

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Guttersen 6R-223**

Surface Location: Guttersen 6R-403 Pad Sec.6-T2N-R63W

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

Ground Elevation: 4836.0

+N/-S

+E/-W

Northing

Easting

Latitude

Longitude

Slot

0.0

0.0

1308061.77

3287084.26


40.174460

-104.472610

RKB - 15' WELL @ 4851.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500' FSL, 840' FEL	6558.0	-4706.7	-408.1	Point



Azimuths to True North

Magnetic North: 8.42°

Magnetic Field

Strength: 52837.2snT

Dip Angle: 66.85°

Date: 5/31/2013

Model: IGRF2010

Guttersen 6R-403 Pad Sec.6-T2N-R63W

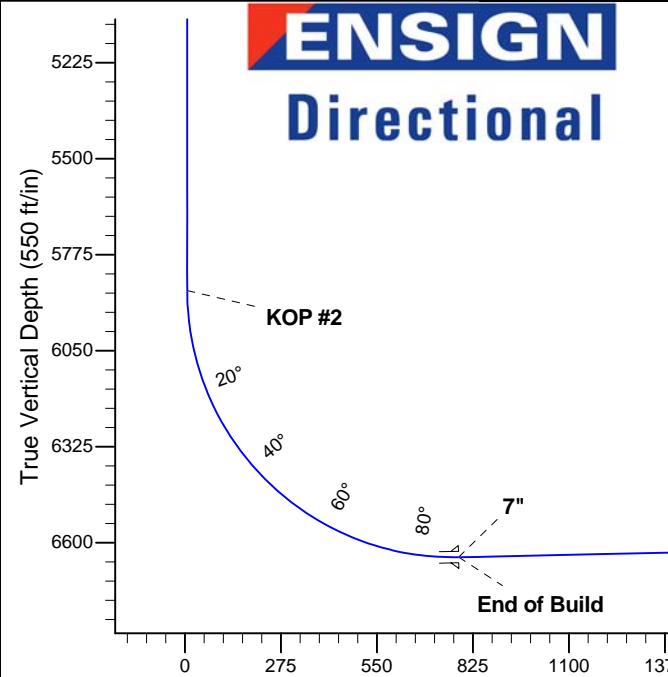
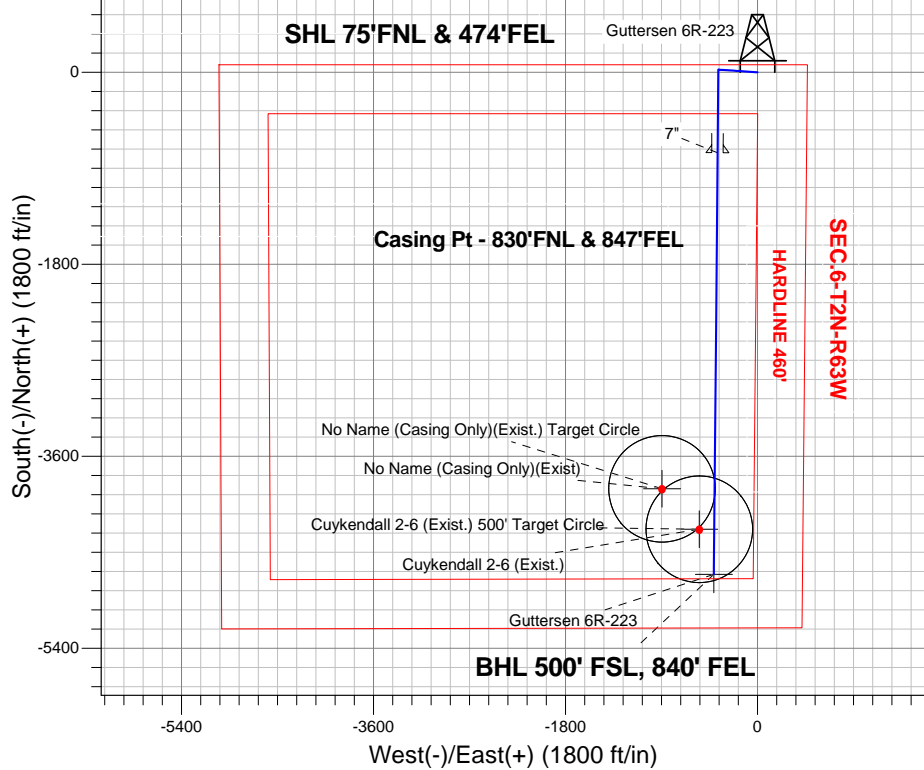
Guttersen 6R-223

Plan #1 (5-31-13)

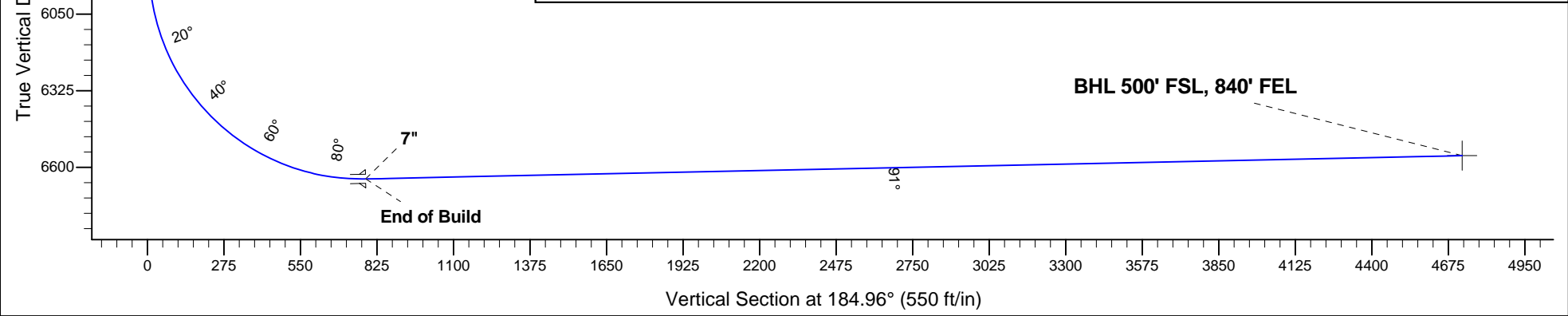
15:45, May 31 2013

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5877.7	5896.3	KOP #2
6641.5	7112.5	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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0		
3	1299.1	5.98	273.91	1298.6	1.1	-15.6	2.00	273.91	0.3		
4	4519.5	5.98	273.91	4501.4	23.9	-350.4	0.00	0.00	6.4		
5	4818.6	0.00	0.00	4800.0	25.0	-366.0	2.00	180.00	6.7		
6	5896.3	0.00	0.00	5877.7	25.0	-366.0	0.00	0.00	6.7		
7	7112.5	91.21	180.51	6641.5	-755.0	-372.9	7.50	180.51	784.4		
8	11065.2	91.21	180.51	6558.0	-4706.7	-408.1	0.00	0.00	4724.4	BHL 500' FSL, 840' FEL	





## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.6-T2N-R63W**

**Guttersen 6R-403 Pad Sec.6-T2N-R63W**

**Guttersen 6R-223**

**Wellbore #1**

**Plan: Plan #1 (5-31-13)**

## **Standard Planning Report**

**31 May, 2013**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

<b>Project</b>	SEC.6-T2N-R63W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site Guttersen 6R-403 Pad Sec.6-T2N-R63W					
Site Position:		Northing:	1,308,061.43ft	Latitude:	40.174460
From:	Lat/Long	Easting:	3,287,053.52ft	Longitude:	-104.472720
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.66 °

Well	Guttersen 6R-223					
Well Position	+N-S	0.0 ft	Northing:	1,308,061.77 ft	Latitude:	40.174460
	+E-W	30.7 ft	Easting:	3,287,084.26 ft	Longitude:	-104.472610
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,836.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/31/2013	8.42	66.85	52,837

<b>Design</b>	Plan #1 (5-31-13)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	184.96

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,299.1	5.98	273.91	1,298.6	1.1	-15.6	2.00	2.00	0.00	273.91	
4,519.5	5.98	273.91	4,501.4	23.9	-350.4	0.00	0.00	0.00	0.00	
4,818.6	0.00	0.00	4,800.0	25.0	-366.0	2.00	-2.00	0.00	180.00	
5,896.3	0.00	0.00	5,877.7	25.0	-366.0	0.00	0.00	0.00	0.00	
7,112.5	91.21	180.51	6,641.5	-755.0	-372.9	7.50	7.50	0.00	180.51	
11,065.2	91.21	180.51	6,558.0	-4,706.7	-408.1	0.00	0.00	0.00	0.00	BHL 500' FSL, 840'

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
13.0	0.00	0.00	13.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>No Name (Casing Only)(Exist.) Target Circle</b>									
14.0	0.00	0.00	14.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Cuykendall 2-6 (Exist.) 500' Target Circle</b>									
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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,040.0	0.80	273.91	1,040.0	0.0	-0.3	0.0	2.00	2.00	0.00
1,080.0	1.60	273.91	1,080.0	0.1	-1.1	0.0	2.00	2.00	0.00
1,120.0	2.40	273.91	1,120.0	0.2	-2.5	0.0	2.00	2.00	0.00
1,160.0	3.20	273.91	1,159.9	0.3	-4.5	0.1	2.00	2.00	0.00
1,200.0	4.00	273.91	1,199.8	0.5	-7.0	0.1	2.00	2.00	0.00
1,240.0	4.80	273.91	1,239.7	0.7	-10.0	0.2	2.00	2.00	0.00
1,280.0	5.60	273.91	1,279.6	0.9	-13.6	0.2	2.00	2.00	0.00
1,299.1	5.98	273.91	1,298.6	1.1	-15.6	0.3	2.00	2.00	0.00
1,320.0	5.98	273.91	1,319.3	1.2	-17.7	0.3	0.00	0.00	0.00
1,360.0	5.98	273.91	1,359.1	1.5	-21.9	0.4	0.00	0.00	0.00
1,400.0	5.98	273.91	1,398.9	1.8	-26.1	0.5	0.00	0.00	0.00
1,440.0	5.98	273.91	1,438.7	2.1	-30.2	0.6	0.00	0.00	0.00
1,480.0	5.98	273.91	1,478.5	2.3	-34.4	0.6	0.00	0.00	0.00
1,520.0	5.98	273.91	1,518.3	2.6	-38.5	0.7	0.00	0.00	0.00
1,560.0	5.98	273.91	1,558.0	2.9	-42.7	0.8	0.00	0.00	0.00
1,600.0	5.98	273.91	1,597.8	3.2	-46.9	0.9	0.00	0.00	0.00
1,640.0	5.98	273.91	1,637.6	3.5	-51.0	0.9	0.00	0.00	0.00
1,680.0	5.98	273.91	1,677.4	3.8	-55.2	1.0	0.00	0.00	0.00
1,720.0	5.98	273.91	1,717.2	4.1	-59.3	1.1	0.00	0.00	0.00
1,760.0	5.98	273.91	1,756.9	4.3	-63.5	1.2	0.00	0.00	0.00
1,800.0	5.98	273.91	1,796.7	4.6	-67.6	1.2	0.00	0.00	0.00
1,840.0	5.98	273.91	1,836.5	4.9	-71.8	1.3	0.00	0.00	0.00

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<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,880.0	5.98	273.91	1,876.3	5.2	-76.0	1.4	0.00	0.00	0.00
1,920.0	5.98	273.91	1,916.1	5.5	-80.1	1.5	0.00	0.00	0.00
1,960.0	5.98	273.91	1,955.9	5.8	-84.3	1.5	0.00	0.00	0.00
2,000.0	5.98	273.91	1,995.6	6.0	-88.4	1.6	0.00	0.00	0.00
2,040.0	5.98	273.91	2,035.4	6.3	-92.6	1.7	0.00	0.00	0.00
2,080.0	5.98	273.91	2,075.2	6.6	-96.8	1.8	0.00	0.00	0.00
2,120.0	5.98	273.91	2,115.0	6.9	-100.9	1.8	0.00	0.00	0.00
2,160.0	5.98	273.91	2,154.8	7.2	-105.1	1.9	0.00	0.00	0.00
2,200.0	5.98	273.91	2,194.6	7.5	-109.2	2.0	0.00	0.00	0.00
2,240.0	5.98	273.91	2,234.3	7.7	-113.4	2.1	0.00	0.00	0.00
2,280.0	5.98	273.91	2,274.1	8.0	-117.6	2.2	0.00	0.00	0.00
2,320.0	5.98	273.91	2,313.9	8.3	-121.7	2.2	0.00	0.00	0.00
2,360.0	5.98	273.91	2,353.7	8.6	-125.9	2.3	0.00	0.00	0.00
2,400.0	5.98	273.91	2,393.5	8.9	-130.0	2.4	0.00	0.00	0.00
2,440.0	5.98	273.91	2,433.2	9.2	-134.2	2.5	0.00	0.00	0.00
2,480.0	5.98	273.91	2,473.0	9.5	-138.4	2.5	0.00	0.00	0.00
2,520.0	5.98	273.91	2,512.8	9.7	-142.5	2.6	0.00	0.00	0.00
2,560.0	5.98	273.91	2,552.6	10.0	-146.7	2.7	0.00	0.00	0.00
2,600.0	5.98	273.91	2,592.4	10.3	-150.8	2.8	0.00	0.00	0.00
2,640.0	5.98	273.91	2,632.2	10.6	-155.0	2.8	0.00	0.00	0.00
2,680.0	5.98	273.91	2,671.9	10.9	-159.2	2.9	0.00	0.00	0.00
2,720.0	5.98	273.91	2,711.7	11.2	-163.3	3.0	0.00	0.00	0.00
2,760.0	5.98	273.91	2,751.5	11.4	-167.5	3.1	0.00	0.00	0.00
2,800.0	5.98	273.91	2,791.3	11.7	-171.6	3.1	0.00	0.00	0.00
2,840.0	5.98	273.91	2,831.1	12.0	-175.8	3.2	0.00	0.00	0.00
2,880.0	5.98	273.91	2,870.8	12.3	-180.0	3.3	0.00	0.00	0.00
2,920.0	5.98	273.91	2,910.6	12.6	-184.1	3.4	0.00	0.00	0.00
2,960.0	5.98	273.91	2,950.4	12.9	-188.3	3.5	0.00	0.00	0.00
3,000.0	5.98	273.91	2,990.2	13.1	-192.4	3.5	0.00	0.00	0.00
3,040.0	5.98	273.91	3,030.0	13.4	-196.6	3.6	0.00	0.00	0.00
3,080.0	5.98	273.91	3,069.8	13.7	-200.7	3.7	0.00	0.00	0.00
3,120.0	5.98	273.91	3,109.5	14.0	-204.9	3.8	0.00	0.00	0.00
3,160.0	5.98	273.91	3,149.3	14.3	-209.1	3.8	0.00	0.00	0.00
3,200.0	5.98	273.91	3,189.1	14.6	-213.2	3.9	0.00	0.00	0.00
3,240.0	5.98	273.91	3,228.9	14.8	-217.4	4.0	0.00	0.00	0.00
3,280.0	5.98	273.91	3,268.7	15.1	-221.5	4.1	0.00	0.00	0.00
3,320.0	5.98	273.91	3,308.5	15.4	-225.7	4.1	0.00	0.00	0.00
3,360.0	5.98	273.91	3,348.2	15.7	-229.9	4.2	0.00	0.00	0.00
3,400.0	5.98	273.91	3,388.0	16.0	-234.0	4.3	0.00	0.00	0.00
3,440.0	5.98	273.91	3,427.8	16.3	-238.2	4.4	0.00	0.00	0.00
3,480.0	5.98	273.91	3,467.6	16.6	-242.3	4.4	0.00	0.00	0.00
3,520.0	5.98	273.91	3,507.4	16.8	-246.5	4.5	0.00	0.00	0.00
3,560.0	5.98	273.91	3,547.1	17.1	-250.7	4.6	0.00	0.00	0.00
3,600.0	5.98	273.91	3,586.9	17.4	-254.8	4.7	0.00	0.00	0.00
3,640.0	5.98	273.91	3,626.7	17.7	-259.0	4.7	0.00	0.00	0.00
3,680.0	5.98	273.91	3,666.5	18.0	-263.1	4.8	0.00	0.00	0.00
3,720.0	5.98	273.91	3,706.3	18.3	-267.3	4.9	0.00	0.00	0.00
3,760.0	5.98	273.91	3,746.1	18.5	-271.5	5.0	0.00	0.00	0.00
3,800.0	5.98	273.91	3,785.8	18.8	-275.6	5.1	0.00	0.00	0.00
3,840.0	5.98	273.91	3,825.6	19.1	-279.8	5.1	0.00	0.00	0.00
3,880.0	5.98	273.91	3,865.4	19.4	-283.9	5.2	0.00	0.00	0.00
3,920.0	5.98	273.91	3,905.2	19.7	-288.1	5.3	0.00	0.00	0.00
3,960.0	5.98	273.91	3,945.0	20.0	-292.3	5.4	0.00	0.00	0.00

