

# PETROLEUM DEVELOPMENT CORP Weld County CO

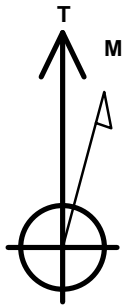
Well Name: **Richter 34U-303**

Surface Location: Richter 27T-HZ Pad Sec.27-T7N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4870.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1440181.34	3269278.69	40.537660	-104.531160	
RKB - 13' WELL @ 4883.0ft (RKB - 13')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FSL & 200'FEL	7015.0	-5009.4	1028.6	Point



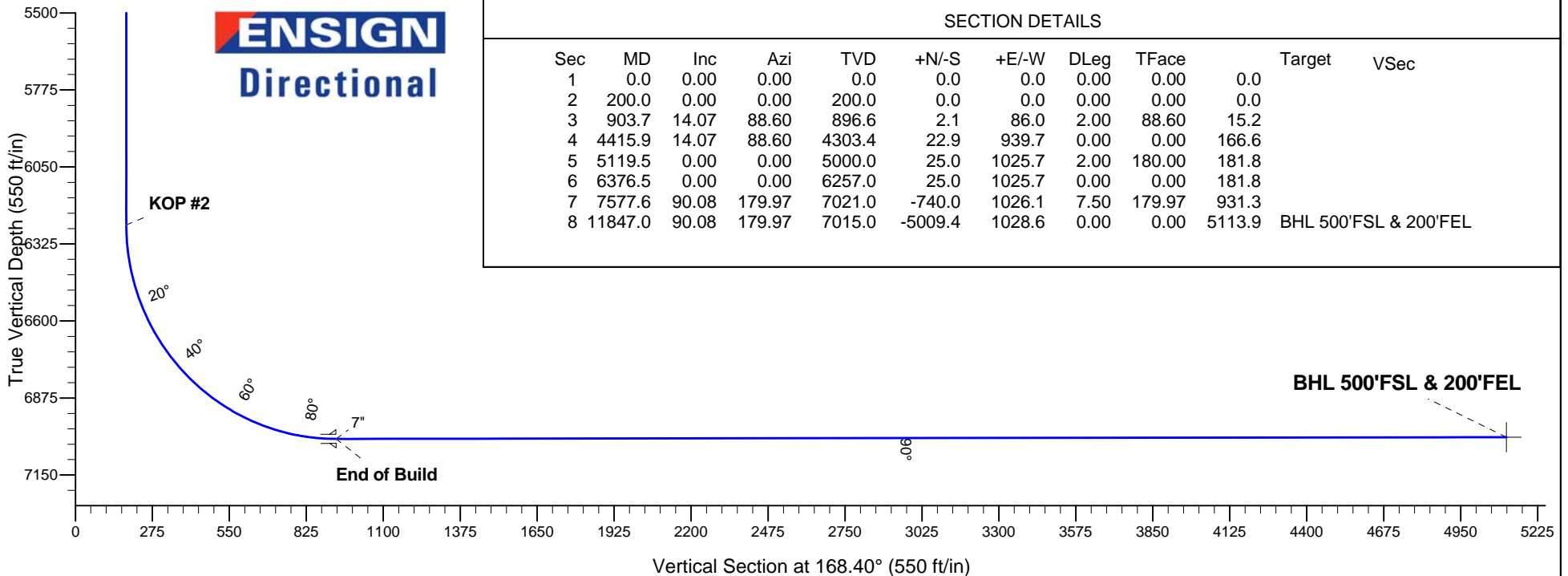
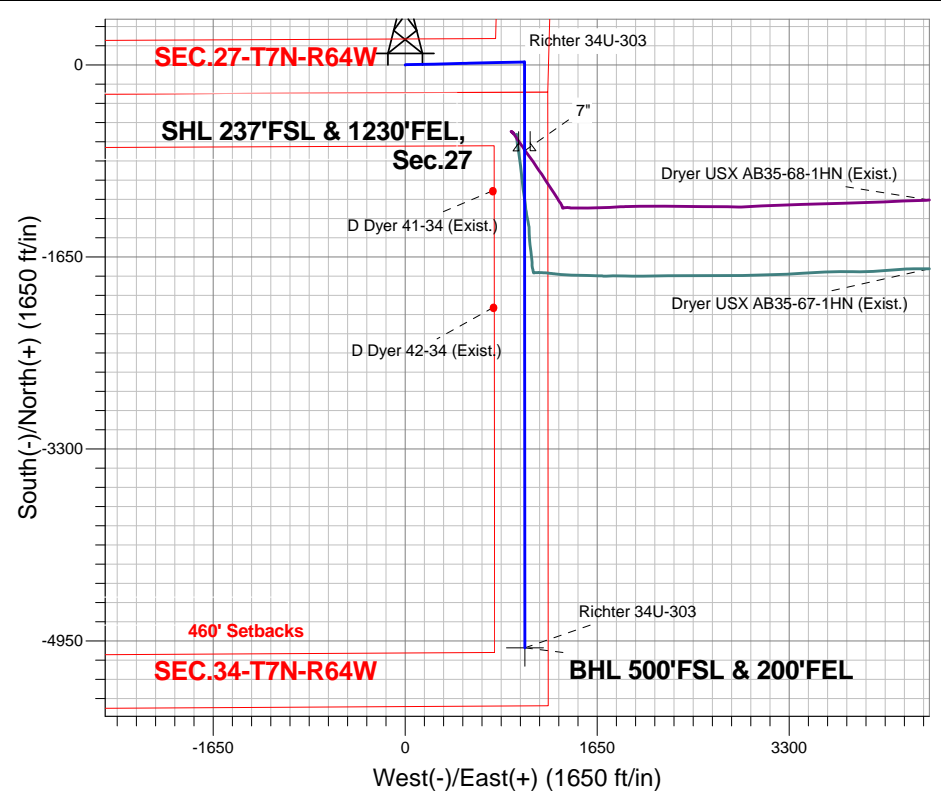
Azimuths to True North  
Magnetic North: 8.46°

Magnetic Field  
Strength: 53005.0snT  
Dip Angle: 67.13°  
Date: 7/25/2013  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6257.0	6376.5	KOP #2
7021.0	7577.6	End of Build

Richter 27T-HZ Pad Sec.27-T7N-R64W  
Richter 34U-303  
Plan #2 (7-25-13)  
11:17, July 25 2013





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.27-T7N-R64W**

**Richter 27T-HZ Pad Sec.27-T7N-R64W**

**Richter 34U-303**

**Wellbore #1**

**Plan: Plan #2 (7-25-13)**

## **Standard Planning Report**

**25 July, 2013**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Project:</b>	SEC.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Richter 34U-303	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-25-13)		

<b>Project</b>	SEC.27-T7N-R64W, Weld County, CO		
<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						Richter 27T-HZ Pad Sec.27-T7N-R64W											
<b>Site Position:</b>						<b>Northing:</b>			1,440,175.74 ft			<b>Latitude:</b>			40.537650		
<b>From:</b>			Lat/Long			<b>Easting:</b>			3,269,098.08 ft			<b>Longitude:</b>			-104.531810		
<b>Position Uncertainty:</b>			0.0 ft			<b>Slot Radius:</b>			"			<b>Grid Convergence:</b>			0.63 °		

Well	Richter 34U-303					
Well Position	+N-S	3.6 ft	Northing:	1,440,181.34 ft	Latitude:	40.537660
	+E-W	180.7 ft	Easting:	3,269,278.69 ft	Longitude:	-104.531160
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,870.0 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	7/25/2013	8.47	67.13	53,005

<b>Design</b>	Plan #2 (7-25-13)			
<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	168.40

<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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
903.7	14.07	88.60	896.6	2.1	86.0	2.00	2.00	0.00	88.60	
4,415.9	14.07	88.60	4,303.4	22.9	939.7	0.00	0.00	0.00	0.00	
5,119.5	0.00	0.00	5,000.0	25.0	1,025.7	2.00	-2.00	0.00	180.00	
6,376.5	0.00	0.00	6,257.0	25.0	1,025.7	0.00	0.00	0.00	0.00	
7,577.6	90.08	179.97	7,021.0	-740.0	1,026.1	7.50	7.50	0.00	179.97	
11,847.0	90.08	179.97	7,015.0	-5,009.4	1,028.6	0.00	0.00	0.00	0.00	BHL 500'FSL & 20C

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Project:</b>	SEC.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Richter 34U-303	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-25-13)		

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
KOP #1									
300.0	2.00	88.60	300.0	0.0	1.7	0.3	2.00	2.00	0.00
400.0	4.00	88.60	399.8	0.2	7.0	1.2	2.00	2.00	0.00
500.0	6.00	88.60	499.5	0.4	15.7	2.8	2.00	2.00	0.00
600.0	8.00	88.60	598.7	0.7	27.9	4.9	2.00	2.00	0.00
700.0	10.00	88.60	697.5	1.1	43.5	7.7	2.00	2.00	0.00
800.0	12.00	88.60	795.6	1.5	62.6	11.1	2.00	2.00	0.00
900.0	14.00	88.60	893.1	2.1	85.1	15.1	2.00	2.00	0.00
903.7	14.07	88.60	896.6	2.1	86.0	15.2	2.00	2.00	0.00
1,000.0	14.07	88.60	990.1	2.7	109.4	19.4	0.00	0.00	0.00
1,100.0	14.07	88.60	1,087.1	3.3	133.7	23.7	0.00	0.00	0.00
1,200.0	14.07	88.60	1,184.1	3.9	158.0	28.0	0.00	0.00	0.00
1,300.0	14.07	88.60	1,281.1	4.4	182.3	32.3	0.00	0.00	0.00
1,400.0	14.07	88.60	1,378.0	5.0	206.6	36.6	0.00	0.00	0.00
1,500.0	14.07	88.60	1,475.0	5.6	230.9	40.9	0.00	0.00	0.00
1,600.0	14.07	88.60	1,572.0	6.2	255.2	45.2	0.00	0.00	0.00
1,700.0	14.07	88.60	1,669.0	6.8	279.5	49.6	0.00	0.00	0.00
1,800.0	14.07	88.60	1,766.0	7.4	303.9	53.9	0.00	0.00	0.00
1,900.0	14.07	88.60	1,863.0	8.0	328.2	58.2	0.00	0.00	0.00
2,000.0	14.07	88.60	1,960.0	8.6	352.5	62.5	0.00	0.00	0.00
2,100.0	14.07	88.60	2,057.0	9.2	376.8	66.8	0.00	0.00	0.00
2,200.0	14.07	88.60	2,154.0	9.8	401.1	71.1	0.00	0.00	0.00
2,300.0	14.07	88.60	2,251.0	10.4	425.4	75.4	0.00	0.00	0.00
2,400.0	14.07	88.60	2,348.0	11.0	449.7	79.7	0.00	0.00	0.00
2,500.0	14.07	88.60	2,445.0	11.6	474.0	84.0	0.00	0.00	0.00
2,600.0	14.07	88.60	2,542.0	12.1	498.3	88.3	0.00	0.00	0.00
2,700.0	14.07	88.60	2,639.0	12.7	522.6	92.6	0.00	0.00	0.00
2,800.0	14.07	88.60	2,736.0	13.3	546.9	97.0	0.00	0.00	0.00
2,900.0	14.07	88.60	2,833.0	13.9	571.2	101.3	0.00	0.00	0.00
3,000.0	14.07	88.60	2,930.0	14.5	595.6	105.6	0.00	0.00	0.00
3,100.0	14.07	88.60	3,027.0	15.1	619.9	109.9	0.00	0.00	0.00
3,200.0	14.07	88.60	3,124.0	15.7	644.2	114.2	0.00	0.00	0.00
3,300.0	14.07	88.60	3,221.0	16.3	668.5	118.5	0.00	0.00	0.00
3,400.0	14.07	88.60	3,318.0	16.9	692.8	122.8	0.00	0.00	0.00
3,500.0	14.07	88.60	3,415.0	17.5	717.1	127.1	0.00	0.00	0.00
3,600.0	14.07	88.60	3,512.0	18.1	741.4	131.4	0.00	0.00	0.00
3,700.0	14.07	88.60	3,609.0	18.7	765.7	135.7	0.00	0.00	0.00
3,800.0	14.07	88.60	3,706.0	19.3	790.0	140.0	0.00	0.00	0.00
3,900.0	14.07	88.60	3,803.0	19.8	814.3	144.4	0.00	0.00	0.00
4,000.0	14.07	88.60	3,900.0	20.4	838.6	148.7	0.00	0.00	0.00
4,100.0	14.07	88.60	3,997.0	21.0	863.0	153.0	0.00	0.00	0.00
4,200.0	14.07	88.60	4,094.0	21.6	887.3	157.3	0.00	0.00	0.00
4,300.0	14.07	88.60	4,191.0	22.2	911.6	161.6	0.00	0.00	0.00
4,400.0	14.07	88.60	4,288.0	22.8	935.9	165.9	0.00	0.00	0.00
4,415.9	14.07	88.60	4,303.4	22.9	939.7	166.6	0.00	0.00	0.00
4,500.0	12.39	88.60	4,385.3	23.4	959.0	170.0	2.00	-2.00	0.00
4,600.0	10.39	88.60	4,483.3	23.9	978.7	173.5	2.00	-2.00	0.00
4,700.0	8.39	88.60	4,582.0	24.3	995.0	176.4	2.00	-2.00	0.00
4,800.0	6.39	88.60	4,681.1	24.6	1,007.9	178.7	2.00	-2.00	0.00
4,900.0	4.39	88.60	4,780.7	24.8	1,017.3	180.3	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Project:</b>	SEC.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Richter 34U-303	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-25-13)		

