

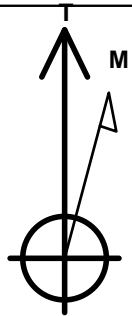
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Richter 34U-203**

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 Point
BHL 500'FSL & 200'FEL	6925.0	-5009.4	1028.6	Point



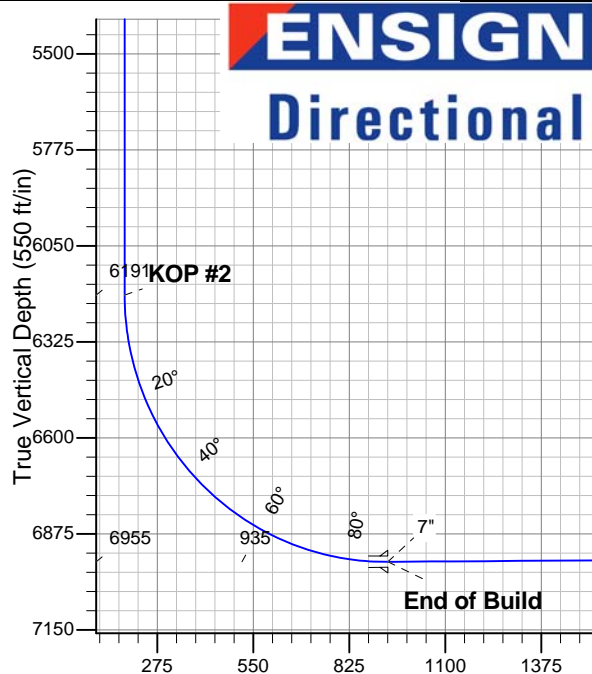
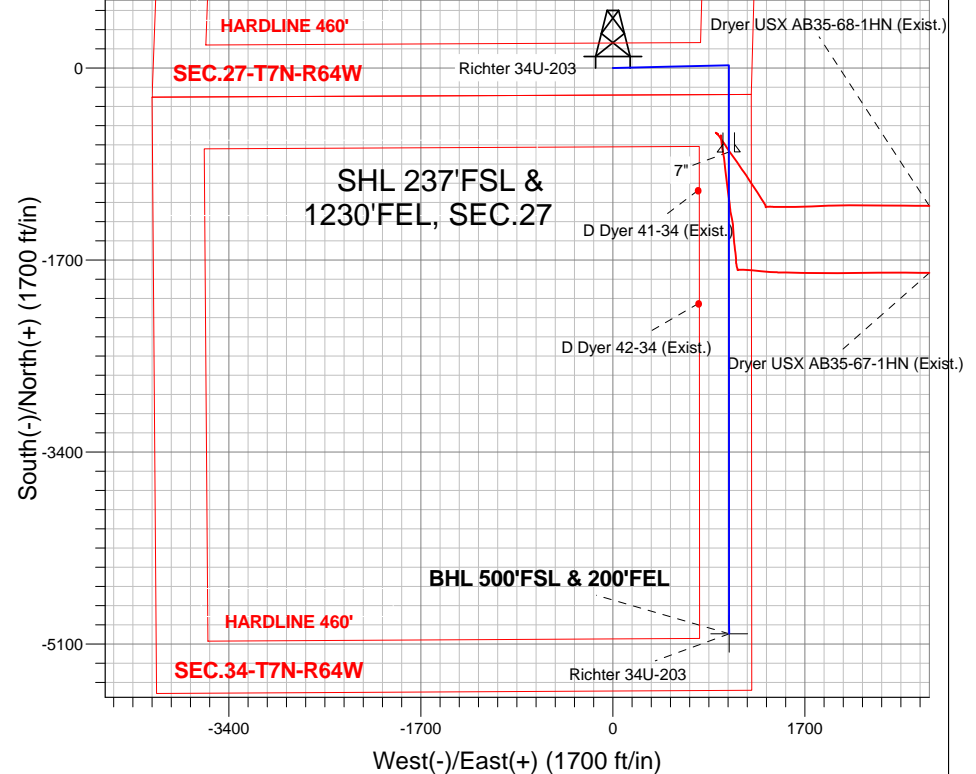
Azimuths to True North
 Magnetic North: 8.58°

Magnetic Field
 Strength: 53091.8nT
 Dip Angle: 67.16°
 Date: 9/28/2012
 Model: IGRF2010

Richter 27T-HZ Pad Sec.27-T7N-R64W
 Richter 34U-203
 Plan #1 (9-28-12)
 16:11, October 02 2012

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6190.9	6310.4	KOP #2
6954.8	7515.7	End of Build



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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	903.7	14.07	88.60	896.6	2.1	86.0	2.00	88.60	15.2	
4	4415.9	14.07	88.60	4303.4	22.9	939.7	0.00	0.00	166.6	
5	5119.5	0.00	0.00	5000.0	25.0	1025.7	2.00	180.00	181.8	
6	6310.4	0.00	0.00	6190.8	25.0	1025.7	0.00	0.00	181.8	
7	7515.7	90.40	179.97	6954.8	-744.3	1026.1	7.50	179.97	935.5	
8	11780.9	90.40	179.97	6925.0	-5009.4	1028.6	0.00	0.00	5113.9	BHL 500'FSL & 200'FEL

Vertical Section at 168.40° (550 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T7N-R64W

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

Richter 34U-203

Wellbore #1

Plan: Plan #1 (9-28-12)

Standard Planning Report

02 October, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

Project	SEC.27-T7N-R64W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

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

Well	Richter 34U-203					
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

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/28/2012	8.58	67.16	53,092

Design	Plan #1 (9-28-12)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	168.40

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
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	
6,310.4	0.00	0.00	6,190.8	25.0	1,025.7	0.00	0.00	0.00	0.00	
7,515.7	90.40	179.97	6,954.8	-744.3	1,026.1	7.50	7.50	0.00	179.97	
11,780.9	90.40	179.97	6,925.0	-5,009.4	1,028.6	0.00	0.00	0.00	0.00	BHL 500'FSL & 20C

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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									
240.0	0.80	88.60	240.0	0.0	0.3	0.0	2.00	2.00	0.00
280.0	1.60	88.60	280.0	0.0	1.1	0.2	2.00	2.00	0.00
320.0	2.40	88.60	320.0	0.1	2.5	0.4	2.00	2.00	0.00
360.0	3.20	88.60	359.9	0.1	4.5	0.8	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
440.0	4.80	88.60	439.7	0.2	10.0	1.8	2.00	2.00	0.00
480.0	5.60	88.60	479.6	0.3	13.7	2.4	2.00	2.00	0.00
520.0	6.40	88.60	519.3	0.4	17.8	3.2	2.00	2.00	0.00
560.0	7.20	88.60	559.1	0.6	22.6	4.0	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
640.0	8.80	88.60	638.3	0.8	33.7	6.0	2.00	2.00	0.00
680.0	9.60	88.60	677.8	1.0	40.1	7.1	2.00	2.00	0.00
720.0	10.40	88.60	717.1	1.1	47.1	8.3	2.00	2.00	0.00
760.0	11.20	88.60	756.4	1.3	54.5	9.7	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
840.0	12.80	88.60	834.7	1.7	71.2	12.6	2.00	2.00	0.00
880.0	13.60	88.60	873.6	2.0	80.3	14.2	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
920.0	14.07	88.60	912.5	2.2	89.9	15.9	0.00	0.00	0.00
960.0	14.07	88.60	951.3	2.4	99.7	17.7	0.00	0.00	0.00
1,000.0	14.07	88.60	990.1	2.7	109.4	19.4	0.00	0.00	0.00
1,040.0	14.07	88.60	1,028.9	2.9	119.1	21.1	0.00	0.00	0.00
1,080.0	14.07	88.60	1,067.7	3.1	128.8	22.8	0.00	0.00	0.00
1,120.0	14.07	88.60	1,106.5	3.4	138.5	24.6	0.00	0.00	0.00
1,160.0	14.07	88.60	1,145.3	3.6	148.3	26.3	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
1,240.0	14.07	88.60	1,222.9	4.1	167.7	29.7	0.00	0.00	0.00
1,280.0	14.07	88.60	1,261.7	4.3	177.4	31.5	0.00	0.00	0.00
1,320.0	14.07	88.60	1,300.4	4.6	187.2	33.2	0.00	0.00	0.00
1,360.0	14.07	88.60	1,339.2	4.8	196.9	34.9	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
1,440.0	14.07	88.60	1,416.8	5.3	216.3	38.4	0.00	0.00	0.00
1,480.0	14.07	88.60	1,455.6	5.5	226.1	40.1	0.00	0.00	0.00
1,520.0	14.07	88.60	1,494.4	5.7	235.8	41.8	0.00	0.00	0.00
1,560.0	14.07	88.60	1,533.2	6.0	245.5	43.5	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
1,640.0	14.07	88.60	1,610.8	6.5	265.0	47.0	0.00	0.00	0.00
1,680.0	14.07	88.60	1,649.6	6.7	274.7	48.7	0.00	0.00	0.00
1,720.0	14.07	88.60	1,688.4	6.9	284.4	50.4	0.00	0.00	0.00
1,760.0	14.07	88.60	1,727.2	7.2	294.1	52.1	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
1,840.0	14.07	88.60	1,804.8	7.6	313.6	55.6	0.00	0.00	0.00
1,880.0	14.07	88.60	1,843.6	7.9	323.3	57.3	0.00	0.00	0.00
1,920.0	14.07	88.60	1,882.4	8.1	333.0	59.0	0.00	0.00	0.00
1,960.0	14.07	88.60	1,921.2	8.4	342.7	60.8	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

