

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Dunn 7L-221**

Surface Location: Dunn 5N64W7 Pad Sec.7-T5N-R64W

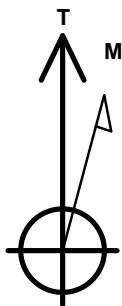
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

Ground Elevation: 4625.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1392891.03 3251104.65 40.408383 -104.598274  
 Original Well Elev WELL @ 4638.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 735'FSL & 980'FWL, Sec.7	1.0	0.0	0.0	Point
BHL 200'FNL & 1680'FWL, Sec.6	6723.0	9553.8	728.5	Point



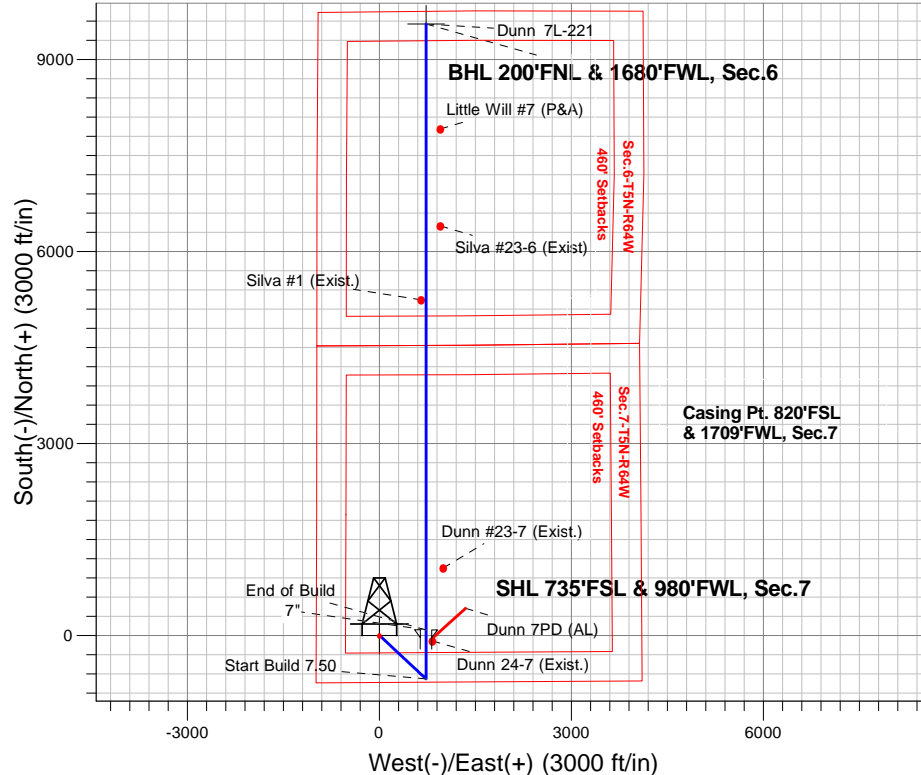
Azimuths to True North  
 Magnetic North: 8.20°

Magnetic Field  
 Strength: 52703.9snT  
 Dip Angle: 66.93°  
 Date: 9/24/2015  
 Model: IGRF2010

## ANNOTATIONS

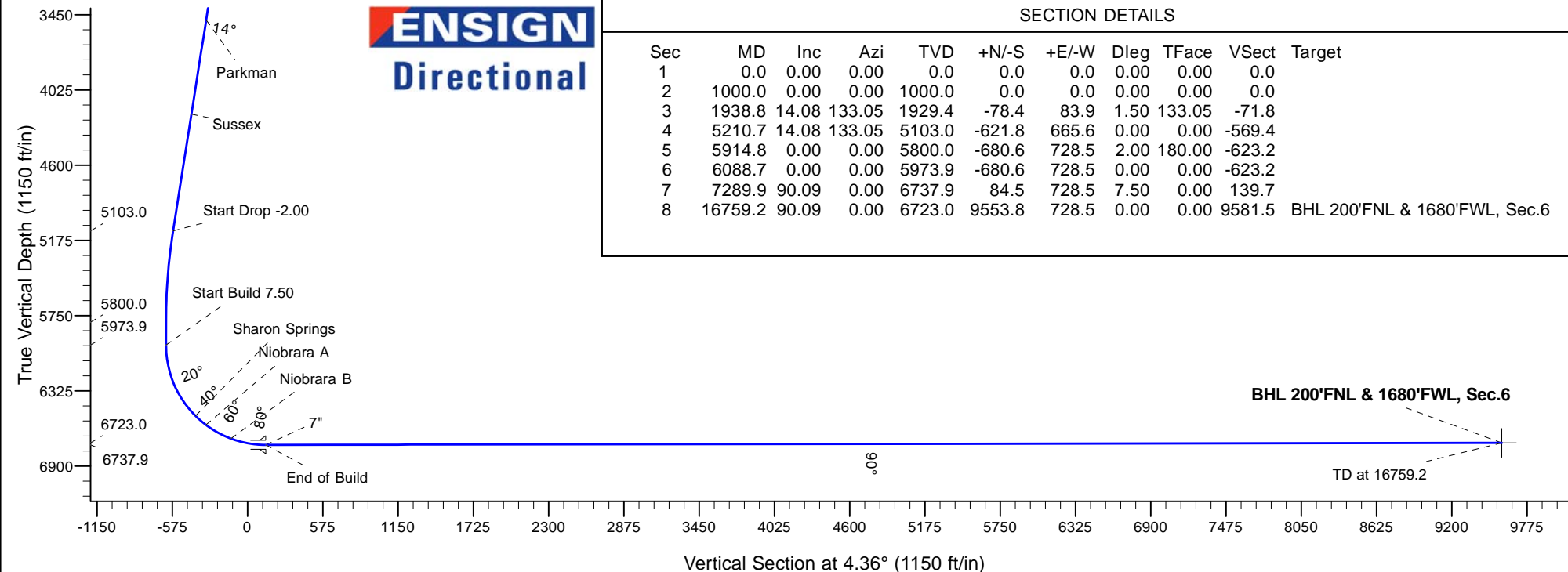
TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.50
5103.0	5210.7	Start Drop -2.00
5800.0	5914.8	Start 173.9 hold at 5914.8 MD
5973.9	6088.7	Start Build 7.50
6737.9	7289.9	End of Build
6723.0	16759.2	TD at 16759.2

Dunn 5N64W7 Pad Sec.7-T5N-R64W  
 Dunn 7L-221  
 Plan #1 (9-10-15)  
 7:15, 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1938.8	14.08	133.05	1929.4	-78.4	83.9	1.50	133.05	-71.8	
4	5210.7	14.08	133.05	5103.0	-621.8	665.6	0.00	0.00	-569.4	
5	5914.8	0.00	0.00	5800.0	-680.6	728.5	2.00	180.00	-623.2	
6	6088.7	0.00	0.00	5973.9	-680.6	728.5	0.00	0.00	-623.2	
7	7289.9	90.09	0.00	6737.9	84.5	728.5	7.50	0.00	139.7	
8	16759.2	90.09	0.00	6723.0	9553.8	728.5	0.00	0.00	9581.5	BHL 200'FNL & 1680'FWL, Sec.6





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

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

**Dunn 7L-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 7L-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 7L-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>From:</b>	Lat/Long	<b>Easting:</b>	3,251,104.57 usft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40.408630
		<b>Longitude:</b>	-104.598271
		<b>Grid Convergence:</b>	0.58 °

<b>Well</b>	Dunn 7L-221		
<b>Well Position</b>	<b>+N/-S</b>	-90.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	-0.8 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/24/2015	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	4.36

<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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,938.8	14.08	133.05	1,929.4	-78.4	83.9	1.50	1.50	0.00	133.05	
5,210.7	14.08	133.05	5,103.0	-621.8	665.6	0.00	0.00	0.00	0.00	
5,914.8	0.00	0.00	5,800.0	-680.6	728.5	2.00	-2.00	0.00	180.00	
6,088.7	0.00	0.00	5,973.9	-680.6	728.5	0.00	0.00	0.00	0.00	
7,289.9	90.09	0.00	6,737.9	84.5	728.5	7.50	7.50	0.00	0.00	
16,759.2	90.09	0.00	6,723.0	9,553.8	728.5	0.00	0.00	0.00	0.00	BHL 200'FNL & 1680'

Database:	US_EDM	Local Co-ordinate Reference:	Well Dunn 7L-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Project:	SEC.7-T5N-R64W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site:	Dunn 5N64W7 Pad Sec.7-T5N-R64W	North Reference:	True
Well:	Dunn 7L-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
SHL 735'FSL & 980'FWL, Sec.7									
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
KOP - Start Build 1.50									
1,100.0	1.50	133.05	1,100.0	-0.9	1.0	-0.8	1.50	1.50	0.00
1,200.0	3.00	133.05	1,199.9	-3.6	3.8	-3.3	1.50	1.50	0.00
1,300.0	4.50	133.05	1,299.7	-8.0	8.6	-7.4	1.50	1.50	0.00
1,400.0	6.00	133.05	1,399.3	-14.3	15.3	-13.1	1.50	1.50	0.00
1,500.0	7.50	133.05	1,498.6	-22.3	23.9	-20.4	1.50	1.50	0.00
1,600.0	9.00	133.05	1,597.5	-32.1	34.4	-29.4	1.50	1.50	0.00
1,700.0	10.50	133.05	1,696.1	-43.7	46.7	-40.0	1.50	1.50	0.00
1,800.0	12.00	133.05	1,794.2	-57.0	61.0	-52.2	1.50	1.50	0.00
1,900.0	13.50	133.05	1,891.7	-72.0	77.1	-66.0	1.50	1.50	0.00
1,938.8	14.08	133.05	1,929.4	-78.4	83.9	-71.8	1.50	1.50	0.00
2,000.0	14.08	133.05	1,988.7	-88.5	94.8	-81.1	0.00	0.00	0.00
2,100.0	14.08	133.05	2,085.7	-105.1	112.5	-96.3	0.00	0.00	0.00
2,200.0	14.08	133.05	2,182.7	-121.7	130.3	-111.5	0.00	0.00	0.00
2,300.0	14.08	133.05	2,279.7	-138.4	148.1	-126.7	0.00	0.00	0.00
2,400.0	14.08	133.05	2,376.7	-155.0	165.9	-141.9	0.00	0.00	0.00
2,500.0	14.08	133.05	2,473.7	-171.6	183.7	-157.1	0.00	0.00	0.00
2,600.0	14.08	133.05	2,570.7	-188.2	201.4	-172.3	0.00	0.00	0.00
2,700.0	14.08	133.05	2,667.7	-204.8	219.2	-187.5	0.00	0.00	0.00
2,800.0	14.08	133.05	2,764.7	-221.4	237.0	-202.7	0.00	0.00	0.00
2,900.0	14.08	133.05	2,861.7	-238.0	254.8	-218.0	0.00	0.00	0.00
3,000.0	14.08	133.05	2,958.7	-254.6	272.5	-233.2	0.00	0.00	0.00
3,100.0	14.08	133.05	3,055.7	-271.2	290.3	-248.4	0.00	0.00	0.00
3,200.0	14.08	133.05	3,152.7	-287.8	308.1	-263.6	0.00	0.00	0.00
3,300.0	14.08	133.05	3,249.7	-304.5	325.9	-278.8	0.00	0.00	0.00
3,400.0	14.08	133.05	3,346.7	-321.1	343.7	-294.0	0.00	0.00	0.00
3,500.0	14.08	133.05	3,443.7	-337.7	361.4	-309.2	0.00	0.00	0.00
3,547.8	14.08	133.05	3,490.0	-345.6	369.9	-316.5	0.00	0.00	0.00
Parkman									
3,600.0	14.08	133.05	3,540.7	-354.3	379.2	-324.4	0.00	0.00	0.00
3,700.0	14.08	133.05	3,637.7	-370.9	397.0	-339.6	0.00	0.00	0.00
3,800.0	14.08	133.05	3,734.6	-387.5	414.8	-354.8	0.00	0.00	0.00
3,900.0	14.08	133.05	3,831.6	-404.1	432.6	-370.1	0.00	0.00	0.00
4,000.0	14.08	133.05	3,928.6	-420.7	450.3	-385.3	0.00	0.00	0.00
4,100.0	14.08	133.05	4,025.6	-437.3	468.1	-400.5	0.00	0.00	0.00
4,200.0	14.08	133.05	4,122.6	-453.9	485.9	-415.7	0.00	0.00	0.00
4,290.1	14.08	133.05	4,210.0	-468.9	501.9	-429.4	0.00	0.00	0.00
Sussex									
4,300.0	14.08	133.05	4,219.6	-470.6	503.7	-430.9	0.00	0.00	0.00
4,400.0	14.08	133.05	4,316.6	-487.2	521.5	-446.1	0.00	0.00	0.00

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Well:	Dunn 7L-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	14.08	133.05	4,413.6	-503.8	539.2	-461.3	0.00	0.00	0.00
4,600.0	14.08	133.05	4,510.6	-520.4	557.0	-476.5	0.00	0.00	0.00
4,700.0	14.08	133.05	4,607.6	-537.0	574.8	-491.7	0.00	0.00	0.00
4,800.0	14.08	133.05	4,704.6	-553.6	592.6	-506.9	0.00	0.00	0.00
4,900.0	14.08	133.05	4,801.6	-570.2	610.3	-522.2	0.00	0.00	0.00
5,000.0	14.08	133.05	4,898.6	-586.8	628.1	-537.4	0.00	0.00	0.00
5,100.0	14.08	133.05	4,995.6	-603.4	645.9	-552.6	0.00	0.00	0.00
5,200.0	14.08	133.05	5,092.6	-620.0	663.7	-567.8	0.00	0.00	0.00
5,210.7	14.08	133.05	5,103.0	-621.8	665.6	-569.4	0.00	0.00	0.00
Start Drop -2.00									
5,300.0	12.30	133.05	5,189.9	-635.7	680.5	-582.2	2.00	-2.00	0.00
5,400.0	10.30	133.05	5,288.0	-649.1	694.8	-594.4	2.00	-2.00	0.00
5,500.0	8.30	133.05	5,386.6	-660.1	706.6	-604.5	2.00	-2.00	0.00
5,600.0	6.30	133.05	5,485.8	-668.8	715.9	-612.4	2.00	-2.00	0.00
5,700.0	4.30	133.05	5,585.4	-675.1	722.6	-618.2	2.00	-2.00	0.00
5,800.0	2.30	133.05	5,685.2	-679.0	726.8	-621.8	2.00	-2.00	0.00
5,900.0	0.30	133.05	5,785.2	-680.6	728.5	-623.2	2.00	-2.00	0.00
5,914.8	0.00	133.05	5,800.0	-680.6	728.5	-623.2	2.00	-2.00	0.00
Start 173.9 hold at 5914.8 MD									
6,000.0	0.00	0.00	5,885.2	-680.6	728.5	-623.2	0.00	0.00	0.00
6,088.7	0.00	0.00	5,973.9	-680.6	728.5	-623.2	0.00	0.00	0.00
Start Build 7.50									
6,100.0	0.84	0.00	5,985.2	-680.5	728.5	-623.2	7.47	7.47	0.00
6,200.0	8.34	0.00	6,084.8	-672.5	728.5	-615.2	7.50	7.50	0.00
6,300.0	15.84	0.00	6,182.5	-651.6	728.5	-594.3	7.50	7.50	0.00
6,400.0	23.34	0.00	6,276.6	-618.1	728.5	-560.9	7.50	7.50	0.00
6,500.0	30.84	0.00	6,365.6	-572.6	728.5	-515.5	7.50	7.50	0.00
6,600.0	38.34	0.00	6,447.9	-515.8	728.5	-458.9	7.50	7.50	0.00
6,691.4	45.20	0.00	6,516.0	-455.0	728.5	-398.3	7.50	7.50	0.00
Sharon Springs									
6,700.0	45.84	0.00	6,522.0	-448.8	728.5	-392.1	7.50	7.50	0.00
6,797.0	53.12	0.00	6,585.0	-375.1	728.5	-318.7	7.50	7.50	0.00
Niobrara A									
6,800.0	53.34	0.00	6,586.8	-372.7	728.5	-316.3	7.50	7.50	0.00
6,900.0	60.84	0.00	6,641.1	-288.8	728.5	-232.6	7.50	7.50	0.00
7,000.0	68.34	0.00	6,684.0	-198.6	728.5	-142.6	7.50	7.50	0.00
7,016.9	69.61	0.00	6,690.0	-182.8	728.5	-126.9	7.50	7.50	0.00
Niobrara B									
7,100.0	75.84	0.00	6,714.7	-103.5	728.5	-47.8	7.50	7.50	0.00
7,200.0	83.34	0.00	6,732.7	-5.2	728.5	50.2	7.50	7.50	0.00
7,289.9	90.09	0.00	6,737.9	84.5	728.5	139.6	7.50	7.50	0.00
End of Build - 7"									
7,300.0	90.09	0.00	6,737.9	94.6	728.5	149.7	0.03	0.03	0.00
7,400.0	90.09	0.00	6,737.7	194.6	728.5	249.4	0.00	0.00	0.00
7,500.0	90.09	0.00	6,737.5	294.6	728.5	349.1	0.00	0.00	0.00
7,600.0	90.09	0.00	6,737.4	394.6	728.5	448.8	0.00	0.00	0.00
7,700.0	90.09	0.00	6,737.2	494.6	728.5	548.6	0.00	0.00	0.00
7,800.0	90.09	0.00	6,737.1	594.6	728.5	648.3	0.00	0.00	0.00
7,900.0	90.09	0.00	6,736.9	694.6	728.5	748.0	0.00	0.00	0.00
8,000.0	90.09	0.00	6,736.8	794.6	728.5	847.7	0.00	0.00	0.00
8,100.0	90.09	0.00	6,736.6	894.6	728.5	947.4	0.00	0.00	0.00
8,200.0	90.09	0.00	6,736.4	994.6	728.5	1,047.1	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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	90.09	0.00	6,736.3	1,094.6	728.5	1,146.8	0.00	0.00	0.00
8,400.0	90.09	0.00	6,736.1	1,194.6	728.5	1,246.5	0.00	0.00	0.00
8,500.0	90.09	0.00	6,736.0	1,294.6	728.5	1,346.2	0.00	0.00	0.00
8,600.0	90.09	0.00	6,735.8	1,394.6	728.5	1,446.0	0.00	0.00	0.00
8,700.0	90.09	0.00	6,735.7	1,494.6	728.5	1,545.7	0.00	0.00	0.00
8,800.0	90.09	0.00	6,735.5	1,594.6	728.5	1,645.4	0.00	0.00	0.00
8,900.0	90.09	0.00	6,735.3	1,694.6	728.5	1,745.1	0.00	0.00	0.00
9,000.0	90.09	0.00	6,735.2	1,794.6	728.5	1,844.8	0.00	0.00	0.00
9,100.0	90.09	0.00	6,735.0	1,894.6	728.5	1,944.5	0.00	0.00	0.00
9,200.0	90.09	0.00	6,734.9	1,994.6	728.5	2,044.2	0.00	0.00	0.00
9,300.0	90.09	0.00	6,734.7	2,094.6	728.5	2,143.9	0.00	0.00	0.00
9,400.0	90.09	0.00	6,734.6	2,194.6	728.5	2,243.6	0.00	0.00	0.00
9,500.0	90.09	0.00	6,734.4	2,294.6	728.5	2,343.3	0.00	0.00	0.00
9,600.0	90.09	0.00	6,734.2	2,394.6	728.5	2,443.1	0.00	0.00	0.00
9,700.0	90.09	0.00	6,734.1	2,494.6	728.5	2,542.8	0.00	0.00	0.00
9,800.0	90.09	0.00	6,733.9	2,594.6	728.5	2,642.5	0.00	0.00	0.00
9,900.0	90.09	0.00	6,733.8	2,694.6	728.5	2,742.2	0.00	0.00	0.00
10,000.0	90.09	0.00	6,733.6	2,794.6	728.5	2,841.9	0.00	0.00	0.00
10,100.0	90.09	0.00	6,733.5	2,894.6	728.5	2,941.6	0.00	0.00	0.00
10,200.0	90.09	0.00	6,733.3	2,994.6	728.5	3,041.3	0.00	0.00	0.00
10,300.0	90.09	0.00	6,733.1	3,094.6	728.5	3,141.0	0.00	0.00	0.00
10,400.0	90.09	0.00	6,733.0	3,194.6	728.5	3,240.7	0.00	0.00	0.00
10,500.0	90.09	0.00	6,732.8	3,294.6	728.5	3,340.4	0.00	0.00	0.00
10,600.0	90.09	0.00	6,732.7	3,394.6	728.5	3,440.2	0.00	0.00	0.00
10,700.0	90.09	0.00	6,732.5	3,494.6	728.5	3,539.9	0.00	0.00	0.00
10,800.0	90.09	0.00	6,732.4	3,594.6	728.5	3,639.6	0.00	0.00	0.00
10,900.0	90.09	0.00	6,732.2	3,694.6	728.5	3,739.3	0.00	0.00	0.00
11,000.0	90.09	0.00	6,732.0	3,794.6	728.5	3,839.0	0.00	0.00	0.00
11,100.0	90.09	0.00	6,731.9	3,894.6	728.5	3,938.7	0.00	0.00	0.00
11,200.0	90.09	0.00	6,731.7	3,994.6	728.5	4,038.4	0.00	0.00	0.00
11,300.0	90.09	0.00	6,731.6	4,094.6	728.5	4,138.1	0.00	0.00	0.00
11,400.0	90.09	0.00	6,731.4	4,194.6	728.5	4,237.8	0.00	0.00	0.00
11,500.0	90.09	0.00	6,731.3	4,294.6	728.5	4,337.6	0.00	0.00	0.00
11,600.0	90.09	0.00	6,731.1	4,394.6	728.5	4,437.3	0.00	0.00	0.00
11,700.0	90.09	0.00	6,730.9	4,494.6	728.5	4,537.0	0.00	0.00	0.00
11,800.0	90.09	0.00	6,730.8	4,594.6	728.5	4,636.7	0.00	0.00	0.00
11,900.0	90.09	0.00	6,730.6	4,694.6	728.5	4,736.4	0.00	0.00	0.00
12,000.0	90.09	0.00	6,730.5	4,794.6	728.5	4,836.1	0.00	0.00	0.00
12,100.0	90.09	0.00	6,730.3	4,894.6	728.5	4,935.8	0.00	0.00	0.00
12,200.0	90.09	0.00	6,730.2	4,994.6	728.5	5,035.5	0.00	0.00	0.00
12,300.0	90.09	0.00	6,730.0	5,094.6	728.5	5,135.2	0.00	0.00	0.00
12,400.0	90.09	0.00	6,729.8	5,194.6	728.5	5,234.9	0.00	0.00	0.00
12,500.0	90.09	0.00	6,729.7	5,294.6	728.5	5,334.7	0.00	0.00	0.00
12,600.0	90.09	0.00	6,729.5	5,394.6	728.5	5,434.4	0.00	0.00	0.00
12,700.0	90.09	0.00	6,729.4	5,494.6	728.5	5,534.1	0.00	0.00	0.00
12,800.0	90.09	0.00	6,729.2	5,594.6	728.5	5,633.8	0.00	0.00	0.00
12,900.0	90.09	0.00	6,729.1	5,694.6	728.5	5,733.5	0.00	0.00	0.00
13,000.0	90.09	0.00	6,728.9	5,794.6	728.5	5,833.2	0.00	0.00	0.00
13,100.0	90.09	0.00	6,728.7	5,894.6	728.5	5,932.9	0.00	0.00	0.00
13,200.0	90.09	0.00	6,728.6	5,994.6	728.5	6,032.6	0.00	0.00	0.00
13,300.0	90.09	0.00	6,728.4	6,094.6	728.5	6,132.3	0.00	0.00	0.00
13,400.0	90.09	0.00	6,728.3	6,194.6	728.5	6,232.1	0.00	0.00	0.00
13,500.0	90.09	0.00	6,728.1	6,294.6	728.5	6,331.8	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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	90.09	0.00	6,728.0	6,394.6	728.5	6,431.5	0.00	0.00	0.00	
13,700.0	90.09	0.00	6,727.8	6,494.6	728.5	6,531.2	0.00	0.00	0.00	
13,800.0	90.09	0.00	6,727.6	6,594.6	728.5	6,630.9	0.00	0.00	0.00	
13,900.0	90.09	0.00	6,727.5	6,694.6	728.5	6,730.6	0.00	0.00	0.00	
14,000.0	90.09	0.00	6,727.3	6,794.6	728.5	6,830.3	0.00	0.00	0.00	
14,100.0	90.09	0.00	6,727.2	6,894.6	728.5	6,930.0	0.00	0.00	0.00	
14,200.0	90.09	0.00	6,727.0	6,994.6	728.5	7,029.7	0.00	0.00	0.00	
14,300.0	90.09	0.00	6,726.9	7,094.6	728.5	7,129.4	0.00	0.00	0.00	
14,400.0	90.09	0.00	6,726.7	7,194.6	728.5	7,229.2	0.00	0.00	0.00	
14,500.0	90.09	0.00	6,726.5	7,294.6	728.5	7,328.9	0.00	0.00	0.00	
14,600.0	90.09	0.00	6,726.4	7,394.6	728.5	7,428.6	0.00	0.00	0.00	
14,700.0	90.09	0.00	6,726.2	7,494.6	728.5	7,528.3	0.00	0.00	0.00	
14,800.0	90.09	0.00	6,726.1	7,594.6	728.5	7,628.0	0.00	0.00	0.00	
14,900.0	90.09	0.00	6,725.9	7,694.6	728.5	7,727.7	0.00	0.00	0.00	
15,000.0	90.09	0.00	6,725.8	7,794.6	728.5	7,827.4	0.00	0.00	0.00	
15,100.0	90.09	0.00	6,725.6	7,894.6	728.5	7,927.1	0.00	0.00	0.00	
15,200.0	90.09	0.00	6,725.4	7,994.6	728.5	8,026.8	0.00	0.00	0.00	
15,300.0	90.09	0.00	6,725.3	8,094.6	728.5	8,126.5	0.00	0.00	0.00	
15,400.0	90.09	0.00	6,725.1	8,194.6	728.5	8,226.3	0.00	0.00	0.00	
15,500.0	90.09	0.00	6,725.0	8,294.6	728.5	8,326.0	0.00	0.00	0.00	
15,600.0	90.09	0.00	6,724.8	8,394.6	728.5	8,425.7	0.00	0.00	0.00	
15,700.0	90.09	0.00	6,724.7	8,494.6	728.5	8,525.4	0.00	0.00	0.00	
15,800.0	90.09	0.00	6,724.5	8,594.6	728.5	8,625.1	0.00	0.00	0.00	
15,900.0	90.09	0.00	6,724.3	8,694.6	728.5	8,724.8	0.00	0.00	0.00	
16,000.0	90.09	0.00	6,724.2	8,794.6	728.5	8,824.5	0.00	0.00	0.00	
16,100.0	90.09	0.00	6,724.0	8,894.6	728.5	8,924.2	0.00	0.00	0.00	
16,200.0	90.09	0.00	6,723.9	8,994.6	728.5	9,023.9	0.00	0.00	0.00	
16,300.0	90.09	0.00	6,723.7	9,094.6	728.5	9,123.7	0.00	0.00	0.00	
16,400.0	90.09	0.00	6,723.6	9,194.6	728.5	9,223.4	0.00	0.00	0.00	
16,500.0	90.09	0.00	6,723.4	9,294.6	728.5	9,323.1	0.00	0.00	0.00	
16,600.0	90.09	0.00	6,723.2	9,394.6	728.5	9,422.8	0.00	0.00	0.00	
16,700.0	90.09	0.00	6,723.1	9,494.6	728.5	9,522.5	0.00	0.00	0.00	
16,759.2	90.09	0.00	6,723.0	9,553.8	728.5	9,581.5	0.00	0.00	0.00	
TD at 16759.2 - BHL 200'FNL & 1680'FWL, Sec.6										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 735'FSL & 980'FWL	0.00	0.00	1.0	0.0	0.0	1,392,891.04	3,251,104.65	40.408383	-104.598274
- plan hits target center									
- Point									
BHL 200'FNL & 1680'FM	0.00	0.00	6,723.0	9,553.8	728.5	1,402,451.33	3,251,735.96	40.434607	-104.595657
- plan hits target center									
- Point									

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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 (")
7,289.9	6,737.9	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,547.8	3,490.0	Parkman		0.00	
4,290.1	4,210.0	Sussex		0.00	
6,691.4	6,516.0	Sharon Springs		0.00	
6,797.0	6,585.0	Niobrara A		0.00	
7,016.9	6,690.0	Niobrara B		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP - Start Build 1.50
5,210.7	5,103.0	-621.8	665.6	Start Drop -2.00
5,914.8	5,800.0	-680.6	728.5	Start 173.9 hold at 5914.8 MD
6,088.7	5,973.9	-680.6	728.5	Start Build 7.50
7,289.9	6,737.9	84.5	728.5	End of Build
16,759.2	6,723.0	9,553.8	728.5	TD at 16759.2