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<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,000.0	5.98	273.91	3,984.7	20.2	-296.4	5.4	0.00	0.00	0.00
4,040.0	5.98	273.91	4,024.5	20.5	-300.6	5.5	0.00	0.00	0.00
4,080.0	5.98	273.91	4,064.3	20.8	-304.7	5.6	0.00	0.00	0.00
4,120.0	5.98	273.91	4,104.1	21.1	-308.9	5.7	0.00	0.00	0.00
4,160.0	5.98	273.91	4,143.9	21.4	-313.1	5.7	0.00	0.00	0.00
4,200.0	5.98	273.91	4,183.7	21.7	-317.2	5.8	0.00	0.00	0.00
4,240.0	5.98	273.91	4,223.4	22.0	-321.4	5.9	0.00	0.00	0.00
4,280.0	5.98	273.91	4,263.2	22.2	-325.5	6.0	0.00	0.00	0.00
4,320.0	5.98	273.91	4,303.0	22.5	-329.7	6.0	0.00	0.00	0.00
4,360.0	5.98	273.91	4,342.8	22.8	-333.8	6.1	0.00	0.00	0.00
4,400.0	5.98	273.91	4,382.6	23.1	-338.0	6.2	0.00	0.00	0.00
4,440.0	5.98	273.91	4,422.4	23.4	-342.2	6.3	0.00	0.00	0.00
4,480.0	5.98	273.91	4,462.1	23.7	-346.3	6.3	0.00	0.00	0.00
4,519.5	5.98	273.91	4,501.4	23.9	-350.4	6.4	0.00	0.00	0.00
4,520.0	5.97	273.91	4,501.9	23.9	-350.5	6.4	2.00	-2.00	0.00
4,560.0	5.17	273.91	4,541.7	24.2	-354.4	6.5	2.00	-2.00	0.00
4,600.0	4.37	273.91	4,581.6	24.4	-357.7	6.6	2.00	-2.00	0.00
4,640.0	3.57	273.91	4,621.5	24.6	-360.4	6.6	2.00	-2.00	0.00
4,680.0	2.77	273.91	4,661.4	24.8	-362.7	6.6	2.00	-2.00	0.00
4,720.0	1.97	273.91	4,701.4	24.9	-364.3	6.7	2.00	-2.00	0.00
4,760.0	1.17	273.91	4,741.4	25.0	-365.4	6.7	2.00	-2.00	0.00
4,800.0	0.37	273.91	4,781.4	25.0	-365.9	6.7	2.00	-2.00	0.00
4,818.6	0.00	0.00	4,800.0	25.0	-366.0	6.7	2.00	-2.00	0.00
4,840.0	0.00	0.00	4,821.4	25.0	-366.0	6.7	0.00	0.00	0.00
4,880.0	0.00	0.00	4,861.4	25.0	-366.0	6.7	0.00	0.00	0.00
4,920.0	0.00	0.00	4,901.4	25.0	-366.0	6.7	0.00	0.00	0.00
4,960.0	0.00	0.00	4,941.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,000.0	0.00	0.00	4,981.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,040.0	0.00	0.00	5,021.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,080.0	0.00	0.00	5,061.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,120.0	0.00	0.00	5,101.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,160.0	0.00	0.00	5,141.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,200.0	0.00	0.00	5,181.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,240.0	0.00	0.00	5,221.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,280.0	0.00	0.00	5,261.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,320.0	0.00	0.00	5,301.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,360.0	0.00	0.00	5,341.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,381.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,440.0	0.00	0.00	5,421.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,480.0	0.00	0.00	5,461.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,520.0	0.00	0.00	5,501.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,560.0	0.00	0.00	5,541.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,581.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,640.0	0.00	0.00	5,621.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,680.0	0.00	0.00	5,661.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,720.0	0.00	0.00	5,701.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,760.0	0.00	0.00	5,741.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,781.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,840.0	0.00	0.00	5,821.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,880.0	0.00	0.00	5,861.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,896.3	0.00	0.00	5,877.7	25.0	-366.0	6.7	0.00	0.00	0.00
<b>KOP #2</b>									
5,920.0	1.78	180.51	5,901.4	24.6	-366.0	7.1	7.49	7.49	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,960.0	4.78	180.51	5,941.3	22.3	-366.0	9.4	7.50	7.50	0.00
6,000.0	7.78	180.51	5,981.1	18.0	-366.1	13.7	7.50	7.50	0.00
6,040.0	10.78	180.51	6,020.5	11.5	-366.1	20.1	7.50	7.50	0.00
6,080.0	13.78	180.51	6,059.6	3.0	-366.2	28.6	7.50	7.50	0.00
6,120.0	16.78	180.51	6,098.2	-7.5	-366.3	39.1	7.50	7.50	0.00
6,160.0	19.78	180.51	6,136.2	-20.1	-366.4	51.6	7.50	7.50	0.00
6,200.0	22.78	180.51	6,173.4	-34.6	-366.5	66.1	7.50	7.50	0.00
6,240.0	25.78	180.51	6,209.9	-51.0	-366.7	82.5	7.50	7.50	0.00
6,280.0	28.78	180.51	6,245.4	-69.3	-366.8	100.8	7.50	7.50	0.00
6,320.0	31.78	180.51	6,280.0	-89.5	-367.0	120.9	7.50	7.50	0.00
6,360.0	34.78	180.51	6,313.4	-111.4	-367.2	142.7	7.50	7.50	0.00
6,400.0	37.78	180.51	6,345.7	-135.1	-367.4	166.3	7.50	7.50	0.00
6,440.0	40.78	180.51	6,376.6	-160.4	-367.6	191.6	7.50	7.50	0.00
6,480.0	43.78	180.51	6,406.2	-187.3	-367.9	218.4	7.50	7.50	0.00
6,520.0	46.78	180.51	6,434.4	-215.7	-368.1	246.7	7.50	7.50	0.00
6,560.0	49.78	180.51	6,461.0	-245.6	-368.4	276.5	7.50	7.50	0.00
6,600.0	52.78	180.51	6,486.0	-276.8	-368.7	307.6	7.50	7.50	0.00
6,640.0	55.78	180.51	6,509.4	-309.3	-369.0	340.0	7.50	7.50	0.00
6,680.0	58.78	180.51	6,531.0	-342.9	-369.3	373.5	7.50	7.50	0.00
6,720.0	61.78	180.51	6,550.8	-377.6	-369.6	408.2	7.50	7.50	0.00
6,760.0	64.78	180.51	6,568.8	-413.4	-369.9	443.8	7.50	7.50	0.00
6,800.0	67.78	180.51	6,584.9	-450.0	-370.2	480.3	7.50	7.50	0.00
6,840.0	70.78	180.51	6,599.0	-487.4	-370.6	517.6	7.50	7.50	0.00
6,880.0	73.78	180.51	6,611.2	-525.5	-370.9	555.6	7.50	7.50	0.00
6,920.0	76.78	180.51	6,621.4	-564.2	-371.2	594.1	7.50	7.50	0.00
6,960.0	79.78	180.51	6,629.5	-603.3	-371.6	633.2	7.50	7.50	0.00
7,000.0	82.78	180.51	6,635.6	-642.9	-371.9	672.6	7.50	7.50	0.00
7,040.0	85.78	180.51	6,639.6	-682.6	-372.3	712.3	7.50	7.50	0.00
7,080.0	88.78	180.51	6,641.5	-722.6	-372.6	752.1	7.50	7.50	0.00
7,112.5	91.21	180.51	6,641.5	-755.1	-372.9	784.5	7.49	7.49	0.00
End of Build - 7"									
7,120.0	91.21	180.51	6,641.3	-762.6	-373.0	792.0	0.00	0.00	0.00
7,160.0	91.21	180.51	6,640.5	-802.6	-373.4	831.8	0.00	0.00	0.00
7,200.0	91.21	180.51	6,639.6	-842.6	-373.7	871.7	0.00	0.00	0.00
7,240.0	91.21	180.51	6,638.8	-882.6	-374.1	911.6	0.00	0.00	0.00
7,280.0	91.21	180.51	6,637.9	-922.5	-374.4	951.4	0.00	0.00	0.00
7,320.0	91.21	180.51	6,637.1	-962.5	-374.8	991.3	0.00	0.00	0.00
7,360.0	91.21	180.51	6,636.2	-1,002.5	-375.1	1,031.2	0.00	0.00	0.00
7,400.0	91.21	180.51	6,635.4	-1,042.5	-375.5	1,071.1	0.00	0.00	0.00
7,440.0	91.21	180.51	6,634.6	-1,082.5	-375.8	1,110.9	0.00	0.00	0.00
7,480.0	91.21	180.51	6,633.7	-1,122.5	-376.2	1,150.8	0.00	0.00	0.00
7,520.0	91.21	180.51	6,632.9	-1,162.5	-376.6	1,190.7	0.00	0.00	0.00
7,560.0	91.21	180.51	6,632.0	-1,202.5	-376.9	1,230.5	0.00	0.00	0.00
7,600.0	91.21	180.51	6,631.2	-1,242.5	-377.3	1,270.4	0.00	0.00	0.00
7,640.0	91.21	180.51	6,630.3	-1,282.5	-377.6	1,310.3	0.00	0.00	0.00
7,680.0	91.21	180.51	6,629.5	-1,322.4	-378.0	1,350.1	0.00	0.00	0.00
7,720.0	91.21	180.51	6,628.6	-1,362.4	-378.3	1,390.0	0.00	0.00	0.00
7,760.0	91.21	180.51	6,627.8	-1,402.4	-378.7	1,429.9	0.00	0.00	0.00
7,800.0	91.21	180.51	6,626.9	-1,442.4	-379.0	1,469.8	0.00	0.00	0.00
7,840.0	91.21	180.51	6,626.1	-1,482.4	-379.4	1,509.6	0.00	0.00	0.00
7,880.0	91.21	180.51	6,625.3	-1,522.4	-379.8	1,549.5	0.00	0.00	0.00
7,920.0	91.21	180.51	6,624.4	-1,562.4	-380.1	1,589.4	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,960.0	91.21	180.51	6,623.6	-1,602.4	-380.5	1,629.2	0.00	0.00	0.00
8,000.0	91.21	180.51	6,622.7	-1,642.4	-380.8	1,669.1	0.00	0.00	0.00
8,040.0	91.21	180.51	6,621.9	-1,682.3	-381.2	1,709.0	0.00	0.00	0.00
8,080.0	91.21	180.51	6,621.0	-1,722.3	-381.5	1,748.9	0.00	0.00	0.00
8,120.0	91.21	180.51	6,620.2	-1,762.3	-381.9	1,788.7	0.00	0.00	0.00
8,160.0	91.21	180.51	6,619.3	-1,802.3	-382.2	1,828.6	0.00	0.00	0.00
8,200.0	91.21	180.51	6,618.5	-1,842.3	-382.6	1,868.5	0.00	0.00	0.00
8,240.0	91.21	180.51	6,617.7	-1,882.3	-383.0	1,908.3	0.00	0.00	0.00
8,280.0	91.21	180.51	6,616.8	-1,922.3	-383.3	1,948.2	0.00	0.00	0.00
8,320.0	91.21	180.51	6,616.0	-1,962.3	-383.7	1,988.1	0.00	0.00	0.00
8,360.0	91.21	180.51	6,615.1	-2,002.3	-384.0	2,028.0	0.00	0.00	0.00
8,400.0	91.21	180.51	6,614.3	-2,042.3	-384.4	2,067.8	0.00	0.00	0.00
8,440.0	91.21	180.51	6,613.4	-2,082.2	-384.7	2,107.7	0.00	0.00	0.00
8,480.0	91.21	180.51	6,612.6	-2,122.2	-385.1	2,147.6	0.00	0.00	0.00
8,520.0	91.21	180.51	6,611.7	-2,162.2	-385.4	2,187.4	0.00	0.00	0.00
8,560.0	91.21	180.51	6,610.9	-2,202.2	-385.8	2,227.3	0.00	0.00	0.00
8,600.0	91.21	180.51	6,610.1	-2,242.2	-386.2	2,267.2	0.00	0.00	0.00
8,640.0	91.21	180.51	6,609.2	-2,282.2	-386.5	2,307.0	0.00	0.00	0.00
8,680.0	91.21	180.51	6,608.4	-2,322.2	-386.9	2,346.9	0.00	0.00	0.00
8,720.0	91.21	180.51	6,607.5	-2,362.2	-387.2	2,386.8	0.00	0.00	0.00
8,760.0	91.21	180.51	6,606.7	-2,402.2	-387.6	2,426.7	0.00	0.00	0.00
8,800.0	91.21	180.51	6,605.8	-2,442.1	-387.9	2,466.5	0.00	0.00	0.00
8,840.0	91.21	180.51	6,605.0	-2,482.1	-388.3	2,506.4	0.00	0.00	0.00
8,880.0	91.21	180.51	6,604.1	-2,522.1	-388.6	2,546.3	0.00	0.00	0.00
8,920.0	91.21	180.51	6,603.3	-2,562.1	-389.0	2,586.1	0.00	0.00	0.00
8,960.0	91.21	180.51	6,602.5	-2,602.1	-389.4	2,626.0	0.00	0.00	0.00
9,000.0	91.21	180.51	6,601.6	-2,642.1	-389.7	2,665.9	0.00	0.00	0.00
9,040.0	91.21	180.51	6,600.8	-2,682.1	-390.1	2,705.8	0.00	0.00	0.00
9,080.0	91.21	180.51	6,599.9	-2,722.1	-390.4	2,745.6	0.00	0.00	0.00
9,120.0	91.21	180.51	6,599.1	-2,762.1	-390.8	2,785.5	0.00	0.00	0.00
9,160.0	91.21	180.51	6,598.2	-2,802.1	-391.1	2,825.4	0.00	0.00	0.00
9,200.0	91.21	180.51	6,597.4	-2,842.0	-391.5	2,865.2	0.00	0.00	0.00
9,240.0	91.21	180.51	6,596.5	-2,882.0	-391.8	2,905.1	0.00	0.00	0.00
9,280.0	91.21	180.51	6,595.7	-2,922.0	-392.2	2,945.0	0.00	0.00	0.00
9,320.0	91.21	180.51	6,594.9	-2,962.0	-392.6	2,984.8	0.00	0.00	0.00
9,360.0	91.21	180.51	6,594.0	-3,002.0	-392.9	3,024.7	0.00	0.00	0.00
9,400.0	91.21	180.51	6,593.2	-3,042.0	-393.3	3,064.6	0.00	0.00	0.00
9,440.0	91.21	180.51	6,592.3	-3,082.0	-393.6	3,104.5	0.00	0.00	0.00
9,480.0	91.21	180.51	6,591.5	-3,122.0	-394.0	3,144.3	0.00	0.00	0.00
9,520.0	91.21	180.51	6,590.6	-3,162.0	-394.3	3,184.2	0.00	0.00	0.00
9,560.0	91.21	180.51	6,589.8	-3,201.9	-394.7	3,224.1	0.00	0.00	0.00
9,600.0	91.21	180.51	6,588.9	-3,241.9	-395.0	3,263.9	0.00	0.00	0.00
9,640.0	91.21	180.51	6,588.1	-3,281.9	-395.4	3,303.8	0.00	0.00	0.00
9,680.0	91.21	180.51	6,587.3	-3,321.9	-395.8	3,343.7	0.00	0.00	0.00
9,720.0	91.21	180.51	6,586.4	-3,361.9	-396.1	3,383.6	0.00	0.00	0.00
9,760.0	91.21	180.51	6,585.6	-3,401.9	-396.5	3,423.4	0.00	0.00	0.00
9,800.0	91.21	180.51	6,584.7	-3,441.9	-396.8	3,463.3	0.00	0.00	0.00
9,840.0	91.21	180.51	6,583.9	-3,481.9	-397.2	3,503.2	0.00	0.00	0.00
9,880.0	91.21	180.51	6,583.0	-3,521.9	-397.5	3,543.0	0.00	0.00	0.00
9,920.0	91.21	180.51	6,582.2	-3,561.9	-397.9	3,582.9	0.00	0.00	0.00
9,960.0	91.21	180.51	6,581.3	-3,601.8	-398.2	3,622.8	0.00	0.00	0.00
10,000.0	91.21	180.51	6,580.5	-3,641.8	-398.6	3,662.7	0.00	0.00	0.00
10,040.0	91.21	180.51	6,579.6	-3,681.8	-399.0	3,702.5	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,080.0	91.21	180.51	6,578.8	-3,721.8	-399.3	3,742.4	0.00	0.00	0.00
10,120.0	91.21	180.51	6,578.0	-3,761.8	-399.7	3,782.3	0.00	0.00	0.00
10,160.0	91.21	180.51	6,577.1	-3,801.8	-400.0	3,822.1	0.00	0.00	0.00
10,200.0	91.21	180.51	6,576.3	-3,841.8	-400.4	3,862.0	0.00	0.00	0.00
10,240.0	91.21	180.51	6,575.4	-3,881.8	-400.7	3,901.9	0.00	0.00	0.00
10,280.0	91.21	180.51	6,574.6	-3,921.8	-401.1	3,941.7	0.00	0.00	0.00
10,320.0	91.21	180.51	6,573.7	-3,961.7	-401.4	3,981.6	0.00	0.00	0.00
10,360.0	91.21	180.51	6,572.9	-4,001.7	-401.8	4,021.5	0.00	0.00	0.00
10,400.0	91.21	180.51	6,572.0	-4,041.7	-402.2	4,061.4	0.00	0.00	0.00
10,440.0	91.21	180.51	6,571.2	-4,081.7	-402.5	4,101.2	0.00	0.00	0.00
10,480.0	91.21	180.51	6,570.4	-4,121.7	-402.9	4,141.1	0.00	0.00	0.00
10,520.0	91.21	180.51	6,569.5	-4,161.7	-403.2	4,181.0	0.00	0.00	0.00
10,560.0	91.21	180.51	6,568.7	-4,201.7	-403.6	4,220.8	0.00	0.00	0.00
10,600.0	91.21	180.51	6,567.8	-4,241.7	-403.9	4,260.7	0.00	0.00	0.00
10,640.0	91.21	180.51	6,567.0	-4,281.7	-404.3	4,300.6	0.00	0.00	0.00
10,680.0	91.21	180.51	6,566.1	-4,321.7	-404.6	4,340.5	0.00	0.00	0.00
10,720.0	91.21	180.51	6,565.3	-4,361.6	-405.0	4,380.3	0.00	0.00	0.00
10,760.0	91.21	180.51	6,564.4	-4,401.6	-405.4	4,420.2	0.00	0.00	0.00
10,800.0	91.21	180.51	6,563.6	-4,441.6	-405.7	4,460.1	0.00	0.00	0.00
10,840.0	91.21	180.51	6,562.8	-4,481.6	-406.1	4,499.9	0.00	0.00	0.00
10,880.0	91.21	180.51	6,561.9	-4,521.6	-406.4	4,539.8	0.00	0.00	0.00
10,920.0	91.21	180.51	6,561.1	-4,561.6	-406.8	4,579.7	0.00	0.00	0.00
10,960.0	91.21	180.51	6,560.2	-4,601.6	-407.1	4,619.6	0.00	0.00	0.00
11,000.0	91.21	180.51	6,559.4	-4,641.6	-407.5	4,659.4	0.00	0.00	0.00
11,040.0	91.21	180.51	6,558.5	-4,681.6	-407.8	4,699.3	0.00	0.00	0.00
11,065.2	91.21	180.51	6,558.0	-4,706.7	-408.1	4,724.4	0.00	0.00	0.00
BHL 500' FSL, 840' FEL									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 500' FSL, 840' FI	0.00	0.00	6,558.0	-4,706.7	-408.1	1,303,350.87	3,286,730.76	40.161540	-104.474070
- plan hits target center									
- Point									
Cuykendall 2-6 (Exist.	0.00	0.00	14.0	-4,284.1	-545.0	1,303,771.82	3,286,588.93	40.162700	-104.474560
- plan misses target center by 4318.6ft at 14.0ft MD (14.0 TVD, 0.0 N, 0.0 E)									
- Circle (radius 500.0)									
No Name (Casing Onl	0.00	0.00	13.0	-3,905.2	-894.4	1,304,146.60	3,286,235.23	40.163740	-104.475810
- plan misses target center by 4006.4ft at 13.0ft MD (13.0 TVD, 0.0 N, 0.0 E)									
- Circle (radius 500.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
7,112.5	6,641.5	7"		7	8-3/4

