

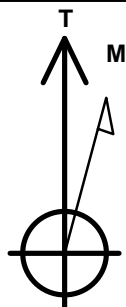
# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Wiedeman 29K-443**

Surface Location: Wiedeman 29K-HZ Pad Sec.29-T4N-R66W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4762.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1346135.39 3193228.78 40.281470 -104.807410  
 RKB-15' WELL @ 4777.0ft (RKB-15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 2133'FNL & 735'FWL, SEC.32	7287.0	-4364.3	-240.0	Point



Azimuths to True North  
 Magnetic North: 8.61°

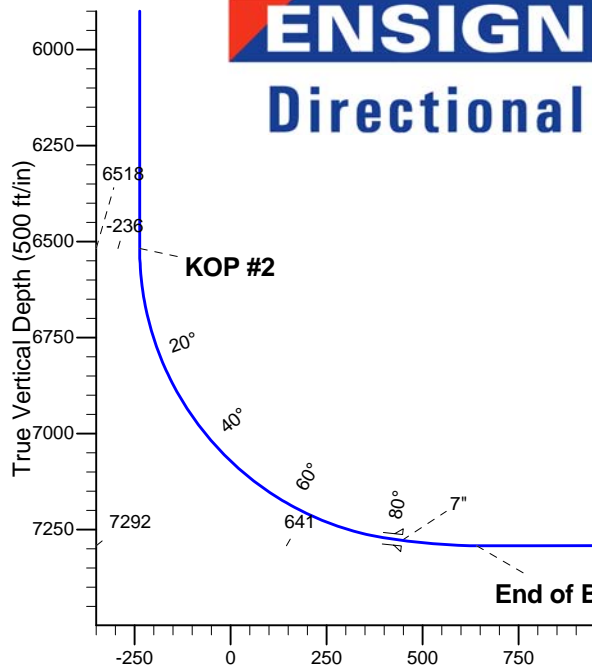
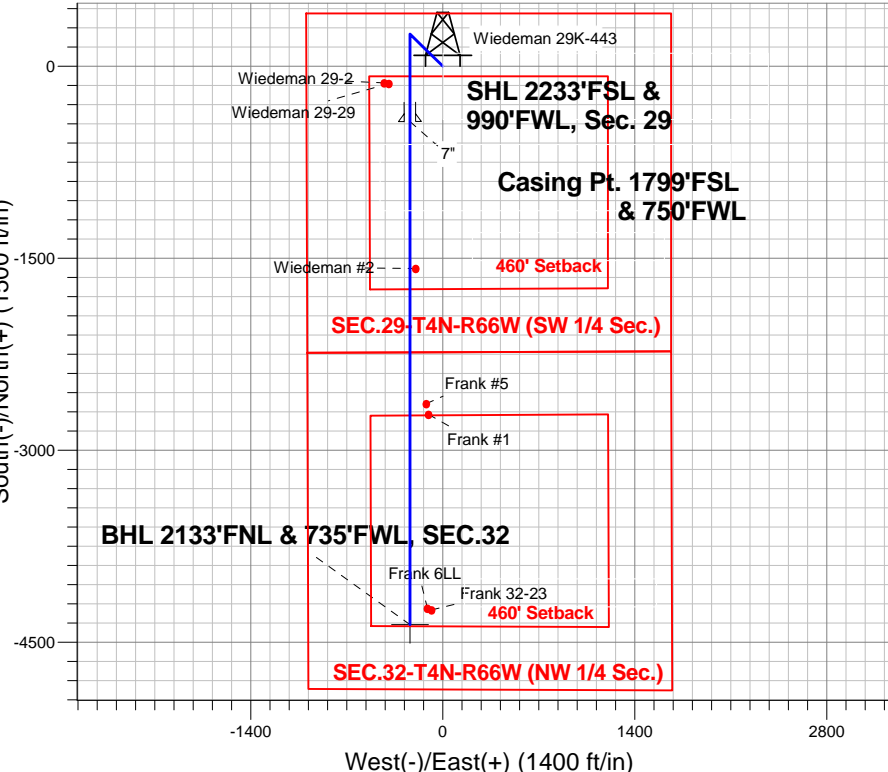
Magnetic Field  
 Strength: 52894.3snT  
 Dip Angle: 66.88°  
 Date: 6/12/2013  
 Model: IGRF2010

Wiedeman 29K-HZ Pad Sec.29-T4N-R66W  
 Wiedeman 29K-443  
 Plan #1 (06-12-13)  
 11:53, June 13 2013

## ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP #1
6518.4	6536.6	KOP #2
7292.2	7852.2	End of Build

South(-)/North(+) (1500 ft/in)



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1810.0	6.20	316.17	1809.4	12.1	-11.6	2.00	316.17	-11.4	
4	4708.1	6.20	316.17	4690.6	237.9	-228.4	0.00	0.00	-225.0	
5	5018.2	0.00	0.00	5000.0	250.0	-240.0	2.00	180.00	-236.4	
6	6536.6	0.00	0.00	6518.4	250.0	-240.0	0.00	0.00	-236.4	
7	7656.6	84.00	180.00	7278.2	-434.1	-240.0	7.50	180.00	446.6	
8	7730.6	84.00	180.00	7285.9	-507.7	-240.0	0.00	0.00	520.1	
9	7852.2	90.08	180.00	7292.2	-629.1	-240.0	5.00	0.00	641.3	
10	11587.5	90.08	180.00	7287.0	-4364.3	-240.0	0.00	0.00	4370.9	BHL 2133'FNL & 735'FWL, SEC.32

BHL 2133'FNL & 735'FWL, SEC.32

Vertical Section at 183.15° (500 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.29-T4N-R66W**

**Wiedeman 29K-HZ Pad Sec.29-T4N-R66W**

**Wiedeman 29K-443**

**Wellbore #1**

**Plan: Plan #1 (06-12-13)**

## **Standard Planning Report**

**13 June, 2013**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Project:</b>	SEC.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (06-12-13)		

<b>Project</b>	SEC.29-T4N-R66W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		Wiedeman 29K-HZ Pad Sec.29-T4N-R66W			
Site Position:		Northing:	1,346,126.76 ft	Latitude:	40.281440
From:	Lat/Long	Easting:	3,193,519.01 ft	Longitude:	-104.806370
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.45 °

Well	Wiedeman 29K-443					
Well Position	+N-S	10.9 ft	Northing:	1,346,135.39 ft	Latitude:	40.281470
	+E-W	-290.2 ft	Easting:	3,193,228.78 ft	Longitude:	-104.807410
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,762.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/12/2013	8.61	66.88	52,894

<b>Design</b>	Plan #1 (06-12-13)			
<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	183.15

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,810.0	6.20	316.17	1,809.4	12.1	-11.6	2.00	2.00	0.00	316.17	
4,708.1	6.20	316.17	4,690.6	237.9	-228.4	0.00	0.00	0.00	0.00	
5,018.2	0.00	0.00	5,000.0	250.0	-240.0	2.00	-2.00	0.00	180.00	
6,536.6	0.00	0.00	6,518.4	250.0	-240.0	0.00	0.00	0.00	0.00	
7,656.6	84.00	180.00	7,278.2	-434.1	-240.0	7.50	7.50	0.00	180.00	
7,730.6	84.00	180.00	7,285.9	-507.7	-240.0	0.00	0.00	0.00	0.00	
7,852.2	90.08	180.00	7,292.2	-629.1	-240.0	5.00	5.00	0.00	0.00	
11,587.5	90.08	180.00	7,287.0	-4,364.3	-240.0	0.00	0.00	0.00	0.00	BHL 2133'FNL & 75

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Project:</b>	SEC.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (06-12-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,600.0	2.00	316.17	1,600.0	1.3	-1.2	-1.2	2.00	2.00	0.00
1,700.0	4.00	316.17	1,699.8	5.0	-4.8	-4.8	2.00	2.00	0.00
1,800.0	6.00	316.17	1,799.5	11.3	-10.9	-10.7	2.00	2.00	0.00
1,810.0	6.20	316.17	1,809.4	12.1	-11.6	-11.4	2.00	2.00	0.00
1,900.0	6.20	316.17	1,898.9	19.1	-18.3	-18.1	0.00	0.00	0.00
2,000.0	6.20	316.17	1,998.3	26.9	-25.8	-25.4	0.00	0.00	0.00
2,100.0	6.20	316.17	2,097.7	34.7	-33.3	-32.8	0.00	0.00	0.00
2,200.0	6.20	316.17	2,197.1	42.5	-40.8	-40.2	0.00	0.00	0.00
2,300.0	6.20	316.17	2,296.5	50.3	-48.3	-47.5	0.00	0.00	0.00
2,400.0	6.20	316.17	2,395.9	58.1	-55.7	-54.9	0.00	0.00	0.00
2,500.0	6.20	316.17	2,495.4	65.9	-63.2	-62.3	0.00	0.00	0.00
2,600.0	6.20	316.17	2,594.8	73.6	-70.7	-69.7	0.00	0.00	0.00
2,700.0	6.20	316.17	2,694.2	81.4	-78.2	-77.0	0.00	0.00	0.00
2,800.0	6.20	316.17	2,793.6	89.2	-85.7	-84.4	0.00	0.00	0.00
2,900.0	6.20	316.17	2,893.0	97.0	-93.1	-91.8	0.00	0.00	0.00
3,000.0	6.20	316.17	2,992.4	104.8	-100.6	-99.1	0.00	0.00	0.00
3,100.0	6.20	316.17	3,091.8	112.6	-108.1	-106.5	0.00	0.00	0.00
3,200.0	6.20	316.17	3,191.3	120.4	-115.6	-113.9	0.00	0.00	0.00
3,300.0	6.20	316.17	3,290.7	128.2	-123.1	-121.2	0.00	0.00	0.00
3,400.0	6.20	316.17	3,390.1	136.0	-130.5	-128.6	0.00	0.00	0.00
3,500.0	6.20	316.17	3,489.5	143.8	-138.0	-136.0	0.00	0.00	0.00
3,600.0	6.20	316.17	3,588.9	151.6	-145.5	-143.3	0.00	0.00	0.00
3,700.0	6.20	316.17	3,688.3	159.4	-153.0	-150.7	0.00	0.00	0.00
3,800.0	6.20	316.17	3,787.8	167.1	-160.5	-158.1	0.00	0.00	0.00
3,900.0	6.20	316.17	3,887.2	174.9	-167.9	-165.5	0.00	0.00	0.00
4,000.0	6.20	316.17	3,986.6	182.7	-175.4	-172.8	0.00	0.00	0.00
4,100.0	6.20	316.17	4,086.0	190.5	-182.9	-180.2	0.00	0.00	0.00
4,200.0	6.20	316.17	4,185.4	198.3	-190.4	-187.6	0.00	0.00	0.00
4,300.0	6.20	316.17	4,284.8	206.1	-197.9	-194.9	0.00	0.00	0.00
4,400.0	6.20	316.17	4,384.2	213.9	-205.3	-202.3	0.00	0.00	0.00
4,500.0	6.20	316.17	4,483.7	221.7	-212.8	-209.7	0.00	0.00	0.00
4,600.0	6.20	316.17	4,583.1	229.5	-220.3	-217.0	0.00	0.00	0.00
4,700.0	6.20	316.17	4,682.5	237.3	-227.8	-224.4	0.00	0.00	0.00
4,708.1	6.20	316.17	4,690.6	237.9	-228.4	-225.0	0.00	0.00	0.00
4,800.0	4.36	316.17	4,782.0	244.0	-234.2	-230.8	2.00	-2.00	0.00
4,900.0	2.36	316.17	4,881.9	248.2	-238.3	-234.8	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Project:</b>	SEC.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (06-12-13)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.0	0.36	316.17	4,981.8	250.0	-240.0	-236.4	2.00	-2.00	0.00
5,018.2	0.00	0.00	5,000.0	250.0	-240.0	-236.4	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,081.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,200.0	0.00	0.00	5,181.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,300.0	0.00	0.00	5,281.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,381.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,500.0	0.00	0.00	5,481.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,581.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,681.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,781.8	250.0	-240.0	-236.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,881.8	250.0	-240.0	-236.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,981.8	250.0	-240.0	-236.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,081.8	250.0	-240.0	-236.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,181.8	250.0	-240.0	-236.4	0.00	0.00	0.00
6,300.0	0.00	0.00	6,281.8	250.0	-240.0	-236.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,381.8	250.0	-240.0	-236.4	0.00	0.00	0.00
6,500.0	0.00	0.00	6,481.8	250.0	-240.0	-236.4	0.00	0.00	0.00
6,536.6	0.00	0.00	6,518.4	250.0	-240.0	-236.4	0.00	0.00	0.00
<b>KOP #2</b>									
6,600.0	4.75	180.00	6,581.8	247.4	-240.0	-233.8	7.50	7.50	0.00
6,700.0	12.25	180.00	6,680.6	232.6	-240.0	-219.1	7.50	7.50	0.00
6,800.0	19.75	180.00	6,776.6	205.0	-240.0	-191.6	7.50	7.50	0.00
6,900.0	27.25	180.00	6,868.3	165.2	-240.0	-151.8	7.50	7.50	0.00
7,000.0	34.75	180.00	6,953.9	113.7	-240.0	-100.4	7.50	7.50	0.00
7,100.0	42.25	180.00	7,032.1	51.5	-240.0	-38.2	7.50	7.50	0.00
7,200.0	49.75	180.00	7,101.5	-20.4	-240.0	33.5	7.50	7.50	0.00
7,300.0	57.25	180.00	7,161.0	-100.7	-240.0	113.7	7.50	7.50	0.00
7,400.0	64.75	180.00	7,209.4	-188.1	-240.0	201.0	7.50	7.50	0.00
7,500.0	72.25	180.00	7,246.0	-281.1	-240.0	293.9	7.50	7.50	0.00
7,600.0	79.75	180.00	7,270.2	-378.1	-240.0	390.7	7.50	7.50	0.00
7,656.6	84.00	180.00	7,278.2	-434.1	-240.0	446.6	7.50	7.50	0.00
<b>7"</b>									
7,700.0	84.00	180.00	7,282.7	-477.2	-240.0	489.7	0.00	0.00	0.00
7,730.6	84.00	180.00	7,285.9	-507.7	-240.0	520.1	0.00	0.00	0.00
7,800.0	87.47	180.00	7,291.1	-576.9	-240.0	589.2	5.00	5.00	0.00
7,852.2	90.08	180.00	7,292.2	-629.1	-240.0	641.3	5.00	5.00	0.00
<b>End of Build</b>									
7,900.0	90.08	180.00	7,292.1	-676.9	-240.0	689.0	0.00	0.00	0.00
8,000.0	90.08	180.00	7,292.0	-776.9	-240.0	788.9	0.00	0.00	0.00
8,100.0	90.08	180.00	7,291.9	-876.9	-240.0	888.7	0.00	0.00	0.00
8,200.0	90.08	180.00	7,291.7	-976.9	-240.0	988.6	0.00	0.00	0.00
8,300.0	90.08	180.00	7,291.6	-1,076.9	-240.0	1,088.4	0.00	0.00	0.00
8,400.0	90.08	180.00	7,291.5	-1,176.9	-240.0	1,188.3	0.00	0.00	0.00
8,500.0	90.08	180.00	7,291.3	-1,276.9	-240.0	1,288.1	0.00	0.00	0.00
8,600.0	90.08	180.00	7,291.2	-1,376.9	-240.0	1,388.0	0.00	0.00	0.00
8,700.0	90.08	180.00	7,291.0	-1,476.9	-240.0	1,487.8	0.00	0.00	0.00
8,800.0	90.08	180.00	7,290.9	-1,576.9	-240.0	1,587.7	0.00	0.00	0.00
8,900.0	90.08	180.00	7,290.8	-1,676.9	-240.0	1,687.5	0.00	0.00	0.00
9,000.0	90.08	180.00	7,290.6	-1,776.9	-240.0	1,787.4	0.00	0.00	0.00
9,100.0	90.08	180.00	7,290.5	-1,876.9	-240.0	1,887.2	0.00	0.00	0.00
9,200.0	90.08	180.00	7,290.3	-1,976.9	-240.0	1,987.0	0.00	0.00	0.00
9,300.0	90.08	180.00	7,290.2	-2,076.9	-240.0	2,086.9	0.00	0.00	0.00
9,400.0	90.08	180.00	7,290.1	-2,176.9	-240.0	2,186.7	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Project:</b>	SEC.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (06-12-13)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,500.0	90.08	180.00	7,289.9	-2,276.9	-240.0	2,286.6	0.00	0.00	0.00
9,600.0	90.08	180.00	7,289.8	-2,376.9	-240.0	2,386.4	0.00	0.00	0.00
9,700.0	90.08	180.00	7,289.6	-2,476.9	-240.0	2,486.3	0.00	0.00	0.00
9,800.0	90.08	180.00	7,289.5	-2,576.9	-240.0	2,586.1	0.00	0.00	0.00
9,900.0	90.08	180.00	7,289.4	-2,676.9	-240.0	2,686.0	0.00	0.00	0.00
10,000.0	90.08	180.00	7,289.2	-2,776.9	-240.0	2,785.8	0.00	0.00	0.00
10,100.0	90.08	180.00	7,289.1	-2,876.9	-240.0	2,885.7	0.00	0.00	0.00
10,200.0	90.08	180.00	7,288.9	-2,976.9	-240.0	2,985.5	0.00	0.00	0.00
10,300.0	90.08	180.00	7,288.8	-3,076.9	-240.0	3,085.4	0.00	0.00	0.00
10,400.0	90.08	180.00	7,288.7	-3,176.9	-240.0	3,185.2	0.00	0.00	0.00
10,500.0	90.08	180.00	7,288.5	-3,276.9	-240.0	3,285.1	0.00	0.00	0.00
10,600.0	90.08	180.00	7,288.4	-3,376.9	-240.0	3,384.9	0.00	0.00	0.00
10,700.0	90.08	180.00	7,288.2	-3,476.9	-240.0	3,484.8	0.00	0.00	0.00
10,800.0	90.08	180.00	7,288.1	-3,576.9	-240.0	3,584.6	0.00	0.00	0.00
10,900.0	90.08	180.00	7,288.0	-3,676.9	-240.0	3,684.5	0.00	0.00	0.00
11,000.0	90.08	180.00	7,287.8	-3,776.9	-240.0	3,784.3	0.00	0.00	0.00
11,100.0	90.08	180.00	7,287.7	-3,876.9	-240.0	3,884.2	0.00	0.00	0.00
11,200.0	90.08	180.00	7,287.5	-3,976.9	-240.0	3,984.0	0.00	0.00	0.00
11,300.0	90.08	180.00	7,287.4	-4,076.9	-240.0	4,083.9	0.00	0.00	0.00
11,400.0	90.08	180.00	7,287.3	-4,176.9	-240.0	4,183.7	0.00	0.00	0.00
11,500.0	90.08	180.00	7,287.1	-4,276.9	-240.0	4,283.6	0.00	0.00	0.00
11,587.5	90.08	180.00	7,287.0	-4,364.3	-240.0	4,370.9	0.00	0.00	0.00
BHL 2133'FNL & 735'FWL, SEC.32									

## Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,656.6	7,278.2	7"	7	7-1/2

## Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.0	1,500.0	0.0	0.0	KOP #1
6,536.6	6,518.4	250.0	-240.0	KOP #2
7,852.2	7,292.2	-629.1	-240.0	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.29-T4N-R66W**

**Wiedeman 29K-HZ Pad Sec.29-T4N-R66W**

**Wiedeman 29K-443**

**Wellbore #1**

**Plan #1 (06-12-13)**

## **Anticollision Report**

**13 June, 2013**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (06-12-13)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	6/13/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,587.5	Plan #1 (06-12-13) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Pad						
Frank #1 - Wellbore #1 - Wellbore #1	9,944.4	7,279.3	136.7	73.3	2.154	CC, ES, SF
Frank #5 - Wellbore #1 - Wellbore #1	9,860.7	7,278.4	120.0	58.1	1.937	CC, ES, SF
Frank 32-23 - Wellbore #1 - Wellbore #1	11,470.9	7,281.2	159.1	67.1	1.729	CC, ES, SF
Frank 6LL - Wellbore #1 - Wellbore #1	11,460.0	7,281.2	128.4	36.6	1.399	Level 3, CC, ES, SF
Wiedeman #2 - Wellbore #1 - Wellbore #1	8,804.2	7,273.9	41.9	-1.2	0.972	Level 1, CC, ES, SF
Wiedeman 29-2 - Wellbore #1 - Wellbore #1	7,335.6	7,165.5	186.9	162.8	7.772	CC, ES, SF
Wiedeman 29-29 - Wellbore #1 - Wellbore #1	7,339.8	7,166.6	153.4	129.3	6.374	CC, ES, SF
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W						
Wiedeman 29G-323 - Wellbore #1 - Plan #1 (06-12-13)	1,000.0	1,000.0	30.7	26.4	7.187	CC, ES
Wiedeman 29G-323 - Wellbore #1 - Plan #1 (06-12-13)	11,587.5	11,512.6	354.4	191.8	2.179	SF
Wiedeman 29G-403 - Wellbore #1 - Plan #1 (06-12-13)	400.0	400.0	61.4	59.8	39.013	CC, ES
Wiedeman 29G-403 - Wellbore #1 - Plan #1 (06-12-13)	11,587.5	11,636.3	661.4	489.1	3.840	SF
Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)	1,500.0	1,500.0	229.0	222.5	35.140	CC, ES
Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)	11,587.5	11,397.6	394.3	247.1	2.678	SF

<b>Offset Design</b> Existing Wells Pad - Frank #1 - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7400-MWD												<b>Offset Well Error:</b>	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	
9,000.0	7,290.6	7,280.6	7,280.6	38.4	8.2	-90.55	-2,721.3	-103.2	954.3	907.9	46.48	20.534	
9,100.0	7,290.5	7,280.5	7,280.5	40.2	8.2	-90.49	-2,721.3	-103.2	855.5	807.3	48.23	17.738	
9,200.0	7,290.3	7,280.3	7,280.3	41.9	8.2	-90.44	-2,721.3	-103.2	756.9	706.9	50.00	15.139	
9,300.0	7,290.2	7,280.2	7,280.2	43.7	8.2	-90.38	-2,721.3	-103.2	658.8	607.1	51.78	12.724	
9,400.0	7,290.1	7,280.1	7,280.1	45.5	8.2	-90.32	-2,721.3	-103.2	561.4	507.8	53.57	10.479	
9,500.0	7,289.9	7,279.9	7,279.9	47.3	8.2	-90.26	-2,721.3	-103.2	465.1	409.7	55.38	8.398	
9,600.0	7,289.8	7,279.8	7,279.8	49.1	8.2	-90.20	-2,721.3	-103.2	370.6	313.5	57.19	6.481	
9,700.0	7,289.6	7,279.6	7,279.6	50.9	8.2	-90.14	-2,721.3	-103.2	280.1	221.1	59.01	4.748	
9,800.0	7,289.5	7,279.5	7,279.5	52.8	8.2	-90.08	-2,721.3	-103.2	198.9	138.1	60.83	3.270	
9,900.0	7,289.4	7,279.4	7,279.4	54.6	8.2	-90.03	-2,721.3	-103.2	143.8	81.1	62.67	2.295	
9,944.4	7,289.3	7,279.3	7,279.3	55.4	8.2	-90.00	-2,721.3	-103.2	136.7	73.3	63.48	2.154	CC, ES, SF
10,000.0	7,289.2	7,279.2	7,279.2	56.4	8.2	-89.97	-2,721.3	-103.2	147.6	83.1	64.50	2.288	