## 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	2.39	88.60	4,880.5	24.9	1,023.2	181.4	2.00	-2.00	0.00
5,100.0	0.39	88.60	4,980.5	25.0	1,025.6	181.8	2.00	-2.00	0.00
5,119.5	0.00	0.00	5,000.0	25.0	1,025.7	181.8	2.00	-2.00	0.00
5,200.0	0.00	0.00	5,080.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,300.0	0.00	0.00	5,180.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,280.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,380.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,480.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,580.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,680.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,780.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,880.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,100.0	0.00	0.00	5,980.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,080.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,300.0	0.00	0.00	6,180.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,376.5	0.00	0.00	6,257.0	25.0	1,025.7	181.8	0.00	0.00	0.00
<b>KOP #2</b>									
6,400.0	1.76	179.97	6,280.5	24.6	1,025.7	182.2	7.49	7.49	0.00
6,500.0	9.26	179.97	6,379.9	15.0	1,025.7	191.6	7.50	7.50	0.00
6,600.0	16.76	179.97	6,477.3	-7.4	1,025.7	213.6	7.50	7.50	0.00
6,700.0	24.26	179.97	6,570.9	-42.5	1,025.7	247.9	7.50	7.50	0.00
6,800.0	31.76	179.97	6,659.1	-89.4	1,025.8	293.9	7.50	7.50	0.00
6,900.0	39.26	179.97	6,740.5	-147.4	1,025.8	350.8	7.50	7.50	0.00
7,000.0	46.76	179.97	6,813.5	-215.6	1,025.8	417.5	7.50	7.50	0.00
7,100.0	54.26	179.97	6,877.1	-292.7	1,025.9	493.1	7.50	7.50	0.00
7,200.0	61.76	179.97	6,930.0	-377.5	1,025.9	576.1	7.50	7.50	0.00
7,300.0	69.26	179.97	6,971.5	-468.4	1,026.0	665.2	7.50	7.50	0.00
7,400.0	76.76	179.97	7,000.7	-564.0	1,026.0	758.8	7.50	7.50	0.00
7,500.0	84.26	179.97	7,017.1	-662.5	1,026.1	855.4	7.50	7.50	0.00
7,577.6	90.08	179.97	7,021.0	-740.0	1,026.1	931.3	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,600.0	90.08	179.97	7,020.9	-762.4	1,026.2	953.2	0.00	0.00	0.00
7,700.0	90.08	179.97	7,020.8	-862.4	1,026.2	1,051.2	0.00	0.00	0.00
7,800.0	90.08	179.97	7,020.7	-962.4	1,026.3	1,149.2	0.00	0.00	0.00
7,900.0	90.08	179.97	7,020.5	-1,062.4	1,026.3	1,247.1	0.00	0.00	0.00
8,000.0	90.08	179.97	7,020.4	-1,162.4	1,026.4	1,345.1	0.00	0.00	0.00
8,100.0	90.08	179.97	7,020.2	-1,262.4	1,026.5	1,443.1	0.00	0.00	0.00
8,200.0	90.08	179.97	7,020.1	-1,362.4	1,026.5	1,541.0	0.00	0.00	0.00
8,300.0	90.08	179.97	7,020.0	-1,462.4	1,026.6	1,639.0	0.00	0.00	0.00
8,400.0	90.08	179.97	7,019.8	-1,562.4	1,026.6	1,737.0	0.00	0.00	0.00
8,500.0	90.08	179.97	7,019.7	-1,662.4	1,026.7	1,834.9	0.00	0.00	0.00
8,600.0	90.08	179.97	7,019.5	-1,762.4	1,026.7	1,932.9	0.00	0.00	0.00
8,700.0	90.08	179.97	7,019.4	-1,862.4	1,026.8	2,030.9	0.00	0.00	0.00
8,800.0	90.08	179.97	7,019.3	-1,962.4	1,026.9	2,128.8	0.00	0.00	0.00
8,900.0	90.08	179.97	7,019.1	-2,062.4	1,026.9	2,226.8	0.00	0.00	0.00
9,000.0	90.08	179.97	7,019.0	-2,162.4	1,027.0	2,324.8	0.00	0.00	0.00
9,100.0	90.08	179.97	7,018.8	-2,262.4	1,027.0	2,422.7	0.00	0.00	0.00
9,200.0	90.08	179.97	7,018.7	-2,362.4	1,027.1	2,520.7	0.00	0.00	0.00
9,300.0	90.08	179.97	7,018.6	-2,462.4	1,027.2	2,618.7	0.00	0.00	0.00
9,400.0	90.08	179.97	7,018.4	-2,562.4	1,027.2	2,716.6	0.00	0.00	0.00
9,500.0	90.08	179.97	7,018.3	-2,662.4	1,027.3	2,814.6	0.00	0.00	0.00
9,600.0	90.08	179.97	7,018.1	-2,762.4	1,027.3	2,912.6	0.00	0.00	0.00
9,700.0	90.08	179.97	7,018.0	-2,862.4	1,027.4	3,010.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Project:</b>	SEC.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Richter 34U-303	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-25-13)		

#### 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)
9,800.0	90.08	179.97	7,017.9	-2,962.4	1,027.4	3,108.5	0.00	0.00	0.00
9,900.0	90.08	179.97	7,017.7	-3,062.4	1,027.5	3,206.5	0.00	0.00	0.00
10,000.0	90.08	179.97	7,017.6	-3,162.4	1,027.6	3,304.5	0.00	0.00	0.00
10,100.0	90.08	179.97	7,017.4	-3,262.4	1,027.6	3,402.4	0.00	0.00	0.00
10,200.0	90.08	179.97	7,017.3	-3,362.4	1,027.7	3,500.4	0.00	0.00	0.00
10,300.0	90.08	179.97	7,017.2	-3,462.4	1,027.7	3,598.4	0.00	0.00	0.00
10,400.0	90.08	179.97	7,017.0	-3,562.4	1,027.8	3,696.3	0.00	0.00	0.00
10,500.0	90.08	179.97	7,016.9	-3,662.4	1,027.9	3,794.3	0.00	0.00	0.00
10,600.0	90.08	179.97	7,016.7	-3,762.4	1,027.9	3,892.3	0.00	0.00	0.00
10,700.0	90.08	179.97	7,016.6	-3,862.4	1,028.0	3,990.2	0.00	0.00	0.00
10,800.0	90.08	179.97	7,016.5	-3,962.4	1,028.0	4,088.2	0.00	0.00	0.00
10,900.0	90.08	179.97	7,016.3	-4,062.4	1,028.1	4,186.2	0.00	0.00	0.00
11,000.0	90.08	179.97	7,016.2	-4,162.4	1,028.1	4,284.1	0.00	0.00	0.00
11,100.0	90.08	179.97	7,016.0	-4,262.4	1,028.2	4,382.1	0.00	0.00	0.00
11,200.0	90.08	179.97	7,015.9	-4,362.4	1,028.3	4,480.1	0.00	0.00	0.00
11,300.0	90.08	179.97	7,015.8	-4,462.4	1,028.3	4,578.0	0.00	0.00	0.00
11,400.0	90.08	179.97	7,015.6	-4,562.4	1,028.4	4,676.0	0.00	0.00	0.00
11,500.0	90.08	179.97	7,015.5	-4,662.4	1,028.4	4,774.0	0.00	0.00	0.00
11,600.0	90.08	179.97	7,015.3	-4,762.4	1,028.5	4,871.9	0.00	0.00	0.00
11,700.0	90.08	179.97	7,015.2	-4,862.4	1,028.6	4,969.9	0.00	0.00	0.00
11,800.0	90.08	179.97	7,015.1	-4,962.4	1,028.6	5,067.9	0.00	0.00	0.00
11,847.0	90.08	179.97	7,015.0	-5,009.4	1,028.6	5,113.9	0.00	0.00	0.00
BHL 500'FSL & 200'FEL									

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,577.6	7,021.0	7"	7	7-1/2

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
6,376.5	6,257.0	25.0	1,025.7	KOP #2
7,577.6	7,021.0	-740.0	1,026.1	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.27-T7N-R64W**

**Richter 27T-HZ Pad Sec.27-T7N-R64W**

**Richter 34U-303**

**Wellbore #1**

**Plan #2 (7-25-13)**

## **Anticollision Report**

**25 July, 2013**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (7-25-13)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 7/25/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,847.0	Plan #2 (7-25-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Dyer 34R-203 Pad Sec.34-T7N-R64W						
D Dyer 41-34 (Exist.) - Wellbore #1 - Design #1	7,919.5	7,017.5	273.1	230.9	6.478	CC, ES, SF
D Dyer 42-34 (Exist.) - Wellbore #1 - Design #1	8,921.3	6,993.1	268.1	209.2	4.552	CC, ES, SF
Richter 27T-HZ Pad Sec.27-T7N-R64W						
Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbor	8,638.7	6,961.9	428.0	377.5	8.473	CC, ES
Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbor	8,700.0	6,963.8	432.4	380.9	8.400	SF
Dryer USX AB35-68-1HN (Exist.) - Wellbore #1 - Wellbor	8,068.4	6,785.0	627.4	585.6	15.025	CC, ES
Dryer USX AB35-68-1HN (Exist.) - Wellbore #1 - Wellbor	8,200.0	6,785.0	641.0	597.5	14.734	SF
Richter 34M-203 - Wellbore #1 - Plan #1 (9-27-12)	200.0	200.0	180.7	180.0	267.992	CC, ES
Richter 34M-203 - Wellbore #1 - Plan #1 (9-27-12)	800.0	742.5	299.8	296.4	87.688	SF
Richter 34M-423 - Wellbore #1 - Plan #1 (9-28-12)	200.0	200.0	150.1	149.5	222.660	CC, ES
Richter 34M-423 - Wellbore #1 - Plan #1 (9-28-12)	1,100.0	1,079.2	285.1	280.3	59.542	SF
Richter 34R-223 - Wellbore #1 - Plan #1 (9-27-12)	200.0	200.0	58.4	57.7	86.565	CC, ES
Richter 34R-223 - Wellbore #1 - Plan #1 (9-27-12)	11,847.0	11,679.6	794.6	601.2	4.108	SF
Richter 34R-403 - Wellbore #1 - Plan #1 (9-28-12)	200.0	200.0	88.9	88.3	131.908	CC, ES
Richter 34R-403 - Wellbore #1 - Plan #1 (9-28-12)	800.0	795.6	151.5	148.1	44.542	SF
Richter 34R-423 - Wellbore #1 - Plan #1 (9-28-12)	200.0	200.0	30.6	29.9	45.343	CC, ES
Richter 34R-423 - Wellbore #1 - Plan #1 (9-28-12)	11,847.0	11,765.0	467.5	274.6	2.424	SF
Ritcher 34R-343 - Wellbore #1 - Plan #2 (7-25-13)	200.0	200.0	119.6	118.9	177.334	CC, ES
Ritcher 34R-343 - Wellbore #1 - Plan #2 (7-25-13)	1,200.0	1,184.1	277.6	272.3	52.493	SF

<b>Offset Design</b> Dyer 34R-203 Pad Sec.34-T7N-R64W - D Dyer 41-34 (Exist.) - Wellbore #1 - Design #1												
Survey Program: 0-MWD												
Reference		Offset		Semi Major Axis			Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
6,900.0	6,740.5	6,737.5	6,737.5	24.6	15.0	20.68	-1,082.0	753.3	973.5	941.3	32.21	30.224
7,000.0	6,813.5	6,810.5	6,810.5	24.9	15.2	24.71	-1,082.0	753.3	908.3	878.0	30.31	29.969
7,100.0	6,877.1	6,874.1	6,874.1	25.2	15.3	30.64	-1,082.0	753.3	835.0	806.3	28.78	29.011
7,200.0	6,930.0	6,927.0	6,927.0	25.5	15.5	39.33	-1,082.0	753.3	755.5	727.1	28.36	26.641
7,300.0	6,971.5	6,968.5	6,968.5	26.0	15.6	51.49	-1,082.0	753.3	671.5	641.7	29.79	22.544
7,400.0	7,000.7	6,997.7	6,997.7	26.7	15.6	66.52	-1,082.0	753.3	585.5	552.7	32.80	17.848
7,500.0	7,017.1	7,014.1	7,014.1	27.4	15.7	81.27	-1,082.0	753.3	500.4	464.6	35.76	13.993