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

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)
2,040.0	14.07	88.60	1,998.8	8.8	362.2	64.2	0.00	0.00	0.00
2,080.0	14.07	88.60	2,037.6	9.1	371.9	65.9	0.00	0.00	0.00
2,120.0	14.07	88.60	2,076.4	9.3	381.6	67.7	0.00	0.00	0.00
2,160.0	14.07	88.60	2,115.2	9.5	391.4	69.4	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
2,240.0	14.07	88.60	2,192.8	10.0	410.8	72.8	0.00	0.00	0.00
2,280.0	14.07	88.60	2,231.6	10.2	420.5	74.5	0.00	0.00	0.00
2,320.0	14.07	88.60	2,270.4	10.5	430.3	76.3	0.00	0.00	0.00
2,360.0	14.07	88.60	2,309.2	10.7	440.0	78.0	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
2,440.0	14.07	88.60	2,386.8	11.2	459.4	81.4	0.00	0.00	0.00
2,480.0	14.07	88.60	2,425.6	11.4	469.2	83.2	0.00	0.00	0.00
2,520.0	14.07	88.60	2,464.4	11.7	478.9	84.9	0.00	0.00	0.00
2,560.0	14.07	88.60	2,503.2	11.9	488.6	86.6	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
2,640.0	14.07	88.60	2,580.8	12.4	508.0	90.1	0.00	0.00	0.00
2,680.0	14.07	88.60	2,619.6	12.6	517.8	91.8	0.00	0.00	0.00
2,720.0	14.07	88.60	2,658.4	12.9	527.5	93.5	0.00	0.00	0.00
2,760.0	14.07	88.60	2,697.2	13.1	537.2	95.2	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
2,840.0	14.07	88.60	2,774.8	13.6	556.7	98.7	0.00	0.00	0.00
2,880.0	14.07	88.60	2,813.6	13.8	566.4	100.4	0.00	0.00	0.00
2,920.0	14.07	88.60	2,852.4	14.0	576.1	102.1	0.00	0.00	0.00
2,960.0	14.07	88.60	2,891.2	14.3	585.8	103.9	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
3,040.0	14.07	88.60	2,968.8	14.8	605.3	107.3	0.00	0.00	0.00
3,080.0	14.07	88.60	3,007.6	15.0	615.0	109.0	0.00	0.00	0.00
3,120.0	14.07	88.60	3,046.4	15.2	624.7	110.7	0.00	0.00	0.00
3,160.0	14.07	88.60	3,085.2	15.5	634.5	112.5	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
3,240.0	14.07	88.60	3,162.8	15.9	653.9	115.9	0.00	0.00	0.00
3,280.0	14.07	88.60	3,201.6	16.2	663.6	117.6	0.00	0.00	0.00
3,320.0	14.07	88.60	3,240.4	16.4	673.3	119.4	0.00	0.00	0.00
3,360.0	14.07	88.60	3,279.2	16.6	683.1	121.1	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
3,440.0	14.07	88.60	3,356.8	17.1	702.5	124.5	0.00	0.00	0.00
3,480.0	14.07	88.60	3,395.6	17.4	712.2	126.3	0.00	0.00	0.00
3,520.0	14.07	88.60	3,434.4	17.6	722.0	128.0	0.00	0.00	0.00
3,560.0	14.07	88.60	3,473.2	17.8	731.7	129.7	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
3,640.0	14.07	88.60	3,550.8	18.3	751.1	133.2	0.00	0.00	0.00
3,680.0	14.07	88.60	3,589.6	18.5	760.9	134.9	0.00	0.00	0.00
3,720.0	14.07	88.60	3,628.4	18.8	770.6	136.6	0.00	0.00	0.00
3,760.0	14.07	88.60	3,667.2	19.0	780.3	138.3	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
3,840.0	14.07	88.60	3,744.8	19.5	799.8	141.8	0.00	0.00	0.00
3,880.0	14.07	88.60	3,783.6	19.7	809.5	143.5	0.00	0.00	0.00
3,920.0	14.07	88.60	3,822.4	20.0	819.2	145.2	0.00	0.00	0.00
3,960.0	14.07	88.60	3,861.2	20.2	828.9	146.9	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
4,040.0	14.07	88.60	3,938.8	20.7	848.4	150.4	0.00	0.00	0.00
4,080.0	14.07	88.60	3,977.6	20.9	858.1	152.1	0.00	0.00	0.00
4,120.0	14.07	88.60	4,016.4	21.2	867.8	153.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,160.0	14.07	88.60	4,055.2	21.4	877.5	155.6	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
4,240.0	14.07	88.60	4,132.8	21.9	897.0	159.0	0.00	0.00	0.00
4,280.0	14.07	88.60	4,171.6	22.1	906.7	160.7	0.00	0.00	0.00
4,320.0	14.07	88.60	4,210.4	22.3	916.4	162.5	0.00	0.00	0.00
4,360.0	14.07	88.60	4,249.2	22.6	926.2	164.2	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
4,440.0	13.59	88.60	4,326.8	23.0	945.5	167.6	2.00	-2.00	0.00
4,480.0	12.79	88.60	4,365.8	23.3	954.6	169.2	2.00	-2.00	0.00
4,520.0	11.99	88.60	4,404.8	23.5	963.2	170.7	2.00	-2.00	0.00
4,560.0	11.19	88.60	4,444.0	23.7	971.2	172.2	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
4,640.0	9.59	88.60	4,522.7	24.0	985.7	174.7	2.00	-2.00	0.00
4,680.0	8.79	88.60	4,562.2	24.2	992.1	175.9	2.00	-2.00	0.00
4,720.0	7.99	88.60	4,601.8	24.3	997.9	176.9	2.00	-2.00	0.00
4,760.0	7.19	88.60	4,641.4	24.5	1,003.2	177.8	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
4,840.0	5.59	88.60	4,720.9	24.7	1,012.1	179.4	2.00	-2.00	0.00
4,880.0	4.79	88.60	4,760.8	24.8	1,015.7	180.1	2.00	-2.00	0.00
4,920.0	3.99	88.60	4,800.6	24.8	1,018.8	180.6	2.00	-2.00	0.00
4,960.0	3.19	88.60	4,840.6	24.9	1,021.3	181.0	2.00	-2.00	0.00
5,000.0	2.39	88.60	4,880.5	24.9	1,023.2	181.4	2.00	-2.00	0.00
5,040.0	1.59	88.60	4,920.5	25.0	1,024.6	181.6	2.00	-2.00	0.00
5,080.0	0.79	88.60	4,960.5	25.0	1,025.4	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
5,120.0	0.00	0.00	5,000.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,160.0	0.00	0.00	5,040.5	25.0	1,025.7	181.8	0.00	0.00	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
5,240.0	0.00	0.00	5,120.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,280.0	0.00	0.00	5,160.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,320.0	0.00	0.00	5,200.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,360.0	0.00	0.00	5,240.5	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
5,440.0	0.00	0.00	5,320.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,480.0	0.00	0.00	5,360.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,520.0	0.00	0.00	5,400.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,560.0	0.00	0.00	5,440.5	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
5,640.0	0.00	0.00	5,520.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,680.0	0.00	0.00	5,560.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,720.0	0.00	0.00	5,600.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,760.0	0.00	0.00	5,640.5	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
5,840.0	0.00	0.00	5,720.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,880.0	0.00	0.00	5,760.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,920.0	0.00	0.00	5,800.5	25.0	1,025.7	181.8	0.00	0.00	0.00
5,960.0	0.00	0.00	5,840.5	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
6,040.0	0.00	0.00	5,920.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,080.0	0.00	0.00	5,960.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,120.0	0.00	0.00	6,000.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,160.0	0.00	0.00	6,040.5	25.0	1,025.7	181.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