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad - Frank #1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7400-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,100.0	7,289.1	7,279.1	7,279.1	58.3	8.2	-89.91	-2,721.3	-103.2	207.1	140.7	66.35	3.121	
10,200.0	7,288.9	7,278.9	7,278.9	60.1	8.2	-89.85	-2,721.3	-103.2	289.8	221.6	68.19	4.250	
10,300.0	7,288.8	7,278.8	7,278.8	62.0	8.2	-89.79	-2,721.3	-103.2	380.9	310.9	70.05	5.438	
10,400.0	7,288.7	7,278.7	7,278.7	63.8	8.2	-89.73	-2,721.3	-103.2	475.6	403.7	71.90	6.614	
10,500.0	7,288.5	7,278.5	7,278.5	65.7	8.2	-89.68	-2,721.3	-103.2	572.1	498.3	73.76	7.756	
10,600.0	7,288.4	7,278.4	7,278.4	67.5	8.2	-89.62	-2,721.3	-103.2	669.6	594.0	75.63	8.854	
10,700.0	7,288.2	7,278.2	7,278.2	69.4	8.2	-89.56	-2,721.3	-103.2	767.8	690.3	77.49	9.908	
10,800.0	7,288.1	7,278.1	7,278.1	71.3	8.2	-89.50	-2,721.3	-103.2	866.4	787.0	79.36	10.917	
10,900.0	7,288.0	7,278.0	7,278.0	73.1	8.2	-89.44	-2,721.3	-103.2	965.2	884.0	81.23	11.883	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad - Frank #5 - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft		
Survey Program: 7400-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)			
8,900.0	7,290.8	7,279.8	7,279.8	36.7	8.2	-90.64	-2,637.6	-120.0	968.2	923.4	44.74	21.641		
9,000.0	7,290.6	7,279.6	7,279.6	38.4	8.2	-90.57	-2,637.6	-120.0	869.0	822.6	46.48	18.699		
9,100.0	7,290.5	7,279.5	7,279.5	40.2	8.2	-90.51	-2,637.6	-120.0	770.1	721.9	48.23	15.968		
9,200.0	7,290.3	7,279.3	7,279.3	41.9	8.2	-90.44	-2,637.6	-120.0	671.5	621.5	50.00	13.431		
9,300.0	7,290.2	7,279.2	7,279.2	43.7	8.2	-90.37	-2,637.6	-120.0	573.4	521.6	51.78	11.074		
9,400.0	7,290.1	7,279.1	7,279.1	45.5	8.2	-90.31	-2,637.6	-120.0	476.1	422.5	53.57	8.887		
9,500.0	7,289.9	7,278.9	7,278.9	47.3	8.2	-90.24	-2,637.6	-120.0	380.1	324.8	55.37	6.865		
9,600.0	7,289.8	7,278.8	7,278.8	49.1	8.2	-90.17	-2,637.6	-120.0	287.0	229.8	57.19	5.019		
9,700.0	7,289.6	7,278.6	7,278.6	50.9	8.2	-90.11	-2,637.6	-120.0	200.6	141.6	59.00	3.399		
9,800.0	7,289.5	7,278.5	7,278.5	52.8	8.2	-90.04	-2,637.6	-120.0	134.5	73.7	60.83	2.211		
9,860.7	7,289.4	7,278.4	7,278.4	53.9	8.2	-90.00	-2,637.6	-120.0	120.0	58.1	61.94	1.937 CC, ES, SF		
9,900.0	7,289.4	7,278.4	7,278.4	54.6	8.2	-89.97	-2,637.6	-120.0	126.3	63.6	62.66	2.015		
10,000.0	7,289.2	7,278.2	7,278.2	56.4	8.2	-89.91	-2,637.6	-120.0	183.9	119.4	64.50	2.851		
10,100.0	7,289.1	7,278.1	7,278.1	58.3	8.2	-89.84	-2,637.6	-120.0	267.7	201.4	66.34	4.035		
10,200.0	7,288.9	7,277.9	7,277.9	60.1	8.2	-89.77	-2,637.6	-120.0	359.9	291.7	68.19	5.278		
10,300.0	7,288.8	7,277.8	7,277.8	62.0	8.2	-89.71	-2,637.6	-120.0	455.4	385.3	70.04	6.501		
10,400.0	7,288.7	7,277.7	7,277.7	63.8	8.2	-89.64	-2,637.6	-120.0	552.5	480.6	71.90	7.684		
10,500.0	7,288.5	7,277.5	7,277.5	65.7	8.2	-89.57	-2,637.6	-120.0	650.5	576.7	73.76	8.819		
10,600.0	7,288.4	7,277.4	7,277.4	67.5	8.2	-89.51	-2,637.6	-120.0	749.0	673.4	75.62	9.904		
10,700.0	7,288.2	7,277.2	7,277.2	69.4	8.2	-89.44	-2,637.6	-120.0	847.8	770.3	77.49	10.941		
10,800.0	7,288.1	7,277.1	7,277.1	71.3	8.2	-89.37	-2,637.6	-120.0	946.9	867.6	79.36	11.933		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Pad - Frank 32-23 - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7400-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,500.0	7,288.5	7,282.5	7,282.5	65.7	8.2	-90.49	-4,247.8	-80.9	983.9	910.1	73.78	13.336		
10,600.0	7,288.4	7,282.4	7,282.4	67.5	8.2	-90.44	-4,247.8	-80.9	885.3	809.7	75.64	11.704		
10,700.0	7,288.2	7,282.2	7,282.2	69.4	8.2	-90.39	-4,247.8	-80.9	787.2	709.7	77.51	10.156		
10,800.0	7,288.1	7,282.1	7,282.1	71.3	8.2	-90.34	-4,247.8	-80.9	689.5	610.1	79.38	8.687		
10,900.0	7,288.0	7,282.0	7,282.0	73.1	8.2	-90.29	-4,247.8	-80.9	592.7	511.4	81.25	7.295		
11,000.0	7,287.8	7,281.8	7,281.8	75.0	8.2	-90.24	-4,247.8	-80.9	497.1	413.9	83.12	5.980		
11,100.0	7,287.7	7,281.7	7,281.7	76.9	8.2	-90.19	-4,247.8	-80.9	403.6	318.6	85.00	4.748		
11,200.0	7,287.5	7,281.5	7,281.5	78.8	8.2	-90.14	-4,247.8	-80.9	314.2	227.3	86.88	3.616		
11,300.0	7,287.4	7,281.4	7,281.4	80.7	8.2	-90.09	-4,247.8	-80.9	233.5	144.7	88.76	2.631		
11,400.0	7,287.3	7,281.3	7,281.3	82.5	8.2	-90.04	-4,247.8	-80.9	174.2	83.5	90.64	1.921		
11,470.9	7,287.2	7,281.2	7,281.2	83.9	8.2	-90.00	-4,247.8	-80.9	159.1	67.1	91.98	1.729 CC, ES, SF		
11,500.0	7,287.1	7,281.1	7,281.1	84.4	8.2	-89.99	-4,247.8	-80.9	161.7	69.2	92.52	1.748		
11,587.5	7,287.0	7,281.0	7,281.0	86.1	8.2	-89.94	-4,247.8	-80.9	197.2	103.0	94.17	2.094		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad- Frank 6LL - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7400-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,500.0	7,288.5	7,282.5	7,282.5	65.7	8.2	-90.60	-4,236.9	-111.6	968.5	894.8	73.78	13.128	
10,600.0	7,288.4	7,282.4	7,282.4	67.5	8.2	-90.54	-4,236.9	-111.6	869.5	793.9	75.64	11.495	
10,700.0	7,288.2	7,282.2	7,282.2	69.4	8.2	-90.47	-4,236.9	-111.6	770.8	693.3	77.51	9.944	
10,800.0	7,288.1	7,282.1	7,282.1	71.3	8.2	-90.41	-4,236.9	-111.6	672.4	593.0	79.38	8.471	
10,900.0	7,288.0	7,282.0	7,282.0	73.1	8.2	-90.35	-4,236.9	-111.6	574.5	493.3	81.25	7.071	
11,000.0	7,287.8	7,281.8	7,281.8	75.0	8.2	-90.29	-4,236.9	-111.6	477.6	394.5	83.12	5.745	
11,100.0	7,287.7	7,281.7	7,281.7	76.9	8.2	-90.22	-4,236.9	-111.6	382.2	297.2	85.00	4.497	
11,200.0	7,287.5	7,281.5	7,281.5	78.8	8.2	-90.16	-4,236.9	-111.6	290.0	203.1	86.88	3.338	
11,300.0	7,287.4	7,281.4	7,281.4	80.7	8.2	-90.10	-4,236.9	-111.6	205.1	116.4	88.76	2.311	
11,400.0	7,287.3	7,281.3	7,281.3	82.5	8.2	-90.04	-4,236.9	-111.6	141.7	51.1	90.64	1.563	
11,460.0	7,287.2	7,281.2	7,281.2	83.7	8.2	-90.00	-4,236.9	-111.6	128.4	36.6	91.77	1.399	Level 3, CC, ES, SF
11,500.0	7,287.1	7,281.1	7,281.1	84.4	8.2	-89.98	-4,236.9	-111.6	134.5	41.9	92.52	1.453	Level 3
11,587.5	7,287.0	7,281.0	7,281.0	86.1	8.2	-89.92	-4,236.9	-111.6	180.9	86.7	94.17	1.921	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad - Wiedeman #2 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7400-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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,900.0	7,292.1	7,275.1	7,275.1	21.2	8.2	-91.73	-1,581.1	-198.1	905.2	876.0	29.17	31.031		
8,000.0	7,292.0	7,275.0	7,275.0	22.5	8.2	-91.54	-1,581.1	-198.1	805.3	774.8	30.47	26.427		
8,100.0	7,291.9	7,274.9	7,274.9	23.9	8.2	-91.34	-1,581.1	-198.1	705.5	673.6	31.86	22.143		
8,200.0	7,291.7	7,274.7	7,274.7	25.3	8.2	-91.15	-1,581.1	-198.1	605.7	572.4	33.32	18.179		
8,300.0	7,291.6	7,274.6	7,274.6	26.8	8.2	-90.96	-1,581.1	-198.1	506.0	471.1	34.83	14.526		
8,400.0	7,291.5	7,274.5	7,274.5	28.4	8.2	-90.77	-1,581.1	-198.1	406.4	370.0	36.40	11.166		
8,500.0	7,291.3	7,274.3	7,274.3	30.0	8.2	-90.58	-1,581.1	-198.1	307.1	269.1	38.00	8.081		
8,600.0	7,291.2	7,274.2	7,274.2	31.6	8.2	-90.39	-1,581.1	-198.1	208.5	168.8	39.64	5.259		
8,700.0	7,291.0	7,274.0	7,274.0	33.3	8.2	-90.20	-1,581.1	-198.1	112.3	71.0	41.31	2.719		
8,800.0	7,290.9	7,273.9	7,273.9	35.0	8.2	-90.01	-1,581.1	-198.1	42.1	-0.9	43.00	0.979 Level 1		
8,804.2	7,290.9	7,273.9	7,273.9	35.1	8.2	-90.00	-1,581.1	-198.1	41.9	-1.2	43.08	0.972 Level 1, CC, ES, SF		
8,900.0	7,290.8	7,273.8	7,273.8	36.7	8.2	-89.82	-1,581.1	-198.1	104.5	59.8	44.72	2.337		
9,000.0	7,290.6	7,273.6	7,273.6	38.4	8.2	-89.63	-1,581.1	-198.1	200.2	153.7	46.46	4.309		
9,100.0	7,290.5	7,273.5	7,273.5	40.2	8.2	-89.44	-1,581.1	-198.1	298.7	250.5	48.21	6.197		
9,200.0	7,290.3	7,273.3	7,273.3	41.9	8.2	-89.24	-1,581.1	-198.1	398.0	348.0	49.97	7.964		
9,300.0	7,290.2	7,273.2	7,273.2	43.7	8.2	-89.05	-1,581.1	-198.1	497.5	445.8	51.75	9.614		
9,400.0	7,290.1	7,273.1	7,273.1	45.5	8.2	-88.86	-1,581.1	-198.1	597.2	543.7	53.54	11.155		
9,500.0	7,289.9	7,272.9	7,272.9	47.3	8.2	-88.67	-1,581.1	-198.1	697.0	641.7	55.34	12.596		
9,600.0	7,289.8	7,272.8	7,272.8	49.1	8.2	-88.48	-1,581.1	-198.1	796.9	739.7	57.14	13.945		
9,700.0	7,289.6	7,272.6	7,272.6	50.9	8.2	-88.29	-1,581.1	-198.1	896.8	837.8	58.96	15.211		
9,800.0	7,289.5	7,272.5	7,272.5	52.8	8.2	-88.10	-1,581.1	-198.1	996.7	935.9	60.77	16.399		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-2 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7400-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		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	-107.08	-131.1	-426.9	446.8					
100.0	100.0	86.0	86.0	0.1	0.1	-107.08	-131.1	-426.9	446.6	446.4	0.21	2,134.388		
200.0	200.0	186.0	186.0	0.3	0.2	-107.08	-131.1	-426.9	446.6	446.0	0.55	817.345		
300.0	300.0	286.0	286.0	0.6	0.3	-107.08	-131.1	-426.9	446.6	445.7	0.88	505.452		
400.0	400.0	386.0	386.0	0.8	0.4	-107.08	-131.1	-426.9	446.6	445.4	1.22	365.847		
500.0	500.0	486.0	486.0	1.0	0.5	-107.08	-131.1	-426.9	446.6	445.0	1.56	286.670		
600.0	600.0	586.0	586.0	1.2	0.7	-107.08	-131.1	-426.9	446.6	444.7	1.89	235.666		
700.0	700.0	686.0	686.0	1.5	0.8	-107.08	-131.1	-426.9	446.6	444.3	2.23	200.070		
800.0	800.0	786.0	786.0	1.7	0.9	-107.08	-131.1	-426.9	446.6	444.0	2.57	173.816		
900.0	900.0	886.0	886.0	1.9	1.0	-107.08	-131.1	-426.9	446.6	443.7	2.91	153.653		
1,000.0	1,000.0	986.0	986.0	2.1	1.1	-107.08	-131.1	-426.9	446.6	443.3	3.24	137.682		
1,100.0	1,100.0	1,086.0	1,086.0	2.4	1.2	-107.08	-131.1	-426.9	446.6	443.0	3.58	124.718		
1,200.0	1,200.0	1,186.0	1,186.0	2.6	1.3	-107.08	-131.1	-426.9	446.6	442.7	3.92	113.986		
1,300.0	1,300.0	1,286.0	1,286.0	2.8	1.4	-107.08	-131.1	-426.9	446.6	442.3	4.25	104.954		
1,400.0	1,400.0	1,386.0	1,386.0	3.0	1.6	-107.08	-131.1	-426.9	446.6	442.0	4.59	97.249		
1,500.0	1,500.0	1,486.0	1,486.0	3.3	1.7	-107.08	-131.1	-426.9	446.6	441.6	4.93	90.597		
1,600.0	1,600.0	1,586.0	1,586.0	3.5	1.8	-63.46	-131.1	-426.9	445.8	440.5	5.26	84.723		
1,700.0	1,699.8	1,685.8	1,685.8	3.7	1.9	-64.11	-131.1	-426.9	443.5	437.9	5.59	79.323		
1,800.0	1,799.5	1,785.5	1,785.5	3.9	2.0	-65.19	-131.1	-426.9	439.7	433.8	5.92	74.229		
1,900.0	1,898.9	1,884.9	1,884.9	4.2	2.1	-66.48	-131.1	-426.9	435.3	429.0	6.27	69.453		
2,000.0	1,998.3	1,984.3	1,984.3	4.4	2.2	-67.79	-131.1	-426.9	431.1	424.5	6.62	65.127		
2,100.0	2,097.7	2,083.7	2,083.7	4.7	2.3	-69.13	-131.1	-426.9	427.1	420.1	6.98	61.210		
2,200.0	2,197.1	2,183.1	2,183.1	4.9	2.5	-70.49	-131.1	-426.9	423.4	416.0	7.34	57.659		
2,300.0	2,296.5	2,282.5	2,282.5	5.2	2.6	-71.87	-131.1	-426.9	419.8	412.1	7.71	54.436		
2,400.0	2,395.9	2,381.9	2,381.9	5.4	2.7	-73.27	-131.1	-426.9	416.6	408.5	8.09	51.507		
2,500.0	2,495.4	2,481.4	2,481.4	5.7	2.8	-74.70	-131.1	-426.9	413.6	405.1	8.47	48.842		
2,600.0	2,594.8	2,580.8	2,580.8	6.0	2.9	-76.14	-131.1	-426.9	410.9	402.0	8.85	46.415		
2,700.0	2,694.2	2,680.2	2,680.2	6.3	3.0	-77.61	-131.1	-426.9	408.4	399.2	9.24	44.200		
2,800.0	2,793.6	2,779.6	2,779.6	6.5	3.1	-79.09	-131.1	-426.9	406.2	396.6	9.63	42.179		
2,900.0	2,893.0	2,879.0	2,879.0	6.8	3.2	-80.58	-131.1	-426.9	404.3	394.3	10.02	40.331		
3,000.0	2,992.4	2,978.4	2,978.4	7.1	3.3	-82.09	-131.1	-426.9	402.7	392.2	10.42	38.642		
3,100.0	3,091.8	3,077.8	3,077.8	7.4	3.5	-83.61	-131.1	-426.9	401.3	390.5	10.82	37.095		
3,200.0	3,191.3	3,177.3	3,177.3	7.7	3.6	-85.14	-131.1	-426.9	400.2	389.0	11.22	35.678		
3,300.0	3,290.7	3,276.7	3,276.7	7.9	3.7	-86.67	-131.1	-426.9	399.5	387.8	11.62	34.381		
3,400.0	3,390.1	3,376.1	3,376.1	8.2	3.8	-88.21	-131.1	-426.9	399.0	387.0	12.02	33.191		
3,500.0	3,489.5	3,475.5	3,475.5	8.5	3.9	-89.75	-131.1	-426.9	398.8	386.4	12.42	32.101		
3,516.0	3,505.4	3,491.4	3,491.4	8.6	3.9	-90.00	-131.1	-426.9	398.8	386.3	12.49	31.935		
3,600.0	3,588.9	3,574.9	3,574.9	8.8	4.0	-91.30	-131.1	-426.9	398.9	386.1	12.83	31.101		
3,700.0	3,688.3	3,674.3	3,674.3	9.1	4.1	-92.84	-131.1	-426.9	399.3	386.0	13.23	30.184		
3,800.0	3,787.8	3,773.8	3,773.8	9.4	4.2	-94.37	-131.1	-426.9	400.0	386.3	13.63	29.344		
3,900.0	3,887.2	3,873.2	3,873.2	9.7	4.4	-95.90	-131.1	-426.9	400.9	386.9	14.03	28.574		
4,000.0	3,986.6	3,972.6	3,972.6	10.0	4.5	-97.43	-131.1	-426.9	402.2	387.8	14.43	27.869		
4,100.0	4,086.0	4,072.0	4,072.0	10.3	4.6	-98.94	-131.1	-426.9	403.7	388.9	14.83	27.223		
4,200.0	4,185.4	4,171.4	4,171.4	10.6	4.7	-100.44	-131.1	-426.9	405.6	390.3	15.23	26.632		
4,300.0	4,284.8	4,270.8	4,270.8	10.8	4.8	-101.92	-131.1	-426.9	407.7	392.0	15.62	26.092		
4,400.0	4,384.2	4,370.2	4,370.2	11.1	4.9	-103.39	-131.1	-426.9	410.0	394.0	16.02	25.599		
4,500.0	4,483.7	4,469.7	4,469.7	11.4	5.0	-104.84	-131.1	-426.9	412.7	396.3	16.41	25.148		
4,600.0	4,583.1	4,569.1	4,569.1	11.7	5.1	-106.27	-131.1	-426.9	415.6	398.8	16.80	24.737		
4,700.0	4,682.5	4,668.5	4,668.5	12.0	5.2	-107.68	-131.1	-426.9	418.8	401.6	17.19	24.363		
4,800.0	4,782.0	4,768.0	4,768.0	12.3	5.4	-108.94	-131.1	-426.9	421.7	404.2	17.54	24.050		
4,900.0	4,881.9	4,867.9	4,867.9	12.5	5.5	-109.72	-131.1	-426.9	423.7	405.8	17.83	23.767		

