
5,500.0	5,415.7	5,525.5	5,420.2	18.8	17.5	-118.93	-689.4	-20.3	324.9	289.8	35.05	9.268				
5,600.0	5,515.0	5,624.5	5,518.0	19.0	17.8	-118.18	-704.3	-20.7	329.3	293.7	35.67	9.234				
5,700.0	5,614.7	5,723.6	5,616.5	19.3	18.1	-117.49	-715.8	-21.0	332.5	296.3	36.20	9.184				
5,800.0	5,714.5	5,823.0	5,715.5	19.4	18.3	-116.84	-723.9	-21.3	334.2	297.6	36.65	9.120				
5,885.5	5,800.0	5,908.0	5,800.4	19.5	18.5	89.67	-728.1	-21.4	334.6	297.6	36.98	9.050				
5,900.0	5,814.5	5,922.5	5,814.8	19.6	18.5	89.75	-728.6	-21.4	334.6	297.6	37.03	9.037				
6,000.0	5,914.5	6,022.1	5,914.5	19.7	18.7	89.97	-729.8	-21.4	334.6	297.2	37.33	8.963				
6,069.3	5,983.8	6,091.4	5,983.8	19.8	18.8	89.97	-729.8	-21.4	334.6	297.1	37.51	8.919				
6,085.6	6,000.1	6,107.7	6,000.1	19.8	18.8	90.00	-729.8	-21.4	334.6	297.0	37.55	8.909				
6,100.0	6,014.5	6,122.1	6,014.5	19.8	18.8	90.08	-729.8	-21.4	334.6	297.0	37.60	8.899				
6,150.0	6,064.4	6,172.0	6,064.4	19.8	18.9	90.69	-729.8	-21.4	334.6	296.9	37.74	8.866				
6,200.0	6,113.9	6,222.2	6,114.5	19.8	18.9	91.53	-727.8	-21.4	334.7	296.8	37.84	8.846				
6,250.0	6,162.8	6,272.7	6,164.8	19.8	18.9	92.36	-722.4	-21.4	334.9	297.0	37.86	8.844				
6,300.0	6,211.0	6,323.6	6,214.9	19.7	18.9	93.18	-713.7	-21.4	335.1	297.3	37.81	8.862				
6,350.0	6,258.3	6,374.8	6,264.6	19.6	18.8	93.99	-701.6	-21.4	335.4	297.7	37.69	8.898				
6,400.0	6,304.3	6,426.3	6,313.7	19.5	18.7	94.79	-686.0	-21.4	335.7	298.2	37.50	8.954				
6,450.0	6,349.0	6,478.1	6,361.9	19.4	18.6	95.56	-667.1	-21.4	336.2	298.9	37.24	9.027				
6,500.0	6,392.1	6,530.3	6,409.1	19.2	18.5	96.31	-644.8	-21.4	336.6	299.7	36.92	9.117				
6,550.0	6,433.4	6,582.9	6,454.9	19.0	18.3	97.03	-619.1	-21.4	337.1	300.6	36.55	9.223				
6,600.0	6,472.9	6,635.7	6,499.1	18.9	18.1	97.73	-590.2	-21.4	337.6	301.5	36.14	9.343				
6,650.0	6,510.2	6,688.8	6,541.4	18.7	17.8	98.38	-558.0	-21.4	338.2	302.5	35.69	9.475				
6,700.0	6,545.3	6,742.3	6,581.7	18.5	17.6	99.00	-522.9	-21.4	338.7	303.5	35.23	9.615				
6,750.0	6,578.0	6,796.0	6,619.5	18.3	17.4	99.58	-484.7	-21.4	339.3	304.5	34.77	9.760				
6,800.0	6,608.1	6,850.1	6,654.8	18.1	17.2	100.12	-443.8	-21.5	339.9	305.5	34.31	9.904				
6,850.0	6,635.6	6,904.3	6,687.2	17.9	16.9	100.61	-400.3	-21.5	340.4	306.5	33.89	10.043				
6,900.0	6,660.2	6,958.8	6,716.6	17.7	16.7	101.05	-354.4	-21.5	340.9	307.4	33.52	10.170				
6,950.0	6,682.0	7,013.6	6,742.7	17.6	16.6	101.44	-306.3	-21.5	341.3	308.1	33.21	10.278				
7,000.0	6,700.8	7,068.5	6,765.4	17.4	16.5	101.78	-256.3	-21.5	341.7	308.8	32.98	10.362				
7,050.0	6,716.5	7,123.5	6,784.4	17.3	16.4	102.06	-204.7	-21.5	342.1	309.2	32.85	10.414				
7,100.0	6,729.1	7,178.7	6,799.8	17.3	16.4	102.29	-151.7	-21.5	342.4	309.6	32.83	10.430				
7,150.0	6,738.5	7,234.0	6,811.3	17.2	16.4	102.46	-97.6	-21.5	342.6	309.7	32.92	10.407				
7,200.0	6,744.6	7,289.4	6,818.9	17.2	16.5	102.57	-42.8	-21.5	342.7	309.6	33.13	10.345				
7,250.0	6,747.5	7,344.8	6,822.4	17.3	16.7	102.63	12.5	-21.5	342.8	309.3	33.47	10.243				
7,271.3	6,747.8	7,368.5	6,822.7	17.4	16.7	102.63	36.2	-21.5	342.8	309.2	33.65	10.189				
7,300.0	6,747.7	7,397.2	6,822.6	17.5	16.9	102.63	64.9	-21.5	342.8	308.9	33.91	10.109				
7,400.0	6,747.4	7,497.2	6,822.3	18.1	17.4	102.62	164.9	-21.5	342.8	307.7	35.08	9.772				
7,500.0	6,747.2	7,597.2	6,822.0	18.9	18.1	102.61	264.9	-21.5	342.8	306.2	36.60	9.367				
7,600.0	6,746.9	7,697.2	6,821.7	19.8	19.0	102.60	364.9	-21.5	342.8	304.3	38.42	8.921				
7,700.0	6,746.6	7,797.2	6,821.4	21.0	20.1	102.60	464.9	-21.5	342.8	302.2	40.52	8.459				
7,800.0	6,746.4	7,897.2	6,821.1	22.2	21.2	102.59	564.9	-21.5	342.7	299.9	42.84	8.000				
7,900.0	6,746.1	7,997.2	6,820.8	23.5	22.5	102.58	664.9	-21.5	342.7	297.4	45.36	7.556				
8,000.0	6,745.9	8,097.2	6,820.4	24.9	23.8	102.57	764.9	-21.5	342.7	294.7	48.04	7.134				
8,100.0	6,745.6	8,197.2	6,820.1	26.4	25.3	102.56	864.9	-21.5	342.7	291.8	50.86	6.738				
8,200.0	6,745.3	8,297.2	6,819.8	27.9	26.8	102.55	964.9	-21.5	342.7	288.9	53.79	6.370				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,300.0	6,745.1	8,397.2	6,819.5	29.4	28.3	102.54	1,064.9	-21.5	342.7	285.8	56.83	6.030				
8,400.0	6,744.8	8,497.2	6,819.2	31.0	29.9	102.54	1,164.9	-21.5	342.6	282.7	59.94	5.716				
8,500.0	6,744.6	8,597.2	6,818.9	32.7	31.5	102.53	1,264.9	-21.5	342.6	279.5	63.13	5.427				
8,600.0	6,744.3	8,697.2	6,818.6	34.3	33.2	102.52	1,364.9	-21.5	342.6	276.2	66.37	5.162				
8,700.0	6,744.0	8,797.2	6,818.2	36.0	34.8	102.51	1,464.9	-21.6	342.6	272.9	69.67	4.917				
8,800.0	6,743.8	8,897.2	6,817.9	37.7	36.6	102.50	1,564.9	-21.6	342.6	269.6	73.02	4.692				
8,900.0	6,743.5	8,997.2	6,817.6	39.4	38.3	102.49	1,664.9	-21.6	342.6	266.2	76.40	4.484				
9,000.0	6,743.2	9,097.2	6,817.3	41.2	40.0	102.49	1,764.9	-21.6	342.5	262.7	79.82	4.291				
9,100.0	6,743.0	9,197.2	6,817.0	42.9	41.8	102.48	1,864.9	-21.6	342.5	259.3	83.27	4.113				
9,200.0	6,742.7	9,297.2	6,816.7	44.7	43.6	102.47	1,964.9	-21.6	342.5	255.8	86.74	3.949				
9,300.0	6,742.5	9,397.2	6,816.4	46.5	45.3	102.46	2,064.9	-21.6	342.5	252.3	90.24	3.795				
9,400.0	6,742.2	9,497.2	6,816.0	48.3	47.1	102.45	2,164.9	-21.6	342.5	248.7	93.76	3.653				
9,500.0	6,741.9	9,597.2	6,815.7	50.1	48.9	102.44	2,264.9	-21.6	342.5	245.2	97.30	3.520				
9,600.0	6,741.7	9,697.2	6,815.4	51.9	50.8	102.44	2,364.9	-21.6	342.4	241.6	100.85	3.395				
9,700.0	6,741.4	9,797.2	6,815.1	53.7	52.6	102.43	2,464.9	-21.6	342.4	238.0	104.42	3.279				