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)
6,200.0	0.00	0.00	6,080.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,240.0	0.00	0.00	6,120.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,280.0	0.00	0.00	6,160.5	25.0	1,025.7	181.8	0.00	0.00	0.00
6,310.4	0.00	0.00	6,190.9	25.0	1,025.7	181.8	0.00	0.00	0.00
KOP #2									
6,320.0	0.72	179.97	6,200.5	24.9	1,025.7	181.9	7.52	7.52	0.00
6,360.0	3.72	179.97	6,240.4	23.4	1,025.7	183.4	7.50	7.50	0.00
6,400.0	6.72	179.97	6,280.3	19.7	1,025.7	187.0	7.50	7.50	0.00
6,440.0	9.72	179.97	6,319.9	14.0	1,025.7	192.6	7.50	7.50	0.00
6,480.0	12.72	179.97	6,359.1	6.2	1,025.7	200.2	7.50	7.50	0.00
6,520.0	15.72	179.97	6,397.9	-3.6	1,025.7	209.8	7.50	7.50	0.00
6,560.0	18.72	179.97	6,436.1	-15.4	1,025.7	221.4	7.50	7.50	0.00
6,600.0	21.72	179.97	6,473.6	-29.2	1,025.7	235.0	7.50	7.50	0.00
6,640.0	24.72	179.97	6,510.3	-45.0	1,025.7	250.4	7.50	7.50	0.00
6,680.0	27.72	179.97	6,546.2	-62.7	1,025.8	267.7	7.50	7.50	0.00
6,720.0	30.72	179.97	6,581.1	-82.2	1,025.8	286.9	7.50	7.50	0.00
6,760.0	33.72	179.97	6,615.0	-103.5	1,025.8	307.8	7.50	7.50	0.00
6,800.0	36.72	179.97	6,647.6	-126.6	1,025.8	330.4	7.50	7.50	0.00
6,840.0	39.72	179.97	6,679.1	-151.4	1,025.8	354.6	7.50	7.50	0.00
6,880.0	42.72	179.97	6,709.1	-177.7	1,025.8	380.4	7.50	7.50	0.00
6,920.0	45.72	179.97	6,737.8	-205.6	1,025.8	407.7	7.50	7.50	0.00
6,960.0	48.72	179.97	6,765.0	-235.0	1,025.9	436.5	7.50	7.50	0.00
7,000.0	51.72	179.97	6,790.6	-265.7	1,025.9	466.6	7.50	7.50	0.00
7,040.0	54.72	179.97	6,814.5	-297.7	1,025.9	498.0	7.50	7.50	0.00
7,080.0	57.72	179.97	6,836.7	-331.0	1,025.9	530.6	7.50	7.50	0.00
7,120.0	60.72	179.97	6,857.2	-365.3	1,025.9	564.2	7.50	7.50	0.00
7,160.0	63.72	179.97	6,875.8	-400.7	1,025.9	598.9	7.50	7.50	0.00
7,200.0	66.72	179.97	6,892.6	-437.0	1,026.0	634.5	7.50	7.50	0.00
7,240.0	69.72	179.97	6,907.4	-474.2	1,026.0	670.9	7.50	7.50	0.00
7,280.0	72.72	179.97	6,920.3	-512.0	1,026.0	708.0	7.50	7.50	0.00
7,320.0	75.72	179.97	6,931.2	-550.5	1,026.0	745.7	7.50	7.50	0.00
7,360.0	78.72	179.97	6,940.0	-589.5	1,026.1	783.9	7.50	7.50	0.00
7,400.0	81.72	179.97	6,946.8	-629.0	1,026.1	822.5	7.50	7.50	0.00
7,440.0	84.72	179.97	6,951.6	-668.7	1,026.1	861.4	7.50	7.50	0.00
7,480.0	87.72	179.97	6,954.2	-708.6	1,026.1	900.5	7.50	7.50	0.00
7,515.7	90.40	179.97	6,954.8	-744.3	1,026.1	935.5	7.50	7.50	0.00
End of Build - 7"									
7,520.0	90.40	179.97	6,954.7	-748.6	1,026.2	939.7	0.02	0.02	0.00
7,560.0	90.40	179.97	6,954.5	-788.6	1,026.2	978.9	0.00	0.00	0.00
7,600.0	90.40	179.97	6,954.2	-828.6	1,026.2	1,018.0	0.00	0.00	0.00
7,640.0	90.40	179.97	6,953.9	-868.6	1,026.2	1,057.2	0.00	0.00	0.00
7,680.0	90.40	179.97	6,953.6	-908.6	1,026.2	1,096.4	0.00	0.00	0.00
7,720.0	90.40	179.97	6,953.4	-948.6	1,026.3	1,135.6	0.00	0.00	0.00
7,760.0	90.40	179.97	6,953.1	-988.6	1,026.3	1,174.8	0.00	0.00	0.00
7,800.0	90.40	179.97	6,952.8	-1,028.6	1,026.3	1,214.0	0.00	0.00	0.00
7,840.0	90.40	179.97	6,952.5	-1,068.6	1,026.3	1,253.2	0.00	0.00	0.00
7,880.0	90.40	179.97	6,952.2	-1,108.6	1,026.4	1,292.3	0.00	0.00	0.00
7,920.0	90.40	179.97	6,952.0	-1,148.6	1,026.4	1,331.5	0.00	0.00	0.00
7,960.0	90.40	179.97	6,951.7	-1,188.6	1,026.4	1,370.7	0.00	0.00	0.00
8,000.0	90.40	179.97	6,951.4	-1,228.6	1,026.4	1,409.9	0.00	0.00	0.00
8,040.0	90.40	179.97	6,951.1	-1,268.6	1,026.5	1,449.1	0.00	0.00	0.00
8,080.0	90.40	179.97	6,950.8	-1,308.6	1,026.5	1,488.3	0.00	0.00	0.00
8,120.0	90.40	179.97	6,950.6	-1,348.6	1,026.5	1,527.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,160.0	90.40	179.97	6,950.3	-1,388.6	1,026.5	1,566.7	0.00	0.00	0.00
8,200.0	90.40	179.97	6,950.0	-1,428.6	1,026.5	1,605.8	0.00	0.00	0.00
8,240.0	90.40	179.97	6,949.7	-1,468.6	1,026.6	1,645.0	0.00	0.00	0.00
8,280.0	90.40	179.97	6,949.4	-1,508.5	1,026.6	1,684.2	0.00	0.00	0.00
8,320.0	90.40	179.97	6,949.2	-1,548.5	1,026.6	1,723.4	0.00	0.00	0.00
8,360.0	90.40	179.97	6,948.9	-1,588.5	1,026.6	1,762.6	0.00	0.00	0.00
8,400.0	90.40	179.97	6,948.6	-1,628.5	1,026.7	1,801.8	0.00	0.00	0.00
8,440.0	90.40	179.97	6,948.3	-1,668.5	1,026.7	1,841.0	0.00	0.00	0.00
8,480.0	90.40	179.97	6,948.0	-1,708.5	1,026.7	1,880.1	0.00	0.00	0.00
8,520.0	90.40	179.97	6,947.8	-1,748.5	1,026.7	1,919.3	0.00	0.00	0.00
8,560.0	90.40	179.97	6,947.5	-1,788.5	1,026.8	1,958.5	0.00	0.00	0.00
8,600.0	90.40	179.97	6,947.2	-1,828.5	1,026.8	1,997.7	0.00	0.00	0.00
8,640.0	90.40	179.97	6,946.9	-1,868.5	1,026.8	2,036.9	0.00	0.00	0.00
8,680.0	90.40	179.97	6,946.6	-1,908.5	1,026.8	2,076.1	0.00	0.00	0.00
8,720.0	90.40	179.97	6,946.4	-1,948.5	1,026.9	2,115.3	0.00	0.00	0.00
8,760.0	90.40	179.97	6,946.1	-1,988.5	1,026.9	2,154.4	0.00	0.00	0.00
8,800.0	90.40	179.97	6,945.8	-2,028.5	1,026.9	2,193.6	0.00	0.00	0.00
8,840.0	90.40	179.97	6,945.5	-2,068.5	1,026.9	2,232.8	0.00	0.00	0.00
8,880.0	90.40	179.97	6,945.3	-2,108.5	1,026.9	2,272.0	0.00	0.00	0.00
8,920.0	90.40	179.97	6,945.0	-2,148.5	1,027.0	2,311.2	0.00	0.00	0.00
8,960.0	90.40	179.97	6,944.7	-2,188.5	1,027.0	2,350.4	0.00	0.00	0.00
9,000.0	90.40	179.97	6,944.4	-2,228.5	1,027.0	2,389.6	0.00	0.00	0.00
9,040.0	90.40	179.97	6,944.1	-2,268.5	1,027.0	2,428.7	0.00	0.00	0.00
9,080.0	90.40	179.97	6,943.9	-2,308.5	1,027.1	2,467.9	0.00	0.00	0.00
9,120.0	90.40	179.97	6,943.6	-2,348.5	1,027.1	2,507.1	0.00	0.00	0.00
9,160.0	90.40	179.97	6,943.3	-2,388.5	1,027.1	2,546.3	0.00	0.00	0.00
9,200.0	90.40	179.97	6,943.0	-2,428.5	1,027.1	2,585.5	0.00	0.00	0.00
9,240.0	90.40	179.97	6,942.7	-2,468.5	1,027.2	2,624.7	0.00	0.00	0.00
9,280.0	90.40	179.97	6,942.5	-2,508.5	1,027.2	2,663.9	0.00	0.00	0.00
9,320.0	90.40	179.97	6,942.2	-2,548.5	1,027.2	2,703.1	0.00	0.00	0.00
9,360.0	90.40	179.97	6,941.9	-2,588.5	1,027.2	2,742.2	0.00	0.00	0.00
9,400.0	90.40	179.97	6,941.6	-2,628.5	1,027.2	2,781.4	0.00	0.00	0.00
9,440.0	90.40	179.97	6,941.3	-2,668.5	1,027.3	2,820.6	0.00	0.00	0.00
9,480.0	90.40	179.97	6,941.1	-2,708.5	1,027.3	2,859.8	0.00	0.00	0.00
9,520.0	90.40	179.97	6,940.8	-2,748.5	1,027.3	2,899.0	0.00	0.00	0.00
9,560.0	90.40	179.97	6,940.5	-2,788.5	1,027.3	2,938.2	0.00	0.00	0.00
9,600.0	90.40	179.97	6,940.2	-2,828.5	1,027.4	2,977.4	0.00	0.00	0.00
9,640.0	90.40	179.97	6,939.9	-2,868.5	1,027.4	3,016.5	0.00	0.00	0.00
9,680.0	90.40	179.97	6,939.7	-2,908.5	1,027.4	3,055.7	0.00	0.00	0.00
9,720.0	90.40	179.97	6,939.4	-2,948.5	1,027.4	3,094.9	0.00	0.00	0.00
9,760.0	90.40	179.97	6,939.1	-2,988.5	1,027.5	3,134.1	0.00	0.00	0.00
9,800.0	90.40	179.97	6,938.8	-3,028.5	1,027.5	3,173.3	0.00	0.00	0.00
9,840.0	90.40	179.97	6,938.5	-3,068.5	1,027.5	3,212.5	0.00	0.00	0.00
9,880.0	90.40	179.97	6,938.3	-3,108.5	1,027.5	3,251.7	0.00	0.00	0.00
9,920.0	90.40	179.97	6,938.0	-3,148.5	1,027.6	3,290.8	0.00	0.00	0.00
9,960.0	90.40	179.97	6,937.7	-3,188.5	1,027.6	3,330.0	0.00	0.00	0.00
10,000.0	90.40	179.97	6,937.4	-3,228.5	1,027.6	3,369.2	0.00	0.00	0.00
10,040.0	90.40	179.97	6,937.2	-3,268.5	1,027.6	3,408.4	0.00	0.00	0.00
10,080.0	90.40	179.97	6,936.9	-3,308.5	1,027.6	3,447.6	0.00	0.00	0.00
10,120.0	90.40	179.97	6,936.6	-3,348.5	1,027.7	3,486.8	0.00	0.00	0.00
10,160.0	90.40	179.97	6,936.3	-3,388.5	1,027.7	3,526.0	0.00	0.00	0.00
10,200.0	90.40	179.97	6,936.0	-3,428.5	1,027.7	3,565.1	0.00	0.00	0.00
10,240.0	90.40	179.97	6,935.8	-3,468.5	1,027.7	3,604.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

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)
10,280.0	90.40	179.97	6,935.5	-3,508.5	1,027.8	3,643.5	0.00	0.00	0.00
10,320.0	90.40	179.97	6,935.2	-3,548.5	1,027.8	3,682.7	0.00	0.00	0.00
10,360.0	90.40	179.97	6,934.9	-3,588.5	1,027.8	3,721.9	0.00	0.00	0.00
10,400.0	90.40	179.97	6,934.6	-3,628.5	1,027.8	3,761.1	0.00	0.00	0.00
10,440.0	90.40	179.97	6,934.4	-3,668.5	1,027.9	3,800.3	0.00	0.00	0.00
10,480.0	90.40	179.97	6,934.1	-3,708.5	1,027.9	3,839.5	0.00	0.00	0.00
10,520.0	90.40	179.97	6,933.8	-3,748.5	1,027.9	3,878.6	0.00	0.00	0.00
10,560.0	90.40	179.97	6,933.5	-3,788.5	1,027.9	3,917.8	0.00	0.00	0.00
10,600.0	90.40	179.97	6,933.2	-3,828.5	1,027.9	3,957.0	0.00	0.00	0.00
10,640.0	90.40	179.97	6,933.0	-3,868.5	1,028.0	3,996.2	0.00	0.00	0.00
10,680.0	90.40	179.97	6,932.7	-3,908.5	1,028.0	4,035.4	0.00	0.00	0.00
10,720.0	90.40	179.97	6,932.4	-3,948.5	1,028.0	4,074.6	0.00	0.00	0.00
10,760.0	90.40	179.97	6,932.1	-3,988.5	1,028.0	4,113.8	0.00	0.00	0.00
10,800.0	90.40	179.97	6,931.8	-4,028.5	1,028.1	4,152.9	0.00	0.00	0.00
10,840.0	90.40	179.97	6,931.6	-4,068.5	1,028.1	4,192.1	0.00	0.00	0.00
10,880.0	90.40	179.97	6,931.3	-4,108.5	1,028.1	4,231.3	0.00	0.00	0.00
10,920.0	90.40	179.97	6,931.0	-4,148.5	1,028.1	4,270.5	0.00	0.00	0.00
10,960.0	90.40	179.97	6,930.7	-4,188.5	1,028.2	4,309.7	0.00	0.00	0.00
11,000.0	90.40	179.97	6,930.5	-4,228.5	1,028.2	4,348.9	0.00	0.00	0.00
11,040.0	90.40	179.97	6,930.2	-4,268.5	1,028.2	4,388.1	0.00	0.00	0.00
11,080.0	90.40	179.97	6,929.9	-4,308.5	1,028.2	4,427.2	0.00	0.00	0.00
11,120.0	90.40	179.97	6,929.6	-4,348.5	1,028.3	4,466.4	0.00	0.00	0.00
11,160.0	90.40	179.97	6,929.3	-4,388.5	1,028.3	4,505.6	0.00	0.00	0.00
11,200.0	90.40	179.97	6,929.1	-4,428.5	1,028.3	4,544.8	0.00	0.00	0.00
11,240.0	90.40	179.97	6,928.8	-4,468.5	1,028.3	4,584.0	0.00	0.00	0.00
11,280.0	90.40	179.97	6,928.5	-4,508.5	1,028.3	4,623.2	0.00	0.00	0.00
11,320.0	90.40	179.97	6,928.2	-4,548.5	1,028.4	4,662.4	0.00	0.00	0.00
11,360.0	90.40	179.97	6,927.9	-4,588.5	1,028.4	4,701.5	0.00	0.00	0.00
11,400.0	90.40	179.97	6,927.7	-4,628.5	1,028.4	4,740.7	0.00	0.00	0.00
11,440.0	90.40	179.97	6,927.4	-4,668.5	1,028.4	4,779.9	0.00	0.00	0.00
11,480.0	90.40	179.97	6,927.1	-4,708.5	1,028.5	4,819.1	0.00	0.00	0.00
11,520.0	90.40	179.97	6,926.8	-4,748.5	1,028.5	4,858.3	0.00	0.00	0.00
11,560.0	90.40	179.97	6,926.5	-4,788.5	1,028.5	4,897.5	0.00	0.00	0.00
11,600.0	90.40	179.97	6,926.3	-4,828.5	1,028.5	4,936.7	0.00	0.00	0.00
11,640.0	90.40	179.97	6,926.0	-4,868.5	1,028.6	4,975.9	0.00	0.00	0.00
11,680.0	90.40	179.97	6,925.7	-4,908.5	1,028.6	5,015.0	0.00	0.00	0.00
11,720.0	90.40	179.97	6,925.4	-4,948.5	1,028.6	5,054.2	0.00	0.00	0.00
11,760.0	90.40	179.97	6,925.1	-4,988.5	1,028.6	5,093.4	0.00	0.00	0.00
11,780.9	90.40	179.97	6,925.0	-5,009.4	1,028.6	5,113.9	0.00	0.00	0.00
BHL 500'FSL & 200'FEL									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 500'FSL & 200'F - hit/miss target - Shape - Point	0.00	0.00	6,925.0	-5,009.4	1,028.6	1,435,183.68	3,270,361.96	40.523910	-104.527460