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

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

**Dunn 7L-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 7L-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 7L-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	16,759.2	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
Offset Well - Wellbore - Design						
Dunn 5N64W7 Pad Sec.7-T5N-R64W						
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-8-15)	1,000.0	1,000.0	75.1	70.8	17.574	CC, ES
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-8-15)	1,300.0	1,299.7	83.4	77.9	15.107	SF
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	1,000.0	1,000.0	44.8	40.5	10.492	CC, ES
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	1,200.0	1,199.9	48.5	43.4	9.499	SF
Dunn 7L-321 - Wellbore #1 - Plan #1 (9-10-15)	1,000.0	1,000.0	60.1	55.8	14.075	CC, ES
Dunn 7L-321 - Wellbore #1 - Plan #1 (9-10-15)	1,300.0	1,299.7	68.6	63.1	12.423	SF
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)	1,000.0	1,000.0	29.9	25.6	6.996	CC, ES
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)	16,759.2	16,713.4	486.1	111.0	1.296	Level 3, SF
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	1,000.0	1,000.0	14.9	10.7	3.497	CC
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	16,759.2	16,806.3	261.8	-103.1	0.717	Level 1, ES, SF
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	1,000.0	1,000.0	90.0	85.7	21.071	CC, ES
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	16,759.2	16,834.0	753.5	381.1	2.024	SF
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	200.0	200.0	60.1	59.4	89.160	CC
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	300.0	299.5	60.5	59.4	54.634	ES
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	900.0	889.0	100.0	96.0	24.464	SF
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	600.0	600.0	29.9	27.4	12.085	CC, ES
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	16,759.2	16,866.1	555.1	179.4	1.477	Level 3, SF
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	400.0	400.0	45.2	43.6	28.717	CC, ES
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	16,759.2	16,994.3	797.0	422.8	2.130	SF
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	800.0	800.0	14.9	11.6	4.432	CC
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	16,759.2	16,884.9	321.7	-45.0	0.877	Level 1, ES, SF
Dunn Pad Sec.7-T5N-R64W						
Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1	7,114.6	6,705.1	97.8	-54.0	0.644	Level 1, CC, ES, SF
Dunn 7PD (AL) - Wellbore #1 - Design #1	7,626.8	6,807.8	615.3	577.2	16.113	CC, ES
Dunn 7PD (AL) - Wellbore #1 - Design #1	7,700.0	6,807.7	619.7	580.7	15.899	SF
Existing Wells - Sec.7-T5N-R64W						
Dunn #23-7 (Exist.) - Wellbore #1 - Wellbore #1	8,255.7	6,721.3	266.8	102.9	1.628	CC, ES, SF
Little Will #7 (P&A) - Wellbore #1 - Wellbore #1	15,119.0	6,710.6	223.0	-67.5	0.768	Level 1, CC, ES, SF
Silva #1 (Exist.) - Wellbore #1 - Wellbore #1	12,448.2	6,690.8	78.4	-161.0	0.327	Level 1, CC, ES, SF
Silva #23-6 (Exist.) - Wellbore #1 - Wellbore #1	13,603.9	6,697.9	222.0	-39.4	0.849	Level 1, CC, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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													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	0.64	75.0	0.8	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.64	75.0	0.8	75.1	74.8	0.22	333.947		
200.0	200.0	200.0	200.0	0.3	0.3	0.64	75.0	0.8	75.1	74.4	0.67	111.309		
300.0	300.0	300.0	300.0	0.6	0.6	0.64	75.0	0.8	75.1	73.9	1.12	66.785		
400.0	400.0	400.0	400.0	0.8	0.8	0.64	75.0	0.8	75.1	73.5	1.57	47.703		
500.0	500.0	500.0	500.0	1.0	1.0	0.64	75.0	0.8	75.1	73.0	2.02	37.102		
600.0	600.0	600.0	600.0	1.2	1.2	0.64	75.0	0.8	75.1	72.6	2.47	30.356		
700.0	700.0	700.0	700.0	1.5	1.5	0.64	75.0	0.8	75.1	72.1	2.92	25.686		
800.0	800.0	800.0	800.0	1.7	1.7	0.64	75.0	0.8	75.1	71.7	3.37	22.261		
900.0	900.0	900.0	900.0	1.9	1.9	0.64	75.0	0.8	75.1	71.2	3.82	19.642		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.64	75.0	0.8	75.1	70.8	4.27	17.574 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-133.13	75.0	0.8	75.9	71.2	4.70	16.168		
1,200.0	1,199.9	1,199.9	1,199.9	2.5	2.6	-135.19	75.0	0.8	78.7	73.6	5.11	15.407		
1,300.0	1,299.7	1,299.7	1,299.7	2.7	2.8	-138.31	75.0	0.8	83.4	77.9	5.52	15.107 SF		
1,400.0	1,399.3	1,399.3	1,399.3	2.9	3.0	-142.09	75.0	0.8	90.5	84.5	5.95	15.216		
1,500.0	1,498.6	1,498.6	1,498.6	3.2	3.3	-146.14	75.0	0.8	100.0	93.7	6.37	15.694		
1,600.0	1,597.5	1,597.5	1,597.5	3.4	3.5	-150.12	75.0	0.8	112.3	105.5	6.80	16.502		
1,700.0	1,696.1	1,696.1	1,696.1	3.7	3.7	-153.81	75.0	0.8	127.3	120.0	7.23	17.600		
1,800.0	1,794.2	1,794.2	1,794.2	4.1	3.9	-157.10	75.0	0.8	145.1	137.4	7.66	18.947		
1,900.0	1,891.7	1,892.9	1,892.8	4.4	4.1	-160.37	74.3	0.0	165.4	157.3	8.06	20.523		
1,938.8	1,929.4	1,931.0	1,930.9	4.6	4.2	-161.72	73.5	-0.8	173.8	165.6	8.20	21.190		
2,000.0	1,988.7	1,990.9	1,990.9	4.9	4.3	-163.91	71.7	-2.6	187.5	179.1	8.45	22.196		
2,100.0	2,085.7	2,088.7	2,088.4	5.3	4.5	-167.43	67.4	-7.0	209.9	201.1	8.85	23.719		
2,200.0	2,182.7	2,186.0	2,185.3	5.7	4.7	-170.87	61.4	-13.1	232.7	223.4	9.26	25.117		
2,300.0	2,279.7	2,282.7	2,281.4	6.2	4.9	-174.23	53.8	-20.9	255.9	246.2	9.69	26.404		
2,400.0	2,376.7	2,378.8	2,376.6	6.7	5.1	-177.53	44.5	-30.5	279.9	269.7	10.14	27.587		
2,500.0	2,473.7	2,474.1	2,470.6	7.2	5.3	179.25	33.6	-41.6	304.7	294.1	10.63	28.669		
2,600.0	2,570.7	2,568.4	2,563.3	7.7	5.6	176.12	21.2	-54.3	330.6	319.4	11.15	29.650		
2,700.0	2,667.7	2,661.8	2,654.5	8.2	5.9	173.10	7.4	-68.4	357.6	345.9	11.71	30.534		
2,800.0	2,764.7	2,754.1	2,744.2	8.7	6.2	170.18	-7.8	-83.9	386.0	373.7	12.32	31.332		
2,900.0	2,861.7	2,845.3	2,832.3	9.2	6.6	167.37	-24.3	-100.8	415.9	402.9	12.98	32.050		
3,000.0	2,958.7	2,935.1	2,918.5	9.7	6.9	164.69	-42.0	-118.9	447.3	433.6	13.68	32.705		
3,100.0	3,055.7	3,023.7	3,002.8	10.2	7.3	162.13	-60.8	-138.1	480.3	465.9	14.42	33.312		
3,200.0	3,152.7	3,110.8	3,085.2	10.7	7.8	159.69	-80.6	-158.4	514.9	499.7	15.20	33.885		
3,300.0	3,249.7	3,196.5	3,165.6	11.2	8.3	157.38	-101.4	-179.7	551.3	535.3	16.01	34.436		
3,400.0	3,346.7	3,282.3	3,245.4	11.7	8.8	155.16	-123.4	-202.2	589.3	572.5	16.86	34.952		
3,500.0	3,443.7	3,371.9	3,328.6	12.2	9.4	153.06	-146.8	-226.1	628.4	610.7	17.75	35.398		
3,600.0	3,540.7	3,461.5	3,411.7	12.8	9.9	151.20	-170.1	-250.0	668.2	649.5	18.65	35.826		
3,700.0	3,637.7	3,551.1	3,494.9	13.3	10.5	149.54	-193.4	-273.8	708.5	688.9	19.55	36.236		
3,800.0	3,734.6	3,640.7	3,578.0	13.8	11.1	148.05	-216.8	-297.7	749.2	728.8	20.45	36.628		
3,900.0	3,831.6	3,730.3	3,661.2	14.3	11.8	146.71	-240.1	-321.6	790.4	769.0	21.36	37.004		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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		Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 71-221 - Wellbore #1 - Plan #1 (9-10-15)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	0.36	44.8	0.3	44.8						
100.0	100.0	100.0	100.0	0.1	0.1	0.36	44.8	0.3	44.8	44.6	0.22	199.369			
200.0	200.0	200.0	200.0	0.3	0.3	0.36	44.8	0.3	44.8	44.1	0.67	66.452			
300.0	300.0	300.0	300.0	0.6	0.6	0.36	44.8	0.3	44.8	43.7	1.12	39.871			
400.0	400.0	400.0	400.0	0.8	0.8	0.36	44.8	0.3	44.8	43.2	1.57	28.479			
500.0	500.0	500.0	500.0	1.0	1.0	0.36	44.8	0.3	44.8	42.8	2.02	22.150			
600.0	600.0	600.0	600.0	1.2	1.2	0.36	44.8	0.3	44.8	42.3	2.47	18.123			
700.0	700.0	700.0	700.0	1.5	1.5	0.36	44.8	0.3	44.8	41.9	2.92	15.335			
800.0	800.0	800.0	800.0	1.7	1.7	0.36	44.8	0.3	44.8	41.4	3.37	13.290			
900.0	900.0	900.0	900.0	1.9	1.9	0.36	44.8	0.3	44.8	41.0	3.82	11.727			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.36	44.8	0.3	44.8	40.5	4.27	10.492	CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-133.89	44.8	0.3	45.7	41.0	4.70	9.731			
1,200.0	1,199.9	1,199.9	1,199.9	2.5	2.6	-137.21	44.8	0.3	48.5	43.4	5.11	9.499	SF		
1,300.0	1,299.7	1,299.7	1,299.7	2.7	2.8	-141.92	44.8	0.3	53.5	48.0	5.52	9.686			
1,400.0	1,399.3	1,399.3	1,399.3	2.9	3.0	-147.16	44.8	0.3	61.0	55.0	5.94	10.257			
1,500.0	1,498.6	1,498.6	1,498.6	3.2	3.3	-152.22	44.8	0.3	71.1	64.8	6.37	11.174			
1,600.0	1,597.5	1,598.9	1,598.9	3.4	3.5	-157.43	43.7	-0.3	83.3	76.6	6.76	12.320			
1,700.0	1,696.1	1,699.0	1,698.9	3.7	3.6	-163.05	40.1	-2.0	97.0	89.9	7.13	13.602			
1,800.0	1,794.2	1,798.6	1,798.3	4.1	3.8	-168.69	34.3	-4.8	112.6	105.1	7.50	15.017			
1,900.0	1,891.7	1,897.7	1,897.0	4.4	4.0	-174.11	26.2	-8.8	130.6	122.7	7.88	16.579			
1,938.8	1,929.4	1,936.0	1,935.0	4.6	4.1	-176.12	22.5	-10.6	138.3	130.3	8.03	17.219			
2,000.0	1,988.7	1,996.2	1,994.8	4.9	4.2	-179.16	15.9	-13.8	150.8	142.5	8.30	18.171			
2,100.0	2,085.7	2,094.3	2,091.9	5.3	4.4	176.18	3.3	-19.9	171.3	162.6	8.76	19.553			
2,200.0	2,182.7	2,192.0	2,188.3	5.7	4.7	171.79	-11.4	-27.1	192.3	183.1	9.28	20.736			
2,300.0	2,279.7	2,289.2	2,283.6	6.2	5.0	167.62	-28.2	-35.3	214.0	204.1	9.85	21.733			
2,400.0	2,376.7	2,385.7	2,377.8	6.7	5.3	163.67	-47.0	-44.5	236.5	226.0	10.48	22.568			
2,500.0	2,473.7	2,481.9	2,471.5	7.2	5.6	160.26	-66.3	-53.9	259.8	248.7	11.16	23.294			
2,600.0	2,570.7	2,578.0	2,565.2	7.7	6.0	157.41	-85.6	-63.3	284.0	272.1	11.87	23.934			
2,700.0	2,667.7	2,674.1	2,658.9	8.2	6.3	155.00	-104.9	-72.7	308.7	296.1	12.60	24.499			
2,800.0	2,764.7	2,770.3	2,752.7	8.7	6.7	152.95	-124.2	-82.2	333.8	320.5	13.35	24.999			
2,900.0	2,861.7	2,866.4	2,846.4	9.2	7.1	151.19	-143.5	-91.6	359.3	345.2	14.12	25.442			
3,000.0	2,958.7	2,962.5	2,940.1	9.7	7.5	149.65	-162.8	-101.0	385.1	370.2	14.90	25.837			
3,100.0	3,055.7	3,058.7	3,033.8	10.2	7.9	148.31	-182.1	-110.4	411.1	395.4	15.70	26.191			
3,200.0	3,152.7	3,154.8	3,127.5	10.7	8.3	147.13	-201.4	-119.8	437.3	420.8	16.50	26.509			
3,300.0	3,249.7	3,251.0	3,221.2	11.2	8.8	146.08	-220.7	-129.2	463.6	446.3	17.30	26.796			
3,400.0	3,346.7	3,347.1	3,314.9	11.7	9.2	145.15	-240.0	-138.6	490.1	472.0	18.11	27.056			
3,500.0	3,443.7	3,443.2	3,408.6	12.2	9.6	144.30	-259.3	-148.0	516.7	497.7	18.93	27.293			
3,600.0	3,540.7	3,539.4	3,502.3	12.8	10.0	143.55	-278.6	-157.5	543.3	523.6	19.75	27.509			
3,700.0	3,637.7	3,635.5	3,596.0	13.3	10.5	142.86	-297.9	-166.9	570.1	549.5	20.58	27.708			
3,800.0	3,734.6	3,731.7	3,689.7	13.8	10.9	142.23	-317.3	-176.3	596.9	575.5	21.40	27.890			
3,900.0	3,831.6	3,827.8	3,783.4	14.3	11.4	141.66	-336.6	-185.7	623.8	601.6	22.23	28.058			
4,000.0	3,928.6	3,923.9	3,877.2	14.8	11.8	141.13	-355.9	-195.1	650.7	627.7	23.06	28.213			
4,100.0	4,025.6	4,020.1	3,970.9	15.4	12.2	140.65	-375.2	-204.5	677.7	653.8	23.90	28.358			
4,200.0	4,122.6	4,116.2	4,064.6	15.9	12.7	140.20	-394.5	-213.9	704.8	680.0	24.74	28.492			
4,300.0	4,219.6	4,212.3	4,158.3	16.4	13.1	139.79	-413.8	-223.4	731.8	706.2	25.57	28.617			
4,400.0	4,316.6	4,308.5	4,252.0	16.9	13.6	139.40	-433.1	-232.8	758.9	732.5	26.41	28.733			
4,500.0	4,413.6	4,404.6	4,345.7	17.5	14.0	139.04	-452.4	-242.2	786.0	758.8	27.25	28.843			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.53	60.1	0.6	60.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.53	60.1	0.6	60.1	59.9	0.22	267.459	
200.0	200.0	200.0	200.0	0.3	0.3	0.53	60.1	0.6	60.1	59.4	0.67	89.147	
300.0	300.0	300.0	300.0	0.6	0.6	0.53	60.1	0.6	60.1	59.0	1.12	53.488	
400.0	400.0	400.0	400.0	0.8	0.8	0.53	60.1	0.6	60.1	58.5	1.57	38.205	
500.0	500.0	500.0	500.0	1.0	1.0	0.53	60.1	0.6	60.1	58.1	2.02	29.715	
600.0	600.0	600.0	600.0	1.2	1.2	0.53	60.1	0.6	60.1	57.6	2.47	24.312	
700.0	700.0	700.0	700.0	1.5	1.5	0.53	60.1	0.6	60.1	57.2	2.92	20.572	
800.0	800.0	800.0	800.0	1.7	1.7	0.53	60.1	0.6	60.1	56.7	3.37	17.829	
900.0	900.0	900.0	900.0	1.9	1.9	0.53	60.1	0.6	60.1	56.3	3.82	15.731	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.53	60.1	0.6	60.1	55.8	4.27	14.075 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-133.42	60.1	0.6	61.0	56.3	4.70	12.987	
1,200.0	1,199.9	1,199.9	1,199.9	2.5	2.6	-135.95	60.1	0.6	63.8	58.7	5.11	12.487	
1,300.0	1,299.7	1,299.7	1,299.7	2.7	2.8	-139.70	60.1	0.6	68.6	63.1	5.52	12.423 SF	
1,400.0	1,399.3	1,399.3	1,399.3	2.9	3.0	-144.11	60.1	0.6	75.8	69.9	5.95	12.754	
1,500.0	1,498.6	1,498.6	1,498.6	3.2	3.3	-148.63	60.1	0.6	85.7	79.3	6.37	13.443	
1,600.0	1,597.5	1,597.5	1,597.5	3.4	3.5	-152.90	60.1	0.6	98.2	91.4	6.80	14.449	
1,700.0	1,696.1	1,697.4	1,697.4	3.7	3.7	-157.30	59.1	-0.2	113.0	105.8	7.20	15.703	
1,800.0	1,794.2	1,796.8	1,796.7	4.1	3.9	-162.09	56.1	-2.6	129.8	122.2	7.57	17.145	
1,900.0	1,891.7	1,895.5	1,895.2	4.4	4.0	-166.95	51.1	-6.5	148.9	141.0	7.94	18.754	
1,938.8	1,929.4	1,933.6	1,933.1	4.6	4.1	-168.80	48.7	-8.4	157.1	149.0	8.09	19.424	
2,000.0	1,988.7	1,993.4	1,992.7	4.9	4.2	-171.65	44.2	-11.9	170.3	162.0	8.34	20.433	
2,100.0	2,085.7	2,090.9	2,089.5	5.3	4.4	-176.05	35.3	-18.9	192.4	183.6	8.76	21.953	
2,200.0	2,182.7	2,187.8	2,185.5	5.7	4.7	179.82	24.6	-27.3	215.1	205.9	9.22	23.324	
2,300.0	2,279.7	2,284.1	2,280.5	6.2	4.9	175.90	12.0	-37.1	238.6	228.9	9.72	24.550	
2,400.0	2,376.7	2,379.6	2,374.2	6.7	5.2	172.17	-2.3	-48.4	263.1	252.8	10.26	25.637	
2,500.0	2,473.7	2,474.3	2,466.7	7.2	5.5	168.63	-18.3	-60.9	288.7	277.9	10.86	26.589	
2,600.0	2,570.7	2,567.9	2,557.6	7.7	5.8	165.25	-35.9	-74.7	315.6	304.1	11.51	27.432	
2,700.0	2,667.7	2,660.9	2,647.3	8.2	6.2	162.04	-55.0	-89.8	343.9	331.7	12.21	28.179	
2,800.0	2,764.7	2,754.9	2,737.8	8.7	6.6	159.17	-75.0	-105.4	373.3	360.4	12.95	28.827	
2,900.0	2,861.7	2,848.8	2,828.3	9.2	7.0	156.71	-94.9	-121.0	403.5	389.8	13.72	29.414	
3,000.0	2,958.7	2,942.8	2,918.8	9.7	7.4	154.58	-114.8	-136.7	434.3	419.8	14.50	29.944	
3,100.0	3,055.7	3,036.8	3,009.3	10.2	7.9	152.73	-134.8	-152.3	465.5	450.2	15.30	30.425	
3,200.0	3,152.7	3,130.7	3,099.8	10.7	8.4	151.11	-154.7	-167.9	497.1	481.0	16.11	30.864	
3,300.0	3,249.7	3,224.7	3,190.3	11.2	8.8	149.69	-174.6	-183.6	529.1	512.1	16.92	31.264	
3,400.0	3,346.7	3,318.7	3,280.7	11.7	9.3	148.42	-194.6	-199.2	561.3	543.5	17.74	31.632	
3,500.0	3,443.7	3,412.6	3,371.2	12.2	9.8	147.29	-214.5	-214.8	593.7	575.1	18.57	31.970	
3,600.0	3,540.7	3,506.6	3,461.7	12.8	10.3	146.27	-234.4	-230.5	626.3	606.9	19.40	32.282	
3,700.0	3,637.7	3,600.6	3,552.2	13.3	10.8	145.36	-254.4	-246.1	659.1	638.9	20.24	32.571	
3,800.0	3,734.6	3,694.5	3,642.7	13.8	11.2	144.53	-274.3	-261.7	692.0	671.0	21.07	32.839	
3,900.0	3,831.6	3,788.5	3,733.2	14.3	11.7	143.77	-294.2	-277.4	725.1	703.2	21.91	33.088	
4,000.0	3,928.6	3,882.5	3,823.7	14.8	12.2	143.09	-314.2	-293.0	758.2	735.5	22.76	33.320	
4,100.0	4,025.6	3,976.5	3,914.2	15.4	12.8	142.45	-334.1	-308.6	791.5	767.9	23.60	33.538	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)		Offset Site Error:		0.0 ft
Survey Program:				0-MWD									Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
0.0	0.0	0.0	0.0	0.0	0.0	0.53	29.9	0.3	29.9	29.9	0.00	N/A					
100.0	100.0	100.0	100.0	0.1	0.1	0.53	29.9	0.3	29.9	29.7	0.22	132.928					
200.0	200.0	200.0	200.0	0.3	0.3	0.53	29.9	0.3	29.9	29.2	0.67	44.307					
300.0	300.0	300.0	300.0	0.6	0.6	0.53	29.9	0.3	29.9	28.8	1.12	26.584					
400.0	400.0	400.0	400.0	0.8	0.8	0.53	29.9	0.3	29.9	28.3	1.57	18.988					
500.0	500.0	500.0	500.0	1.0	1.0	0.53	29.9	0.3	29.9	27.9	2.02	14.769					
600.0	600.0	600.0	600.0	1.2	1.2	0.53	29.9	0.3	29.9	27.4	2.47	12.083					
700.0	700.0	700.0	700.0	1.5	1.5	0.53	29.9	0.3	29.9	27.0	2.92	10.224					
800.0	800.0	800.0	800.0	1.7	1.7	0.53	29.9	0.3	29.9	26.5	3.37	8.861					
900.0	900.0	900.0	900.0	1.9	1.9	0.53	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	0.53	29.9	0.3	29.9	25.6	4.27	6.996	CC, ES				
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-134.31	29.9	0.3	30.8	26.1	4.70	6.552					
1,200.0	1,199.9	1,199.9	1,199.9	2.5	2.6	-139.07	29.9	0.3	33.6	28.5	5.11	6.587					
1,300.0	1,299.7	1,299.7	1,299.7	2.7	2.8	-145.36	29.9	0.3	38.8	33.3	5.52	7.029					
1,400.0	1,399.3	1,399.3	1,399.3	2.9	3.0	-151.70	29.9	0.3	46.6	40.7	5.94	7.850					
1,500.0	1,498.6	1,500.0	1,500.0	3.2	3.2	-157.42	28.6	0.7	56.0	49.7	6.33	8.838					
1,600.0	1,597.5	1,601.0	1,600.9	3.4	3.4	-162.61	24.9	2.0	65.6	58.9	6.70	9.791					
1,700.0	1,696.1	1,702.2	1,701.8	3.7	3.6	-167.43	18.6	4.1	75.6	68.6	7.07	10.692					
1,800.0	1,794.2	1,803.4	1,802.7	4.1	3.8	-171.97	9.7	7.1	86.2	78.7	7.45	11.561					
1,900.0	1,891.7	1,904.8	1,903.4	4.4	4.0	-176.27	-1.7	11.0	97.3	89.4	7.84	12.406					
1,938.8	1,929.4	1,944.2	1,942.4	4.6	4.1	-177.88	-6.8	12.7	101.8	93.8	8.00	12.725					
2,000.0	1,988.7	2,006.4	2,003.9	4.9	4.2	179.64	-15.6	15.7	108.6	100.3	8.27	13.135					
2,100.0	2,085.7	2,108.3	2,104.2	5.3	4.5	175.66	-32.1	21.3	118.3	109.5	8.74	13.532					
2,200.0	2,182.7	2,209.0	2,203.0	5.7	4.8	171.72	-50.7	27.6	126.5	117.3	9.26	13.666					
2,300.0	2,279.7	2,308.3	2,300.3	6.2	5.1	168.23	-69.3	33.9	135.0	125.2	9.82	13.751					
2,400.0	2,376.7	2,407.6	2,397.7	6.7	5.5	165.15	-87.9	40.3	144.0	133.5	10.42	13.812					
2,500.0	2,473.7	2,506.9	2,495.1	7.2	5.8	162.44	-106.5	46.6	153.2	142.2	11.06	13.851					
2,600.0	2,570.7	2,606.2	2,592.4	7.7	6.2	160.05	-125.1	52.9	162.8	151.1	11.74	13.870					
2,700.0	2,667.7	2,705.6	2,689.8	8.2	6.6	157.92	-143.7	59.2	172.7	160.2	12.45	13.875					
2,800.0	2,764.7	2,804.9	2,787.1	8.7	6.9	156.02	-162.3	65.5	182.7	169.6	13.18	13.868					
2,900.0	2,861.7	2,904.2	2,884.5	9.2	7.3	154.33	-180.9	71.8	193.0	179.0	13.93	13.853					
3,000.0	2,958.7	3,003.5	2,981.8	9.7	7.7	152.80	-199.5	78.2	203.4	188.7	14.70	13.833					
3,100.0	3,055.7	3,102.8	3,079.2	10.2	8.1	151.42	-218.1	84.5	213.9	198.4	15.49	13.808					
3,200.0	3,152.7	3,202.2	3,176.5	10.7	8.5	150.18	-236.8	90.8	224.5	208.2	16.29	13.782					
3,300.0	3,249.7	3,301.5	3,273.9	11.2	8.9	149.04	-255.4	97.1	235.2	218.1	17.10	13.754					
3,400.0	3,346.7	3,400.8	3,371.3	11.7	9.3	148.00	-274.0	103.4	246.0	228.1	17.92	13.726					
3,500.0	3,443.7	3,500.1	3,468.6	12.2	9.8	147.06	-292.6	109.8	256.9	238.2	18.76	13.698					
3,600.0	3,540.7	3,599.4	3,566.0	12.8	10.2	146.19	-311.2	116.1	267.9	248.3	19.59	13.671					
3,700.0	3,637.7	3,698.8	3,663.3	13.3	10.6	145.38	-329.8	122.4	278.9	258.4	20.44	13.645					
3,800.0	3,734.6	3,798.1	3,760.7	13.8	11.0	144.64	-348.4	128.7	289.9	268.6	21.29	13.619					
3,900.0	3,831.6	3,897.4	3,858.0	14.3	11.4	143.95	-367.0	135.0	301.0	278.9	22.14	13.595					
4,000.0	3,928.6	3,996.7	3,955.4	14.8	11.9	143.32	-385.6	141.3	312.1	289.1	23.00	13.572					
4,100.0	4,025.6	4,096.0	4,052.8	15.4	12.3	142.72	-404.3	147.7	323.3	299.4	23.86	13.549					
4,200.0	4,122.6	4,195.4	4,150.1	15.9	12.7	142.17	-422.9	154.0	334.5	309.8	24.73	13.528					
4,300.0	4,219.6	4,294.7	4,247.5	16.4	13.1	141.65	-441.5	160.3	345.7	320.1	25.59	13.508					
4,400.0	4,316.6	4,394.0	4,344.8	16.9	13.6	141.16	-460.1	166.6	357.0	330.5	26.46	13.489					
4,500.0	4,413.6	4,493.3	4,442.2	17.5	14.0	140.71	-478.7	172.9	368.3	340.9	27.34	13.471					
4,600.0	4,510.6	4,592.6	4,539.5	18.0	14.4	140.28	-497.3	179.2	379.6	351.4	28.21	13.454					
4,700.0	4,607.6	4,692.0	4,636.9	18.5	14.8	139.87	-515.9	185.6	390.9	361.8	29.09	13.438					
4,800.0	4,704.6	4,791.3	4,734.2	19.0	15.3	139.49	-534.5	191.9	402.2	372.3	29.97	13.423					
4,900.0	4,801.6	4,890.6	4,831.6	19.6	15.7	139.13	-553.1	198.2	413.6	382.7	30.85	13.408					

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 7L-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 7L-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													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	4,898.6	4,989.9	4,929.0	20.1	16.1	138.79	-571.7	204.5	425.0	393.2	31.73	13.394		
5,100.0	4,995.6	5,089.2	5,026.3	20.6	16.6	138.46	-590.4	210.8	436.3	403.7	32.61	13.381		
5,200.0	5,092.6	5,188.6	5,123.7	21.1	17.0	138.16	-609.0	217.2	447.7	414.3	33.49	13.369		
5,210.7	5,103.0	5,199.2	5,134.1	21.2	17.1	138.13	-611.0	217.8	449.0	415.4	33.59	13.367		
5,300.0	5,189.9	5,288.0	5,221.1	21.6	17.4	137.87	-627.6	223.5	458.1	423.8	34.37	13.330		
5,400.0	5,288.0	5,383.0	5,314.5	21.9	17.8	137.47	-644.3	229.1	466.4	431.3	35.10	13.288		
5,500.0	5,386.6	5,477.5	5,407.9	22.2	18.1	137.16	-658.0	233.8	473.3	437.6	35.70	13.256		
5,600.0	5,485.8	5,572.2	5,501.9	22.4	18.3	136.92	-668.8	237.5	478.7	442.5	36.21	13.221		
5,700.0	5,585.4	5,667.0	5,596.3	22.7	18.5	136.75	-676.7	240.1	482.6	446.0	36.62	13.178		
5,800.0	5,685.2	5,761.9	5,691.1	22.8	18.7	136.64	-681.6	241.8	485.1	448.1	36.95	13.126		
5,900.0	5,785.2	5,866.8	5,795.9	22.9	18.8	136.60	-683.5	242.5	486.0	448.8	37.21	13.063		
5,914.8	5,800.0	5,870.9	5,800.0	23.0	18.8	-90.34	-683.5	242.5	486.0	448.8	37.24	13.051		
5,943.2	5,828.4	5,899.3	5,828.4	23.0	18.9	-90.34	-683.5	242.5	486.0	448.7	37.32	13.025		
6,000.0	5,885.2	5,956.1	5,885.2	23.1	18.9	-90.34	-683.5	242.5	486.0	448.6	37.46	12.973		
6,088.7	5,973.9	6,044.8	5,973.9	23.2	19.1	-90.34	-683.5	242.5	486.0	448.3	37.69	12.895		
6,100.0	5,985.2	6,056.1	5,985.2	23.2	19.1	-90.35	-683.4	242.5	486.0	448.3	37.72	12.887		
6,150.0	6,035.1	6,106.3	6,035.4	23.2	19.1	-90.34	-681.1	242.5	486.0	448.2	37.80	12.859		
6,200.0	6,084.8	6,156.5	6,085.2	23.2	19.1	-90.34	-675.4	242.5	486.0	448.2	37.81	12.853		
6,250.0	6,134.0	6,206.7	6,134.6	23.2	19.1	-90.34	-666.4	242.5	486.0	448.3	37.77	12.869		
6,300.0	6,182.5	6,256.9	6,183.3	23.2	19.0	-90.33	-654.3	242.5	486.0	448.4	37.67	12.904		
6,350.0	6,230.1	6,307.0	6,231.1	23.1	19.0	-90.32	-639.0	242.5	486.0	448.5	37.51	12.958		
6,400.0	6,276.6	6,357.2	6,277.7	23.0	18.9	-90.32	-620.5	242.5	486.0	448.7	37.30	13.030		
6,450.0	6,321.9	6,407.4	6,323.1	22.9	18.7	-90.31	-599.1	242.5	486.0	449.0	37.06	13.117		
6,500.0	6,365.6	6,457.6	6,366.9	22.8	18.6	-90.30	-574.7	242.5	486.0	449.3	36.78	13.216		
6,550.0	6,407.7	6,507.7	6,409.0	22.7	18.4	-90.28	-547.5	242.5	486.0	449.6	36.47	13.327		
6,600.0	6,447.9	6,557.9	6,449.3	22.5	18.3	-90.27	-517.6	242.5	486.0	449.9	36.15	13.444		
6,650.0	6,486.0	6,608.0	6,487.5	22.4	18.1	-90.26	-485.1	242.5	486.0	450.2	35.83	13.566		
6,700.0	6,522.0	6,658.2	6,523.5	22.2	17.9	-90.24	-450.2	242.5	486.0	450.5	35.51	13.686		
6,750.0	6,555.7	6,708.3	6,557.1	22.0	17.8	-90.22	-413.1	242.5	486.0	450.8	35.22	13.801		
6,800.0	6,586.8	6,758.4	6,588.2	21.9	17.6	-90.21	-373.8	242.5	486.0	451.1	34.95	13.906		
6,850.0	6,615.3	6,808.5	6,616.6	21.7	17.5	-90.19	-332.5	242.5	486.0	451.3	34.73	13.995		
6,900.0	6,641.1	6,858.6	6,642.3	21.5	17.4	-90.17	-289.5	242.5	486.0	451.5	34.56	14.064		
6,950.0	6,664.0	6,908.7	6,665.1	21.3	17.3	-90.15	-244.9	242.5	486.0	451.6	34.46	14.106		
7,000.0	6,684.0	6,958.8	6,685.0	21.2	17.2	-90.13	-199.0	242.5	486.0	451.6	34.43	14.118		
7,050.0	6,700.9	7,008.8	6,701.7	21.0	17.2	-90.11	-151.8	242.5	486.0	451.6	34.48	14.097		
7,100.0	6,714.7	7,058.9	6,715.4	20.8	17.2	-90.08	-103.7	242.5	486.0	451.4	34.62	14.041		
7,150.0	6,725.3	7,108.9	6,725.8	20.7	17.2	-90.06	-54.7	242.5	486.0	451.2	34.85	13.948		
7,200.0	6,732.7	7,159.0	6,733.1	20.5	17.4	-90.04	-5.2	242.5	486.0	450.9	35.17	13.821		
7,222.4	6,735.0	7,181.4	6,735.2	20.5	17.4	-90.03	17.1	242.5	486.0	450.7	35.35	13.750		
7,250.0	6,736.9	7,209.0	6,737.0	20.4	17.5	-90.02	44.6	242.5	486.0	450.5	35.58	13.661		
7,289.9	6,737.9	7,248.9	6,737.9	20.3	17.7	-90.00	84.5	242.5	486.0	450.1	35.97	13.513		
7,300.0	6,737.9	7,259.0	6,737.9	20.2	17.7	-90.00	94.6	242.5	486.0	450.0	36.08	13.472		
7,400.0	6,737.7	7,359.0	6,737.7	20.0	18.4	-90.00	194.6	242.5	486.0	448.7	37.37	13.007		
7,500.0	6,737.5	7,459.0	6,737.5	20.1	19.2	-90.00	294.6	242.5	486.0	447.1	38.97	12.471		
7,600.0	6,737.4	7,559.0	6,737.4	21.2	20.2	-90.00	394.6	242.5	486.0	445.2	40.88	11.889		
7,700.0	6,737.2	7,659.0	6,737.2	22.3	21.3	-90.00	494.6	242.5	486.0	443.0	43.05	11.291		
7,800.0	6,737.1	7,759.0	6,737.1	23.6	22.5	-90.00	594.6	242.5	486.0	440.6	45.43	10.698		
7,900.0	6,736.9	7,859.0	6,736.9	25.0	23.8	-90.00	694.6	242.5	486.0	438.0	48.01	10.123		
8,000.0	6,736.8	7,959.0	6,736.8	26.4	25.2	-90.00	794.6	242.5	486.0	435.3	50.75	9.577		
8,100.0	6,736.6	8,059.0	6,736.6	27.8	26.6	-90.00	894.6	242.5	486.0	432.4	53.62	9.064		
8,200.0	6,736.4	8,159.0	6,736.4	29.3	28.1	-90.00	994.6	242.5	486.0	429.4	56.61	8.586		