9,800.0	6,741.2	9,897.2	6,814.8	55.5	54.4	102.42	2,564.9	-21.6	342.4	234.4	108.01	3.170				
9,900.0	6,740.9	9,997.2	6,814.5	57.4	56.2	102.41	2,664.9	-21.6	342.4	230.8	111.60	3.068				
10,000.0	6,740.6	10,097.2	6,814.2	59.2	58.1	102.40	2,764.9	-21.6	342.4	227.2	115.21	2.972				
10,100.0	6,740.4	10,197.2	6,813.9	61.0	59.9	102.39	2,864.9	-21.6	342.4	223.5	118.82	2.881				
10,200.0	6,740.1	10,297.2	6,813.5	62.9	61.8	102.39	2,964.9	-21.6	342.3	219.9	122.45	2.796				
10,300.0	6,739.8	10,397.2	6,813.2	64.7	63.6	102.38	3,064.9	-21.6	342.3	216.2	126.09	2.715				
10,400.0	6,739.6	10,497.2	6,812.9	66.6	65.5	102.37	3,164.9	-21.6	342.3	212.6	129.73	2.639				
10,500.0	6,739.3	10,597.2	6,812.6	68.5	67.3	102.36	3,264.9	-21.7	342.3	208.9	133.38	2.566				
10,600.0	6,739.1	10,697.2	6,812.3	70.3	69.2	102.35	3,364.9	-21.7	342.3	205.3	137.03	2.498				
10,700.0	6,738.8	10,797.2	6,812.0	72.2	71.1	102.34	3,464.9	-21.7	342.3	201.6	140.69	2.433				
10,800.0	6,738.5	10,897.2	6,811.7	74.0	72.9	102.34	3,564.9	-21.7	342.3	197.9	144.36	2.371				
10,900.0	6,738.3	10,997.2	6,811.3	75.9	74.8	102.33	3,664.9	-21.7	342.2	194.2	148.04	2.312				
11,000.0	6,738.0	11,097.2	6,811.0	77.8	76.7	102.32	3,764.9	-21.7	342.2	190.5	151.71	2.256				
11,100.0	6,737.7	11,197.2	6,810.7	79.7	78.6	102.31	3,864.9	-21.7	342.2	186.8	155.40	2.202				
11,200.0	6,737.5	11,297.2	6,810.4	81.5	80.4	102.30	3,964.9	-21.7	342.2	183.1	159.08	2.151				
11,300.0	6,737.2	11,397.2	6,810.1	83.4	82.3	102.29	4,064.9	-21.7	342.2	179.4	162.77	2.102				
11,400.0	6,737.0	11,497.2	6,809.8	85.3	84.2	102.29	4,164.9	-21.7	342.2	175.7	166.47	2.055				
11,500.0	6,736.7	11,597.2	6,809.5	87.2	86.1	102.28	4,264.9	-21.7	342.1	172.0	170.17	2.011				
11,600.0	6,736.4	11,697.2	6,809.1	89.1	88.0	102.27	4,364.9	-21.7	342.1	168.3	173.87	1.968				
11,700.0	6,736.2	11,797.2	6,808.8	90.9	89.9	102.26	4,464.9	-21.7	342.1	164.5	177.57	1.927				
11,800.0	6,735.9	11,897.2	6,808.5	92.8	91.8	102.25	4,564.9	-21.7	342.1	160.8	181.28	1.887				
11,900.0	6,735.7	11,997.2	6,808.2	94.7	93.7	102.24	4,664.9	-21.7	342.1	157.1	184.99	1.849				
12,000.0	6,735.4	12,097.2	6,807.9	96.6	95.5	102.23	4,764.9	-21.7	342.1	153.4	188.70	1.813				
12,100.0	6,735.1	12,197.2	6,807.6	98.5	97.4	102.23	4,864.9	-21.7	342.0	149.6	192.42	1.778				
12,200.0	6,734.9	12,297.2	6,807.3	100.4	99.3	102.22	4,964.9	-21.7	342.0	145.9	196.13	1.744				
12,300.0	6,734.6	12,397.2	6,806.9	102.3	101.2	102.21	5,064.9	-21.8	342.0	142.2	199.85	1.711				
12,400.0	6,734.3	12,497.2	6,806.6	104.2	103.1	102.20	5,164.9	-21.8	342.0	138.4	203.57	1.680				
12,500.0	6,734.1	12,597.2	6,806.3	106.1	105.0	102.19	5,264.9	-21.8	342.0	134.7	207.30	1.650				
12,600.0	6,733.8	12,697.2	6,806.0	108.0	106.9	102.18	5,364.9	-21.8	342.0	130.9	211.02	1.621				
12,700.0	6,733.6	12,797.2	6,805.7	109.9	108.8	102.18	5,464.9	-21.8	341.9	127.2	214.75	1.592				
12,800.0	6,733.3	12,897.2	6,805.4	111.8	110.7	102.17	5,564.9	-21.8	341.9	123.5	218.48	1.565				
12,900.0	6,733.0	12,997.2	6,805.1	113.7	112.6	102.16	5,664.9	-21.8	341.9	119.7	222.21	1.539				
13,000.0	6,732.8	13,097.2	6,804.7	115.6	114.5	102.15	5,764.9	-21.8	341.9	116.0	225.94	1.513				
13,100.0	6,732.5	13,197.2	6,804.4	117.5	116.4	102.14	5,864.9	-21.8	341.9	112.2	229.68	1.489	Level 3			
13,200.0	6,732.3	13,297.2	6,804.1	119.4	118.3	102.13	5,964.9	-21.8	341.9	108.5	233.41	1.465	Level 3			
13,300.0	6,732.0	13,397.2	6,803.8	121.3	120.2	102.13	6,064.9	-21.8	341.9	104.7	237.15	1.442	Level 3			

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
13,400.0	6,731.7	13,497.2	6,803.5	123.2	122.1	102.12	6,164.9	-21.8	341.8	100.9	240.89	1.419	Level 3			
13,500.0	6,731.5	13,597.2	6,803.2	125.1	124.0	102.11	6,264.9	-21.8	341.8	97.2	244.63	1.397	Level 3			
13,600.0	6,731.2	13,697.2	6,802.9	127.0	125.9	102.10	6,364.9	-21.8	341.8	93.4	248.37	1.376	Level 3			
13,700.0	6,730.9	13,797.2	6,802.5	128.9	127.8	102.09	6,464.9	-21.8	341.8	89.7	252.11	1.356	Level 3			
13,800.0	6,730.7	13,897.2	6,802.2	130.8	129.7	102.08	6,564.9	-21.8	341.8	85.9	255.85	1.336	Level 3			
13,900.0	6,730.4	13,997.2	6,801.9	132.7	131.6	102.08	6,664.9	-21.8	341.8	82.2	259.60	1.316	Level 3			
14,000.0	6,730.2	14,097.2	6,801.6	134.6	133.5	102.07	6,764.9	-21.8	341.7	78.4	263.34	1.298	Level 3			
14,100.0	6,729.9	14,197.2	6,801.3	136.5	135.5	102.06	6,864.9	-21.8	341.7	74.6	267.09	1.279	Level 3			
14,200.0	6,729.6	14,297.2	6,801.0	138.4	137.4	102.05	6,964.9	-21.9	341.7	70.9	270.84	1.262	Level 3			
14,300.0	6,729.4	14,397.2	6,800.7	140.3	139.3	102.04	7,064.9	-21.9	341.7	67.1	274.58	1.244	Level 2			
14,400.0	6,729.1	14,497.2	6,800.3	142.2	141.2	102.03	7,164.9	-21.9	341.7	63.3	278.33	1.228	Level 2			
14,500.0	6,728.8	14,597.2	6,800.0	144.1	143.1	102.02	7,264.9	-21.9	341.7	59.6	282.08	1.211	Level 2			
14,600.0	6,728.6	14,697.2	6,799.7	146.0	145.0	102.02	7,364.9	-21.9	341.6	55.8	285.83	1.195	Level 2			
14,700.0	6,728.3	14,797.2	6,799.4	147.9	146.9	102.01	7,464.9	-21.9	341.6	52.0	289.59	1.180	Level 2			
14,800.0	6,728.1	14,897.2	6,799.1	149.8	148.8	102.00	7,564.9	-21.9	341.6	48.3	293.34	1.165	Level 2			
14,900.0	6,727.8	14,997.2	6,798.8	151.7	150.7	101.99	7,664.9	-21.9	341.6	44.5	297.09	1.150	Level 2			
15,000.0	6,727.5	15,097.2	6,798.5	153.6	152.6	101.98	7,764.9	-21.9	341.6	40.7	300.85	1.135	Level 2			
15,100.0	6,727.3	15,197.2	6,798.1	155.5	154.5	101.97	7,864.9	-21.9	341.6	37.0	304.60	1.121	Level 2			
15,200.0	6,727.0	15,297.2	6,797.8	157.5	156.4	101.97	7,964.9	-21.9	341.6	33.2	308.36	1.108	Level 2			