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 Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dyer 34R-203 Pad Sec.34-T7N-R64W - D Dyer 41-34 (Exist.) - Wellbore #1 - Design #1												<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)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,600.0	7,020.9	7,017.9	7,017.9	28.3	15.7	90.09	-1,082.0	753.3	420.3	382.6	37.67	11.155	
7,700.0	7,020.8	7,017.8	7,017.8	29.3	15.7	90.06	-1,082.0	753.3	350.3	311.3	38.99	8.984	
7,800.0	7,020.7	7,017.7	7,017.7	30.3	15.7	90.03	-1,082.0	753.3	298.0	257.7	40.39	7.379	
7,900.0	7,020.5	7,017.5	7,017.5	31.5	15.7	90.01	-1,082.0	753.3	273.8	231.9	41.86	6.540	
7,919.5	7,020.5	7,017.5	7,017.5	31.7	15.7	90.00	-1,082.0	753.3	273.1	230.9	42.15	6.478	CC, ES, SF
8,000.0	7,020.4	7,017.4	7,017.4	32.7	15.7	89.98	-1,082.0	753.3	284.7	241.3	43.38	6.563	
8,100.0	7,020.2	7,017.2	7,017.2	34.1	15.7	89.95	-1,082.0	753.3	327.3	282.4	44.94	7.284	
8,200.0	7,020.1	7,017.1	7,017.1	35.4	15.7	89.92	-1,082.0	753.3	391.5	344.9	46.55	8.410	
8,300.0	7,020.0	7,017.0	7,017.0	36.9	15.7	89.89	-1,082.0	753.3	468.4	420.2	48.19	9.719	
8,400.0	7,019.8	7,016.8	7,016.8	38.3	15.7	89.86	-1,082.0	753.3	552.7	502.8	49.86	11.084	
8,500.0	7,019.7	7,016.7	7,016.7	39.8	15.7	89.83	-1,082.0	753.3	641.6	590.0	51.56	12.443	
8,600.0	7,019.5	7,016.5	7,016.5	41.4	15.7	89.80	-1,082.0	753.3	733.3	680.0	53.28	13.763	
8,700.0	7,019.4	7,016.4	7,016.4	43.0	15.7	89.77	-1,082.0	753.3	826.9	771.9	55.01	15.031	
8,800.0	7,019.3	7,016.3	7,016.3	44.6	15.7	89.74	-1,082.0	753.3	921.9	865.1	56.77	16.240	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dyer 34R-203 Pad Sec.34-T7N-R64W - D Dyer 42-34 (Exist.) - Wellbore #1 - Design #1												<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	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,000.0	7,020.4	6,994.4	6,994.4	32.7	15.6	90.27	-2,083.9	758.9	959.5	916.2	43.34	22.139	
8,100.0	7,020.2	6,994.2	6,994.2	34.1	15.6	90.25	-2,083.9	758.9	864.0	819.1	44.91	19.238	
8,200.0	7,020.1	6,994.1	6,994.1	35.4	15.6	90.22	-2,083.9	758.9	769.5	723.0	46.52	16.543	
8,300.0	7,020.0	6,994.0	6,994.0	36.9	15.6	90.19	-2,083.9	758.9	676.7	628.5	48.16	14.051	
8,400.0	7,019.8	6,993.8	6,993.8	38.3	15.6	90.16	-2,083.9	758.9	586.2	536.4	49.83	11.764	
8,500.0	7,019.7	6,993.7	6,993.7	39.8	15.6	90.13	-2,083.9	758.9	499.4	447.9	51.53	9.692	
8,600.0	7,019.5	6,993.5	6,993.5	41.4	15.6	90.10	-2,083.9	758.9	418.5	365.2	53.24	7.859	
8,700.0	7,019.4	6,993.4	6,993.4	43.0	15.6	90.07	-2,083.9	758.9	347.6	292.6	54.98	6.323	
8,800.0	7,019.3	6,993.3	6,993.3	44.6	15.6	90.04	-2,083.9	758.9	294.2	237.5	56.73	5.186	
8,900.0	7,019.1	6,993.1	6,993.1	46.2	15.6	90.01	-2,083.9	758.9	268.9	210.4	58.50	4.596	
8,921.3	7,019.1	6,993.1	6,993.1	46.6	15.6	90.00	-2,083.9	758.9	268.1	209.2	58.88	4.552	CC, ES, SF
9,000.0	7,019.0	6,993.0	6,993.0	47.9	15.6	89.98	-2,083.9	758.9	279.4	219.1	60.28	4.634	
9,100.0	7,018.8	6,992.8	6,992.8	49.5	15.6	89.95	-2,083.9	758.9	322.1	260.1	62.07	5.190	
9,200.0	7,018.7	6,992.7	6,992.7	51.2	15.6	89.92	-2,083.9	758.9	386.7	322.8	63.88	6.053	
9,300.0	7,018.6	6,992.6	6,992.6	52.9	15.6	89.89	-2,083.9	758.9	463.9	398.3	65.69	7.063	
9,400.0	7,018.4	6,992.4	6,992.4	54.7	15.6	89.86	-2,083.9	758.9	548.6	481.1	67.50	8.127	
9,500.0	7,018.3	6,992.3	6,992.3	56.4	15.6	89.83	-2,083.9	758.9	637.7	568.4	69.33	9.198	
9,600.0	7,018.1	6,992.1	6,992.1	58.2	15.6	89.80	-2,083.9	758.9	729.7	658.5	71.16	10.254	
9,700.0	7,018.0	6,992.0	6,992.0	59.9	15.6	89.77	-2,083.9	758.9	823.5	750.5	73.00	11.281	
9,800.0	7,017.9	6,991.9	6,991.9	61.7	15.6	89.74	-2,083.9	758.9	918.6	843.8	74.84	12.274	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 839-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,300.0	1,281.1	1,250.0	1,249.9	4.5	1.8	39.89	-600.6	958.2	984.5	979.1	5.45	180.701	
1,400.0	1,378.0	1,329.7	1,329.4	5.0	2.0	40.86	-605.9	958.7	970.3	964.3	6.00	161.659	
1,500.0	1,475.0	1,409.8	1,409.1	5.5	2.1	41.98	-613.6	958.7	958.0	951.4	6.58	145.508	
1,600.0	1,572.0	1,485.3	1,484.0	6.0	2.3	43.17	-623.1	958.6	948.1	940.9	7.18	132.002	
1,700.0	1,669.0	1,556.9	1,554.7	6.6	2.5	44.38	-634.2	958.8	941.2	933.4	7.80	120.717	
1,800.0	1,766.0	1,629.0	1,625.6	7.1	2.7	45.64	-647.2	960.2	937.9	929.5	8.44	111.176	
1,865.8	1,829.9	1,680.1	1,675.6	7.4	2.9	46.57	-657.5	961.5	937.4	928.5	8.89	105.451	
1,900.0	1,863.0	1,709.1	1,703.9	7.6	2.9	47.11	-663.7	962.1	937.5	928.4	9.14	102.620	
2,000.0	1,960.0	1,785.2	1,778.1	8.1	3.2	48.60	-681.0	963.6	939.6	929.7	9.85	95.380	
2,100.0	2,057.0	1,857.8	1,848.4	8.6	3.5	50.03	-699.0	965.7	944.8	934.3	10.57	89.398	
2,200.0	2,154.0	1,933.6	1,921.5	9.2	3.9	51.45	-718.6	969.8	953.4	942.1	11.31	84.324	
2,300.0	2,251.0	2,009.0	1,994.0	9.7	4.2	52.88	-739.0	973.8	964.1	952.0	12.05	80.003	
2,400.0	2,348.0	2,088.1	2,069.4	10.2	4.6	54.45	-762.4	977.5	977.4	964.6	12.84	76.119	
2,500.0	2,445.0	2,163.6	2,140.8	10.7	5.1	55.96	-786.7	981.2	994.1	980.4	13.63	72.935	
7,800.0	7,020.7	6,934.2	6,698.9	30.3	25.8	-41.29	-1,799.3	1,310.1	941.2	902.7	38.44	24.486	
7,900.0	7,020.5	6,939.5	6,702.8	31.5	25.9	-42.00	-1,799.6	1,313.7	853.4	813.5	39.87	21.405	
8,000.0	7,020.4	6,943.0	6,705.3	32.7	25.9	-42.47	-1,799.7	1,316.2	768.6	727.3	41.23	18.642	
8,100.0	7,020.2	6,943.0	6,705.3	34.1	25.9	-42.47	-1,799.7	1,316.2	687.8	645.4	42.38	16.232	
8,200.0	7,020.1	6,949.1	6,709.7	35.4	25.9	-43.28	-1,800.0	1,320.4	612.7	568.7	44.01	13.924	
8,300.0	7,020.0	6,952.0	6,711.7	36.9	25.9	-43.66	-1,800.1	1,322.4	545.7	500.3	45.43	12.012	
8,400.0	7,019.8	6,954.8	6,713.8	38.3	25.9	-44.05	-1,800.2	1,324.4	490.0	443.1	46.89	10.450	
8,500.0	7,019.7	6,957.8	6,715.9	39.8	26.0	-44.44	-1,800.4	1,326.5	449.9	401.5	48.39	9.298	
8,600.0	7,019.5	6,960.7	6,718.0	41.4	26.0	-44.84	-1,800.5	1,328.6	429.8	379.9	49.92	8.610	
8,638.7	7,019.5	6,961.9	6,718.8	42.0	26.0	-44.99	-1,800.5	1,329.4	428.0	377.5	50.52	8.473 CC, ES	
8,700.0	7,019.4	6,963.8	6,720.1	43.0	26.0	-45.24	-1,800.6	1,330.7	432.4	380.9	51.47	8.400 SF	
8,800.0	7,019.3	6,966.9	6,722.3	44.6	26.0	-45.66	-1,800.8	1,332.9	457.4	404.3	53.06	8.620	
8,900.0	7,019.1	6,970.0	6,724.5	46.2	26.0	-46.07	-1,800.9	1,335.1	501.4	446.7	54.67	9.170	
9,000.0	7,019.0	6,975.0	6,728.0	47.9	26.0	-46.74	-1,801.1	1,338.7	560.0	503.5	56.48	9.915	
9,100.0	7,018.8	6,975.0	6,728.0	49.5	26.0	-46.74	-1,801.1	1,338.7	629.0	571.2	57.86	10.872	
9,200.0	7,018.7	6,979.9	6,731.4	51.2	26.1	-47.40	-1,801.3	1,342.2	705.5	645.9	59.69	11.819	
9,300.0	7,018.6	6,983.4	6,733.8	52.9	26.1	-47.86	-1,801.5	1,344.7	787.3	725.9	61.42	12.818	
9,400.0	7,018.4	6,986.9	6,736.2	54.7	26.1	-48.33	-1,801.7	1,347.3	872.9	809.7	63.18	13.816	
9,500.0	7,018.3	6,990.5	6,738.7	56.4	26.1	-48.81	-1,801.8	1,349.9	961.2	896.3	64.96	14.797	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 839-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)	+E/-W (ft)						
1,100.0	1,087.1	1,114.9	1,114.8	3.5	1.5	38.95	-582.3	926.0	985.5	981.1	4.44	222.110		
1,200.0	1,184.1	1,212.0	1,211.9	4.0	1.7	39.85	-580.8	923.9	963.9	958.9	5.02	192.121		
1,300.0	1,281.1	1,309.5	1,309.4	4.5	1.9	40.81	-579.3	921.7	942.4	936.8	5.61	167.859		
1,400.0	1,378.0	1,406.9	1,406.7	5.0	2.1	41.81	-577.9	919.3	921.1	914.9	6.23	147.952		
1,500.0	1,475.0	1,504.0	1,503.8	5.5	2.3	42.87	-576.4	916.8	899.9	893.1	6.86	131.279		
1,600.0	1,572.0	1,601.0	1,600.7	6.0	2.6	43.96	-574.8	914.4	879.0	871.5	7.50	117.191		
1,700.0	1,669.0	1,698.0	1,697.6	6.6	2.8	45.10	-573.1	911.9	858.4	850.2	8.16	105.193		
1,800.0	1,766.0	1,770.8	1,770.5	7.1	2.9	45.99	-572.2	910.5	839.0	830.3	8.76	95.798		
1,900.0	1,863.0	1,836.7	1,836.3	7.6	3.1	46.81	-573.0	911.2	823.6	814.3	9.34	88.227		
2,000.0	1,960.0	1,914.0	1,913.5	8.1	3.2	47.78	-576.0	914.2	812.2	802.2	9.94	81.680		
2,100.0	2,057.0	1,990.9	1,990.2	8.6	3.3	48.75	-580.2	918.7	803.6	793.0	10.57	76.036		
2,200.0	2,154.0	2,070.4	2,069.3	9.2	3.5	49.77	-585.5	924.1	797.2	786.0	11.21	71.106		
2,300.0	2,251.0	2,146.6	2,144.9	9.7	3.6	50.77	-592.2	930.6	793.8	781.9	11.86	66.929		
2,354.5	2,303.9	2,187.5	2,185.4	10.0	3.7	51.32	-596.7	934.5	793.3	781.0	12.22	64.933		
2,400.0	2,348.0	2,221.9	2,219.4	10.2	3.8	51.80	-600.9	938.0	793.6	781.1	12.52	63.387		
2,500.0	2,445.0	2,294.0	2,290.3	10.7	4.0	52.83	-611.2	945.6	796.7	783.5	13.18	60.431		
2,600.0	2,542.0	2,367.2	2,361.9	11.3	4.2	53.91	-623.7	954.3	803.4	789.5	13.87	57.933		
2,700.0	2,639.0	2,441.2	2,433.7	11.8	4.4	54.99	-638.4	964.4	813.8	799.2	14.56	55.877		
2,800.0	2,736.0	2,526.2	2,515.6	12.3	4.7	56.23	-657.2	977.0	827.1	811.7	15.31	54.033		
2,900.0	2,833.0	2,623.7	2,609.6	12.8	5.1	57.62	-679.1	991.4	841.2	825.1	16.10	52.246		
3,000.0	2,930.0	2,714.8	2,697.3	13.4	5.4	58.90	-699.8	1,004.6	855.9	839.0	16.88	50.703		
3,100.0	3,027.0	2,814.6	2,793.2	13.9	5.9	60.22	-723.0	1,019.9	872.0	854.3	17.69	49.281		
3,200.0	3,124.0	2,922.4	2,897.2	14.4	6.3	61.56	-746.2	1,036.0	886.8	868.3	18.54	47.836		
3,300.0	3,221.0	3,008.0	2,979.7	14.9	6.7	62.55	-764.4	1,049.5	902.2	882.9	19.31	46.720		
3,400.0	3,318.0	3,098.4	3,066.5	15.5	7.1	63.56	-785.0	1,064.4	919.5	899.3	20.11	45.725		
3,500.0	3,415.0	3,212.4	3,176.1	16.0	7.6	64.77	-810.0	1,083.1	936.4	915.4	20.99	44.607		
3,600.0	3,512.0	3,299.0	3,259.6	16.5	8.0	65.69	-828.5	1,096.5	952.6	930.8	21.79	43.723		
3,700.0	3,609.0	3,393.5	3,350.5	17.0	8.5	66.74	-850.6	1,110.6	970.8	948.1	22.62	42.911		
3,800.0	3,706.0	3,506.9	3,459.8	17.6	9.0	67.95	-875.8	1,126.7	988.0	964.5	23.53	41.990		
7,300.0	6,971.5	6,753.0	6,621.3	26.0	20.5	-38.94	-1,229.8	1,510.5	968.8	940.7	28.03	34.557		
7,400.0	7,000.7	6,771.0	6,635.9	26.7	20.6	-44.14	-1,230.0	1,520.9	907.1	877.1	30.07	30.166		
7,500.0	7,017.1	6,785.0	6,647.2	27.4	20.8	-49.67	-1,230.0	1,529.3	844.8	811.5	33.23	25.424		
7,600.0	7,020.9	6,785.0	6,647.2	28.3	20.8	-53.28	-1,230.0	1,529.3	783.0	746.9	36.05	21.717		
7,700.0	7,020.8	6,785.0	6,647.2	29.3	20.8	-53.28	-1,230.0	1,529.3	727.6	690.4	37.18	19.570		
7,800.0	7,020.7	6,785.0	6,647.2	30.3	20.8	-53.28	-1,230.0	1,529.3	682.4	644.0	38.36	17.790		
7,900.0	7,020.5	6,785.0	6,647.2	31.5	20.8	-53.28	-1,230.0	1,529.3	649.6	610.0	39.59	16.409		
8,000.0	7,020.4	6,785.0	6,647.2	32.7	20.8	-53.28	-1,230.0	1,529.3	631.1	590.2	40.86	15.446		
8,068.4	7,020.3	6,785.0	6,647.2	33.6	20.8	-53.28	-1,230.0	1,529.3	627.4	585.6	41.75	15.025 CC, ES		
8,100.0	7,020.2	6,785.0	6,647.2	34.1	20.8	-53.28	-1,230.0	1,529.3	628.2	586.0	42.17	14.897		
8,200.0	7,020.1	6,785.0	6,647.2	35.4	20.8	-53.28	-1,230.0	1,529.3	641.0	597.5	43.51	14.734 SF		
8,300.0	7,020.0	6,785.0	6,647.2	36.9	20.8	-53.28	-1,230.0	1,529.3	668.7	623.9	44.87	14.903		
8,400.0	7,019.8	6,785.0	6,647.2	38.3	20.8	-53.28	-1,230.0	1,529.3	709.6	663.3	46.26	15.339		
8,500.0	7,019.7	6,785.0	6,647.2	39.8	20.8	-53.28	-1,230.0	1,529.3	761.5	713.8	47.67	15.974		
8,600.0	7,019.5	6,785.0	6,647.2	41.4	20.8	-53.28	-1,230.0	1,529.3	822.3	773.2	49.10	16.749		
8,700.0	7,019.4	6,785.0	6,647.2	43.0	20.8	-53.28	-1,230.0	1,529.3	890.2	839.7	50.54	17.615		
8,800.0	7,019.3	6,785.0	6,647.2	44.6	20.8	-53.28	-1,230.0	1,529.3	963.7	911.7	51.99	18.536		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34M-203 - Wellbore #1 - Plan #1 (9-27-12)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-91.15	-3.6	-180.7	180.7					
100.0	100.0	100.0	100.0	0.1	0.1	-91.15	-3.6	-180.7	180.7	180.5	0.22	803.977		
200.0	200.0	200.0	200.0	0.3	0.3	-91.15	-3.6	-180.7	180.7	180.0	0.67	267.992 CC, ES		
300.0	300.0	294.0	293.9	0.6	0.5	-179.74	-3.6	-182.2	184.1	183.0	1.10	166.794		
400.0	399.8	387.3	387.2	0.8	0.7	-179.70	-3.5	-186.8	194.2	192.7	1.55	125.058		
500.0	499.5	479.4	478.9	1.0	1.0	-179.63	-3.4	-194.3	211.0	209.0	2.02	104.644		
600.0	598.7	569.6	568.6	1.3	1.2	-179.56	-3.2	-204.5	234.3	231.8	2.48	94.325		
700.0	697.5	657.5	655.5	1.6	1.5	-179.48	-3.0	-217.1	264.0	261.1	2.95	89.416		
800.0	795.6	742.5	739.2	2.0	1.8	-179.41	-2.8	-231.9	299.8	296.4	3.42	87.688 SF		
900.0	893.1	824.2	819.3	2.5	2.2	-179.34	-2.5	-248.4	341.6	337.7	3.88	87.962		
1,000.0	990.1	906.1	899.0	3.0	2.5	-179.28	-2.2	-267.2	387.5	383.2	4.34	89.278		
1,100.0	1,087.1	990.7	981.0	3.5	2.9	-179.23	-1.9	-287.9	434.7	429.9	4.80	90.574		
1,200.0	1,184.1	1,078.8	1,066.5	4.0	3.4	-179.19	-1.5	-309.4	482.0	476.7	5.26	91.632		
1,300.0	1,281.1	1,167.0	1,152.0	4.5	3.8	-179.15	-1.1	-330.9	529.2	523.5	5.72	92.438		
1,400.0	1,378.0	1,255.1	1,237.4	5.0	4.3	-179.12	-0.8	-352.4	576.4	570.2	6.20	93.003		
1,500.0	1,475.0	1,343.3	1,322.9	5.5	4.7	-179.09	-0.4	-373.9	623.7	617.0	6.68	93.414		
1,600.0	1,572.0	1,431.4	1,408.4	6.0	5.2	-179.07	-0.1	-395.4	670.9	663.8	7.16	93.758		
1,700.0	1,669.0	1,519.5	1,493.9	6.6	5.7	-179.05	0.3	-416.9	718.2	710.5	7.64	94.011		
1,800.0	1,766.0	1,607.7	1,579.3	7.1	6.1	-179.04	0.6	-438.4	765.4	757.3	8.13	94.203		
1,900.0	1,863.0	1,695.8	1,664.8	7.6	6.6	-179.02	1.0	-459.9	812.6	804.0	8.61	94.346		
2,000.0	1,960.0	1,784.0	1,750.3	8.1	7.1	-179.01	1.4	-481.4	859.9	850.8	9.10	94.454		
2,100.0	2,057.0	1,872.1	1,835.8	8.6	7.5	-179.00	1.7	-502.9	907.1	897.5	9.60	94.535		
2,200.0	2,154.0	1,960.2	1,921.2	9.2	8.0	-178.99	2.1	-524.4	954.4	944.3	10.09	94.595		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34M-423 - Wellbore #1 - Plan #1 (9-28-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	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	-91.39	-3.6	-150.1	150.1					
100.0	100.0	100.0	100.0	0.1	0.1	-91.39	-3.6	-150.1	150.1	149.9	0.22	667.980		
200.0	200.0	200.0	200.0	0.3	0.3	-91.39	-3.6	-150.1	150.1	149.5	0.67	222.660 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-179.99	-3.6	-150.1	151.9	150.8	1.12	135.584		
400.0	399.8	399.8	399.8	0.8	0.8	-179.99	-3.6	-150.1	157.1	155.5	1.57	100.153		
500.0	499.5	499.5	499.5	1.0	1.0	-179.99	-3.6	-150.1	165.8	163.8	2.02	81.970		
600.0	598.7	598.7	598.7	1.3	1.2	-179.99	-3.6	-150.1	178.0	175.5	2.48	71.767		
700.0	697.5	697.5	697.5	1.6	1.5	-179.99	-3.6	-150.1	193.7	190.7	2.94	65.863		
800.0	795.6	795.6	795.6	2.0	1.7	-179.99	-3.6	-150.1	212.7	209.3	3.40	62.524		
900.0	893.1	893.1	893.1	2.5	1.9	-180.00	-3.6	-150.1	235.2	231.4	3.87	60.823		
1,000.0	990.1	990.1	990.1	3.0	2.1	-180.00	-3.6	-150.1	259.5	255.2	4.34	59.861		
1,100.0	1,087.1	1,079.2	1,079.2	3.5	2.3	179.99	-3.8	-151.2	285.1	280.3	4.79	59.542 SF		
1,200.0	1,184.1	1,166.0	1,166.0	4.0	2.5	179.93	-4.2	-154.9	313.5	308.3	5.24	59.852		
1,300.0	1,281.1	1,251.3	1,250.9	4.5	2.7	179.84	-4.8	-161.0	344.8	339.1	5.69	60.619		
1,400.0	1,378.0	1,334.8	1,334.0	5.0	2.9	179.74	-5.7	-169.5	378.9	372.7	6.14	61.730		
1,500.0	1,475.0	1,416.5	1,415.0	5.5	3.1	179.63	-6.9	-180.1	415.6	409.0	6.59	63.103		
1,600.0	1,572.0	1,497.6	1,495.1	6.0	3.3	179.51	-8.3	-192.9	455.0	447.9	7.04	64.596		
1,700.0	1,669.0	1,589.1	1,585.3	6.6	3.5	179.38	-9.9	-208.4	495.3	487.8	7.50	66.026		
1,800.0	1,766.0	1,680.6	1,675.5	7.1	3.8	179.28	-11.6	-223.8	535.7	527.7	7.96	67.268		
1,900.0	1,863.0	1,772.1	1,765.6	7.6	4.1	179.19	-13.3	-239.2	576.1	567.6	8.43	68.341		
2,000.0	1,960.0	1,863.6	1,855.8	8.1	4.5	179.11	-15.0	-254.6	616.4	607.5	8.90	69.258		
2,100.0	2,057.0	1,955.1	1,945.9	8.6	4.8	179.04	-16.6	-270.0	656.8	647.4	9.37	70.074		
2,200.0	2,154.0	2,046.5	2,036.1	9.2	5.1	178.98	-18.3	-285.5	697.2	687.3	9.85	70.794		
2,300.0	2,251.0	2,138.0	2,126.3	9.7	5.4	178.93	-20.0	-300.9	737.5	727.2	10.33	71.429		
2,400.0	2,348.0	2,229.5	2,216.4	10.2	5.8	178.88	-21.6	-316.3	777.9	767.1	10.81	71.994		
2,500.0	2,445.0	2,321.0	2,306.6	10.7	6.1	178.84	-23.3	-331.7	818.3	807.0	11.29	72.500		
2,600.0	2,542.0	2,412.5	2,396.8	11.3	6.4	178.80	-25.0	-347.1	858.6	846.9	11.77	72.953		
2,700.0	2,639.0	2,504.0	2,486.9	11.8	6.8	178.76	-26.6	-362.6	899.0	886.8	12.25	73.362		
2,800.0	2,736.0	2,595.5	2,577.1	12.3	7.1	178.73	-28.3	-378.0	939.4	926.7	12.74	73.732		
2,900.0	2,833.0	2,687.0	2,667.2	12.8	7.5	178.70	-30.0	-393.4	979.8	966.5	13.23	74.068		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-223 - Wellbore #1 - Plan #1 (9-27-12)													
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)	+E/-W (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-58.4	58.4				
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-58.4	58.4	58.1	0.22	259.694	
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-58.4	58.4	57.7	0.67	86.565 CC, ES	
300.0	300.0	300.0	300.0	0.6	0.6	-178.64	0.0	-58.4	60.1	59.0	1.12	53.664	
400.0	399.8	399.8	399.8	0.8	0.8	-178.74	0.0	-58.4	65.3	63.8	1.57	41.656	
500.0	499.5	499.5	499.5	1.0	1.0	-178.89	0.0	-58.4	74.1	72.0	2.02	36.610	
600.0	598.7	598.7	598.7	1.3	1.2	-179.04	0.0	-58.4	86.2	83.8	2.48	34.772	
700.0	697.5	697.5	697.5	1.6	1.5	-179.18	0.0	-58.4	101.9	98.9	2.94	34.654	
800.0	795.6	795.6	795.6	2.0	1.7	-179.31	0.0	-58.4	121.0	117.6	3.40	35.555	
900.0	893.1	893.1	893.1	2.5	1.9	-179.41	0.0	-58.4	143.5	139.6	3.87	37.097	
1,000.0	990.1	990.1	990.1	3.0	2.1	-179.50	0.0	-58.4	167.8	163.4	4.34	38.698	
1,100.0	1,087.1	1,087.1	1,087.1	3.5	2.3	-179.56	0.0	-58.4	192.1	187.3	4.81	39.938	
1,200.0	1,184.1	1,184.1	1,184.1	4.0	2.5	-179.61	0.0	-58.4	216.4	211.1	5.29	40.924	
1,300.0	1,281.1	1,288.4	1,288.4	4.5	2.8	-179.63	0.1	-57.0	239.5	233.7	5.77	41.512	
1,400.0	1,378.0	1,395.9	1,395.7	5.0	3.0	-179.59	0.6	-51.7	259.0	252.7	6.24	41.489	
1,500.0	1,475.0	1,504.7	1,504.2	5.5	3.2	-179.50	1.3	-42.2	274.7	268.0	6.73	40.841	
1,600.0	1,572.0	1,613.4	1,612.0	6.0	3.5	-179.37	2.4	-28.7	286.8	279.5	7.22	39.703	
1,700.0	1,669.0	1,712.8	1,710.4	6.6	3.8	-179.24	3.5	-14.9	297.4	289.6	7.71	38.564	
1,800.0	1,766.0	1,812.3	1,808.9	7.1	4.0	-179.12	4.7	-1.1	307.9	299.7	8.21	37.530	
1,900.0	1,863.0	1,911.7	1,907.3	7.6	4.3	-179.01	5.8	12.7	318.5	309.8	8.70	36.593	
2,000.0	1,960.0	2,011.1	2,005.8	8.1	4.6	-178.90	6.9	26.6	329.1	319.9	9.20	35.757	
2,100.0	2,057.0	2,110.6	2,104.3	8.6	4.9	-178.80	8.1	40.4	339.7	330.0	9.71	34.990	
2,200.0	2,154.0	2,210.0	2,202.7	9.2	5.2	-178.71	9.2	54.2	350.3	340.1	10.21	34.292	
2,300.0	2,251.0	2,309.4	2,301.2	9.7	5.5	-178.62	10.3	68.0	360.9	350.1	10.72	33.654	
2,400.0	2,348.0	2,408.9	2,399.7	10.2	5.8	-178.54	11.4	81.9	371.4	360.2	11.23	33.069	
2,500.0	2,445.0	2,508.3	2,498.1	10.7	6.1	-178.46	12.6	95.7	382.0	370.3	11.74	32.530	
2,600.0	2,542.0	2,607.7	2,596.6	11.3	6.5	-178.38	13.7	109.5	392.6	380.4	12.26	32.033	
2,700.0	2,639.0	2,707.2	2,695.1	11.8	6.8	-178.31	14.8	123.3	403.2	390.4	12.77	31.573	
2,800.0	2,736.0	2,806.6	2,793.5	12.3	7.1	-178.25	15.9	137.2	413.8	400.5	13.29	31.146	
2,900.0	2,833.0	2,906.1	2,892.0	12.8	7.4	-178.18	17.1	151.0	424.4	410.6	13.80	30.749	
3,000.0	2,930.0	3,005.5	2,990.5	13.4	7.8	-178.12	18.2	164.8	435.0	420.7	14.32	30.378	
3,100.0	3,027.0	3,104.9	3,088.9	13.9	8.1	-178.07	19.3	178.6	445.6	430.7	14.84	30.032	
3,200.0	3,124.0	3,204.4	3,187.4	14.4	8.4	-178.01	20.4	192.4	456.2	440.8	15.36	29.708	
3,300.0	3,221.0	3,303.8	3,285.8	14.9	8.7	-177.96	21.6	206.3	466.8	450.9	15.87	29.404	
3,400.0	3,318.0	3,391.2	3,372.5	15.5	9.0	-177.92	22.5	217.5	478.4	462.1	16.35	29.261	
3,500.0	3,415.0	3,475.8	3,456.7	16.0	9.2	-177.92	23.2	225.9	493.0	476.2	16.80	29.342	
3,600.0	3,512.0	3,559.7	3,540.3	16.5	9.4	-177.94	23.6	231.8	510.4	493.2	17.25	29.597	
3,700.0	3,609.0	3,642.6	3,623.2	17.0	9.5	-177.99	23.9	235.2	530.7	513.0	17.69	30.010	
3,800.0	3,706.0	3,725.4	3,706.0	17.6	9.7	-178.05	24.0	236.2	553.8	535.7	18.12	30.558	
3,900.0	3,803.0	3,822.4	3,803.0	18.1	9.8	-178.14	24.0	236.2	578.1	559.5	18.59	31.092	
4,000.0	3,900.0	3,919.4	3,900.0	18.6	10.0	-178.21	24.0	236.2	602.4	583.4	19.07	31.587	
4,100.0	3,997.0	4,016.4	3,997.0	19.1	10.2	-178.28	24.0	236.2	626.7	607.2	19.55	32.056	
4,200.0	4,094.0	4,113.4	4,094.0	19.7	10.4	-178.34	24.0	236.2	651.0	631.0	20.03	32.501	
4,300.0	4,191.0	4,210.4	4,191.0	20.2	10.5	-178.40	24.0	236.2	675.3	654.8	20.51	32.924	
4,400.0	4,288.0	4,307.4	4,288.0	20.7	10.7	-178.46	24.0	236.2	699.7	678.7	20.99	33.326	
4,500.0	4,385.3	4,404.7	4,385.3	21.2	10.9	-178.52	24.0	236.2	722.8	701.3	21.49	33.630	
4,600.0	4,483.3	4,502.7	4,483.3	21.5	11.1	-178.57	24.0	236.2	742.5	720.6	21.94	33.839	
4,700.0	4,582.0	4,601.4	4,582.0	21.8	11.3	-178.61	24.0	236.2	758.8	736.5	22.36	33.934	
4,800.0	4,681.1	4,700.5	4,681.1	22.1	11.5	-178.64	24.0	236.2	771.7	748.9	22.75	33.925	
4,900.0	4,780.7	4,800.1	4,780.7	22.3	11.7	-178.66	24.0	236.2	781.1	758.0	23.10	33.816	
5,000.0	4,880.5	4,899.9	4,880.5	22.4	11.9	-178.67	24.0	236.2	787.0	763.6	23.41	33.612	