Database:	Landmark	Local Co-ordinate Reference:	Well Richter 34U-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Project:	SEC.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	North Reference:	True
Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-28-12)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,515.7	6,954.8	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
6,310.4	6,190.9	25.0	1,025.7	KOP #2
7,515.7	6,954.8	-744.3	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-203

Wellbore #1

Plan #1 (9-28-12)

Anticollision Report

02 October, 2012



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (9-28-12)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	10/2/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,780.9	Plan #1 (9-28-12) (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						
Dyer 34R-203 Pad Sec.34-T7N-R64W						
D Dyer 41-34 (Exist.) - Wellbore #1 - Design #1	7,853.3	6,949.4	273.1	231.1	6.512	CC, ES
D Dyer 41-34 (Exist.) - Wellbore #1 - Design #1	7,900.0	6,949.1	277.0	234.4	6.498	SF
D Dyer 42-34 (Exist.) - Wellbore #1 - Design #1	8,855.2	6,919.4	268.1	209.4	4.568	CC, ES, SF
Richter 27T-HZ Pad Sec.27-T7N-R64W						
Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbor	8,572.3	6,925.7	378.0	326.3	7.305	CC, ES
Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbor	8,600.0	6,926.6	379.0	326.8	7.260	SF
Dryer USX AB35-68-1HN (Exist.) - Wellbore #1 - Wellbor	8,003.9	6,753.0	587.0	544.6	13.837	CC, ES
Dryer USX AB35-68-1HN (Exist.) - Wellbore #1 - Wellbor	8,100.0	6,753.0	594.8	551.1	13.601	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)	11,780.9	11,680.3	789.5	594.5	4.049	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)	11,780.9	11,779.9	492.8	307.3	2.657	SF
Ritcher 34R-243 - Wellbore #1 - Plan #1 (9-27-12)	200.0	200.0	119.6	118.9	177.333	CC, ES
Ritcher 34R-243 - Wellbore #1 - Plan #1 (9-27-12)	1,200.0	1,184.1	277.6	272.3	52.493	SF

Offset Design 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
6,800.0	6,647.6	6,644.6	6,644.6	24.5	14.8	19.63	-1,082.0	753.3	993.5	960.9	32.64	30.439
6,850.0	6,686.7	6,683.7	6,683.7	24.6	14.9	21.23	-1,082.0	753.3	963.6	931.9	31.68	30.413
6,900.0	6,723.7	6,720.7	6,720.7	24.7	15.0	23.17	-1,082.0	753.3	931.3	900.6	30.72	30.315
6,950.0	6,758.3	6,755.3	6,755.3	24.8	15.1	25.52	-1,082.0	753.3	896.9	867.1	29.81	30.091
7,000.0	6,790.6	6,787.6	6,787.6	25.0	15.1	28.37	-1,082.0	753.3	860.6	831.6	29.01	29.671
7,050.0	6,820.2	6,817.2	6,817.2	25.1	15.2	31.83	-1,082.0	753.3	822.6	794.2	28.40	28.959