15,300.0	6,726.8	15,397.2	6,797.5	159.4	158.4	101.96	8,064.9	-21.9	341.5	29.4	312.11	1.094	Level 2			
15,400.0	6,726.5	15,497.2	6,797.2	161.3	160.3	101.95	8,164.9	-21.9	341.5	25.7	315.87	1.081	Level 2			
15,500.0	6,726.2	15,597.2	6,796.9	163.2	162.2	101.94	8,264.9	-21.9	341.5	21.9	319.63	1.068	Level 2			
15,600.0	6,726.0	15,697.2	6,796.6	165.1	164.1	101.93	8,364.8	-21.9	341.5	18.1	323.39	1.056	Level 2			
15,700.0	6,725.7	15,797.2	6,796.3	167.0	166.0	101.92	8,464.8	-21.9	341.5	14.3	327.15	1.044	Level 2			
15,800.0	6,725.4	15,897.2	6,795.9	168.9	167.9	101.92	8,564.8	-21.9	341.5	10.6	330.91	1.032	Level 2			
15,900.0	6,725.2	15,997.2	6,795.6	170.8	169.8	101.91	8,664.8	-21.9	341.4	6.8	334.67	1.020	Level 2			
16,000.0	6,724.9	16,097.2	6,795.3	172.7	171.7	101.90	8,764.8	-22.0	341.4	3.0	338.43	1.009	Level 2			
16,100.0	6,724.7	16,197.2	6,795.0	174.6	173.6	101.89	8,864.8	-22.0	341.4	-0.8	342.19	0.998	Level 1			
16,200.0	6,724.4	16,297.2	6,794.7	176.6	175.6	101.88	8,964.8	-22.0	341.4	-4.6	345.95	0.987	Level 1			
16,300.0	6,724.1	16,397.2	6,794.4	178.5	177.5	101.87	9,064.8	-22.0	341.4	-8.3	349.71	0.976	Level 1			
16,400.0	6,723.9	16,497.2	6,794.1	180.4	179.4	101.86	9,164.8	-22.0	341.4	-12.1	353.48	0.966	Level 1			
16,500.0	6,723.6	16,597.2	6,793.7	182.3	181.3	101.86	9,264.8	-22.0	341.4	-15.9	357.24	0.956	Level 1			
16,600.0	6,723.3	16,697.2	6,793.4	184.2	183.2	101.85	9,364.8	-22.0	341.3	-19.7	361.00	0.946	Level 1			
16,700.0	6,723.1	16,797.2	6,793.1	186.1	185.1	101.84	9,464.8	-22.0	341.3	-23.4	364.77	0.936	Level 1			
16,733.4	6,723.0	16,830.6	6,793.0	186.8	185.8	101.84	9,498.3	-22.0	341.3	-24.7	366.03	0.932	Level 1, ES, SF			

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-179.54	-104.9	-0.8	104.9							
100.0	100.0	100.0	100.0	0.1	0.1	-179.54	-104.9	-0.8	104.9	104.7	0.22	466.864				
200.0	200.0	200.0	200.0	0.3	0.3	-179.54	-104.9	-0.8	104.9	104.3	0.67	155.612 CC				
300.0	300.0	299.1	299.1	0.6	0.5	179.79	-105.3	0.4	105.3	104.2	1.11	95.106 ES				
400.0	400.0	398.1	398.0	0.8	0.8	177.84	-106.6	4.0	106.7	105.1	1.54	69.111				
500.0	500.0	496.8	496.5	1.0	1.0	174.70	-108.6	10.1	109.2	107.2	1.99	54.782				
600.0	600.0	595.2	594.5	1.2	1.2	170.58	-111.5	18.5	113.2	110.7	2.45	46.173				
700.0	700.0	693.0	691.6	1.5	1.5	165.76	-115.2	29.2	119.1	116.2	2.91	40.868				
800.0	800.0	790.1	787.8	1.7	1.8	160.55	-119.6	42.2	127.4	124.0	3.38	37.703				
900.0	900.0	886.5	882.8	1.9	2.2	155.29	-124.8	57.4	138.4	134.6	3.84	36.019				
1,000.0	1,000.0	982.0	976.6	2.1	2.6	150.25	-130.6	74.7	152.3	148.0	4.30	35.392 SF				
1,100.0	1,100.0	1,076.6	1,068.9	2.4	3.0	145.60	-137.2	94.0	169.2	164.4	4.76	35.522				
1,200.0	1,200.0	1,170.0	1,159.6	2.6	3.4	141.44	-144.4	115.1	189.0	183.8	5.22	36.185				
1,300.0	1,300.0	1,262.3	1,248.7	2.8	3.9	137.79	-152.2	138.1	211.9	206.2	5.69	37.215				
1,400.0	1,400.0	1,353.3	1,335.9	3.0	4.4	134.62	-160.6	162.7	237.5	231.3	6.17	38.489				
1,500.0	1,500.0	1,443.0	1,421.2	3.3	5.0	131.90	-169.5	188.9	265.8	259.1	6.66	39.920				
1,600.0	1,600.0	1,531.3	1,504.5	3.5	5.6	-76.20	-178.9	216.6	296.4	289.1	7.36	40.248				
1,700.0	1,699.9	1,617.9	1,585.5	3.6	6.2	-78.31	-188.8	245.4	329.1	321.3	7.79	42.236				
1,800.0	1,799.7	1,700.0	1,661.7	3.8	6.8	-80.28	-198.6	274.4	364.1	355.9	8.21	44.335				
1,900.0	1,899.3	1,785.7	1,740.6	4.0	7.5	-82.32	-209.5	306.3	401.3	392.7	8.65	46.385				
2,000.0	1,998.6	1,868.9	1,816.4	4.2	8.2	-84.21	-220.6	338.8	441.0	431.9	9.10	48.455				
2,100.0	2,097.5	1,958.1	1,897.4	4.5	9.0	-86.16	-232.6	374.1	481.7	472.2	9.57	50.313				
2,200.0	2,196.1	2,046.7	1,977.9	4.7	9.8	-87.99	-244.5	409.2	523.2	513.1	10.07	51.951				
2,300.0	2,294.2	2,134.8	2,057.9	5.0	10.6	-89.72	-256.4	444.0	565.4	554.8	10.60	53.352				
2,360.6	2,353.3	2,187.8	2,106.1	5.2	11.1	-90.71	-263.5	465.0	591.4	580.5	10.93	54.085				
2,400.0	2,391.7	2,222.3	2,137.4	5.3	11.4	-91.61	-268.2	478.6	608.5	597.3	11.15	54.555				
2,500.0	2,489.2	2,309.7	2,216.7	5.7	12.1	-93.68	-280.0	513.2	652.3	640.6	11.73	55.588				
2,600.0	2,586.7	2,397.1	2,296.1	6.1	12.9	-95.50	-291.7	547.8	696.8	684.4	12.35	56.418				
2,700.0	2,684.2	2,484.4	2,375.5	6.4	13.7	-97.12	-303.5	582.4	741.8	728.8	13.00	57.078				
2,800.0	2,781.6	2,571.8	2,454.9	6.8	14.5	-98.55	-315.3	617.0	787.2	773.5	13.67	57.599				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-179.57	-74.7	-0.6	74.7							
100.0	100.0	100.0	100.0	0.1	0.1	-179.57	-74.7	-0.6	74.7	74.5	0.22	332.315				
200.0	200.0	200.0	200.0	0.3	0.3	-179.57	-74.7	-0.6	74.7	74.0	0.67	110.765				
300.0	300.0	300.0	300.0	0.6	0.6	-179.57	-74.7	-0.6	74.7	73.6	1.12	66.458				
400.0	400.0	400.0	400.0	0.8	0.8	-179.57	-74.7	-0.6	74.7	73.1	1.57	47.470				
500.0	500.0	500.0	500.0	1.0	1.0	-179.57	-74.7	-0.6	74.7	72.7	2.02	36.921				
600.0	600.0	600.0	600.0	1.2	1.2	-179.57	-74.7	-0.6	74.7	72.2	2.47	30.208	CC, ES			
700.0	700.0	699.1	699.1	1.5	1.4	179.55	-75.3	0.6	75.3	72.4	2.90	25.945				
800.0	800.0	798.1	798.0	1.7	1.6	177.00	-77.0	4.0	77.1	73.8	3.32	23.228				
900.0	900.0	896.8	896.5	1.9	1.8	173.05	-79.9	9.7	80.5	76.8	3.75	21.480				
1,000.0	1,000.0	995.1	994.4	2.1	2.1	168.10	-83.9	17.7	85.9	81.7	4.19	20.522				
1,100.0	1,100.0	1,092.9	1,091.6	2.4	2.3	162.65	-89.0	27.8	93.6	89.0	4.63	20.234	SF			
1,200.0	1,200.0	1,190.1	1,187.8	2.6	2.6	157.17	-95.2	40.1	104.0	98.9	5.07	20.513				
1,300.0	1,300.0	1,286.5	1,282.8	2.8	2.9	152.02	-102.4	54.4	117.2	111.7	5.51	21.257				
1,400.0	1,400.0	1,382.0	1,376.6	3.0	3.3	147.42	-110.6	70.7	133.3	127.4	5.96	22.368				