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Project:</b>	SEC.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-31-13)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
5,896.3	5,877.7	25.0	-366.0	KOP #2
7,112.5	6,641.5	-755.1	-372.9	End of Build



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.6-T2N-R63W**

**Guttersen 6R-403 Pad Sec.6-T2N-R63W**

**Guttersen 6R-223**

**Wellbore #1**

**Plan #1 (5-31-13)**

## **Anticollision Report**

**31 May, 2013**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (5-31-13)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	5/31/2013		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,065.2	Plan #1 (5-31-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.6-T2N-R63W						
Cuykendall 2-6 (Exist.) - Wellbore #1 - Wellbore #1	10,643.7	6,553.9	140.7	-73.6	0.656	Level 1, CC, ES, SF
No Name (Casing Only)(Exist) - Wellbore #1 - Wellbore #	10,267.9	6,561.8	493.4	286.0	2.379	CC, ES
No Name (Casing Only)(Exist) - Wellbore #1 - Wellbore #	10,300.0	6,561.2	494.5	286.4	2.377	SF
Guttersen 6R-403 Pad Sec.6-T2N-R63W						
Guttersen 6R-403 - Wellbore #1 - Plan #1 (5-31-13)	200.0	200.0	30.7	30.1	45.587	CC, ES
Guttersen 6R-403 - Wellbore #1 - Plan #1 (5-31-13)	11,065.2	11,304.1	683.8	513.1	4.005	SF
Guttersen 6U-203 - Wellbore #1 - Plan #1 (1-18-13)	1,000.0	1,000.0	58.7	54.4	13.742	CC, ES
Guttersen 6U-203 - Wellbore #1 - Plan #1 (1-18-13)	11,065.2	11,054.8	637.3	455.0	3.496	SF
Guttersen 6U-443 - Wellbore #1 - Plan #1 (1-18-13)	1,000.0	1,000.0	27.9	23.7	6.544	CC, ES
Guttersen 6U-443 - Wellbore #1 - Plan #1 (1-18-13)	11,065.2	11,226.0	403.8	253.2	2.681	SF

<b>Offset Design</b>											
Existing Wells Sec.6-T2N-R63W - Cuykendall 2-6 (Exist.) - Wellbore #1 - Wellbore #1											
Survey Program: 7300-UNKNOWN											
Reference		Offset		Semi Major Axis		Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)
0.0	0.0	0.0	0.0	0.0	0.0	-172.75	-4,284.1	-545.0	4,318.7		
100.0	100.0	87.0	87.0	0.1	1.7	-172.75	-4,284.1	-545.0	4,318.7	4,316.8	1.85 2,331.156
200.0	200.0	187.0	187.0	0.3	3.7	-172.75	-4,284.1	-545.0	4,318.7	4,314.6	4.08 1,059.183
300.0	300.0	287.0	287.0	0.6	5.7	-172.75	-4,284.1	-545.0	4,318.7	4,312.4	6.30 685.271
400.0	400.0	387.0	387.0	0.8	7.7	-172.75	-4,284.1	-545.0	4,318.7	4,310.1	8.53 506.476
500.0	500.0	487.0	487.0	1.0	9.7	-172.75	-4,284.1	-545.0	4,318.7	4,307.9	10.75 401.674
600.0	600.0	587.0	587.0	1.2	11.7	-172.75	-4,284.1	-545.0	4,318.7	4,305.7	12.98 332.808
700.0	700.0	687.0	687.0	1.5	13.7	-172.75	-4,284.1	-545.0	4,318.7	4,303.5	15.20 284.100
800.0	800.0	787.0	787.0	1.7	15.7	-172.75	-4,284.1	-545.0	4,318.7	4,301.2	17.43 247.829
900.0	900.0	887.0	887.0	1.9	17.7	-172.75	-4,284.1	-545.0	4,318.7	4,299.0	19.65 219.771
1,000.0	1,000.0	987.0	987.0	2.1	19.7	-172.75	-4,284.1	-545.0	4,318.7	4,296.8	21.88 197.420
1,100.0	1,100.0	1,087.0	1,087.0	2.3	21.7	-86.68	-4,284.1	-545.0	4,318.6	4,294.5	24.09 179.283
1,200.0	1,199.8	1,186.8	1,186.8	2.6	23.7	-86.76	-4,284.1	-545.0	4,318.3	4,292.0	26.29 164.238
1,299.1	1,298.6	1,285.6	1,285.6	2.8	25.7	-86.88	-4,284.1	-545.0	4,317.8	4,289.3	28.49 151.570
1,400.0	1,398.9	1,385.9	1,385.9	3.0	27.7	-87.02	-4,284.1	-545.0	4,317.2	4,286.5	30.73 140.477
1,500.0	1,498.4	1,485.4	1,485.4	3.3	29.7	-87.16	-4,284.1	-545.0	4,316.7	4,283.7	32.97 130.932