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 Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		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)	+E/-W (ft)						
5,100.0	4,980.5	4,999.9	4,980.5	22.5	12.1	-178.68	24.0	236.2	789.4	765.7	23.69	33.318		
5,200.0	5,080.5	5,099.9	5,080.5	22.6	12.3	-90.07	24.0	236.2	789.5	765.4	24.05	32.825		
5,300.0	5,180.5	5,199.9	5,180.5	22.7	12.5	-90.07	24.0	236.2	789.5	765.0	24.43	32.310		
5,400.0	5,280.5	5,299.9	5,280.5	22.8	12.7	-90.07	24.0	236.2	789.5	764.7	24.82	31.809		
5,500.0	5,380.5	5,399.9	5,380.5	23.0	12.9	-90.07	24.0	236.2	789.5	764.3	25.21	31.320		
5,600.0	5,480.5	5,499.9	5,480.5	23.1	13.1	-90.07	24.0	236.2	789.5	763.9	25.60	30.844		
5,700.0	5,580.5	5,599.9	5,580.5	23.2	13.3	-90.07	24.0	236.2	789.5	763.5	25.99	30.381		
5,800.0	5,680.5	5,699.9	5,680.5	23.3	13.5	-90.07	24.0	236.2	789.5	763.1	26.38	29.929		
5,900.0	5,780.5	5,799.9	5,780.5	23.4	13.7	-90.07	24.0	236.2	789.5	762.7	26.77	29.488		
6,000.0	5,880.5	5,899.9	5,880.5	23.5	13.9	-90.07	24.0	236.2	789.5	762.3	27.17	29.059		
6,100.0	5,980.5	5,999.9	5,980.5	23.6	14.1	-90.07	24.0	236.2	789.5	761.9	27.57	28.640		
6,200.0	6,080.5	6,099.9	6,080.5	23.8	14.3	-90.07	24.0	236.2	789.5	761.5	27.96	28.231		
6,300.0	6,180.5	6,199.9	6,180.5	23.9	14.5	-90.07	24.0	236.2	789.5	761.1	28.36	27.833		
6,313.5	6,193.9	6,213.3	6,193.9	23.9	14.5	89.96	24.0	236.2	789.5	761.1	28.42	27.781		
6,400.0	6,280.5	6,299.4	6,279.8	24.0	14.7	89.61	18.8	236.2	789.5	760.8	28.73	27.478		
6,500.0	6,379.9	6,397.8	6,376.6	24.1	14.8	88.99	1.1	236.2	789.6	760.5	29.06	27.168		
6,600.0	6,477.3	6,495.2	6,469.2	24.2	15.0	88.40	-28.5	236.3	789.8	760.4	29.41	26.856		
6,700.0	6,570.9	6,591.6	6,556.6	24.3	15.2	87.83	-69.2	236.3	790.0	760.2	29.81	26.502		
6,800.0	6,659.1	6,687.1	6,637.4	24.5	15.4	87.31	-120.1	236.3	790.3	760.0	30.32	26.066		
6,900.0	6,740.5	6,781.9	6,710.6	24.6	15.7	86.83	-180.0	236.3	790.7	759.7	30.99	25.513		
7,000.0	6,813.5	6,875.9	6,775.4	24.9	16.1	86.40	-248.1	236.4	791.0	759.2	31.87	24.822		
7,100.0	6,877.1	6,969.4	6,831.1	25.2	16.6	86.03	-323.1	236.4	791.4	758.4	32.98	23.994		
7,200.0	6,930.0	7,062.3	6,876.9	25.5	17.2	85.72	-403.9	236.5	791.7	757.3	34.35	23.047		
7,300.0	6,971.5	7,154.9	6,912.5	26.0	18.1	85.48	-489.3	236.5	791.9	756.0	35.98	22.013		
7,400.0	7,000.7	7,247.2	6,937.5	26.7	19.0	85.32	-578.1	236.6	792.1	754.3	37.85	20.930		
7,500.0	7,017.1	7,339.3	6,951.5	27.4	20.1	85.23	-669.1	236.6	792.2	752.3	39.93	19.841		
7,600.0	7,020.9	7,432.7	6,954.7	28.3	21.3	85.20	-762.4	236.7	792.3	750.0	42.24	18.755		
7,700.0	7,020.8	7,532.7	6,954.0	29.3	22.6	85.16	-862.4	236.7	792.3	747.4	44.93	17.634		
7,800.0	7,020.7	7,632.7	6,953.3	30.3	24.0	85.12	-962.4	236.8	792.4	744.6	47.77	16.587		
7,900.0	7,020.5	7,732.7	6,952.6	31.5	25.5	85.08	-1,062.4	236.8	792.4	741.7	50.74	15.617		
8,000.0	7,020.4	7,832.7	6,951.9	32.7	27.1	85.04	-1,162.4	236.9	792.5	738.6	53.82	14.725		
8,100.0	7,020.2	7,932.7	6,951.2	34.1	28.7	85.00	-1,262.4	237.0	792.5	735.5	56.99	13.907		
8,200.0	7,020.1	8,032.7	6,950.5	35.4	30.3	84.96	-1,362.4	237.0	792.6	732.3	60.23	13.158		
8,300.0	7,020.0	8,132.7	6,949.8	36.9	32.0	84.92	-1,462.4	237.1	792.6	729.1	63.54	12.474		
8,400.0	7,019.8	8,232.7	6,949.1	38.3	33.7	84.88	-1,562.4	237.1	792.7	725.7	66.91	11.847		
8,500.0	7,019.7	8,332.7	6,948.4	39.8	35.4	84.84	-1,662.4	237.2	792.7	722.4	70.32	11.273		
8,600.0	7,019.5	8,432.7	6,947.7	41.4	37.1	84.80	-1,762.3	237.2	792.8	719.0	73.77	10.746		
8,700.0	7,019.4	8,532.7	6,947.0	43.0	38.9	84.76	-1,862.3	237.3	792.8	715.5	77.26	10.262		
8,800.0	7,019.3	8,632.7	6,946.3	44.6	40.6	84.72	-1,962.3	237.4	792.9	712.1	80.78	9.815		
8,900.0	7,019.1	8,732.7	6,945.6	46.2	42.4	84.68	-2,062.3	237.4	792.9	708.6	84.32	9.403		
9,000.0	7,019.0	8,832.7	6,944.9	47.9	44.2	84.64	-2,162.3	237.5	793.0	705.1	87.89	9.022		
9,100.0	7,018.8	8,932.7	6,944.2	49.5	46.0	84.60	-2,262.3	237.5	793.0	701.5	91.48	8.669		
9,200.0	7,018.7	9,032.7	6,943.5	51.2	47.8	84.56	-2,362.3	237.6	793.1	698.0	95.09	8.341		
9,300.0	7,018.6	9,132.7	6,942.8	52.9	49.6	84.52	-2,462.3	237.6	793.1	694.4	98.71	8.035		
9,400.0	7,018.4	9,232.7	6,942.1	54.7	51.5	84.48	-2,562.3	237.7	793.2	690.8	102.35	7.750		
9,500.0	7,018.3	9,332.7	6,941.4	56.4	53.3	84.44	-2,662.3	237.8	793.2	687.2	106.00	7.484		
9,600.0	7,018.1	9,432.7	6,940.7	58.2	55.2	84.40	-2,762.3	237.8	793.3	683.6	109.66	7.234		
9,700.0	7,018.0	9,532.7	6,940.0	59.9	57.0	84.36	-2,862.3	237.9	793.4	680.0	113.33	7.000		
9,800.0	7,017.9	9,632.7	6,939.3	61.7	58.9	84.32	-2,962.3	237.9	793.4	676.4	117.01	6.781		
9,900.0	7,017.7	9,732.7	6,938.6	63.5	60.7	84.28	-3,062.3	238.0	793.5	672.8	120.70	6.574		
10,000.0	7,017.6	9,832.7	6,937.9	65.3	62.6	84.24	-3,162.3	238.0	793.5	669.1	124.39	6.379		