1,500.0	1,500.0	1,476.6	1,468.9	3.3	3.6	143.42	-119.8	88.9	152.3	145.9	6.41	23.754				
1,600.0	1,600.0	1,570.0	1,559.6	3.5	4.1	-66.06	-129.8	108.8	173.6	166.7	6.95	25.001				
1,700.0	1,699.9	1,662.2	1,648.6	3.6	4.5	-69.57	-140.7	130.5	196.9	189.5	7.35	26.778				
1,800.0	1,799.7	1,753.1	1,735.6	3.8	5.0	-72.99	-152.4	153.7	222.4	214.6	7.76	28.644				
1,900.0	1,899.3	1,842.4	1,820.6	4.0	5.5	-76.22	-164.8	178.3	250.3	242.1	8.18	30.591				
2,000.0	1,998.6	1,932.1	1,905.3	4.2	6.1	-79.29	-178.1	204.7	280.7	272.1	8.62	32.571				
2,100.0	2,097.5	2,025.5	1,993.3	4.5	6.7	-82.27	-192.2	232.6	312.2	303.1	9.09	34.360				
2,200.0	2,196.1	2,118.4	2,080.9	4.7	7.3	-85.05	-206.2	260.4	344.3	334.7	9.58	35.933				
2,300.0	2,294.2	2,210.9	2,168.0	5.0	8.0	-87.64	-220.1	288.0	377.3	367.1	10.12	37.276				
2,360.6	2,353.3	2,266.7	2,220.6	5.2	8.3	-89.14	-228.5	304.7	397.6	387.2	10.47	37.978				
2,400.0	2,391.7	2,303.0	2,254.8	5.3	8.6	-90.28	-234.0	315.5	411.1	400.4	10.71	38.398				
2,500.0	2,489.2	2,394.9	2,341.4	5.7	9.2	-92.86	-247.8	343.0	445.8	434.5	11.33	39.337				
2,600.0	2,586.7	2,486.9	2,428.1	6.1	9.9	-95.08	-261.7	370.5	481.2	469.2	11.99	40.120				
2,700.0	2,684.2	2,578.8	2,514.7	6.4	10.5	-97.00	-275.5	398.0	517.2	504.5	12.68	40.773				
2,800.0	2,781.6	2,670.8	2,601.4	6.8	11.1	-98.68	-289.4	425.4	553.6	540.2	13.40	41.319				
2,900.0	2,879.1	2,762.7	2,688.0	7.3	11.8	-100.15	-303.2	452.9	590.4	576.3	14.13	41.777				
3,000.0	2,976.6	2,854.7	2,774.7	7.7	12.4	-101.46	-317.1	480.4	627.5	612.6	14.88	42.164				
3,100.0	3,074.1	2,946.6	2,861.3	8.1	13.1	-102.61	-330.9	507.9	664.9	649.2	15.65	42.493				
3,200.0	3,171.5	3,038.6	2,947.9	8.5	13.7	-103.65	-344.8	535.4	702.4	686.0	16.42	42.774				
3,300.0	3,269.0	3,130.5	3,034.6	9.0	14.4	-104.59	-358.6	562.8	740.2	723.0	17.21	43.016				
3,400.0	3,366.5	3,222.5	3,121.2	9.4	15.0	-105.43	-372.5	590.3	778.1	760.1	18.00	43.226				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-179.47	-90.0	-0.8	90.0							
100.0	100.0	100.0	100.0	0.1	0.1	-179.47	-90.0	-0.8	90.0	89.8	0.22	400.405				
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-90.0	-0.8	90.0	89.3	0.67	133.460				
300.0	300.0	300.0	300.0	0.6	0.6	-179.47	-90.0	-0.8	90.0	88.9	1.12	80.075				
400.0	400.0	400.0	400.0	0.8	0.8	-179.47	-90.0	-0.8	90.0	88.4	1.57	57.196 CC, ES				
500.0	500.0	499.1	499.1	1.0	1.0	179.78	-90.5	0.4	90.5	88.5	2.00	45.156				
600.0	600.0	598.1	598.0	1.2	1.2	177.57	-91.9	3.9	92.1	89.6	2.43	37.894				
700.0	700.0	696.8	696.5	1.5	1.4	174.07	-94.4	9.8	95.0	92.1	2.87	33.131				
800.0	800.0	795.1	794.4	1.7	1.7	169.55	-97.8	18.0	99.6	96.3	3.31	30.071				
900.0	900.0	892.9	891.5	1.9	1.9	164.40	-102.1	28.5	106.4	102.6	3.76	28.268				
1,000.0	1,000.0	990.0	987.7	2.1	2.2	159.01	-107.4	41.2	115.7	111.4	4.22	27.438				
1,100.0	1,100.0	1,086.4	1,082.7	2.4	2.5	153.74	-113.5	56.0	127.7	123.1	4.67	27.366 SF				
1,200.0	1,200.0	1,181.9	1,176.5	2.6	2.9	148.84	-120.5	72.9	142.8	137.6	5.12	27.876				
1,300.0	1,300.0	1,276.4	1,268.8	2.8	3.3	144.45	-128.3	91.7	160.7	155.1	5.58	28.822				
1,400.0	1,400.0	1,369.9	1,359.5	3.0	3.7	140.61	-136.8	112.3	181.6	175.6	6.04	30.081				
1,500.0	1,500.0	1,462.2	1,448.5	3.3	4.2	137.31	-146.1	134.7	205.3	198.8	6.51	31.555				
1,600.0	1,600.0	1,553.1	1,535.7	3.5	4.7	-71.41	-156.0	158.8	231.3	224.2	7.12	32.484				
1,700.0	1,699.9	1,642.7	1,620.9	3.6	5.3	-74.15	-166.6	184.3	259.4	251.8	7.54	34.403				
1,800.0	1,799.7	1,730.6	1,703.9	3.8	5.8	-76.81	-177.7	211.2	289.7	281.7	7.96	36.399				
1,900.0	1,899.3	1,817.2	1,784.9	4.0	6.4	-79.34	-189.4	239.3	322.4	314.0	8.39	38.439				
2,000.0	1,998.6	1,909.5	1,871.0	4.2	7.1	-81.93	-202.1	270.2	356.5	347.6	8.83	40.353				
2,100.0	2,097.5	2,001.5	1,956.7	4.5	7.8	-84.35	-214.9	300.9	391.1	381.8	9.30	42.059				
2,200.0	2,196.1	2,093.0	2,042.0	4.7	8.5	-86.63	-227.5	331.5	426.5	416.7	9.79	43.542				
2,300.0	2,294.2	2,184.0	2,126.8	5.0	9.2	-88.79	-240.1	361.9	462.6	452.3	10.33	44.802				
2,360.6	2,353.3	2,238.8	2,178.0	5.2	9.6	-90.05	-247.7	380.2	484.9	474.3	10.67	45.456				
2,400.0	2,391.7	2,274.4	2,211.2	5.3	9.8	-91.06	-252.6	392.1	499.6	488.7	10.90	45.853				
2,500.0	2,489.2	2,364.8	2,295.5	5.7	10.5	-93.39	-265.1	422.3	537.5	526.0	11.50	46.726				
2,600.0	2,586.7	2,455.2	2,379.7	6.1	11.2	-95.42	-277.6	452.5	576.1	563.9	12.14	47.433				
2,700.0	2,684.2	2,545.6	2,464.0	6.4	11.9	-97.20	-290.1	482.7	615.2	602.4	12.82	48.002				
2,800.0	2,781.6	2,636.0	2,548.2	6.8	12.6	-98.78	-302.6	512.9	654.7	641.2	13.51	48.460				
2,900.0	2,879.1	2,726.3	2,632.5	7.3	13.3	-100.18	-315.1	543.1	694.7	680.5	14.23	48.828				
3,000.0	2,976.6	2,816.7	2,716.8	7.7	14.0	-101.43	-327.6	573.3	735.0	720.0	14.96	49.125				
3,100.0	3,074.1	2,907.1	2,801.0	8.1	14.7	-102.55	-340.1	603.5	775.5	759.8	15.71	49.365				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-179.47	-59.7	-0.6	59.7							
100.0	100.0	100.0	100.0	0.1	0.1	-179.47	-59.7	-0.6	59.7	59.5	0.22	265.856				
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-59.7	-0.6	59.7	59.1	0.67	88.613				
300.0	300.0	300.0	300.0	0.6	0.6	-179.47	-59.7	-0.6	59.7	58.6	1.12	53.167				
400.0	400.0	400.0	400.0	0.8	0.8	-179.47	-59.7	-0.6	59.7	58.2	1.57	37.976				
500.0	500.0	500.0	500.0	1.0	1.0	-179.47	-59.7	-0.6	59.7	57.7	2.02	29.537				
600.0	600.0	600.0	600.0	1.2	1.2	-179.47	-59.7	-0.6	59.7	57.3	2.47	24.167				
700.0	700.0	700.0	700.0	1.5	1.5	-179.47	-59.7	-0.6	59.7	56.8	2.92	20.449				