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.6-T2N-R63W - Cuykendall 2-6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,600.0	1,597.8	1,584.8	1,584.8	3.5	31.7	-87.29	-87.29	-4,284.1	-545.0	4,316.2	4,281.0	35.21	122.572	
1,700.0	1,697.3	1,684.3	1,684.3	3.8	33.7	-87.43	-87.43	-4,284.1	-545.0	4,315.7	4,278.2	37.46	115.194	
1,800.0	1,796.7	1,783.7	1,783.7	4.0	35.7	-87.57	-87.57	-4,284.1	-545.0	4,315.2	4,275.5	39.72	108.640	
1,900.0	1,896.2	1,883.2	1,883.2	4.3	37.7	-87.71	-87.71	-4,284.1	-545.0	4,314.8	4,272.8	41.98	102.779	
2,000.0	1,995.6	1,982.6	1,982.6	4.6	39.7	-87.84	-87.84	-4,284.1	-545.0	4,314.4	4,270.1	44.25	97.511	
2,100.0	2,095.1	2,082.1	2,082.1	4.9	41.6	-87.98	-87.98	-4,284.1	-545.0	4,314.0	4,267.5	46.51	92.750	
2,200.0	2,194.6	2,181.6	2,181.6	5.2	43.6	-88.12	-88.12	-4,284.1	-545.0	4,313.7	4,264.9	48.78	88.428	
2,300.0	2,294.0	2,281.0	2,281.0	5.4	45.6	-88.26	-88.26	-4,284.1	-545.0	4,313.3	4,262.3	51.05	84.487	
2,400.0	2,393.5	2,380.5	2,380.5	5.7	47.6	-88.40	-88.40	-4,284.1	-545.0	4,313.0	4,259.7	53.33	80.879	
2,500.0	2,492.9	2,479.9	2,479.9	6.0	49.6	-88.53	-88.53	-4,284.1	-545.0	4,312.7	4,257.1	55.60	77.565	
2,600.0	2,592.4	2,579.4	2,579.4	6.3	51.6	-88.67	-88.67	-4,284.1	-545.0	4,312.5	4,254.6	57.88	74.510	
2,700.0	2,691.8	2,678.8	2,678.8	6.6	53.6	-88.81	-88.81	-4,284.1	-545.0	4,312.3	4,252.1	60.16	71.685	
2,800.0	2,791.3	2,778.3	2,778.3	6.9	55.6	-88.95	-88.95	-4,284.1	-545.0	4,312.0	4,249.6	62.43	69.066	
2,900.0	2,890.7	2,877.7	2,877.7	7.2	57.6	-89.08	-89.08	-4,284.1	-545.0	4,311.9	4,247.2	64.71	66.631	
3,000.0	2,990.2	2,977.2	2,977.2	7.5	59.5	-89.22	-89.22	-4,284.1	-545.0	4,311.7	4,244.7	66.99	64.360	
3,100.0	3,089.6	3,076.6	3,076.6	7.7	61.5	-89.36	-89.36	-4,284.1	-545.0	4,311.6	4,242.3	69.27	62.240	
3,200.0	3,189.1	3,176.1	3,176.1	8.0	63.5	-89.50	-89.50	-4,284.1	-545.0	4,311.5	4,239.9	71.56	60.254	
3,300.0	3,288.6	3,275.6	3,275.6	8.3	65.5	-89.63	-89.63	-4,284.1	-545.0	4,311.4	4,237.6	73.84	58.390	
3,400.0	3,388.0	3,375.0	3,375.0	8.6	67.5	-89.77	-89.77	-4,284.1	-545.0	4,311.3	4,235.2	76.12	56.639	
3,500.0	3,487.5	3,474.5	3,474.5	8.9	69.5	-89.91	-89.91	-4,284.1	-545.0	4,311.3	4,232.9	78.40	54.989	
3,565.4	3,552.5	3,539.5	3,539.5	9.1	70.8	-90.00	-90.00	-4,284.1	-545.0	4,311.3	4,231.4	79.90	53.962	
3,600.0	3,586.9	3,573.9	3,573.9	9.2	71.5	-90.05	-90.05	-4,284.1	-545.0	4,311.3	4,230.6	80.69	53.433	
3,700.0	3,686.4	3,673.4	3,673.4	9.5	73.5	-90.19	-90.19	-4,284.1	-545.0	4,311.3	4,228.4	82.97	51.963	
3,800.0	3,785.8	3,772.8	3,772.8	9.8	75.5	-90.32	-90.32	-4,284.1	-545.0	4,311.4	4,226.1	85.25	50.571	
3,900.0	3,885.3	3,872.3	3,872.3	10.1	77.4	-90.46	-90.46	-4,284.1	-545.0	4,311.4	4,223.9	87.54	49.252	
4,000.0	3,984.7	3,971.7	3,971.7	10.4	79.4	-90.60	-90.60	-4,284.1	-545.0	4,311.5	4,221.7	89.82	48.001	
4,100.0	4,084.2	4,071.2	4,071.2	10.7	81.4	-90.74	-90.74	-4,284.1	-545.0	4,311.7	4,219.6	92.11	46.811	
4,200.0	4,183.7	4,170.7	4,170.7	11.0	83.4	-90.87	-90.87	-4,284.1	-545.0	4,311.8	4,217.4	94.39	45.680	
4,300.0	4,283.1	4,270.1	4,270.1	11.3	85.4	-91.01	-91.01	-4,284.1	-545.0	4,312.0	4,215.3	96.68	44.602	
4,400.0	4,382.6	4,369.6	4,369.6	11.6	87.4	-91.15	-91.15	-4,284.1	-545.0	4,312.2	4,213.2	98.96	43.573	
4,500.0	4,482.0	4,469.0	4,469.0	11.9	89.4	-91.29	-91.29	-4,284.1	-545.0	4,312.4	4,211.2	101.25	42.592	
4,519.5	4,501.4	4,488.4	4,488.4	11.9	89.8	-91.31	-91.31	-4,284.1	-545.0	4,312.5	4,210.8	101.69	42.406	
4,600.0	4,581.6	4,568.6	4,568.6	12.1	91.4	-91.41	-91.41	-4,284.1	-545.0	4,312.6	4,209.1	103.50	41.668	
4,700.0	4,681.4	4,668.4	4,668.4	12.3	93.4	-91.49	-91.49	-4,284.1	-545.0	4,312.8	4,207.1	105.69	40.808	
4,800.0	4,781.4	4,768.4	4,768.4	12.5	95.4	-91.53	-91.53	-4,284.1	-545.0	4,312.8	4,205.0	107.85	39.989	
4,818.6	4,800.0	4,787.0	4,787.0	12.5	95.7	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,204.6	108.25	39.841	
4,900.0	4,881.4	4,868.4	4,868.4	12.6	97.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,202.8	110.02	39.202	
5,000.0	4,981.4	4,968.4	4,968.4	12.8	99.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,200.6	112.19	38.441	
5,100.0	5,081.4	5,068.4	5,068.4	13.0	101.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,198.5	114.37	37.708	
5,200.0	5,181.4	5,168.4	5,168.4	13.2	103.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,196.3	116.56	37.002	
5,300.0	5,281.4	5,268.4	5,268.4	13.4	105.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,194.1	118.74	36.322	
5,400.0	5,381.4	5,368.4	5,368.4	13.6	107.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,191.9	120.92	35.666	
5,500.0	5,481.4	5,468.4	5,468.4	13.7	109.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,189.7	123.11	35.033	
5,600.0	5,581.4	5,568.4	5,568.4	13.9	111.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,187.5	125.30	34.421	
5,700.0	5,681.4	5,668.4	5,668.4	14.1	113.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,185.4	127.48	33.831	
5,800.0	5,781.4	5,768.4	5,768.4	14.3	115.4	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,183.2	129.67	33.260	
5,896.3	5,877.7	5,864.7	5,864.7	14.5	117.3	-177.62	-177.62	-4,284.1	-545.0	4,312.8	4,181.1	131.78	32.727	
5,900.0	5,881.4	5,868.4	5,868.4	14.5	117.4	1.87	1.87	-4,284.1	-545.0	4,312.8	4,181.0	131.86	32.708	
5,950.0	5,931.3	5,918.3	5,918.3	14.6	118.4	1.87	1.87	-4,284.1	-545.0	4,311.0	4,178.3	132.61	32.507	
6,000.0	5,981.1	5,968.1	5,968.1	14.7	119.4	1.89	1.89	-4,284.1	-545.0	4,305.8	4,173.0	132.80	32.424	
6,050.0	6,030.3	6,017.3	6,017.3	14.7	120.3	1.91	1.91	-4,284.1	-545.0	4,297.4	4,165.0	132.40	32.459	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.6-T2N-R63W - Cuykendall 2-6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,100.0	6,079.0	6,066.0	6,066.0	14.8	121.3	1.95		-4,284.1	-545.0	4,285.9	4,154.5	131.40	32.617	
6,150.0	6,126.7	6,113.7	6,113.7	14.9	122.3	2.00		-4,284.1	-545.0	4,271.1	4,141.3	129.80	32.905	
6,200.0	6,173.4	6,160.4	6,160.4	15.0	123.2	2.06		-4,284.1	-545.0	4,253.3	4,125.7	127.60	33.333	
6,250.0	6,218.9	6,205.9	6,205.9	15.1	124.1	2.13		-4,284.1	-545.0	4,232.5	4,107.7	124.80	33.914	
6,300.0	6,262.8	6,249.8	6,249.8	15.2	125.0	2.22		-4,284.1	-545.0	4,208.7	4,087.3	121.40	34.667	
6,350.0	6,305.2	6,292.2	6,292.2	15.3	125.8	2.33		-4,284.1	-545.0	4,182.1	4,064.7	117.42	35.617	
6,400.0	6,345.7	6,332.7	6,332.7	15.5	126.7	2.46		-4,284.1	-545.0	4,152.8	4,039.9	112.87	36.793	
6,450.0	6,384.2	6,371.2	6,371.2	15.6	127.4	2.61		-4,284.1	-545.0	4,120.9	4,013.2	107.77	38.238	
6,500.0	6,420.5	6,407.5	6,407.5	15.8	128.1	2.80		-4,284.1	-545.0	4,086.6	3,984.5	102.15	40.005	
6,550.0	6,454.5	6,441.5	6,441.5	16.0	128.8	3.03		-4,284.1	-545.0	4,050.0	3,953.9	96.05	42.167	
6,600.0	6,486.0	6,473.0	6,473.0	16.2	129.5	3.32		-4,284.1	-545.0	4,011.2	3,921.7	89.50	44.820	
6,650.0	6,514.9	6,501.9	6,501.9	16.5	130.0	3.68		-4,284.1	-545.0	3,970.5	3,887.9	82.56	48.094	
6,700.0	6,541.1	6,528.1	6,528.1	16.9	130.6	4.13		-4,284.1	-545.0	3,927.9	3,852.6	75.30	52.160	
6,750.0	6,564.5	6,551.5	6,551.5	17.2	131.0	4.73		-4,284.1	-545.0	3,883.7	3,815.9	67.85	57.242	
6,800.0	6,584.9	6,571.9	6,571.9	17.6	131.4	5.54		-4,284.1	-545.0	3,838.1	3,777.8	60.37	63.573	
6,850.0	6,602.3	6,589.3	6,589.3	18.1	131.8	6.68		-4,284.1	-545.0	3,791.3	3,738.0	53.25	71.200	
6,900.0	6,616.6	6,603.6	6,603.6	18.6	132.1	8.42		-4,284.1	-545.0	3,743.4	3,696.1	47.34	79.080	
6,950.0	6,627.7	6,614.7	6,614.7	19.2	132.3	11.32		-4,284.1	-545.0	3,694.7	3,649.8	44.92	82.259	
7,000.0	6,635.6	6,622.6	6,622.6	19.7	132.5	17.07		-4,284.1	-545.0	3,645.4	3,593.4	51.95	70.166	
7,050.0	6,640.2	6,627.2	6,627.2	20.3	132.5	32.87		-4,284.1	-545.0	3,595.6	3,510.2	85.45	42.081	
7,100.0	6,641.6	6,628.6	6,628.6	21.0	132.6	96.91		-4,284.1	-545.0	3,545.7	3,394.2	151.48	23.407	
7,112.5	6,641.5	6,628.5	6,628.5	21.1	132.6	117.92		-4,284.1	-545.0	3,533.3	3,398.3	134.94	26.185	
7,200.0	6,639.6	6,626.6	6,626.6	22.3	132.5	117.33		-4,284.1	-545.0	3,445.8	3,309.1	136.72	25.204	
7,300.0	6,637.5	6,624.5	6,624.5	23.7	132.5	116.64		-4,284.1	-545.0	3,345.9	3,207.1	138.82	24.102	
7,400.0	6,635.4	6,622.4	6,622.4	25.2	132.4	115.95		-4,284.1	-545.0	3,246.0	3,105.0	140.99	23.023	
7,500.0	6,633.3	6,620.3	6,620.3	26.8	132.4	115.25		-4,284.1	-545.0	3,146.2	3,002.9	143.22	21.968	
7,600.0	6,631.2	6,618.2	6,618.2	28.3	132.4	114.55		-4,284.1	-545.0	3,046.3	2,900.8	145.49	20.939	
7,700.0	6,629.1	6,616.1	6,616.1	30.0	132.3	113.83		-4,284.1	-545.0	2,946.4	2,798.6	147.79	19.937	
7,800.0	6,626.9	6,613.9	6,613.9	31.6	132.3	113.11		-4,284.1	-545.0	2,846.6	2,696.4	150.12	18.961	
7,900.0	6,624.8	6,611.8	6,611.8	33.3	132.2	112.38		-4,284.1	-545.0	2,746.7	2,594.2	152.48	18.013	
8,000.0	6,622.7	6,609.7	6,609.7	35.0	132.2	111.64		-4,284.1	-545.0	2,646.9	2,492.0	154.86	17.092	
8,100.0	6,620.6	6,607.6	6,607.6	36.7	132.2	110.89		-4,284.1	-545.0	2,547.0	2,389.8	157.25	16.198	
8,200.0	6,618.5	6,605.5	6,605.5	38.5	132.1	110.14		-4,284.1	-545.0	2,447.2	2,287.6	159.65	15.329	
8,300.0	6,616.4	6,603.4	6,603.4	40.3	132.1	109.38		-4,284.1	-545.0	2,347.4	2,185.4	162.06	14.485	
8,400.0	6,614.3	6,601.3	6,601.3	42.0	132.0	108.61		-4,284.1	-545.0	2,247.6	2,083.1	164.47	13.666	
8,500.0	6,612.2	6,599.2	6,599.2	43.8	132.0	107.83		-4,284.1	-545.0	2,147.8	1,981.0	166.88	12.870	
8,600.0	6,610.1	6,597.1	6,597.1	45.6	131.9	107.05		-4,284.1	-545.0	2,048.1	1,878.8	169.30	12.098	
8,700.0	6,607.9	6,594.9	6,594.9	47.4	131.9	106.26		-4,284.1	-545.0	1,948.4	1,776.7	171.70	11.347	
8,800.0	6,605.8	6,592.8	6,592.8	49.2	131.9	105.46		-4,284.1	-545.0	1,848.7	1,674.6	174.10	10.618	
8,900.0	6,603.7	6,590.7	6,590.7	51.1	131.8	104.66		-4,284.1	-545.0	1,749.0	1,572.5	176.49	9.910	
9,000.0	6,601.6	6,588.6	6,588.6	52.9	131.8	103.86		-4,284.1	-545.0	1,649.4	1,470.5	178.87	9.221	
9,100.0	6,599.5	6,586.5	6,586.5	54.7	131.7	103.04		-4,284.1	-545.0	1,549.8	1,368.5	181.23	8.551	
9,200.0	6,597.4	6,584.4	6,584.4	56.6	131.7	102.22		-4,284.1	-545.0	1,450.2	1,266.6	183.58	7.900	
9,300.0	6,595.3	6,582.3	6,582.3	58.4	131.6	101.40		-4,284.1	-545.0	1,350.8	1,164.9	185.91	7.266	
9,400.0	6,593.2	6,580.2	6,580.2	60.2	131.6	100.57		-4,284.1	-545.0	1,251.4	1,063.2	188.22	6.649	
9,500.0	6,591.1	6,578.1	6,578.1	62.1	131.6	99.74		-4,284.1	-545.0	1,152.1	961.6	190.50	6.048	
9,600.0	6,588.9	6,575.9	6,575.9	64.0	131.5	98.90		-4,284.1	-545.0	1,052.9	860.2	192.76	5.462	
9,700.0	6,586.8	6,573.8	6,573.8	65.8	131.5	98.06		-4,284.1	-545.0	953.9	758.9	194.99	4.892	
9,800.0	6,584.7	6,571.7	6,571.7	67.7	131.4	97.22		-4,284.1	-545.0	855.2	658.0	197.19	4.337	
9,900.0	6,582.6	6,569.6	6,569.6	69.5	131.4	96.37		-4,284.1	-545.0	756.7	557.4	199.36	3.796	