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Dyer 34R-203 Pad Sec.34-T7N-R64W - D Dyer 41-34 (Exist.) - Wellbore #1 - Design #1													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	
7,100.0	6,847.2	6,844.2	6,844.2	25.3	15.3	36.02	-1,082.0	753.3	783.0	754.9	28.11	27.856		
7,150.0	6,871.4	6,868.4	6,868.4	25.5	15.3	41.05	-1,082.0	753.3	742.1	713.9	28.23	26.289		
7,200.0	6,892.6	6,889.6	6,889.6	25.8	15.4	46.98	-1,082.0	753.3	700.3	671.4	28.85	24.272		
7,250.0	6,910.9	6,907.9	6,907.9	26.0	15.4	53.78	-1,082.0	753.3	657.6	627.7	29.97	21.944		
7,300.0	6,926.0	6,923.0	6,923.0	26.4	15.4	61.26	-1,082.0	753.3	614.6	583.2	31.46	19.536		
7,350.0	6,938.0	6,935.0	6,935.0	26.7	15.5	69.03	-1,082.0	753.3	571.6	538.5	33.09	17.272		
7,400.0	6,946.8	6,943.8	6,943.8	27.1	15.5	76.57	-1,082.0	753.3	528.9	494.2	34.62	15.276		
7,450.0	6,952.4	6,949.4	6,949.4	27.5	15.5	83.35	-1,082.0	753.3	487.0	451.1	35.91	13.563		
7,500.0	6,954.7	6,951.7	6,951.7	27.9	15.5	88.99	-1,082.0	753.3	446.5	409.6	36.94	12.086		
7,515.7	6,954.8	6,951.8	6,951.8	28.0	15.5	90.49	-1,082.0	753.3	434.2	397.0	37.23	11.662		
7,600.0	6,954.2	6,951.2	6,951.2	28.8	15.5	90.37	-1,082.0	753.3	372.4	334.1	38.32	9.719		
7,700.0	6,953.5	6,950.5	6,950.5	29.9	15.5	90.22	-1,082.0	753.3	313.1	273.5	39.69	7.889		
7,800.0	6,952.8	6,949.8	6,949.8	31.0	15.5	90.08	-1,082.0	753.3	278.2	237.1	41.13	6.764		
7,853.3	6,952.4	6,949.4	6,949.4	31.7	15.5	90.00	-1,082.0	753.3	273.1	231.1	41.93	6.512 CC, ES		
7,900.0	6,952.1	6,949.1	6,949.1	32.3	15.5	89.93	-1,082.0	753.3	277.0	234.4	42.63	6.498 SF		
8,000.0	6,951.4	6,948.4	6,948.4	33.6	15.5	89.79	-1,082.0	753.3	310.0	265.8	44.18	7.016		
8,100.0	6,950.7	6,947.7	6,947.7	34.9	15.5	89.64	-1,082.0	753.3	368.0	322.2	45.77	8.040		
8,200.0	6,950.0	6,947.0	6,947.0	36.3	15.5	89.49	-1,082.0	753.3	441.3	393.9	47.40	9.311		
8,300.0	6,949.3	6,946.3	6,946.3	37.8	15.5	89.35	-1,082.0	753.3	523.5	474.5	49.05	10.673		
8,400.0	6,948.6	6,945.6	6,945.6	39.3	15.5	89.20	-1,082.0	753.3	611.1	560.4	50.73	12.045		
8,500.0	6,947.9	6,944.9	6,944.9	40.8	15.5	89.05	-1,082.0	753.3	702.0	649.5	52.44	13.386		
8,600.0	6,947.2	6,944.2	6,944.2	42.4	15.5	88.91	-1,082.0	753.3	795.0	740.9	54.16	14.679		
8,700.0	6,946.5	6,943.5	6,943.5	44.0	15.5	88.76	-1,082.0	753.3	889.6	833.7	55.90	15.914		
8,800.0	6,945.8	6,942.8	6,942.8	45.6	15.5	88.61	-1,082.0	753.3	985.3	927.6	57.66	17.089		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Dyer 34R-203 Pad Sec.34-T7N-R64W - D Dyer 42-34 (Exist.) - Wellbore #1 - Design #1												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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,900.0	6,952.1	6,926.1	6,926.1	32.3	15.5	91.43	-2,083.9	758.9	992.1	949.4	42.66	23.254	
8,000.0	6,951.4	6,925.4	6,925.4	33.6	15.5	91.28	-2,083.9	758.9	896.2	852.0	44.21	20.270	
8,100.0	6,950.7	6,924.7	6,924.7	34.9	15.5	91.13	-2,083.9	758.9	801.3	755.5	45.81	17.495	
8,200.0	6,950.0	6,924.0	6,924.0	36.3	15.5	90.98	-2,083.9	758.9	707.9	660.5	47.43	14.924	
8,300.0	6,949.3	6,923.3	6,923.3	37.8	15.4	90.83	-2,083.9	758.9	616.5	567.4	49.09	12.559	
8,400.0	6,948.6	6,922.6	6,922.6	39.3	15.4	90.68	-2,083.9	758.9	528.3	477.5	50.78	10.404	
8,500.0	6,947.9	6,921.9	6,921.9	40.8	15.4	90.53	-2,083.9	758.9	445.0	392.5	52.48	8.479	
8,600.0	6,947.2	6,921.2	6,921.2	42.4	15.4	90.38	-2,083.9	758.9	370.1	315.9	54.21	6.828	
8,700.0	6,946.5	6,920.5	6,920.5	44.0	15.4	90.23	-2,083.9	758.9	309.7	253.8	55.95	5.536	
8,800.0	6,945.8	6,919.8	6,919.8	45.6	15.4	90.08	-2,083.9	758.9	273.7	216.0	57.71	4.743	
8,855.2	6,945.4	6,919.4	6,919.4	46.5	15.4	90.00	-2,083.9	758.9	268.1	209.4	58.68	4.568	CC, ES, SF
8,900.0	6,945.1	6,919.1	6,919.1	47.3	15.4	89.93	-2,083.9	758.9	271.8	212.3	59.48	4.569	
9,000.0	6,944.4	6,918.4	6,918.4	48.9	15.4	89.78	-2,083.9	758.9	304.7	243.4	61.26	4.973	
9,100.0	6,943.7	6,917.7	6,917.7	50.6	15.4	89.63	-2,083.9	758.9	363.0	300.0	63.05	5.757	
9,200.0	6,943.0	6,917.0	6,917.0	52.3	15.4	89.49	-2,083.9	758.9	436.7	371.9	64.85	6.734	
9,300.0	6,942.3	6,916.3	6,916.3	54.1	15.4	89.34	-2,083.9	758.9	519.3	452.7	66.66	7.791	
9,400.0	6,941.6	6,915.6	6,915.6	55.8	15.4	89.19	-2,083.9	758.9	607.2	538.7	68.47	8.867	
9,500.0	6,940.9	6,914.9	6,914.9	57.5	15.4	89.04	-2,083.9	758.9	698.3	628.0	70.30	9.933	
9,600.0	6,940.2	6,914.2	6,914.2	59.3	15.4	88.89	-2,083.9	758.9	791.5	719.4	72.12	10.975	
9,700.0	6,939.5	6,913.5	6,913.5	61.1	15.4	88.74	-2,083.9	758.9	886.3	812.3	73.95	11.984	
9,800.0	6,938.8	6,912.8	6,912.8	62.9	15.4	88.59	-2,083.9	758.9	982.1	906.3	75.79	12.958	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design										Richter 27T-HZ Pad Sec.27-T7N-R64W - Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbore #1				Offset Site Error:		0.0 ft
Survey Program: 839-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)					
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	180.712				
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	161.670				
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	145.518				
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	132.011				
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	120.725				
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	111.184				
1,865.8	1,829.9	1,680.0	1,675.6	7.4	2.9	46.57	-657.5	961.5	937.4	928.6	8.89	105.459				
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	102.628				
2,000.0	1,960.0	1,785.2	1,778.1	8.1	3.2	48.60	-681.0	963.6	939.6	929.8	9.85	95.388				
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	89.406				
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	84.331				
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	80.010				
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	76.126				
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	72.942				
7,700.0	6,953.5	6,880.0	6,658.4	29.9	25.6	-40.39	-1,795.7	1,274.3	949.5	912.1	37.48	25.336				
7,800.0	6,952.8	6,885.8	6,662.9	31.0	25.6	-41.25	-1,796.1	1,278.0	858.9	819.9	38.97	22.039				
7,900.0	6,952.1	6,892.6	6,668.1	32.3	25.6	-42.25	-1,796.7	1,282.4	770.5	729.9	40.60	18.980				
8,000.0	6,951.4	6,898.7	6,672.7	33.6	25.7	-43.17	-1,797.1	1,286.3	685.3	643.1	42.23	16.227				
8,100.0	6,950.7	6,904.4	6,676.9	34.9	25.7	-44.01	-1,797.5	1,290.0	604.5	560.7	43.87	13.779				
8,200.0	6,950.0	6,912.0	6,682.6	36.3	25.7	-45.17	-1,798.1	1,295.1	530.3	484.6	45.73	11.596				
8,300.0	6,949.3	6,912.0	6,682.6	37.8	25.7	-45.17	-1,798.1	1,295.1	465.7	418.7	46.99	9.911				
8,400.0	6,948.6	6,919.0	6,687.8	39.3	25.8	-46.22	-1,798.5	1,299.8	415.4	366.5	48.88	8.498				
8,500.0	6,947.9	6,923.0	6,690.8	40.8	25.8	-46.83	-1,798.8	1,302.5	384.9	334.3	50.55	7.614				
8,572.3	6,947.4	6,925.7	6,692.7	42.0	25.8	-47.23	-1,798.9	1,304.3	378.0	326.3	51.75	7.305 CC, ES				
8,600.0	6,947.2	6,926.6	6,693.4	42.4	25.8	-47.38	-1,799.0	1,304.9	379.0	326.8	52.21	7.260 SF				
8,700.0	6,946.5	6,929.8	6,695.8	44.0	25.8	-47.87	-1,799.1	1,307.1	399.0	345.1	53.86	7.407				
8,800.0	6,945.8	6,932.7	6,697.9	45.6	25.8	-48.30	-1,799.3	1,309.1	441.2	385.7	55.51	7.948				
8,900.0	6,945.1	6,935.4	6,699.8	47.3	25.8	-48.70	-1,799.4	1,310.9	500.1	443.0	57.16	8.749				
9,000.0	6,944.4	6,943.0	6,705.3	48.9	25.9	-49.85	-1,799.7	1,316.2	570.6	511.3	59.31	9.621				
9,100.0	6,943.7	6,943.0	6,705.3	50.6	25.9	-49.85	-1,799.7	1,316.2	648.8	588.1	60.75	10.681				
9,200.0	6,943.0	6,943.0	6,705.3	52.3	25.9	-49.85	-1,799.7	1,316.2	732.4	670.2	62.19	11.776				
9,300.0	6,942.3	6,943.0	6,705.3	54.1	25.9	-49.85	-1,799.7	1,316.2	819.6	756.0	63.65	12.877				
9,400.0	6,941.6	6,947.1	6,708.3	55.8	25.9	-50.48	-1,799.9	1,319.0	909.5	843.9	65.54	13.876				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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	222.121		
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	192.131		
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	167.869		
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	147.961		
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	6.85	131.288		
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	117.199		
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	105.201		
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	95.805		
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	9.33	88.234		
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	81.686		
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	76.042		
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	71.112		
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	66.935		
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	64.939		
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	63.393		
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	60.436		
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	57.938		
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	55.882		
2,800.0	2,736.0	2,526.2	2,515.6	12.3	4.7	56.23	-657.2	977.0	827.1	811.8	15.31	54.038		
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	52.251		
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	50.708		
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	49.286		
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	47.841		
3,300.0	3,221.0	3,008.0	2,979.7	14.9	6.7	62.55	-764.5	1,049.5	902.2	882.9	19.31	46.724		
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	45.729		
3,500.0	3,415.0	3,212.4	3,176.1	16.0	7.6	64.77	-810.1	1,083.1	936.4	915.4	20.99	44.612		
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	21.78	43.727		
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	948.2	22.62	42.915		
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	41.994		
7,150.0	6,871.4	6,722.0	6,595.5	25.5	20.3	-36.61	-1,229.9	1,493.3	999.0	971.4	27.66	36.116		
7,200.0	6,892.6	6,722.0	6,595.5	25.8	20.3	-38.44	-1,229.9	1,493.3	967.7	939.9	27.80	34.809		
7,250.0	6,910.9	6,733.1	6,604.8	26.0	20.4	-41.22	-1,229.8	1,499.3	935.8	907.3	28.52	32.818		
7,300.0	6,926.0	6,739.0	6,609.8	26.4	20.4	-43.82	-1,229.8	1,502.6	903.6	874.1	29.51	30.614		
7,350.0	6,938.0	6,743.9	6,613.8	26.7	20.4	-46.49	-1,229.8	1,505.3	871.0	840.2	30.82	28.267		
7,400.0	6,946.8	6,753.0	6,621.3	27.1	20.5	-49.69	-1,229.8	1,510.5	838.4	805.9	32.50	25.800		
7,450.0	6,952.4	6,753.0	6,621.3	27.5	20.5	-52.19	-1,229.8	1,510.5	805.9	771.8	34.10	23.631		
7,500.0	6,954.7	6,753.0	6,621.3	27.9	20.5	-54.74	-1,229.8	1,510.5	773.5	737.7	35.80	21.607		
7,515.7	6,954.8	6,753.0	6,621.3	28.0	20.5	-55.55	-1,229.8	1,510.5	763.5	727.1	36.34	21.007		
7,600.0	6,954.2	6,753.0	6,621.3	28.8	20.5	-55.55	-1,229.8	1,510.5	712.5	675.2	37.30	19.102		
7,700.0	6,953.5	6,753.0	6,621.3	29.9	20.5	-55.55	-1,229.8	1,510.5	661.0	622.5	38.50	17.170		
7,800.0	6,952.8	6,753.0	6,621.3	31.0	20.5	-55.55	-1,229.8	1,510.5	621.4	581.7	39.74	15.635		
7,900.0	6,952.1	6,753.0	6,621.3	32.3	20.5	-55.55	-1,229.8	1,510.5	596.1	555.1	41.04	14.526		
8,000.0	6,951.4	6,753.0	6,621.3	33.6	20.5	-55.55	-1,229.8	1,510.5	587.0	544.7	42.37	13.855		
8,003.9	6,951.4	6,753.0	6,621.3	33.6	20.5	-55.55	-1,229.8	1,510.5	587.0	544.6	42.42	13.837 CC, ES		
8,100.0	6,950.7	6,753.0	6,621.3	34.9	20.5	-55.55	-1,229.8	1,510.5	594.8	551.1	43.73	13.601 SF		
8,200.0	6,950.0	6,753.0	6,621.3	36.3	20.5	-55.55	-1,229.8	1,510.5	618.9	573.8	45.13	13.715		
8,300.0	6,949.3	6,753.0	6,621.3	37.8	20.5	-55.55	-1,229.8	1,510.5	657.5	610.9	46.54	14.126		
8,400.0	6,948.6	6,753.0	6,621.3	39.3	20.5	-55.55	-1,229.8	1,510.5	708.2	660.2	47.98	14.759		
8,500.0	6,947.9	6,753.0	6,621.3	40.8	20.5	-55.55	-1,229.8	1,510.5	768.6	719.1	49.44	15.546		
8,600.0	6,947.2	6,753.0	6,621.3	42.4	20.5	-55.55	-1,229.8	1,510.5	836.6	785.7	50.91	16.432		
8,700.0	6,946.5	6,753.0	6,621.3	44.0	20.5	-55.55	-1,229.8	1,510.5	910.6	858.2	52.40	17.377		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 839-MWD													Offset Well Error:	0.0 ft
Richter 27T-HZ Pad Sec.27-T7N-R64W - Dryer USX AB35-68-1HN (Exist.) - Wellbore #1 - Wellbore #1														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,800.0	6,945.8	6,753.0	6,621.3	45.6	20.5	-55.55	-1,229.8	1,510.5	989.1	935.2	53.90	18.351		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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	-91.16	-3.6	-180.7	180.7					
100.0	100.0	100.0	100.0	0.1	0.1	-91.16	-3.6	-180.7	180.7	180.5	0.22	803.977		
200.0	200.0	200.0	200.0	0.3	0.3	-91.16	-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		