800.0	800.0	800.0	800.0	1.7	1.7	-179.47	-59.7	-0.6	59.7	56.4	3.37	17.722 CC, ES				
900.0	900.0	899.2	899.1	1.9	1.9	179.50	-60.4	0.5	60.4	56.6	3.80	15.913				
1,000.0	1,000.0	998.2	998.1	2.1	2.1	176.54	-62.5	3.8	62.6	58.4	4.21	14.871				
1,100.0	1,100.0	1,096.9	1,096.6	2.4	2.3	172.08	-65.9	9.2	66.7	62.0	4.64	14.381 SF				
1,200.0	1,200.0	1,195.3	1,194.6	2.6	2.5	166.72	-70.7	16.7	72.9	67.8	5.06	14.389				
1,300.0	1,300.0	1,293.1	1,291.8	2.8	2.7	161.12	-76.8	26.3	81.6	76.1	5.50	14.846				
1,400.0	1,400.0	1,390.3	1,388.0	3.0	3.0	155.79	-84.2	37.9	93.1	87.2	5.93	15.695				
1,500.0	1,500.0	1,486.8	1,483.1	3.3	3.3	151.02	-92.8	51.4	107.4	101.1	6.37	16.865				
1,600.0	1,600.0	1,582.3	1,576.9	3.5	3.6	-59.36	-102.6	66.8	123.9	117.1	6.84	18.129				
1,700.0	1,699.9	1,676.9	1,669.2	3.6	4.0	-63.84	-113.5	84.0	142.2	135.0	7.23	19.666				
1,800.0	1,799.7	1,770.4	1,760.0	3.8	4.4	-68.22	-125.6	102.9	162.7	155.1	7.63	21.310				
1,900.0	1,899.3	1,862.6	1,849.0	4.0	4.8	-72.36	-138.6	123.3	185.6	177.5	8.05	23.063				
2,000.0	1,998.6	1,955.7	1,938.2	4.2	5.3	-76.27	-152.8	145.6	210.9	202.4	8.48	24.862				
2,100.0	2,097.5	2,050.9	2,029.4	4.5	5.8	-79.97	-167.5	168.7	237.0	228.0	8.94	26.499				
2,200.0	2,196.1	2,145.9	2,120.4	4.7	6.4	-83.39	-182.1	191.8	263.8	254.3	9.44	27.932				
2,300.0	2,294.2	2,240.4	2,210.9	5.0	6.9	-86.61	-196.7	214.7	291.3	281.3	9.99	29.162				
2,360.6	2,353.3	2,297.5	2,265.6	5.2	7.2	-88.47	-205.5	228.5	308.5	298.1	10.35	29.815				
2,400.0	2,391.7	2,334.6	2,301.1	5.3	7.4	-89.79	-211.2	237.5	319.8	309.2	10.59	30.200				
2,500.0	2,489.2	2,428.7	2,391.2	5.7	8.0	-92.75	-225.8	260.3	349.2	338.0	11.23	31.088				
2,600.0	2,586.7	2,522.8	2,481.4	6.1	8.5	-95.27	-240.3	283.2	379.4	367.5	11.91	31.852				
2,700.0	2,684.2	2,616.9	2,571.5	6.4	9.1	-97.42	-254.8	306.0	410.2	397.5	12.62	32.511				
2,800.0	2,781.6	2,710.9	2,661.6	6.8	9.6	-99.27	-269.3	328.8	441.4	428.0	13.34	33.079				
2,900.0	2,879.1	2,805.0	2,751.7	7.3	10.2	-100.88	-283.8	351.6	473.0	458.9	14.09	33.571				
3,000.0	2,976.6	2,899.1	2,841.8	7.7	10.8	-102.29	-298.3	374.4	504.8	490.0	14.85	34.000				
3,100.0	3,074.1	2,993.2	2,931.9	8.1	11.3	-103.54	-312.9	397.2	537.0	521.3	15.62	34.376				
3,200.0	3,171.5	3,087.3	3,022.0	8.5	11.9	-104.64	-327.4	420.1	569.3	552.9	16.40	34.708				
3,300.0	3,269.0	3,181.4	3,112.1	9.0	12.5	-105.63	-341.9	442.9	601.8	584.6	17.19	35.003				
3,400.0	3,366.5	3,275.4	3,202.3	9.4	13.0	-106.52	-356.4	465.7	634.4	616.4	17.99	35.265				
3,500.0	3,463.9	3,369.5	3,292.4	9.9	13.6	-107.32	-370.9	488.5	667.2	648.4	18.79	35.501				
3,600.0	3,561.4	3,463.6	3,382.5	10.3	14.2	-108.05	-385.4	511.3	700.1	680.5	19.60	35.713				
3,700.0	3,658.9	3,557.7	3,472.6	10.8	14.7	-108.71	-400.0	534.1	733.1	712.6	20.42	35.905				
3,800.0	3,756.4	3,651.8	3,562.7	11.2	15.3	-109.31	-414.5	557.0	766.1	744.9	21.23	36.080				
3,900.0	3,853.8	3,745.9	3,652.8	11.7	15.9	-109.87	-429.0	579.8	799.2	777.2	22.05	36.239				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Existing Wells - Sec.7-T5N-R64W - Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 6990-UNKNOWN														
Reference				Offset			Semi Major Axis			Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-84.13	47.7	-464.5	467.1					
100.0	100.0	87.0	87.0	0.1	1.7	-84.13	47.7	-464.5	467.0	465.1	1.85	252.086		
200.0	200.0	187.0	187.0	0.3	3.7	-84.13	47.7	-464.5	467.0	462.9	4.08	114.531		
300.0	300.0	287.0	287.0	0.6	5.7	-84.13	47.7	-464.5	467.0	460.7	6.30	74.098		
400.0	400.0	387.0	387.0	0.8	7.7	-84.13	47.7	-464.5	467.0	458.4	8.53	54.765		
500.0	500.0	487.0	487.0	1.0	9.7	-84.13	47.7	-464.5	467.0	456.2	10.75	43.432		
600.0	600.0	587.0	587.0	1.2	11.7	-84.13	47.7	-464.5	467.0	454.0	12.98	35.986		
700.0	700.0	687.0	687.0	1.5	13.7	-84.13	47.7	-464.5	467.0	451.8	15.20	30.719		
800.0	800.0	787.0	787.0	1.7	15.7	-84.13	47.7	-464.5	467.0	449.5	17.43	26.797		
900.0	900.0	887.0	887.0	1.9	17.7	-84.13	47.7	-464.5	467.0	447.3	19.65	23.763		
1,000.0	1,000.0	987.0	987.0	2.1	19.7	-84.13	47.7	-464.5	467.0	445.1	21.88	21.347		
1,100.0	1,100.0	1,087.0	1,087.0	2.4	21.7	-84.13	47.7	-464.5	467.0	442.9	24.10	19.376		
1,200.0	1,200.0	1,187.0	1,187.0	2.6	23.7	-84.13	47.7	-464.5	467.0	440.6	26.32	17.738		
1,300.0	1,300.0	1,287.0	1,287.0	2.8	25.7	-84.13	47.7	-464.5	467.0	438.4	28.55	16.356		
1,400.0	1,400.0	1,387.0	1,387.0	3.0	27.7	-84.13	47.7	-464.5	467.0	436.2	30.77	15.174		
1,500.0	1,500.0	1,487.0	1,487.0	3.3	29.7	-84.13	47.7	-464.5	467.0	434.0	33.00	14.151		
1,600.0	1,600.0	1,587.0	1,587.0	3.5	31.7	70.03	47.7	-464.5	466.5	431.3	35.19	13.255		
1,700.0	1,699.9	1,686.9	1,686.9	3.6	33.7	70.50	47.7	-464.5	465.2	427.8	37.36	12.451		
1,800.0	1,799.7	1,786.7	1,786.7	3.8	35.7	71.29	47.7	-464.5	463.0	423.5	39.53	11.713		
1,900.0	1,899.3	1,886.3	1,886.3	4.0	37.7	72.41	47.7	-464.5	460.2	418.5	41.71	11.033		
2,000.0	1,998.6	1,985.6	1,985.6	4.2	39.7	73.85	47.7	-464.5	456.7	412.8	43.90	10.405		
2,100.0	2,097.5	2,084.5	2,084.5	4.5	41.7	75.63	47.7	-464.5	452.9	406.8	46.10	9.825		
2,200.0	2,196.1	2,183.1	2,183.1	4.7	43.7	77.76	47.7	-464.5	449.0	400.7	48.33	9.290		
2,300.0	2,294.2	2,281.2	2,281.2	5.0	45.6	80.22	47.7	-464.5	445.2	394.6	50.59	8.800		
2,360.6	2,353.3	2,340.3	2,340.3	5.2	46.8	81.88	47.7	-464.5	443.1	391.1	51.97	8.526		
2,400.0	2,391.7	2,378.7	2,378.7	5.3	47.6	82.98	47.7	-464.5	441.9	389.0	52.88	8.357		
2,500.0	2,489.2	2,476.2	2,476.2	5.7	49.5	85.80	47.7	-464.5	439.7	384.5	55.20	7.965		
2,600.0	2,586.7	2,573.7	2,573.7	6.1	51.5	88.64	47.7	-464.5	438.6	381.0	57.53	7.623		