10,000.0	6,580.5	6,567.5	6,567.5	71.4	131.3	95.52		-4,284.1	-545.0	658.8	457.3	201.49	3.269	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Gutttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Gutttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Gutttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Sec.6-T2N-R63W - Cuykendall 2-6 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,100.0	6,578.4	6,565.4	6,565.4	73.3	131.3	94.66	-4,284.1	-545.0	561.5	357.9	203.59	2.758		
10,200.0	6,576.3	6,563.3	6,563.3	75.1	131.3	93.81	-4,284.1	-545.0	465.4	259.7	205.66	2.263		
10,300.0	6,574.2	6,561.2	6,561.2	77.0	131.2	92.95	-4,284.1	-545.0	371.3	163.6	207.69	1.788		
10,400.0	6,572.0	6,559.0	6,559.0	78.9	131.2	92.09	-4,284.1	-545.0	281.4	71.7	209.67	1.342	Level 3	
10,500.0	6,569.9	6,556.9	6,556.9	80.8	131.1	91.24	-4,284.1	-545.0	201.1	-10.5	211.62	0.950	Level 1	
10,600.0	6,567.8	6,554.8	6,554.8	82.7	131.1	90.38	-4,284.1	-545.0	147.3	-66.2	213.52	0.690	Level 1	
10,643.7	6,566.9	6,553.9	6,553.9	83.5	131.1	90.00	-4,284.1	-545.0	140.7	-73.6	214.34	0.656	Level 1, CC, ES, SF	
10,700.0	6,565.7	6,552.7	6,552.7	84.5	131.1	89.52	-4,284.1	-545.0	151.5	-63.8	215.38	0.704	Level 1	
10,800.0	6,563.6	6,550.6	6,550.6	86.4	131.0	88.66	-4,284.1	-545.0	210.3	-6.9	217.19	0.968	Level 1	
10,900.0	6,561.5	6,548.5	6,548.5	88.3	131.0	87.80	-4,284.1	-545.0	292.3	73.4	218.96	1.335	Level 3	
11,000.0	6,559.4	6,546.4	6,546.4	90.2	130.9	86.94	-4,284.1	-545.0	383.0	162.3	220.68	1.735		
11,065.2	6,558.0	6,545.0	6,545.0	91.4	130.9	86.38	-4,284.1	-545.0	444.2	222.4	221.78	2.003		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Sec.6-T2N-R63W - No Name (Casing Only)(Exist) - Wellbore #1 - Wellbore #1											Offset Site Error: 0.0 ft	
Survey Program: 7300-UNKNOWN													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-167.10	-3,905.2	-894.4	4,006.4					
100.0	100.0	87.0	87.0	0.1	1.7	-167.10	-3,905.2	-894.4	4,006.4	4,004.5	1.85	2,162.581		
200.0	200.0	187.0	187.0	0.3	3.7	-167.10	-3,905.2	-894.4	4,006.4	4,002.3	4.08	982.590		
300.0	300.0	287.0	287.0	0.6	5.7	-167.10	-3,905.2	-894.4	4,006.4	4,000.1	6.30	635.717		
400.0	400.0	387.0	387.0	0.8	7.7	-167.10	-3,905.2	-894.4	4,006.4	3,997.8	8.53	469.851		
500.0	500.0	487.0	487.0	1.0	9.7	-167.10	-3,905.2	-894.4	4,006.4	3,995.6	10.75	372.628		
600.0	600.0	587.0	587.0	1.2	11.7	-167.10	-3,905.2	-894.4	4,006.4	3,993.4	12.98	308.742		
700.0	700.0	687.0	687.0	1.5	13.7	-167.10	-3,905.2	-894.4	4,006.4	3,991.2	15.20	263.556		
800.0	800.0	787.0	787.0	1.7	15.7	-167.10	-3,905.2	-894.4	4,006.4	3,988.9	17.43	229.908		
900.0	900.0	887.0	887.0	1.9	17.7	-167.10	-3,905.2	-894.4	4,006.4	3,986.7	19.65	203.879		
1,000.0	1,000.0	987.0	987.0	2.1	19.7	-167.10	-3,905.2	-894.4	4,006.4	3,984.5	21.88	183.144		
1,100.0	1,100.0	1,087.0	1,087.0	2.3	21.7	-81.04	-3,905.2	-894.4	4,006.1	3,982.0	24.09	166.313		
1,200.0	1,199.8	1,186.8	1,186.8	2.6	23.7	-81.13	-3,905.2	-894.4	4,005.3	3,979.0	26.29	152.343		
1,299.1	1,298.6	1,285.6	1,285.6	2.8	25.7	-81.28	-3,905.2	-894.4	4,003.9	3,975.5	28.48	140.572		
1,400.0	1,398.9	1,385.9	1,385.9	3.0	27.7	-81.42	-3,905.2	-894.4	4,002.4	3,971.6	30.73	130.252		
1,500.0	1,498.4	1,485.4	1,485.4	3.3	29.7	-81.57	-3,905.2	-894.4	4,000.8	3,967.8	32.96	121.372		
1,600.0	1,597.8	1,584.8	1,584.8	3.5	31.7	-81.72	-3,905.2	-894.4	3,999.3	3,964.1	35.21	113.595		
1,700.0	1,697.3	1,684.3	1,684.3	3.8	33.7	-81.86	-3,905.2	-894.4	3,997.8	3,960.3	37.46	106.731		
1,800.0	1,796.7	1,783.7	1,783.7	4.0	35.7	-82.01	-3,905.2	-894.4	3,996.3	3,956.6	39.71	100.634		
1,900.0	1,896.2	1,883.2	1,883.2	4.3	37.7	-82.16	-3,905.2	-894.4	3,994.9	3,952.9	41.97	95.182		
2,000.0	1,995.6	1,982.6	1,982.6	4.6	39.7	-82.31	-3,905.2	-894.4	3,993.5	3,949.2	44.23	90.281		
2,100.0	2,095.1	2,082.1	2,082.1	4.9	41.6	-82.45	-3,905.2	-894.4	3,992.1	3,945.6	46.50	85.851		
2,200.0	2,194.6	2,181.6	2,181.6	5.2	43.6	-82.60	-3,905.2	-894.4	3,990.7	3,941.9	48.77	81.830		
2,300.0	2,294.0	2,281.0	2,281.0	5.4	45.6	-82.75	-3,905.2	-894.4	3,989.4	3,938.3	51.04	78.164		
2,400.0	2,393.5	2,380.5	2,380.5	5.7	47.6	-82.90	-3,905.2	-894.4	3,988.1	3,934.8	53.31	74.808		
2,500.0	2,492.9	2,479.9	2,479.9	6.0	49.6	-83.04	-3,905.2	-894.4	3,986.8	3,931.2	55.58	71.724		
2,600.0	2,592.4	2,579.4	2,579.4	6.3	51.6	-83.19	-3,905.2	-894.4	3,985.5	3,927.7	57.86	68.882		
2,700.0	2,691.8	2,678.8	2,678.8	6.6	53.6	-83.34	-3,905.2	-894.4	3,984.3	3,924.2	60.14	66.254		
2,800.0	2,791.3	2,778.3	2,778.3	6.9	55.6	-83.49	-3,905.2	-894.4	3,983.1	3,920.7	62.41	63.817		
2,900.0	2,890.7	2,877.7	2,877.7	7.2	57.6	-83.64	-3,905.2	-894.4	3,981.9	3,917.2	64.69	61.551		
3,000.0	2,990.2	2,977.2	2,977.2	7.5	59.5	-83.78	-3,905.2	-894.4	3,980.8	3,913.8	66.97	59.439		
3,100.0	3,089.6	3,076.6	3,076.6	7.7	61.5	-83.93	-3,905.2	-894.4	3,979.7	3,910.4	69.25	57.466		
3,200.0	3,189.1	3,176.1	3,176.1	8.0	63.5	-84.08	-3,905.2	-894.4	3,978.6	3,907.0	71.53	55.618		
3,300.0	3,288.6	3,275.6	3,275.6	8.3	65.5	-84.23	-3,905.2	-894.4	3,977.5	3,903.7	73.81	53.885		
3,400.0	3,388.0	3,375.0	3,375.0	8.6	67.5	-84.38	-3,905.2	-894.4	3,976.4	3,900.4	76.10	52.255		
3,500.0	3,487.5	3,474.5	3,474.5	8.9	69.5	-84.53	-3,905.2	-894.4	3,975.4	3,897.1	78.38	50.721		
3,600.0	3,586.9	3,573.9	3,573.9	9.2	71.5	-84.68	-3,905.2	-894.4	3,974.5	3,893.8	80.66	49.273		
3,700.0	3,686.4	3,673.4	3,673.4	9.5	73.5	-84.83	-3,905.2	-894.4	3,973.5	3,890.5	82.95	47.905		
3,800.0	3,785.8	3,772.8	3,772.8	9.8	75.5	-84.97	-3,905.2	-894.4	3,972.6	3,887.3	85.23	46.610		
3,900.0	3,885.3	3,872.3	3,872.3	10.1	77.4	-85.12	-3,905.2	-894.4	3,971.7	3,884.1	87.51	45.383		
4,000.0	3,984.7	3,971.7	3,971.7	10.4	79.4	-85.27	-3,905.2	-894.4	3,970.8	3,881.0	89.80	44.219		
4,100.0	4,084.2	4,071.2	4,071.2	10.7	81.4	-85.42	-3,905.2	-894.4	3,969.9	3,877.8	92.08	43.113		
4,200.0	4,183.7	4,170.7	4,170.7	11.0	83.4	-85.57	-3,905.2	-894.4	3,969.1	3,874.7	94.37	42.060		
4,300.0	4,283.1	4,270.1	4,270.1	11.3	85.4	-85.72	-3,905.2	-894.4	3,968.3	3,871.7	96.65	41.057		
4,400.0	4,382.6	4,369.6	4,369.6	11.6	87.4	-85.87	-3,905.2	-894.4	3,967.5	3,868.6	98.94	40.101		
4,500.0	4,482.0	4,469.0	4,469.0	11.9	89.4	-86.02	-3,905.2	-894.4	3,966.8	3,865.6	101.22	39.188		
4,519.5	4,501.4	4,488.4	4,488.4	11.9	89.8	-86.05	-3,905.2	-894.4	3,966.7	3,865.0	101.67	39.015		
4,600.0	4,581.6	4,568.6	4,568.6	12.1	91.4	-86.14	-3,905.2	-894.4	3,966.2	3,862.7	103.48	38.329		
4,700.0	4,681.4	4,668.4	4,668.4	12.3	93.4	-86.22	-3,905.2	-894.4	3,965.8	3,860.1	105.67	37.531		
4,800.0	4,781.4	4,768.4	4,768.4	12.5	95.4	-86.25	-3,905.2	-894.4	3,965.6	3,857.8	107.83	36.776		
4,818.6	4,800.0	4,787.0	4,787.0	12.5	95.7	-172.34	-3,905.2	-894.4	3,965.6	3,857.4	108.24	36.639		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersten 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersten 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersten 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Sec.6-T2N-R63W - No Name (Casing Only)(Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 7300-UNKNOWN														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)					
4,900.0	4,881.4	4,868.4	4,868.4	12.6	97.4	-172.34	-3,905.2	-894.4	3,965.6	3,855.6	110.00	36.051				
5,000.0	4,981.4	4,968.4	4,968.4	12.8	99.4	-172.34	-3,905.2	-894.4	3,965.6	3,853.4	112.18	35.351				
5,100.0	5,081.4	5,068.4	5,068.4	13.0	101.4	-172.34	-3,905.2	-894.4	3,965.6	3,851.2	114.36	34.677				
5,200.0	5,181.4	5,168.4	5,168.4	13.2	103.4	-172.34	-3,905.2	-894.4	3,965.6	3,849.1	116.54	34.028				
5,300.0	5,281.4	5,268.4	5,268.4	13.4	105.4	-172.34	-3,905.2	-894.4	3,965.6	3,846.9	118.72	33.402				
5,400.0	5,381.4	5,368.4	5,368.4	13.6	107.4	-172.34	-3,905.2	-894.4	3,965.6	3,844.7	120.91	32.798				
5,500.0	5,481.4	5,468.4	5,468.4	13.7	109.4	-172.34	-3,905.2	-894.4	3,965.6	3,842.5	123.09	32.216				
5,600.0	5,581.4	5,568.4	5,568.4	13.9	111.4	-172.34	-3,905.2	-894.4	3,965.6	3,840.3	125.28	31.654				
5,700.0	5,681.4	5,668.4	5,668.4	14.1	113.4	-172.34	-3,905.2	-894.4	3,965.6	3,838.1	127.47	31.110				
5,800.0	5,781.4	5,768.4	5,768.4	14.3	115.4	-172.34	-3,905.2	-894.4	3,965.6	3,836.0	129.66	30.585				
5,896.3	5,877.7	5,864.7	5,864.7	14.5	117.3	-172.34	-3,905.2	-894.4	3,965.6	3,833.8	131.77	30.096				
5,900.0	5,881.4	5,868.4	5,868.4	14.5	117.4	7.15	-3,905.2	-894.4	3,965.6	3,833.8	131.84	30.078				
5,950.0	5,931.3	5,918.3	5,918.3	14.6	118.4	7.17	-3,905.2	-894.4	3,963.7	3,831.1	132.61	29.891				
6,000.0	5,981.1	5,968.1	5,968.1	14.7	119.4	7.23	-3,905.2	-894.4	3,958.6	3,825.8	132.80	29.808				
6,050.0	6,030.3	6,017.3	6,017.3	14.7	120.3	7.32	-3,905.2	-894.4	3,950.3	3,817.9	132.42	29.831				
6,100.0	6,079.0	6,066.0	6,066.0	14.8	121.3	7.46	-3,905.2	-894.4	3,938.8	3,807.4	131.46	29.963				
6,150.0	6,126.7	6,113.7	6,113.7	14.9	122.3	7.64	-3,905.2	-894.4	3,924.2	3,794.3	129.90	30.209				
6,200.0	6,173.4	6,160.4	6,160.4	15.0	123.2	7.86	-3,905.2	-894.4	3,906.5	3,778.7	127.76	30.577				
6,250.0	6,218.9	6,205.9	6,205.9	15.1	124.1	8.14	-3,905.2	-894.4	3,885.8	3,760.8	125.04	31.076				
6,300.0	6,262.8	6,249.8	6,249.8	15.2	125.0	8.48	-3,905.2	-894.4	3,862.2	3,740.5	121.76	31.721				
6,350.0	6,305.2	6,292.2	6,292.2	15.3	125.8	8.89	-3,905.2	-894.4	3,835.9	3,717.9	117.93	32.526				
6,400.0	6,345.7	6,332.7	6,332.7	15.5	126.7	9.39	-3,905.2	-894.4	3,806.8	3,693.2	113.60	33.511				
6,450.0	6,384.2	6,371.2	6,371.2	15.6	127.4	9.99	-3,905.2	-894.4	3,775.2	3,666.4	108.81	34.695				
6,500.0	6,420.5	6,407.5	6,407.5	15.8	128.1	10.71	-3,905.2	-894.4	3,741.1	3,637.5	103.63	36.100				
6,550.0	6,454.5	6,441.5	6,441.5	16.0	128.8	11.58	-3,905.2	-894.4	3,704.8	3,606.6	98.17	37.739				
6,600.0	6,486.0	6,473.0	6,473.0	16.2	129.5	12.65	-3,905.2	-894.4	3,666.3	3,573.8	92.57	39.606				
6,650.0	6,514.9	6,501.9	6,501.9	16.5	130.0	13.98	-3,905.2	-894.4	3,625.9	3,538.9	87.07	41.644				
6,700.0	6,541.1	6,528.1	6,528.1	16.9	130.6	15.66	-3,905.2	-894.4	3,583.8	3,501.7	82.03	43.687				
6,750.0	6,564.5	6,551.5	6,551.5	17.2	131.0	17.82	-3,905.2	-894.4	3,540.0	3,461.9	78.04	45.359				
6,800.0	6,584.9	6,571.9	6,571.9	17.6	131.4	20.66	-3,905.2	-894.4	3,494.8	3,418.8	76.03	45.968				
6,850.0	6,602.3	6,589.3	6,589.3	18.1	131.8	24.52	-3,905.2	-894.4	3,448.4	3,371.1	77.34	44.587				
6,900.0	6,616.6	6,603.6	6,603.6	18.6	132.1	29.98	-3,905.2	-894.4	3,401.0	3,317.2	83.76	40.605				
6,950.0	6,627.7	6,614.7	6,614.7	19.2	132.3	38.01	-3,905.2	-894.4	3,352.8	3,255.7	97.11	34.525				
7,000.0	6,635.6	6,622.6	6,622.6	19.7	132.5	50.22	-3,905.2	-894.4	3,304.0	3,185.9	118.10	27.975				