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 7L-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 7L-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
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
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	6,736.3	8,259.0	6,736.3	30.9	29.7	-90.00	1,094.6	242.5	486.0	426.3	59.69	8.142	
8,400.0	6,736.1	8,359.0	6,736.1	32.5	31.3	-90.00	1,194.6	242.5	486.0	423.2	62.86	7.732	
8,500.0	6,736.0	8,459.0	6,736.0	34.1	32.9	-90.00	1,294.6	242.5	486.0	419.9	66.10	7.353	
8,600.0	6,735.8	8,559.0	6,735.8	35.7	34.6	-90.00	1,394.6	242.5	486.0	416.6	69.41	7.003	
8,700.0	6,735.7	8,659.0	6,735.7	37.4	36.3	-90.00	1,494.6	242.5	486.0	413.3	72.76	6.680	
8,800.0	6,735.5	8,759.0	6,735.5	39.1	38.0	-90.00	1,594.6	242.5	486.0	409.9	76.16	6.382	
8,900.0	6,735.3	8,859.0	6,735.3	40.8	39.7	-90.00	1,694.6	242.5	486.0	406.4	79.60	6.106	
9,000.0	6,735.2	8,959.0	6,735.2	42.5	41.4	-90.00	1,794.6	242.5	486.0	403.0	83.08	5.850	
9,100.0	6,735.0	9,059.0	6,735.0	44.2	43.2	-90.00	1,894.6	242.5	486.0	399.5	86.59	5.613	
9,200.0	6,734.9	9,159.0	6,734.9	46.0	45.0	-90.00	1,994.6	242.5	486.0	395.9	90.12	5.393	
9,300.0	6,734.7	9,259.0	6,734.7	47.7	46.7	-90.00	2,094.6	242.5	486.0	392.4	93.68	5.188	
9,400.0	6,734.6	9,359.0	6,734.6	49.5	48.5	-90.00	2,194.6	242.5	486.0	388.8	97.26	4.997	
9,500.0	6,734.4	9,459.0	6,734.4	51.3	50.3	-90.00	2,294.6	242.5	486.0	385.2	100.86	4.819	
9,600.0	6,734.2	9,559.0	6,734.2	53.1	52.1	-90.00	2,394.6	242.5	486.0	381.6	104.47	4.652	
9,700.0	6,734.1	9,659.0	6,734.1	54.9	54.0	-90.00	2,494.6	242.5	486.0	377.9	108.11	4.496	
9,800.0	6,733.9	9,759.0	6,733.9	56.7	55.8	-90.00	2,594.6	242.5	486.0	374.3	111.75	4.349	
9,900.0	6,733.8	9,859.0	6,733.8	58.5	57.6	-90.00	2,694.6	242.5	486.0	370.6	115.41	4.211	
10,000.0	6,733.6	9,959.0	6,733.6	60.3	59.5	-90.00	2,794.6	242.5	486.0	367.0	119.08	4.082	
10,100.0	6,733.5	10,059.0	6,733.5	62.2	61.3	-90.00	2,894.6	242.5	486.0	363.3	122.76	3.959	
10,200.0	6,733.3	10,159.0	6,733.3	64.0	63.1	-90.00	2,994.6	242.5	486.0	359.6	126.45	3.844	
10,300.0	6,733.1	10,259.0	6,733.1	65.8	65.0	-90.00	3,094.6	242.5	486.0	355.9	130.15	3.734	
10,400.0	6,733.0	10,359.0	6,733.0	67.7	66.8	-90.00	3,194.6	242.5	486.0	352.2	133.86	3.631	
10,500.0	6,732.8	10,459.0	6,732.8	69.5	68.7	-90.00	3,294.6	242.5	486.0	348.5	137.57	3.533	
10,600.0	6,732.7	10,559.0	6,732.7	71.3	70.6	-90.00	3,394.6	242.5	486.0	344.7	141.29	3.440	
10,700.0	6,732.5	10,659.0	6,732.5	73.2	72.4	-90.00	3,494.6	242.5	486.0	341.0	145.02	3.352	
10,800.0	6,732.4	10,759.0	6,732.4	75.1	74.3	-90.00	3,594.6	242.5	486.0	337.3	148.75	3.267	
10,900.0	6,732.2	10,859.0	6,732.2	76.9	76.2	-90.00	3,694.6	242.5	486.0	333.5	152.49	3.187	
11,000.0	6,732.0	10,959.0	6,732.0	78.8	78.0	-90.00	3,794.6	242.5	486.0	329.8	156.23	3.111	
11,100.0	6,731.9	11,059.0	6,731.9	80.6	79.9	-90.00	3,894.6	242.5	486.0	326.1	159.98	3.038	
11,200.0	6,731.7	11,159.0	6,731.7	82.5	81.8	-90.00	3,994.6	242.5	486.0	322.3	163.73	2.968	
11,300.0	6,731.6	11,259.0	6,731.6	84.4	83.7	-90.00	4,094.6	242.5	486.0	318.5	167.49	2.902	
11,400.0	6,731.4	11,359.0	6,731.4	86.2	85.6	-90.00	4,194.6	242.5	486.0	314.8	171.25	2.838	
11,500.0	6,731.3	11,459.0	6,731.3	88.1	87.4	-90.00	4,294.6	242.5	486.0	311.0	175.01	2.777	
11,600.0	6,731.1	11,559.0	6,731.1	90.0	89.3	-90.00	4,394.6	242.5	486.0	307.3	178.78	2.719	
11,700.0	6,730.9	11,659.0	6,730.9	91.9	91.2	-90.00	4,494.6	242.5	486.0	303.5	182.55	2.662	
11,800.0	6,730.8	11,759.0	6,730.8	93.7	93.1	-90.00	4,594.6	242.5	486.0	299.7	186.33	2.609	
11,900.0	6,730.6	11,859.0	6,730.6	95.6	95.0	-90.00	4,694.6	242.5	486.0	295.9	190.10	2.557	
12,000.0	6,730.5	11,959.0	6,730.5	97.5	96.9	-90.00	4,794.6	242.5	486.0	292.2	193.88	2.507	
12,100.0	6,730.3	12,059.0	6,730.3	99.4	98.8	-90.00	4,894.6	242.5	486.0	288.4	197.66	2.459	
12,200.0	6,730.2	12,159.0	6,730.2	101.3	100.7	-90.00	4,994.6	242.5	486.0	284.6	201.44	2.413	
12,300.0	6,730.0	12,259.0	6,730.0	103.2	102.5	-90.00	5,094.6	242.5	486.0	280.8	205.23	2.368	
12,400.0	6,729.8	12,359.0	6,729.8	105.0	104.4	-90.00	5,194.6	242.5	486.0	277.0	209.02	2.325	
12,500.0	6,729.7	12,459.0	6,729.7	106.9	106.3	-90.00	5,294.6	242.5	486.0	273.2	212.80	2.284	
12,600.0	6,729.5	12,559.0	6,729.5	108.8	108.2	-90.00	5,394.6	242.5	486.0	269.4	216.60	2.244	
12,700.0	6,729.4	12,659.0	6,729.4	110.7	110.1	-90.00	5,494.6	242.5	486.0	265.7	220.39	2.205	
12,800.0	6,729.2	12,759.0	6,729.2	112.6	112.0	-90.00	5,594.6	242.5	486.0	261.9	224.18	2.168	
12,900.0	6,729.1	12,859.0	6,729.1	114.5	113.9	-90.00	5,694.6	242.5	486.0	258.1	227.98	2.132	
13,000.0	6,728.9	12,959.0	6,728.9	116.4	115.8	-90.00	5,794.6	242.5	486.0	254.3	231.78	2.097	
13,100.0	6,728.7	13,059.0	6,728.7	118.3	117.7	-90.00	5,894.6	242.5	486.0	250.5	235.58	2.063	
13,200.0	6,728.6	13,159.0	6,728.6	120.2	119.6	-90.00	5,994.6	242.5	486.0	246.7	239.38	2.030	
13,300.0	6,728.4	13,259.0	6,728.4	122.1	121.5	-90.00	6,094.6	242.5	486.0	242.9	243.18	1.999	

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 7L-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 7L-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
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
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	6,728.3	13,359.0	6,728.3	124.0	123.4	-90.00	6,194.6	242.5	486.0	239.1	246.98	1.968	
13,500.0	6,728.1	13,459.0	6,728.1	125.9	125.3	-90.00	6,294.6	242.5	486.0	235.3	250.78	1.938	
13,600.0	6,728.0	13,559.0	6,728.0	127.8	127.2	-90.00	6,394.6	242.5	486.0	231.5	254.59	1.909	
13,700.0	6,727.8	13,659.0	6,727.8	129.6	129.1	-90.00	6,494.6	242.5	486.0	227.7	258.39	1.881	
13,800.0	6,727.6	13,759.0	6,727.6	131.5	131.0	-90.00	6,594.6	242.5	486.0	223.8	262.20	1.854	
13,900.0	6,727.5	13,859.0	6,727.5	133.4	132.9	-90.00	6,694.6	242.5	486.0	220.0	266.01	1.827	
14,000.0	6,727.3	13,959.0	6,727.3	135.3	134.8	-90.00	6,794.6	242.5	486.0	216.2	269.82	1.801	
14,100.0	6,727.2	14,059.0	6,727.2	137.2	136.8	-90.00	6,894.6	242.5	486.0	212.4	273.63	1.776	
14,200.0	6,727.0	14,159.0	6,727.0	139.1	138.7	-90.00	6,994.6	242.5	486.0	208.6	277.44	1.752	
14,300.0	6,726.9	14,259.0	6,726.9	141.0	140.6	-90.00	7,094.6	242.5	486.0	204.8	281.25	1.728	
14,400.0	6,726.7	14,359.0	6,726.7	143.0	142.5	-90.00	7,194.6	242.5	486.0	201.0	285.06	1.705	
14,500.0	6,726.5	14,459.0	6,726.5	144.9	144.4	-90.00	7,294.6	242.5	486.0	197.2	288.88	1.683	
14,600.0	6,726.4	14,559.0	6,726.4	146.8	146.3	-90.00	7,394.6	242.5	486.0	193.4	292.69	1.661	
14,700.0	6,726.2	14,659.0	6,726.2	148.7	148.2	-90.00	7,494.6	242.5	486.0	189.5	296.51	1.639	
14,800.0	6,726.1	14,759.0	6,726.1	150.6	150.1	-90.00	7,594.6	242.5	486.0	185.7	300.32	1.618	
14,900.0	6,725.9	14,859.0	6,725.9	152.5	152.0	-90.00	7,694.6	242.5	486.0	181.9	304.14	1.598	
15,000.0	6,725.8	14,959.0	6,725.8	154.4	153.9	-90.00	7,794.6	242.5	486.0	178.1	307.95	1.578	
15,100.0	6,725.6	15,059.0	6,725.6	156.3	155.8	-90.00	7,894.6	242.5	486.0	174.3	311.77	1.559	
15,200.0	6,725.4	15,159.0	6,725.4	158.2	157.7	-90.00	7,994.6	242.5	486.0	170.5	315.59	1.540	
15,300.0	6,725.3	15,259.0	6,725.3	160.1	159.6	-90.00	8,094.6	242.5	486.0	166.6	319.41	1.522	
15,400.0	6,725.1	15,359.0	6,725.1	162.0	161.5	-90.00	8,194.6	242.5	486.0	162.8	323.23	1.504	
15,500.0	6,725.0	15,459.0	6,725.0	163.9	163.5	-90.00	8,294.6	242.5	486.0	159.0	327.04	1.486 Level 3	
15,600.0	6,724.8	15,559.0	6,724.8	165.8	165.4	-90.00	8,394.6	242.5	486.0	155.2	330.86	1.469 Level 3	
15,700.0	6,724.7	15,659.0	6,724.7	167.7	167.3	-90.00	8,494.6	242.5	486.0	151.4	334.69	1.452 Level 3	
15,800.0	6,724.5	15,759.0	6,724.5	169.6	169.2	-90.00	8,594.6	242.5	486.0	147.5	338.51	1.436 Level 3	
15,900.0	6,724.3	15,859.0	6,724.3	171.5	171.1	-90.00	8,694.6	242.5	486.0	143.7	342.33	1.420 Level 3	
16,000.0	6,724.2	15,959.0	6,724.2	173.4	173.0	-90.00	8,794.6	242.5	486.0	139.9	346.15	1.404 Level 3	
16,100.0	6,724.0	16,059.0	6,724.0	175.3	174.9	-90.00	8,894.6	242.5	486.0	136.1	349.97	1.389 Level 3	
16,200.0	6,723.9	16,159.0	6,723.9	177.3	176.8	-90.00	8,994.6	242.5	486.0	132.3	353.79	1.374 Level 3	
16,300.0	6,723.7	16,259.0	6,723.7	179.2	178.7	-90.00	9,094.6	242.5	486.1	128.4	357.62	1.359 Level 3	
16,400.0	6,723.6	16,359.0	6,723.6	181.1	180.7	-90.00	9,194.6	242.5	486.1	124.6	361.44	1.345 Level 3	
16,500.0	6,723.4	16,459.0	6,723.4	183.0	182.6	-90.00	9,294.6	242.5	486.1	120.8	365.26	1.331 Level 3	
16,600.0	6,723.2	16,559.0	6,723.2	184.9	184.5	-90.00	9,394.6	242.5	486.1	117.0	369.09	1.317 Level 3	
16,700.0	6,723.1	16,659.0	6,723.1	186.8	186.4	-90.00	9,494.6	242.5	486.1	113.1	372.91	1.303 Level 3	
16,732.2	6,723.0	16,691.2	6,723.0	187.4	187.0	-90.00	9,526.8	242.5	486.1	111.9	374.14	1.299 Level 3	
16,759.2	6,723.0	16,713.4	6,723.0	187.9	187.4	-90.00	9,549.0	242.5	486.1	111.0	375.09	1.296 Level 3, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	0.00	14.9	0.0	14.9	14.9	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	0.00	14.9	0.0	14.9	14.7	0.22	66.443		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	14.9	0.0	14.9	14.3	0.67	22.146		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	14.9	0.0	14.9	13.8	1.12	13.288		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	14.9	0.0	14.9	13.4	1.57	9.491		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	14.9	0.0	14.9	12.9	2.02	7.382		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	14.9	0.0	14.9	12.5	2.47	6.040		
700.0	700.0	700.0	700.0	1.5	1.5	0.00	14.9	0.0	14.9	12.0	2.92	5.111		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	14.9	0.0	14.9	11.6	3.37	4.429		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	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	0.00	14.9	0.0	14.9	10.7	4.27	3.497 CC		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-136.50	14.9	0.0	15.9	11.2	4.70	3.376		
1,200.0	1,199.9	1,199.9	1,199.9	2.5	2.6	-144.69	14.9	0.0	18.9	13.8	5.11	3.701		
1,300.0	1,299.7	1,300.3	1,300.3	2.7	2.8	-152.79	13.8	0.7	23.3	17.8	5.49	4.233		
1,400.0	1,399.3	1,400.8	1,400.7	2.9	3.0	-159.41	10.6	3.0	27.8	21.9	5.86	4.737		
1,500.0	1,498.6	1,501.4	1,501.1	3.2	3.2	-165.13	5.1	6.7	32.5	26.2	6.24	5.200		
1,600.0	1,597.5	1,602.2	1,601.5	3.4	3.4	-170.27	-2.5	11.9	37.3	30.7	6.62	5.634		
1,700.0	1,696.1	1,703.1	1,701.6	3.7	3.6	-174.99	-12.4	18.7	42.4	35.4	7.01	6.044		
1,800.0	1,794.2	1,804.0	1,801.5	4.1	3.8	-179.38	-24.4	26.9	47.7	40.3	7.42	6.435		
1,900.0	1,891.7	1,905.1	1,901.1	4.4	4.1	-176.51	-38.6	36.6	53.3	45.5	7.84	6.806		
1,938.8	1,929.4	1,944.4	1,939.7	4.6	4.2	174.98	-44.8	40.8	55.6	47.6	8.01	6.942		
2,000.0	1,988.7	2,006.1	2,000.2	4.9	4.4	172.59	-55.0	47.8	58.8	50.5	8.31	7.078		
2,100.0	2,085.7	2,105.9	2,097.8	5.3	4.8	169.08	-72.0	59.4	63.7	54.9	8.83	7.222		
2,200.0	2,182.7	2,205.7	2,195.5	5.7	5.2	166.07	-89.0	71.0	68.9	59.5	9.38	7.341		
2,300.0	2,279.7	2,305.5	2,293.1	6.2	5.5	163.50	-106.0	82.7	74.2	64.2	9.98	7.438		
2,400.0	2,376.7	2,405.4	2,390.8	6.7	5.9	161.26	-123.0	94.3	79.6	69.0	10.60	7.514		
2,500.0	2,473.7	2,505.2	2,488.5	7.2	6.3	159.32	-140.0	105.9	85.2	73.9	11.25	7.572		
2,600.0	2,570.7	2,605.0	2,586.1	7.7	6.7	157.61	-157.1	117.5	90.8	78.9	11.92	7.615		
2,700.0	2,667.7	2,704.8	2,683.8	8.2	7.1	156.11	-174.1	129.2	96.5	83.9	12.62	7.647		
2,800.0	2,764.7	2,804.6	2,781.4	8.7	7.6	154.77	-191.1	140.8	102.3	88.9	13.34	7.669		
2,900.0	2,861.7	2,904.4	2,879.1	9.2	8.0	153.58	-208.1	152.4	108.1	94.0	14.07	7.683		
3,000.0	2,958.7	3,004.2	2,976.7	9.7	8.4	152.51	-225.1	164.0	113.9	99.1	14.81	7.693		
3,100.0	3,055.7	3,104.0	3,074.4	10.2	8.9	151.54	-242.1	175.6	119.8	104.2	15.57	7.697		
3,200.0	3,152.7	3,203.8	3,172.1	10.7	9.3	150.67	-259.1	187.3	125.7	109.4	16.33	7.699		
3,300.0	3,249.7	3,303.6	3,269.7	11.2	9.7	149.87	-276.1	198.9	131.7	114.6	17.11	7.698		
3,400.0	3,346.7	3,403.4	3,367.4	11.7	10.2	149.14	-293.1	210.5	137.6	119.8	17.89	7.695		
3,500.0	3,443.7	3,503.2	3,465.0	12.2	10.6	148.48	-310.1	222.1	143.6	125.0	18.68	7.690		
3,600.0	3,540.7	3,603.0	3,562.7	12.8	11.0	147.86	-327.1	233.7	149.6	130.2	19.47	7.685		
3,700.0	3,637.7	3,702.8	3,660.4	13.3	11.5	147.30	-344.1	245.4	155.7	135.4	20.27	7.678		
3,800.0	3,734.6	3,802.7	3,758.0	13.8	11.9	146.77	-361.1	257.0	161.7	140.6	21.08	7.671		
3,900.0	3,831.6	3,902.5	3,855.7	14.3	12.4	146.28	-378.1	268.6	167.7	145.9	21.89	7.664		
4,000.0	3,928.6	4,002.3	3,953.3	14.8	12.8	145.83	-395.1	280.2	173.8	151.1	22.70	7.657		
4,100.0	4,025.6	4,102.1	4,051.0	15.4	13.3	145.41	-412.1	291.8	179.9	156.4	23.51	7.649		
4,200.0	4,122.6	4,201.9	4,148.7	15.9	13.7	145.02	-429.1	303.5	185.9	161.6	24.33	7.642		
4,300.0	4,219.6	4,301.7	4,246.3	16.4	14.2	144.65	-446.1	315.1	192.0	166.9	25.15	7.634		
4,400.0	4,316.6	4,401.5	4,344.0	16.9	14.6	144.30	-463.1	326.7	198.1	172.1	25.98	7.627		
4,500.0	4,413.6	4,501.3	4,441.6	17.5	15.1	143.97	-480.2	338.3	204.2	177.4	26.80	7.619		
4,600.0	4,510.6	4,601.1	4,539.3	18.0	15.5	143.67	-497.2	349.9	210.3	182.7	27.63	7.612		
4,700.0	4,607.6	4,700.9	4,636.9	18.5	16.0	143.38	-514.2	361.6	216.4	188.0	28.46	7.605		
4,800.0	4,704.6	4,800.7	4,734.6	19.0	16.4	143.10	-531.2	373.2	222.6	193.3	29.29	7.598		
4,900.0	4,801.6	4,900.5	4,832.3	19.6	16.9	142.84	-548.2	384.8	228.7	198.6	30.13	7.591		

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 7L-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 7L-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												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,898.6	5,000.3	4,929.9	20.1	17.4	142.60	-565.2	396.4	234.8	203.8	30.96	7.584	
5,100.0	4,995.6	5,100.1	5,027.6	20.6	17.8	142.36	-582.2	408.1	240.9	209.1	31.79	7.578	
5,200.0	5,092.6	5,200.0	5,125.2	21.1	18.3	142.14	-599.2	419.7	247.1	214.4	32.63	7.572	
5,210.7	5,103.0	5,210.7	5,135.7	21.2	18.3	142.12	-601.0	420.9	247.7	215.0	32.72	7.571	
5,300.0	5,189.9	5,299.8	5,222.9	21.6	18.7	141.79	-616.2	431.3	252.1	218.6	33.49	7.529	
5,400.0	5,288.0	5,399.1	5,320.1	21.9	19.2	140.95	-633.1	442.8	254.5	220.1	34.37	7.404	
5,500.0	5,386.6	5,493.8	5,413.1	22.2	19.5	140.02	-647.7	452.8	255.5	220.4	35.12	7.274	
5,600.0	5,485.8	5,588.6	5,506.8	22.4	19.7	139.16	-659.7	461.0	255.9	220.1	35.79	7.150	
5,700.0	5,585.4	5,683.5	5,601.0	22.7	20.0	138.38	-669.2	467.5	255.7	219.3	36.37	7.030	
5,800.0	5,685.2	5,778.5	5,695.7	22.8	20.2	137.66	-676.0	472.2	254.9	218.0	36.87	6.913	
5,900.0	5,785.2	5,873.7	5,790.7	22.9	20.3	137.00	-680.3	475.1	253.4	216.1	37.28	6.797	
5,914.8	5,800.0	5,887.8	5,804.7	23.0	20.3	-90.04	-680.8	475.4	253.1	215.8	37.34	6.779	
6,000.0	5,885.2	5,968.9	5,885.9	23.1	20.5	-90.33	-682.0	476.3	252.2	214.6	37.65	6.700	
6,035.5	5,920.7	6,003.7	5,920.7	23.1	20.5	-90.33	-682.1	476.3	252.2	214.5	37.74	6.682	
6,088.7	5,973.9	6,057.0	5,973.9	23.2	20.6	-90.33	-682.1	476.3	252.2	214.3	37.88	6.658	
6,100.0	5,985.2	6,068.2	5,985.2	23.2	20.6	-90.35	-682.1	476.3	252.2	214.3	37.91	6.652	
6,150.0	6,035.1	6,118.2	6,035.1	23.2	20.6	-90.89	-682.1	476.3	252.2	214.1	38.15	6.611	
6,200.0	6,084.8	6,168.2	6,085.2	23.2	20.7	-92.01	-681.4	476.3	252.3	213.9	38.49	6.556	
6,250.0	6,134.0	6,218.7	6,135.5	23.2	20.7	-93.19	-677.7	476.3	252.6	213.8	38.78	6.514	
6,300.0	6,182.5	6,269.5	6,185.8	23.2	20.7	-94.35	-670.6	476.3	252.9	213.9	38.98	6.488	
6,350.0	6,230.1	6,320.7	6,235.9	23.1	20.7	-95.50	-660.0	476.3	253.4	214.3	39.10	6.479	
6,400.0	6,276.6	6,372.3	6,285.6	23.0	20.6	-96.62	-646.1	476.3	253.9	214.8	39.14	6.487	
6,450.0	6,321.9	6,424.2	6,334.5	22.9	20.5	-97.71	-628.7	476.3	254.5	215.4	39.09	6.511	
6,500.0	6,365.6	6,476.5	6,382.4	22.8	20.4	-98.76	-607.8	476.3	255.2	216.2	38.95	6.551	
6,550.0	6,407.7	6,529.1	6,429.1	22.7	20.3	-99.78	-583.5	476.3	255.9	217.2	38.74	6.607	
6,600.0	6,447.9	6,582.1	6,474.3	22.5	20.2	-100.75	-555.9	476.3	256.7	218.3	38.46	6.676	
6,650.0	6,486.0	6,635.5	6,517.8	22.4	20.0	-101.67	-525.1	476.3	257.6	219.4	38.11	6.757	
6,700.0	6,522.0	6,689.1	6,559.2	22.2	19.8	-102.54	-491.0	476.3	258.4	220.7	37.73	6.849	
6,750.0	6,555.7	6,743.1	6,598.4	22.0	19.6	-103.34	-453.9	476.3	259.2	221.9	37.31	6.948	
6,800.0	6,586.8	6,797.3	6,635.1	21.9	19.5	-104.09	-413.9	476.3	260.0	223.2	36.88	7.051	
6,850.0	6,615.3	6,851.9	6,668.9	21.7	19.3	-104.77	-371.2	476.3	260.8	224.4	36.46	7.154	
6,900.0	6,641.1	6,906.7	6,699.8	21.5	19.1	-105.38	-325.9	476.3	261.6	225.5	36.07	7.252	
6,950.0	6,664.0	6,961.7	6,727.5	21.3	18.9	-105.92	-278.4	476.3	262.3	226.5	35.74	7.338	
7,000.0	6,684.0	7,017.0	6,751.8	21.2	18.7	-106.39	-228.8	476.3	262.9	227.4	35.49	7.408	
7,050.0	6,700.9	7,072.4	6,772.5	21.0	18.6	-106.78	-177.4	476.3	263.4	228.1	35.33	7.457	
7,100.0	6,714.7	7,128.0	6,789.4	20.8	18.4	-107.10	-124.4	476.3	263.9	228.6	35.28	7.478	
7,150.0	6,725.3	7,183.6	6,802.5	20.7	18.3	-107.34	-70.3	476.3	264.2	228.8	35.37	7.470	
7,200.0	6,732.7	7,239.4	6,811.6	20.5	18.3	-107.50	-15.3	476.3	264.4	228.8	35.59	7.430	
7,250.0	6,736.9	7,295.2	6,816.7	20.4	18.2	-107.57	40.3	476.3	264.5	228.6	35.95	7.359	
7,289.9	6,737.9	7,339.8	6,817.8	20.3	18.3	-107.58	84.8	476.3	264.6	228.2	36.34	7.280	
7,300.0	6,737.9	7,349.8	6,817.8	20.2	18.3	-107.58	94.8	476.3	264.5	228.1	36.46	7.257	
7,400.0	6,737.7	7,449.8	6,817.5	20.0	18.8	-107.56	194.8	476.3	264.5	226.8	37.77	7.004	
7,500.0	6,737.5	7,549.8	6,817.2	20.1	19.5	-107.54	294.8	476.3	264.5	225.1	39.36	6.719	
7,600.0	6,737.4	7,649.8	6,817.0	21.2	20.5	-107.51	394.8	476.3	264.5	223.2	41.23	6.414	
7,700.0	6,737.2	7,749.8	6,816.7	22.3	21.7	-107.49	494.8	476.3	264.4	221.1	43.34	6.102	
7,800.0	6,737.1	7,849.8	6,816.4	23.6	22.9	-107.47	594.8	476.3	264.4	218.7	45.64	5.793	
7,900.0	6,736.9	7,949.8	6,816.2	25.0	24.3	-107.45	694.8	476.3	264.4	216.2	48.12	5.494	
8,000.0	6,736.8	8,049.8	6,815.9	26.4	25.7	-107.43	794.8	476.3	264.3	213.6	50.75	5.209	
8,100.0	6,736.6	8,149.8	6,815.7	27.8	27.1	-107.41	894.8	476.3	264.3	210.8	53.50	4.940	
8,200.0	6,736.4	8,249.8	6,815.4	29.3	28.6	-107.38	994.8	476.3	264.3	207.9	56.37	4.688	
8,300.0	6,736.3	8,349.8	6,815.1	30.9	30.2	-107.36	1,094.8	476.3	264.2	204.9	59.32	4.454	

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 7L-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 7L-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												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	6,736.1	8,449.8	6,814.9	32.5	31.8	-107.34	1,194.8	476.3	264.2	201.8	62.36	4.237	
8,500.0	6,736.0	8,549.8	6,814.6	34.1	33.4	-107.32	1,294.8	476.3	264.2	198.7	65.46	4.036	
8,600.0	6,735.8	8,649.8	6,814.4	35.7	35.0	-107.30	1,394.8	476.3	264.1	195.5	68.62	3.849	
8,700.0	6,735.7	8,749.8	6,814.1	37.4	36.7	-107.28	1,494.8	476.3	264.1	192.3	71.84	3.677	
8,800.0	6,735.5	8,849.8	6,813.8	39.1	38.4	-107.25	1,594.8	476.3	264.1	189.0	75.10	3.517	
8,900.0	6,735.3	8,949.8	6,813.6	40.8	40.1	-107.23	1,694.8	476.3	264.0	185.7	78.40	3.368	
9,000.0	6,735.2	9,049.8	6,813.3	42.5	41.9	-107.21	1,794.8	476.3	264.0	182.3	81.73	3.230	
9,100.0	6,735.0	9,149.8	6,813.0	44.2	43.6	-107.19	1,894.8	476.3	264.0	178.9	85.10	3.102	
9,200.0	6,734.9	9,249.8	6,812.8	46.0	45.4	-107.17	1,994.8	476.3	264.0	175.5	88.49	2.983	
9,300.0	6,734.7	9,349.8	6,812.5	47.7	47.2	-107.15	2,094.8	476.3	263.9	172.0	91.91	2.872	
9,400.0	6,734.6	9,449.8	6,812.3	49.5	48.9	-107.12	2,194.8	476.3	263.9	168.5	95.35	2.768	
9,500.0	6,734.4	9,549.8	6,812.0	51.3	50.7	-107.10	2,294.8	476.3	263.9	165.1	98.81	2.671	
9,600.0	6,734.2	9,649.8	6,811.7	53.1	52.5	-107.08	2,394.8	476.3	263.8	161.6	102.28	2.579	
9,700.0	6,734.1	9,749.8	6,811.5	54.9	54.3	-107.06	2,494.8	476.3	263.8	158.0	105.78	2.494	
9,800.0	6,733.9	9,849.8	6,811.2	56.7	56.2	-107.04	2,594.8	476.3	263.8	154.5	109.28	2.414	
9,900.0	6,733.8	9,949.8	6,811.0	58.5	58.0	-107.01	2,694.8	476.3	263.7	150.9	112.81	2.338	
10,000.0	6,733.6	10,049.8	6,810.7	60.3	59.8	-106.99	2,794.8	476.3	263.7	147.4	116.34	2.267	
10,100.0	6,733.5	10,149.8	6,810.4	62.2	61.6	-106.97	2,894.8	476.3	263.7	143.8	119.88	2.199	
10,200.0	6,733.3	10,249.8	6,810.2	64.0	63.5	-106.95	2,994.8	476.3	263.7	140.2	123.44	2.136	
10,300.0	6,733.1	10,349.8	6,809.9	65.8	65.3	-106.93	3,094.8	476.3	263.6	136.6	127.00	2.076	
10,400.0	6,733.0	10,449.8	6,809.6	67.7	67.2	-106.91	3,194.8	476.3	263.6	133.0	130.58	2.019	
10,500.0	6,732.8	10,549.8	6,809.4	69.5	69.0	-106.88	3,294.8	476.3	263.6	129.4	134.16	1.965	
10,600.0	6,732.7	10,649.8	6,809.1	71.3	70.9	-106.86	3,394.8	476.3	263.5	125.8	137.75	1.913	
10,700.0	6,732.5	10,749.8	6,808.9	73.2	72.7	-106.84	3,494.8	476.3	263.5	122.2	141.34	1.864	
10,800.0	6,732.4	10,849.8	6,808.6	75.1	74.6	-106.82	3,594.8	476.3	263.5	118.5	144.94	1.818	
10,900.0	6,732.2	10,949.8	6,808.3	76.9	76.5	-106.80	3,694.8	476.3	263.4	114.9	148.55	1.773	
11,000.0	6,732.0	11,049.8	6,808.1	78.8	78.3	-106.78	3,794.8	476.3	263.4	111.2	152.17	1.731	
11,100.0	6,731.9	11,149.8	6,807.8	80.6	80.2	-106.75	3,894.8	476.3	263.4	107.6	155.79	1.691	
11,200.0	6,731.7	11,249.8	6,807.5	82.5	82.1	-106.73	3,994.8	476.3	263.4	103.9	159.41	1.652	
11,300.0	6,731.6	11,349.8	6,807.3	84.4	84.0	-106.71	4,094.8	476.3	263.3	100.3	163.04	1.615	
11,400.0	6,731.4	11,449.8	6,807.0	86.2	85.8	-106.69	4,194.8	476.3	263.3	96.6	166.68	1.580	
11,500.0	6,731.3	11,549.8	6,806.8	88.1	87.7	-106.67	4,294.8	476.3	263.3	92.9	170.31	1.546	
11,600.0	6,731.1	11,649.8	6,806.5	90.0	89.6	-106.64	4,394.8	476.3	263.2	89.3	173.96	1.513	
11,700.0	6,730.9	11,749.8	6,806.2	91.9	91.5	-106.62	4,494.8	476.3	263.2	85.6	177.60	1.482 Level 3	
11,800.0	6,730.8	11,849.8	6,806.0	93.7	93.4	-106.60	4,594.8	476.3	263.2	81.9	181.25	1.452 Level 3	
11,900.0	6,730.6	11,949.8	6,805.7	95.6	95.2	-106.58	4,694.8	476.3	263.1	78.2	184.91	1.423 Level 3	
12,000.0	6,730.5	12,049.8	6,805.5	97.5	97.1	-106.56	4,794.8	476.3	263.1	74.5	188.56	1.395 Level 3	
12,100.0	6,730.3	12,149.8	6,805.2	99.4	99.0	-106.53	4,894.8	476.3	263.1	70.9	192.22	1.369 Level 3	
12,200.0	6,730.2	12,249.8	6,804.9	101.3	100.9	-106.51	4,994.8	476.3	263.1	67.2	195.89	1.343 Level 3	
12,300.0	6,730.0	12,349.8	6,804.7	103.2	102.8	-106.49	5,094.8	476.3	263.0	63.5	199.55	1.318 Level 3	
12,400.0	6,729.8	12,449.8	6,804.4	105.0	104.7	-106.47	5,194.8	476.3	263.0	59.8	203.22	1.294 Level 3	
12,500.0	6,729.7	12,549.8	6,804.1	106.9	106.6	-106.45	5,294.8	476.3	263.0	56.1	206.89	1.271 Level 3	
12,600.0	6,729.5	12,649.8	6,803.9	108.8	108.5	-106.43	5,394.8	476.3	262.9	52.4	210.57	1.249 Level 2	
12,700.0	6,729.4	12,749.8	6,803.6	110.7	110.4	-106.40	5,494.8	476.3	262.9	48.7	214.24	1.227 Level 2	
12,800.0	6,729.2	12,849.8	6,803.4	112.6	112.3	-106.38	5,594.8	476.3	262.9	45.0	217.92	1.206 Level 2	
12,900.0	6,729.1	12,949.8	6,803.1	114.5	114.2	-106.36	5,694.8	476.3	262.8	41.2	221.60	1.186 Level 2	
13,000.0	6,728.9	13,049.8	6,802.8	116.4	116.1	-106.34	5,794.8	476.3	262.8	37.5	225.29	1.167 Level 2	
13,100.0	6,728.7	13,149.8	6,802.6	118.3	117.9	-106.32	5,894.8	476.3	262.8	33.8	228.97	1.148 Level 2	
13,200.0	6,728.6	13,249.8	6,802.3	120.2	119.8	-106.29	5,994.8	476.3	262.8	30.1	232.66	1.129 Level 2	
13,300.0	6,728.4	13,349.8	6,802.0	122.1	121.7	-106.27	6,094.8	476.3	262.7	26.4	236.35	1.112 Level 2	
13,400.0	6,728.3	13,449.8	6,801.8	124.0	123.6	-106.25	6,194.8	476.3	262.7	22.7	240.04	1.094 Level 2	