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 Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-223 - Wellbore #1 - Plan #1 (9-27-12)												<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 0-MWD												<b>Offset Well Error:</b>	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)	+E/-W (ft)					
10,100.0	7,017.4	9,932.7	6,937.2	67.1	64.4	84.20	-3,262.3	238.1	793.6	665.5	128.10	6.195	
10,200.0	7,017.3	10,032.7	6,936.5	68.9	66.3	84.16	-3,362.3	238.2	793.6	661.8	131.81	6.021	
10,300.0	7,017.2	10,132.7	6,935.8	70.7	68.2	84.12	-3,462.3	238.2	793.7	658.2	135.52	5.857	
10,400.0	7,017.0	10,232.7	6,935.1	72.5	70.1	84.08	-3,562.3	238.3	793.8	654.5	139.24	5.701	
10,500.0	7,016.9	10,332.7	6,934.4	74.3	71.9	84.04	-3,662.3	238.3	793.8	650.8	142.97	5.552	
10,600.0	7,016.7	10,432.7	6,933.7	76.1	73.8	84.00	-3,762.3	238.4	793.9	647.2	146.70	5.412	
10,700.0	7,016.6	10,532.7	6,933.0	78.0	75.7	83.96	-3,862.3	238.4	793.9	643.5	150.43	5.278	
10,800.0	7,016.5	10,632.7	6,932.3	79.8	77.6	83.92	-3,962.3	238.5	794.0	639.8	154.17	5.150	
10,900.0	7,016.3	10,732.7	6,931.6	81.6	79.5	83.88	-4,062.3	238.6	794.1	636.1	157.91	5.029	
11,000.0	7,016.2	10,832.7	6,930.9	83.5	81.4	83.84	-4,162.3	238.6	794.1	632.5	161.65	4.913	
11,100.0	7,016.0	10,932.7	6,930.2	85.3	83.2	83.80	-4,262.2	238.7	794.2	628.8	165.40	4.802	
11,200.0	7,015.9	11,032.7	6,929.5	87.2	85.1	83.76	-4,362.2	238.7	794.2	625.1	169.15	4.696	
11,300.0	7,015.8	11,132.7	6,928.8	89.0	87.0	83.72	-4,462.2	238.8	794.3	621.4	172.90	4.594	
11,400.0	7,015.6	11,232.7	6,928.1	90.9	88.9	83.68	-4,562.2	238.8	794.4	617.7	176.65	4.497	
11,500.0	7,015.5	11,332.7	6,927.4	92.7	90.8	83.64	-4,662.2	238.9	794.4	614.0	180.40	4.404	
11,600.0	7,015.3	11,432.7	6,926.8	94.6	92.7	83.60	-4,762.2	239.0	794.5	610.3	184.16	4.314	
11,700.0	7,015.2	11,532.7	6,926.1	96.5	94.6	83.56	-4,862.2	239.0	794.6	606.6	187.92	4.228	
11,800.0	7,015.1	11,632.7	6,925.4	98.3	96.5	83.52	-4,962.2	239.1	794.6	602.9	191.68	4.146	
11,847.0	7,015.0	11,679.6	6,925.0	99.2	97.4	83.50	-5,009.2	239.1	794.6	601.2	193.45	4.108 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Survey Program: 0-MWD												Offset Site Error: 0.0 ft	
Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-403 - Wellbore #1 - Plan #1 (9-28-12)												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
0.0	0.0	0.0	0.0	0.0	0.0	-89.99	0.0	-88.9	88.9				
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-88.9	88.9	88.7	0.22	395.724	
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-88.9	88.9	88.3	0.67	131.908	CC, ES
300.0	300.0	300.0	300.0	0.6	0.6	-178.62	0.0	-88.9	90.7	89.6	1.12	80.958	
400.0	399.8	399.8	399.8	0.8	0.8	-178.70	0.0	-88.9	95.9	94.4	1.57	61.147	
500.0	499.5	499.5	499.5	1.0	1.0	-178.80	0.0	-88.9	104.6	102.6	2.02	51.724	
600.0	598.7	598.7	598.7	1.3	1.2	-178.92	0.0	-88.9	116.8	114.3	2.48	47.099	
700.0	697.5	697.5	697.5	1.6	1.5	-179.04	0.0	-88.9	132.5	129.5	2.94	45.054	
800.0	795.6	795.6	795.6	2.0	1.7	-179.16	0.0	-88.9	151.5	148.1	3.40	44.542	SF
900.0	893.1	893.1	893.1	2.5	1.9	-179.26	0.0	-88.9	174.0	170.2	3.87	45.004	
1,000.0	990.1	990.1	990.1	3.0	2.1	-179.35	0.0	-88.9	198.3	194.0	4.34	45.751	
1,100.0	1,087.1	1,087.1	1,087.1	3.5	2.3	-179.42	0.0	-88.9	222.7	217.8	4.81	46.296	
1,200.0	1,184.1	1,184.1	1,184.1	4.0	2.5	-179.48	0.0	-88.9	247.0	241.7	5.29	46.707	
1,300.0	1,281.1	1,281.1	1,281.1	4.5	2.8	-179.53	0.0	-88.9	271.3	265.5	5.77	47.026	
1,400.0	1,378.0	1,378.0	1,378.0	5.0	3.0	-179.57	0.0	-88.9	295.6	289.3	6.25	47.278	
1,500.0	1,475.0	1,475.0	1,475.0	5.5	3.2	-179.60	0.0	-88.9	319.9	313.2	6.74	47.482	
1,600.0	1,572.0	1,572.0	1,572.0	6.0	3.4	-179.63	0.0	-88.9	344.2	337.0	7.22	47.648	
1,700.0	1,669.0	1,669.0	1,669.0	6.6	3.6	-179.65	0.0	-88.9	368.5	360.8	7.71	47.787	
1,800.0	1,766.0	1,766.0	1,766.0	7.1	3.9	-179.67	0.0	-88.9	392.9	384.7	8.20	47.903	
1,900.0	1,863.0	1,863.0	1,863.0	7.6	4.1	-179.69	0.0	-88.9	417.2	408.5	8.69	48.002	
2,000.0	1,960.0	1,960.0	1,960.0	8.1	4.3	-179.71	0.0	-88.9	441.5	432.3	9.18	48.086	
2,100.0	2,057.0	2,057.0	2,057.0	8.6	4.5	-179.72	0.0	-88.9	465.8	456.1	9.67	48.160	
2,200.0	2,154.0	2,154.0	2,154.0	9.2	4.7	-179.74	0.0	-88.9	490.1	480.0	10.16	48.224	
2,300.0	2,251.0	2,251.0	2,251.0	9.7	4.9	-179.75	0.0	-88.9	514.4	503.8	10.66	48.280	
2,400.0	2,348.0	2,348.0	2,348.0	10.2	5.2	-179.76	0.0	-88.9	538.8	527.6	11.15	48.329	
2,500.0	2,445.0	2,445.0	2,445.0	10.7	5.4	-179.77	0.0	-88.9	563.1	551.4	11.64	48.373	
2,600.0	2,542.0	2,542.0	2,542.0	11.3	5.6	-179.78	0.0	-88.9	587.4	575.3	12.13	48.412	
2,700.0	2,639.0	2,639.0	2,639.0	11.8	5.8	-179.79	0.0	-88.9	611.7	599.1	12.63	48.447	
2,800.0	2,736.0	2,736.0	2,736.0	12.3	6.0	-179.80	0.0	-88.9	636.0	622.9	13.12	48.478	
2,900.0	2,833.0	2,833.0	2,833.0	12.8	6.3	-179.81	0.0	-88.9	660.3	646.7	13.61	48.507	
3,000.0	2,930.0	2,930.0	2,930.0	13.4	6.5	-179.81	0.0	-88.9	684.7	670.6	14.11	48.533	
3,100.0	3,027.0	3,027.0	3,027.0	13.9	6.7	-179.82	0.0	-88.9	709.0	694.4	14.60	48.556	
3,200.0	3,124.0	3,124.0	3,124.0	14.4	6.9	-179.82	0.0	-88.9	733.3	718.2	15.10	48.577	
3,300.0	3,221.0	3,221.0	3,221.0	14.9	7.1	-179.83	0.0	-88.9	757.6	742.0	15.59	48.597	
3,400.0	3,318.0	3,318.0	3,318.0	15.5	7.3	-179.84	0.0	-88.9	781.9	765.8	16.08	48.614	
3,500.0	3,415.0	3,415.0	3,415.0	16.0	7.6	-179.84	0.0	-88.9	806.2	789.7	16.58	48.631	
3,600.0	3,512.0	3,512.0	3,512.0	16.5	7.8	-179.85	0.0	-88.9	830.6	813.5	17.07	48.645	
3,700.0	3,609.0	3,609.0	3,609.0	17.0	8.0	-179.85	0.0	-88.9	854.9	837.3	17.57	48.659	
3,800.0	3,706.0	3,706.0	3,706.0	17.6	8.2	-179.85	0.0	-88.9	879.2	861.1	18.06	48.672	
3,900.0	3,803.0	3,803.0	3,803.0	18.1	8.4	-179.86	0.0	-88.9	903.5	884.9	18.56	48.683	
4,000.0	3,900.0	3,900.0	3,900.0	18.6	8.7	-179.86	0.0	-88.9	927.8	908.8	19.05	48.694	
4,100.0	3,997.0	3,997.0	3,997.0	19.1	8.9	-179.87	0.0	-88.9	952.1	932.6	19.55	48.704	
4,200.0	4,094.0	4,094.0	4,094.0	19.7	9.1	-179.87	0.0	-88.9	976.5	956.4	20.04	48.713	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-423 - Wellbore #1 - Plan #1 (9-28-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	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	-89.98	0.0	-30.6	30.6					
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-30.6	30.6	30.4	0.22	136.030		
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-30.6	30.6	29.9	0.67	45.343 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-178.66	0.0	-30.6	32.3	31.2	1.12	28.851		
400.0	399.8	399.8	399.8	0.8	0.8	-178.85	0.0	-30.6	37.6	36.0	1.57	23.938		
500.0	499.5	499.5	499.5	1.0	1.0	-179.06	0.0	-30.6	46.3	44.2	2.02	22.870		
600.0	598.7	598.7	598.7	1.3	1.2	-179.25	0.0	-30.6	58.5	56.0	2.48	23.565		
700.0	697.5	697.5	697.5	1.6	1.5	-179.41	0.0	-30.6	74.1	71.2	2.94	25.200		
800.0	795.6	795.6	795.6	2.0	1.7	-179.53	0.0	-30.6	93.2	89.8	3.40	27.385		
900.0	893.1	893.1	893.1	2.5	1.9	-179.62	0.0	-30.6	115.7	111.8	3.87	29.909		
1,000.0	990.1	990.1	990.1	3.0	2.1	-179.68	0.0	-30.6	140.0	135.6	4.34	32.286		
1,100.0	1,087.1	1,092.3	1,092.3	3.5	2.3	-179.80	-0.2	-29.1	162.9	158.1	4.80	33.934		
1,200.0	1,184.1	1,196.6	1,196.4	4.0	2.5	179.95	-0.7	-23.9	182.3	177.1	5.26	34.685		
1,300.0	1,281.1	1,302.3	1,301.7	4.5	2.8	179.60	-1.7	-14.7	198.2	192.5	5.73	34.593		
1,400.0	1,378.0	1,409.1	1,407.7	5.0	3.0	179.15	-3.2	-1.6	210.5	204.2	6.22	33.837		
1,500.0	1,475.0	1,514.1	1,511.4	5.5	3.3	178.60	-5.0	15.0	219.2	212.5	6.72	32.621		
1,600.0	1,572.0	1,613.8	1,609.6	6.0	3.6	178.09	-6.8	31.6	227.1	219.9	7.22	31.439		
1,700.0	1,669.0	1,713.4	1,707.9	6.6	3.9	177.61	-8.6	48.2	235.1	227.3	7.74	30.385		
1,800.0	1,766.0	1,813.1	1,806.1	7.1	4.3	177.16	-10.4	64.9	243.0	234.7	8.25	29.438		
1,900.0	1,863.0	1,912.8	1,904.4	7.6	4.6	176.74	-12.2	81.5	250.9	242.2	8.78	28.595		
2,000.0	1,960.0	2,012.4	2,002.7	8.1	4.9	176.35	-14.1	98.1	258.9	249.6	9.30	27.828		
2,100.0	2,057.0	2,112.1	2,100.9	8.6	5.3	175.98	-15.9	114.7	266.9	257.0	9.84	27.133		
2,200.0	2,154.0	2,211.8	2,199.2	9.2	5.7	175.63	-17.7	131.3	274.9	264.5	10.37	26.500		
2,300.0	2,251.0	2,311.4	2,297.4	9.7	6.0	175.30	-19.5	148.0	282.9	271.9	10.91	25.922		
2,400.0	2,348.0	2,411.1	2,395.7	10.2	6.4	174.99	-21.3	164.6	290.9	279.4	11.45	25.393		
2,500.0	2,445.0	2,510.8	2,493.9	10.7	6.8	174.69	-23.1	181.2	298.9	286.9	12.00	24.906		
2,600.0	2,542.0	2,610.4	2,592.2	11.3	7.1	174.42	-25.0	197.8	306.9	294.3	12.55	24.456		
2,700.0	2,639.0	2,710.1	2,690.4	11.8	7.5	174.15	-26.8	214.5	314.9	301.8	13.10	24.041		
2,800.0	2,736.0	2,809.8	2,788.7	12.3	7.9	173.90	-28.6	231.1	323.0	309.3	13.65	23.655		
2,900.0	2,833.0	2,909.4	2,886.9	12.8	8.3	173.66	-30.4	247.7	331.0	316.8	14.21	23.297		
3,000.0	2,930.0	3,009.1	2,985.2	13.4	8.6	173.43	-32.2	264.3	339.0	324.3	14.76	22.963		
3,100.0	3,027.0	3,108.8	3,083.5	13.9	9.0	173.22	-34.0	280.9	347.1	331.8	15.32	22.651		
3,200.0	3,124.0	3,208.4	3,181.7	14.4	9.4	173.01	-35.9	297.6	355.1	339.3	15.88	22.359		
3,300.0	3,221.0	3,308.1	3,280.0	14.9	9.8	172.81	-37.7	314.2	363.2	346.8	16.45	22.085		
3,400.0	3,318.0	3,407.8	3,378.2	15.5	10.2	172.62	-39.5	330.8	371.3	354.3	17.01	21.827		
3,500.0	3,415.0	3,507.4	3,476.5	16.0	10.5	172.44	-41.3	347.4	379.3	361.8	17.57	21.585		
3,600.0	3,512.0	3,607.1	3,574.7	16.5	10.9	172.26	-43.1	364.1	387.4	369.3	18.14	21.356		
3,700.0	3,609.0	3,706.8	3,673.0	17.0	11.3	172.10	-44.9	380.7	395.5	376.8	18.71	21.140		
3,800.0	3,706.0	3,806.4	3,771.2	17.6	11.7	171.94	-46.7	397.3	403.5	384.3	19.28	20.936		
3,900.0	3,803.0	3,906.1	3,869.5	18.1	12.1	171.78	-48.6	413.9	411.6	391.8	19.84	20.743		
4,000.0	3,900.0	4,005.8	3,967.7	18.6	12.5	171.64	-50.4	430.5	419.7	399.3	20.41	20.559		
4,100.0	3,997.0	4,105.5	4,066.0	19.1	12.8	171.49	-52.2	447.2	427.8	406.8	20.99	20.385		
4,200.0	4,094.0	4,205.1	4,164.3	19.7	13.2	171.36	-54.0	463.8	435.9	414.3	21.56	20.219		
4,300.0	4,191.0	4,304.8	4,262.5	20.2	13.6	171.22	-55.8	480.4	444.0	421.8	22.13	20.061		
4,400.0	4,288.0	4,404.5	4,360.8	20.7	14.0	171.10	-57.6	497.0	452.1	429.4	22.70	19.910		
4,500.0	4,385.3	4,504.2	4,459.1	21.2	14.4	170.97	-59.5	513.7	458.9	435.7	23.28	19.712		
4,600.0	4,483.3	4,600.0	4,553.6	21.5	14.7	170.78	-61.2	529.4	462.6	438.9	23.79	19.450		
4,700.0	4,582.0	4,685.5	4,638.2	21.8	15.0	170.64	-62.5	541.4	465.3	441.1	24.18	19.243		
4,800.0	4,681.1	4,772.0	4,724.2	22.1	15.2	170.52	-63.5	551.0	467.3	442.8	24.52	19.056		
4,900.0	4,780.7	4,858.5	4,810.3	22.3	15.4	170.44	-64.3	558.0	468.8	444.0	24.82	18.891		
5,000.0	4,880.5	4,944.9	4,896.7	22.4	15.5	170.38	-64.8	562.4	469.8	444.7	25.06	18.746		