7,050.0	6,640.2	6,627.2	6,627.2	20.3	132.5	68.44	-3,905.2	-894.4	3,254.8	3,112.8	141.97	22.926				
7,100.0	6,641.6	6,628.6	6,628.6	21.0	132.6	91.77	-3,905.2	-894.4	3,205.4	3,052.8	152.60	21.006				
7,112.5	6,641.5	6,628.5	6,628.5	21.1	132.6	97.69	-3,905.2	-894.4	3,193.1	3,041.7	151.36	21.096				
7,200.0	6,639.6	6,626.6	6,626.6	22.3	132.5	97.48	-3,905.2	-894.4	3,106.6	2,954.0	152.61	20.356				
7,300.0	6,637.5	6,624.5	6,624.5	23.7	132.5	97.24	-3,905.2	-894.4	3,008.0	2,853.8	154.11	19.518				
7,400.0	6,635.4	6,622.4	6,622.4	25.2	132.4	97.00	-3,905.2	-894.4	2,909.4	2,753.7	155.67	18.689				
7,500.0	6,633.3	6,620.3	6,620.3	26.8	132.4	96.75	-3,905.2	-894.4	2,810.9	2,653.6	157.28	17.872				
7,600.0	6,631.2	6,618.2	6,618.2	28.3	132.4	96.51	-3,905.2	-894.4	2,712.5	2,553.6	158.93	17.067				
7,700.0	6,629.1	6,616.1	6,616.1	30.0	132.3	96.27	-3,905.2	-894.4	2,614.3	2,453.7	160.62	16.277				
7,800.0	6,626.9	6,613.9	6,613.9	31.6	132.3	96.03	-3,905.2	-894.4	2,516.2	2,353.8	162.33	15.500				
7,900.0	6,624.8	6,611.8	6,611.8	33.3	132.2	95.79	-3,905.2	-894.4	2,418.2	2,254.2	164.07	14.739				
8,000.0	6,622.7	6,609.7	6,609.7	35.0	132.2	95.54	-3,905.2	-894.4	2,320.4	2,154.6	165.82	13.993				
8,100.0	6,620.6	6,607.6	6,607.6	36.7	132.2	95.30	-3,905.2	-894.4	2,222.8	2,055.2	167.60	13.263				
8,200.0	6,618.5	6,605.5	6,605.5	38.5	132.1	95.06	-3,905.2	-894.4	2,125.5	1,956.1	169.38	12.548				
8,300.0	6,616.4	6,603.4	6,603.4	40.3	132.1	94.81	-3,905.2	-894.4	2,028.4	1,857.2	171.18	11.849				
8,400.0	6,614.3	6,601.3	6,601.3	42.0	132.0	94.57	-3,905.2	-894.4	1,931.5	1,758.6	172.99	11.166				
8,500.0	6,612.2	6,599.2	6,599.2	43.8	132.0	94.33	-3,905.2	-894.4	1,835.1	1,660.3	174.81	10.498				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.6-T2N-R63W - No Name (Casing Only)(Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance								Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,600.0	6,610.1	6,597.1	6,597.1	45.6	131.9	94.08	-3,905.2	-894.4	1,739.0	1,562.3	176.63	9.845		
8,700.0	6,607.9	6,594.9	6,594.9	47.4	131.9	93.84	-3,905.2	-894.4	1,643.3	1,464.9	178.46	9.208		
8,800.0	6,605.8	6,592.8	6,592.8	49.2	131.9	93.59	-3,905.2	-894.4	1,548.3	1,368.0	180.30	8.587		
8,900.0	6,603.7	6,590.7	6,590.7	51.1	131.8	93.35	-3,905.2	-894.4	1,453.9	1,271.7	182.14	7.982		
9,000.0	6,601.6	6,588.6	6,588.6	52.9	131.8	93.11	-3,905.2	-894.4	1,360.2	1,176.3	183.98	7.393		
9,100.0	6,599.5	6,586.5	6,586.5	54.7	131.7	92.86	-3,905.2	-894.4	1,267.6	1,081.8	185.83	6.821		
9,200.0	6,597.4	6,584.4	6,584.4	56.6	131.7	92.62	-3,905.2	-894.4	1,176.1	988.5	187.67	6.267		
9,300.0	6,595.3	6,582.3	6,582.3	58.4	131.6	92.37	-3,905.2	-894.4	1,086.2	896.7	189.52	5.731		
9,400.0	6,593.2	6,580.2	6,580.2	60.2	131.6	92.13	-3,905.2	-894.4	998.2	806.8	191.37	5.216		
9,500.0	6,591.1	6,578.1	6,578.1	62.1	131.6	91.88	-3,905.2	-894.4	912.6	719.4	193.22	4.723		
9,600.0	6,588.9	6,575.9	6,575.9	64.0	131.5	91.64	-3,905.2	-894.4	830.2	635.2	195.07	4.256		
9,700.0	6,586.8	6,573.8	6,573.8	65.8	131.5	91.39	-3,905.2	-894.4	752.2	555.3	196.93	3.820		
9,800.0	6,584.7	6,571.7	6,571.7	67.7	131.4	91.15	-3,905.2	-894.4	679.9	481.1	198.78	3.420		
9,900.0	6,582.6	6,569.6	6,569.6	69.5	131.4	90.90	-3,905.2	-894.4	615.4	414.8	200.62	3.067		
10,000.0	6,580.5	6,567.5	6,567.5	71.4	131.3	90.66	-3,905.2	-894.4	561.4	358.9	202.47	2.773		
10,100.0	6,578.4	6,565.4	6,565.4	73.3	131.3	90.41	-3,905.2	-894.4	521.2	316.9	204.32	2.551		
10,200.0	6,576.3	6,563.3	6,563.3	75.1	131.3	90.17	-3,905.2	-894.4	498.1	291.9	206.17	2.416		
10,267.9	6,574.8	6,561.8	6,561.8	76.4	131.2	90.00	-3,905.2	-894.4	493.4	286.0	207.42	2.379 CC, ES		
10,300.0	6,574.2	6,561.2	6,561.2	77.0	131.2	89.92	-3,905.2	-894.4	494.5	286.4	208.01	2.377 SF		
10,400.0	6,572.0	6,559.0	6,559.0	78.9	131.2	89.68	-3,905.2	-894.4	510.8	300.9	209.85	2.434		
10,500.0	6,569.9	6,556.9	6,556.9	80.8	131.1	89.43	-3,905.2	-894.4	545.3	333.6	211.69	2.576		
10,600.0	6,567.8	6,554.8	6,554.8	82.7	131.1	89.19	-3,905.2	-894.4	594.7	381.2	213.53	2.785		
10,700.0	6,565.7	6,552.7	6,552.7	84.5	131.1	88.94	-3,905.2	-894.4	655.8	440.5	215.36	3.045		
10,800.0	6,563.6	6,550.6	6,550.6	86.4	131.0	88.70	-3,905.2	-894.4	725.6	508.4	217.20	3.341		
10,900.0	6,561.5	6,548.5	6,548.5	88.3	131.0	88.45	-3,905.2	-894.4	801.8	582.8	219.02	3.661		
11,000.0	6,559.4	6,546.4	6,546.4	90.2	130.9	88.21	-3,905.2	-894.4	882.7	661.9	220.85	3.997		
11,065.2	6,558.0	6,545.0	6,545.0	91.4	130.9	88.05	-3,905.2	-894.4	937.5	715.4	222.04	4.222		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6R-403 - Wellbore #1 - Plan #1 (5-31-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	-90.00	0.0	-30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	-90.00	0.0	-30.7	30.7	30.5	0.22	136.762	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	-90.00	0.0	-30.7	30.7	30.1	0.67	45.587 CC, ES	
300.0	300.0	298.9	298.9	0.6	0.6	-89.92	-89.92	0.0	-32.4	32.5	31.4	1.11	29.201	
400.0	400.0	397.6	397.4	0.8	0.8	-89.73	-89.73	0.2	-37.5	37.6	36.1	1.56	24.172	
500.0	500.0	495.8	495.2	1.0	1.0	-89.51	-89.51	0.4	-46.0	46.2	44.2	2.03	22.791	
600.0	600.0	593.3	592.0	1.2	1.3	-89.31	-89.31	0.7	-57.7	58.2	55.7	2.53	22.980	
700.0	700.0	689.9	687.5	1.5	1.6	-89.15	-89.15	1.1	-72.5	73.6	70.5	3.08	23.894	
800.0	800.0	787.4	783.4	1.7	2.0	-89.03	-89.03	1.5	-90.0	91.5	87.8	3.67	24.952	
900.0	900.0	885.7	880.2	1.9	2.4	-88.95	-88.95	2.0	-107.8	109.6	105.3	4.27	25.643	
1,000.0	1,000.0	984.1	976.9	2.1	2.8	-88.89	-88.89	2.4	-125.6	127.7	122.8	4.89	26.121	
1,100.0	1,100.0	1,082.7	1,073.9	2.3	3.2	-2.77	-2.77	2.9	-143.4	144.1	139.3	4.77	30.218	
1,200.0	1,199.8	1,181.9	1,171.4	2.6	3.6	-2.81	-2.81	3.4	-161.4	157.0	151.8	5.21	30.133	
1,299.1	1,298.6	1,280.6	1,268.5	2.8	4.0	-2.90	-2.90	3.8	-179.2	166.4	160.8	5.65	29.432	
1,400.0	1,398.9	1,381.1	1,367.4	3.0	4.4	-3.03	-3.03	4.3	-197.4	174.3	168.1	6.12	28.460	
1,500.0	1,498.4	1,480.8	1,465.4	3.3	4.8	-3.14	-3.14	4.8	-215.5	182.0	175.4	6.59	27.618	
1,600.0	1,597.8	1,580.5	1,563.5	3.5	5.2	-3.24	-3.24	5.2	-233.5	189.8	182.7	7.06	26.875	
1,700.0	1,697.3	1,680.2	1,661.5	3.8	5.6	-3.34	-3.34	5.7	-251.6	197.6	190.0	7.54	26.215	
1,800.0	1,796.7	1,779.9	1,759.6	4.0	6.0	-3.43	-3.43	6.1	-269.6	205.3	197.3	8.01	25.625	
1,900.0	1,896.2	1,879.6	1,857.6	4.3	6.4	-3.51	-3.51	6.6	-287.6	213.1	204.6	8.49	25.096	
2,000.0	1,995.6	1,979.3	1,955.7	4.6	6.8	-3.58	-3.58	7.1	-305.7	220.9	211.9	8.97	24.619	
2,100.0	2,095.1	2,079.0	2,053.7	4.9	7.2	-3.66	-3.66	7.5	-323.7	228.7	219.2	9.45	24.187	
2,200.0	2,194.6	2,178.7	2,151.8	5.2	7.7	-3.72	-3.72	8.0	-341.8	236.4	226.5	9.94	23.794	
2,300.0	2,294.0	2,278.4	2,249.8	5.4	8.1	-3.78	-3.78	8.5	-359.8	244.2	233.8	10.42	23.435	
2,400.0	2,393.5	2,378.1	2,347.9	5.7	8.5	-3.84	-3.84	8.9	-377.8	252.0	241.1	10.90	23.105	
2,500.0	2,492.9	2,477.8	2,445.9	6.0	8.9	-3.90	-3.90	9.4	-395.9	259.7	248.3	11.39	22.803	
2,600.0	2,592.4	2,577.5	2,544.0	6.3	9.3	-3.95	-3.95	9.9	-413.9	267.5	255.6	11.88	22.523	
2,700.0	2,691.8	2,677.2	2,642.0	6.6	9.7	-4.00	-4.00	10.3	-432.0	275.3	262.9	12.36	22.265	
2,800.0	2,791.3	2,776.9	2,740.1	6.9	10.1	-4.04	-4.04	10.8	-450.0	283.1	270.2	12.85	22.025	
2,900.0	2,890.7	2,876.6	2,838.1	7.2	10.6	-4.09	-4.09	11.3	-468.1	290.8	277.5	13.34	21.802	
3,000.0	2,990.2	2,976.3	2,936.2	7.5	11.0	-4.13	-4.13	11.7	-486.1	298.6	284.8	13.83	21.594	
3,100.0	3,089.6	3,076.0	3,034.2	7.7	11.4	-4.17	-4.17	12.2	-504.1	306.4	292.1	14.32	21.400	
3,200.0	3,189.1	3,175.7	3,132.3	8.0	11.8	-4.20	-4.20	12.7	-522.2	314.1	299.3	14.81	21.218	
3,300.0	3,288.6	3,275.4	3,230.3	8.3	12.2	-4.24	-4.24	13.1	-540.2	321.9	306.6	15.29	21.047	
3,400.0	3,388.0	3,375.1	3,328.4	8.6	12.6	-4.27	-4.27	13.6	-558.3	329.7	313.9	15.78	20.886	
3,500.0	3,487.5	3,474.8	3,426.4	8.9	13.0	-4.31	-4.31	14.0	-576.3	337.5	321.2	16.27	20.735	
3,600.0	3,586.9	3,574.5	3,524.5	9.2	13.4	-4.34	-4.34	14.5	-594.3	345.2	328.5	16.77	20.592	
3,700.0	3,686.4	3,674.2	3,622.5	9.5	13.9	-4.37	-4.37	15.0	-612.4	353.0	335.7	17.26	20.457	
3,800.0	3,785.8	3,773.9	3,720.6	9.8	14.3	-4.39	-4.39	15.4	-630.4	360.8	343.0	17.75	20.330	
3,900.0	3,885.3	3,873.6	3,818.6	10.1	14.7	-4.42	-4.42	15.9	-648.5	368.6	350.3	18.24	20.209	
4,000.0	3,984.7	3,973.3	3,916.7	10.4	15.1	-4.45	-4.45	16.4	-666.5	376.3	357.6	18.73	20.094	
4,100.0	4,084.2	4,073.0	4,014.7	10.7	15.5	-4.47	-4.47	16.8	-684.6	384.1	364.9	19.22	19.985	
4,200.0	4,183.7	4,172.7	4,112.8	11.0	15.9	-4.50	-4.50	17.3	-702.6	391.9	372.2	19.71	19.881	
4,300.0	4,283.1	4,272.4	4,210.8	11.3	16.4	-4.52	-4.52	17.8	-720.6	399.6	379.4	20.20	19.782	
4,400.0	4,382.6	4,372.1	4,308.9	11.6	16.8	-4.54	-4.54	18.2	-738.7	407.4	386.7	20.69	19.687	
4,500.0	4,482.0	4,471.8	4,406.9	11.9	17.2	-4.56	-4.56	18.7	-756.7	415.2	394.0	21.19	19.597	
4,519.5	4,501.4	4,491.2	4,426.0	11.9	17.3	-4.57	-4.57	18.8	-760.2	416.7	395.4	21.28	19.580	
4,600.0	4,581.6	4,571.4	4,504.9	12.1	17.6	-4.58	-4.58	19.2	-774.7	424.1	402.4	21.64	19.598	
4,700.0	4,681.4	4,670.6	4,602.5	12.3	18.0	-4.57	-4.57	19.6	-792.7	436.4	414.3	22.03	19.805	
4,800.0	4,781.4	4,769.3	4,699.6	12.5	18.4	-4.54	-4.54	20.1	-810.6	452.1	429.7	22.40	20.187	
4,818.6	4,800.0	4,787.7	4,717.6	12.5	18.5	-90.62	-90.62	20.2	-813.9	455.4	433.0	22.46	20.273	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6R-403 - Wellbore #1 - Plan #1 (5-31-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,881.4	4,867.7	4,796.3	12.6	18.8	-90.55		20.5	-828.4	470.1	447.3	22.83	20.596	
5,000.0	4,981.4	4,966.0	4,893.0	12.8	19.2	-90.48		21.0	-846.2	488.2	465.0	23.28	20.972	
5,100.0	5,081.4	5,064.4	4,989.8	13.0	19.6	-90.41		21.5	-864.0	506.3	482.6	23.73	21.333	
5,200.0	5,181.4	5,162.7	5,086.5	13.2	20.1	-90.34		21.9	-881.8	524.4	500.2	24.19	21.679	
5,300.0	5,281.4	5,261.1	5,183.2	13.4	20.5	-90.28		22.4	-899.6	542.5	517.9	24.65	22.012	
5,400.0	5,381.4	5,359.4	5,279.9	13.6	20.9	-90.23		22.8	-917.4	560.6	535.5	25.10	22.332	
5,500.0	5,481.4	5,457.8	5,376.7	13.7	21.3	-90.17		23.3	-935.2	578.7	553.1	25.56	22.640	
5,600.0	5,581.4	5,556.1	5,473.4	13.9	21.7	-90.12		23.7	-952.9	596.8	570.8	26.02	22.937	
5,700.0	5,681.4	5,679.1	5,594.7	14.1	22.1	-90.07		24.3	-972.9	613.1	586.6	26.49	23.147	
5,800.0	5,781.4	5,805.7	5,720.4	14.3	22.4	-90.03		24.6	-988.1	625.0	598.1	26.94	23.205	
5,896.3	5,877.7	5,928.7	5,843.1	14.5	22.6	-90.01		24.9	-997.4	632.4	605.0	27.35	23.118	
5,900.0	5,881.4	5,933.5	5,847.8	14.5	22.6	89.47		24.9	-997.7	632.6	605.2	27.37	23.114	
5,950.0	5,931.3	5,997.5	5,911.8	14.6	22.7	89.53		25.0	-1,000.4	634.7	607.1	27.57	23.021	
6,000.0	5,981.1	6,061.4	5,975.7	14.7	22.8	90.06		25.0	-1,001.6	635.6	607.9	27.76	22.894	
6,050.0	6,030.3	6,116.1	6,030.3	14.7	22.8	90.86		25.0	-1,001.7	635.8	607.8	27.94	22.752	