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

Offset Design														Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)		Offset Site Error:		0.0 ft
Survey Program:				0-MWD								Offset Well Error:				0.0 ft		
Reference		Offset		Semi Major Axis			Distance											
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)							
13,500.0	6,728.1	13,549.8	6,801.5	125.9	125.5	-106.23	6,294.8	476.3	262.7	18.9	243.73	1.078	Level 2					
13,600.0	6,728.0	13,649.8	6,801.3	127.8	127.4	-106.21	6,394.8	476.3	262.6	15.2	247.43	1.061	Level 2					
13,700.0	6,727.8	13,749.8	6,801.0	129.6	129.3	-106.18	6,494.8	476.3	262.6	11.5	251.12	1.046	Level 2					
13,800.0	6,727.6	13,849.8	6,800.7	131.5	131.2	-106.16	6,594.8	476.3	262.6	7.8	254.82	1.030	Level 2					
13,900.0	6,727.5	13,949.8	6,800.5	133.4	133.2	-106.14	6,694.8	476.3	262.6	4.0	258.52	1.016	Level 2					
14,000.0	6,727.3	14,049.8	6,800.2	135.3	135.1	-106.12	6,794.8	476.3	262.5	0.3	262.22	1.001	Level 2					
14,100.0	6,727.2	14,149.8	6,800.0	137.2	137.0	-106.10	6,894.8	476.3	262.5	-3.4	265.93	0.987	Level 1					
14,200.0	6,727.0	14,249.8	6,799.7	139.1	138.9	-106.07	6,994.8	476.3	262.5	-7.2	269.63	0.973	Level 1					
14,300.0	6,726.9	14,349.8	6,799.4	141.0	140.8	-106.05	7,094.8	476.3	262.4	-10.9	273.34	0.960	Level 1					
14,400.0	6,726.7	14,449.8	6,799.2	143.0	142.7	-106.03	7,194.8	476.3	262.4	-14.6	277.05	0.947	Level 1					
14,500.0	6,726.5	14,549.8	6,798.9	144.9	144.6	-106.01	7,294.8	476.3	262.4	-18.4	280.76	0.935	Level 1					
14,600.0	6,726.4	14,649.8	6,798.6	146.8	146.5	-105.99	7,394.8	476.3	262.4	-22.1	284.47	0.922	Level 1					
14,700.0	6,726.2	14,749.8	6,798.4	148.7	148.4	-105.96	7,494.8	476.3	262.3	-25.9	288.18	0.910	Level 1					
14,800.0	6,726.1	14,849.8	6,798.1	150.6	150.3	-105.94	7,594.8	476.3	262.3	-29.6	291.89	0.899	Level 1					
14,900.0	6,725.9	14,949.8	6,797.9	152.5	152.2	-105.92	7,694.8	476.3	262.3	-33.3	295.61	0.887	Level 1					
15,000.0	6,725.8	15,049.8	6,797.6	154.4	154.1	-105.90	7,794.8	476.3	262.2	-37.1	299.33	0.876	Level 1					
15,100.0	6,725.6	15,149.8	6,797.3	156.3	156.0	-105.88	7,894.8	476.3	262.2	-40.8	303.04	0.865	Level 1					
15,200.0	6,725.4	15,249.8	6,797.1	158.2	157.9	-105.85	7,994.8	476.3	262.2	-44.6	306.76	0.855	Level 1					
15,300.0	6,725.3	15,349.8	6,796.8	160.1	159.8	-105.83	8,094.8	476.3	262.2	-48.3	310.48	0.844	Level 1					
15,400.0	6,725.1	15,449.8	6,796.6	162.0	161.7	-105.81	8,194.8	476.3	262.1	-52.1	314.20	0.834	Level 1					
15,500.0	6,725.0	15,549.8	6,796.3	163.9	163.6	-105.79	8,294.8	476.3	262.1	-55.8	317.93	0.824	Level 1					
15,600.0	6,724.8	15,649.8	6,796.0	165.8	165.6	-105.77	8,394.8	476.3	262.1	-59.6	321.65	0.815	Level 1					
15,700.0	6,724.7	15,749.8	6,795.8	167.7	167.5	-105.74	8,494.8	476.3	262.0	-63.3	325.37	0.805	Level 1					
15,800.0	6,724.5	15,849.8	6,795.5	169.6	169.4	-105.72	8,594.8	476.3	262.0	-67.1	329.10	0.796	Level 1					
15,900.0	6,724.3	15,949.8	6,795.2	171.5	171.3	-105.70	8,694.8	476.3	262.0	-70.8	332.83	0.787	Level 1					
16,000.0	6,724.2	16,049.8	6,795.0	173.4	173.2	-105.68	8,794.8	476.3	262.0	-74.6	336.55	0.778	Level 1					
16,100.0	6,724.0	16,149.8	6,794.7	175.3	175.1	-105.66	8,894.8	476.3	261.9	-78.4	340.28	0.770	Level 1					
16,200.0	6,723.9	16,249.8	6,794.5	177.3	177.0	-105.63	8,994.8	476.3	261.9	-82.1	344.01	0.761	Level 1					
16,300.0	6,723.7	16,349.8	6,794.2	179.2	178.9	-105.61	9,094.8	476.3	261.9	-85.9	347.75	0.753	Level 1					
16,400.0	6,723.6	16,449.8	6,793.9	181.1	180.8	-105.59	9,194.8	476.3	261.8	-89.6	351.48	0.745	Level 1					
16,500.0	6,723.4	16,549.8	6,793.7	183.0	182.7	-105.57	9,294.8	476.3	261.8	-93.4	355.21	0.737	Level 1					
16,600.0	6,723.2	16,649.8	6,793.4	184.9	184.7	-105.55	9,394.8	476.3	261.8	-97.2	358.95	0.729	Level 1					
16,700.0	6,723.1	16,749.8	6,793.1	186.8	186.6	-105.52	9,494.8	476.3	261.8	-100.9	362.68	0.722	Level 1					
16,744.4	6,723.0	16,794.2	6,793.0	187.6	187.4	-105.51	9,539.2	476.3	261.7	-102.6	364.34	0.718	Level 1					
16,759.2	6,723.0	16,806.3	6,793.0	187.9	187.6	-105.51	9,551.2	476.3	261.8	-103.1	364.84	0.717	Level 1, ES, SF					

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.53	90.0	0.8	90.0					
100.0	100.0	100.0	100.0	0.1	0.1	0.53	90.0	0.8	90.0	89.8	0.22	400.387		
200.0	200.0	200.0	200.0	0.3	0.3	0.53	90.0	0.8	90.0	89.3	0.67	133.454		
300.0	300.0	300.0	300.0	0.6	0.6	0.53	90.0	0.8	90.0	88.9	1.12	80.071		
400.0	400.0	400.0	400.0	0.8	0.8	0.53	90.0	0.8	90.0	88.4	1.57	57.194		
500.0	500.0	500.0	500.0	1.0	1.0	0.53	90.0	0.8	90.0	88.0	2.02	44.484		
600.0	600.0	600.0	600.0	1.2	1.2	0.53	90.0	0.8	90.0	87.5	2.47	36.396		
700.0	700.0	700.0	700.0	1.5	1.5	0.53	90.0	0.8	90.0	87.1	2.92	30.796		
800.0	800.0	800.0	800.0	1.7	1.7	0.53	90.0	0.8	90.0	86.6	3.37	26.690		
900.0	900.0	900.0	900.0	1.9	1.9	0.53	90.0	0.8	90.0	86.2	3.82	23.550		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.53	90.0	0.8	90.0	85.7	4.27	21.071 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-133.12	90.0	0.8	90.9	86.2	4.70	19.347		
1,200.0	1,199.9	1,199.9	1,199.9	2.5	2.6	-134.84	90.0	0.8	93.6	88.5	5.11	18.330		
1,300.0	1,299.7	1,299.7	1,299.7	2.7	2.8	-137.50	90.0	0.8	98.3	92.8	5.52	17.800		
1,400.0	1,399.3	1,399.3	1,399.3	2.9	3.0	-140.79	90.0	0.8	105.3	99.3	5.95	17.697		
1,500.0	1,498.6	1,498.6	1,498.6	3.2	3.3	-144.42	90.0	0.8	114.6	108.3	6.38	17.975		
1,600.0	1,597.5	1,597.5	1,597.5	3.4	3.5	-148.09	90.0	0.8	126.6	119.8	6.81	18.595		
1,700.0	1,696.1	1,696.1	1,696.1	3.7	3.7	-151.61	90.0	0.8	141.3	134.1	7.24	19.518		
1,800.0	1,794.2	1,794.2	1,794.2	4.1	3.9	-154.83	90.0	0.8	158.8	151.1	7.67	20.705		
1,900.0	1,891.7	1,891.7	1,891.7	4.4	4.1	-157.71	90.0	0.8	179.1	171.0	8.10	22.119		
1,938.8	1,929.4	1,929.4	1,929.4	4.6	4.2	-158.73	90.0	0.8	187.7	179.4	8.26	22.721		
2,000.0	1,988.7	1,988.7	1,988.7	4.9	4.4	-160.25	90.0	0.8	201.7	193.2	8.54	23.627		
2,100.0	2,085.7	2,085.7	2,085.7	5.3	4.6	-162.34	90.0	0.8	224.8	215.8	8.99	25.007		
2,200.0	2,182.7	2,182.7	2,182.7	5.7	4.8	-164.04	90.0	0.8	248.2	238.7	9.45	26.270		
2,300.0	2,279.7	2,279.7	2,279.7	6.2	5.0	-165.45	90.0	0.8	271.7	261.8	9.91	27.426		
2,400.0	2,376.7	2,376.7	2,376.7	6.7	5.2	-166.64	90.0	0.8	295.4	285.0	10.37	28.484		
2,500.0	2,473.7	2,473.7	2,473.7	7.2	5.4	-167.64	90.0	0.8	319.1	308.3	10.83	29.455		
2,600.0	2,570.7	2,576.1	2,576.1	7.7	5.7	-168.64	89.2	0.8	342.4	331.1	11.29	30.332		
2,700.0	2,667.7	2,681.3	2,681.2	8.2	5.8	-169.79	85.7	0.7	363.7	352.0	11.71	31.049		
2,800.0	2,764.7	2,787.1	2,786.8	8.7	6.0	-171.10	79.2	0.5	383.1	371.0	12.14	31.560		
2,900.0	2,861.7	2,893.4	2,892.7	9.2	6.2	-172.56	69.7	0.3	400.6	388.0	12.57	31.868		
3,000.0	2,958.7	3,000.2	2,998.7	9.7	6.4	-174.17	57.3	-0.1	416.2	403.2	13.01	31.992		
3,100.0	3,055.7	3,107.1	3,104.5	10.2	6.6	-175.94	41.9	-0.5	430.1	416.7	13.47	31.942		
3,200.0	3,152.7	3,214.0	3,209.9	10.7	6.9	-177.86	23.5	-1.1	442.5	428.5	13.94	31.730		
3,300.0	3,249.7	3,320.8	3,314.5	11.2	7.1	-179.94	2.2	-1.7	453.3	438.9	14.45	31.362		
3,400.0	3,346.7	3,427.4	3,418.3	11.7	7.5	-177.80	-22.0	-2.3	462.9	447.9	15.01	30.845		
3,500.0	3,443.7	3,533.4	3,520.9	12.2	7.8	175.38	-48.9	-3.1	471.4	455.8	15.62	30.186		
3,600.0	3,540.7	3,638.8	3,622.0	12.8	8.2	172.78	-78.5	-3.9	479.1	462.8	16.30	29.395		
3,700.0	3,637.7	3,743.2	3,721.3	13.3	8.6	170.02	-110.5	-4.9	486.1	469.1	17.06	28.499		
3,800.0	3,734.6	3,840.2	3,813.3	13.8	9.0	167.41	-141.4	-5.7	493.6	475.7	17.87	27.623		
3,900.0	3,831.6	3,937.3	3,905.3	14.3	9.5	164.88	-172.3	-6.6	502.0	483.3	18.74	26.794		
4,000.0	3,928.6	4,034.4	3,997.4	14.8	10.0	162.44	-203.2	-7.5	511.5	491.8	19.66	26.015		
4,100.0	4,025.6	4,131.4	4,089.4	15.4	10.4	160.08	-234.1	-8.4	521.9	501.3	20.64	25.289		
4,200.0	4,122.6	4,228.5	4,181.4	15.9	10.9	157.81	-265.0	-9.2	533.2	511.5	21.66	24.620		
4,300.0	4,219.6	4,325.6	4,273.4	16.4	11.5	155.64	-295.9	-10.1	545.3	522.6	22.71	24.009		
4,400.0	4,316.6	4,422.6	4,365.4	16.9	12.0	153.56	-326.9	-11.0	558.2	534.4	23.80	23.453		
4,500.0	4,413.6	4,519.7	4,457.4	17.5	12.5	151.57	-357.8	-11.9	571.8	546.9	24.91	22.952		
4,600.0	4,510.6	4,616.8	4,549.4	18.0	13.1	149.68	-388.7	-12.7	586.1	560.0	26.05	22.502		
4,700.0	4,607.6	4,713.9	4,641.4	18.5	13.6	147.87	-419.6	-13.6	601.0	573.8	27.19	22.099		
4,800.0	4,704.6	4,810.9	4,733.4	19.0	14.2	146.15	-450.5	-14.5	616.4	588.1	28.35	21.741		
4,900.0	4,801.6	4,908.0	4,825.5	19.6	14.7	144.51	-481.4	-15.4	632.4	602.9	29.52	21.422		

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 7L-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 7L-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												Offset Well Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,898.6	5,005.1	4,917.5	20.1	15.3	142.95	-512.3	-16.3	649.0	618.3	30.70	21.140	
5,100.0	4,995.6	5,101.8	5,009.2	20.6	15.9	141.48	-543.1	-17.1	665.9	634.1	31.86	20.904	
5,200.0	5,092.6	5,198.0	5,101.1	21.1	16.3	140.28	-571.4	-17.9	683.4	650.6	32.85	20.803	
5,210.7	5,103.0	5,208.3	5,111.0	21.2	16.3	140.17	-574.3	-18.0	685.3	652.4	32.95	20.796	
5,300.0	5,189.9	5,295.0	5,194.7	21.6	16.7	139.53	-596.9	-18.7	700.2	666.4	33.78	20.728	
5,400.0	5,288.0	5,392.9	5,290.0	21.9	17.1	138.89	-619.4	-19.3	714.7	680.1	34.59	20.665	
5,500.0	5,386.6	5,491.6	5,386.8	22.2	17.4	138.34	-638.7	-19.8	726.8	691.4	35.30	20.585	
5,600.0	5,485.8	5,591.0	5,484.8	22.4	17.7	137.86	-654.8	-20.3	736.3	700.4	35.94	20.488	
5,700.0	5,585.4	5,690.9	5,583.9	22.7	18.0	137.44	-667.5	-20.7	743.3	706.8	36.48	20.376	
5,800.0	5,685.2	5,791.2	5,683.8	22.8	18.3	137.09	-676.9	-20.9	747.7	710.8	36.93	20.247	
5,900.0	5,785.2	5,891.8	5,784.2	22.9	18.5	136.79	-682.7	-21.1	749.6	712.3	37.29	20.100	
5,914.8	5,800.0	5,906.8	5,799.2	23.0	18.5	-90.20	-683.2	-21.1	749.6	712.3	37.34	20.076	
6,000.0	5,885.2	5,992.7	5,885.1	23.1	18.6	-90.33	-685.0	-21.2	749.7	712.1	37.61	19.934	
6,088.7	5,973.9	6,081.6	5,973.9	23.2	18.8	-90.34	-685.0	-21.2	749.7	711.8	37.85	19.808	
6,100.0	5,985.2	6,092.8	5,985.2	23.2	18.8	-90.34	-685.0	-21.2	749.7	711.8	37.88	19.792	
6,150.0	6,035.1	6,142.7	6,035.1	23.2	18.8	-90.52	-685.0	-21.2	749.7	711.7	38.01	19.722	
6,200.0	6,084.8	6,192.8	6,085.2	23.2	18.9	-90.92	-684.6	-21.2	749.8	711.6	38.14	19.657	
6,250.0	6,134.0	6,243.5	6,135.8	23.2	18.9	-91.34	-681.1	-21.2	749.9	711.7	38.21	19.625	
6,300.0	6,182.5	6,294.6	6,186.3	23.2	18.9	-91.75	-674.3	-21.2	750.0	711.8	38.21	19.629	
6,350.0	6,230.1	6,346.0	6,236.7	23.1	18.9	-92.16	-664.0	-21.2	750.2	712.1	38.14	19.670	
6,400.0	6,276.6	6,397.8	6,286.7	23.0	18.8	-92.56	-650.2	-21.2	750.4	712.4	38.00	19.745	
6,450.0	6,321.9	6,450.0	6,336.0	22.9	18.7	-92.95	-633.0	-21.2	750.7	712.9	37.81	19.854	
6,500.0	6,365.6	6,502.6	6,384.3	22.8	18.5	-93.33	-612.2	-21.2	750.9	713.4	37.56	19.995	
6,550.0	6,407.7	6,555.6	6,431.4	22.7	18.4	-93.70	-588.0	-21.2	751.2	714.0	37.26	20.164	
6,600.0	6,447.9	6,609.0	6,477.0	22.5	18.2	-94.05	-560.4	-21.2	751.6	714.6	36.92	20.359	
6,650.0	6,486.0	6,662.7	6,520.9	22.4	18.0	-94.38	-529.4	-21.2	751.9	715.3	36.55	20.573	
6,700.0	6,522.0	6,716.7	6,562.7	22.2	17.7	-94.69	-495.2	-21.2	752.2	716.0	36.16	20.802	
6,750.0	6,555.7	6,771.1	6,602.3	22.0	17.5	-94.99	-457.9	-21.2	752.5	716.8	35.77	21.038	
6,800.0	6,586.8	6,825.8	6,639.3	21.9	17.3	-95.26	-417.7	-21.2	752.9	717.5	35.39	21.273	
6,850.0	6,615.3	6,880.8	6,673.5	21.7	17.0	-95.50	-374.7	-21.2	753.2	718.1	35.04	21.496	
6,900.0	6,641.1	6,936.0	6,704.7	21.5	16.8	-95.72	-329.1	-21.2	753.4	718.7	34.72	21.698	
6,950.0	6,664.0	6,991.5	6,732.6	21.3	16.6	-95.92	-281.1	-21.2	753.7	719.2	34.47	21.867	
7,000.0	6,684.0	7,047.2	6,757.0	21.2	16.5	-96.08	-231.1	-21.2	753.9	719.7	34.28	21.990	
7,050.0	6,700.9	7,103.1	6,777.8	21.0	16.4	-96.22	-179.2	-21.2	754.1	719.9	34.19	22.058	
7,100.0	6,714.7	7,159.1	6,794.8	20.8	16.4	-96.33	-125.8	-21.2	754.3	720.1	34.19	22.060	
7,150.0	6,725.3	7,215.3	6,807.8	20.7	16.4	-96.41	-71.2	-21.2	754.4	720.1	34.30	21.992	
7,200.0	6,732.7	7,271.5	6,816.9	20.5	16.5	-96.45	-15.7	-21.2	754.5	719.9	34.52	21.854	
7,250.0	6,736.9	7,327.7	6,821.8	20.4	16.6	-96.47	40.3	-21.2	754.5	719.6	34.86	21.646	
7,289.9	6,737.9	7,372.3	6,822.7	20.3	16.7	-96.46	84.8	-21.2	754.5	719.3	35.20	21.437	
7,300.0	6,737.9	7,382.3	6,822.7	20.2	16.8	-96.46	94.8	-21.2	754.5	719.2	35.29	21.379	
7,400.0	6,737.7	7,482.3	6,822.4	20.0	17.3	-96.44	194.8	-21.2	754.5	718.0	36.45	20.696	
7,500.0	6,737.5	7,582.3	6,822.1	20.1	18.0	-96.43	294.8	-21.2	754.5	716.5	37.96	19.877	
7,600.0	6,737.4	7,682.3	6,821.8	21.2	18.9	-96.42	394.8	-21.2	754.4	714.7	39.77	18.970	
7,700.0	6,737.2	7,782.3	6,821.4	22.3	19.9	-96.41	494.8	-21.2	754.4	712.6	41.86	18.024	
7,800.0	6,737.1	7,882.3	6,821.1	23.6	21.0	-96.40	594.8	-21.2	754.4	710.2	44.18	17.077	
7,900.0	6,736.9	7,982.3	6,820.8	25.0	22.3	-96.38	694.8	-21.2	754.4	707.7	46.70	16.156	
8,000.0	6,736.8	8,082.3	6,820.5	26.4	23.6	-96.37	794.8	-21.2	754.4	705.0	49.38	15.276	
8,100.0	6,736.6	8,182.3	6,820.2	27.8	25.1	-96.36	894.8	-21.2	754.4	702.2	52.21	14.448	
8,200.0	6,736.4	8,282.3	6,819.9	29.3	26.5	-96.35	994.8	-21.2	754.4	699.2	55.16	13.676	
8,300.0	6,736.3	8,382.3	6,819.6	30.9	28.1	-96.34	1,094.8	-21.3	754.4	696.2	58.21	12.959	
8,400.0	6,736.1	8,482.3	6,819.2	32.5	29.7	-96.33	1,194.8	-21.3	754.4	693.0	61.35	12.296	

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 7L-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 7L-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												Offset Well Error:	0.0 ft
Reference													
Offset													
Semi Major Axis													
Distance													
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,500.0	6,736.0	8,582.3	6,818.9	34.1	31.3	-96.31	1,294.8	-21.3	754.3	689.8	64.56	11.684	
8,600.0	6,735.8	8,682.3	6,818.6	35.7	32.9	-96.30	1,394.8	-21.3	754.3	686.5	67.84	11.119	
8,700.0	6,735.7	8,782.3	6,818.3	37.4	34.6	-96.29	1,494.8	-21.3	754.3	683.2	71.17	10.599	
8,800.0	6,735.5	8,882.3	6,818.0	39.1	36.3	-96.28	1,594.8	-21.3	754.3	679.8	74.55	10.119	
8,900.0	6,735.3	8,982.3	6,817.7	40.8	38.0	-96.27	1,694.8	-21.3	754.3	676.3	77.97	9.675	
9,000.0	6,735.2	9,082.3	6,817.4	42.5	39.8	-96.25	1,794.8	-21.3	754.3	672.9	81.42	9.264	
9,100.0	6,735.0	9,182.3	6,817.0	44.2	41.5	-96.24	1,894.8	-21.3	754.3	669.4	84.91	8.884	
9,200.0	6,734.9	9,282.3	6,816.7	46.0	43.3	-96.23	1,994.8	-21.3	754.3	665.8	88.42	8.530	
9,300.0	6,734.7	9,382.3	6,816.4	47.7	45.1	-96.22	2,094.8	-21.3	754.3	662.3	91.96	8.202	
9,400.0	6,734.6	9,482.3	6,816.1	49.5	46.9	-96.21	2,194.8	-21.3	754.2	658.7	95.52	7.896	
9,500.0	6,734.4	9,582.3	6,815.8	51.3	48.7	-96.19	2,294.8	-21.3	754.2	655.1	99.10	7.611	
9,600.0	6,734.2	9,682.3	6,815.5	53.1	50.5	-96.18	2,394.8	-21.3	754.2	651.5	102.70	7.344	
9,700.0	6,734.1	9,782.3	6,815.2	54.9	52.3	-96.17	2,494.8	-21.3	754.2	647.9	106.32	7.094	
9,800.0	6,733.9	9,882.3	6,814.8	56.7	54.1	-96.16	2,594.8	-21.3	754.2	644.2	109.94	6.860	
9,900.0	6,733.8	9,982.3	6,814.5	58.5	56.0	-96.15	2,694.8	-21.3	754.2	640.6	113.59	6.640	
10,000.0	6,733.6	10,082.3	6,814.2	60.3	57.8	-96.13	2,794.8	-21.3	754.2	636.9	117.24	6.433	
10,100.0	6,733.5	10,182.3	6,813.9	62.2	59.6	-96.12	2,894.8	-21.4	754.2	633.3	120.90	6.238	
10,200.0	6,733.3	10,282.3	6,813.6	64.0	61.5	-96.11	2,994.8	-21.4	754.1	629.6	124.58	6.054	
10,300.0	6,733.1	10,382.3	6,813.3	65.8	63.3	-96.10	3,094.8	-21.4	754.1	625.9	128.26	5.880	
10,400.0	6,733.0	10,482.3	6,813.0	67.7	65.2	-96.09	3,194.8	-21.4	754.1	622.2	131.95	5.715	
10,500.0	6,732.8	10,582.3	6,812.6	69.5	67.1	-96.08	3,294.8	-21.4	754.1	618.5	135.65	5.559	
10,600.0	6,732.7	10,682.3	6,812.3	71.3	68.9	-96.06	3,394.8	-21.4	754.1	614.8	139.35	5.411	
10,700.0	6,732.5	10,782.3	6,812.0	73.2	70.8	-96.05	3,494.8	-21.4	754.1	611.0	143.07	5.271	
10,800.0	6,732.4	10,882.3	6,811.7	75.1	72.7	-96.04	3,594.8	-21.4	754.1	607.3	146.78	5.137	
10,900.0	6,732.2	10,982.3	6,811.4	76.9	74.5	-96.03	3,694.8	-21.4	754.1	603.6	150.51	5.010	
11,000.0	6,732.0	11,082.3	6,811.1	78.8	76.4	-96.02	3,794.8	-21.4	754.1	599.8	154.24	4.889	
11,100.0	6,731.9	11,182.3	6,810.8	80.6	78.3	-96.00	3,894.8	-21.4	754.1	596.1	157.97	4.773	
11,200.0	6,731.7	11,282.3	6,810.4	82.5	80.2	-95.99	3,994.8	-21.4	754.0	592.3	161.71	4.663	
11,300.0	6,731.6	11,382.3	6,810.1	84.4	82.1	-95.98	4,094.8	-21.4	754.0	588.6	165.45	4.557	
11,400.0	6,731.4	11,482.3	6,809.8	86.2	83.9	-95.97	4,194.8	-21.4	754.0	584.8	169.19	4.457	
11,500.0	6,731.3	11,582.3	6,809.5	88.1	85.8	-95.96	4,294.8	-21.4	754.0	581.1	172.94	4.360	
11,600.0	6,731.1	11,682.3	6,809.2	90.0	87.7	-95.94	4,394.8	-21.4	754.0	577.3	176.70	4.267	
11,700.0	6,730.9	11,782.3	6,808.9	91.9	89.6	-95.93	4,494.8	-21.4	754.0	573.5	180.45	4.178	
11,800.0	6,730.8	11,882.3	6,808.6	93.7	91.5	-95.92	4,594.8	-21.4	754.0	569.8	184.21	4.093	
11,900.0	6,730.6	11,982.3	6,808.2	95.6	93.4	-95.91	4,694.8	-21.4	754.0	566.0	187.97	4.011	
12,000.0	6,730.5	12,082.3	6,807.9	97.5	95.3	-95.90	4,794.8	-21.5	754.0	562.2	191.74	3.932	
12,100.0	6,730.3	12,182.3	6,807.6	99.4	97.2	-95.88	4,894.8	-21.5	753.9	558.4	195.51	3.856	
12,200.0	6,730.2	12,282.3	6,807.3	101.3	99.0	-95.87	4,994.8	-21.5	753.9	554.7	199.28	3.783	
12,300.0	6,730.0	12,382.3	6,807.0	103.2	100.9	-95.86	5,094.8	-21.5	753.9	550.9	203.05	3.713	
12,400.0	6,729.8	12,482.3	6,806.7	105.0	102.8	-95.85	5,194.8	-21.5	753.9	547.1	206.82	3.645	
12,500.0	6,729.7	12,582.3	6,806.4	106.9	104.7	-95.84	5,294.8	-21.5	753.9	543.3	210.60	3.580	
12,600.0	6,729.5	12,682.3	6,806.0	108.8	106.6	-95.82	5,394.8	-21.5	753.9	539.5	214.38	3.517	
12,700.0	6,729.4	12,782.3	6,805.7	110.7	108.5	-95.81	5,494.8	-21.5	753.9	535.7	218.16	3.456	
12,800.0	6,729.2	12,882.3	6,805.4	112.6	110.4	-95.80	5,594.8	-21.5	753.9	531.9	221.94	3.397	
12,900.0	6,729.1	12,982.3	6,805.1	114.5	112.3	-95.79	5,694.8	-21.5	753.9	528.1	225.72	3.340	
13,000.0	6,728.9	13,082.3	6,804.8	116.4	114.2	-95.78	5,794.8	-21.5	753.9	524.3	229.51	3.285	
13,100.0	6,728.7	13,182.3	6,804.5	118.3	116.1	-95.77	5,894.8	-21.5	753.8	520.5	233.29	3.231	
13,200.0	6,728.6	13,282.3	6,804.2	120.2	118.0	-95.75	5,994.8	-21.5	753.8	516.8	237.08	3.180	
13,300.0	6,728.4	13,382.3	6,803.8	122.1	119.9	-95.74	6,094.8	-21.5	753.8	513.0	240.87	3.130	
13,400.0	6,728.3	13,482.3	6,803.5	124.0	121.8	-95.73	6,194.8	-21.5	753.8	509.1	244.66	3.081	
13,500.0	6,728.1	13,582.3	6,803.2	125.9	123.7	-95.72	6,294.8	-21.5	753.8	505.3	248.45	3.034	