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-2 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7400-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,981.8	4,967.8	4,967.8	12.6	5.6	-110.04		-131.1	-426.9	424.5	406.4	18.10	23.452	
5,100.0	5,081.8	5,067.8	5,067.8	12.8	5.7	-153.88		-131.1	-426.9	424.5	406.1	18.38	23.093	
5,200.0	5,181.8	5,167.8	5,167.8	13.0	5.8	-153.88		-131.1	-426.9	424.5	405.8	18.69	22.714	
5,300.0	5,281.8	5,267.8	5,267.8	13.2	5.9	-153.88		-131.1	-426.9	424.5	405.5	19.00	22.345	
5,400.0	5,381.8	5,367.8	5,367.8	13.4	6.0	-153.88		-131.1	-426.9	424.5	405.2	19.31	21.987	
5,500.0	5,481.8	5,467.8	5,467.8	13.6	6.1	-153.88		-131.1	-426.9	424.5	404.9	19.62	21.640	
5,600.0	5,581.8	5,567.8	5,567.8	13.8	6.3	-153.88		-131.1	-426.9	424.5	404.6	19.93	21.302	
5,700.0	5,681.8	5,667.8	5,667.8	14.0	6.4	-153.88		-131.1	-426.9	424.5	404.3	20.24	20.974	
5,800.0	5,781.8	5,767.8	5,767.8	14.2	6.5	-153.88		-131.1	-426.9	424.5	403.9	20.55	20.655	
5,900.0	5,881.8	5,867.8	5,867.8	14.4	6.6	-153.88		-131.1	-426.9	424.5	403.6	20.86	20.345	
6,000.0	5,981.8	5,967.8	5,967.8	14.6	6.7	-153.88		-131.1	-426.9	424.5	403.3	21.18	20.044	
6,100.0	6,081.8	6,067.8	6,067.8	14.8	6.8	-153.88		-131.1	-426.9	424.5	403.0	21.49	19.750	
6,200.0	6,181.8	6,167.8	6,167.8	15.0	6.9	-153.88		-131.1	-426.9	424.5	402.7	21.81	19.465	
6,300.0	6,281.8	6,267.8	6,267.8	15.2	7.0	-153.88		-131.1	-426.9	424.5	402.4	22.12	19.187	
6,400.0	6,381.8	6,367.8	6,367.8	15.4	7.2	-153.88		-131.1	-426.9	424.5	402.1	22.44	18.916	
6,500.0	6,481.8	6,467.8	6,467.8	15.6	7.3	-153.88		-131.1	-426.9	424.5	401.7	22.76	18.653	
6,600.0	6,581.8	6,567.8	6,567.8	15.7	7.4	26.36		-131.1	-426.9	422.1	399.1	22.99	18.360	
6,700.0	6,680.6	6,666.6	6,666.6	15.8	7.5	27.73		-131.1	-426.9	408.9	385.9	23.02	17.761	
6,800.0	6,776.6	6,762.6	6,762.6	15.9	7.6	30.57		-131.1	-426.9	384.6	361.7	22.90	16.795	
6,900.0	6,868.3	6,854.3	6,854.3	15.9	7.7	35.35		-131.1	-426.9	350.3	327.6	22.70	15.436	
7,000.0	6,953.9	6,939.9	6,939.9	15.9	7.8	42.89		-131.1	-426.9	308.0	285.5	22.56	13.656	
7,100.0	7,032.1	7,018.1	7,018.1	16.0	7.9	54.12		-131.1	-426.9	261.3	238.6	22.70	11.511	
7,200.0	7,101.5	7,087.5	7,087.5	16.0	8.0	69.05		-131.1	-426.9	217.2	194.0	23.25	9.345	
7,300.0	7,161.0	7,147.0	7,147.0	16.1	8.0	84.97		-131.1	-426.9	189.4	165.5	23.87	7.933	
7,335.6	7,179.5	7,165.5	7,165.5	16.2	8.1	89.99		-131.1	-426.9	186.9	162.8	24.05	7.772 CC, ES, SF	
7,400.0	7,209.4	7,195.4	7,195.4	16.5	8.1	97.41		-131.1	-426.9	195.4	171.1	24.24	8.059	
7,500.0	7,246.0	7,232.0	7,232.0	17.1	8.1	103.74		-131.1	-426.9	239.6	215.0	24.62	9.731	
7,600.0	7,270.2	7,256.2	7,256.2	17.9	8.2	103.22		-131.1	-426.9	309.7	284.2	25.42	12.182	
7,700.0	7,282.7	7,268.7	7,268.7	18.9	8.2	100.96		-131.1	-426.9	393.3	366.9	26.48	14.853	
7,800.0	7,291.1	7,277.1	7,277.1	20.0	8.2	96.01		-131.1	-426.9	483.3	455.5	27.80	17.388	
7,900.0	7,292.1	7,278.1	7,278.1	21.2	8.2	89.77		-131.1	-426.9	576.8	547.7	29.16	19.781	
8,000.0	7,292.0	7,278.0	7,278.0	22.5	8.2	89.72		-131.1	-426.9	672.2	641.7	30.47	22.065	
8,100.0	7,291.9	7,277.9	7,277.9	23.9	8.2	89.68		-131.1	-426.9	768.8	736.9	31.85	24.134	
8,200.0	7,291.7	7,277.7	7,277.7	25.3	8.2	89.64		-131.1	-426.9	866.1	832.8	33.31	26.000	
8,300.0	7,291.6	7,277.6	7,277.6	26.8	8.2	89.60		-131.1	-426.9	964.0	929.2	34.83	27.678	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-29 - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 7400-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	-108.91	-134.8	-393.4	416.1					
100.0	100.0	85.0	85.0	0.1	0.1	-108.91	-134.8	-393.4	415.9	415.6	0.21	1,998.275		
200.0	200.0	185.0	185.0	0.3	0.2	-108.91	-134.8	-393.4	415.9	415.3	0.55	762.681		
300.0	300.0	285.0	285.0	0.6	0.3	-108.91	-134.8	-393.4	415.9	415.0	0.88	471.276		
400.0	400.0	385.0	385.0	0.8	0.4	-108.91	-134.8	-393.4	415.9	414.6	1.22	340.991		
500.0	500.0	485.0	485.0	1.0	0.5	-108.91	-134.8	-393.4	415.9	414.3	1.56	267.139		
600.0	600.0	585.0	585.0	1.2	0.7	-108.91	-134.8	-393.4	415.9	414.0	1.89	219.582		
700.0	700.0	685.0	685.0	1.5	0.8	-108.91	-134.8	-393.4	415.9	413.6	2.23	186.399		
800.0	800.0	785.0	785.0	1.7	0.9	-108.91	-134.8	-393.4	415.9	413.3	2.57	161.929		
900.0	900.0	885.0	885.0	1.9	1.0	-108.91	-134.8	-393.4	415.9	412.9	2.91	143.137		
1,000.0	1,000.0	985.0	985.0	2.1	1.1	-108.91	-134.8	-393.4	415.9	412.6	3.24	128.254		
1,100.0	1,100.0	1,085.0	1,085.0	2.4	1.2	-108.91	-134.8	-393.4	415.9	412.3	3.58	116.174		
1,200.0	1,200.0	1,185.0	1,185.0	2.6	1.3	-108.91	-134.8	-393.4	415.9	411.9	3.92	106.174		
1,300.0	1,300.0	1,285.0	1,285.0	2.8	1.4	-108.91	-134.8	-393.4	415.9	411.6	4.25	97.759		
1,400.0	1,400.0	1,385.0	1,385.0	3.0	1.6	-108.91	-134.8	-393.4	415.9	411.3	4.59	90.580		
1,500.0	1,500.0	1,485.0	1,485.0	3.3	1.7	-108.91	-134.8	-393.4	415.9	410.9	4.93	84.383		
1,600.0	1,600.0	1,585.0	1,585.0	3.5	1.8	-65.31	-134.8	-393.4	415.1	409.9	5.26	78.909		
1,700.0	1,699.8	1,684.8	1,684.8	3.7	1.9	-66.01	-134.8	-393.4	413.0	407.4	5.59	73.875		
1,800.0	1,799.5	1,784.5	1,784.5	3.9	2.0	-67.19	-134.8	-393.4	409.5	403.6	5.92	69.125		
1,900.0	1,898.9	1,883.9	1,883.9	4.2	2.1	-68.59	-134.8	-393.4	405.4	399.1	6.27	64.679		
2,000.0	1,998.3	1,983.3	1,983.3	4.4	2.2	-70.02	-134.8	-393.4	401.6	395.0	6.62	60.657		
2,100.0	2,097.7	2,082.7	2,082.7	4.7	2.3	-71.47	-134.8	-393.4	398.0	391.0	6.98	57.020		
2,200.0	2,197.1	2,182.1	2,182.1	4.9	2.5	-72.95	-134.8	-393.4	394.7	387.3	7.35	53.729		
2,300.0	2,296.5	2,281.5	2,281.5	5.2	2.6	-74.45	-134.8	-393.4	391.6	383.9	7.72	50.748		
2,400.0	2,395.9	2,380.9	2,380.9	5.4	2.7	-75.98	-134.8	-393.4	388.9	380.8	8.09	48.044		
2,500.0	2,495.4	2,480.4	2,480.4	5.7	2.8	-77.52	-134.8	-393.4	386.4	377.9	8.47	45.590		
2,600.0	2,594.8	2,579.8	2,579.8	6.0	2.9	-79.09	-134.8	-393.4	384.2	375.3	8.86	43.360		
2,700.0	2,694.2	2,679.2	2,679.2	6.3	3.0	-80.67	-134.8	-393.4	382.3	373.0	9.25	41.332		
2,800.0	2,793.6	2,778.6	2,778.6	6.5	3.1	-82.27	-134.8	-393.4	380.6	371.0	9.64	39.487		
2,900.0	2,893.0	2,878.0	2,878.0	6.8	3.2	-83.87	-134.8	-393.4	379.3	369.3	10.03	37.806		
3,000.0	2,992.4	2,977.4	2,977.4	7.1	3.3	-85.49	-134.8	-393.4	378.3	367.9	10.43	36.273		
3,100.0	3,091.8	3,076.8	3,076.8	7.4	3.5	-87.11	-134.8	-393.4	377.6	366.8	10.83	34.876		
3,200.0	3,191.3	3,176.3	3,176.3	7.7	3.6	-88.74	-134.8	-393.4	377.2	366.0	11.23	33.602		
3,277.0	3,267.8	3,252.8	3,252.8	7.9	3.7	-90.00	-134.8	-393.4	377.1	365.6	11.53	32.697		
3,300.0	3,290.7	3,275.7	3,275.7	7.9	3.7	-90.37	-134.8	-393.4	377.1	365.5	11.63	32.440		
3,400.0	3,390.1	3,375.1	3,375.1	8.2	3.8	-92.01	-134.8	-393.4	377.4	365.3	12.03	31.379		
3,500.0	3,489.5	3,474.5	3,474.5	8.5	3.9	-93.63	-134.8	-393.4	377.9	365.5	12.43	30.411		
3,600.0	3,588.9	3,573.9	3,573.9	8.8	4.0	-95.25	-134.8	-393.4	378.7	365.9	12.83	29.529		
3,700.0	3,688.3	3,673.3	3,673.3	9.1	4.1	-96.87	-134.8	-393.4	379.9	366.7	13.23	28.724		
3,800.0	3,787.8	3,772.8	3,772.8	9.4	4.2	-98.47	-134.8	-393.4	381.3	367.7	13.62	27.991		
3,900.0	3,887.2	3,872.2	3,872.2	9.7	4.4	-100.06	-134.8	-393.4	383.1	369.1	14.02	27.323		
4,000.0	3,986.6	3,971.6	3,971.6	10.0	4.5	-101.63	-134.8	-393.4	385.1	370.7	14.42	26.714		
4,100.0	4,086.0	4,071.0	4,071.0	10.3	4.6	-103.19	-134.8	-393.4	387.5	372.7	14.81	26.161		
4,200.0	4,185.4	4,170.4	4,170.4	10.6	4.7	-104.72	-134.8	-393.4	390.1	374.9	15.20	25.659		
4,300.0	4,284.8	4,269.8	4,269.8	10.8	4.8	-106.24	-134.8	-393.4	393.0	377.4	15.59	25.202		
4,400.0	4,384.2	4,369.2	4,369.2	11.1	4.9	-107.73	-134.8	-393.4	396.2	380.2	15.98	24.789		
4,500.0	4,483.7	4,468.7	4,468.7	11.4	5.0	-109.20	-134.8	-393.4	399.6	383.2	16.37	24.414		
4,600.0	4,583.1	4,568.1	4,568.1	11.7	5.1	-110.64	-134.8	-393.4	403.3	386.6	16.75	24.076		
4,700.0	4,682.5	4,667.5	4,667.5	12.0	5.2	-112.06	-134.8	-393.4	407.3	390.1	17.13	23.771		
4,800.0	4,782.0	4,767.0	4,767.0	12.3	5.4	-113.32	-134.8	-393.4	410.9	393.4	17.47	23.514		
4,900.0	4,881.9	4,866.9	4,866.9	12.5	5.5	-114.11	-134.8	-393.4	413.2	395.5	17.76	23.268		