6,100.0	6,079.0	6,165.4	6,079.7	14.8	22.9	91.83		24.6	-1,001.7	636.1	607.9	28.12	22.620	
6,150.0	6,126.7	6,215.8	6,129.9	14.9	22.9	92.85		21.2	-1,001.8	636.5	608.2	28.30	22.493	
6,200.0	6,173.4	6,267.0	6,180.7	15.0	23.0	93.85		14.5	-1,001.8	637.2	608.7	28.49	22.364	
6,250.0	6,218.9	6,319.1	6,231.7	15.1	23.1	94.85		4.1	-1,001.9	638.1	609.4	28.71	22.230	
6,300.0	6,262.8	6,372.0	6,282.7	15.2	23.1	95.83		-10.0	-1,002.1	639.2	610.3	28.94	22.088	
6,350.0	6,305.2	6,425.9	6,333.5	15.3	23.2	96.79		-27.9	-1,002.2	640.5	611.3	29.20	21.934	
6,400.0	6,345.7	6,480.6	6,383.7	15.5	23.3	97.73		-49.7	-1,002.4	641.9	612.4	29.49	21.765	
6,450.0	6,384.2	6,536.3	6,433.0	15.6	23.4	98.65		-75.5	-1,002.7	643.4	613.6	29.82	21.577	
6,500.0	6,420.5	6,593.0	6,481.2	15.8	23.4	99.52		-105.4	-1,002.9	645.0	614.8	30.19	21.368	
6,550.0	6,454.5	6,650.6	6,527.7	16.0	23.6	100.36		-139.4	-1,003.3	646.7	616.1	30.60	21.135	
6,600.0	6,486.0	6,709.2	6,572.2	16.2	23.7	101.15		-177.4	-1,003.6	648.4	617.4	31.07	20.873	
6,650.0	6,514.9	6,768.8	6,614.4	16.5	23.8	101.90		-219.5	-1,004.0	650.1	618.6	31.59	20.582	
6,700.0	6,541.1	6,829.2	6,653.7	16.9	24.0	102.59		-265.3	-1,004.4	651.8	619.7	32.17	20.263	
6,750.0	6,564.5	6,890.5	6,689.7	17.2	24.2	103.21		-314.9	-1,004.9	653.4	620.6	32.81	19.914	
6,800.0	6,584.9	6,952.6	6,722.0	17.6	24.5	103.77		-367.9	-1,005.4	655.0	621.4	33.52	19.536	
6,850.0	6,602.3	7,015.4	6,750.3	18.1	24.8	104.26		-424.0	-1,005.9	656.3	622.0	34.31	19.128	
6,900.0	6,616.6	7,078.9	6,774.0	18.6	25.1	104.68		-482.9	-1,006.4	657.5	622.3	35.17	18.695	
6,950.0	6,627.7	7,142.9	6,792.9	19.2	25.5	105.01		-544.0	-1,007.0	658.5	622.4	36.10	18.242	
7,000.0	6,635.6	7,207.4	6,806.7	19.7	26.0	105.27		-607.0	-1,007.6	659.3	622.2	37.10	17.769	
7,050.0	6,640.2	7,269.4	6,815.0	20.3	26.5	105.43		-668.4	-1,008.2	659.8	621.7	38.14	17.298	
7,100.0	6,641.6	7,319.2	6,820.2	21.0	26.9	105.67		-717.9	-1,008.6	660.8	621.8	39.06	16.917	
7,112.5	6,641.5	7,331.6	6,821.5	21.1	27.0	105.77		-730.2	-1,008.7	661.2	622.0	39.29	16.831	
7,200.0	6,639.6	7,435.2	6,827.9	22.3	28.0	106.48		-833.6	-1,009.7	663.3	621.7	41.58	15.952	
7,300.0	6,637.5	7,539.4	6,827.5	23.7	29.2	106.63		-937.8	-1,010.6	663.8	619.5	44.34	14.973	
7,400.0	6,635.4	7,639.3	6,827.0	25.2	30.3	106.76		-1,037.8	-1,011.6	664.3	617.1	47.16	14.085	
7,500.0	6,633.3	7,739.3	6,826.4	26.8	31.6	106.89		-1,137.7	-1,012.5	664.8	614.7	50.10	13.270	
7,600.0	6,631.2	7,839.3	6,825.8	28.3	32.9	107.01		-1,237.7	-1,013.4	665.3	612.1	53.12	12.525	
7,700.0	6,629.1	7,939.3	6,825.3	30.0	34.3	107.14		-1,337.7	-1,014.3	665.7	609.5	56.21	11.844	
7,800.0	6,626.9	8,039.3	6,824.7	31.6	35.8	107.26		-1,437.7	-1,015.2	666.2	606.9	59.36	11.224	
7,900.0	6,624.8	8,139.3	6,824.1	33.3	37.3	107.39		-1,537.7	-1,016.2	666.7	604.2	62.56	10.657	
8,000.0	6,622.7	8,239.3	6,823.5	35.0	38.8	107.52		-1,637.7	-1,017.1	667.2	601.4	65.80	10.140	
8,100.0	6,620.6	8,339.3	6,823.0	36.7	40.4	107.64		-1,737.6	-1,018.0	667.7	598.6	69.08	9.666	
8,200.0	6,618.5	8,439.2	6,822.4	38.5	41.9	107.77		-1,837.6	-1,018.9	668.2	595.8	72.39	9.231	
8,300.0	6,616.4	8,539.2	6,821.8	40.3	43.6	107.89		-1,937.6	-1,019.8	668.7	593.0	75.72	8.831	
8,400.0	6,614.3	8,639.2	6,821.3	42.0	45.2	108.02		-2,037.6	-1,020.8	669.2	590.1	79.07	8.463	
8,500.0	6,612.2	8,739.2	6,820.7	43.8	46.9	108.14		-2,137.6	-1,021.7	669.7	587.3	82.45	8.123	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6R-403 - Wellbore #1 - Plan #1 (5-31-13)													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 +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)			
8,600.0	6,610.1	8,839.2	6,820.1	45.6	48.6	108.26	-2,237.5	-1,022.6	670.2	584.4	85.83	7.808		
8,700.0	6,607.9	8,939.2	6,819.6	47.4	50.3	108.39	-2,337.5	-1,023.5	670.7	581.5	89.24	7.516		
8,800.0	6,605.8	9,039.2	6,819.0	49.2	52.0	108.51	-2,437.5	-1,024.4	671.3	578.6	92.65	7.245		
8,900.0	6,603.7	9,139.2	6,818.4	51.1	53.7	108.64	-2,537.5	-1,025.4	671.8	575.7	96.07	6.993		
9,000.0	6,601.6	9,239.2	6,817.8	52.9	55.5	108.76	-2,637.5	-1,026.3	672.3	572.8	99.50	6.757		
9,100.0	6,599.5	9,339.1	6,817.3	54.7	57.2	108.88	-2,737.5	-1,027.2	672.8	569.9	102.93	6.536		
9,200.0	6,597.4	9,439.1	6,816.7	56.6	59.0	109.01	-2,837.4	-1,028.1	673.3	567.0	106.38	6.330		
9,300.0	6,595.3	9,539.1	6,816.1	58.4	60.8	109.13	-2,937.4	-1,029.0	673.9	564.1	109.82	6.136		
9,400.0	6,593.2	9,639.1	6,815.6	60.2	62.5	109.25	-3,037.4	-1,029.9	674.4	561.1	113.27	5.954		
9,500.0	6,591.1	9,739.1	6,815.0	62.1	64.3	109.37	-3,137.4	-1,030.9	675.0	558.2	116.72	5.783		
9,600.0	6,588.9	9,839.1	6,814.4	64.0	66.1	109.50	-3,237.4	-1,031.8	675.5	555.3	120.18	5.621		
9,700.0	6,586.8	9,939.1	6,813.8	65.8	67.9	109.62	-3,337.4	-1,032.7	676.0	552.4	123.63	5.468		
9,800.0	6,584.7	10,039.1	6,813.3	67.7	69.7	109.74	-3,437.3	-1,033.6	676.6	549.5	127.09	5.324		
9,900.0	6,582.6	10,139.0	6,812.7	69.5	71.6	109.86	-3,537.3	-1,034.5	677.1	546.6	130.54	5.187		
10,000.0	6,580.5	10,239.0	6,812.1	71.4	73.4	109.98	-3,637.3	-1,035.5	677.7	543.7	134.00	5.057		
10,100.0	6,578.4	10,339.0	6,811.6	73.3	75.2	110.11	-3,737.3	-1,036.4	678.2	540.8	137.46	4.934		
10,200.0	6,576.3	10,439.0	6,811.0	75.1	77.0	110.23	-3,837.3	-1,037.3	678.8	537.9	140.91	4.817		
10,300.0	6,574.2	10,539.0	6,810.4	77.0	78.9	110.35	-3,937.2	-1,038.2	679.4	535.0	144.36	4.706		
10,400.0	6,572.0	10,639.0	6,809.8	78.9	80.7	110.47	-4,037.2	-1,039.1	679.9	532.1	147.82	4.600		
10,500.0	6,569.9	10,739.0	6,809.3	80.8	82.5	110.59	-4,137.2	-1,040.1	680.5	529.2	151.27	4.499		
10,600.0	6,567.8	10,839.0	6,808.7	82.7	84.4	110.71	-4,237.2	-1,041.0	681.1	526.4	154.72	4.402		
10,700.0	6,565.7	10,939.0	6,808.1	84.5	86.2	110.83	-4,337.2	-1,041.9	681.7	523.5	158.16	4.310		
10,800.0	6,563.6	11,038.9	6,807.6	86.4	88.1	110.95	-4,437.2	-1,042.8	682.2	520.6	161.61	4.222		
10,900.0	6,561.5	11,138.9	6,807.0	88.3	89.9	111.07	-4,537.1	-1,043.7	682.8	517.8	165.05	4.137		
11,000.0	6,559.4	11,238.9	6,806.4	90.2	91.8	111.19	-4,637.1	-1,044.7	683.4	514.9	168.49	4.056		
11,065.2	6,558.0	11,304.1	6,806.0	91.4	93.0	111.27	-4,702.3	-1,045.3	683.8	513.1	170.72	4.005 SF		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-203 - Wellbore #1 - Plan #1 (1-18-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	58.7	58.7					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	58.7	58.7	58.5	0.22	261.091		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	58.7	58.7	58.0	0.67	87.030		
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	58.7	58.7	57.6	1.12	52.218		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	58.7	58.7	57.1	1.57	37.299		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	58.7	58.7	56.7	2.02	29.010		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	58.7	58.7	56.2	2.47	23.736		
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	58.7	58.7	55.8	2.92	20.084		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	58.7	58.7	55.3	3.37	17.406		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	58.7	58.7	54.9	3.82	15.358		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	58.7	58.7	54.4	4.27	13.742 CC, ES		
1,100.0	1,100.0	1,098.4	1,098.4	2.3	2.3	176.06	0.2	59.9	61.7	57.0	4.69	13.152		
1,200.0	1,199.8	1,196.3	1,196.2	2.6	2.5	175.98	0.6	63.7	70.7	65.7	5.09	13.888		
1,299.1	1,298.6	1,292.4	1,292.1	2.8	2.8	175.88	1.3	69.8	85.6	80.1	5.50	15.575		
1,400.0	1,398.9	1,391.3	1,390.7	3.0	3.0	175.79	2.2	77.6	104.0	98.1	5.92	17.575		
1,500.0	1,498.4	1,489.6	1,488.7	3.3	3.2	175.74	3.1	85.4	122.2	115.9	6.34	19.292		
1,600.0	1,597.8	1,587.9	1,586.7	3.5	3.4	175.69	4.0	93.2	140.5	133.7	6.76	20.781		
1,700.0	1,697.3	1,686.2	1,684.7	3.8	3.7	175.66	4.9	100.9	158.7	151.5	7.19	22.079		
1,800.0	1,796.7	1,784.6	1,782.7	4.0	3.9	175.63	5.9	108.7	176.9	169.3	7.62	23.220		
1,900.0	1,896.2	1,882.9	1,880.7	4.3	4.2	175.61	6.8	116.5	195.2	187.1	8.06	24.228		
2,000.0	1,995.6	1,981.2	1,978.7	4.6	4.4	175.59	7.7	124.3	213.4	204.9	8.49	25.126		
2,100.0	2,095.1	2,079.5	2,076.7	4.9	4.7	175.58	8.6	132.1	231.7	222.7	8.93	25.929		
2,200.0	2,194.6	2,177.9	2,174.8	5.2	4.9	175.57	9.5	139.9	249.9	240.5	9.38	26.650		
2,300.0	2,294.0	2,276.2	2,272.8	5.4	5.2	175.55	10.4	147.6	268.1	258.3	9.82	27.302		
2,400.0	2,393.5	2,374.5	2,370.8	5.7	5.4	175.55	11.3	155.4	286.4	276.1	10.27	27.893		
2,500.0	2,492.9	2,472.8	2,468.8	6.0	5.7	175.54	12.2	163.2	304.6	293.9	10.71	28.432		
2,600.0	2,592.4	2,571.1	2,566.8	6.3	5.9	175.53	13.1	171.0	322.9	311.7	11.16	28.925		
2,700.0	2,691.8	2,669.5	2,664.8	6.6	6.2	175.52	14.0	178.8	341.1	329.5	11.61	29.376		
2,800.0	2,791.3	2,767.8	2,762.8	6.9	6.4	175.52	14.9	186.6	359.3	347.3	12.06	29.792		
2,900.0	2,890.7	2,866.1	2,860.8	7.2	6.7	175.51	15.9	194.3	377.6	365.1	12.51	30.176		
3,000.0	2,990.2	2,964.4	2,958.8	7.5	6.9	175.51	16.8	202.1	395.8	382.8	12.96	30.532		
3,100.0	3,089.6	3,062.8	3,056.8	7.7	7.2	175.50	17.7	209.9	414.0	400.6	13.42	30.862		
3,200.0	3,189.1	3,161.1	3,154.9	8.0	7.5	175.50	18.6	217.7	432.3	418.4	13.87	31.169		
3,300.0	3,288.6	3,259.4	3,252.9	8.3	7.7	175.49	19.5	225.5	450.5	436.2	14.32	31.456		
3,400.0	3,388.0	3,357.7	3,350.9	8.6	8.0	175.49	20.4	233.2	468.8	454.0	14.78	31.724		
3,500.0	3,487.5	3,456.0	3,448.9	8.9	8.2	175.49	21.3	241.0	487.0	471.8	15.23	31.975		
3,600.0	3,586.9	3,554.4	3,546.9	9.2	8.5	175.48	22.2	248.8	505.2	489.6	15.69	32.210		
3,700.0	3,686.4	3,652.7	3,644.9	9.5	8.8	175.48	23.1	256.6	523.5	507.3	16.14	32.432		
3,800.0	3,785.8	3,758.8	3,750.7	9.8	9.0	175.48	24.1	264.6	541.4	524.8	16.60	32.611		
3,900.0	3,885.3	3,874.1	3,865.9	10.1	9.3	175.52	24.7	270.3	556.7	539.7	17.05	32.652		
4,000.0	3,984.7	3,990.4	3,982.1	10.4	9.5	175.59	25.0	272.6	569.1	551.6	17.50	32.527		
4,100.0	4,084.2	4,092.5	4,084.2	10.7	9.6	175.67	25.0	272.7	579.5	561.6	17.93	32.324		
4,200.0	4,183.7	4,191.9	4,183.7	11.0	9.8	175.75	25.0	272.7	589.9	571.5	18.37	32.115		
4,300.0	4,283.1	4,291.4	4,283.1	11.3	10.0	175.82	25.0	272.7	600.3	581.5	18.81	31.913		
4,400.0	4,382.6	4,390.8	4,382.6	11.6	10.2	175.89	25.0	272.7	610.7	591.4	19.25	31.720		
4,500.0	4,482.0	4,490.3	4,482.0	11.9	10.4	175.96	25.0	272.7	621.1	601.4	19.70	31.534		
4,519.5	4,501.4	4,509.7	4,501.4	11.9	10.5	175.97	25.0	272.7	623.1	603.3	19.78	31.498		
4,600.0	4,581.6	4,589.9	4,581.6	12.1	10.6	176.03	25.0	272.7	630.4	610.2	20.15	31.276		
4,700.0	4,681.4	4,689.7	4,681.4	12.3	10.8	176.07	25.0	272.7	636.2	615.7	20.57	30.924		
4,800.0	4,781.4	4,789.6	4,781.4	12.5	11.0	176.09	25.0	272.7	638.6	617.7	20.97	30.457		
4,818.6	4,800.0	4,808.3	4,800.0	12.5	11.1	90.00	25.0	272.7	638.7	617.6	21.04	30.355		