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 7L-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 7L-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
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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		
13,600.0	6,728.0	13,682.3	6,802.9	127.8	125.6	-95.71	6,394.8	-21.5	753.8	501.5	252.25	2.988		
13,700.0	6,727.8	13,782.3	6,802.6	129.6	127.5	-95.69	6,494.8	-21.5	753.8	497.7	256.04	2.944		
13,800.0	6,727.6	13,882.3	6,802.3	131.5	129.5	-95.68	6,594.8	-21.6	753.8	493.9	259.84	2.901		
13,900.0	6,727.5	13,982.3	6,802.0	133.4	131.4	-95.67	6,694.8	-21.6	753.8	490.1	263.63	2.859		
14,000.0	6,727.3	14,082.3	6,801.6	135.3	133.3	-95.66	6,794.8	-21.6	753.8	486.3	267.43	2.818		
14,100.0	6,727.2	14,182.3	6,801.3	137.2	135.2	-95.65	6,894.8	-21.6	753.7	482.5	271.23	2.779		
14,200.0	6,727.0	14,282.3	6,801.0	139.1	137.1	-95.63	6,994.8	-21.6	753.7	478.7	275.03	2.741		
14,300.0	6,726.9	14,382.3	6,800.7	141.0	139.0	-95.62	7,094.8	-21.6	753.7	474.9	278.83	2.703		
14,400.0	6,726.7	14,482.3	6,800.4	143.0	140.9	-95.61	7,194.8	-21.6	753.7	471.1	282.63	2.667		
14,500.0	6,726.5	14,582.3	6,800.1	144.9	142.8	-95.60	7,294.8	-21.6	753.7	467.3	286.43	2.631		
14,600.0	6,726.4	14,682.3	6,799.8	146.8	144.7	-95.59	7,394.8	-21.6	753.7	463.5	290.24	2.597		
14,700.0	6,726.2	14,782.3	6,799.4	148.7	146.6	-95.57	7,494.8	-21.6	753.7	459.6	294.04	2.563		
14,800.0	6,726.1	14,882.3	6,799.1	150.6	148.5	-95.56	7,594.8	-21.6	753.7	455.8	297.85	2.530		
14,900.0	6,725.9	14,982.3	6,798.8	152.5	150.4	-95.55	7,694.8	-21.6	753.7	452.0	301.65	2.498		
15,000.0	6,725.8	15,082.3	6,798.5	154.4	152.3	-95.54	7,794.8	-21.6	753.7	448.2	305.46	2.467		
15,100.0	6,725.6	15,182.3	6,798.2	156.3	154.3	-95.53	7,894.8	-21.6	753.6	444.4	309.27	2.437		
15,200.0	6,725.4	15,282.3	6,797.9	158.2	156.2	-95.51	7,994.8	-21.6	753.6	440.6	313.07	2.407		
15,300.0	6,725.3	15,382.3	6,797.6	160.1	158.1	-95.50	8,094.8	-21.6	753.6	436.7	316.88	2.378		
15,400.0	6,725.1	15,482.3	6,797.2	162.0	160.0	-95.49	8,194.8	-21.6	753.6	432.9	320.69	2.350		
15,500.0	6,725.0	15,582.3	6,796.9	163.9	161.9	-95.48	8,294.8	-21.6	753.6	429.1	324.50	2.322		
15,600.0	6,724.8	15,682.3	6,796.6	165.8	163.8	-95.47	8,394.8	-21.7	753.6	425.3	328.31	2.295		
15,700.0	6,724.7	15,782.3	6,796.3	167.7	165.7	-95.46	8,494.8	-21.7	753.6	421.5	332.12	2.269		
15,800.0	6,724.5	15,882.3	6,796.0	169.6	167.6	-95.44	8,594.8	-21.7	753.6	417.6	335.93	2.243		
15,900.0	6,724.3	15,982.3	6,795.7	171.5	169.5	-95.43	8,694.8	-21.7	753.6	413.8	339.75	2.218		
16,000.0	6,724.2	16,082.3	6,795.4	173.4	171.5	-95.42	8,794.8	-21.7	753.6	410.0	343.56	2.193		
16,100.0	6,724.0	16,182.3	6,795.0	175.3	173.4	-95.41	8,894.8	-21.7	753.5	406.2	347.37	2.169		
16,200.0	6,723.9	16,282.3	6,794.7	177.3	175.3	-95.40	8,994.8	-21.7	753.5	402.4	351.19	2.146		
16,300.0	6,723.7	16,382.3	6,794.4	179.2	177.2	-95.38	9,094.8	-21.7	753.5	398.5	355.00	2.123		
16,400.0	6,723.6	16,482.3	6,794.1	181.1	179.1	-95.37	9,194.8	-21.7	753.5	394.7	358.81	2.100		
16,500.0	6,723.4	16,582.3	6,793.8	183.0	181.0	-95.36	9,294.8	-21.7	753.5	390.9	362.63	2.078		
16,600.0	6,723.2	16,682.3	6,793.5	184.9	182.9	-95.35	9,394.8	-21.7	753.5	387.1	366.45	2.056		
16,700.0	6,723.1	16,782.3	6,793.2	186.8	184.8	-95.34	9,494.8	-21.7	753.5	383.2	370.26	2.035		
16,742.0	6,723.0	16,824.3	6,793.0	187.6	185.6	-95.33	9,536.8	-21.7	753.5	381.6	371.86	2.026		
16,759.2	6,723.0	16,834.0	6,793.0	187.9	185.8	-95.33	9,546.5	-21.7	753.5	381.1	372.38	2.024 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-179.47	-60.1	-0.6	60.1				
100.0	100.0	100.0	100.0	0.1	0.1	-179.47	-60.1	-0.6	60.1	59.9	0.22	267.495	
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-60.1	-0.6	60.1	59.4	0.67	89.160 CC	
300.0	300.0	299.5	299.5	0.6	0.5	179.37	-60.5	0.7	60.5	59.4	1.11	54.634 ES	
400.0	400.0	398.8	398.7	0.8	0.8	175.98	-61.8	4.3	61.9	60.4	1.55	40.088	
500.0	500.0	497.9	497.6	1.0	1.0	170.72	-63.9	10.4	64.7	62.7	2.00	32.339	
600.0	600.0	596.6	595.9	1.2	1.2	164.18	-66.7	18.9	69.5	67.0	2.48	27.998	
700.0	700.0	694.8	693.4	1.5	1.5	157.11	-70.4	29.7	76.7	73.7	2.99	25.665	
800.0	800.0	792.3	789.9	1.7	1.8	150.24	-74.9	42.8	86.9	83.3	3.53	24.632	
900.0	900.0	889.0	885.3	1.9	2.2	144.04	-80.1	58.1	100.0	96.0	4.09	24.464 SF	
1,000.0	1,000.0	984.8	979.3	2.1	2.6	138.72	-86.0	75.5	116.3	111.6	4.68	24.870	
1,100.0	1,100.0	1,079.9	1,072.2	2.3	3.0	1.24	-92.6	95.0	134.3	129.4	4.83	27.795	
1,200.0	1,199.9	1,174.5	1,164.0	2.5	3.4	-2.47	-100.0	116.5	152.6	147.3	5.26	28.991	
1,300.0	1,299.7	1,268.6	1,254.7	2.7	3.9	-5.69	-108.0	140.0	171.1	165.4	5.70	30.011	
1,400.0	1,399.3	1,362.1	1,344.3	2.9	4.5	-8.55	-116.7	165.5	189.9	183.8	6.15	30.898	
1,500.0	1,498.6	1,455.1	1,432.6	3.2	5.1	-11.14	-126.0	192.9	209.0	202.3	6.60	31.650	
1,600.0	1,597.5	1,547.5	1,519.8	3.4	5.7	-13.51	-135.9	222.1	228.2	221.2	7.07	32.286	
1,700.0	1,696.1	1,639.5	1,605.6	3.7	6.4	-15.71	-146.5	253.2	247.7	240.2	7.55	32.812	
1,800.0	1,794.2	1,730.8	1,690.2	4.1	7.1	-17.77	-157.7	286.0	267.5	259.5	8.05	33.224	
1,900.0	1,891.7	1,821.7	1,773.4	4.4	7.8	-19.70	-169.4	320.4	287.5	279.0	8.58	33.514	
1,938.8	1,929.4	1,857.5	1,806.0	4.6	8.1	-20.44	-174.2	334.5	295.4	286.6	8.80	33.580	
2,000.0	1,988.7	1,917.1	1,860.1	4.9	8.7	-21.68	-182.3	358.1	307.7	298.6	9.17	33.573	
2,100.0	2,085.7	2,014.5	1,948.6	5.3	9.5	-23.50	-195.4	396.7	328.2	318.4	9.79	33.511	
2,200.0	2,182.7	2,111.9	2,037.0	5.7	10.4	-25.10	-208.5	435.2	348.9	338.4	10.45	33.389	
2,300.0	2,279.7	2,209.2	2,125.5	6.2	11.2	-26.53	-221.6	473.7	369.8	358.7	11.13	33.220	
2,400.0	2,376.7	2,306.6	2,214.0	6.7	12.1	-27.80	-234.7	512.3	391.0	379.1	11.84	33.015	
2,500.0	2,473.7	2,404.0	2,302.4	7.2	13.0	-28.94	-247.9	550.8	412.3	399.7	12.57	32.788	
2,600.0	2,570.7	2,501.4	2,390.9	7.7	13.9	-29.98	-261.0	589.4	433.7	420.4	13.33	32.545	
2,700.0	2,667.7	2,598.8	2,479.4	8.2	14.7	-30.91	-274.1	627.9	455.3	441.2	14.10	32.295	
2,800.0	2,764.7	2,696.2	2,567.8	8.7	15.6	-31.76	-287.2	666.4	477.0	462.1	14.89	32.043	
2,900.0	2,861.7	2,793.6	2,656.3	9.2	16.5	-32.54	-300.4	705.0	498.8	483.1	15.69	31.793	
3,000.0	2,958.7	2,890.9	2,744.8	9.7	17.4	-33.25	-313.5	743.5	520.6	504.1	16.50	31.547	
3,100.0	3,055.7	2,988.3	2,833.2	10.2	18.3	-33.90	-326.6	782.1	542.5	525.2	17.33	31.308	
3,200.0	3,152.7	3,085.7	2,921.7	10.7	19.2	-34.51	-339.7	820.6	564.5	546.4	18.17	31.076	
3,300.0	3,249.7	3,183.1	3,010.2	11.2	20.0	-35.06	-352.9	859.1	586.6	567.6	19.01	30.854	
3,400.0	3,346.7	3,280.5	3,098.6	11.7	20.9	-35.58	-366.0	897.7	608.7	588.8	19.87	30.640	
3,500.0	3,443.7	3,377.9	3,187.1	12.2	21.8	-36.06	-379.1	936.2	630.8	610.1	20.73	30.435	
3,600.0	3,540.7	3,475.3	3,275.6	12.8	22.7	-36.51	-392.2	974.8	653.0	631.4	21.59	30.239	
3,700.0	3,637.7	3,572.6	3,364.1	13.3	23.6	-36.93	-405.4	1,013.3	675.2	652.7	22.47	30.052	
3,800.0	3,734.6	3,670.0	3,452.5	13.8	24.5	-37.33	-418.5	1,051.8	697.4	674.1	23.35	29.873	
3,900.0	3,831.6	3,767.4	3,541.0	14.3	25.4	-37.70	-431.6	1,090.4	719.7	695.5	24.23	29.703	
4,000.0	3,928.6	3,864.8	3,629.5	14.8	26.2	-38.04	-444.7	1,128.9	742.0	716.9	25.12	29.541	
4,100.0	4,025.6	3,962.2	3,717.9	15.4	27.1	-38.37	-457.8	1,167.5	764.3	738.3	26.01	29.386	
4,200.0	4,122.6	4,059.6	3,806.4	15.9	28.0	-38.68	-471.0	1,206.0	786.7	759.8	26.91	29.238	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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													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	132.946		
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-29.9	-0.3	29.9	29.2	0.67	44.313		
300.0	300.0	300.0	300.0	0.6	0.6	-179.47	-29.9	-0.3	29.9	28.8	1.12	26.587		
400.0	400.0	400.0	400.0	0.8	0.8	-179.47	-29.9	-0.3	29.9	28.3	1.57	18.991		
500.0	500.0	500.0	500.0	1.0	1.0	-179.47	-29.9	-0.3	29.9	27.9	2.02	14.771		
600.0	600.0	600.0	600.0	1.2	1.2	-179.47	-29.9	-0.3	29.9	27.4	2.47	12.085 CC, ES		
700.0	700.0	699.6	699.6	1.5	1.4	178.34	-30.5	0.9	30.5	27.6	2.90	10.503		
800.0	800.0	799.1	799.0	1.7	1.6	172.30	-32.2	4.4	32.5	29.2	3.32	9.789		
900.0	900.0	898.4	898.1	1.9	1.8	163.92	-35.1	10.1	36.6	32.8	3.76	9.739		
1,000.0	1,000.0	997.2	996.5	2.1	2.1	155.14	-39.2	18.1	43.3	39.1	4.21	10.281		
1,100.0	1,100.0	1,095.6	1,094.2	2.3	2.3	14.63	-44.3	28.4	51.7	47.1	4.61	11.203		
1,200.0	1,199.9	1,193.8	1,191.4	2.5	2.6	8.68	-50.6	40.9	60.5	55.4	5.02	12.048		
1,300.0	1,299.7	1,291.7	1,287.9	2.7	2.9	3.72	-58.0	55.5	69.5	64.1	5.43	12.801		
1,400.0	1,399.3	1,389.3	1,383.7	2.9	3.3	-0.58	-66.4	72.3	78.8	73.0	5.85	13.475		
1,500.0	1,498.6	1,486.6	1,478.7	3.2	3.7	-4.39	-76.0	91.2	88.4	82.1	6.28	14.081		
1,600.0	1,597.5	1,583.6	1,572.8	3.4	4.1	-7.85	-86.6	112.2	98.2	91.4	6.71	14.624		
1,700.0	1,696.1	1,680.3	1,666.0	3.7	4.6	-11.02	-98.2	135.2	108.2	101.1	7.16	15.110		
1,800.0	1,794.2	1,776.8	1,758.2	4.1	5.1	-13.97	-110.8	160.3	118.5	110.9	7.64	15.527		
1,900.0	1,891.7	1,872.9	1,849.5	4.4	5.7	-16.73	-124.5	187.4	129.2	121.0	8.14	15.870		
1,938.8	1,929.4	1,910.3	1,884.8	4.6	6.0	-17.76	-130.0	198.5	133.4	125.0	8.34	15.983		
2,000.0	1,988.7	1,971.0	1,942.0	4.9	6.3	-19.37	-139.2	216.6	140.0	131.3	8.70	16.088		
2,100.0	2,085.7	2,070.3	2,035.5	5.3	7.0	-21.70	-154.1	246.2	151.0	141.7	9.31	16.219		
2,200.0	2,182.7	2,169.5	2,129.0	5.7	7.7	-23.70	-169.1	275.9	162.2	152.3	9.95	16.299		
2,300.0	2,279.7	2,268.7	2,222.5	6.2	8.4	-25.45	-184.0	305.6	173.7	163.0	10.63	16.338		
2,400.0	2,376.7	2,367.9	2,316.0	6.7	9.0	-26.98	-199.0	335.2	185.2	173.9	11.33	16.344		
2,500.0	2,473.7	2,467.1	2,409.5	7.2	9.7	-28.33	-213.9	364.9	196.9	184.8	12.06	16.326		
2,600.0	2,570.7	2,566.3	2,503.0	7.7	10.4	-29.53	-228.9	394.5	208.6	195.8	12.81	16.290		
2,700.0	2,667.7	2,665.6	2,596.5	8.2	11.1	-30.60	-243.8	424.2	220.5	206.9	13.57	16.241		
2,800.0	2,764.7	2,764.8	2,690.0	8.7	11.8	-31.56	-258.7	453.8	232.4	218.0	14.36	16.184		
2,900.0	2,861.7	2,864.0	2,783.5	9.2	12.5	-32.42	-273.7	483.5	244.3	229.2	15.16	16.122		
3,000.0	2,958.7	2,963.2	2,877.0	9.7	13.2	-33.21	-288.6	513.1	256.3	240.4	15.97	16.056		
3,100.0	3,055.7	3,062.4	2,970.4	10.2	13.9	-33.93	-303.6	542.8	268.4	251.6	16.79	15.990		
3,200.0	3,152.7	3,161.7	3,063.9	10.7	14.6	-34.58	-318.5	572.4	280.5	262.9	17.62	15.923		
3,300.0	3,249.7	3,260.9	3,157.4	11.2	15.3	-35.18	-333.5	602.1	292.6	274.2	18.45	15.856		
3,400.0	3,346.7	3,360.1	3,250.9	11.7	16.0	-35.73	-348.4	631.7	304.8	285.5	19.30	15.791		
3,500.0	3,443.7	3,459.3	3,344.4	12.2	16.7	-36.24	-363.4	661.4	317.0	296.8	20.15	15.728		
3,600.0	3,540.7	3,558.5	3,437.9	12.8	17.4	-36.71	-378.3	691.0	329.2	308.2	21.01	15.666		
3,700.0	3,637.7	3,657.7	3,531.4	13.3	18.1	-37.15	-393.3	720.7	341.4	319.5	21.87	15.607		
3,800.0	3,734.6	3,757.0	3,624.9	13.8	18.8	-37.56	-408.2	750.3	353.6	330.9	22.74	15.550		
3,900.0	3,831.6	3,856.2	3,718.4	14.3	19.5	-37.94	-423.1	780.0	365.9	342.3	23.61	15.495		
4,000.0	3,928.6	3,955.4	3,811.9	14.8	20.3	-38.30	-438.1	809.6	378.2	353.7	24.49	15.442		
4,100.0	4,025.6	4,054.6	3,905.4	15.4	21.0	-38.63	-453.0	839.3	390.5	365.1	25.37	15.392		
4,200.0	4,122.6	4,153.8	3,998.9	15.9	21.7	-38.94	-468.0	868.9	402.8	376.5	26.25	15.343		
4,300.0	4,219.6	4,253.0	4,092.4	16.4	22.4	-39.24	-482.9	898.6	415.1	388.0	27.14	15.297		
4,400.0	4,316.6	4,352.3	4,185.9	16.9	23.1	-39.52	-497.9	928.2	427.4	399.4	28.02	15.253		
4,500.0	4,413.6	4,451.5	4,279.4	17.5	23.8	-39.78	-512.8	957.9	439.7	410.8	28.91	15.210		
4,600.0	4,510.6	4,550.7	4,372.9	18.0	24.5	-40.03	-527.8	987.6	452.1	422.3	29.80	15.169		
4,700.0	4,607.6	4,649.9	4,466.4	18.5	25.2	-40.26	-542.7	1,017.2	464.4	433.7	30.70	15.130		
4,800.0	4,704.6	4,749.1	4,559.9	19.0	25.9	-40.48	-557.6	1,046.9	476.8	445.2	31.59	15.092		
4,900.0	4,801.6	4,848.3	4,653.4	19.6	26.6	-40.69	-572.6	1,076.5	489.2	456.7	32.49	15.057		

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 7L-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 7L-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													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	4,898.6	4,947.6	4,746.9	20.1	27.4	-40.90	-587.5	1,106.2	501.5	468.1	33.39	15.022			
5,100.0	4,995.6	5,046.8	4,840.4	20.6	28.1	-41.09	-602.5	1,135.8	513.9	479.6	34.29	14.989			
5,200.0	5,092.6	5,165.4	4,952.9	21.1	28.7	-41.42	-619.3	1,169.2	524.5	489.2	35.23	14.887			
5,210.7	5,103.0	5,178.2	4,965.2	21.2	28.8	-41.47	-621.0	1,172.6	525.4	490.0	35.33	14.870			
5,300.0	5,189.9	5,284.9	5,067.8	21.6	29.3	-41.95	-634.1	1,198.6	532.4	496.3	36.11	14.744			
5,400.0	5,288.0	5,404.7	5,184.2	21.9	29.8	-42.40	-646.8	1,223.8	539.1	502.3	36.83	14.638			
5,500.0	5,386.6	5,524.8	5,302.0	22.2	30.2	-42.76	-657.4	1,244.7	544.7	507.2	37.44	14.547			
5,600.0	5,485.8	5,645.2	5,421.0	22.4	30.5	-43.05	-665.6	1,261.1	549.1	511.1	37.96	14.466			
5,700.0	5,585.4	5,765.9	5,540.9	22.7	30.8	-43.25	-671.7	1,273.1	552.3	513.9	38.37	14.395			
5,800.0	5,685.2	5,886.6	5,661.3	22.8	31.0	-43.38	-675.5	1,280.6	554.3	515.6	38.67	14.333			
5,900.0	5,785.2	6,007.4	5,782.1	22.9	31.1	-43.43	-677.0	1,283.6	555.1	516.2	38.88	14.279			
5,914.8	5,800.0	6,025.3	5,800.0	23.0	31.1	89.63	-677.0	1,283.6	555.1	516.2	38.90	14.270			
6,000.0	5,885.2	6,110.5	5,885.2	23.1	31.2	89.63	-677.0	1,283.6	555.1	516.0	39.12	14.191			
6,088.7	5,973.9	6,199.3	5,973.9	23.2	31.3	89.63	-677.0	1,283.6	555.1	515.8	39.34	14.112			
6,100.0	5,985.2	6,210.5	5,985.1	23.2	31.3	89.63	-676.9	1,283.6	555.1	515.8	39.36	14.103			
6,150.0	6,035.1	6,260.2	6,034.8	23.2	31.3	89.63	-674.5	1,283.6	555.1	515.7	39.44	14.074			
6,200.0	6,084.8	6,310.0	6,084.3	23.2	31.3	89.63	-669.0	1,283.6	555.1	515.7	39.46	14.068			
6,250.0	6,134.0	6,359.8	6,133.3	23.2	31.3	89.63	-660.2	1,283.6	555.1	515.7	39.42	14.083			
6,300.0	6,182.5	6,409.5	6,181.6	23.2	31.3	89.64	-648.2	1,283.6	555.1	515.8	39.32	14.117			
6,350.0	6,230.1	6,459.3	6,229.0	23.1	31.2	89.65	-633.1	1,283.6	555.1	515.9	39.17	14.171			
6,400.0	6,276.6	6,509.1	6,275.3	23.0	31.2	89.66	-615.0	1,283.6	555.1	516.1	38.98	14.241			
6,450.0	6,321.9	6,558.9	6,320.4	22.9	31.1	89.67	-593.9	1,283.6	555.1	516.4	38.75	14.326			
6,500.0	6,365.6	6,608.7	6,364.0	22.8	31.0	89.68	-569.9	1,283.6	555.1	516.6	38.49	14.423			
6,550.0	6,407.7	6,658.5	6,406.0	22.7	30.9	89.69	-543.1	1,283.6	555.1	516.9	38.20	14.531			
6,600.0	6,447.9	6,708.3	6,446.1	22.5	30.8	89.71	-513.6	1,283.6	555.1	517.2	37.91	14.644			
6,650.0	6,486.0	6,758.1	6,484.2	22.4	30.7	89.72	-481.5	1,283.6	555.1	517.5	37.61	14.760			
6,700.0	6,522.0	6,807.9	6,520.2	22.2	30.6	89.74	-447.1	1,283.6	555.1	517.8	37.32	14.875			
6,750.0	6,555.7	6,857.8	6,553.9	22.0	30.5	89.76	-410.3	1,283.6	555.1	518.1	37.05	14.984			
6,800.0	6,586.8	6,907.6	6,585.1	21.9	30.3	89.78	-371.4	1,283.6	555.1	518.3	36.81	15.081			
6,850.0	6,615.3	6,957.5	6,613.7	21.7	30.2	89.80	-330.6	1,283.6	555.1	518.5	36.61	15.162			
6,900.0	6,641.1	7,007.4	6,639.5	21.5	30.1	89.82	-288.0	1,283.6	555.1	518.6	36.47	15.222			
6,950.0	6,664.0	7,057.3	6,662.6	21.3	29.9	89.84	-243.7	1,283.6	555.1	518.7	36.39	15.256			
7,000.0	6,684.0	7,107.2	6,682.7	21.2	29.8	89.86	-198.1	1,283.6	555.1	518.7	36.37	15.261			
7,050.0	6,700.9	7,157.1	6,699.8	21.0	29.7	89.88	-151.2	1,283.6	555.1	518.7	36.44	15.233			
7,100.0	6,714.7	7,207.0	6,713.8	20.8	29.6	89.91	-103.3	1,283.6	555.1	518.5	36.59	15.171			
7,150.0	6,725.3	7,257.0	6,724.7	20.7	29.5	89.93	-54.5	1,283.6	555.1	518.3	36.82	15.074			
7,200.0	6,732.7	7,306.9	6,732.3	20.5	29.4	89.96	-5.2	1,283.6	555.1	518.0	37.15	14.944			
7,250.0	6,736.9	7,356.9	6,736.7	20.4	29.3	89.98	44.6	1,283.6	555.1	517.6	37.55	14.782			
7,289.9	6,737.9	7,396.8	6,737.9	20.3	29.2	90.00	84.5	1,283.6	555.1	517.2	37.94	14.633			
7,300.0	6,737.9	7,406.9	6,737.9	20.2	29.2	90.00	94.6	1,283.6	555.1	517.1	38.05	14.590			
7,400.0	6,737.7	7,506.9	6,737.7	20.0	29.1	90.00	194.6	1,283.6	555.1	515.8	39.29	14.129			
7,500.0	6,737.5	7,606.9	6,737.6	20.1	29.1	90.00	294.6	1,283.6	555.1	514.2	40.86	13.586			
7,600.0	6,737.4	7,706.9	6,737.4	21.2	29.3	90.00	394.6	1,283.6	555.1	512.4	42.71	12.996			
7,700.0	6,737.2	7,806.9	6,737.2	22.3	29.5	90.00	494.6	1,283.6	555.1	510.3	44.82	12.384			
7,800.0	6,737.1	7,906.9	6,737.1	23.6	30.0	90.00	594.6	1,283.6	555.1	508.0	47.15	11.772			
7,900.0	6,736.9	8,006.9	6,736.9	25.0	30.6	90.00	694.6	1,283.6	555.1	505.4	49.67	11.176			
8,000.0	6,736.8	8,106.9	6,736.8	26.4	31.4	90.00	794.6	1,283.6	555.1	502.8	52.35	10.604			
8,100.0	6,736.6	8,206.9	6,736.6	27.8	32.4	90.00	894.6	1,283.6	555.1	499.9	55.16	10.063			
8,200.0	6,736.4	8,306.9	6,736.5	29.3	33.6	90.00	994.6	1,283.6	555.1	497.0	58.10	9.555			
8,300.0	6,736.3	8,406.9	6,736.3	30.9	34.8	90.00	1,094.6	1,283.6	555.1	494.0	61.13	9.080			
8,400.0	6,736.1	8,506.9	6,736.1	32.5	36.2	90.00	1,194.6	1,283.6	555.1	490.9	64.25	8.639			

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 7L-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 7L-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
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
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
8,500.0	6,736.0	8,606.9	6,736.0	34.1	37.6	90.00	1,294.6	1,283.6	555.1	487.7	67.45	8.230	
8,600.0	6,735.8	8,706.9	6,735.8	35.7	39.1	90.00	1,394.6	1,283.6	555.1	484.4	70.71	7.851	
8,700.0	6,735.7	8,806.9	6,735.7	37.4	40.6	90.00	1,494.6	1,283.6	555.1	481.1	74.02	7.499	
8,800.0	6,735.5	8,906.9	6,735.5	39.1	42.1	90.00	1,594.6	1,283.6	555.1	477.7	77.39	7.173	
8,900.0	6,735.3	9,006.9	6,735.4	40.8	43.7	90.00	1,694.6	1,283.6	555.1	474.3	80.79	6.871	
9,000.0	6,735.2	9,106.9	6,735.2	42.5	45.3	90.00	1,794.6	1,283.6	555.1	470.9	84.24	6.590	
9,100.0	6,735.0	9,206.9	6,735.0	44.2	47.0	90.00	1,894.6	1,283.6	555.1	467.4	87.71	6.329	
9,200.0	6,734.9	9,306.9	6,734.9	46.0	48.6	90.00	1,994.6	1,283.6	555.1	463.9	91.22	6.085	
9,300.0	6,734.7	9,406.9	6,734.7	47.7	50.3	90.00	2,094.6	1,283.6	555.1	460.4	94.75	5.859	
9,400.0	6,734.6	9,506.9	6,734.6	49.5	52.0	90.00	2,194.6	1,283.6	555.1	456.8	98.30	5.647	
9,500.0	6,734.4	9,606.9	6,734.4	51.3	53.7	90.00	2,294.6	1,283.6	555.1	453.2	101.88	5.449	
9,600.0	6,734.2	9,706.9	6,734.3	53.1	55.5	90.00	2,394.6	1,283.6	555.1	449.6	105.48	5.263	
9,700.0	6,734.1	9,806.9	6,734.1	54.9	57.2	90.00	2,494.6	1,283.6	555.1	446.0	109.09	5.089	
9,800.0	6,733.9	9,906.9	6,733.9	56.7	58.9	90.00	2,594.6	1,283.6	555.1	442.4	112.71	4.925	
9,900.0	6,733.8	10,006.9	6,733.8	58.5	60.7	90.00	2,694.6	1,283.6	555.1	438.7	116.35	4.771	
10,000.0	6,733.6	10,106.9	6,733.6	60.3	62.5	90.00	2,794.6	1,283.6	555.1	435.1	120.01	4.626	
10,100.0	6,733.5	10,206.9	6,733.5	62.2	64.2	90.00	2,894.6	1,283.6	555.1	431.4	123.67	4.489	
10,200.0	6,733.3	10,306.9	6,733.3	64.0	66.0	90.00	2,994.6	1,283.6	555.1	427.8	127.35	4.359	
10,300.0	6,733.1	10,406.9	6,733.2	65.8	67.8	90.00	3,094.6	1,283.6	555.1	424.1	131.03	4.236	
10,400.0	6,733.0	10,506.9	6,733.0	67.7	69.6	90.00	3,194.6	1,283.6	555.1	420.4	134.72	4.120	
10,500.0	6,732.8	10,606.9	6,732.8	69.5	71.4	90.00	3,294.6	1,283.6	555.1	416.7	138.42	4.010	
10,600.0	6,732.7	10,706.9	6,732.7	71.3	73.2	90.00	3,394.6	1,283.6	555.1	413.0	142.13	3.906	
10,700.0	6,732.5	10,806.9	6,732.5	73.2	75.0	90.00	3,494.6	1,283.6	555.1	409.3	145.85	3.806	
10,800.0	6,732.4	10,906.9	6,732.4	75.1	76.9	90.00	3,594.6	1,283.6	555.1	405.5	149.57	3.711	
10,900.0	6,732.2	11,006.9	6,732.2	76.9	78.7	90.00	3,694.6	1,283.6	555.1	401.8	153.30	3.621	
11,000.0	6,732.0	11,106.9	6,732.1	78.8	80.5	90.00	3,794.6	1,283.6	555.1	398.1	157.03	3.535	
11,100.0	6,731.9	11,206.9	6,731.9	80.6	82.4	90.00	3,894.6	1,283.6	555.1	394.3	160.77	3.453	
11,200.0	6,731.7	11,306.9	6,731.7	82.5	84.2	90.00	3,994.6	1,283.6	555.1	390.6	164.51	3.374	
11,300.0	6,731.6	11,406.9	6,731.6	84.4	86.0	90.00	4,094.6	1,283.6	555.1	386.8	168.26	3.299	
11,400.0	6,731.4	11,506.9	6,731.4	86.2	87.9	90.00	4,194.6	1,283.6	555.1	383.1	172.01	3.227	
11,500.0	6,731.3	11,606.9	6,731.3	88.1	89.7	90.00	4,294.6	1,283.6	555.1	379.3	175.77	3.158	
11,600.0	6,731.1	11,706.9	6,731.1	90.0	91.6	90.00	4,394.6	1,283.6	555.1	375.6	179.52	3.092	
11,700.0	6,730.9	11,806.9	6,731.0	91.9	93.4	90.00	4,494.6	1,283.6	555.1	371.8	183.29	3.029	
11,800.0	6,730.8	11,906.9	6,730.8	93.7	95.3	90.00	4,594.6	1,283.6	555.1	368.0	187.05	2.968	
11,900.0	6,730.6	12,006.9	6,730.6	95.6	97.1	90.00	4,694.6	1,283.6	555.1	364.3	190.82	2.909	
12,000.0	6,730.5	12,106.9	6,730.5	97.5	99.0	90.00	4,794.6	1,283.6	555.1	360.5	194.59	2.853	
12,100.0	6,730.3	12,206.9	6,730.3	99.4	100.9	90.00	4,894.6	1,283.6	555.1	356.7	198.37	2.798	
12,200.0	6,730.2	12,306.9	6,730.2	101.3	102.7	90.00	4,994.6	1,283.6	555.1	353.0	202.14	2.746	
12,300.0	6,730.0	12,406.9	6,730.0	103.2	104.6	90.00	5,094.6	1,283.6	555.1	349.2	205.92	2.696	
12,400.0	6,729.8	12,506.9	6,729.9	105.0	106.5	90.00	5,194.6	1,283.6	555.1	345.4	209.70	2.647	
12,500.0	6,729.7	12,606.9	6,729.7	106.9	108.3	90.00	5,294.6	1,283.6	555.1	341.6	213.49	2.600	
12,600.0	6,729.5	12,706.9	6,729.5	108.8	110.2	90.00	5,394.6	1,283.6	555.1	337.8	217.27	2.555	
12,700.0	6,729.4	12,806.9	6,729.4	110.7	112.1	90.00	5,494.6	1,283.6	555.1	334.0	221.06	2.511	
12,800.0	6,729.2	12,906.9	6,729.2	112.6	113.9	90.00	5,594.6	1,283.6	555.1	330.2	224.85	2.469	
12,900.0	6,729.1	13,006.9	6,729.1	114.5	115.8	90.00	5,694.6	1,283.6	555.1	326.5	228.64	2.428	
13,000.0	6,728.9	13,106.9	6,728.9	116.4	117.7	90.00	5,794.6	1,283.6	555.1	322.7	232.43	2.388	
13,100.0	6,728.7	13,206.9	6,728.8	118.3	119.6	90.00	5,894.6	1,283.6	555.1	318.9	236.23	2.350	
13,200.0	6,728.6	13,306.9	6,728.6	120.2	121.4	90.00	5,994.6	1,283.6	555.1	315.1	240.02	2.313	
13,300.0	6,728.4	13,406.9	6,728.4	122.1	123.3	90.00	6,094.6	1,283.6	555.1	311.3	243.82	2.277	
13,400.0	6,728.3	13,506.9	6,728.3	124.0	125.2	90.00	6,194.6	1,283.6	555.1	307.5	247.62	2.242	
13,500.0	6,728.1	13,606.9	6,728.1	125.9	127.1	90.00	6,294.6	1,283.6	555.1	303.7	251.42	2.208	