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 Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-423 - Wellbore #1 - Plan #1 (9-28-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,980.5	5,031.4	4,983.1	22.5	15.6	170.36		-65.0	564.2	470.2	444.9	25.26	18.616	
5,200.0	5,080.5	5,128.7	5,080.5	22.6	15.8	-101.03		-65.0	564.2	470.2	444.6	25.56	18.394	
5,300.0	5,180.5	5,228.7	5,180.5	22.7	15.9	-101.03		-65.0	564.2	470.2	444.3	25.91	18.147	
5,400.0	5,280.5	5,328.7	5,280.5	22.8	16.1	-101.03		-65.0	564.2	470.2	443.9	26.26	17.904	
5,500.0	5,380.5	5,428.7	5,380.5	23.0	16.2	-101.03		-65.0	564.2	470.2	443.6	26.62	17.665	
5,600.0	5,480.5	5,528.7	5,480.5	23.1	16.4	-101.03		-65.0	564.2	470.2	443.2	26.97	17.431	
5,700.0	5,580.5	5,628.7	5,580.5	23.2	16.5	-101.03		-65.0	564.2	470.2	442.8	27.33	17.202	
5,800.0	5,680.5	5,728.7	5,680.5	23.3	16.7	-101.03		-65.0	564.2	470.2	442.5	27.70	16.977	
5,900.0	5,780.5	5,828.7	5,780.5	23.4	16.8	-101.03		-65.0	564.2	470.2	442.1	28.06	16.756	
6,000.0	5,880.5	5,928.7	5,880.5	23.5	17.0	-101.03		-65.0	564.2	470.2	441.7	28.43	16.539	
6,100.0	5,980.5	6,028.7	5,980.5	23.6	17.2	-101.03		-65.0	564.2	470.2	441.4	28.80	16.327	
6,200.0	6,080.5	6,128.7	6,080.5	23.8	17.3	-101.03		-65.0	564.2	470.2	441.0	29.17	16.119	
6,300.0	6,180.5	6,228.7	6,180.5	23.9	17.5	-101.03		-65.0	564.2	470.2	440.6	29.54	15.915	
6,400.0	6,280.5	6,328.7	6,280.5	24.0	17.7	79.05		-65.0	564.2	470.1	440.2	29.90	15.725	
6,500.0	6,379.9	6,423.9	6,375.7	24.1	17.8	80.11		-66.1	564.2	468.6	438.5	30.06	15.588	
6,600.0	6,477.3	6,514.4	6,465.5	24.2	18.0	81.50		-76.2	564.2	466.7	436.5	30.25	15.431	
6,700.0	6,570.9	6,606.0	6,554.6	24.3	18.1	83.04		-97.2	564.3	465.0	434.5	30.52	15.236	
6,800.0	6,659.1	6,700.0	6,642.8	24.5	18.3	84.73		-129.6	564.3	463.5	432.6	30.91	14.993	
6,900.0	6,740.5	6,793.5	6,725.9	24.6	18.6	86.48		-172.4	564.3	462.4	430.9	31.46	14.698	
7,000.0	6,813.5	6,889.8	6,805.2	24.9	18.9	88.33		-226.7	564.4	461.7	429.5	32.20	14.337	
7,094.7	6,874.0	6,982.5	6,874.7	25.1	19.2	90.12		-288.1	564.5	461.4	428.3	33.14	13.925	
7,100.0	6,877.1	6,987.8	6,878.5	25.2	19.3	90.22		-291.8	564.5	461.4	428.2	33.19	13.902	
7,200.0	6,930.0	7,087.9	6,944.0	25.5	19.8	92.13		-367.4	564.5	461.7	427.2	34.49	13.387	
7,300.0	6,971.5	7,190.1	7,000.1	26.0	20.4	94.02		-452.7	564.6	462.5	426.4	36.15	12.795	
7,400.0	7,000.7	7,294.5	7,045.1	26.7	21.2	95.85		-546.8	564.7	463.8	425.6	38.21	12.138	
7,500.0	7,017.1	7,401.1	7,077.5	27.4	22.2	97.60		-648.3	564.8	465.4	424.7	40.68	11.440	
7,600.0	7,020.9	7,509.5	7,095.6	28.3	23.4	99.19		-755.0	564.9	467.3	423.8	43.46	10.752	
7,700.0	7,020.8	7,611.4	7,105.8	29.3	24.6	100.44		-856.5	565.1	469.0	422.9	46.11	10.171	
7,800.0	7,020.7	7,718.0	7,109.0	30.3	26.0	100.84		-963.0	565.2	469.5	420.5	48.98	9.585	
7,900.0	7,020.5	7,818.0	7,108.9	31.5	27.4	100.85		-1,063.0	565.3	469.4	417.5	51.89	9.046	
8,000.0	7,020.4	7,918.0	7,108.8	32.7	28.8	100.86		-1,163.0	565.4	469.4	414.5	54.92	8.547	
8,100.0	7,020.2	8,018.0	7,108.7	34.1	30.3	100.86		-1,263.0	565.5	469.3	411.3	58.03	8.088	
8,200.0	7,020.1	8,118.0	7,108.6	35.4	31.9	100.87		-1,363.0	565.6	469.3	408.1	61.22	7.666	
8,300.0	7,020.0	8,218.0	7,108.5	36.9	33.4	100.87		-1,463.0	565.8	469.2	404.8	64.47	7.278	
8,400.0	7,019.8	8,318.0	7,108.4	38.3	35.1	100.88		-1,563.0	565.9	469.2	401.4	67.78	6.922	
8,500.0	7,019.7	8,418.0	7,108.3	39.8	36.7	100.89		-1,663.0	566.0	469.1	398.0	71.13	6.595	
8,600.0	7,019.5	8,518.0	7,108.2	41.4	38.4	100.89		-1,763.0	566.1	469.1	394.5	74.53	6.294	
8,700.0	7,019.4	8,618.0	7,108.1	43.0	40.1	100.90		-1,863.0	566.2	469.0	391.1	77.97	6.016	
8,800.0	7,019.3	8,718.0	7,108.0	44.6	41.8	100.91		-1,963.0	566.3	469.0	387.5	81.43	5.759	
8,900.0	7,019.1	8,818.0	7,107.9	46.2	43.5	100.91		-2,063.0	566.5	468.9	384.0	84.93	5.522	
9,000.0	7,019.0	8,918.0	7,107.8	47.9	45.3	100.92		-2,163.0	566.6	468.9	380.4	88.44	5.302	
9,100.0	7,018.8	9,018.0	7,107.7	49.5	47.0	100.93		-2,263.0	566.7	468.8	376.9	91.98	5.097	
9,200.0	7,018.7	9,118.0	7,107.6	51.2	48.8	100.93		-2,363.0	566.8	468.8	373.2	95.54	4.907	
9,300.0	7,018.6	9,218.0	7,107.5	52.9	50.6	100.94		-2,463.0	566.9	468.7	369.6	99.11	4.729	
9,400.0	7,018.4	9,318.0	7,107.4	54.7	52.4	100.94		-2,563.0	567.1	468.7	366.0	102.70	4.563	
9,500.0	7,018.3	9,418.0	7,107.3	56.4	54.2	100.95		-2,663.0	567.2	468.6	362.3	106.31	4.408	
9,600.0	7,018.1	9,518.0	7,107.2	58.2	56.0	100.96		-2,763.0	567.3	468.6	358.7	109.92	4.263	
9,700.0	7,018.0	9,618.0	7,107.1	59.9	57.8	100.96		-2,863.0	567.4	468.5	355.0	113.55	4.126	
9,800.0	7,017.9	9,718.0	7,107.0	61.7	59.6	100.97		-2,963.0	567.5	468.5	351.3	117.19	3.998	
9,900.0	7,017.7	9,818.0	7,106.9	63.5	61.5	100.98		-3,063.0	567.6	468.4	347.6	120.83	3.877	
10,000.0	7,017.6	9,918.0	7,106.8	65.3	63.3	100.98		-3,163.0	567.8	468.4	343.9	124.49	3.763	