2,647.9	2,633.4	2,620.4	2,620.4	6.2	52.4	90.00	47.7	-464.5	438.4	379.8	58.65	7.475		
2,700.0	2,684.2	2,671.2	2,671.2	6.4	53.4	91.48	47.7	-464.5	438.6	378.7	59.87	7.326		
2,800.0	2,781.6	2,768.6	2,768.6	6.8	55.4	94.32	47.7	-464.5	439.7	377.5	62.21	7.069		
2,900.0	2,879.1	2,866.1	2,866.1	7.3	57.3	97.14	47.7	-464.5	442.0	377.5	64.54	6.849		
3,000.0	2,976.6	2,963.6	2,963.6	7.7	59.3	99.92	47.7	-464.5	445.4	378.6	66.87	6.661		
3,100.0	3,074.1	3,061.0	3,061.0	8.1	61.2	102.66	47.7	-464.5	449.9	380.7	69.19	6.503		
3,200.0	3,171.5	3,158.5	3,158.5	8.5	63.2	105.33	47.7	-464.5	455.4	384.0	71.49	6.371		
3,300.0	3,269.0	3,256.0	3,256.0	9.0	65.1	107.95	47.7	-464.5	462.0	388.2	73.78	6.262		
3,400.0	3,366.5	3,353.5	3,353.5	9.4	67.1	110.48	47.7	-464.5	469.5	393.5	76.06	6.173		
3,500.0	3,463.9	3,450.9	3,450.9	9.9	69.0	112.94	47.7	-464.5	478.0	399.7	78.31	6.103		
3,600.0	3,561.4	3,548.4	3,548.4	10.3	71.0	115.31	47.7	-464.5	487.3	406.7	80.56	6.049		
3,700.0	3,658.9	3,645.9	3,645.9	10.8	72.9	117.59	47.7	-464.5	497.5	414.7	82.78	6.009		
3,800.0	3,756.4	3,743.4	3,743.4	11.2	74.9	119.78	47.7	-464.5	508.4	423.4	85.00	5.981		
3,900.0	3,853.8	3,840.8	3,840.8	11.7	76.8	121.88	47.7	-464.5	520.1	432.9	87.20	5.964		
4,000.0	3,951.3	3,938.3	3,938.3	12.1	78.8	123.88	47.7	-464.5	532.4	443.0	89.38	5.956		
4,100.0	4,048.8	4,035.8	4,035.8	12.6	80.7	125.80	47.7	-464.5	545.4	453.8	91.56	5.957		
4,200.0	4,146.3	4,133.2	4,133.2	13.1	82.7	127.63	47.7	-464.5	559.0	465.2	93.73	5.964		
4,300.0	4,243.7	4,230.7	4,230.7	13.5	84.6	129.37	47.7	-464.5	573.1	477.2	95.88	5.977		
4,400.0	4,341.2	4,328.2	4,328.2	14.0	86.6	131.03	47.7	-464.5	587.7	489.7	98.03	5.995		
4,500.0	4,438.7	4,425.7	4,425.7	14.5	88.5	132.61	47.7	-464.5	602.8	502.7	100.18	6.018		
4,600.0	4,536.1	4,523.1	4,523.1	14.9	90.5	134.11	47.7	-464.5	618.4	516.1	102.31	6.044		
4,700.0	4,633.6	4,620.6	4,620.6	15.4	92.4	135.54	47.7	-464.5	634.3	529.9	104.45	6.073		
4,800.0	4,731.1	4,718.1	4,718.1	15.9	94.4	136.91	47.7	-464.5	650.7	544.1	106.58	6.105		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Existing Wells - Sec.7-T5N-R64W - Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 6990-UNKNOWN														
Reference				Offset			Semi Major Axis			Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,900.0	4,828.6	4,815.6	4,815.6	16.4	96.3	138.20	47.7	-464.5	667.3	558.6	108.70	6.139		
5,000.0	4,926.0	4,913.0	4,913.0	16.8	98.3	139.44	47.7	-464.5	684.3	573.5	110.83	6.175		
5,100.0	5,023.5	5,010.5	5,010.5	17.3	100.2	140.61	47.7	-464.5	701.6	588.7	112.95	6.212		
5,200.0	5,121.0	5,108.0	5,108.0	17.8	102.2	141.73	47.7	-464.5	719.2	604.1	115.07	6.250		
5,240.1	5,160.0	5,147.0	5,147.0	18.0	102.9	142.16	47.7	-464.5	726.3	610.4	115.92	6.266		
5,300.0	5,218.6	5,205.6	5,205.6	18.2	104.1	142.89	47.7	-464.5	736.5	619.1	117.45	6.271		
5,400.0	5,316.8	5,303.8	5,303.8	18.5	106.1	143.92	47.7	-464.5	751.6	631.6	119.96	6.265		
5,500.0	5,415.7	5,402.7	5,402.7	18.8	108.1	144.73	47.7	-464.5	763.9	641.5	122.44	6.239		
5,600.0	5,515.0	5,502.0	5,502.0	19.0	110.0	145.34	47.7	-464.5	773.5	648.7	124.85	6.195		
5,700.0	5,614.7	5,601.6	5,601.6	19.3	112.0	145.76	47.7	-464.5	780.3	653.1	127.19	6.135		
5,800.0	5,714.5	5,701.5	5,701.5	19.4	114.0	146.00	47.7	-464.5	784.2	654.8	129.44	6.058		
5,885.5	5,800.0	5,787.0	5,787.0	19.5	115.7	-7.94	47.7	-464.5	785.3	654.0	131.29	5.981		
5,900.0	5,814.5	5,801.5	5,801.5	19.6	116.0	-7.94	47.7	-464.5	785.3	653.7	131.60	5.967		
6,000.0	5,914.5	5,901.5	5,901.5	19.7	118.0	-7.94	47.7	-464.5	785.3	651.5	133.76	5.871		
6,069.3	5,983.8	5,970.8	5,970.8	19.8	119.4	-7.94	47.7	-464.5	785.3	650.0	135.25	5.806		
6,100.0	6,014.5	6,001.5	6,001.5	19.8	120.0	-7.96	47.7	-464.5	784.6	648.9	135.75	5.780		
6,150.0	6,064.4	6,051.4	6,051.4	19.8	121.0	-8.03	47.7	-464.5	781.0	644.9	136.10	5.739		
6,200.0	6,113.9	6,100.9	6,100.9	19.8	122.0	-8.17	47.7	-464.5	774.2	638.4	135.85	5.699		
6,250.0	6,162.8	6,149.8	6,149.8	19.8	123.0	-8.39	47.7	-464.5	764.2	629.2	135.02	5.660		
6,300.0	6,211.0	6,198.0	6,198.0	19.7	124.0	-8.70	47.7	-464.5	751.0	617.4	133.58	5.622		
6,350.0	6,258.3	6,245.2	6,245.2	19.6	124.9	-9.09	47.7	-464.5	734.8	603.2	131.56	5.585		
6,400.0	6,304.3	6,291.3	6,291.3	19.5	125.8	-9.59	47.7	-464.5	715.5	586.6	128.97	5.548		
6,450.0	6,349.0	6,336.0	6,336.0	19.4	126.7	-10.23	47.7	-464.5	693.4	567.5	125.82	5.511		
6,500.0	6,392.1	6,379.1	6,379.1	19.2	127.6	-11.02	47.7	-464.5	668.4	546.2	122.18	5.470		
6,550.0	6,433.4	6,420.4	6,420.4	19.0	128.4	-12.00	47.7	-464.5	640.7	522.6	118.10	5.425		
6,600.0	6,472.9	6,459.8	6,459.8	18.9	129.2	-13.23	47.7	-464.5	610.4	496.7	113.69	5.369		
6,650.0	6,510.2	6,497.2	6,497.2	18.7	129.9	-14.78	47.7	-464.5	577.7	468.6	109.12	5.294		
6,700.0	6,545.3	6,532.3	6,532.3	18.5	130.6	-16.75	47.7	-464.5	542.8	438.1	104.67	5.186		
6,750.0	6,578.0	6,565.0	6,565.0	18.3	131.3	-19.26	47.7	-464.5	505.8	405.0	100.74	5.020		
6,800.0	6,608.1	6,595.1	6,595.1	18.1	131.9	-22.52	47.7	-464.5	466.9	368.9	98.03	4.763		
6,850.0	6,635.6	6,622.6	6,622.6	17.9	132.5	-26.77	47.7	-464.5	426.4	328.9	97.52	4.372		
6,900.0	6,660.2	6,647.2	6,647.2	17.7	132.9	-32.33	47.7	-464.5	384.5	284.1	100.43	3.829		
6,950.0	6,682.0	6,669.0	6,669.0	17.6	133.4	-39.54	47.7	-464.5	341.6	233.8	107.72	3.171		
7,000.0	6,700.8	6,687.8	6,687.8	17.4	133.8	-48.55	47.7	-464.5	298.0	178.9	119.09	2.502		
7,050.0	6,716.5	6,703.5	6,703.5	17.3	134.1	-59.02	47.7	-464.5	254.4	122.3	132.09	1.926		