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-29 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7400-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,981.8	4,966.8	4,966.8	12.6	5.6	-114.43		-134.8	-393.4	414.2	396.2	18.03	22.971	
5,100.0	5,081.8	5,066.8	5,066.8	12.8	5.7	-158.26		-134.8	-393.4	414.2	395.9	18.31	22.619	
5,200.0	5,181.8	5,166.8	5,166.8	13.0	5.8	-158.26		-134.8	-393.4	414.2	395.6	18.62	22.244	
5,300.0	5,281.8	5,266.8	5,266.8	13.2	5.9	-158.26		-134.8	-393.4	414.2	395.3	18.93	21.880	
5,400.0	5,381.8	5,366.8	5,366.8	13.4	6.0	-158.26		-134.8	-393.4	414.2	395.0	19.24	21.528	
5,500.0	5,481.8	5,466.8	5,466.8	13.6	6.1	-158.26		-134.8	-393.4	414.2	394.7	19.55	21.185	
5,600.0	5,581.8	5,566.8	5,566.8	13.8	6.3	-158.26		-134.8	-393.4	414.2	394.4	19.87	20.852	
5,700.0	5,681.8	5,666.8	5,666.8	14.0	6.4	-158.26		-134.8	-393.4	414.2	394.1	20.18	20.529	
5,800.0	5,781.8	5,766.8	5,766.8	14.2	6.5	-158.26		-134.8	-393.4	414.2	393.7	20.49	20.215	
5,900.0	5,881.8	5,866.8	5,866.8	14.4	6.6	-158.26		-134.8	-393.4	414.2	393.4	20.81	19.910	
6,000.0	5,981.8	5,966.8	5,966.8	14.6	6.7	-158.26		-134.8	-393.4	414.2	393.1	21.12	19.613	
6,100.0	6,081.8	6,066.8	6,066.8	14.8	6.8	-158.26		-134.8	-393.4	414.2	392.8	21.44	19.324	
6,200.0	6,181.8	6,166.8	6,166.8	15.0	6.9	-158.26		-134.8	-393.4	414.2	392.5	21.75	19.044	
6,300.0	6,281.8	6,266.8	6,266.8	15.2	7.0	-158.26		-134.8	-393.4	414.2	392.2	22.07	18.770	
6,400.0	6,381.8	6,366.8	6,366.8	15.4	7.2	-158.26		-134.8	-393.4	414.2	391.8	22.39	18.504	
6,500.0	6,481.8	6,466.8	6,466.8	15.6	7.3	-158.26		-134.8	-393.4	414.2	391.5	22.70	18.245	
6,600.0	6,581.8	6,566.8	6,566.8	15.7	7.4	21.94		-134.8	-393.4	411.8	388.9	22.93	17.955	
6,700.0	6,680.6	6,665.6	6,665.6	15.8	7.5	23.14		-134.8	-393.4	398.1	375.2	22.95	17.344	
6,800.0	6,776.6	6,761.6	6,761.6	15.9	7.6	25.63		-134.8	-393.4	372.8	350.0	22.81	16.347	
6,900.0	6,868.3	6,853.3	6,853.3	15.9	7.7	29.91		-134.8	-393.4	336.9	314.4	22.56	14.934	
7,000.0	6,953.9	6,938.9	6,938.9	15.9	7.8	36.92		-134.8	-393.4	292.0	269.7	22.35	13.065	
7,100.0	7,032.1	7,017.1	7,017.1	16.0	7.9	48.05		-134.8	-393.4	241.3	218.9	22.45	10.751	
7,200.0	7,101.5	7,086.5	7,086.5	16.0	8.0	64.28		-134.8	-393.4	191.4	168.3	23.07	8.295	
7,300.0	7,161.0	7,146.0	7,146.0	16.1	8.0	83.15		-134.8	-393.4	157.1	133.3	23.85	6.588	
7,339.8	7,181.6	7,166.6	7,166.6	16.2	8.1	89.99		-134.8	-393.4	153.4	129.3	24.07	6.374 CC, ES, SF	
7,400.0	7,209.4	7,194.4	7,194.4	16.5	8.1	98.44		-134.8	-393.4	162.4	138.2	24.21	6.708	
7,500.0	7,246.0	7,231.0	7,231.0	17.1	8.1	106.21		-134.8	-393.4	212.0	187.5	24.48	8.661	
7,600.0	7,270.2	7,255.2	7,255.2	17.9	8.2	105.75		-134.8	-393.4	287.6	262.4	25.26	11.387	
7,700.0	7,282.7	7,267.7	7,267.7	18.9	8.2	103.13		-134.8	-393.4	375.3	348.9	26.35	14.242	
7,800.0	7,291.1	7,276.1	7,276.1	20.0	8.2	97.25		-134.8	-393.4	468.0	440.2	27.74	16.868	
7,900.0	7,292.1	7,277.1	7,277.1	21.2	8.2	89.72		-134.8	-393.4	563.4	534.2	29.16	19.320	
8,000.0	7,292.0	7,277.0	7,277.0	22.5	8.2	89.67		-134.8	-393.4	660.1	629.7	30.46	21.669	
8,100.0	7,291.9	7,276.9	7,276.9	23.9	8.2	89.61		-134.8	-393.4	757.8	725.9	31.85	23.789	
8,200.0	7,291.7	7,276.7	7,276.7	25.3	8.2	89.56		-134.8	-393.4	855.9	822.6	33.31	25.694	
8,300.0	7,291.6	7,276.6	7,276.6	26.8	8.2	89.51		-134.8	-393.4	954.5	919.7	34.83	27.405	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-323 - Wellbore #1 - Plan #1 (06-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	-89.98	0.0	-30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	-89.98	0.0	-30.7	30.7	30.5	0.22	136.547	
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	-89.98	0.0	-30.7	30.7	30.0	0.67	45.516	
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	-89.98	0.0	-30.7	30.7	29.6	1.12	27.309	
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	-89.98	0.0	-30.7	30.7	29.1	1.57	19.507	
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	-89.98	0.0	-30.7	30.7	28.7	2.02	15.172	
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	-89.98	0.0	-30.7	30.7	28.2	2.47	12.413	
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	-89.98	0.0	-30.7	30.7	27.8	2.92	10.504	
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	-89.98	0.0	-30.7	30.7	27.3	3.37	9.103	
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	-89.98	0.0	-30.7	30.7	26.9	3.82	8.032	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	-89.98	0.0	-30.7	30.7	26.4	4.27	7.187 CC, ES	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	-88.71	-88.71	0.7	-32.2	32.3	27.6	4.71	6.850	
1,200.0	1,200.0	1,197.8	1,197.6	2.6	2.6	-85.53	-85.53	2.9	-36.9	37.1	31.9	5.15	7.201	
1,300.0	1,300.0	1,296.1	1,295.5	2.8	2.8	-81.77	-81.77	6.4	-44.6	45.2	39.6	5.59	8.091	
1,400.0	1,400.0	1,394.2	1,393.0	3.0	3.0	-78.37	-78.37	11.3	-55.1	56.7	50.7	6.04	9.383	
1,500.0	1,500.0	1,493.4	1,491.4	3.3	3.3	-75.95	-75.95	16.7	-66.6	69.1	62.6	6.50	10.633	
1,600.0	1,600.0	1,592.8	1,589.9	3.5	3.6	-30.96	-30.96	22.0	-78.0	80.2	73.3	6.91	11.610	
1,700.0	1,699.8	1,692.4	1,688.8	3.7	3.8	-31.23	-31.23	27.3	-89.5	88.2	80.9	7.34	12.023	
1,800.0	1,799.5	1,792.3	1,787.8	3.9	4.1	-32.60	-32.60	32.6	-101.0	93.4	85.6	7.77	12.008	
1,900.0	1,898.9	1,892.2	1,886.9	4.2	4.4	-34.55	-34.55	38.0	-112.5	96.8	88.6	8.23	11.763	
2,000.0	1,998.3	1,992.1	1,986.0	4.4	4.7	-36.37	-36.37	43.3	-124.0	100.3	91.6	8.69	11.541	
2,100.0	2,097.7	2,091.9	2,085.1	4.7	5.0	-38.07	-38.07	48.7	-135.6	104.0	94.8	9.17	11.341	
2,200.0	2,197.1	2,191.8	2,184.1	4.9	5.3	-39.65	-39.65	54.0	-147.1	107.7	98.0	9.65	11.161	
2,300.0	2,296.5	2,291.7	2,283.2	5.2	5.6	-41.13	-41.13	59.4	-158.6	111.5	101.4	10.14	10.996	
2,400.0	2,395.9	2,391.6	2,382.3	5.4	5.9	-42.51	-42.51	64.7	-170.1	115.4	104.7	10.64	10.847	
2,500.0	2,495.4	2,491.5	2,481.4	5.7	6.3	-43.80	-43.80	70.1	-181.6	119.3	108.1	11.14	10.709	
2,600.0	2,594.8	2,591.4	2,580.5	6.0	6.6	-45.00	-45.00	75.4	-193.1	123.3	111.6	11.65	10.582	
2,700.0	2,694.2	2,691.3	2,679.5	6.3	6.9	-46.13	-46.13	80.7	-204.6	127.3	115.1	12.16	10.465	
2,800.0	2,793.6	2,791.2	2,778.6	6.5	7.2	-47.19	-47.19	86.1	-216.2	131.4	118.7	12.69	10.357	
2,900.0	2,893.0	2,891.0	2,877.7	6.8	7.5	-48.19	-48.19	91.4	-227.7	135.5	122.3	13.21	10.256	
3,000.0	2,992.4	2,990.9	2,976.8	7.1	7.8	-49.12	-49.12	96.8	-239.2	139.7	125.9	13.74	10.163	
3,100.0	3,091.8	3,090.8	3,075.8	7.4	8.1	-50.00	-50.00	102.1	-250.7	143.9	129.6	14.28	10.075	
3,200.0	3,191.3	3,190.7	3,174.9	7.7	8.5	-50.84	-50.84	107.5	-262.2	148.1	133.3	14.82	9.994	
3,300.0	3,290.7	3,290.6	3,274.0	7.9	8.8	-51.62	-51.62	112.8	-273.7	152.4	137.0	15.36	9.917	
3,400.0	3,390.1	3,390.5	3,373.1	8.2	9.1	-52.37	-52.37	118.2	-285.2	156.6	140.7	15.91	9.846	
3,500.0	3,489.5	3,490.4	3,472.2	8.5	9.4	-53.07	-53.07	123.5	-296.8	161.0	144.5	16.46	9.778	
3,600.0	3,588.9	3,590.3	3,571.2	8.8	9.8	-53.73	-53.73	128.9	-308.3	165.3	148.3	17.01	9.715	
3,700.0	3,688.3	3,690.1	3,670.3	9.1	10.1	-54.37	-54.37	134.2	-319.8	169.7	152.1	17.57	9.656	
3,800.0	3,787.8	3,790.0	3,769.4	9.4	10.4	-54.97	-54.97	139.5	-331.3	174.0	155.9	18.13	9.600	
3,900.0	3,887.2	3,889.9	3,868.5	9.7	10.7	-55.54	-55.54	144.9	-342.8	178.4	159.7	18.69	9.547	
4,000.0	3,986.6	3,989.8	3,967.5	10.0	11.0	-56.08	-56.08	150.2	-354.3	182.8	163.6	19.25	9.497	
4,100.0	4,086.0	4,089.7	4,066.6	10.3	11.4	-56.60	-56.60	155.6	-365.8	187.3	167.4	19.82	9.449	
4,200.0	4,185.4	4,189.6	4,165.7	10.6	11.7	-57.09	-57.09	160.9	-377.4	191.7	171.3	20.38	9.404	
4,300.0	4,284.8	4,289.5	4,264.8	10.8	12.0	-57.57	-57.57	166.3	-388.9	196.1	175.2	20.95	9.362	
4,400.0	4,384.2	4,389.4	4,363.9	11.1	12.3	-58.02	-58.02	171.6	-400.4	200.6	179.1	21.52	9.322	
4,500.0	4,483.7	4,489.3	4,462.9	11.4	12.7	-58.45	-58.45	177.0	-411.9	205.1	183.0	22.09	9.283	
4,600.0	4,583.1	4,589.1	4,562.0	11.7	13.0	-58.86	-58.86	182.3	-423.4	209.6	186.9	22.67	9.247	
4,700.0	4,682.5	4,689.0	4,661.1	12.0	13.3	-59.26	-59.26	187.6	-434.9	214.1	190.8	23.24	9.212	
4,800.0	4,782.0	4,788.9	4,760.1	12.3	13.6	-59.39	-59.39	193.0	-446.4	219.3	195.6	23.76	9.232	
4,900.0	4,881.9	4,888.6	4,859.0	12.5	14.0	-58.79	-58.79	198.3	-457.9	226.4	202.2	24.17	9.365	
5,000.0	4,981.8	4,988.0	4,957.7	12.6	14.3	-57.55	-57.55	203.6	-469.4	235.3	210.8	24.51	9.600	