903.7	896.6	827.1	822.1	2.5	2.2	-179.33	-2.5	-249.0	343.2	339.3	3.90	88.007		
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	-179.10	-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	94.012		
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		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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	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	-91.39	-91.39	-3.6	-150.1	150.1				
100.0	100.0	100.0	100.0	0.1	0.1	-91.39	-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	-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	-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	-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	-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	-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	-180.00	-180.00	-3.6	-150.1	193.7	190.7	2.94	65.863	
800.0	795.6	795.6	795.6	2.0	1.7	-180.00	-180.00	-3.6	-150.1	212.7	209.3	3.40	62.524	
903.7	896.6	896.6	896.6	2.5	1.9	-180.00	-180.00	-3.6	-150.1	236.1	232.2	3.88	60.789	
1,000.0	990.1	990.1	990.1	3.0	2.1	-180.00	-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	179.98	179.98	-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	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	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	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	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	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	179.38	-10.0	-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	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	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	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	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	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	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	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	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	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	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	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	178.70	-30.0	-393.4	979.8	966.5	13.23	74.068	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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	-90.00	0.0	-58.4	58.4				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-58.4	58.4	58.1	0.22	259.694	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	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	-178.75	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	-179.19	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	
903.7	896.6	896.6	896.6	2.5	1.9	-179.42	0.0	-58.4	144.3	140.5	3.88	37.165	
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	0.5	-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	-179.51	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	35.758	
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	3,285.9	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	-177.93	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	
4,415.9	4,303.4	4,322.8	4,303.4	20.8	10.8	-178.47	24.0	236.2	703.5	682.4	21.07	33.388	
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	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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)					
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	
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	
5,119.5	5,000.0	5,019.4	5,000.0	22.6	12.1	-90.07	24.0	236.2	789.5	765.7	23.75	33.247	
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	22.9	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	
6,310.4	6,190.8	6,210.3	6,190.8	23.9	14.5	-90.07	24.0	236.2	789.5	761.1	28.41	27.792	
6,350.0	6,230.5	6,249.9	6,230.4	23.9	14.6	89.96	23.0	236.2	789.5	760.9	28.55	27.649	
6,400.0	6,280.3	6,299.8	6,280.2	24.0	14.7	89.96	18.8	236.2	789.5	760.7	28.72	27.485	
6,450.0	6,329.7	6,349.8	6,329.6	24.0	14.7	89.96	11.3	236.2	789.5	760.6	28.89	27.326	
6,500.0	6,378.5	6,399.7	6,378.4	24.1	14.8	89.96	0.6	236.2	789.5	760.4	29.06	27.168	
6,550.0	6,426.6	6,449.7	6,426.4	24.1	14.9	89.96	-13.2	236.3	789.5	760.2	29.23	27.008	
6,600.0	6,473.6	6,499.7	6,473.4	24.2	15.0	89.96	-30.2	236.3	789.5	760.1	29.41	26.840	
6,650.0	6,519.4	6,549.6	6,519.2	24.3	15.1	89.97	-50.1	236.3	789.5	759.9	29.61	26.659	
6,700.0	6,563.8	6,599.6	6,563.6	24.3	15.2	89.97	-73.1	236.3	789.5	759.6	29.84	26.459	
6,750.0	6,606.6	6,649.6	6,606.4	24.4	15.3	89.97	-98.9	236.3	789.5	759.4	30.10	26.233	
6,800.0	6,647.6	6,699.6	6,647.4	24.5	15.4	89.97	-127.4	236.3	789.5	759.1	30.39	25.975	
6,850.0	6,686.7	6,749.5	6,686.4	24.6	15.6	89.97	-158.5	236.3	789.5	758.7	30.74	25.682	
6,900.0	6,723.7	6,799.5	6,723.4	24.7	15.8	89.97	-192.2	236.4	789.5	758.3	31.15	25.347	
6,950.0	6,758.3	6,849.5	6,758.1	24.8	16.0	89.97	-228.2	236.4	789.5	757.9	31.62	24.971	
7,000.0	6,790.6	6,899.5	6,790.3	25.0	16.2	89.98	-266.3	236.4	789.5	757.3	32.16	24.551	
7,050.0	6,820.2	6,949.4	6,820.0	25.1	16.5	89.98	-306.5	236.4	789.5	756.7	32.77	24.088	
7,100.0	6,847.2	6,999.4	6,847.0	25.3	16.8	89.98	-348.6	236.4	789.5	756.0	33.47	23.587	
7,150.0	6,871.4	7,049.4	6,871.2	25.5	17.1	89.98	-392.3	236.5	789.5	755.2	34.25	23.052	
7,200.0	6,892.6	7,099.4	6,892.4	25.8	17.6	89.99	-437.6	236.5	789.5	754.4	35.11	22.488	
7,250.0	6,910.9	7,149.4	6,910.7	26.0	18.0	89.99	-484.1	236.5	789.5	753.4	36.04	21.903	
7,300.0	6,926.0	7,199.4	6,925.9	26.4	18.5	89.99	-531.7	236.5	789.5	752.4	37.06	21.303	
7,350.0	6,938.0	7,249.4	6,937.9	26.7	19.0	89.99	-580.2	236.6	789.5	751.3	38.14	20.697	
7,400.0	6,946.8	7,299.4	6,946.8	27.1	19.6	90.00	-629.4	236.6	789.5	750.2	39.29	20.091	
7,450.0	6,952.4	7,349.4	6,952.4	27.5	20.2	90.00	-679.1	236.6	789.5	749.0	40.50	19.492	
7,500.0	6,954.7	7,399.4	6,954.7	27.9	20.8	90.00	-729.0	236.7	789.5	747.7	41.76	18.905	
7,515.7	6,954.8	7,415.1	6,954.8	28.0	21.0	90.00	-744.7	236.7	789.5	747.3	42.16	18.724	
7,600.0	6,954.2	7,499.4	6,954.2	28.8	22.1	90.00	-829.0	236.7	789.5	745.1	44.41	17.777	
7,700.0	6,953.5	7,599.4	6,953.5	29.9	23.5	90.00	-929.0	236.8	789.5	742.3	47.23	16.717	
7,800.0	6,952.8	7,699.4	6,952.8	31.0	25.0	90.00	-1,029.0	236.8	789.5	739.3	50.18	15.734	
7,900.0	6,952.1	7,799.4	6,952.1	32.3	26.5	90.00	-1,129.0	236.9	789.5	736.2	53.25	14.827	
8,000.0	6,951.4	7,899.4	6,951.4	33.6	28.1	90.00	-1,229.0	236.9	789.5	733.1	56.41	13.996	
8,100.0	6,950.7	7,999.4	6,950.7	34.9	29.7	90.00	-1,329.0	237.0	789.5	729.8	59.65	13.235	
8,200.0	6,950.0	8,099.4	6,950.0	36.3	31.4	90.00	-1,429.0	237.1	789.5	726.5	62.96	12.539	
8,300.0	6,949.3	8,199.4	6,949.3	37.8	33.1	90.00	-1,529.0	237.1	789.5	723.2	66.33	11.902	
8,400.0	6,948.6	8,299.4	6,948.6	39.3	34.8	90.00	-1,629.0	237.2	789.5	719.7	69.75	11.319	
8,500.0	6,947.9	8,399.4	6,947.9	40.8	36.5	90.00	-1,729.0	237.2	789.5	716.3	73.21	10.784	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design												Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-223 - Wellbore #1 - Plan #1 (9-27-12)		Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
8,600.0	6,947.2	8,499.4	6,947.2	42.4	38.3	90.00	-1,829.0	237.3	789.5	712.8	76.71	10.292				
8,700.0	6,946.5	8,599.4	6,946.5	44.0	40.0	90.00	-1,929.0	237.3	789.5	709.3	80.24	9.839				
8,800.0	6,945.8	8,699.4	6,945.8	45.6	41.8	90.00	-2,029.0	237.4	789.5	705.7	83.80	9.421				
8,900.0	6,945.1	8,799.4	6,945.1	47.3	43.6	90.00	-2,129.0	237.5	789.5	702.1	87.38	9.035				
9,000.0	6,944.4	8,899.4	6,944.4	48.9	45.4	90.00	-2,229.0	237.5	789.5	698.5	90.99	8.677				
9,100.0	6,943.7	8,999.4	6,943.7	50.6	47.2	90.00	-2,329.0	237.6	789.5	694.9	94.61	8.345				
9,200.0	6,943.0	9,099.4	6,943.0	52.3	49.0	90.00	-2,429.0	237.6	789.5	691.3	98.25	8.035				
9,300.0	6,942.3	9,199.4	6,942.3	54.1	50.9	90.00	-2,529.0	237.7	789.5	687.6	101.91	7.747				
9,400.0	6,941.6	9,299.4	6,941.6	55.8	52.7	90.00	-2,629.0	237.7	789.5	683.9	105.58	7.478				
9,500.0	6,940.9	9,399.4	6,940.9	57.5	54.5	90.00	-2,729.0	237.8	789.5	680.2	109.26	7.226				
9,600.0	6,940.2	9,499.4	6,940.2	59.3	56.4	90.00	-2,829.0	237.9	789.5	676.6	112.95	6.990				
9,700.0	6,939.5	9,599.4	6,939.5	61.1	58.2	90.00	-2,929.0	237.9	789.5	672.9	116.66	6.768				
9,800.0	6,938.8	9,699.4	6,938.9	62.9	60.1	90.00	-3,029.0	238.0	789.5	669.1	120.37	6.559				
9,900.0	6,938.1	9,799.4	6,938.2	64.6	62.0	90.00	-3,129.0	238.0	789.5	665.4	124.09	6.362				
10,000.0	6,937.4	9,899.4	6,937.5	66.4	63.8	90.00	-3,229.0	238.1	789.5	661.7	127.82	6.177				
10,100.0	6,936.7	9,999.4	6,936.8	68.2	65.7	90.00	-3,329.0	238.1	789.5	658.0	131.55	6.001				
10,200.0	6,936.0	10,099.4	6,936.1	70.0	67.6	90.00	-3,429.0	238.2	789.5	654.2	135.30	5.835				
10,300.0	6,935.3	10,199.4	6,935.4	71.9	69.4	90.00	-3,528.9	238.3	789.5	650.5	139.04	5.678				
10,400.0	6,934.6	10,299.4	6,934.7	73.7	71.3	90.00	-3,628.9	238.3	789.5	646.7	142.80	5.529				
10,500.0	6,933.9	10,399.4	6,934.0	75.5	73.2	90.00	-3,728.9	238.4	789.5	643.0	146.55	5.387				
10,600.0	6,933.2	10,499.4	6,933.3	77.3	75.1	90.00	-3,828.9	238.4	789.5	639.2	150.32	5.252				
10,700.0	6,932.5	10,599.4	6,932.6	79.2	77.0	90.00	-3,928.9	238.5	789.5	635.4	154.08	5.124				
10,800.0	6,931.8	10,699.4	6,931.9	81.0	78.8	90.00	-4,028.9	238.5	789.5	631.7	157.85	5.002				
10,900.0	6,931.1	10,799.4	6,931.2	82.8	80.7	90.00	-4,128.9	238.6	789.5	627.9	161.63	4.885				
11,000.0	6,930.5	10,899.4	6,930.5	84.7	82.6	90.00	-4,228.9	238.7	789.5	624.1	165.41	4.773				
11,100.0	6,929.8	10,999.4	6,929.8	86.5	84.5	90.00	-4,328.9	238.7	789.5	620.3	169.19	4.667				
11,200.0	6,929.1	11,099.4	6,929.1	88.4	86.4	90.00	-4,428.9	238.8	789.5	616.6	172.97	4.565				
11,300.0	6,928.4	11,199.4	6,928.4	90.2	88.3	90.00	-4,528.9	238.8	789.5	612.8	176.76	4.467				
11,400.0	6,927.7	11,299.4	6,927.7	92.1	90.2	90.00	-4,628.9	238.9	789.5	609.0	180.55	4.373				
11,500.0	6,927.0	11,399.4	6,927.0	94.0	92.1	90.00	-4,728.9	238.9	789.5	605.2	184.34	4.283				
11,600.0	6,926.3	11,499.4	6,926.3	95.8	94.0	90.00	-4,828.9	239.0	789.5	601.4	188.13	4.197				
11,700.0	6,925.6	11,599.4	6,925.6	97.7	95.9	90.00	-4,928.9	239.1	789.5	597.6	191.93	4.114				
11,780.9	6,925.0	11,680.3	6,925.0	99.2	97.4	90.00	-5,009.8	239.1	789.5	594.5	195.00	4.049 SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Richter 27T-HZ Pad Sec.27-T7N-R64W - Richter 34R-403 - 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)	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	-90.00		0.0	-88.9	88.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00		0.0	-88.9	88.9	88.7	0.22	395.724	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00		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	-178.63		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	-179.05		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	
903.7	896.6	896.6	896.6	2.5	1.9	-179.27		0.0	-88.9	174.9	171.0	3.88	45.038	
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	-179.83		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	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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)	Semi Major Axis (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	-89.99	-89.99	0.0	-30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	-89.99	0.0	-30.6	30.6	30.4	0.22	136.030	
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	-89.99	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	-178.67	-178.67	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	-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	-179.07	-179.07	0.0	-30.6	46.3	44.2	2.02	22.870	
600.0	598.7	598.7	598.7	1.3	1.2	-179.26	-179.26	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	-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	-179.53	0.0	-30.6	93.2	89.8	3.40	27.385	
903.7	896.6	896.6	896.6	2.5	1.9	-179.62	-179.62	0.0	-30.6	116.6	112.7	3.88	30.008	
1,000.0	990.1	990.1	990.1	3.0	2.1	-179.68	-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	-179.79	-179.79	-0.1	-29.1	162.9	158.1	4.80	33.931	
1,200.0	1,184.1	1,196.6	1,196.5	4.0	2.5	-179.99	-179.99	-0.6	-23.9	182.3	177.1	5.26	34.675	
1,300.0	1,281.1	1,302.4	1,301.8	4.5	2.8	-179.72	-179.72	-1.3	-14.7	198.2	192.4	5.73	34.577	
1,400.0	1,378.0	1,409.2	1,407.8	5.0	3.0	179.34	179.34	-2.4	-1.5	210.4	204.1	6.22	33.816	