7,100.0	6,729.1	6,716.1	6,716.1	17.3	134.3	-69.79	47.7	-464.5	211.6	68.8	142.88	1.481	Level 3	
7,150.0	6,738.5	6,725.5	6,725.5	17.2	134.5	-79.24	47.7	-464.5	171.3	22.2	149.09	1.149	Level 2	
7,200.0	6,744.6	6,731.6	6,731.6	17.2	134.6	-86.04	47.7	-464.5	136.6	-14.8	151.38	0.902	Level 1	
7,250.0	6,747.5	6,734.5	6,734.5	17.3	134.7	-89.56	47.7	-464.5	113.4	-38.4	151.89	0.747	Level 1	
7,271.3	6,747.8	6,734.8	6,734.8	17.4	134.7	-90.02	47.7	-464.5	109.1	-42.8	151.98	0.718	Level 1	
7,283.1	6,747.7	6,734.7	6,734.7	17.4	134.7	-90.00	47.7	-464.5	108.5	-43.5	152.04	0.714	Level 1, CC, ES, SF	
7,300.0	6,747.7	6,734.7	6,734.7	17.5	134.7	-89.98	47.7	-464.5	109.8	-42.3	152.12	0.722	Level 1	
7,400.0	6,747.4	6,734.4	6,734.4	18.1	134.7	-89.84	47.7	-464.5	159.5	6.8	152.74	1.044	Level 2	
7,500.0	6,747.2	6,734.2	6,734.2	18.9	134.7	-89.70	47.7	-464.5	242.5	89.0	153.53	1.580		
7,600.0	6,746.9	6,733.9	6,733.9	19.8	134.7	-89.56	47.7	-464.5	335.0	180.5	154.48	2.168		
7,700.0	6,746.6	6,733.6	6,733.6	21.0	134.7	-89.42	47.7	-464.5	430.8	275.2	155.56	2.769		
7,800.0	6,746.4	6,733.4	6,733.4	22.2	134.7	-89.29	47.7	-464.5	528.2	371.4	156.75	3.370		
7,900.0	6,746.1	6,733.1	6,733.1	23.5	134.7	-89.15	47.7	-464.5	626.4	468.3	158.04	3.963		
8,000.0	6,745.9	6,732.9	6,732.9	24.9	134.7	-89.01	47.7	-464.5	725.1	565.7	159.41	4.549		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 71125-UNKNOWN													Existing Wells - Sec.7-T5N-R64W - Dunn #13-7 (Exist.) - Wellbore #1 - Wellbore #1		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
7,600.0	6,746.9	6,731.9	6,731.9	19.8	134.6	-90.61	1,138.8	-547.5	797.5	643.1	154.41	5.165				
7,700.0	6,746.6	6,731.6	6,731.6	21.0	134.6	-90.53	1,138.8	-547.5	700.9	545.4	155.49	4.507				
7,800.0	6,746.4	6,731.4	6,731.4	22.2	134.6	-90.45	1,138.8	-547.5	605.3	448.6	156.69	3.863				
7,900.0	6,746.1	6,731.1	6,731.1	23.5	134.6	-90.37	1,138.8	-547.5	511.4	353.4	157.98	3.237				
8,000.0	6,745.9	6,730.9	6,730.9	24.9	134.6	-90.29	1,138.8	-547.5	420.3	261.0	159.36	2.638				
8,100.0	6,745.6	6,730.6	6,730.6	26.4	134.6	-90.21	1,138.8	-547.5	334.4	173.6	160.80	2.080				
8,200.0	6,745.3	6,730.3	6,730.3	27.9	134.6	-90.14	1,138.8	-547.5	258.9	96.6	162.30	1.595				
8,300.0	6,745.1	6,730.1	6,730.1	29.4	134.6	-90.06	1,138.8	-547.5	205.3	41.5	163.85	1.253	Level 3			
8,374.2	6,744.9	6,729.9	6,729.9	30.6	134.6	-90.00	1,138.8	-547.5	191.5	26.4	165.03	1.160	Level 2, CC, ES, SF			
8,400.0	6,744.8	6,729.8	6,729.8	31.0	134.6	-89.98	1,138.8	-547.5	193.2	27.8	165.44	1.168	Level 2			
8,500.0	6,744.6	6,729.5	6,729.5	32.7	134.6	-89.90	1,138.8	-547.5	229.1	62.0	167.06	1.371	Level 3			
8,600.0	6,744.3	6,729.3	6,729.3	34.3	134.6	-89.82	1,138.8	-547.5	296.0	127.3	168.72	1.755				
8,700.0	6,744.0	6,729.0	6,729.0	36.0	134.6	-89.74	1,138.8	-547.5	377.9	207.5	170.40	2.218				
8,800.0	6,743.8	6,728.8	6,728.8	37.7	134.6	-89.67	1,138.8	-547.5	466.9	294.8	172.10	2.713				
8,900.0	6,743.5	6,728.5	6,728.5	39.4	134.6	-89.59	1,138.8	-547.5	559.6	385.7	173.83	3.219				
9,000.0	6,743.2	6,728.2	6,728.2	41.2	134.6	-89.51	1,138.8	-547.5	654.4	478.9	175.57	3.728				
9,100.0	6,743.0	6,728.0	6,728.0	42.9	134.6	-89.43	1,138.8	-547.5	750.6	573.3	177.32	4.233				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 6998-UNKNOWN Existing Wells - Sec.7-T5N-R64W - Little Will #6 (P&A) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,200.0	6,727.0	6,716.0	6,716.0	157.5	134.3	90.50	8,681.2	-140.0	748.5	456.8	291.70	2.566		
15,300.0	6,726.8	6,715.7	6,715.7	159.4	134.3	90.43	8,681.2	-140.0	653.4	359.8	293.61	2.225		
15,400.0	6,726.5	6,715.5	6,715.5	161.3	134.3	90.36	8,681.2	-140.0	560.0	264.4	295.51	1.895		
15,500.0	6,726.2	6,715.2	6,715.2	163.2	134.3	90.29	8,681.2	-140.0	469.3	171.9	297.42	1.578		
15,600.0	6,726.0	6,715.0	6,715.0	165.1	134.3	90.22	8,681.2	-140.0	383.3	84.0	299.32	1.281	Level 3	
15,700.0	6,725.7	6,714.7	6,714.7	167.0	134.3	90.15	8,681.2	-140.0	305.9	4.7	301.23	1.016	Level 2	
15,800.0	6,725.4	6,714.4	6,714.4	168.9	134.3	90.08	8,681.2	-140.0	245.5	-57.7	303.13	0.810	Level 1	
15,900.0	6,725.2	6,714.2	6,714.2	170.8	134.3	90.01	8,681.2	-140.0	216.7	-88.4	305.04	0.710	Level 1	
15,916.6	6,725.1	6,714.1	6,714.1	171.1	134.3	90.00	8,681.2	-140.0	216.0	-89.3	305.36	0.707	Level 1, CC, ES, SF	
16,000.0	6,724.9	6,713.9	6,713.9	172.7	134.3	89.94	8,681.2	-140.0	231.5	-75.4	306.94	0.754	Level 1	
16,100.0	6,724.7	6,713.6	6,713.6	174.6	134.3	89.87	8,681.2	-140.0	283.4	-25.5	308.85	0.917	Level 1	
16,200.0	6,724.4	6,713.4	6,713.4	176.6	134.3	89.80	8,681.2	-140.0	356.3	45.6	310.75	1.147	Level 2	
16,300.0	6,724.1	6,713.1	6,713.1	178.5	134.3	89.73	8,681.2	-140.0	440.0	127.4	312.66	1.407	Level 3	
16,400.0	6,723.9	6,712.9	6,712.9	180.4	134.3	89.66	8,681.2	-140.0	529.4	214.9	314.56	1.683		
16,500.0	6,723.6	6,712.6	6,712.6	182.3	134.3	89.59	8,681.2	-140.0	622.1	305.6	316.47	1.966		
16,600.0	6,723.3	6,712.3	6,712.3	184.2	134.2	89.53	8,681.2	-140.0	716.7	398.3	318.37	2.251		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

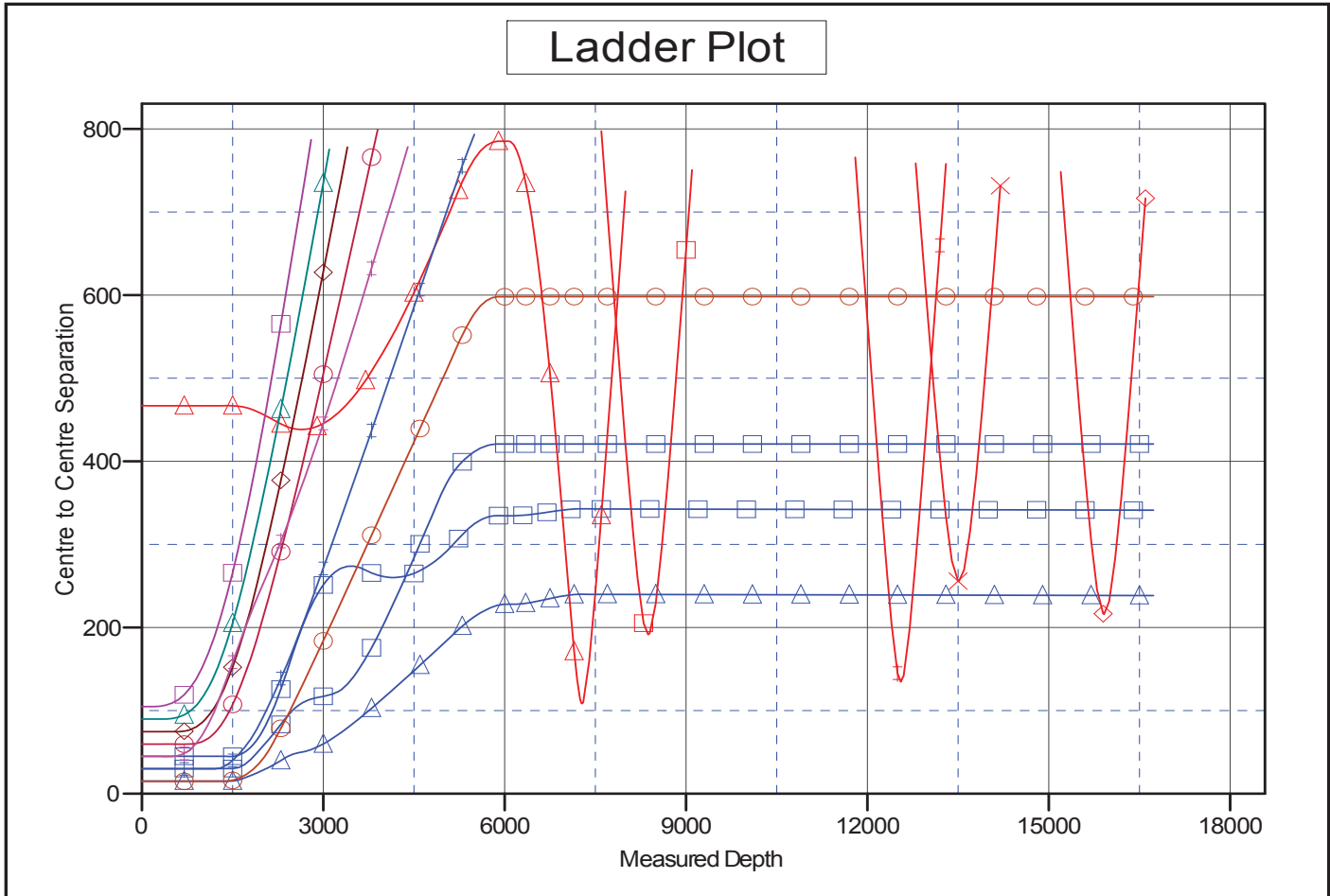
Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7000-UNKNOWN Existing Wells - Sec.7-T5N-R64W - Mitani #1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,800.0	6,733.3	6,705.3	6,705.3	111.8	134.1	90.42	6,278.9	-100.5	758.6	512.9	245.77	3.087		
12,900.0	6,733.0	6,705.0	6,705.0	113.7	134.1	90.36	6,278.9	-100.5	665.3	417.7	247.66	2.687		
13,000.0	6,732.8	6,704.8	6,704.8	115.6	134.1	90.30	6,278.9	-100.5	574.3	324.7	249.56	2.301		