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 7L-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 7L-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													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		
13,600.0	6,728.0	13,706.9	6,728.0	127.8	129.0	90.00	6,394.6	1,283.6	555.1	299.9	255.22	2.175		
13,700.0	6,727.8	13,806.9	6,727.8	129.6	130.9	90.00	6,494.6	1,283.6	555.1	296.1	259.02	2.143		
13,800.0	6,727.6	13,906.9	6,727.7	131.5	132.7	90.00	6,594.6	1,283.6	555.1	292.3	262.82	2.112		
13,900.0	6,727.5	14,006.9	6,727.5	133.4	134.6	90.00	6,694.6	1,283.6	555.1	288.5	266.63	2.082		
14,000.0	6,727.3	14,106.9	6,727.3	135.3	136.5	90.00	6,794.6	1,283.6	555.1	284.7	270.43	2.053		
14,100.0	6,727.2	14,206.9	6,727.2	137.2	138.4	90.00	6,894.6	1,283.6	555.1	280.9	274.24	2.024		
14,200.0	6,727.0	14,306.9	6,727.0	139.1	140.3	90.00	6,994.6	1,283.6	555.1	277.0	278.05	1.996		
14,300.0	6,726.9	14,406.9	6,726.9	141.0	142.2	90.00	7,094.6	1,283.6	555.1	273.2	281.86	1.969		
14,400.0	6,726.7	14,506.9	6,726.7	143.0	144.1	90.00	7,194.6	1,283.6	555.1	269.4	285.67	1.943		
14,500.0	6,726.5	14,606.9	6,726.6	144.9	146.0	90.00	7,294.6	1,283.6	555.1	265.6	289.48	1.918		
14,600.0	6,726.4	14,706.9	6,726.4	146.8	147.9	90.00	7,394.6	1,283.6	555.1	261.8	293.29	1.893		
14,700.0	6,726.2	14,806.9	6,726.2	148.7	149.8	90.00	7,494.6	1,283.6	555.1	258.0	297.10	1.868		
14,800.0	6,726.1	14,906.9	6,726.1	150.6	151.7	90.00	7,594.6	1,283.6	555.1	254.2	300.91	1.845		
14,900.0	6,725.9	15,006.9	6,725.9	152.5	153.5	90.00	7,694.6	1,283.6	555.1	250.4	304.72	1.822		
15,000.0	6,725.8	15,106.9	6,725.8	154.4	155.4	90.00	7,794.6	1,283.6	555.1	246.6	308.54	1.799		
15,100.0	6,725.6	15,206.9	6,725.6	156.3	157.3	90.00	7,894.6	1,283.6	555.1	242.7	312.35	1.777		
15,200.0	6,725.4	15,306.9	6,725.5	158.2	159.2	90.00	7,994.6	1,283.6	555.1	238.9	316.17	1.756		
15,300.0	6,725.3	15,406.9	6,725.3	160.1	161.1	90.00	8,094.6	1,283.6	555.1	235.1	319.98	1.735		
15,400.0	6,725.1	15,506.9	6,725.1	162.0	163.0	90.00	8,194.6	1,283.6	555.1	231.3	323.80	1.714		
15,500.0	6,725.0	15,606.9	6,725.0	163.9	164.9	90.00	8,294.6	1,283.6	555.1	227.5	327.62	1.694		
15,600.0	6,724.8	15,706.9	6,724.8	165.8	166.8	90.00	8,394.6	1,283.6	555.1	223.7	331.43	1.675		
15,700.0	6,724.7	15,806.9	6,724.7	167.7	168.7	90.00	8,494.6	1,283.6	555.1	219.8	335.25	1.656		
15,800.0	6,724.5	15,906.9	6,724.5	169.6	170.6	90.00	8,594.6	1,283.6	555.1	216.0	339.07	1.637		
15,900.0	6,724.3	16,006.9	6,724.4	171.5	172.5	90.00	8,694.6	1,283.6	555.1	212.2	342.89	1.619		
16,000.0	6,724.2	16,106.9	6,724.2	173.4	174.4	90.00	8,794.6	1,283.6	555.1	208.4	346.71	1.601		
16,100.0	6,724.0	16,206.9	6,724.0	175.3	176.3	90.00	8,894.6	1,283.6	555.1	204.6	350.53	1.584		
16,200.0	6,723.9	16,306.9	6,723.9	177.3	178.2	90.00	8,994.6	1,283.6	555.1	200.7	354.35	1.567		
16,300.0	6,723.7	16,406.9	6,723.7	179.2	180.1	90.00	9,094.6	1,283.6	555.1	196.9	358.17	1.550		
16,400.0	6,723.6	16,506.9	6,723.6	181.1	182.0	90.00	9,194.6	1,283.6	555.1	193.1	361.99	1.533		
16,500.0	6,723.4	16,606.9	6,723.4	183.0	183.9	90.00	9,294.6	1,283.6	555.1	189.3	365.81	1.517		
16,600.0	6,723.2	16,706.9	6,723.3	184.9	185.8	90.00	9,394.6	1,283.6	555.1	185.5	369.64	1.502		
16,700.0	6,723.1	16,806.9	6,723.1	186.8	187.7	90.00	9,494.6	1,283.6	555.1	181.6	373.46	1.486 Level 3		
16,759.2	6,723.0	16,866.1	6,723.0	187.9	188.9	90.00	9,553.8	1,283.6	555.1	179.4	375.72	1.477 Level 3, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	-179.29	-45.2	-0.6	45.2					
100.0	100.0	100.0	100.0	0.1	0.1	-179.29	-45.2	-0.6	45.2	45.0	0.22	201.038		
200.0	200.0	200.0	200.0	0.3	0.3	-179.29	-45.2	-0.6	45.2	44.5	0.67	67.008		
300.0	300.0	300.0	300.0	0.6	0.6	-179.29	-45.2	-0.6	45.2	44.1	1.12	40.205		
400.0	400.0	400.0	400.0	0.8	0.8	-179.29	-45.2	-0.6	45.2	43.6	1.57	28.717 CC, ES		
500.0	500.0	499.5	499.5	1.0	1.0	179.20	-45.7	0.6	45.7	43.7	2.00	22.791		
600.0	600.0	598.9	598.9	1.2	1.2	174.88	-47.2	4.2	47.4	44.9	2.43	19.484		
700.0	700.0	698.1	697.8	1.5	1.4	168.40	-49.6	10.2	50.7	47.8	2.87	17.637		
800.0	800.0	796.8	796.1	1.7	1.7	160.80	-53.1	18.5	56.3	53.0	3.34	16.857		
900.0	900.0	895.0	893.6	1.9	1.9	153.17	-57.4	29.0	64.7	60.8	3.83	16.880		
1,000.0	1,000.0	992.6	990.2	2.1	2.2	146.30	-62.7	41.8	76.0	71.7	4.35	17.492		
1,100.0	1,100.0	1,089.6	1,085.8	2.3	2.5	7.53	-68.9	56.8	89.1	84.5	4.68	19.033		
1,200.0	1,199.9	1,186.1	1,180.6	2.5	2.9	2.86	-76.0	73.9	102.6	97.5	5.10	20.114		
1,300.0	1,299.7	1,282.3	1,274.5	2.7	3.3	-1.12	-84.0	93.2	116.4	110.9	5.53	21.055		
1,400.0	1,399.3	1,378.1	1,367.4	2.9	3.8	-4.60	-92.8	114.5	130.5	124.5	5.96	21.881		
1,500.0	1,498.6	1,473.4	1,459.3	3.2	4.3	-7.72	-102.5	137.9	144.8	138.4	6.41	22.604		
1,600.0	1,597.5	1,568.3	1,550.2	3.4	4.8	-10.56	-113.0	163.2	159.4	152.5	6.86	23.242		
1,700.0	1,696.1	1,662.8	1,639.9	3.7	5.4	-13.18	-124.3	190.6	174.2	166.9	7.32	23.784		
1,800.0	1,794.2	1,756.8	1,728.5	4.1	6.0	-15.63	-136.4	219.8	189.3	181.5	7.81	24.231		
1,900.0	1,891.7	1,852.4	1,817.8	4.4	6.7	-17.97	-149.4	251.4	204.5	196.2	8.33	24.540		
1,938.8	1,929.4	1,890.7	1,853.4	4.6	7.0	-18.87	-154.7	264.2	210.0	201.5	8.55	24.572		
2,000.0	1,988.7	1,951.1	1,909.7	4.9	7.4	-20.27	-163.1	284.3	218.5	209.6	8.91	24.532		
2,100.0	2,085.7	2,049.7	2,001.7	5.3	8.1	-22.33	-176.7	317.3	232.6	223.1	9.52	24.432		
2,200.0	2,182.7	2,148.4	2,093.7	5.7	8.9	-24.16	-190.4	350.3	247.0	236.9	10.17	24.295		
2,300.0	2,279.7	2,247.1	2,185.7	6.2	9.6	-25.78	-204.0	383.3	261.6	250.8	10.84	24.127		
2,400.0	2,376.7	2,345.7	2,277.7	6.7	10.4	-27.23	-217.7	416.2	276.4	264.9	11.55	23.938		
2,500.0	2,473.7	2,444.4	2,369.7	7.2	11.1	-28.54	-231.3	449.2	291.4	279.1	12.28	23.736		
2,600.0	2,570.7	2,543.1	2,461.7	7.7	11.9	-29.72	-245.0	482.2	306.5	293.5	13.03	23.526		
2,700.0	2,667.7	2,641.8	2,553.6	8.2	12.6	-30.78	-258.6	515.1	321.7	307.9	13.80	23.315		
2,800.0	2,764.7	2,740.4	2,645.6	8.7	13.4	-31.75	-272.2	548.1	337.0	322.4	14.59	23.105		
2,900.0	2,861.7	2,839.1	2,737.6	9.2	14.2	-32.64	-285.9	581.1	352.4	337.0	15.39	22.900		
3,000.0	2,958.7	2,937.8	2,829.6	9.7	14.9	-33.45	-299.5	614.1	367.9	351.6	16.20	22.700		
3,100.0	3,055.7	3,036.4	2,921.6	10.2	15.7	-34.20	-313.2	647.0	383.4	366.4	17.03	22.508		
3,200.0	3,152.7	3,135.1	3,013.6	10.7	16.4	-34.89	-326.8	680.0	399.0	381.1	17.87	22.323		
3,300.0	3,249.7	3,233.8	3,105.6	11.2	17.2	-35.52	-340.5	713.0	414.6	395.9	18.72	22.147		
3,400.0	3,346.7	3,332.4	3,197.6	11.7	18.0	-36.12	-354.1	746.0	430.3	410.7	19.58	21.979		
3,500.0	3,443.7	3,431.1	3,289.5	12.2	18.7	-36.66	-367.8	778.9	446.0	425.6	20.44	21.819		
3,600.0	3,540.7	3,529.8	3,381.5	12.8	19.5	-37.18	-381.4	811.9	461.8	440.5	21.31	21.667		
3,700.0	3,637.7	3,628.4	3,473.5	13.3	20.3	-37.65	-395.1	844.9	477.6	455.4	22.19	21.523		
3,800.0	3,734.6	3,727.1	3,565.5	13.8	21.0	-38.10	-408.7	877.9	493.5	470.4	23.07	21.385		
3,900.0	3,831.6	3,825.8	3,657.5	14.3	21.8	-38.52	-422.4	910.8	509.3	485.4	23.96	21.255		
4,000.0	3,928.6	3,924.4	3,749.5	14.8	22.6	-38.91	-436.0	943.8	525.2	500.3	24.85	21.132		
4,100.0	4,025.6	4,023.1	3,841.5	15.4	23.3	-39.29	-449.6	976.8	541.1	515.4	25.75	21.014		
4,200.0	4,122.6	4,121.8	3,933.5	15.9	24.1	-39.64	-463.3	1,009.8	557.0	530.4	26.65	20.903		
4,300.0	4,219.6	4,220.4	4,025.4	16.4	24.9	-39.97	-476.9	1,042.7	573.0	545.4	27.55	20.797		
4,400.0	4,316.6	4,319.1	4,117.4	16.9	25.6	-40.28	-490.6	1,075.7	589.0	560.5	28.46	20.696		
4,500.0	4,413.6	4,417.8	4,209.4	17.5	26.4	-40.57	-504.2	1,108.7	604.9	575.6	29.37	20.600		
4,600.0	4,510.6	4,516.4	4,301.4	18.0	27.2	-40.85	-517.9	1,141.6	620.9	590.7	30.28	20.508		
4,700.0	4,607.6	4,615.1	4,393.4	18.5	27.9	-41.12	-531.5	1,174.6	636.9	605.8	31.19	20.421		
4,800.0	4,704.6	4,713.8	4,485.4	19.0	28.7	-41.38	-545.2	1,207.6	653.0	620.9	32.11	20.338		
4,900.0	4,801.6	4,812.4	4,577.4	19.6	29.5	-41.62	-558.8	1,240.6	669.0	636.0	33.02	20.259		

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 7L-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 7L-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		Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
5,000.0	4,898.6	4,911.1	4,669.4	20.1	30.2	-41.85	-572.5	1,273.5	685.1	651.1	33.94	20.183			
5,100.0	4,995.6	5,009.8	4,761.4	20.6	31.0	-42.07	-586.1	1,306.5	701.1	666.3	34.86	20.110			
5,200.0	5,092.6	5,108.4	4,853.3	21.1	31.8	-42.28	-599.8	1,339.5	717.2	681.4	35.79	20.041			
5,210.7	5,103.0	5,119.0	4,863.2	21.2	31.8	-42.30	-601.2	1,343.0	718.9	683.0	35.88	20.034			
5,300.0	5,189.9	5,233.9	4,971.1	21.6	32.6	-42.69	-616.3	1,379.4	732.7	696.0	36.72	19.954			
5,400.0	5,288.0	5,363.7	5,094.9	21.9	33.2	-43.04	-631.3	1,415.8	746.6	709.1	37.47	19.928			
5,500.0	5,386.6	5,494.6	5,221.3	22.2	33.8	-43.31	-644.3	1,447.1	758.9	720.8	38.11	19.916			
5,600.0	5,485.8	5,626.4	5,349.9	22.4	34.3	-43.49	-655.1	1,473.2	769.5	730.9	38.63	19.920			
5,700.0	5,585.4	5,758.9	5,480.5	22.7	34.7	-43.58	-663.7	1,493.9	778.5	739.4	39.04	19.939			
5,800.0	5,685.2	5,892.1	5,612.7	22.8	35.0	-43.59	-670.0	1,509.1	785.7	746.4	39.34	19.970			
5,900.0	5,785.2	6,025.8	5,746.0	22.9	35.2	-43.53	-673.9	1,518.6	791.2	751.6	39.53	20.016			
5,914.8	5,800.0	6,045.7	5,765.8	23.0	35.3	89.54	-674.3	1,519.6	791.8	752.3	39.55	20.023			
6,000.0	5,885.2	6,160.0	5,880.1	23.1	35.4	89.63	-675.5	1,522.4	793.9	754.2	39.77	19.965			
6,088.7	5,973.9	6,253.8	5,973.9	23.2	35.4	89.63	-675.5	1,522.5	794.0	754.0	39.99	19.855			
6,100.0	5,985.2	6,265.1	5,985.2	23.2	35.5	89.64	-675.5	1,522.5	794.0	754.0	40.01	19.843			
6,150.0	6,035.1	6,315.0	6,035.1	23.2	35.5	89.81	-675.5	1,522.5	794.0	753.9	40.03	19.832			
6,178.5	6,063.4	6,343.3	6,063.4	23.2	35.5	90.00	-675.3	1,522.5	794.0	754.0	39.99	19.856			
6,200.0	6,084.8	6,364.8	6,084.9	23.2	35.5	90.15	-674.6	1,522.5	794.0	754.0	39.94	19.880			
6,250.0	6,134.0	6,414.9	6,134.8	23.2	35.5	90.51	-670.6	1,522.5	794.0	754.2	39.78	19.958			
6,300.0	6,182.5	6,465.2	6,184.6	23.2	35.5	90.86	-663.3	1,522.5	794.0	754.5	39.58	20.064			
6,350.0	6,230.1	6,516.0	6,234.2	23.1	35.5	91.21	-652.7	1,522.5	794.1	754.8	39.32	20.194			
6,400.0	6,276.6	6,567.0	6,283.3	23.0	35.5	91.55	-638.6	1,522.5	794.3	755.2	39.04	20.347			
6,450.0	6,321.9	6,618.4	6,331.6	22.9	35.5	91.89	-621.2	1,522.5	794.4	755.7	38.72	20.519			
6,500.0	6,365.6	6,670.1	6,379.0	22.8	35.4	92.22	-600.5	1,522.5	794.6	756.2	38.37	20.706			
6,550.0	6,407.7	6,722.2	6,425.1	22.7	35.3	92.55	-576.4	1,522.5	794.7	756.7	38.02	20.903			
6,600.0	6,447.9	6,774.6	6,469.8	22.5	35.2	92.86	-549.1	1,522.5	795.0	757.3	37.67	21.105			
6,650.0	6,486.0	6,827.3	6,512.8	22.4	35.2	93.16	-518.5	1,522.5	795.2	757.9	37.32	21.307			
6,700.0	6,522.0	6,880.3	6,553.8	22.2	35.0	93.45	-484.9	1,522.5	795.4	758.4	36.99	21.501			
6,750.0	6,555.7	6,933.7	6,592.5	22.0	34.9	93.72	-448.3	1,522.5	795.6	758.9	36.70	21.681			
6,800.0	6,586.8	6,987.3	6,628.8	21.9	34.8	93.98	-408.8	1,522.5	795.9	759.4	36.44	21.840			
6,850.0	6,615.3	7,041.2	6,662.5	21.7	34.7	94.22	-366.7	1,522.5	796.1	759.9	36.24	21.970			
6,900.0	6,641.1	7,095.4	6,693.2	21.5	34.6	94.44	-322.0	1,522.5	796.4	760.3	36.09	22.063			
6,950.0	6,664.0	7,149.8	6,720.8	21.3	34.5	94.64	-275.1	1,522.5	796.6	760.6	36.02	22.114			
7,000.0	6,684.0	7,204.5	6,745.0	21.2	34.3	94.82	-226.2	1,522.5	796.8	760.8	36.03	22.115			
7,050.0	6,700.9	7,259.3	6,765.8	21.0	34.2	94.98	-175.4	1,522.5	797.0	760.8	36.12	22.064			
7,100.0	6,714.7	7,314.4	6,782.9	20.8	34.1	95.11	-123.2	1,522.5	797.1	760.8	36.30	21.960			
7,150.0	6,725.3	7,369.5	6,796.3	20.7	34.0	95.22	-69.7	1,522.5	797.3	760.7	36.57	21.803			
7,200.0	6,732.7	7,424.8	6,805.8	20.5	33.9	95.30	-15.2	1,522.5	797.4	760.4	36.92	21.595			
7,250.0	6,736.9	7,480.2	6,811.3	20.4	33.8	95.36	39.9	1,522.5	797.4	760.1	37.37	21.341			
7,289.9	6,737.9	7,524.4	6,812.8	20.3	33.8	95.39	84.1	1,522.5	797.5	759.7	37.78	21.109			
7,300.0	6,737.9	7,535.1	6,812.8	20.2	33.8	95.39	94.8	1,522.5	797.5	759.6	37.88	21.050			
7,400.0	6,737.7	7,635.1	6,812.6	20.0	33.7	95.39	194.8	1,522.5	797.5	758.4	39.11	20.392			
7,500.0	6,737.5	7,735.1	6,812.4	20.1	33.7	95.39	294.8	1,522.5	797.5	756.8	40.64	19.622			
7,600.0	6,737.4	7,835.1	6,812.2	21.2	33.8	95.38	394.8	1,522.5	797.5	755.0	42.47	18.779			
7,700.0	6,737.2	7,935.1	6,812.0	22.3	34.0	95.38	494.8	1,522.5	797.5	752.9	44.54	17.903			
7,800.0	6,737.1	8,035.1	6,811.8	23.6	34.3	95.38	594.8	1,522.5	797.5	750.6	46.84	17.024			
7,900.0	6,736.9	8,135.1	6,811.6	25.0	34.7	95.37	694.8	1,522.5	797.5	748.1	49.33	16.164			
8,000.0	6,736.8	8,235.1	6,811.4	26.4	35.3	95.37	794.8	1,522.5	797.5	745.5	51.99	15.339			
8,100.0	6,736.6	8,335.1	6,811.2	27.8	36.0	95.36	894.8	1,522.5	797.4	742.7	54.78	14.557			
8,200.0	6,736.4	8,435.1	6,810.9	29.3	36.9	95.36	994.8	1,522.5	797.4	739.8	57.69	13.823			
8,300.0	6,736.3	8,535.1	6,810.7	30.9	37.9	95.36	1,094.8	1,522.5	797.4	736.7	60.70	13.137			

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 7L-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 7L-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												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,736.1	8,635.1	6,810.5	32.5	39.0	95.35	1,194.8	1,522.5	797.4	733.6	63.80	12.499	
8,500.0	6,736.0	8,735.1	6,810.3	34.1	40.2	95.35	1,294.8	1,522.5	797.4	730.4	66.98	11.906	
8,600.0	6,735.8	8,835.1	6,810.1	35.7	41.5	95.35	1,394.8	1,522.5	797.4	727.2	70.22	11.356	
8,700.0	6,735.7	8,935.1	6,809.9	37.4	42.9	95.34	1,494.8	1,522.5	797.4	723.9	73.51	10.847	
8,800.0	6,735.5	9,035.1	6,809.7	39.1	44.3	95.34	1,594.8	1,522.5	797.4	720.6	76.86	10.375	
8,900.0	6,735.3	9,135.1	6,809.5	40.8	45.8	95.33	1,694.8	1,522.5	797.4	717.2	80.25	9.937	
9,000.0	6,735.2	9,235.1	6,809.3	42.5	47.3	95.33	1,794.8	1,522.5	797.4	713.7	83.68	9.530	
9,100.0	6,735.0	9,335.1	6,809.1	44.2	48.9	95.33	1,894.8	1,522.5	797.4	710.3	87.14	9.151	
9,200.0	6,734.9	9,435.1	6,808.8	46.0	50.5	95.32	1,994.8	1,522.5	797.4	706.8	90.63	8.799	
9,300.0	6,734.7	9,535.1	6,808.6	47.7	52.1	95.32	2,094.8	1,522.5	797.4	703.2	94.14	8.470	
9,400.0	6,734.6	9,635.1	6,808.4	49.5	53.7	95.32	2,194.8	1,522.5	797.4	699.7	97.68	8.163	
9,500.0	6,734.4	9,735.1	6,808.2	51.3	55.4	95.31	2,294.8	1,522.5	797.4	696.1	101.24	7.876	
9,600.0	6,734.2	9,835.1	6,808.0	53.1	57.1	95.31	2,394.8	1,522.5	797.4	692.6	104.82	7.607	
9,700.0	6,734.1	9,935.1	6,807.8	54.9	58.7	95.30	2,494.8	1,522.5	797.4	688.9	108.42	7.355	
9,800.0	6,733.9	10,035.1	6,807.6	56.7	60.5	95.30	2,594.7	1,522.5	797.4	685.3	112.03	7.117	
9,900.0	6,733.8	10,135.1	6,807.4	58.5	62.2	95.30	2,694.7	1,522.5	797.4	681.7	115.65	6.894	
10,000.0	6,733.6	10,235.1	6,807.2	60.3	63.9	95.29	2,794.7	1,522.5	797.4	678.1	119.29	6.684	
10,100.0	6,733.5	10,335.1	6,807.0	62.2	65.6	95.29	2,894.7	1,522.5	797.3	674.4	122.94	6.485	
10,200.0	6,733.3	10,435.1	6,806.8	64.0	67.4	95.29	2,994.7	1,522.5	797.3	670.7	126.60	6.298	
10,300.0	6,733.1	10,535.1	6,806.5	65.8	69.2	95.28	3,094.7	1,522.5	797.3	667.1	130.27	6.120	
10,400.0	6,733.0	10,635.1	6,806.3	67.7	70.9	95.28	3,194.7	1,522.5	797.3	663.4	133.95	5.952	
10,500.0	6,732.8	10,735.1	6,806.1	69.5	72.7	95.27	3,294.7	1,522.5	797.3	659.7	137.64	5.793	
10,600.0	6,732.7	10,835.1	6,805.9	71.3	74.5	95.27	3,394.7	1,522.5	797.3	656.0	141.33	5.641	
10,700.0	6,732.5	10,935.1	6,805.7	73.2	76.3	95.27	3,494.7	1,522.5	797.3	652.3	145.04	5.497	
10,800.0	6,732.4	11,035.1	6,805.5	75.1	78.1	95.26	3,594.7	1,522.5	797.3	648.6	148.74	5.360	
10,900.0	6,732.2	11,135.1	6,805.3	76.9	79.9	95.26	3,694.7	1,522.5	797.3	644.8	152.46	5.230	
11,000.0	6,732.0	11,235.1	6,805.1	78.8	81.7	95.26	3,794.7	1,522.5	797.3	641.1	156.18	5.105	
11,100.0	6,731.9	11,335.1	6,804.9	80.6	83.5	95.25	3,894.7	1,522.5	797.3	637.4	159.90	4.986	
11,200.0	6,731.7	11,435.1	6,804.7	82.5	85.3	95.25	3,994.7	1,522.5	797.3	633.7	163.63	4.872	
11,300.0	6,731.6	11,535.1	6,804.4	84.4	87.1	95.24	4,094.7	1,522.5	797.3	629.9	167.37	4.764	
11,400.0	6,731.4	11,635.1	6,804.2	86.2	89.0	95.24	4,194.7	1,522.5	797.3	626.2	171.10	4.660	
11,500.0	6,731.3	11,735.1	6,804.0	88.1	90.8	95.24	4,294.7	1,522.5	797.3	622.4	174.85	4.560	
11,600.0	6,731.1	11,835.1	6,803.8	90.0	92.6	95.23	4,394.7	1,522.5	797.3	618.7	178.59	4.464	
11,700.0	6,730.9	11,935.1	6,803.6	91.9	94.5	95.23	4,494.7	1,522.5	797.3	614.9	182.34	4.372	
11,800.0	6,730.8	12,035.1	6,803.4	93.7	96.3	95.23	4,594.7	1,522.5	797.3	611.2	186.09	4.284	
11,900.0	6,730.6	12,135.1	6,803.2	95.6	98.1	95.22	4,694.7	1,522.5	797.3	607.4	189.85	4.199	
12,000.0	6,730.5	12,235.1	6,803.0	97.5	100.0	95.22	4,794.7	1,522.5	797.3	603.6	193.61	4.118	
12,100.0	6,730.3	12,335.1	6,802.8	99.4	101.8	95.21	4,894.7	1,522.5	797.2	599.9	197.37	4.039	
12,200.0	6,730.2	12,435.1	6,802.6	101.3	103.7	95.21	4,994.7	1,522.5	797.2	596.1	201.13	3.964	
12,300.0	6,730.0	12,535.1	6,802.4	103.2	105.5	95.21	5,094.7	1,522.5	797.2	592.3	204.90	3.891	
12,400.0	6,729.8	12,635.1	6,802.1	105.0	107.4	95.20	5,194.7	1,522.5	797.2	588.6	208.67	3.821	
12,500.0	6,729.7	12,735.1	6,801.9	106.9	109.2	95.20	5,294.7	1,522.5	797.2	584.8	212.44	3.753	
12,600.0	6,729.5	12,835.1	6,801.7	108.8	111.1	95.20	5,394.7	1,522.5	797.2	581.0	216.21	3.687	
12,700.0	6,729.4	12,935.1	6,801.5	110.7	113.0	95.19	5,494.7	1,522.5	797.2	577.2	219.99	3.624	
12,800.0	6,729.2	13,035.1	6,801.3	112.6	114.8	95.19	5,594.7	1,522.5	797.2	573.4	223.77	3.563	
12,900.0	6,729.1	13,135.1	6,801.1	114.5	116.7	95.18	5,694.7	1,522.5	797.2	569.7	227.54	3.504	
13,000.0	6,728.9	13,235.1	6,800.9	116.4	118.6	95.18	5,794.7	1,522.5	797.2	565.9	231.32	3.446	
13,100.0	6,728.7	13,335.1	6,800.7	118.3	120.4	95.18	5,894.7	1,522.5	797.2	562.1	235.11	3.391	
13,200.0	6,728.6	13,435.1	6,800.5	120.2	122.3	95.17	5,994.7	1,522.5	797.2	558.3	238.89	3.337	
13,300.0	6,728.4	13,535.1	6,800.3	122.1	124.2	95.17	6,094.7	1,522.5	797.2	554.5	242.67	3.285	
13,400.0	6,728.3	13,635.1	6,800.1	124.0	126.0	95.17	6,194.7	1,522.5	797.2	550.7	246.46	3.235	