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-323 - Wellbore #1 - Plan #1 (06-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.8	5,087.2	5,056.1	12.8	14.6	-99.67	-99.67	208.9	-480.8	245.7	220.8	24.83	9.895	
5,200.0	5,181.8	5,186.4	5,154.4	13.0	14.9	-98.06	-98.06	214.3	-492.3	256.3	231.1	25.17	10.181	
5,300.0	5,281.8	5,285.6	5,252.8	13.2	15.3	-96.58	-96.58	219.6	-503.7	267.0	241.5	25.52	10.463	
5,400.0	5,381.8	5,384.8	5,351.2	13.4	15.6	-95.22	-95.22	224.9	-515.1	278.0	252.1	25.88	10.740	
5,500.0	5,481.8	5,484.0	5,449.6	13.6	15.9	-93.96	-93.96	230.2	-526.6	289.1	262.8	26.25	11.012	
5,600.0	5,581.8	5,583.2	5,548.0	13.8	16.2	-92.79	-92.79	235.5	-538.0	300.3	273.6	26.62	11.278	
5,700.0	5,681.8	5,683.5	5,647.5	14.0	16.5	-91.69	-91.69	240.8	-549.5	311.6	284.6	27.00	11.538	
5,800.0	5,781.8	5,793.9	5,757.3	14.2	16.8	-90.77	-90.77	245.7	-559.9	320.9	293.6	27.37	11.726	
5,900.0	5,881.8	5,905.1	5,868.2	14.4	17.0	-90.22	-90.22	248.7	-566.5	326.8	299.1	27.74	11.781	
6,000.0	5,981.8	6,016.6	5,979.7	14.6	17.2	-90.00	-90.00	250.0	-569.2	329.2	301.1	28.13	11.706	
6,100.0	6,081.8	6,118.7	6,081.8	14.8	17.3	-90.00	-90.00	250.0	-569.3	329.3	300.8	28.52	11.547	
6,200.0	6,181.8	6,218.7	6,181.8	15.0	17.5	-90.00	-90.00	250.0	-569.3	329.3	300.4	28.92	11.386	
6,300.0	6,281.8	6,318.7	6,281.8	15.2	17.7	-90.00	-90.00	250.0	-569.3	329.3	300.0	29.33	11.229	
6,400.0	6,381.8	6,418.7	6,381.8	15.4	17.9	-90.00	-90.00	250.0	-569.3	329.3	299.6	29.73	11.076	
6,448.4	6,430.2	6,467.1	6,430.2	15.5	17.9	-90.00	-90.00	250.0	-569.3	329.3	299.4	29.93	11.003	
6,500.0	6,481.8	6,518.6	6,481.7	15.6	18.0	-90.35	-90.35	248.0	-569.3	329.3	299.2	30.14	10.926	
6,600.0	6,581.8	6,617.1	6,579.1	15.7	18.1	87.74	87.74	234.6	-569.3	329.6	299.0	30.54	10.791	
6,700.0	6,680.6	6,714.0	6,672.6	15.8	18.1	85.74	85.74	209.2	-569.3	330.2	299.4	30.81	10.717	
6,800.0	6,776.6	6,809.6	6,760.9	15.9	18.2	83.82	83.82	172.8	-569.3	331.2	300.3	30.97	10.697	
6,900.0	6,868.3	6,904.0	6,843.0	15.9	18.2	82.03	82.03	126.3	-569.3	332.5	301.5	31.03	10.716	
7,000.0	6,953.9	6,997.2	6,917.9	15.9	18.2	80.38	80.38	70.8	-569.3	334.0	303.0	31.07	10.752	
7,100.0	7,032.1	7,089.5	6,984.8	16.0	18.2	78.91	78.91	7.3	-569.3	335.6	304.5	31.15	10.775	
7,200.0	7,101.5	7,181.0	7,043.1	16.0	18.3	77.62	77.62	-63.1	-569.3	337.2	305.8	31.37	10.749	
7,300.0	7,161.0	7,271.8	7,092.2	16.1	18.4	76.54	76.54	-139.4	-569.3	338.6	306.8	31.80	10.648	
7,400.0	7,209.4	7,362.0	7,131.6	16.5	18.7	75.66	75.66	-220.5	-569.3	339.9	307.3	32.55	10.442	
7,500.0	7,246.0	7,450.0	7,160.7	17.1	19.0	75.02	75.02	-303.5	-569.3	340.9	307.3	33.65	10.130	
7,600.0	7,270.2	7,541.2	7,180.5	17.9	19.6	74.58	74.58	-392.5	-569.3	341.6	306.4	35.17	9.712	
7,700.0	7,282.7	7,630.5	7,189.5	18.9	20.4	74.21	74.21	-481.2	-569.3	342.2	305.3	36.96	9.260	
7,800.0	7,291.1	7,725.2	7,189.7	20.0	21.3	72.91	72.91	-576.0	-569.3	344.5	305.6	38.95	8.845	
7,900.0	7,292.1	7,825.2	7,188.8	21.2	22.4	72.58	72.58	-675.9	-569.3	345.1	303.8	41.31	8.355	
8,000.0	7,292.0	7,925.2	7,187.9	22.5	23.7	72.46	72.46	-775.9	-569.3	345.3	301.5	43.80	7.885	
8,100.0	7,291.9	8,025.2	7,187.1	23.9	25.0	72.34	72.34	-875.9	-569.3	345.6	299.1	46.44	7.441	
8,200.0	7,291.7	8,125.2	7,186.2	25.3	26.4	72.22	72.22	-975.9	-569.3	345.8	296.6	49.21	7.027	
8,300.0	7,291.6	8,225.2	7,185.3	26.8	27.8	72.11	72.11	-1,075.9	-569.3	346.0	293.9	52.09	6.643	
8,400.0	7,291.5	8,325.2	7,184.4	28.4	29.3	71.99	71.99	-1,175.9	-569.3	346.3	291.2	55.06	6.289	
8,500.0	7,291.3	8,425.2	7,183.5	30.0	30.9	71.87	71.87	-1,275.9	-569.3	346.5	288.4	58.11	5.963	
8,600.0	7,291.2	8,525.2	7,182.6	31.6	32.5	71.75	71.75	-1,375.9	-569.3	346.7	285.5	61.22	5.664	
8,700.0	7,291.0	8,625.2	7,181.7	33.3	34.1	71.63	71.63	-1,475.9	-569.3	347.0	282.6	64.38	5.390	
8,800.0	7,290.9	8,725.2	7,180.8	35.0	35.8	71.52	71.52	-1,575.9	-569.3	347.2	279.6	67.58	5.137	
8,900.0	7,290.8	8,825.2	7,179.9	36.7	37.4	71.40	71.40	-1,675.9	-569.3	347.4	276.6	70.83	4.905	
9,000.0	7,290.6	8,925.2	7,179.0	38.4	39.1	71.28	71.28	-1,775.9	-569.3	347.7	273.6	74.11	4.692	
9,100.0	7,290.5	9,025.2	7,178.2	40.2	40.9	71.17	71.17	-1,875.9	-569.3	347.9	270.5	77.41	4.494	
9,200.0	7,290.3	9,125.2	7,177.3	41.9	42.6	71.05	71.05	-1,975.8	-569.3	348.2	267.4	80.74	4.312	
9,300.0	7,290.2	9,225.2	7,176.4	43.7	44.4	70.93	70.93	-2,075.8	-569.3	348.4	264.3	84.09	4.143	
9,400.0	7,290.1	9,325.2	7,175.5	45.5	46.1	70.81	70.81	-2,175.8	-569.3	348.7	261.2	87.45	3.987	
9,500.0	7,289.9	9,425.2	7,174.6	47.3	47.9	70.70	70.70	-2,275.8	-569.3	348.9	258.1	90.84	3.841	
9,600.0	7,289.8	9,525.2	7,173.7	49.1	49.7	70.58	70.58	-2,375.8	-569.3	349.1	254.9	94.23	3.705	
9,700.0	7,289.6	9,625.2	7,172.8	50.9	51.5	70.47	70.47	-2,475.8	-569.3	349.4	251.8	97.63	3.579	
9,800.0	7,289.5	9,725.1	7,171.9	52.8	53.3	70.35	70.35	-2,575.8	-569.3	349.7	248.6	101.05	3.460	
9,900.0	7,289.4	9,825.1	7,171.0	54.6	55.1	70.23	70.23	-2,675.8	-569.3	349.9	245.4	104.47	3.349	
10,000.0	7,289.2	9,925.1	7,170.1	56.4	56.9	70.12	70.12	-2,775.8	-569.3	350.2	242.3	107.90	3.245	

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-323 - Wellbore #1 - Plan #1 (06-12-13)													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,100.0	7,289.1	10,025.1	7,169.3	58.3	58.7	70.00	-2,875.8	-569.3	350.4	239.1	111.33	3.147		
10,200.0	7,288.9	10,125.1	7,168.4	60.1	60.6	69.89	-2,975.8	-569.3	350.7	235.9	114.77	3.055		
10,300.0	7,288.8	10,225.1	7,167.5	62.0	62.4	69.77	-3,075.8	-569.3	350.9	232.7	118.21	2.969		
10,400.0	7,288.7	10,325.1	7,166.6	63.8	64.3	69.66	-3,175.8	-569.3	351.2	229.5	121.66	2.887		
10,500.0	7,288.5	10,425.1	7,165.7	65.7	66.1	69.54	-3,275.8	-569.3	351.5	226.3	125.10	2.809		
10,600.0	7,288.4	10,525.1	7,164.8	67.5	67.9	69.43	-3,375.8	-569.3	351.7	223.2	128.55	2.736		
10,700.0	7,288.2	10,625.1	7,163.9	69.4	69.8	69.31	-3,475.7	-569.3	352.0	220.0	132.00	2.666		
10,800.0	7,288.1	10,725.1	7,163.0	71.3	71.7	69.20	-3,575.7	-569.3	352.2	216.8	135.45	2.600		
10,900.0	7,288.0	10,825.1	7,162.1	73.1	73.5	69.09	-3,675.7	-569.3	352.5	213.6	138.91	2.538		
11,000.0	7,287.8	10,925.1	7,161.2	75.0	75.4	68.97	-3,775.7	-569.3	352.8	210.4	142.36	2.478		
11,100.0	7,287.7	11,025.1	7,160.3	76.9	77.3	68.86	-3,875.7	-569.3	353.0	207.2	145.81	2.421		
11,200.0	7,287.5	11,125.1	7,159.5	78.8	79.1	68.75	-3,975.7	-569.3	353.3	204.1	149.26	2.367		
11,300.0	7,287.4	11,225.1	7,158.6	80.7	81.0	68.63	-4,075.7	-569.3	353.6	200.9	152.70	2.316		
11,400.0	7,287.3	11,325.1	7,157.7	82.5	82.9	68.52	-4,175.7	-569.3	353.9	197.7	156.15	2.266		
11,500.0	7,287.1	11,425.1	7,156.8	84.4	84.7	68.41	-4,275.7	-569.3	354.1	194.5	159.59	2.219		
11,587.5	7,287.0	11,512.6	7,156.0	86.1	86.4	68.31	-4,363.2	-569.3	354.4	191.8	162.61	2.179 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-403 - Wellbore #1 - Plan #1 (06-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	-89.99	0.0	-61.4	61.4				
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	-89.99	0.0	-61.4	61.4	61.2	0.22	273.094	
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	-89.99	0.0	-61.4	61.4	60.7	0.67	91.031	
300.0	300.0	300.0	300.0	0.6	0.6	-89.99	-89.99	0.0	-61.4	61.4	60.3	1.12	54.619	
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	-89.99	0.0	-61.4	61.4	59.8	1.57	39.013 CC, ES	
500.0	500.0	497.9	497.9	1.0	1.0	-89.56	-89.56	0.5	-63.0	63.0	61.0	2.01	31.343	
600.0	600.0	595.7	595.5	1.2	1.2	-88.38	-88.38	1.9	-67.8	68.0	65.5	2.45	27.734	
700.0	700.0	692.9	692.4	1.5	1.4	-86.77	-86.77	4.3	-75.7	76.2	73.3	2.90	26.279	
800.0	800.0	789.5	788.3	1.7	1.7	-85.02	-85.02	7.6	-86.7	87.8	84.5	3.36	26.112	
900.0	900.0	886.5	884.2	1.9	2.0	-83.37	-83.37	11.7	-100.6	102.5	98.7	3.85	26.667	
1,000.0	1,000.0	985.3	981.8	2.1	2.3	-82.06	-82.06	16.1	-115.4	117.9	113.6	4.34	27.196	
1,100.0	1,100.0	1,084.1	1,079.4	2.4	2.7	-81.06	-81.06	20.5	-130.2	133.4	128.5	4.84	27.575	
1,200.0	1,200.0	1,182.9	1,176.9	2.6	3.0	-80.26	-80.26	24.9	-144.9	148.9	143.5	5.35	27.849	
1,300.0	1,300.0	1,281.6	1,274.5	2.8	3.4	-79.61	-79.61	29.3	-159.7	164.4	158.5	5.86	28.053	
1,400.0	1,400.0	1,380.4	1,372.1	3.0	3.7	-79.08	-79.08	33.7	-174.5	179.9	173.5	6.38	28.207	
1,500.0	1,500.0	1,479.2	1,469.6	3.3	4.1	-78.63	-78.63	38.1	-189.2	195.4	188.5	6.90	28.327	
1,600.0	1,600.0	1,578.2	1,567.4	3.5	4.4	-34.52	-34.52	42.5	-204.0	209.5	202.5	7.00	29.913	
1,700.0	1,699.8	1,677.5	1,665.6	3.7	4.8	-34.81	-34.81	46.9	-218.9	220.8	213.3	7.46	29.589	
1,800.0	1,799.5	1,777.1	1,763.9	3.9	5.1	-35.60	-35.60	51.3	-233.8	229.2	221.3	7.92	28.938	
1,900.0	1,898.9	1,876.8	1,862.4	4.2	5.5	-36.71	-36.71	55.8	-248.7	236.1	227.7	8.39	28.123	
2,000.0	1,998.3	1,976.4	1,960.8	4.4	5.9	-37.77	-37.77	60.2	-263.6	243.0	234.1	8.87	27.379	
2,100.0	2,097.7	2,076.1	2,059.2	4.7	6.2	-38.77	-38.77	64.6	-278.5	250.0	240.6	9.36	26.702	
2,200.0	2,197.1	2,175.8	2,157.7	4.9	6.6	-39.71	-39.71	69.1	-293.4	257.0	247.2	9.85	26.083	
2,300.0	2,296.5	2,275.4	2,256.1	5.2	7.0	-40.61	-40.61	73.5	-308.3	264.2	253.8	10.35	25.515	
2,400.0	2,395.9	2,375.1	2,354.6	5.4	7.3	-41.46	-41.46	77.9	-323.2	271.3	260.5	10.86	24.993	
2,500.0	2,495.4	2,474.8	2,453.0	5.7	7.7	-42.26	-42.26	82.4	-338.1	278.6	267.2	11.37	24.511	
2,600.0	2,594.8	2,574.4	2,551.5	6.0	8.1	-43.02	-43.02	86.8	-353.0	285.9	274.0	11.88	24.065	
2,700.0	2,694.2	2,674.1	2,649.9	6.3	8.4	-43.75	-43.75	91.2	-367.9	293.2	280.8	12.40	23.652	
2,800.0	2,793.6	2,773.7	2,748.4	6.5	8.8	-44.44	-44.44	95.7	-382.8	300.6	287.7	12.92	23.268	
2,900.0	2,893.0	2,873.4	2,846.8	6.8	9.2	-45.09	-45.09	100.1	-397.7	308.0	294.6	13.45	22.910	
3,000.0	2,992.4	2,973.1	2,945.2	7.1	9.5	-45.72	-45.72	104.5	-412.6	315.5	301.5	13.97	22.576	
3,100.0	3,091.8	3,072.7	3,043.7	7.4	9.9	-46.31	-46.31	109.0	-427.5	323.0	308.5	14.51	22.263	
3,200.0	3,191.3	3,172.4	3,142.1	7.7	10.3	-46.88	-46.88	113.4	-442.4	330.5	315.5	15.04	21.971	
3,300.0	3,290.7	3,272.1	3,240.6	7.9	10.7	-47.43	-47.43	117.8	-457.2	338.1	322.5	15.58	21.696	
3,400.0	3,390.1	3,371.7	3,339.0	8.2	11.0	-47.95	-47.95	122.3	-472.1	345.7	329.6	16.12	21.438	
3,500.0	3,489.5	3,471.4	3,437.5	8.5	11.4	-48.45	-48.45	126.7	-487.0	353.3	336.6	16.67	21.195	
3,600.0	3,588.9	3,571.0	3,535.9	8.8	11.8	-48.92	-48.92	131.1	-501.9	360.9	343.7	17.22	20.965	
3,700.0	3,688.3	3,670.7	3,634.3	9.1	12.1	-49.38	-49.38	135.6	-516.8	368.6	350.8	17.77	20.749	
3,800.0	3,787.8	3,770.4	3,732.8	9.4	12.5	-49.82	-49.82	140.0	-531.7	376.3	358.0	18.32	20.544	
3,900.0	3,887.2	3,870.0	3,831.2	9.7	12.9	-50.24	-50.24	144.4	-546.6	384.0	365.2	18.87	20.351	
4,000.0	3,986.6	3,969.7	3,929.7	10.0	13.2	-50.64	-50.64	148.9	-561.5	391.8	372.3	19.43	20.167	
4,100.0	4,086.0	4,069.4	4,028.1	10.3	13.6	-51.03	-51.03	153.3	-576.4	399.5	379.5	19.98	19.993	
4,200.0	4,185.4	4,169.0	4,126.6	10.6	14.0	-51.40	-51.40	157.7	-591.3	407.3	386.7	20.54	19.827	
4,300.0	4,284.8	4,268.7	4,225.0	10.8	14.4	-51.76	-51.76	162.2	-606.2	415.1	394.0	21.10	19.670	
4,400.0	4,384.2	4,368.4	4,323.4	11.1	14.7	-52.11	-52.11	166.6	-621.1	422.9	401.2	21.66	19.520	
4,500.0	4,483.7	4,468.0	4,421.9	11.4	15.1	-52.44	-52.44	171.0	-636.0	430.7	408.5	22.23	19.377	
4,600.0	4,583.1	4,567.7	4,520.3	11.7	15.5	-52.77	-52.77	175.5	-650.9	438.5	415.7	22.79	19.241	
4,700.0	4,682.5	4,667.3	4,618.8	12.0	15.8	-53.08	-53.08	179.9	-665.8	446.4	423.0	23.36	19.110	
4,800.0	4,782.0	4,766.9	4,717.2	12.3	16.2	-53.36	-53.36	184.3	-680.7	455.1	431.2	23.88	19.061	
4,900.0	4,881.9	4,866.3	4,815.3	12.5	16.6	-53.33	-53.33	188.8	-695.6	465.9	441.6	24.31	19.163	
5,000.0	4,981.8	4,965.4	4,913.2	12.6	16.9	-53.01	-53.01	193.2	-710.4	478.8	454.1	24.69	19.389	