1,500.0	1,475.0	1,514.1	1,511.4	5.5	3.3	178.90	178.90	-3.8	15.1	219.1	212.4	6.72	32.600	
1,600.0	1,572.0	1,613.8	1,609.7	6.0	3.6	178.48	178.48	-5.2	31.7	227.0	219.7	7.22	31.423	
1,700.0	1,669.0	1,713.5	1,708.0	6.6	3.9	178.09	178.09	-6.6	48.3	234.8	227.1	7.73	30.375	
1,800.0	1,766.0	1,813.2	1,806.2	7.1	4.3	177.72	177.72	-8.0	64.9	242.7	234.5	8.25	29.434	
1,900.0	1,863.0	1,912.8	1,904.5	7.6	4.6	177.38	177.38	-9.4	81.6	250.7	241.9	8.76	28.598	
2,000.0	1,960.0	2,012.5	2,002.8	8.1	4.9	177.06	177.06	-10.8	98.2	258.6	249.3	9.29	27.838	
2,100.0	2,057.0	2,112.2	2,101.0	8.6	5.3	176.76	176.76	-12.2	114.8	266.5	256.7	9.82	27.149	
2,200.0	2,154.0	2,211.9	2,199.3	9.2	5.7	176.48	176.48	-13.6	131.4	274.4	264.1	10.35	26.523	
2,300.0	2,251.0	2,311.5	2,297.6	9.7	6.0	176.21	176.21	-15.0	148.0	282.4	271.5	10.88	25.952	
2,400.0	2,348.0	2,411.2	2,395.8	10.2	6.4	175.95	175.95	-16.4	164.7	290.3	278.9	11.42	25.429	
2,500.0	2,445.0	2,510.9	2,494.1	10.7	6.8	175.71	175.71	-17.8	181.3	298.3	286.3	11.96	24.948	
2,600.0	2,542.0	2,610.6	2,592.4	11.3	7.1	175.49	175.49	-19.2	197.9	306.2	293.7	12.50	24.504	
2,700.0	2,639.0	2,710.2	2,690.7	11.8	7.5	175.27	175.27	-20.6	214.5	314.2	301.1	13.04	24.095	
2,800.0	2,736.0	2,809.9	2,788.9	12.3	7.9	175.07	175.07	-22.0	231.1	322.2	308.6	13.58	23.715	
2,900.0	2,833.0	2,909.6	2,887.2	12.8	8.2	174.87	174.87	-23.4	247.8	330.1	316.0	14.13	23.361	
3,000.0	2,930.0	3,009.3	2,985.5	13.4	8.6	174.68	174.68	-24.8	264.4	338.1	323.4	14.68	23.032	
3,100.0	3,027.0	3,108.9	3,083.7	13.9	9.0	174.51	174.51	-26.2	281.0	346.1	330.8	15.23	22.725	
3,200.0	3,124.0	3,208.6	3,182.0	14.4	9.4	174.34	174.34	-27.6	297.6	354.0	338.3	15.78	22.437	
3,300.0	3,221.0	3,308.3	3,280.3	14.9	9.8	174.17	174.17	-29.0	314.2	362.0	345.7	16.33	22.168	
3,400.0	3,318.0	3,408.0	3,378.6	15.5	10.1	174.02	174.02	-30.4	330.8	370.0	353.1	16.88	21.915	
3,500.0	3,415.0	3,507.7	3,476.8	16.0	10.5	173.87	173.87	-31.8	347.5	378.0	360.6	17.44	21.676	
3,600.0	3,512.0	3,607.3	3,575.1	16.5	10.9	173.73	173.73	-33.2	364.1	386.0	368.0	17.99	21.451	
3,700.0	3,609.0	3,707.0	3,673.4	17.0	11.3	173.59	173.59	-34.6	380.7	394.0	375.4	18.55	21.239	
3,800.0	3,706.0	3,806.7	3,771.6	17.6	11.7	173.46	173.46	-36.0	397.3	402.0	382.9	19.11	21.038	
3,900.0	3,803.0	3,906.4	3,869.9	18.1	12.1	173.33	173.33	-37.4	413.9	410.0	390.3	19.66	20.848	
4,000.0	3,900.0	4,006.0	3,968.2	18.6	12.4	173.21	173.21	-38.8	430.6	418.0	397.7	20.22	20.668	
4,100.0	3,997.0	4,105.7	4,066.5	19.1	12.8	173.10	173.10	-40.2	447.2	426.0	405.2	20.78	20.496	
4,200.0	4,094.0	4,205.4	4,164.7	19.7	13.2	172.98	172.98	-41.6	463.8	434.0	412.6	21.34	20.333	
4,300.0	4,191.0	4,305.1	4,263.0	20.2	13.6	172.88	172.88	-43.0	480.4	442.0	420.1	21.90	20.178	
4,400.0	4,288.0	4,404.7	4,361.3	20.7	14.0	172.77	172.77	-44.3	497.0	450.0	427.5	22.46	20.030	
4,415.9	4,303.4	4,420.5	4,376.9	20.8	14.0	172.75	172.75	-44.6	499.7	451.2	428.7	22.55	20.007	
4,500.0	4,385.3	4,504.5	4,459.6	21.2	14.4	172.66	172.66	-45.7	513.7	456.8	433.7	23.03	19.833	
4,600.0	4,483.3	4,600.0	4,553.8	21.5	14.7	172.51	172.51	-47.1	529.4	460.3	436.8	23.52	19.571	
4,700.0	4,582.0	4,685.7	4,638.7	21.8	14.9	172.39	172.39	-48.1	541.4	462.8	438.9	23.91	19.361	
4,800.0	4,681.1	4,772.1	4,724.5	22.1	15.1	172.30	172.30	-48.9	551.0	464.8	440.6	24.24	19.172	
4,900.0	4,780.7	4,858.5	4,810.6	22.3	15.3	172.23	172.23	-49.5	558.0	466.2	441.7	24.53	19.005	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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	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	4,880.5	4,944.8	4,896.8	22.4	15.5	172.18	-49.8	562.4	467.1	442.4	24.77	18.857		
5,100.0	4,980.5	5,031.2	4,983.1	22.5	15.6	172.17	-50.0	564.2	467.5	442.6	24.97	18.724		
5,119.5	5,000.0	5,048.0	5,000.0	22.6	15.6	-99.23	-50.0	564.2	467.5	442.5	25.00	18.702		
5,146.4	5,026.8	5,074.8	5,026.8	22.6	15.7	-99.23	-50.0	564.2	467.5	442.4	25.09	18.633		
5,200.0	5,080.5	5,128.5	5,080.5	22.6	15.7	-99.23	-50.0	564.2	467.5	442.3	25.28	18.496		
5,300.0	5,180.5	5,228.5	5,180.5	22.7	15.9	-99.23	-50.0	564.2	467.5	441.9	25.63	18.241		
5,400.0	5,280.5	5,328.5	5,280.5	22.8	16.0	-99.23	-50.0	564.2	467.5	441.5	25.99	17.992		
5,500.0	5,380.5	5,428.5	5,380.5	22.9	16.2	-99.23	-50.0	564.2	467.5	441.2	26.34	17.747		
5,600.0	5,480.5	5,528.5	5,480.5	23.1	16.4	-99.23	-50.0	564.2	467.5	440.8	26.71	17.507		
5,700.0	5,580.5	5,628.5	5,580.5	23.2	16.5	-99.23	-50.0	564.2	467.5	440.5	27.07	17.272		
5,800.0	5,680.5	5,728.5	5,680.5	23.3	16.7	-99.23	-50.0	564.2	467.5	440.1	27.43	17.041		
5,900.0	5,780.5	5,828.5	5,780.5	23.4	16.8	-99.23	-50.0	564.2	467.5	439.7	27.80	16.815		
6,000.0	5,880.5	5,928.5	5,880.5	23.5	17.0	-99.23	-50.0	564.2	467.5	439.4	28.17	16.594		
6,100.0	5,980.5	6,028.5	5,980.5	23.6	17.2	-99.23	-50.0	564.2	467.5	439.0	28.55	16.377		
6,200.0	6,080.5	6,128.5	6,080.5	23.8	17.3	-99.23	-50.0	564.2	467.5	438.6	28.92	16.165		
6,300.0	6,180.5	6,228.5	6,180.5	23.9	17.5	-99.23	-50.0	564.2	467.5	438.2	29.30	15.957		
6,310.4	6,190.8	6,238.9	6,190.8	23.9	17.5	-99.23	-50.0	564.2	467.5	438.2	29.34	15.935		
6,350.0	6,230.5	6,278.5	6,230.5	23.9	17.6	80.94	-50.0	564.2	467.4	437.9	29.45	15.871		
6,400.0	6,280.3	6,328.3	6,280.3	24.0	17.6	81.50	-50.0	564.2	466.7	437.2	29.55	15.795		
6,450.0	6,329.7	6,377.7	6,329.7	24.0	17.7	82.47	-50.0	564.2	465.7	436.0	29.63	15.716		
6,500.0	6,378.5	6,423.8	6,375.8	24.1	17.8	83.64	-51.1	564.2	464.5	434.8	29.71	15.634		
6,550.0	6,426.6	6,470.0	6,421.8	24.1	17.9	84.83	-54.9	564.2	463.5	433.7	29.82	15.545		
6,600.0	6,473.6	6,516.7	6,468.0	24.2	17.9	86.05	-61.6	564.2	462.7	432.7	29.95	15.447		
6,650.0	6,519.4	6,563.9	6,514.2	24.3	18.0	87.29	-71.3	564.2	462.0	431.9	30.12	15.341		
6,700.0	6,563.8	6,611.8	6,560.3	24.3	18.1	88.55	-83.9	564.3	461.7	431.3	30.31	15.230		
6,750.0	6,606.6	6,660.2	6,606.2	24.4	18.2	89.83	-99.7	564.3	461.5	431.0	30.54	15.112		
6,758.4	6,613.6	6,668.4	6,613.8	24.4	18.2	90.05	-102.6	564.3	461.5	430.9	30.58	15.091		
6,800.0	6,647.6	6,709.3	6,651.5	24.5	18.3	91.12	-118.6	564.3	461.6	430.8	30.80	14.988		
6,850.0	6,686.7	6,759.2	6,696.2	24.6	18.4	92.41	-140.6	564.3	461.9	430.8	31.09	14.858		
6,900.0	6,723.7	6,809.7	6,739.9	24.7	18.6	93.69	-166.0	564.3	462.5	431.0	31.42	14.719		
6,950.0	6,758.3	6,861.0	6,782.4	24.8	18.7	94.97	-194.6	564.4	463.3	431.5	31.80	14.569		
7,000.0	6,790.6	6,913.0	6,823.6	25.0	18.9	96.23	-226.5	564.4	464.3	432.1	32.23	14.405		
7,050.0	6,820.2	6,965.9	6,863.0	25.1	19.1	97.47	-261.6	564.4	465.5	432.8	32.73	14.222		
7,100.0	6,847.2	7,019.6	6,900.5	25.3	19.3	98.68	-300.1	564.5	467.0	433.7	33.31	14.018		
7,150.0	6,871.4	7,074.1	6,935.7	25.5	19.6	99.86	-341.7	564.5	468.6	434.6	33.98	13.789		
7,200.0	6,892.6	7,129.5	6,968.3	25.8	19.9	101.00	-386.4	564.6	470.3	435.5	34.75	13.533		
7,250.0	6,910.9	7,185.7	6,998.0	26.0	20.3	102.09	-434.1	564.6	472.1	436.5	35.64	13.248		
7,300.0	6,926.0	7,242.8	7,024.5	26.4	20.7	103.12	-484.6	564.7	474.0	437.4	36.64	12.936		
7,350.0	6,938.0	7,300.7	7,047.5	26.7	21.1	104.10	-537.8	564.7	476.0	438.2	37.78	12.599		
7,400.0	6,946.8	7,359.4	7,066.6	27.1	21.7	105.01	-593.3	564.8	477.9	438.9	39.05	12.238		
7,450.0	6,952.4	7,418.9	7,081.6	27.5	22.3	105.85	-650.9	564.9	479.8	439.3	40.45	11.862		
7,500.0	6,954.7	7,479.2	7,092.1	27.9	22.9	106.61	-710.2	564.9	481.6	439.6	41.97	11.475		
7,515.7	6,954.8	7,498.3	7,094.4	28.0	23.1	106.83	-729.2	564.9	482.1	439.7	42.47	11.353		
7,600.0	6,954.2	7,583.8	7,103.4	28.8	24.1	107.91	-814.2	565.0	484.9	440.4	44.52	10.893		
7,700.0	6,953.5	7,699.0	7,109.0	29.9	25.6	108.64	-929.3	565.2	486.6	439.3	47.31	10.286		
7,800.0	6,952.8	7,799.0	7,108.9	31.0	26.9	108.70	-1,029.3	565.3	486.8	436.7	50.10	9.716		
7,900.0	6,952.1	7,899.0	7,108.8	32.3	28.3	108.77	-1,129.3	565.4	486.9	433.9	53.00	9.187		
8,000.0	6,951.4	7,999.0	7,108.7	33.6	29.8	108.84	-1,229.2	565.5	487.0	431.0	55.98	8.700		
8,100.0	6,950.7	8,099.0	7,108.6	34.9	31.3	108.91	-1,329.2	565.6	487.2	428.1	59.04	8.252		
8,200.0	6,950.0	8,199.0	7,108.5	36.3	32.9	108.98	-1,429.2	565.7	487.3	425.1	62.16	7.840		
8,300.0	6,949.3	8,299.0	7,108.4	37.8	34.5	109.05	-1,529.2	565.9	487.4	422.1	65.34	7.461		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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-423 - Wellbore #1 - Plan #1 (9-28-12)													
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)					
8,400.0	6,948.6	8,399.0	7,108.3	39.3	36.2	109.12	-1,629.2	566.0	487.6	419.0	68.56	7.112	
8,500.0	6,947.9	8,499.0	7,108.2	40.8	37.8	109.19	-1,729.2	566.1	487.7	415.9	71.82	6.791	
8,600.0	6,947.2	8,599.0	7,108.1	42.4	39.5	109.26	-1,829.2	566.2	487.9	412.8	75.11	6.495	
8,700.0	6,946.5	8,699.0	7,108.0	44.0	41.2	109.33	-1,929.2	566.3	488.0	409.6	78.43	6.222	
8,800.0	6,945.8	8,799.0	7,107.9	45.6	42.9	109.39	-2,029.2	566.4	488.2	406.4	81.78	5.969	
8,900.0	6,945.1	8,899.0	7,107.8	47.3	44.7	109.46	-2,129.2	566.6	488.3	403.2	85.15	5.735	
9,000.0	6,944.4	8,999.0	7,107.7	48.9	46.4	109.53	-2,229.2	566.7	488.4	399.9	88.54	5.517	
9,100.0	6,943.7	9,099.0	7,107.6	50.6	48.2	109.60	-2,329.2	566.8	488.6	396.7	91.94	5.314	
9,200.0	6,943.0	9,199.0	7,107.5	52.3	50.0	109.67	-2,429.2	566.9	488.7	393.4	95.36	5.125	
9,300.0	6,942.3	9,299.0	7,107.4	54.1	51.8	109.74	-2,529.2	567.0	488.9	390.1	98.80	4.948	
9,400.0	6,941.6	9,399.0	7,107.3	55.8	53.6	109.81	-2,629.2	567.1	489.0	386.8	102.24	4.783	
9,500.0	6,940.9	9,499.0	7,107.2	57.5	55.4	109.87	-2,729.2	567.3	489.2	383.5	105.69	4.628	
9,600.0	6,940.2	9,599.0	7,107.1	59.3	57.2	109.94	-2,829.2	567.4	489.3	380.2	109.15	4.483	
9,700.0	6,939.5	9,699.0	7,107.0	61.1	59.0	110.01	-2,929.2	567.5	489.5	376.9	112.62	4.346	
9,800.0	6,938.8	9,799.0	7,106.9	62.9	60.9	110.08	-3,029.2	567.6	489.6	373.5	116.10	4.217	
9,900.0	6,938.1	9,899.0	7,106.8	64.6	62.7	110.15	-3,129.2	567.7	489.8	370.2	119.58	4.096	
10,000.0	6,937.4	9,999.0	7,106.7	66.4	64.6	110.22	-3,229.2	567.8	489.9	366.9	123.07	3.981	
10,100.0	6,936.7	10,099.0	7,106.6	68.2	66.4	110.28	-3,329.2	568.0	490.1	363.5	126.56	3.872	
10,200.0	6,936.0	10,199.0	7,106.5	70.0	68.2	110.35	-3,429.2	568.1	490.2	360.2	130.05	3.770	
10,300.0	6,935.3	10,299.0	7,106.4	71.9	70.1	110.42	-3,529.2	568.2	490.4	356.9	133.55	3.672	
10,400.0	6,934.6	10,399.0	7,106.4	73.7	72.0	110.49	-3,629.2	568.3	490.6	353.5	137.05	3.579	
10,500.0	6,933.9	10,499.0	7,106.3	75.5	73.8	110.56	-3,729.2	568.4	490.7	350.2	140.55	3.491	
10,600.0	6,933.2	10,599.0	7,106.2	77.3	75.7	110.63	-3,829.2	568.5	490.9	346.8	144.06	3.407	
10,700.0	6,932.5	10,699.0	7,106.1	79.2	77.6	110.69	-3,929.2	568.7	491.0	343.5	147.56	3.328	
10,800.0	6,931.8	10,799.0	7,106.0	81.0	79.4	110.76	-4,029.2	568.8	491.2	340.1	151.07	3.251	
10,900.0	6,931.1	10,899.0	7,105.9	82.8	81.3	110.83	-4,129.2	568.9	491.3	336.8	154.58	3.179	
11,000.0	6,930.5	10,999.0	7,105.8	84.7	83.2	110.90	-4,229.2	569.0	491.5	333.4	158.09	3.109	
11,100.0	6,929.8	11,099.0	7,105.7	86.5	85.0	110.96	-4,329.2	569.1	491.7	330.1	161.59	3.043	
11,200.0	6,929.1	11,199.0	7,105.6	88.4	86.9	111.03	-4,429.2	569.2	491.8	326.7	165.10	2.979	
11,300.0	6,928.4	11,299.0	7,105.5	90.2	88.8	111.10	-4,529.2	569.4	492.0	323.4	168.61	2.918	
11,400.0	6,927.7	11,399.0	7,105.4	92.1	90.7	111.17	-4,629.2	569.5	492.1	320.0	172.12	2.859	
11,500.0	6,927.0	11,499.0	7,105.3	94.0	92.6	111.24	-4,729.2	569.6	492.3	316.7	175.63	2.803	
11,600.0	6,926.3	11,598.9	7,105.2	95.8	94.5	111.30	-4,829.2	569.7	492.5	313.3	179.14	2.749	
11,700.0	6,925.6	11,698.9	7,105.1	97.7	96.3	111.37	-4,929.2	569.8	492.6	310.0	182.65	2.697	
11,780.9	6,925.0	11,779.9	7,105.0	99.2	97.9	111.43	-5,010.1	569.9	492.8	307.3	185.48	2.657 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design Richter 27T-HZ Pad Sec.27-T7N-R64W - Ritcher 34R-243 - Wellbore #1 - Plan #1 (9-27-12)													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)	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	-91.74	-91.74	-3.6	-119.5	119.6				
100.0	100.0	100.0	100.0	0.1	0.1	-91.74	-91.74	-3.6	-119.5	119.6	119.4	0.22	532.000	
200.0	200.0	200.0	200.0	0.3	0.3	-91.74	-91.74	-3.6	-119.5	119.6	118.9	0.67	177.333 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	179.72	179.72	-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	
903.7	896.6	896.6	896.6	2.5	1.9	179.79	179.79	-3.6	-119.5	205.6	201.7	3.88	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	179.85	179.85	-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	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