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 7L-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 7L-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												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	6,728.1	13,735.1	6,799.8	125.9	127.9	95.16	6,294.7	1,522.5	797.2	546.9	250.25	3.186	
13,600.0	6,728.0	13,835.1	6,799.6	127.8	129.8	95.16	6,394.7	1,522.5	797.2	543.1	254.04	3.138	
13,700.0	6,727.8	13,935.1	6,799.4	129.6	131.7	95.15	6,494.7	1,522.5	797.2	539.3	257.83	3.092	
13,800.0	6,727.6	14,035.1	6,799.2	131.5	133.5	95.15	6,594.7	1,522.5	797.2	535.5	261.62	3.047	
13,900.0	6,727.5	14,135.1	6,799.0	133.4	135.4	95.15	6,694.7	1,522.5	797.2	531.7	265.41	3.003	
14,000.0	6,727.3	14,235.1	6,798.8	135.3	137.3	95.14	6,794.7	1,522.5	797.2	527.9	269.21	2.961	
14,100.0	6,727.2	14,335.1	6,798.6	137.2	139.2	95.14	6,894.7	1,522.5	797.1	524.1	273.00	2.920	
14,200.0	6,727.0	14,435.1	6,798.4	139.1	141.1	95.14	6,994.7	1,522.5	797.1	520.3	276.80	2.880	
14,300.0	6,726.9	14,535.1	6,798.2	141.0	143.0	95.13	7,094.7	1,522.5	797.1	516.5	280.59	2.841	
14,400.0	6,726.7	14,635.1	6,798.0	143.0	144.8	95.13	7,194.7	1,522.5	797.1	512.7	284.39	2.803	
14,500.0	6,726.5	14,735.1	6,797.7	144.9	146.7	95.12	7,294.7	1,522.5	797.1	508.9	288.19	2.766	
14,600.0	6,726.4	14,835.1	6,797.5	146.8	148.6	95.12	7,394.7	1,522.5	797.1	505.1	291.99	2.730	
14,700.0	6,726.2	14,935.1	6,797.3	148.7	150.5	95.12	7,494.7	1,522.5	797.1	501.3	295.79	2.695	
14,800.0	6,726.1	15,035.1	6,797.1	150.6	152.4	95.11	7,594.7	1,522.5	797.1	497.5	299.59	2.661	
14,900.0	6,725.9	15,135.1	6,796.9	152.5	154.3	95.11	7,694.7	1,522.5	797.1	493.7	303.39	2.627	
15,000.0	6,725.8	15,235.1	6,796.7	154.4	156.2	95.11	7,794.7	1,522.5	797.1	489.9	307.19	2.595	
15,100.0	6,725.6	15,335.1	6,796.5	156.3	158.1	95.10	7,894.7	1,522.5	797.1	486.1	311.00	2.563	
15,200.0	6,725.4	15,435.1	6,796.3	158.2	159.9	95.10	7,994.7	1,522.5	797.1	482.3	314.80	2.532	
15,300.0	6,725.3	15,535.1	6,796.1	160.1	161.8	95.09	8,094.7	1,522.5	797.1	478.5	318.60	2.502	
15,400.0	6,725.1	15,635.1	6,795.9	162.0	163.7	95.09	8,194.7	1,522.5	797.1	474.7	322.41	2.472	
15,500.0	6,725.0	15,735.1	6,795.7	163.9	165.6	95.09	8,294.7	1,522.5	797.1	470.9	326.21	2.443	
15,600.0	6,724.8	15,835.1	6,795.4	165.8	167.5	95.08	8,394.7	1,522.5	797.1	467.1	330.02	2.415	
15,700.0	6,724.7	15,935.1	6,795.2	167.7	169.4	95.08	8,494.7	1,522.5	797.1	463.2	333.83	2.388	
15,800.0	6,724.5	16,035.1	6,795.0	169.6	171.3	95.08	8,594.7	1,522.5	797.1	459.4	337.64	2.361	
15,900.0	6,724.3	16,135.1	6,794.8	171.5	173.2	95.07	8,694.7	1,522.5	797.1	455.6	341.44	2.334	
16,000.0	6,724.2	16,235.1	6,794.6	173.4	175.1	95.07	8,794.7	1,522.5	797.1	451.8	345.25	2.309	
16,100.0	6,724.0	16,335.1	6,794.4	175.3	177.0	95.06	8,894.7	1,522.5	797.1	448.0	349.06	2.283	
16,200.0	6,723.9	16,435.1	6,794.2	177.3	178.9	95.06	8,994.7	1,522.5	797.0	444.2	352.87	2.259	
16,300.0	6,723.7	16,535.1	6,794.0	179.2	180.8	95.06	9,094.7	1,522.5	797.0	440.4	356.68	2.235	
16,400.0	6,723.6	16,635.1	6,793.8	181.1	182.7	95.05	9,194.7	1,522.5	797.0	436.5	360.49	2.211	
16,500.0	6,723.4	16,735.1	6,793.6	183.0	184.6	95.05	9,294.7	1,522.5	797.0	432.7	364.30	2.188	
16,600.0	6,723.2	16,835.1	6,793.3	184.9	186.5	95.05	9,394.7	1,522.5	797.0	428.9	368.11	2.165	
16,700.0	6,723.1	16,935.1	6,793.1	186.8	188.4	95.04	9,494.7	1,522.5	797.0	425.1	371.92	2.143	
16,759.2	6,723.0	16,994.3	6,793.0	187.9	189.5	95.04	9,553.9	1,522.5	797.0	422.8	374.18	2.130 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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													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	-178.93	-14.9	-0.3	14.9	14.9	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-178.93	-14.9	-0.3	14.9	14.7	0.22	66.491		
200.0	200.0	200.0	200.0	0.3	0.3	-178.93	-14.9	-0.3	14.9	14.3	0.67	22.162		
300.0	300.0	300.0	300.0	0.6	0.6	-178.93	-14.9	-0.3	14.9	13.8	1.12	13.297		
400.0	400.0	400.0	400.0	0.8	0.8	-178.93	-14.9	-0.3	14.9	13.4	1.57	9.498		
500.0	500.0	500.0	500.0	1.0	1.0	-178.93	-14.9	-0.3	14.9	12.9	2.02	7.387		
600.0	600.0	600.0	600.0	1.2	1.2	-178.93	-14.9	-0.3	14.9	12.5	2.47	6.044		
700.0	700.0	700.0	700.0	1.5	1.5	-178.93	-14.9	-0.3	14.9	12.0	2.92	5.114		
800.0	800.0	800.0	800.0	1.7	1.7	-178.93	-14.9	-0.3	14.9	11.6	3.37	4.432 CC		
900.0	900.0	899.8	899.8	1.9	1.9	177.00	-15.6	0.8	15.7	11.9	3.80	4.123		
1,000.0	1,000.0	999.4	999.3	2.1	2.1	166.94	-17.7	4.1	18.2	14.0	4.22	4.322		
1,100.0	1,100.0	1,098.9	1,098.6	2.3	2.3	23.92	-21.2	9.6	22.1	17.5	4.62	4.793		
1,200.0	1,199.9	1,198.2	1,197.5	2.5	2.5	16.13	-26.1	17.2	26.3	21.3	5.00	5.257		
1,300.0	1,299.7	1,297.4	1,296.0	2.7	2.7	9.71	-32.3	27.0	30.7	25.3	5.40	5.683		
1,400.0	1,399.3	1,396.4	1,394.0	2.9	3.0	4.19	-39.9	38.9	35.2	29.4	5.80	6.076		
1,500.0	1,498.6	1,495.3	1,491.4	3.2	3.3	-0.70	-48.8	53.0	40.0	33.8	6.21	6.440		
1,600.0	1,597.5	1,594.0	1,588.3	3.4	3.7	-5.11	-59.1	69.1	44.9	38.3	6.63	6.779		
1,700.0	1,696.1	1,692.6	1,684.5	3.7	4.1	-9.16	-70.7	87.3	50.1	43.0	7.06	7.092		
1,800.0	1,794.2	1,791.0	1,779.9	4.1	4.5	-12.91	-83.6	107.6	55.5	48.0	7.52	7.377		
1,900.0	1,891.7	1,889.3	1,874.6	4.4	5.0	-16.40	-97.8	129.9	61.1	53.1	8.02	7.627		
1,938.8	1,929.4	1,927.6	1,911.3	4.6	5.2	-17.71	-103.6	139.1	63.4	55.1	8.22	7.708		
2,000.0	1,988.7	1,988.7	1,969.8	4.9	5.5	-19.69	-113.1	153.9	66.8	58.2	8.57	7.789		
2,100.0	2,085.7	2,088.5	2,065.4	5.3	6.0	-22.53	-128.4	178.1	72.5	63.3	9.19	7.894		
2,200.0	2,182.7	2,188.2	2,160.9	5.7	6.6	-24.94	-143.8	202.3	78.4	68.6	9.84	7.969		
2,300.0	2,279.7	2,288.0	2,256.5	6.2	7.2	-27.02	-159.2	226.5	84.4	73.9	10.53	8.019		
2,400.0	2,376.7	2,387.8	2,352.1	6.7	7.7	-28.82	-174.6	250.7	90.5	79.3	11.24	8.049		
2,500.0	2,473.7	2,487.6	2,447.6	7.2	8.3	-30.39	-190.0	274.9	96.7	84.7	11.99	8.064		
2,600.0	2,570.7	2,587.3	2,543.2	7.7	8.9	-31.77	-205.4	299.1	102.9	90.2	12.76	8.068		
2,700.0	2,667.7	2,687.1	2,638.8	8.2	9.5	-32.99	-220.8	323.3	109.2	95.7	13.54	8.063		
2,800.0	2,764.7	2,786.9	2,734.3	8.7	10.1	-34.08	-236.2	347.5	115.6	101.2	14.35	8.053		
2,900.0	2,861.7	2,886.7	2,829.9	9.2	10.7	-35.05	-251.6	371.7	121.9	106.8	15.17	8.039		
3,000.0	2,958.7	2,986.4	2,925.5	9.7	11.3	-35.93	-267.0	395.9	128.3	112.3	16.00	8.022		
3,100.0	3,055.7	3,086.2	3,021.0	10.2	11.9	-36.73	-282.4	420.1	134.8	117.9	16.84	8.003		
3,200.0	3,152.7	3,186.0	3,116.6	10.7	12.5	-37.45	-297.8	444.3	141.2	123.5	17.69	7.983		
3,300.0	3,249.7	3,285.8	3,212.2	11.2	13.1	-38.11	-313.2	468.5	147.7	129.2	18.55	7.963		
3,400.0	3,346.7	3,385.6	3,307.7	11.7	13.7	-38.71	-328.6	492.7	154.2	134.8	19.41	7.943		
3,500.0	3,443.7	3,485.3	3,403.3	12.2	14.3	-39.27	-344.0	516.9	160.7	140.4	20.29	7.922		
3,600.0	3,540.7	3,585.1	3,498.9	12.8	14.9	-39.78	-359.4	541.1	167.2	146.1	21.16	7.902		
3,700.0	3,637.7	3,684.9	3,594.4	13.3	15.5	-40.25	-374.8	565.3	173.8	151.7	22.04	7.883		
3,800.0	3,734.6	3,784.7	3,690.0	13.8	16.1	-40.69	-390.2	589.5	180.3	157.4	22.93	7.864		
3,900.0	3,831.6	3,884.4	3,785.6	14.3	16.7	-41.10	-405.6	613.7	186.9	163.1	23.82	7.846		
4,000.0	3,928.6	3,984.2	3,881.1	14.8	17.4	-41.48	-421.0	637.9	193.4	168.7	24.71	7.828		
4,100.0	4,025.6	4,084.0	3,976.7	15.4	18.0	-41.83	-436.4	662.1	200.0	174.4	25.61	7.811		
4,200.0	4,122.6	4,183.8	4,072.3	15.9	18.6	-42.16	-451.8	686.2	206.6	180.1	26.50	7.795		
4,300.0	4,219.6	4,283.5	4,167.8	16.4	19.2	-42.48	-467.1	710.4	213.2	185.8	27.41	7.779		
4,400.0	4,316.6	4,383.3	4,263.4	16.9	19.8	-42.77	-482.5	734.6	219.8	191.5	28.31	7.764		
4,500.0	4,413.6	4,483.1	4,358.9	17.5	20.4	-43.05	-497.9	758.8	226.4	197.2	29.21	7.749		
4,600.0	4,510.6	4,582.9	4,454.5	18.0	21.0	-43.31	-513.3	783.0	233.0	202.9	30.12	7.735		
4,700.0	4,607.6	4,682.6	4,550.1	18.5	21.6	-43.55	-528.7	807.2	239.6	208.6	31.03	7.722		
4,800.0	4,704.6	4,782.4	4,645.6	19.0	22.3	-43.79	-544.1	831.4	246.2	214.3	31.94	7.709		
4,900.0	4,801.6	4,882.2	4,741.2	19.6	22.9	-44.01	-559.5	855.6	252.8	220.0	32.85	7.697		

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 7L-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 7L-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		Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor			
5,000.0	4,898.6	4,982.0	4,836.8	20.1	23.5	-44.22	-574.9	879.8	259.4	225.7	33.76	7.685			
5,100.0	4,995.6	5,081.7	4,932.3	20.6	24.1	-44.41	-590.3	904.0	266.1	231.4	34.67	7.674			
5,200.0	5,092.6	5,181.5	5,027.9	21.1	24.7	-44.60	-605.7	928.2	272.7	237.1	35.59	7.663			
5,210.7	5,103.0	5,192.2	5,038.2	21.2	24.8	-44.62	-607.4	930.8	273.4	237.7	35.69	7.662			
5,300.0	5,189.9	5,285.5	5,127.7	21.6	25.3	-44.73	-621.5	953.0	279.9	243.5	36.39	7.692			
5,400.0	5,288.0	5,394.1	5,232.8	21.9	25.8	-44.73	-636.2	976.1	286.9	249.9	36.98	7.759			
5,500.0	5,386.6	5,503.1	5,339.2	22.2	26.2	-44.66	-648.7	995.8	293.3	255.8	37.47	7.827			
5,600.0	5,485.8	5,612.2	5,446.6	22.4	26.5	-44.53	-659.1	1,012.1	298.9	261.1	37.85	7.897			
5,700.0	5,585.4	5,721.7	5,555.0	22.7	26.8	-44.32	-667.2	1,024.9	303.9	265.8	38.15	7.968			
5,800.0	5,685.2	5,831.3	5,664.0	22.8	27.0	-44.05	-673.2	1,034.3	308.3	269.9	38.34	8.041			
5,900.0	5,785.2	5,941.2	5,773.7	22.9	27.2	-43.71	-676.9	1,040.2	311.9	273.5	38.44	8.115			
5,914.8	5,800.0	5,957.5	5,789.9	23.0	27.2	89.40	-677.3	1,040.7	312.4	274.0	38.45	8.126			
6,000.0	5,885.2	6,051.2	5,883.7	23.1	27.3	89.60	-678.4	1,042.5	314.0	275.4	38.62	8.132			
6,088.7	5,973.9	6,141.5	5,973.9	23.2	27.4	89.61	-678.4	1,042.5	314.0	275.2	38.84	8.085			
6,100.0	5,985.2	6,152.7	5,985.2	23.2	27.4	89.62	-678.4	1,042.5	314.0	275.2	38.86	8.081			
6,146.2	6,031.3	6,198.9	6,031.3	23.2	27.5	90.00	-678.4	1,042.5	314.0	275.2	38.82	8.089			
6,150.0	6,035.1	6,202.7	6,035.1	23.2	27.5	90.05	-678.4	1,042.5	314.0	275.2	38.81	8.092			
6,200.0	6,084.8	6,252.6	6,085.0	23.2	27.5	90.92	-677.6	1,042.5	314.1	275.5	38.55	8.146			
6,250.0	6,134.0	6,302.8	6,135.1	23.2	27.5	91.81	-673.6	1,042.5	314.2	276.0	38.24	8.217			
6,300.0	6,182.5	6,353.4	6,185.2	23.2	27.5	92.69	-666.2	1,042.5	314.4	276.5	37.87	8.302			
6,350.0	6,230.1	6,404.3	6,234.9	23.1	27.5	93.57	-655.4	1,042.5	314.6	277.2	37.46	8.399			
6,400.0	6,276.6	6,455.6	6,284.2	23.0	27.5	94.43	-641.3	1,042.5	315.0	278.0	37.03	8.507			
6,450.0	6,321.9	6,507.2	6,332.7	22.9	27.4	95.27	-623.8	1,042.5	315.4	278.8	36.57	8.625			
6,500.0	6,365.6	6,559.1	6,380.2	22.8	27.3	96.09	-602.9	1,042.5	315.8	279.7	36.10	8.750			
6,550.0	6,407.7	6,611.4	6,426.5	22.7	27.2	96.88	-578.6	1,042.5	316.3	280.7	35.62	8.879			
6,600.0	6,447.9	6,664.0	6,471.3	22.5	27.1	97.65	-551.1	1,042.5	316.9	281.7	35.16	9.011			
6,650.0	6,486.0	6,716.9	6,514.3	22.4	27.0	98.37	-520.3	1,042.5	317.4	282.7	34.72	9.143			
6,700.0	6,522.0	6,770.1	6,555.3	22.2	26.8	99.07	-486.4	1,042.5	318.0	283.7	34.31	9.269			
6,750.0	6,555.7	6,823.6	6,594.1	22.0	26.7	99.72	-449.6	1,042.5	318.6	284.7	33.94	9.388			
6,800.0	6,586.8	6,877.4	6,630.4	21.9	26.5	100.32	-409.9	1,042.5	319.2	285.6	33.62	9.495			
6,850.0	6,615.3	6,931.5	6,664.0	21.7	26.4	100.88	-367.5	1,042.5	319.8	286.4	33.36	9.585			
6,900.0	6,641.1	6,985.8	6,694.6	21.5	26.2	101.39	-322.7	1,042.5	320.4	287.2	33.18	9.656			
6,950.0	6,664.0	7,040.3	6,722.1	21.3	26.0	101.85	-275.6	1,042.5	320.9	287.8	33.07	9.703			
7,000.0	6,684.0	7,095.1	6,746.2	21.2	25.9	102.25	-226.4	1,042.5	321.4	288.3	33.05	9.724			
7,050.0	6,700.9	7,150.0	6,766.9	21.0	25.7	102.59	-175.5	1,042.5	321.8	288.7	33.12	9.716			
7,100.0	6,714.7	7,205.1	6,783.8	20.8	25.6	102.88	-123.1	1,042.5	322.1	288.9	33.29	9.677			
7,150.0	6,725.3	7,260.4	6,796.9	20.7	25.4	103.11	-69.5	1,042.5	322.4	288.9	33.56	9.609			
7,200.0	6,732.7	7,315.7	6,806.2	20.5	25.3	103.28	-14.9	1,042.5	322.7	288.7	33.92	9.513			
7,250.0	6,736.9	7,371.1	6,811.5	20.4	25.2	103.39	40.2	1,042.5	322.8	288.4	34.37	9.391			
7,289.9	6,737.9	7,415.4	6,812.8	20.3	25.1	103.43	84.4	1,042.5	322.9	288.1	34.79	9.279			
7,300.0	6,737.9	7,425.7	6,812.8	20.2	25.1	103.43	94.8	1,042.5	322.9	288.0	34.90	9.251			
7,400.0	6,737.7	7,525.7	6,812.6	20.0	24.9	103.42	194.8	1,042.5	322.8	286.8	36.09	8.946			
7,500.0	6,737.5	7,625.7	6,812.4	20.1	25.0	103.41	294.8	1,042.5	322.8	285.2	37.60	8.585			
7,600.0	6,737.4	7,725.7	6,812.2	21.2	25.2	103.40	394.8	1,042.5	322.8	283.4	39.42	8.189			
7,700.0	6,737.2	7,825.7	6,812.0	22.3	25.6	103.39	494.8	1,042.5	322.8	281.3	41.50	7.779			
7,800.0	6,737.1	7,925.7	6,811.8	23.6	26.4	103.38	594.8	1,042.5	322.8	279.0	43.80	7.370			
7,900.0	6,736.9	8,025.7	6,811.6	25.0	27.4	103.37	694.8	1,042.5	322.8	276.5	46.29	6.973			
8,000.0	6,736.8	8,125.7	6,811.4	26.4	28.6	103.36	794.8	1,042.5	322.8	273.8	48.94	6.595			
8,100.0	6,736.6	8,225.7	6,811.1	27.8	29.9	103.35	894.8	1,042.5	322.8	271.0	51.73	6.239			
8,200.0	6,736.4	8,325.7	6,810.9	29.3	31.3	103.34	994.8	1,042.5	322.7	268.1	54.64	5.907			
8,300.0	6,736.3	8,425.7	6,810.7	30.9	32.7	103.34	1,094.8	1,042.5	322.7	265.1	57.64	5.599			

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 7L-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 7L-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												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,736.1	8,525.7	6,810.5	32.5	34.2	103.33	1,194.8	1,042.5	322.7	262.0	60.73	5.314	
8,500.0	6,736.0	8,625.7	6,810.3	34.1	35.7	103.32	1,294.8	1,042.5	322.7	258.8	63.89	5.051	
8,600.0	6,735.8	8,725.7	6,810.1	35.7	37.3	103.31	1,394.8	1,042.5	322.7	255.6	67.11	4.809	
8,700.0	6,735.7	8,825.7	6,809.9	37.4	38.9	103.30	1,494.8	1,042.5	322.7	252.3	70.38	4.585	
8,800.0	6,735.5	8,925.7	6,809.7	39.1	40.6	103.29	1,594.8	1,042.5	322.7	249.0	73.70	4.378	
8,900.0	6,735.3	9,025.7	6,809.5	40.8	42.2	103.28	1,694.8	1,042.5	322.7	245.6	77.06	4.187	
9,000.0	6,735.2	9,125.7	6,809.3	42.5	43.9	103.27	1,794.8	1,042.5	322.6	242.2	80.46	4.010	
9,100.0	6,735.0	9,225.7	6,809.0	44.2	45.6	103.26	1,894.8	1,042.5	322.6	238.7	83.88	3.846	
9,200.0	6,734.9	9,325.7	6,808.8	46.0	47.3	103.25	1,994.8	1,042.5	322.6	235.3	87.34	3.694	
9,300.0	6,734.7	9,425.7	6,808.6	47.7	49.0	103.24	2,094.8	1,042.5	322.6	231.8	90.82	3.552	
9,400.0	6,734.6	9,525.7	6,808.4	49.5	50.7	103.24	2,194.8	1,042.5	322.6	228.3	94.32	3.420	
9,500.0	6,734.4	9,625.7	6,808.2	51.3	52.5	103.23	2,294.8	1,042.5	322.6	224.7	97.83	3.297	
9,600.0	6,734.2	9,725.7	6,808.0	53.1	54.3	103.22	2,394.8	1,042.5	322.6	221.2	101.37	3.182	
9,700.0	6,734.1	9,825.7	6,807.8	54.9	56.0	103.21	2,494.8	1,042.5	322.6	217.6	104.92	3.074	
9,800.0	6,733.9	9,925.7	6,807.6	56.7	57.8	103.20	2,594.7	1,042.5	322.5	214.1	108.49	2.973	
9,900.0	6,733.8	10,025.7	6,807.4	58.5	59.6	103.19	2,694.7	1,042.5	322.5	210.5	112.07	2.878	
10,000.0	6,733.6	10,125.7	6,807.2	60.3	61.4	103.18	2,794.7	1,042.5	322.5	206.9	115.66	2.789	
10,100.0	6,733.5	10,225.7	6,807.0	62.2	63.2	103.17	2,894.7	1,042.5	322.5	203.3	119.26	2.704	
10,200.0	6,733.3	10,325.7	6,806.7	64.0	65.0	103.16	2,994.7	1,042.5	322.5	199.6	122.87	2.625	
10,300.0	6,733.1	10,425.7	6,806.5	65.8	66.8	103.15	3,094.7	1,042.5	322.5	196.0	126.49	2.550	
10,400.0	6,733.0	10,525.7	6,806.3	67.7	68.6	103.15	3,194.7	1,042.5	322.5	192.4	130.12	2.478	
10,500.0	6,732.8	10,625.7	6,806.1	69.5	70.5	103.14	3,294.7	1,042.5	322.5	188.7	133.75	2.411	
10,600.0	6,732.7	10,725.7	6,805.9	71.3	72.3	103.13	3,394.7	1,042.5	322.4	185.1	137.39	2.347	
10,700.0	6,732.5	10,825.7	6,805.7	73.2	74.1	103.12	3,494.7	1,042.5	322.4	181.4	141.04	2.286	
10,800.0	6,732.4	10,925.7	6,805.5	75.1	76.0	103.11	3,594.7	1,042.5	322.4	177.7	144.70	2.228	
10,900.0	6,732.2	11,025.7	6,805.3	76.9	77.8	103.10	3,694.7	1,042.5	322.4	174.1	148.36	2.173	
11,000.0	6,732.0	11,125.7	6,805.1	78.8	79.6	103.09	3,794.7	1,042.5	322.4	170.4	152.02	2.121	
11,100.0	6,731.9	11,225.7	6,804.9	80.6	81.5	103.08	3,894.7	1,042.5	322.4	166.7	155.69	2.071	
11,200.0	6,731.7	11,325.7	6,804.6	82.5	83.3	103.07	3,994.7	1,042.5	322.4	163.0	159.37	2.023	
11,300.0	6,731.6	11,425.7	6,804.4	84.4	85.2	103.06	4,094.7	1,042.5	322.4	159.3	163.04	1.977	
11,400.0	6,731.4	11,525.7	6,804.2	86.2	87.0	103.05	4,194.7	1,042.5	322.4	155.6	166.73	1.933	
11,500.0	6,731.3	11,625.7	6,804.0	88.1	88.9	103.05	4,294.7	1,042.5	322.3	151.9	170.41	1.892	
11,600.0	6,731.1	11,725.7	6,803.8	90.0	90.8	103.04	4,394.7	1,042.5	322.3	148.2	174.10	1.851	
11,700.0	6,730.9	11,825.7	6,803.6	91.9	92.6	103.03	4,494.7	1,042.5	322.3	144.5	177.80	1.813	
11,800.0	6,730.8	11,925.7	6,803.4	93.7	94.5	103.02	4,594.7	1,042.5	322.3	140.8	181.49	1.776	
11,900.0	6,730.6	12,025.7	6,803.2	95.6	96.4	103.01	4,694.7	1,042.5	322.3	137.1	185.19	1.740	
12,000.0	6,730.5	12,125.7	6,803.0	97.5	98.2	103.00	4,794.7	1,042.5	322.3	133.4	188.89	1.706	
12,100.0	6,730.3	12,225.7	6,802.8	99.4	100.1	102.99	4,894.7	1,042.5	322.3	129.7	192.60	1.673	
12,200.0	6,730.2	12,325.7	6,802.6	101.3	102.0	102.98	4,994.7	1,042.5	322.3	126.0	196.30	1.642	
12,300.0	6,730.0	12,425.7	6,802.3	103.2	103.9	102.97	5,094.7	1,042.5	322.2	122.2	200.01	1.611	
12,400.0	6,729.8	12,525.7	6,802.1	105.0	105.7	102.96	5,194.7	1,042.5	322.2	118.5	203.72	1.582	
12,500.0	6,729.7	12,625.7	6,801.9	106.9	107.6	102.95	5,294.7	1,042.5	322.2	114.8	207.44	1.553	
12,600.0	6,729.5	12,725.7	6,801.7	108.8	109.5	102.95	5,394.7	1,042.5	322.2	111.1	211.15	1.526	
12,700.0	6,729.4	12,825.7	6,801.5	110.7	111.4	102.94	5,494.7	1,042.5	322.2	107.3	214.87	1.500 Level 3	
12,800.0	6,729.2	12,925.7	6,801.3	112.6	113.2	102.93	5,594.7	1,042.5	322.2	103.6	218.59	1.474 Level 3	
12,900.0	6,729.1	13,025.7	6,801.1	114.5	115.1	102.92	5,694.7	1,042.5	322.2	99.9	222.31	1.449 Level 3	
13,000.0	6,728.9	13,125.7	6,800.9	116.4	117.0	102.91	5,794.7	1,042.5	322.2	96.1	226.03	1.425 Level 3	
13,100.0	6,728.7	13,225.7	6,800.7	118.3	118.9	102.90	5,894.7	1,042.5	322.2	92.4	229.76	1.402 Level 3	
13,200.0	6,728.6	13,325.7	6,800.5	120.2	120.8	102.89	5,994.7	1,042.5	322.1	88.7	233.48	1.380 Level 3	
13,300.0	6,728.4	13,425.7	6,800.3	122.1	122.7	102.88	6,094.7	1,042.5	322.1	84.9	237.21	1.358 Level 3	
13,400.0	6,728.3	13,525.7	6,800.0	124.0	124.6	102.87	6,194.7	1,042.5	322.1	81.2	240.94	1.337 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 7L-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 7L-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
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
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
13,500.0	6,728.1	13,625.7	6,799.8	125.9	126.5	102.86	6,294.7	1,042.5	322.1	77.4	244.67	1.316	Level 3
13,600.0	6,728.0	13,725.7	6,799.6	127.8	128.3	102.86	6,394.7	1,042.5	322.1	73.7	248.40	1.297	Level 3
13,700.0	6,727.8	13,825.7	6,799.4	129.6	130.2	102.85	6,494.7	1,042.5	322.1	69.9	252.13	1.277	Level 3
13,800.0	6,727.6	13,925.7	6,799.2	131.5	132.1	102.84	6,594.7	1,042.5	322.1	66.2	255.86	1.259	Level 3
13,900.0	6,727.5	14,025.7	6,799.0	133.4	134.0	102.83	6,694.7	1,042.5	322.1	62.5	259.60	1.241	Level 2
14,000.0	6,727.3	14,125.7	6,798.8	135.3	135.9	102.82	6,794.7	1,042.5	322.0	58.7	263.34	1.223	Level 2
14,100.0	6,727.2	14,225.7	6,798.6	137.2	137.8	102.81	6,894.7	1,042.5	322.0	55.0	267.07	1.206	Level 2
14,200.0	6,727.0	14,325.7	6,798.4	139.1	139.7	102.80	6,994.7	1,042.5	322.0	51.2	270.81	1.189	Level 2
14,300.0	6,726.9	14,425.7	6,798.2	141.0	141.6	102.79	7,094.7	1,042.5	322.0	47.5	274.55	1.173	Level 2
14,400.0	6,726.7	14,525.7	6,797.9	143.0	143.5	102.78	7,194.7	1,042.5	322.0	43.7	278.29	1.157	Level 2
14,500.0	6,726.5	14,625.7	6,797.7	144.9	145.4	102.77	7,294.7	1,042.5	322.0	40.0	282.03	1.142	Level 2
14,600.0	6,726.4	14,725.7	6,797.5	146.8	147.3	102.76	7,394.7	1,042.5	322.0	36.2	285.77	1.127	Level 2
14,700.0	6,726.2	14,825.7	6,797.3	148.7	149.2	102.76	7,494.7	1,042.5	322.0	32.4	289.52	1.112	Level 2
14,800.0	6,726.1	14,925.7	6,797.1	150.6	151.1	102.75	7,594.7	1,042.5	321.9	28.7	293.26	1.098	Level 2
14,900.0	6,725.9	15,025.7	6,796.9	152.5	153.0	102.74	7,694.7	1,042.5	321.9	24.9	297.01	1.084	Level 2
15,000.0	6,725.8	15,125.7	6,796.7	154.4	154.9	102.73	7,794.7	1,042.5	321.9	21.2	300.75	1.070	Level 2
15,100.0	6,725.6	15,225.7	6,796.5	156.3	156.8	102.72	7,894.7	1,042.5	321.9	17.4	304.50	1.057	Level 2
15,200.0	6,725.4	15,325.7	6,796.3	158.2	158.7	102.71	7,994.7	1,042.5	321.9	13.7	308.25	1.044	Level 2
15,300.0	6,725.3	15,425.7	6,796.1	160.1	160.6	102.70	8,094.7	1,042.5	321.9	9.9	312.00	1.032	Level 2
15,400.0	6,725.1	15,525.7	6,795.9	162.0	162.5	102.69	8,194.7	1,042.5	321.9	6.1	315.74	1.019	Level 2
15,500.0	6,725.0	15,625.7	6,795.6	163.9	164.4	102.68	8,294.7	1,042.5	321.9	2.4	319.49	1.007	Level 2
15,600.0	6,724.8	15,725.7	6,795.4	165.8	166.3	102.67	8,394.7	1,042.5	321.9	-1.4	323.24	0.996	Level 1
15,700.0	6,724.7	15,825.7	6,795.2	167.7	168.2	102.66	8,494.7	1,042.5	321.8	-5.2	327.00	0.984	Level 1
15,800.0	6,724.5	15,925.7	6,795.0	169.6	170.1	102.66	8,594.7	1,042.5	321.8	-8.9	330.75	0.973	Level 1
15,900.0	6,724.3	16,025.7	6,794.8	171.5	172.0	102.65	8,694.7	1,042.5	321.8	-12.7	334.50	0.962	Level 1
16,000.0	6,724.2	16,125.7	6,794.6	173.4	173.9	102.64	8,794.7	1,042.5	321.8	-16.4	338.25	0.951	Level 1
16,100.0	6,724.0	16,225.7	6,794.4	175.3	175.8	102.63	8,894.7	1,042.5	321.8	-20.2	342.01	0.941	Level 1
16,200.0	6,723.9	16,325.7	6,794.2	177.3	177.7	102.62	8,994.7	1,042.5	321.8	-24.0	345.76	0.931	Level 1
16,300.0	6,723.7	16,425.7	6,794.0	179.2	179.6	102.61	9,094.7	1,042.5	321.8	-27.7	349.52	0.921	Level 1
16,400.0	6,723.6	16,525.7	6,793.8	181.1	181.5	102.60	9,194.7	1,042.5	321.8	-31.5	353.27	0.911	Level 1
16,500.0	6,723.4	16,625.7	6,793.5	183.0	183.4	102.59	9,294.7	1,042.5	321.8	-35.3	357.03	0.901	Level 1
16,600.0	6,723.2	16,725.7	6,793.3	184.9	185.3	102.58	9,394.7	1,042.5	321.7	-39.0	360.78	0.892	Level 1
16,700.0	6,723.1	16,825.7	6,793.1	186.8	187.2	102.57	9,494.7	1,042.5	321.7	-42.8	364.54	0.883	Level 1
16,759.2	6,723.0	16,884.9	6,793.0	187.9	188.4	102.57	9,553.9	1,042.5	321.7	-45.0	366.76	0.877	Level 1, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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: 7062-UNKNOWN													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
1,600.0	1,597.5	1,584.5	1,584.5	3.4	31.7	-39.27	-89.3	826.3	794.0	759.2	34.80	22.812			
1,700.0	1,696.1	1,683.1	1,683.1	3.7	33.7	-40.18	-89.3	826.3	780.9	743.9	36.93	21.146			
1,800.0	1,794.2	1,781.2	1,781.2	4.1	35.6	-41.27	-89.3	826.3	766.0	726.9	39.05	19.615			
1,900.0	1,891.7	1,878.7	1,878.7	4.4	37.6	-42.54	-89.3	826.3	749.4	708.2	41.18	18.197			
1,938.8	1,929.4	1,916.4	1,916.4	4.6	38.3	-43.08	-89.3	826.3	742.5	700.5	42.01	17.673			
2,000.0	1,988.7	1,975.7	1,975.7	4.9	39.5	-43.87	-89.3	826.3	731.5	688.1	43.41	16.852			
2,100.0	2,085.7	2,072.7	2,072.7	5.3	41.5	-45.20	-89.3	826.3	713.9	668.2	45.71	15.617			
2,200.0	2,182.7	2,169.7	2,169.7	5.7	43.4	-46.60	-89.3	826.3	696.7	648.7	48.05	14.501			
2,300.0	2,279.7	2,266.7	2,266.7	6.2	45.3	-48.06	-89.3	826.3	680.0	629.6	50.40	13.490			
2,400.0	2,376.7	2,363.7	2,363.7	6.7	47.3	-49.60	-89.3	826.3	663.7	610.9	52.79	12.572			
2,500.0	2,473.7	2,460.7	2,460.7	7.2	49.2	-51.21	-89.3	826.3	647.9	592.7	55.19	11.738			
2,600.0	2,570.7	2,557.7	2,557.7	7.7	51.2	-52.89	-89.3	826.3	632.6	575.0	57.62	10.979			
2,700.0	2,667.7	2,654.7	2,654.7	8.2	53.1	-54.66	-89.3	826.3	618.0	557.9	60.08	10.286			
2,800.0	2,764.7	2,751.7	2,751.7	8.7	55.0	-56.50	-89.3	826.3	603.9	541.4	62.55	9.655			
2,900.0	2,861.7	2,848.7	2,848.7	9.2	57.0	-58.43	-89.3	826.3	590.6	525.5	65.04	9.079			
3,000.0	2,958.7	2,945.7	2,945.7	9.7	58.9	-60.44	-89.3	826.3	577.9	510.3	67.56	8.554			
3,100.0	3,055.7	3,042.7	3,042.7	10.2	60.9	-62.53	-89.3	826.3	566.0	495.9	70.09	8.075			
3,200.0	3,152.7	3,139.7	3,139.7	10.7	62.8	-64.71	-89.3	826.3	554.9	482.3	72.64	7.640			
3,300.0	3,249.7	3,236.7	3,236.7	11.2	64.7	-66.96	-89.3	826.3	544.7	469.5	75.19	7.244			
3,400.0	3,346.7	3,333.7	3,333.7	11.7	66.7	-69.29	-89.3	826.3	535.4	457.6	77.76	6.885			
3,500.0	3,443.7	3,430.7	3,430.7	12.2	68.6	-71.70	-89.3	826.3	527.1	446.7	80.33	6.561			
3,600.0	3,540.7	3,527.6	3,527.6	12.8	70.6	-74.18	-89.3	826.3	519.7	436.8	82.90	6.269			
3,700.0	3,637.7	3,624.6	3,624.6	13.3	72.5	-76.72	-89.3	826.3	513.4	427.9	85.47	6.007			
3,800.0	3,734.6	3,721.6	3,721.6	13.8	74.4	-79.31	-89.3	826.3	508.2	420.2	88.03	5.773			
3,900.0	3,831.6	3,818.6	3,818.6	14.3	76.4	-81.95	-89.3	826.3	504.1	413.6	90.57	5.566			
4,000.0	3,928.6	3,915.6	3,915.6	14.8	78.3	-84.62	-89.3	826.3	501.2	408.1	93.10	5.384			
4,100.0	4,025.6	4,012.6	4,012.6	15.4	80.3	-87.32	-89.3	826.3	499.4	403.8	95.60	5.224			
4,199.0	4,121.6	4,108.6	4,108.6	15.9	82.2	-90.00	-89.3	826.3	498.9	400.8	98.05	5.088			
4,200.0	4,122.6	4,109.6	4,109.6	15.9	82.2	-90.03	-89.3	826.3	498.9	400.8	98.07	5.087			
4,300.0	4,219.6	4,206.6	4,206.6	16.4	84.1	-92.74	-89.3	826.3	499.5	399.0	100.51	4.969			
4,400.0	4,316.6	4,303.6	4,303.6	16.9	86.1	-95.43	-89.3	826.3	501.3	398.3	102.92	4.871			
4,500.0	4,413.6	4,400.6	4,400.6	17.5	88.0	-98.10	-89.3	826.3	504.2	398.9	105.28	4.789			
4,600.0	4,510.6	4,497.6	4,497.6	18.0	90.0	-100.74	-89.3	826.3	508.3	400.7	107.61	4.724			
4,700.0	4,607.6	4,594.6	4,594.6	18.5	91.9	-103.33	-89.3	826.3	513.5	403.6	109.90	4.673			
4,800.0	4,704.6	4,691.6	4,691.6	19.0	93.8	-105.87	-89.3	826.3	519.9	407.7	112.15	4.635			
4,900.0	4,801.6	4,788.6	4,788.6	19.6	95.8	-108.35	-89.3	826.3	527.2	412.8	114.37	4.610			
5,000.0	4,898.6	4,885.6	4,885.6	20.1	97.7	-110.75	-89.3	826.3	535.6	419.0	116.55	4.595			
5,100.0	4,995.6	4,982.6	4,982.6	20.6	99.7	-113.09	-89.3	826.3	544.9	426.2	118.70	4.591			
5,200.0	5,092.6	5,079.6	5,079.6	21.1	101.6	-115.34	-89.3	826.3	555.1	434.3	120.82	4.595			
5,210.7	5,103.0	5,090.0	5,090.0	21.2	101.8	-115.58	-89.3	826.3	556.3	435.2	121.05	4.596			
5,300.0	5,189.9	5,176.9	5,176.9	21.6	103.5	-117.57	-89.3	826.3	565.6	442.6	123.01	4.598			
5,400.0	5,288.0	5,274.9	5,274.9	21.9	105.5	-119.44	-89.3	826.3	575.1	449.9	125.17	4.594			
5,500.0	5,386.6	5,373.6	5,373.6	22.2	107.5	-120.95	-89.3	826.3	583.3	455.9	127.36	4.580			
5,600.0	5,485.8	5,472.8	5,472.8	22.4	109.5	-122.11	-89.3	826.3	590.0	460.4	129.54	4.554			
5,700.0	5,585.4	5,572.4	5,572.4	22.7	111.4	-122.95	-89.3	826.3	595.0	463.2	131.72	4.517			
5,800.0	5,685.2	5,672.2	5,672.2	22.8	113.4	-123.46	-89.3	826.3	598.1	464.2	133.87	4.468			
5,900.0	5,785.2	5,772.2	5,772.2	22.9	115.4	-123.66	-89.3	826.3	599.4	463.4	135.99	4.407			
5,914.8	5,800.0	5,787.0	5,787.0	23.0	115.7	9.39	-89.3	826.3	599.4	463.1	136.30	4.397			
6,000.0	5,885.2	5,872.2	5,872.2	23.1	117.4	9.39	-89.3	826.3	599.4	461.3	138.11	4.340			
6,088.7	5,973.9	5,960.9	5,960.9	23.2	119.2	9.39	-89.3	826.3	599.4	459.4	139.99	4.281			
6,100.0	5,985.2	5,972.2	5,972.2	23.2	119.4	9.39	-89.3	826.3	599.3	459.1	140.21	4.274			