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 Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-423 - Wellbore #1 - Plan #1 (9-28-12)												<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	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,017.4	10,018.0	7,106.7	67.1	65.2	100.99	-3,263.0	567.9	468.3	340.2	128.15	3.655	
10,200.0	7,017.3	10,118.0	7,106.6	68.9	67.0	101.00	-3,363.0	568.0	468.3	336.5	131.82	3.553	
10,300.0	7,017.2	10,218.0	7,106.5	70.7	68.9	101.00	-3,463.0	568.1	468.2	332.7	135.49	3.456	
10,400.0	7,017.0	10,318.0	7,106.4	72.5	70.7	101.01	-3,563.0	568.2	468.2	329.0	139.17	3.364	
10,500.0	7,016.9	10,418.0	7,106.3	74.3	72.6	101.01	-3,663.0	568.3	468.1	325.3	142.86	3.277	
10,600.0	7,016.7	10,518.0	7,106.2	76.1	74.4	101.02	-3,763.0	568.5	468.1	321.5	146.55	3.194	
10,700.0	7,016.6	10,618.0	7,106.1	78.0	76.3	101.03	-3,863.0	568.6	468.0	317.8	150.25	3.115	
10,800.0	7,016.5	10,718.0	7,106.0	79.8	78.2	101.03	-3,963.0	568.7	468.0	314.0	153.95	3.040	
10,900.0	7,016.3	10,818.0	7,105.9	81.6	80.0	101.04	-4,063.0	568.8	467.9	310.3	157.65	2.968	
11,000.0	7,016.2	10,918.0	7,105.8	83.5	81.9	101.05	-4,163.0	568.9	467.9	306.5	161.36	2.900	
11,100.0	7,016.0	11,018.0	7,105.7	85.3	83.8	101.05	-4,263.0	569.0	467.8	302.8	165.07	2.834	
11,200.0	7,015.9	11,118.0	7,105.6	87.2	85.7	101.06	-4,363.0	569.2	467.8	299.0	168.78	2.772	
11,300.0	7,015.8	11,218.0	7,105.5	89.0	87.5	101.07	-4,463.0	569.3	467.7	295.2	172.50	2.711	
11,400.0	7,015.6	11,318.0	7,105.4	90.9	89.4	101.07	-4,563.0	569.4	467.7	291.5	176.22	2.654	
11,500.0	7,015.5	11,418.0	7,105.3	92.7	91.3	101.08	-4,663.0	569.5	467.6	287.7	179.94	2.599	
11,600.0	7,015.3	11,518.0	7,105.2	94.6	93.2	101.09	-4,763.0	569.6	467.6	283.9	183.67	2.546	
11,700.0	7,015.2	11,618.0	7,105.1	96.5	95.1	101.09	-4,863.0	569.8	467.5	280.1	187.39	2.495	
11,800.0	7,015.1	11,718.0	7,105.0	98.3	97.0	101.10	-4,963.0	569.9	467.5	276.4	191.12	2.446	
11,847.0	7,015.0	11,765.0	7,105.0	99.2	97.8	101.10	-5,010.0	569.9	467.5	274.6	192.88	2.424 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Richter 27T-HZ Pad Sec.27-T7N-R64W - Ritcher 34R-343 - Wellbore #1 - Plan #2 (7-25-13)													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	-91.75	-91.75	-3.6	-119.5	119.6				
100.0	100.0	100.0	100.0	0.1	0.1	-91.75	-91.75	-3.6	-119.5	119.6	119.4	0.22	532.001	
200.0	200.0	200.0	200.0	0.3	0.3	-91.75	-91.75	-3.6	-119.5	119.6	118.9	0.67	177.334 CC, ES	
300.0	300.0	300.0	300.0	0.6	0.6	179.66	179.66	-3.6	-119.5	121.3	120.2	1.12	108.300	
400.0	399.8	399.8	399.8	0.8	0.8	179.67	179.67	-3.6	-119.5	126.6	125.0	1.57	80.670	
500.0	499.5	499.5	499.5	1.0	1.0	179.69	179.69	-3.6	-119.5	135.3	133.2	2.02	66.861	
600.0	598.7	598.7	598.7	1.3	1.2	179.71	179.71	-3.6	-119.5	147.5	145.0	2.48	59.444	
700.0	697.5	697.5	697.5	1.6	1.5	179.74	179.74	-3.6	-119.5	163.1	160.2	2.94	55.466	
800.0	795.6	795.6	795.6	2.0	1.7	179.77	179.77	-3.6	-119.5	182.2	178.8	3.40	53.539	
900.0	893.1	893.1	893.1	2.5	1.9	179.79	179.79	-3.6	-119.5	204.7	200.8	3.87	52.918	
1,000.0	990.1	990.1	990.1	3.0	2.1	179.81	179.81	-3.6	-119.5	229.0	224.6	4.34	52.809	
1,100.0	1,087.1	1,087.1	1,087.1	3.5	2.3	179.83	179.83	-3.6	-119.5	253.3	248.5	4.81	52.657	
1,200.0	1,184.1	1,184.1	1,184.1	4.0	2.5	179.84	179.84	-3.6	-119.5	277.6	272.3	5.29	52.493 SF	
1,300.0	1,281.1	1,273.3	1,273.3	4.5	2.7	179.87	179.87	-3.6	-120.5	303.0	297.2	5.75	52.707	
1,400.0	1,378.0	1,359.7	1,359.6	5.0	2.9	179.93	179.93	-3.4	-124.0	331.2	325.0	6.20	53.393	
1,500.0	1,475.0	1,444.5	1,444.2	5.5	3.1	-179.99	-179.99	-3.1	-129.9	362.3	355.6	6.66	54.433	
1,600.0	1,572.0	1,527.7	1,527.0	6.0	3.3	-179.89	-179.89	-2.7	-138.2	396.1	389.0	7.11	55.744	
1,700.0	1,669.0	1,609.0	1,607.6	6.6	3.5	-179.79	-179.79	-2.1	-148.6	432.6	425.1	7.55	57.267	
1,800.0	1,766.0	1,690.4	1,688.0	7.1	3.7	-179.67	-179.67	-1.5	-161.3	471.7	463.7	8.01	58.901	
1,900.0	1,863.0	1,782.1	1,778.4	7.6	4.0	-179.56	-179.56	-0.7	-176.5	511.8	503.3	8.47	60.421	
2,000.0	1,960.0	1,873.7	1,868.8	8.1	4.2	-179.46	-179.46	0.1	-191.6	551.8	542.8	8.93	61.778	
2,100.0	2,057.0	1,965.3	1,959.2	8.6	4.5	-179.37	-179.37	0.9	-206.8	591.8	582.4	9.40	62.983	
2,200.0	2,154.0	2,057.0	2,049.5	9.2	4.8	-179.30	-179.30	1.7	-222.0	631.8	622.0	9.87	64.020	
2,300.0	2,251.0	2,148.6	2,139.9	9.7	5.1	-179.23	-179.23	2.5	-237.2	671.9	661.5	10.34	64.990	
2,400.0	2,348.0	2,240.3	2,230.3	10.2	5.4	-179.17	-179.17	3.3	-252.3	711.9	701.1	10.81	65.847	
2,500.0	2,445.0	2,331.9	2,320.6	10.7	5.8	-179.12	-179.12	4.1	-267.5	751.9	740.6	11.29	66.619	
2,600.0	2,542.0	2,423.5	2,411.0	11.3	6.1	-179.07	-179.07	4.8	-282.7	791.9	780.2	11.76	67.318	
2,700.0	2,639.0	2,515.2	2,501.4	11.8	6.4	-179.03	-179.03	5.6	-297.8	832.0	819.7	12.24	67.952	
2,800.0	2,736.0	2,606.8	2,591.7	12.3	6.7	-178.99	-178.99	6.4	-313.0	872.0	859.3	12.72	68.531	
2,900.0	2,833.0	2,698.4	2,682.1	12.8	7.1	-178.96	-178.96	7.2	-328.2	912.0	898.8	13.21	69.060	
3,000.0	2,930.0	2,790.1	2,772.5	13.4	7.4	-178.93	-178.93	8.0	-343.3	952.0	938.4	13.69	69.545	
3,100.0	3,027.0	2,881.7	2,862.9	13.9	7.7	-178.90	-178.90	8.8	-358.5	992.1	977.9	14.17	69.992	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4883.0ft (RKB - 13')