13,100.0	6,732.5	6,704.5	6,704.5	117.5	134.1	90.24	6,278.9	-100.5	486.8	235.3	251.45	1.936		
13,200.0	6,732.3	6,704.2	6,704.2	119.4	134.1	90.18	6,278.9	-100.5	405.1	151.7	253.35	1.599		
13,300.0	6,732.0	6,704.0	6,704.0	121.3	134.1	90.13	6,278.9	-100.5	333.5	78.3	255.24	1.307	Level 3	
13,400.0	6,731.7	6,703.7	6,703.7	123.2	134.1	90.07	6,278.9	-100.5	279.9	22.8	257.14	1.089	Level 2	
13,500.0	6,731.5	6,703.5	6,703.5	125.1	134.1	90.01	6,278.9	-100.5	255.9	-3.1	259.04	0.988	Level 1	
13,514.3	6,731.4	6,703.4	6,703.4	125.3	134.1	90.00	6,278.9	-100.5	255.5	-3.8	259.31	0.985	Level 1, CC, ES, SF	
13,600.0	6,731.2	6,703.2	6,703.2	127.0	134.1	89.95	6,278.9	-100.5	269.5	8.6	260.93	1.033	Level 2	
13,700.0	6,730.9	6,702.9	6,702.9	128.9	134.1	89.89	6,278.9	-100.5	315.9	53.0	262.83	1.202	Level 2	
13,800.0	6,730.7	6,702.7	6,702.7	130.8	134.1	89.83	6,278.9	-100.5	383.3	118.6	264.73	1.448	Level 3	
13,900.0	6,730.4	6,702.4	6,702.4	132.7	134.0	89.77	6,278.9	-100.5	462.6	196.0	266.63	1.735		
14,000.0	6,730.2	6,702.1	6,702.1	134.6	134.0	89.71	6,278.9	-100.5	548.8	280.3	268.52	2.044		
14,100.0	6,729.9	6,701.9	6,701.9	136.5	134.0	89.66	6,278.9	-100.5	639.0	368.6	270.42	2.363		
14,200.0	6,729.6	6,701.6	6,701.6	138.4	134.0	89.60	6,278.9	-100.5	731.7	459.4	272.32	2.687		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 7032-UNKNOWN													Existing Wells - Sec.7-T5N-R64W - Mitani #14-6 (Exist.) - Wellbore #1 - Wellbore #1		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
11,800.0	6,735.9	6,697.9	6,697.9	92.8	134.0	90.84	5,318.6	-221.3	765.9	539.2	226.67	3.379				
11,900.0	6,735.7	6,697.6	6,697.6	94.7	134.0	90.73	5,318.6	-221.3	667.7	439.1	228.55	2.921				
12,000.0	6,735.4	6,697.4	6,697.4	96.6	133.9	90.62	5,318.6	-221.3	570.1	339.7	230.44	2.474				
12,100.0	6,735.1	6,697.1	6,697.1	98.5	133.9	90.51	5,318.6	-221.3	473.5	241.2	232.33	2.038				
12,200.0	6,734.9	6,696.9	6,696.9	100.4	133.9	90.39	5,318.6	-221.3	378.7	144.5	234.22	1.617				
12,300.0	6,734.6	6,696.6	6,696.6	102.3	133.9	90.28	5,318.6	-221.3	287.5	51.4	236.11	1.218	Level 2			
12,400.0	6,734.3	6,696.3	6,696.3	104.2	133.9	90.17	5,318.6	-221.3	204.6	-33.4	238.00	0.860	Level 1			
12,500.0	6,734.1	6,696.1	6,696.1	106.1	133.9	90.06	5,318.6	-221.3	145.1	-94.8	239.89	0.605	Level 1			
12,554.0	6,733.9	6,695.9	6,695.9	107.1	133.9	90.00	5,318.6	-221.3	134.7	-106.2	240.91	0.559	Level 1, CC, ES, SF			
12,600.0	6,733.8	6,695.8	6,695.8	108.0	133.9	89.95	5,318.6	-221.3	142.3	-99.5	241.78	0.589	Level 1			
12,700.0	6,733.6	6,695.6	6,695.6	109.9	133.9	89.84	5,318.6	-221.3	198.6	-45.0	243.67	0.815	Level 1			
12,800.0	6,733.3	6,695.3	6,695.3	111.8	133.9	89.73	5,318.6	-221.3	280.5	34.9	245.56	1.142	Level 2			
12,900.0	6,733.0	6,695.0	6,695.0	113.7	133.9	89.61	5,318.6	-221.3	371.3	123.9	247.45	1.501				
13,000.0	6,732.8	6,694.8	6,694.8	115.6	133.9	89.50	5,318.6	-221.3	465.9	216.6	249.33	1.869				
13,100.0	6,732.5	6,694.5	6,694.5	117.5	133.9	89.39	5,318.6	-221.3	562.4	311.2	251.22	2.239				
13,200.0	6,732.3	6,694.2	6,694.2	119.4	133.9	89.28	5,318.6	-221.3	659.9	406.8	253.11	2.607				
13,300.0	6,732.0	6,694.0	6,694.0	121.3	133.9	89.17	5,318.6	-221.3	758.1	503.1	255.00	2.973				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
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<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)      Coordinates are relative to: Dunn 71-221  
 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: 0.58°



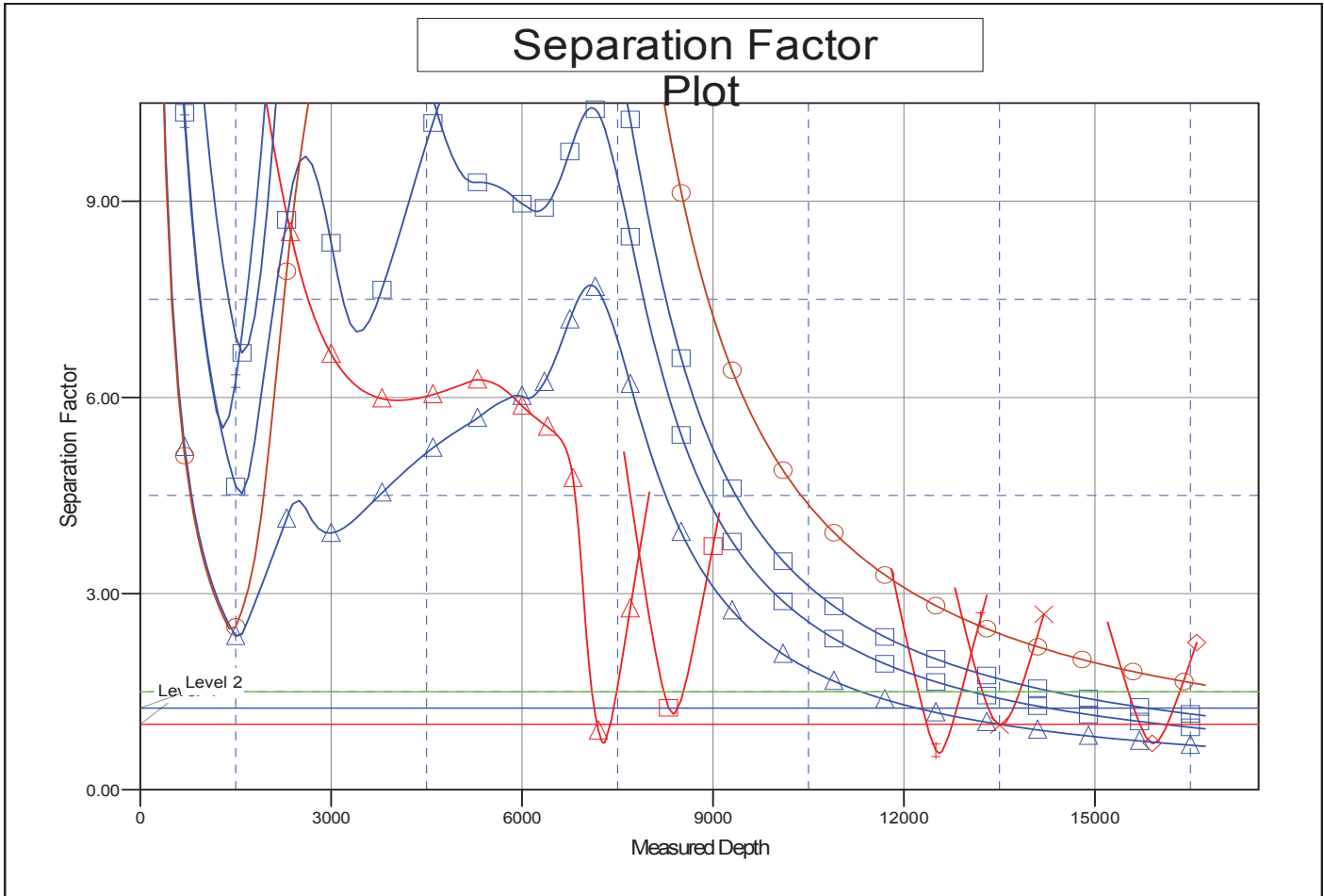
**LEGEND**

- ▲ Dunn #1 (Exist), Wellbore #1, Wellbore #1 V0
- ◆ Little Will #6 (P&A), Wellbore #1, Wellbore #1 V0
- ✱ Mitani #14-6 (Exist), Wellbore #1, Wellbore #1 V0
- ◻ Dunn #13-7 (Exist), Wellbore #1, Wellbore #1 V0
- ✱ Mitani #1 (Exist), Wellbore #1, Wellbore #1 V0
- ▲ Dunn 71-321, Wellbore #1, Plan #1 (9-10-15) V0
- ◉ Dunn 7Q-341, Wellbore #1, Plan #1 (9-11-15) V0
- ◆ Dunn 7Q-241, Wellbore #1, Plan #1 (9-11-15) V0
- ◆ Dunn 7L-301, Wellbore #1, Plan #1 (9-10-15) V0
- ◻ Dunn 7L-201, Wellbore #1, Plan #1 (9-8-15) V0
- ◻ Dunn 7L-341, Wellbore #1, Plan #1 (9-10-15) V0
- ◉ Dunn 7Q-221, Wellbore #1, Plan #1 (9-11-15) V0
- ▲ Dunn 7Q-301, Wellbore #1, Plan #1 (9-11-15) V0
- ◆ Dunn 7L-221, Wellbore #1, Plan #1 (9-10-15) V0
- ◉ Dunn 7L-201, Wellbore #1, Plan #1 (9-10-15) V0

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 71-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 71-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)      Coordinates are relative to: Dunn 71-221  
 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: 0.58°



**LEGEND**

- ▲ Dunn #1 (Exist), Wellbore #1, Wellbore #1 V0
- ◆ Little Will #6 (P&A), Wellbore #1, Wellbore #1 V0
- ✱ Mitani #14-6 (Exist), Wellbore #1, Wellbore #1 V0
- ▣ Dunn #13-7 (Exist), Wellbore #1, Wellbore #1 V0
- ✱ Mitani #1 (Exist), Wellbore #1, Wellbore #1 V0
- ▲ Dunn 7L-321, Wellbore #1, Plan #1 (9-10-15) V0
- ◆ Dunn 7Q-341, Wellbore #1, Plan #1 (9-11-15) V0
- ◆ Dunn 7Q-241, Wellbore #1, Plan #1 (9-11-15) V0
- ◆ Dunn 7L-301, Wellbore #1, Plan #1 (9-10-15) V0
- ◆ Dunn 7L-201, Wellbore #1, Plan #1 (9-8-15) V0
- ▣ Dunn 7L-341, Wellbore #1, Plan #1 (9-10-15) V0
- ▣ Dunn 7Q-221, Wellbore #1, Plan #1 (9-11-15) V0
- ▲ Dunn 7Q-301, Wellbore #1, Plan #1 (9-11-15) V0
- ◆ Dunn 7L-221, Wellbore #1, Plan #1 (9-10-15) V0
- ◆ Dunn 7L-201, Wellbore #1, Plan #1 (9-10-15) V0

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