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

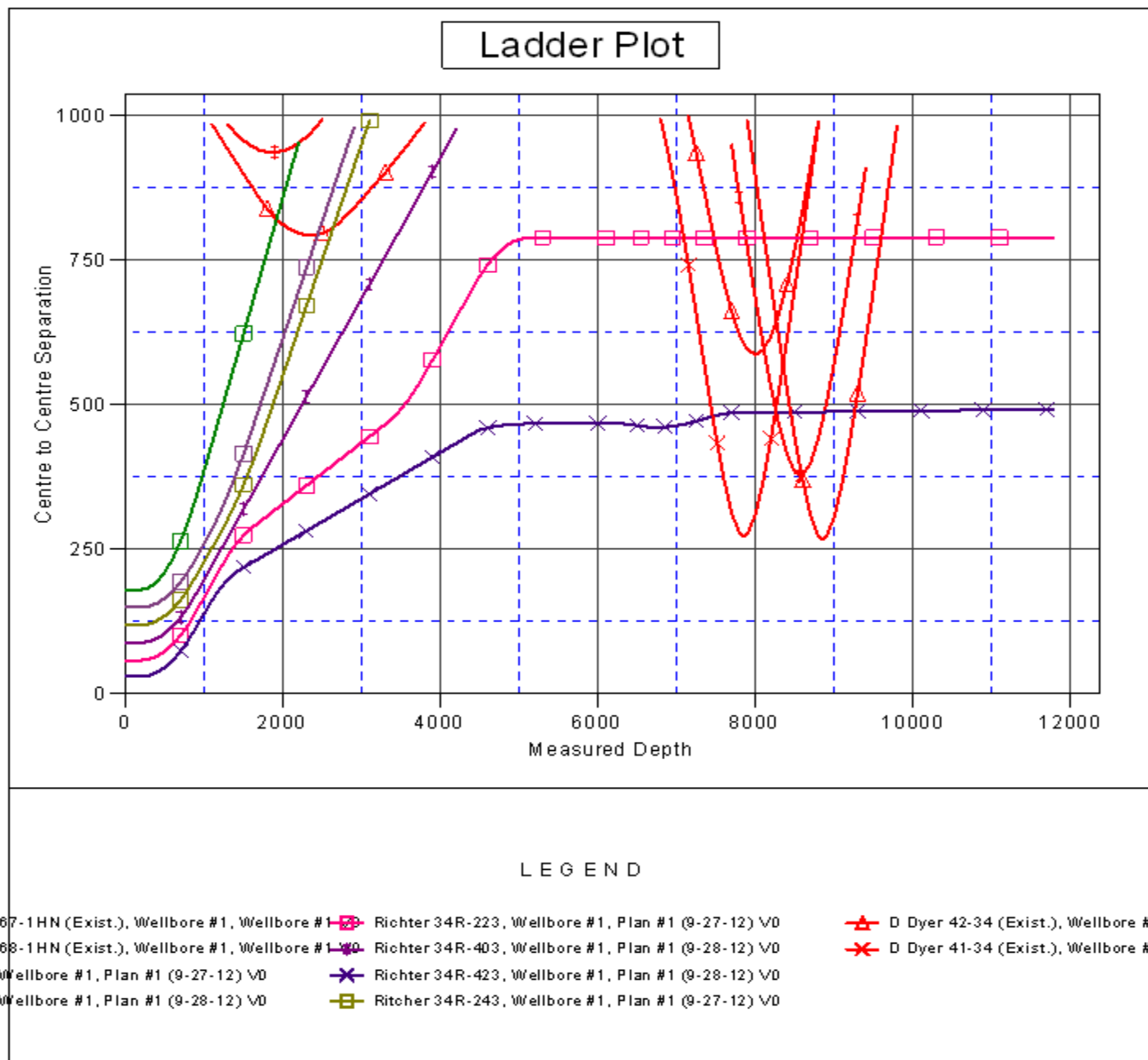
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Richter 34U-203

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.63°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	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-203

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.63°