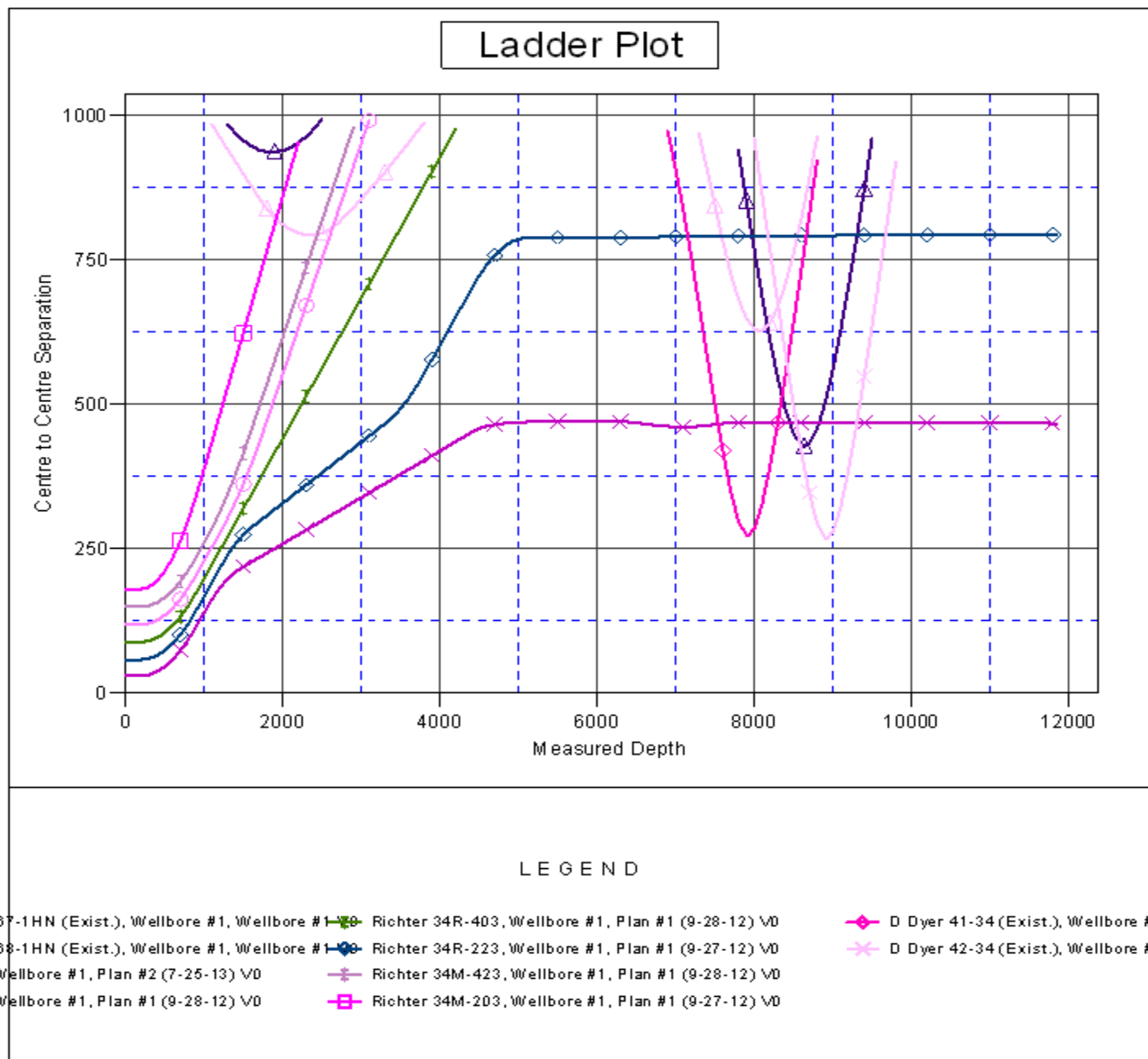
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Richter 34U-303

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.63°





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Richter 34U-303
<b>Project:</b>	SEC.27-T7N-R64W	<b>TVD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Reference Site:</b>	Richter 27T-HZ Pad Sec.27-T7N-R64W	<b>MD Reference:</b>	WELL @ 4883.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Richter 34U-303	<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 #2 (7-25-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4883.0ft (RKB - 13')  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Richter 34U-303  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.63°