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 7L-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 7L-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: 7062-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,150.0	6,035.1	6,022.1	6,022.1	23.2	120.4	9.46	-89.3	826.3	597.0	456.2	140.78	4.240		
6,200.0	6,084.8	6,071.8	6,071.8	23.2	121.4	9.62	-89.3	826.3	591.4	450.6	140.77	4.201		
6,250.0	6,134.0	6,121.0	6,121.0	23.2	122.4	9.88	-89.3	826.3	582.7	442.5	140.17	4.157		
6,300.0	6,182.5	6,169.5	6,169.5	23.2	123.4	10.25	-89.3	826.3	570.8	431.8	138.96	4.107		
6,350.0	6,230.1	6,217.1	6,217.1	23.1	124.3	10.74	-89.3	826.3	555.8	418.6	137.17	4.052		
6,400.0	6,276.6	6,263.6	6,263.6	23.0	125.3	11.39	-89.3	826.3	537.8	403.0	134.80	3.989		
6,450.0	6,321.9	6,308.9	6,308.9	22.9	126.2	12.21	-89.3	826.3	516.8	384.9	131.91	3.918		
6,500.0	6,365.6	6,352.6	6,352.6	22.8	127.1	13.26	-89.3	826.3	493.1	364.6	128.54	3.836		
6,550.0	6,407.7	6,394.7	6,394.7	22.7	127.9	14.59	-89.3	826.3	466.6	341.8	124.79	3.739		
6,600.0	6,447.9	6,434.9	6,434.9	22.5	128.7	16.29	-89.3	826.3	437.6	316.8	120.82	3.622		
6,650.0	6,486.0	6,473.0	6,473.0	22.4	129.5	18.48	-89.3	826.3	406.2	289.3	116.88	3.476		
6,700.0	6,522.0	6,509.0	6,509.0	22.2	130.2	21.32	-89.3	826.3	372.6	259.2	113.40	3.286		
6,750.0	6,555.7	6,542.6	6,542.6	22.0	130.9	25.06	-89.3	826.3	337.1	226.1	111.03	3.036		
6,800.0	6,586.8	6,573.8	6,573.8	21.9	131.5	30.02	-89.3	826.3	299.9	189.1	110.81	2.706		
6,850.0	6,615.3	6,602.3	6,602.3	21.7	132.0	36.59	-89.3	826.3	261.4	147.4	113.96	2.294		
6,900.0	6,641.1	6,628.1	6,628.1	21.5	132.6	45.16	-89.3	826.3	222.3	100.9	121.35	1.831		
6,950.0	6,664.0	6,651.0	6,651.0	21.3	133.0	55.75	-89.3	826.3	183.4	51.3	132.06	1.389 Level 3		
7,000.0	6,684.0	6,670.9	6,670.9	21.2	133.4	67.58	-89.3	826.3	146.7	4.0	142.71	1.028 Level 2		
7,050.0	6,700.9	6,687.9	6,687.9	21.0	133.8	78.92	-89.3	826.3	115.9	-33.6	149.50	0.775 Level 1		
7,100.0	6,714.7	6,701.7	6,701.7	20.8	134.0	87.96	-89.3	826.3	98.8	-52.9	151.70	0.651 Level 1		
7,114.6	6,718.1	6,705.1	6,705.1	20.8	134.1	90.00	-89.3	826.3	97.8	-54.0	151.76	0.644 Level 1, CC, ES, SF		
7,150.0	6,725.3	6,712.3	6,712.3	20.7	134.2	93.66	-89.3	826.3	103.7	-47.8	151.48	0.685 Level 1		
7,200.0	6,732.7	6,719.7	6,719.7	20.5	134.4	95.69	-89.3	826.3	128.9	-22.3	151.25	0.852 Level 1		
7,250.0	6,736.9	6,723.9	6,723.9	20.4	134.5	93.97	-89.3	826.3	165.8	13.8	152.02	1.090 Level 2		
7,289.9	6,737.9	6,724.9	6,724.9	20.3	134.5	89.84	-89.3	826.3	199.4	46.6	152.81	1.305 Level 3		
7,300.0	6,737.9	6,724.8	6,724.8	20.2	134.5	89.83	-89.3	826.3	208.2	55.4	152.87	1.362 Level 3		
7,400.0	6,737.7	6,724.7	6,724.7	20.0	134.5	89.74	-89.3	826.3	300.2	146.7	153.50	1.956		
7,500.0	6,737.5	6,724.5	6,724.5	20.1	134.5	89.65	-89.3	826.3	396.1	241.8	154.30	2.567		
7,600.0	6,737.4	6,724.4	6,724.4	21.2	134.5	89.55	-89.3	826.3	493.6	338.4	155.24	3.180		
7,700.0	6,737.2	6,724.2	6,724.2	22.3	134.5	89.46	-89.3	826.3	592.0	435.7	156.32	3.787		
7,800.0	6,737.1	6,724.1	6,724.1	23.6	134.5	89.37	-89.3	826.3	690.8	533.3	157.50	4.386		
7,900.0	6,736.9	6,723.9	6,723.9	25.0	134.5	89.28	-89.3	826.3	789.9	631.1	158.78	4.975		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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												Offset Well Error:	0.0 ft
Dunn Pad Sec.7-T5N-R64W - Dunn 7PD (AL) - Wellbore #1 - Design #1													
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	
1,600.0	1,597.5	1,603.5	1,603.5	3.4	3.5	-42.86	-39.7	834.1	799.7	792.9	6.84	117.001	
1,700.0	1,696.1	1,702.1	1,702.1	3.7	3.7	-43.82	-39.7	834.1	787.3	780.0	7.30	107.815	
1,800.0	1,794.2	1,800.0	1,800.0	4.1	3.9	-44.96	-39.7	834.1	773.3	765.5	7.79	99.210	
1,900.0	1,891.7	1,881.1	1,881.1	4.4	4.1	-46.14	-38.9	834.9	758.7	750.4	8.27	91.698	
1,938.8	1,929.4	1,912.4	1,912.4	4.6	4.2	-46.67	-38.2	835.7	753.3	744.8	8.47	88.944	
2,000.0	1,988.7	1,961.7	1,961.6	4.9	4.3	-47.46	-36.6	837.5	745.2	736.5	8.79	84.758	
2,100.0	2,085.7	2,042.1	2,041.8	5.3	4.5	-48.86	-32.8	841.7	734.4	725.0	9.34	78.600	
2,200.0	2,182.7	2,122.2	2,121.5	5.7	4.6	-50.38	-27.6	847.5	726.5	716.5	9.92	73.223	
2,300.0	2,279.7	2,200.0	2,198.7	6.2	4.8	-51.97	-21.0	854.7	721.6	711.1	10.52	68.601	
2,398.6	2,375.4	2,279.9	2,277.7	6.7	5.0	-53.71	-12.8	863.8	720.0	708.8	11.14	64.608	
2,400.0	2,376.7	2,281.0	2,278.8	6.7	5.0	-53.74	-12.7	864.0	720.0	708.8	11.15	64.557	
2,500.0	2,473.7	2,359.5	2,356.0	7.2	5.2	-55.53	-3.2	874.5	721.7	709.9	11.80	61.149	
2,600.0	2,570.7	2,453.6	2,448.2	7.7	5.5	-57.72	9.2	888.2	726.0	713.5	12.52	57.971	
2,700.0	2,667.7	2,549.1	2,541.8	8.2	5.8	-59.91	21.8	902.1	731.5	718.2	13.26	55.149	
2,800.0	2,764.7	2,644.6	2,635.5	8.7	6.1	-62.07	34.4	916.0	738.1	724.0	14.02	52.655	
2,900.0	2,861.7	2,740.1	2,729.1	9.2	6.4	-64.20	47.0	929.9	745.8	731.0	14.78	50.453	
3,000.0	2,958.7	2,835.6	2,822.8	9.7	6.8	-66.28	59.5	943.8	754.6	739.0	15.55	48.515	
3,100.0	3,055.7	2,931.1	2,916.4	10.2	7.1	-68.31	72.1	957.7	764.5	748.1	16.33	46.808	
3,200.0	3,152.7	3,026.6	3,010.1	10.7	7.4	-70.29	84.7	971.6	775.3	758.2	17.11	45.307	
3,300.0	3,249.7	3,122.1	3,103.7	11.2	7.8	-72.22	97.3	985.5	787.2	769.3	17.90	43.985	
3,400.0	3,346.7	3,217.6	3,197.4	11.7	8.2	-74.10	109.9	999.4	799.9	781.2	18.68	42.821	
7,150.0	6,725.3	6,795.8	6,731.3	20.7	19.4	82.05	421.4	1,343.9	778.0	742.9	35.09	22.172	
7,200.0	6,732.7	6,803.2	6,738.7	20.5	19.4	85.41	421.4	1,343.9	748.7	713.5	35.26	21.238	
7,250.0	6,736.9	6,807.3	6,742.9	20.4	19.4	88.22	421.4	1,343.9	721.5	686.1	35.38	20.394	
7,289.9	6,737.9	6,808.3	6,743.9	20.3	19.4	90.05	421.4	1,343.9	701.5	666.0	35.47	19.776	
7,300.0	6,737.9	6,808.3	6,743.8	20.2	19.4	90.05	421.4	1,343.9	696.7	661.2	35.53	19.612	
7,400.0	6,737.7	6,808.1	6,743.7	20.0	19.4	90.03	421.4	1,343.9	655.8	619.6	36.16	18.137	
7,500.0	6,737.5	6,808.0	6,743.5	20.1	19.4	90.02	421.4	1,343.9	628.3	591.3	36.96	17.001	
7,600.0	6,737.4	6,807.8	6,743.4	21.2	19.4	90.00	421.4	1,343.9	615.9	578.0	37.90	16.251	
7,626.8	6,737.3	6,807.8	6,743.3	21.5	19.4	90.00	421.4	1,343.9	615.3	577.2	38.19	16.113 CC, ES	
7,700.0	6,737.2	6,807.7	6,743.2	22.3	19.4	89.99	421.4	1,343.9	619.7	580.7	38.98	15.899 SF	
7,800.0	6,737.1	6,807.5	6,743.1	23.6	19.4	89.97	421.4	1,343.9	639.3	599.1	40.16	15.917	
7,900.0	6,736.9	6,807.4	6,742.9	25.0	19.4	89.96	421.4	1,343.9	673.3	631.8	41.44	16.247	
8,000.0	6,736.8	6,807.2	6,742.7	26.4	19.4	89.95	421.4	1,343.9	719.7	676.9	42.80	16.815	
8,100.0	6,736.6	6,807.0	6,742.6	27.8	19.4	89.93	421.4	1,343.9	776.3	732.1	44.23	17.551	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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 Existing Wells - Sec.7-T5N-R64W - Dunn #23-7 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7275-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,600.0	6,737.4	6,722.4	6,722.4	21.2	134.4	90.22	1,050.3	995.3	707.9	552.7	155.17	4.562		
7,700.0	6,737.2	6,722.2	6,722.2	22.3	134.4	90.19	1,050.3	995.3	616.4	460.2	156.24	3.945		
7,800.0	6,737.1	6,722.1	6,722.1	23.6	134.4	90.15	1,050.3	995.3	528.1	370.6	157.43	3.354		
7,900.0	6,736.9	6,721.9	6,721.9	25.0	134.4	90.12	1,050.3	995.3	444.6	285.9	158.70	2.802		
8,000.0	6,736.8	6,721.7	6,721.7	26.4	134.4	90.09	1,050.3	995.3	369.5	209.5	160.06	2.309		
8,100.0	6,736.6	6,721.6	6,721.6	27.8	134.4	90.05	1,050.3	995.3	308.9	147.4	161.49	1.913		
8,200.0	6,736.4	6,721.4	6,721.4	29.3	134.4	90.02	1,050.3	995.3	272.5	109.6	162.97	1.672		
8,255.7	6,736.4	6,721.3	6,721.3	30.2	134.4	90.00	1,050.3	995.3	266.8	102.9	163.83	1.628	CC, ES, SF	
8,300.0	6,736.3	6,721.3	6,721.3	30.9	134.4	89.99	1,050.3	995.3	270.4	105.9	164.51	1.644		
8,400.0	6,736.1	6,721.1	6,721.1	32.5	134.4	89.95	1,050.3	995.3	303.3	137.2	166.08	1.826		
8,500.0	6,736.0	6,721.0	6,721.0	34.1	134.4	89.92	1,050.3	995.3	361.7	194.0	167.69	2.157		
8,600.0	6,735.8	6,720.8	6,720.8	35.7	134.4	89.88	1,050.3	995.3	435.5	266.2	169.33	2.572		
8,700.0	6,735.7	6,720.6	6,720.6	37.4	134.4	89.85	1,050.3	995.3	518.2	347.2	171.00	3.030		
8,800.0	6,735.5	6,720.5	6,720.5	39.1	134.4	89.82	1,050.3	995.3	606.1	433.4	172.70	3.510		
8,900.0	6,735.3	6,720.3	6,720.3	40.8	134.4	89.78	1,050.3	995.3	697.3	522.9	174.41	3.998		
9,000.0	6,735.2	6,720.2	6,720.2	42.5	134.4	89.75	1,050.3	995.3	790.6	614.5	176.14	4.489		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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 Existing Wells - Sec.7-T5N-R64W - Little Will #7 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7000-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
14,400.0	6,726.7	6,711.7	6,711.7	143.0	134.2	90.29	7,913.6	951.6	752.8	476.0	276.85	2.719		
14,500.0	6,726.5	6,711.5	6,711.5	144.9	134.2	90.25	7,913.6	951.6	658.0	379.2	278.75	2.361		
14,600.0	6,726.4	6,711.4	6,711.4	146.8	134.2	90.21	7,913.6	951.6	564.9	284.3	280.66	2.013		
14,700.0	6,726.2	6,711.2	6,711.2	148.7	134.2	90.17	7,913.6	951.6	474.7	192.1	282.56	1.680		
14,800.0	6,726.1	6,711.1	6,711.1	150.6	134.2	90.13	7,913.6	951.6	389.3	104.8	284.47	1.368	Level 3	
14,900.0	6,725.9	6,710.9	6,710.9	152.5	134.2	90.09	7,913.6	951.6	312.6	26.2	286.38	1.092	Level 2	
15,000.0	6,725.8	6,710.8	6,710.8	154.4	134.2	90.05	7,913.6	951.6	252.8	-35.5	288.28	0.877	Level 1	
15,100.0	6,725.6	6,710.6	6,710.6	156.3	134.2	90.01	7,913.6	951.6	223.9	-66.3	290.19	0.771	Level 1	
15,119.0	6,725.6	6,710.6	6,710.6	156.6	134.2	90.00	7,913.6	951.6	223.0	-67.5	290.55	0.768	Level 1, CC, ES, SF	
15,200.0	6,725.4	6,710.4	6,710.4	158.2	134.2	89.97	7,913.6	951.6	237.3	-54.8	292.10	0.812	Level 1	
15,300.0	6,725.3	6,710.3	6,710.3	160.1	134.2	89.93	7,913.6	951.6	287.2	-6.8	294.00	0.977	Level 1	
15,400.0	6,725.1	6,710.1	6,710.1	162.0	134.2	89.89	7,913.6	951.6	358.7	62.8	295.91	1.212	Level 2	
15,500.0	6,725.0	6,710.0	6,710.0	163.9	134.2	89.85	7,913.6	951.6	441.4	143.6	297.82	1.482	Level 3	
15,600.0	6,724.8	6,709.8	6,709.8	165.8	134.2	89.81	7,913.6	951.6	530.2	230.4	299.73	1.769		
15,700.0	6,724.7	6,709.7	6,709.7	167.7	134.2	89.77	7,913.6	951.6	622.3	320.7	301.63	2.063		
15,800.0	6,724.5	6,709.5	6,709.5	169.6	134.2	89.73	7,913.6	951.6	716.6	413.0	303.54	2.361		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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 Existing Wells - Sec.7-T5N-R64W - Silva #1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6976-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,700.0	6,730.9	6,691.9	6,691.9	91.9	133.8	-90.86	5,242.8	650.1	752.3	527.1	225.25	3.340		
11,800.0	6,730.8	6,691.8	6,691.8	93.7	133.8	-90.74	5,242.8	650.1	653.0	425.8	227.13	2.875		
11,900.0	6,730.6	6,691.6	6,691.6	95.6	133.8	-90.63	5,242.8	650.1	553.8	324.8	229.01	2.418		
12,000.0	6,730.5	6,691.5	6,691.5	97.5	133.8	-90.51	5,242.8	650.1	455.0	224.1	230.90	1.971		
12,100.0	6,730.3	6,691.3	6,691.3	99.4	133.8	-90.40	5,242.8	650.1	356.9	124.2	232.78	1.533		
12,200.0	6,730.2	6,691.2	6,691.2	101.3	133.8	-90.29	5,242.8	650.1	260.3	25.6	234.67	1.109	Level 2	
12,300.0	6,730.0	6,691.0	6,691.0	103.2	133.8	-90.17	5,242.8	650.1	167.7	-68.9	236.55	0.709	Level 1	
12,400.0	6,729.8	6,690.8	6,690.8	105.0	133.8	-90.06	5,242.8	650.1	92.0	-146.4	238.44	0.386	Level 1	
12,448.2	6,729.8	6,690.8	6,690.8	105.9	133.8	-90.00	5,242.8	650.1	78.4	-161.0	239.35	0.327	Level 1, CC, ES, SF	
12,500.0	6,729.7	6,690.7	6,690.7	106.9	133.8	-89.94	5,242.8	650.1	93.9	-146.4	240.32	0.391	Level 1	
12,600.0	6,729.5	6,690.5	6,690.5	108.8	133.8	-89.83	5,242.8	650.1	170.8	-71.4	242.21	0.705	Level 1	
12,700.0	6,729.4	6,690.4	6,690.4	110.7	133.8	-89.71	5,242.8	650.1	263.7	19.6	244.09	1.080	Level 2	
12,800.0	6,729.2	6,690.2	6,690.2	112.6	133.8	-89.60	5,242.8	650.1	360.4	114.4	245.98	1.465	Level 3	
12,900.0	6,729.1	6,690.1	6,690.1	114.5	133.8	-89.48	5,242.8	650.1	458.5	210.6	247.87	1.850		
13,000.0	6,728.9	6,689.9	6,689.9	116.4	133.8	-89.37	5,242.8	650.1	557.3	307.6	249.75	2.231		
13,100.0	6,728.7	6,689.7	6,689.7	118.3	133.8	-89.25	5,242.8	650.1	656.5	404.8	251.64	2.609		
13,200.0	6,728.6	6,689.6	6,689.6	120.2	133.8	-89.14	5,242.8	650.1	755.8	502.3	253.52	2.981		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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		Existing Wells - Sec.7-T5N-R64W - Silva #23-6 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program:		7100-UNKNOWN											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
12,900.0	6,729.1	6,699.1	6,699.1	114.5	134.0	90.29	6,398.4	950.5	738.0	490.0	248.06	2.975			
13,000.0	6,728.9	6,698.9	6,698.9	116.4	134.0	90.24	6,398.4	950.5	643.4	393.4	249.96	2.574			
13,100.0	6,728.7	6,698.7	6,698.7	118.3	134.0	90.20	6,398.4	950.5	550.6	298.7	251.86	2.186			
13,200.0	6,728.6	6,698.6	6,698.6	120.2	134.0	90.16	6,398.4	950.5	460.9	207.1	253.76	1.816			
13,300.0	6,728.4	6,698.4	6,698.4	122.1	134.0	90.12	6,398.4	950.5	376.3	120.7	255.65	1.472	Level 3		
13,400.0	6,728.3	6,698.3	6,698.3	124.0	134.0	90.08	6,398.4	950.5	301.4	43.8	257.55	1.170	Level 2		
13,500.0	6,728.1	6,698.1	6,698.1	125.9	134.0	90.04	6,398.4	950.5	245.1	-14.4	259.45	0.945	Level 1		
13,600.0	6,728.0	6,698.0	6,698.0	127.8	134.0	90.00	6,398.4	950.5	222.0	-39.3	261.35	0.850	Level 1		
13,603.9	6,728.0	6,697.9	6,697.9	127.8	134.0	90.00	6,398.4	950.5	222.0	-39.4	261.43	0.849	Level 1, CC, ES, SF		
13,700.0	6,727.8	6,697.8	6,697.8	129.6	134.0	89.96	6,398.4	950.5	241.9	-21.3	263.26	0.919	Level 1		
13,800.0	6,727.6	6,697.6	6,697.6	131.5	134.0	89.92	6,398.4	950.5	296.2	31.1	265.16	1.117	Level 2		
13,900.0	6,727.5	6,697.5	6,697.5	133.4	133.9	89.88	6,398.4	950.5	370.1	103.1	267.06	1.386	Level 3		
14,000.0	6,727.3	6,697.3	6,697.3	135.3	133.9	89.84	6,398.4	950.5	454.1	185.1	268.96	1.688			
14,100.0	6,727.2	6,697.2	6,697.2	137.2	133.9	89.80	6,398.4	950.5	543.5	272.7	270.86	2.007			
14,200.0	6,727.0	6,697.0	6,697.0	139.1	133.9	89.76	6,398.4	950.5	636.1	363.4	272.77	2.332			
14,300.0	6,726.9	6,696.9	6,696.9	141.0	133.9	89.72	6,398.4	950.5	730.7	456.0	274.67	2.660			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-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 7L-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)

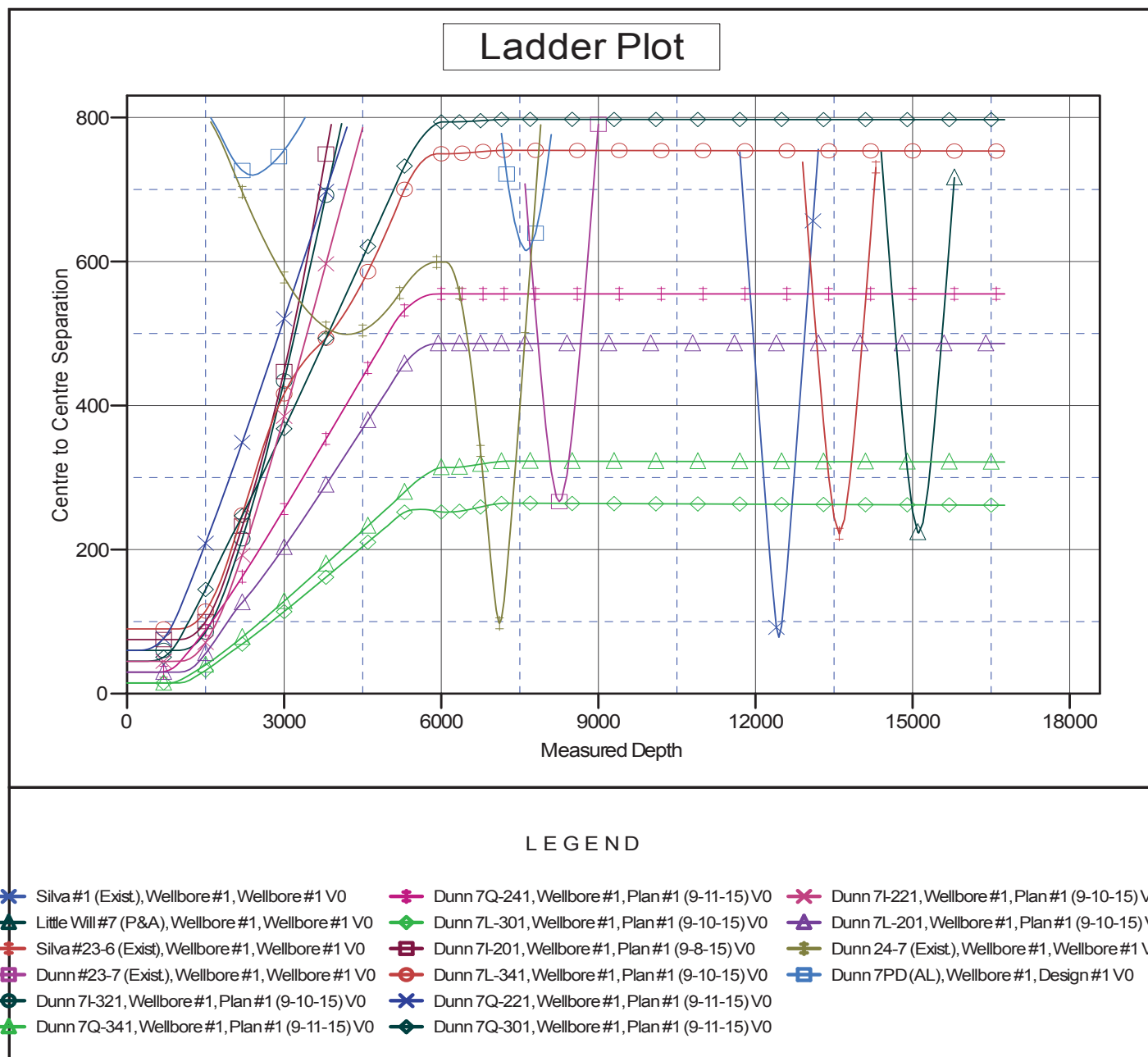
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Dunn 7L-221

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.58°



Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)	Coordinates are relative to: Dunn 7L-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°