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-403 - Wellbore #1 - Plan #1 (06-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,081.8	5,064.2	5,010.8	12.8	17.3	-96.17	197.6	-725.1	493.1	468.1	25.07	19.673		
5,200.0	5,181.8	5,163.0	5,108.3	13.0	17.7	-95.49	202.0	-739.9	507.6	482.1	25.46	19.933		
5,300.0	5,281.8	5,261.7	5,205.9	13.2	18.1	-94.85	206.3	-754.7	522.1	496.2	25.87	20.184		
5,400.0	5,381.8	5,360.5	5,303.5	13.4	18.4	-94.24	210.7	-769.4	536.7	510.4	26.27	20.427		
5,500.0	5,481.8	5,459.3	5,401.0	13.6	18.8	-93.67	215.1	-784.2	551.3	524.6	26.68	20.662		
5,600.0	5,581.8	5,558.1	5,498.6	13.8	19.2	-93.12	219.5	-799.0	566.0	538.9	27.09	20.890		
5,700.0	5,681.8	5,656.9	5,596.2	14.0	19.5	-92.60	223.9	-813.7	580.7	553.2	27.51	21.110		
5,800.0	5,781.8	5,755.6	5,693.7	14.2	19.9	-92.11	228.3	-828.5	595.5	567.5	27.93	21.323		
5,900.0	5,881.8	5,854.4	5,791.3	14.4	20.3	-91.64	232.7	-843.3	610.3	581.9	28.35	21.530		
6,000.0	5,981.8	5,953.2	5,888.9	14.6	20.6	-91.19	237.1	-858.0	625.1	596.4	28.77	21.730		
6,100.0	6,081.8	6,061.1	5,995.5	14.8	21.0	-90.74	241.8	-873.9	639.8	610.6	29.20	21.909		
6,200.0	6,181.8	6,187.7	6,121.2	15.0	21.3	-90.34	246.1	-888.3	651.2	621.5	29.63	21.974		
6,300.0	6,281.8	6,315.3	6,248.5	15.2	21.6	-90.10	248.9	-897.5	658.4	628.3	30.05	21.907		
6,400.0	6,381.8	6,443.6	6,376.7	15.4	21.8	-90.00	250.0	-901.3	661.3	630.8	30.47	21.703		
6,500.0	6,481.8	6,548.8	6,481.8	15.6	21.9	-90.00	250.0	-901.4	661.4	630.5	30.86	21.428		
6,600.0	6,581.8	6,648.8	6,581.8	15.7	22.0	90.00	247.4	-901.4	661.4	630.2	31.20	21.198		
6,700.0	6,680.6	6,748.8	6,680.6	15.8	22.1	90.00	232.6	-901.4	661.4	630.0	31.40	21.066		
6,800.0	6,776.6	6,848.8	6,776.7	15.9	22.1	90.00	205.0	-901.4	661.4	629.9	31.50	20.998		
6,900.0	6,868.3	6,948.8	6,868.3	15.9	22.2	90.00	165.2	-901.4	661.4	629.8	31.55	20.964		
7,000.0	6,953.9	7,048.8	6,953.9	15.9	22.2	90.00	113.7	-901.4	661.4	629.8	31.62	20.919		
7,100.0	7,032.1	7,148.8	7,032.1	16.0	22.2	90.00	51.5	-901.4	661.4	629.6	31.78	20.813		
7,200.0	7,101.5	7,248.8	7,101.6	16.0	22.2	90.00	-20.4	-901.4	661.4	629.3	32.11	20.596		
7,300.0	7,161.0	7,348.8	7,161.0	16.1	22.3	90.00	-100.7	-901.4	661.4	628.7	32.70	20.227		
7,400.0	7,209.4	7,448.8	7,209.4	16.5	22.5	90.00	-188.1	-901.4	661.4	627.8	33.59	19.689		
7,500.0	7,246.0	7,548.8	7,246.0	17.1	22.7	90.00	-281.1	-901.4	661.4	626.6	34.82	18.992		
7,600.0	7,270.2	7,648.8	7,270.2	17.9	23.2	90.00	-378.1	-901.4	661.4	625.0	36.39	18.174		
7,700.0	7,282.7	7,748.8	7,282.7	18.9	23.7	90.00	-477.2	-901.4	661.4	623.1	38.27	17.281		
7,800.0	7,291.1	7,848.8	7,291.1	20.0	24.5	90.00	-576.9	-901.4	661.4	621.0	40.42	16.362		
7,900.0	7,292.1	7,948.8	7,292.1	21.2	25.4	90.00	-676.9	-901.4	661.4	618.6	42.78	15.458		
8,000.0	7,292.0	8,048.8	7,292.0	22.5	26.4	90.00	-776.9	-901.4	661.4	616.0	45.35	14.585		
8,100.0	7,291.9	8,148.8	7,291.9	23.9	27.6	90.00	-876.9	-901.4	661.4	613.3	48.08	13.755		
8,200.0	7,291.7	8,248.8	7,291.7	25.3	28.8	90.00	-976.9	-901.4	661.4	610.4	50.96	12.979		
8,300.0	7,291.6	8,348.8	7,291.6	26.8	30.1	90.00	-1,076.9	-901.4	661.4	607.4	53.95	12.258		
8,400.0	7,291.5	8,448.8	7,291.5	28.4	31.5	90.00	-1,176.9	-901.4	661.4	604.3	57.05	11.593		
8,500.0	7,291.3	8,548.8	7,291.3	30.0	33.0	90.00	-1,276.9	-901.4	661.4	601.1	60.23	10.980		
8,600.0	7,291.2	8,648.8	7,291.2	31.6	34.5	90.00	-1,376.9	-901.4	661.4	597.9	63.49	10.417		
8,700.0	7,291.0	8,748.8	7,291.0	33.3	36.0	90.00	-1,476.9	-901.4	661.4	594.6	66.81	9.900		
8,800.0	7,290.9	8,848.8	7,290.9	35.0	37.6	90.00	-1,576.9	-901.4	661.4	591.2	70.18	9.424		
8,900.0	7,290.8	8,948.8	7,290.8	36.7	39.2	90.00	-1,676.9	-901.4	661.4	587.8	73.59	8.987		
9,000.0	7,290.6	9,048.8	7,290.6	38.4	40.8	90.00	-1,776.9	-901.4	661.4	584.3	77.05	8.584		
9,100.0	7,290.5	9,148.8	7,290.5	40.2	42.5	90.00	-1,876.9	-901.4	661.4	580.8	80.54	8.212		
9,200.0	7,290.3	9,248.8	7,290.3	41.9	44.1	90.00	-1,976.9	-901.4	661.4	577.3	84.06	7.868		
9,300.0	7,290.2	9,348.8	7,290.2	43.7	45.8	90.00	-2,076.9	-901.4	661.4	573.8	87.61	7.549		
9,400.0	7,290.1	9,448.8	7,290.1	45.5	47.5	90.00	-2,176.9	-901.4	661.4	570.2	91.18	7.253		
9,500.0	7,289.9	9,548.8	7,289.9	47.3	49.3	90.00	-2,276.9	-901.4	661.4	566.6	94.77	6.978		
9,600.0	7,289.8	9,648.8	7,289.8	49.1	51.0	90.00	-2,376.9	-901.4	661.4	563.0	98.38	6.722		
9,700.0	7,289.6	9,748.8	7,289.6	50.9	52.8	90.00	-2,476.9	-901.4	661.4	559.4	102.01	6.483		
9,800.0	7,289.5	9,848.8	7,289.5	52.8	54.5	90.00	-2,576.9	-901.4	661.4	555.7	105.66	6.260		
9,900.0	7,289.4	9,948.8	7,289.4	54.6	56.3	90.00	-2,676.9	-901.4	661.4	552.1	109.31	6.050		
10,000.0	7,289.2	10,048.8	7,289.2	56.4	58.1	90.00	-2,776.9	-901.4	661.4	548.4	112.98	5.854		
10,100.0	7,289.1	10,148.8	7,289.1	58.3	59.9	90.00	-2,876.9	-901.4	661.4	544.7	116.66	5.669		

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-403 - Wellbore #1 - Plan #1 (06-12-13)				Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)							
10,200.0	7,288.9	10,248.8	7,288.9	60.1	61.7	90.00	-2,976.9	-901.4	661.4	541.0	120.35	5.495			
10,300.0	7,288.8	10,348.8	7,288.8	62.0	63.5	90.00	-3,076.9	-901.4	661.4	537.3	124.05	5.332			
10,400.0	7,288.7	10,448.8	7,288.7	63.8	65.3	90.00	-3,176.9	-901.4	661.4	533.6	127.75	5.177			
10,500.0	7,288.5	10,548.8	7,288.5	65.7	67.1	90.00	-3,276.9	-901.4	661.4	529.9	131.47	5.031			
10,600.0	7,288.4	10,648.8	7,288.4	67.5	68.9	90.00	-3,376.9	-901.4	661.4	526.2	135.19	4.892			
10,700.0	7,288.2	10,748.8	7,288.2	69.4	70.8	90.00	-3,476.9	-901.4	661.4	522.4	138.92	4.761			
10,800.0	7,288.1	10,848.8	7,288.1	71.3	72.6	90.00	-3,576.9	-901.4	661.4	518.7	142.65	4.636			
10,900.0	7,288.0	10,948.8	7,288.0	73.1	74.4	90.00	-3,676.9	-901.4	661.4	515.0	146.39	4.518			
11,000.0	7,287.8	11,048.8	7,287.8	75.0	76.3	90.00	-3,776.9	-901.4	661.4	511.2	150.13	4.405			
11,100.0	7,287.7	11,148.8	7,287.7	76.9	78.1	90.00	-3,876.9	-901.4	661.4	507.5	153.88	4.298			
11,200.0	7,287.5	11,248.8	7,287.5	78.8	80.0	90.00	-3,976.9	-901.4	661.4	503.7	157.63	4.196			
11,300.0	7,287.4	11,348.8	7,287.4	80.7	81.8	90.00	-4,076.9	-901.4	661.4	500.0	161.39	4.098			
11,400.0	7,287.3	11,448.8	7,287.3	82.5	83.7	90.00	-4,176.9	-901.4	661.4	496.2	165.15	4.005			
11,500.0	7,287.1	11,548.8	7,287.1	84.4	85.6	90.00	-4,276.9	-901.4	661.4	492.4	168.92	3.915			
11,563.9	7,287.0	11,612.7	7,287.0	85.6	86.7	90.00	-4,340.7	-901.4	661.4	490.0	171.32	3.860			
11,587.5	7,287.0	11,636.3	7,287.0	86.1	87.2	90.00	-4,364.3	-901.3	661.4	489.1	172.21	3.840 SF			



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	92.73	92.73	-10.9	228.8	229.0				
100.0	100.0	100.0	100.0	0.1	0.1	92.73	92.73	-10.9	228.8	229.0	228.8	0.22	1,019.055	
200.0	200.0	200.0	200.0	0.3	0.3	92.73	92.73	-10.9	228.8	229.0	228.4	0.67	339.685	
300.0	300.0	300.0	300.0	0.6	0.6	92.73	92.73	-10.9	228.8	229.0	227.9	1.12	203.811	
400.0	400.0	400.0	400.0	0.8	0.8	92.73	92.73	-10.9	228.8	229.0	227.5	1.57	145.579	
500.0	500.0	500.0	500.0	1.0	1.0	92.73	92.73	-10.9	228.8	229.0	227.0	2.02	113.228	
600.0	600.0	600.0	600.0	1.2	1.2	92.73	92.73	-10.9	228.8	229.0	226.6	2.47	92.641	
700.0	700.0	700.0	700.0	1.5	1.5	92.73	92.73	-10.9	228.8	229.0	226.1	2.92	78.389	
800.0	800.0	800.0	800.0	1.7	1.7	92.73	92.73	-10.9	228.8	229.0	225.7	3.37	67.937	
900.0	900.0	900.0	900.0	1.9	1.9	92.73	92.73	-10.9	228.8	229.0	225.2	3.82	59.944	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	92.73	92.73	-10.9	228.8	229.0	224.8	4.27	53.634	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	92.73	92.73	-10.9	228.8	229.0	224.3	4.72	48.526	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	92.73	92.73	-10.9	228.8	229.0	223.9	5.17	44.307	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	92.73	92.73	-10.9	228.8	229.0	223.4	5.62	40.762	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	92.73	92.73	-10.9	228.8	229.0	223.0	6.07	37.743	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	92.73	92.73	-10.9	228.8	229.0	222.5	6.52	35.140 CC, ES	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	136.85	136.85	-10.9	228.8	230.3	223.4	6.96	33.083	
1,700.0	1,699.8	1,699.8	1,699.8	3.7	3.7	137.67	137.67	-10.9	228.8	234.2	226.8	7.40	31.653	
1,800.0	1,799.5	1,799.5	1,799.5	3.9	3.9	138.98	138.98	-10.9	228.8	240.7	232.9	7.83	30.736	
1,900.0	1,898.9	1,898.9	1,898.9	4.2	4.2	140.59	140.59	-10.9	228.8	248.9	240.7	8.27	30.085	
2,000.0	1,998.3	1,998.3	1,998.3	4.4	4.4	142.12	142.12	-10.9	228.8	257.4	248.7	8.72	29.508	
2,100.0	2,097.7	2,103.7	2,103.7	4.7	4.6	143.31	143.31	-9.3	227.9	264.9	255.7	9.18	28.845	
2,200.0	2,197.1	2,209.8	2,209.8	4.9	4.9	143.80	143.80	-4.2	225.0	270.2	260.5	9.65	28.005	
2,300.0	2,296.5	2,315.3	2,314.7	5.2	5.1	143.65	143.65	4.2	220.4	273.1	263.0	10.12	26.999	
2,400.0	2,395.9	2,415.3	2,414.1	5.4	5.3	143.27	143.27	13.4	215.2	275.2	264.6	10.58	26.007	
2,500.0	2,495.4	2,515.3	2,513.5	5.7	5.6	142.90	142.90	22.6	210.1	277.3	266.2	11.05	25.085	
2,600.0	2,594.8	2,615.2	2,612.9	6.0	5.8	142.54	142.54	31.8	204.9	279.4	267.8	11.53	24.226	
2,700.0	2,694.2	2,715.2	2,712.3	6.3	6.1	142.18	142.18	41.1	199.8	281.5	269.4	12.02	23.425	
2,800.0	2,793.6	2,815.1	2,811.7	6.5	6.3	141.83	141.83	50.3	194.6	283.6	271.1	12.50	22.678	
2,900.0	2,893.0	2,915.1	2,911.1	6.8	6.6	141.48	141.48	59.5	189.5	285.7	272.7	13.00	21.980	
3,000.0	2,992.4	3,015.1	3,010.5	7.1	6.8	141.13	141.13	68.7	184.3	287.8	274.3	13.50	21.327	
3,100.0	3,091.8	3,115.0	3,109.9	7.4	7.1	140.80	140.80	77.9	179.2	290.0	276.0	14.00	20.715	
3,200.0	3,191.3	3,215.0	3,209.3	7.7	7.4	140.46	140.46	87.1	174.1	292.1	277.6	14.50	20.141	
3,300.0	3,290.7	3,315.0	3,308.7	7.9	7.6	140.13	140.13	96.3	168.9	294.3	279.3	15.01	19.602	
3,400.0	3,390.1	3,414.9	3,408.1	8.2	7.9	139.81	139.81	105.6	163.8	296.4	280.9	15.52	19.094	
3,500.0	3,489.5	3,514.9	3,507.5	8.5	8.2	139.49	139.49	114.8	158.6	298.6	282.6	16.04	18.616	
3,600.0	3,588.9	3,614.8	3,606.9	8.8	8.4	139.18	139.18	124.0	153.5	300.8	284.2	16.56	18.166	
3,700.0	3,688.3	3,714.8	3,706.4	9.1	8.7	138.87	138.87	133.2	148.3	303.0	285.9	17.08	17.740	
3,800.0	3,787.8	3,814.8	3,805.8	9.4	9.0	138.56	138.56	142.4	143.2	305.2	287.6	17.60	17.338	
3,900.0	3,887.2	3,914.7	3,905.2	9.7	9.3	138.26	138.26	151.6	138.1	307.4	289.3	18.13	16.957	
4,000.0	3,986.6	4,014.7	4,004.6	10.0	9.5	137.96	137.96	160.9	132.9	309.6	291.0	18.66	16.595	
4,100.0	4,086.0	4,114.7	4,104.0	10.3	9.8	137.67	137.67	170.1	127.8	311.9	292.7	19.19	16.253	
4,200.0	4,185.4	4,214.6	4,203.4	10.6	10.1	137.38	137.38	179.3	122.6	314.1	294.4	19.72	15.927	
4,300.0	4,284.8	4,314.6	4,302.8	10.8	10.4	137.10	137.10	188.5	117.5	316.3	296.1	20.26	15.618	
4,400.0	4,384.2	4,414.5	4,402.2	11.1	10.7	136.82	136.82	197.7	112.3	318.6	297.8	20.79	15.323	
4,500.0	4,483.7	4,514.5	4,501.6	11.4	11.0	136.54	136.54	206.9	107.2	320.9	299.5	21.33	15.043	
4,600.0	4,583.1	4,614.5	4,601.0	11.7	11.2	136.27	136.27	216.1	102.1	323.1	301.3	21.87	14.775	
4,700.0	4,682.5	4,714.3	4,700.2	12.0	11.5	136.00	136.00	225.3	96.9	325.4	303.0	22.41	14.520	
4,800.0	4,782.0	4,808.7	4,794.2	12.3	11.7	135.86	135.86	232.6	92.9	327.5	304.7	22.88	14.316	
4,900.0	4,881.9	4,903.0	4,888.5	12.5	11.9	135.77	135.77	237.2	90.3	328.9	305.6	23.26	14.142	
5,000.0	4,981.8	5,000.0	4,985.4	12.6	12.1	135.73	135.73	239.0	89.3	329.4	305.8	23.59	13.964	

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,033.1	5,014.9	5,029.5	5,014.9	12.7	12.1	135.74		239.1	89.3	329.5	305.8	23.70	13.903	
5,100.0	5,081.8	5,096.4	5,081.8	12.8	12.3	91.90		239.1	89.3	329.4	305.5	23.94	13.759	
5,200.0	5,181.8	5,196.4	5,181.8	13.0	12.5	91.90		239.1	89.3	329.4	305.1	24.35	13.529	
5,300.0	5,281.8	5,296.4	5,281.8	13.2	12.7	91.90		239.1	89.3	329.4	304.7	24.76	13.306	
5,400.0	5,381.8	5,396.4	5,381.8	13.4	12.9	91.90		239.1	89.3	329.4	304.3	25.17	13.089	
5,500.0	5,481.8	5,496.4	5,481.8	13.6	13.1	91.90		239.1	89.3	329.4	303.9	25.58	12.878	
5,600.0	5,581.8	5,596.4	5,581.8	13.8	13.3	91.90		239.1	89.3	329.4	303.4	25.99	12.673	
5,700.0	5,681.8	5,696.4	5,681.8	14.0	13.5	91.90		239.1	89.3	329.4	303.0	26.41	12.474	
5,800.0	5,781.8	5,796.4	5,781.8	14.2	13.7	91.90		239.1	89.3	329.4	302.6	26.82	12.281	
5,900.0	5,881.8	5,896.4	5,881.8	14.4	13.9	91.90		239.1	89.3	329.4	302.2	27.24	12.093	
6,000.0	5,981.8	5,996.4	5,981.8	14.6	14.1	91.90		239.1	89.3	329.4	301.8	27.66	11.911	
6,100.0	6,081.8	6,096.4	6,081.8	14.8	14.3	91.90		239.1	89.3	329.4	301.4	28.08	11.733	
6,200.0	6,181.8	6,196.4	6,181.8	15.0	14.5	91.90		239.1	89.3	329.4	300.9	28.50	11.561	
6,300.0	6,281.8	6,296.4	6,281.8	15.2	14.7	91.90		239.1	89.3	329.4	300.5	28.92	11.392	
6,348.7	6,330.6	6,345.2	6,330.6	15.3	14.8	91.90		239.1	89.3	329.4	300.3	29.12	11.312	
6,400.0	6,381.8	6,395.9	6,381.3	15.4	14.9	92.05		238.2	89.3	329.5	300.1	29.32	11.237	
6,500.0	6,481.8	6,493.1	6,477.9	15.6	15.0	93.90		227.5	89.3	330.0	300.5	29.58	11.159	
6,600.0	6,581.8	6,586.9	6,569.0	15.7	15.1	-82.63		205.7	89.3	332.1	302.4	29.69	11.186	
6,700.0	6,680.6	6,678.3	6,654.6	15.8	15.1	-79.17		173.8	89.3	335.5	305.8	29.70	11.296	
6,800.0	6,776.6	6,767.7	6,734.1	15.9	15.1	-75.97		132.9	89.3	339.7	310.1	29.65	11.459	
6,900.0	6,868.3	6,855.4	6,806.9	15.9	15.2	-73.07		84.1	89.3	344.6	315.0	29.56	11.656	
7,000.0	6,953.9	6,941.7	6,872.5	15.9	15.2	-70.50		28.3	89.3	349.8	320.3	29.48	11.863	
7,100.0	7,032.1	7,026.7	6,930.7	16.0	15.2	-68.26		-33.7	89.3	354.9	325.4	29.45	12.051	
7,200.0	7,101.5	7,110.6	6,981.0	16.0	15.4	-66.39		-100.8	89.3	359.7	330.2	29.51	12.191	
7,300.0	7,161.0	7,193.7	7,023.3	16.1	15.8	-64.86		-172.3	89.3	364.0	334.2	29.73	12.242	
7,400.0	7,209.4	7,276.2	7,057.4	16.5	16.3	-63.69		-247.4	89.3	367.5	337.3	30.19	12.174	
7,500.0	7,246.0	7,358.2	7,083.0	17.1	16.9	-62.86		-325.2	89.3	370.1	339.1	30.91	11.971	
7,600.0	7,270.2	7,439.9	7,100.1	17.9	17.6	-62.39		-405.1	89.3	371.6	339.6	31.95	11.629	
7,700.0	7,282.7	7,521.4	7,108.6	18.9	18.4	-62.12		-486.1	89.3	372.6	339.2	33.37	11.167	
7,800.0	7,291.1	7,610.3	7,109.1	20.0	19.4	-61.10		-575.0	89.3	376.2	341.4	34.87	10.790	
7,900.0	7,292.1	7,710.3	7,108.0	21.2	20.6	-60.79		-675.0	89.3	377.2	340.4	36.86	10.235	
8,000.0	7,292.0	7,810.3	7,107.0	22.5	21.9	-60.67		-775.0	89.3	377.7	338.5	39.14	9.650	
8,100.0	7,291.9	7,910.3	7,106.0	23.9	23.3	-60.55		-874.9	89.3	378.1	336.5	41.57	9.097	
8,200.0	7,291.7	8,010.3	7,104.9	25.3	24.8	-60.43		-974.9	89.3	378.6	334.4	44.12	8.581	
8,300.0	7,291.6	8,110.3	7,103.9	26.8	26.3	-60.32		-1,074.9	89.3	379.0	332.2	46.77	8.104	
8,400.0	7,291.5	8,210.3	7,102.9	28.4	27.9	-60.20		-1,174.9	89.3	379.4	329.9	49.50	7.665	
8,500.0	7,291.3	8,310.3	7,101.9	30.0	29.5	-60.08		-1,274.9	89.3	379.9	327.6	52.31	7.262	
8,600.0	7,291.2	8,410.3	7,100.8	31.6	31.2	-59.97		-1,374.9	89.3	380.3	325.1	55.17	6.893	
8,700.0	7,291.0	8,510.2	7,099.8	33.3	32.8	-59.85		-1,474.9	89.3	380.8	322.7	58.08	6.556	
8,800.0	7,290.9	8,610.2	7,098.8	35.0	34.5	-59.73		-1,574.9	89.3	381.2	320.2	61.03	6.246	
8,900.0	7,290.8	8,710.2	7,097.7	36.7	36.3	-59.62		-1,674.9	89.3	381.7	317.6	64.02	5.962	
9,000.0	7,290.6	8,810.2	7,096.7	38.4	38.0	-59.50		-1,774.9	89.3	382.1	315.1	67.03	5.701	
9,100.0	7,290.5	8,910.2	7,095.7	40.2	39.8	-59.39		-1,874.8	89.3	382.6	312.5	70.06	5.460	
9,200.0	7,290.3	9,010.2	7,094.6	41.9	41.5	-59.27		-1,974.8	89.3	383.0	309.9	73.12	5.239	
9,300.0	7,290.2	9,110.2	7,093.6	43.7	43.3	-59.16		-2,074.8	89.3	383.5	307.3	76.19	5.033	
9,400.0	7,290.1	9,210.2	7,092.6	45.5	45.1	-59.05		-2,174.8	89.3	383.9	304.7	79.27	4.843	
9,500.0	7,289.9	9,310.2	7,091.6	47.3	46.9	-58.93		-2,274.8	89.3	384.4	302.0	82.36	4.667	
9,600.0	7,289.8	9,410.2	7,090.5	49.1	48.7	-58.82		-2,374.8	89.3	384.9	299.4	85.47	4.503	
9,700.0	7,289.6	9,510.2	7,089.5	50.9	50.6	-58.71		-2,474.8	89.3	385.3	296.7	88.58	4.350	
9,800.0	7,289.5	9,610.2	7,088.5	52.8	52.4	-58.59		-2,574.8	89.3	385.8	294.1	91.70	4.207	
9,900.0	7,289.4	9,710.2	7,087.4	54.6	54.2	-58.48		-2,674.8	89.3	386.2	291.4	94.82	4.073	

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 Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.0	7,289.2	9,810.2	7,086.4	56.4	56.1	-58.37	-2,774.8	89.3	386.7	288.8	97.95	3.948		
10,100.0	7,289.1	9,910.2	7,085.4	58.3	57.9	-58.26	-2,874.8	89.3	387.2	286.1	101.08	3.830		
10,200.0	7,288.9	10,010.2	7,084.3	60.1	59.8	-58.14	-2,974.7	89.3	387.6	283.4	104.21	3.720		
10,300.0	7,288.8	10,110.2	7,083.3	62.0	61.6	-58.03	-3,074.7	89.3	388.1	280.8	107.34	3.616		
10,400.0	7,288.7	10,210.2	7,082.3	63.8	63.5	-57.92	-3,174.7	89.3	388.6	278.1	110.48	3.517		
10,500.0	7,288.5	10,310.2	7,081.3	65.7	65.3	-57.81	-3,274.7	89.3	389.1	275.5	113.61	3.425		
10,600.0	7,288.4	10,410.2	7,080.2	67.5	67.2	-57.70	-3,374.7	89.3	389.5	272.8	116.74	3.337		
10,700.0	7,288.2	10,510.2	7,079.2	69.4	69.1	-57.59	-3,474.7	89.3	390.0	270.1	119.87	3.254		
10,800.0	7,288.1	10,610.2	7,078.2	71.3	70.9	-57.48	-3,574.7	89.3	390.5	267.5	123.00	3.175		
10,900.0	7,288.0	10,710.2	7,077.1	73.1	72.8	-57.37	-3,674.7	89.3	391.0	264.8	126.13	3.100		
11,000.0	7,287.8	10,810.2	7,076.1	75.0	74.7	-57.26	-3,774.7	89.3	391.4	262.2	129.25	3.029		
11,100.0	7,287.7	10,910.2	7,075.1	76.9	76.6	-57.15	-3,874.7	89.3	391.9	259.6	132.37	2.961		
11,200.0	7,287.5	11,010.1	7,074.1	78.8	78.5	-57.04	-3,974.7	89.3	392.4	256.9	135.49	2.896		
11,300.0	7,287.4	11,110.1	7,073.0	80.7	80.3	-56.93	-4,074.6	89.3	392.9	254.3	138.61	2.835		
11,400.0	7,287.3	11,210.1	7,072.0	82.5	82.2	-56.82	-4,174.6	89.3	393.4	251.7	141.72	2.776		
11,500.0	7,287.1	11,310.1	7,071.0	84.4	84.1	-56.71	-4,274.6	89.3	393.9	249.1	144.79	2.720		
11,587.5	7,287.0	11,397.6	7,070.1	86.1	85.4	-56.62	-4,362.1	89.3	394.3	247.1	147.22	2.678 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4777.0ft (RKB-15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Wiedeman 29K-443

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.45°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 29K-443
<b>Project:</b>	SEC.29-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Reference Site:</b>	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	<b>MD Reference:</b>	WELL @ 4777.0ft (RKB-15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wiedeman 29K-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (06-12-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4777.0ft (RKB-15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Wiedeman 29K-443

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.45°