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-203 - Wellbore #1 - Plan #1 (1-18-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,900.0	4,881.4	4,889.6	4,881.4	12.6	11.2	90.00	25.0	272.7	638.7	617.3	21.37	29.884		
5,000.0	4,981.4	4,989.6	4,981.4	12.8	11.4	90.00	25.0	272.7	638.7	616.9	21.79	29.313		
5,100.0	5,081.4	5,089.6	5,081.4	13.0	11.6	90.00	25.0	272.7	638.7	616.5	22.21	28.761		
5,200.0	5,181.4	5,189.6	5,181.4	13.2	11.9	90.00	25.0	272.7	638.7	616.1	22.63	28.229		
5,300.0	5,281.4	5,289.6	5,281.4	13.4	12.1	90.00	25.0	272.7	638.7	615.6	23.05	27.714		
5,400.0	5,381.4	5,389.6	5,381.4	13.6	12.3	90.00	25.0	272.7	638.7	615.2	23.47	27.217		
5,500.0	5,481.4	5,489.6	5,481.4	13.7	12.5	90.00	25.0	272.7	638.7	614.8	23.89	26.736		
5,600.0	5,581.4	5,589.6	5,581.4	13.9	12.7	90.00	25.0	272.7	638.7	614.4	24.31	26.270		
5,700.0	5,681.4	5,689.6	5,681.4	14.1	12.9	90.00	25.0	272.7	638.7	613.9	24.74	25.820		
5,800.0	5,781.4	5,789.6	5,781.4	14.3	13.1	90.00	25.0	272.7	638.7	613.5	25.16	25.384		
5,896.3	5,877.7	5,886.0	5,877.7	14.5	13.3	90.00	25.0	272.7	638.7	613.1	25.57	24.977		
5,900.0	5,881.4	5,889.7	5,881.4	14.5	13.3	-90.51	25.0	272.7	638.7	613.1	25.59	24.963		
5,950.0	5,931.3	5,940.1	5,931.7	14.6	13.4	-90.51	23.1	272.7	638.7	612.9	25.77	24.784		
6,000.0	5,981.1	5,990.5	5,981.8	14.7	13.5	-90.51	17.9	272.6	638.7	612.7	25.95	24.613		
6,050.0	6,030.3	6,040.8	6,031.5	14.7	13.6	-90.50	9.4	272.5	638.7	612.6	26.13	24.447		
6,100.0	6,079.0	6,091.2	6,080.5	14.8	13.7	-90.49	-2.4	272.4	638.7	612.4	26.30	24.282		
6,150.0	6,126.7	6,141.6	6,128.6	14.9	13.8	-90.48	-17.4	272.3	638.7	612.2	26.49	24.113		
6,200.0	6,173.4	6,191.9	6,175.6	15.0	13.9	-90.47	-35.5	272.1	638.7	612.0	26.68	23.934		
6,250.0	6,218.9	6,242.3	6,221.2	15.1	14.0	-90.46	-56.6	271.9	638.7	611.8	26.90	23.740		
6,300.0	6,262.8	6,292.6	6,265.4	15.2	14.1	-90.44	-80.7	271.7	638.6	611.5	27.15	23.523		
6,350.0	6,305.2	6,343.0	6,307.9	15.3	14.2	-90.42	-107.6	271.5	638.6	611.2	27.44	23.277		
6,400.0	6,345.7	6,393.3	6,348.5	15.5	14.3	-90.40	-137.3	271.2	638.6	610.9	27.77	22.997		
6,450.0	6,384.2	6,443.6	6,387.1	15.6	14.5	-90.38	-169.6	270.9	638.6	610.5	28.16	22.678		
6,500.0	6,420.5	6,493.8	6,423.4	15.8	14.7	-90.36	-204.3	270.6	638.6	610.0	28.62	22.317		
6,550.0	6,454.5	6,544.1	6,457.4	16.0	15.0	-90.33	-241.4	270.2	638.6	609.4	29.14	21.912		
6,600.0	6,486.0	6,594.4	6,488.8	16.2	15.2	-90.31	-280.5	269.9	638.6	608.8	29.75	21.466		
6,650.0	6,514.9	6,644.6	6,517.6	16.5	15.6	-90.28	-321.7	269.5	638.6	608.1	30.44	20.981		
6,700.0	6,541.1	6,694.8	6,543.6	16.9	15.9	-90.25	-364.6	269.1	638.5	607.3	31.21	20.461		
6,750.0	6,564.5	6,744.9	6,566.8	17.2	16.3	-90.22	-409.1	268.7	638.5	606.5	32.06	19.914		
6,800.0	6,584.9	6,795.1	6,586.9	17.6	16.8	-90.19	-455.0	268.3	638.5	605.5	33.01	19.346		
6,850.0	6,602.3	6,845.2	6,604.0	18.1	17.3	-90.16	-502.1	267.8	638.5	604.5	34.03	18.765		
6,900.0	6,616.6	6,895.3	6,618.0	18.6	17.8	-90.13	-550.3	267.4	638.5	603.4	35.12	18.178		
6,950.0	6,627.7	6,945.4	6,628.7	19.2	18.4	-90.10	-599.2	266.9	638.5	602.2	36.29	17.593		
7,000.0	6,635.6	6,995.5	6,636.3	19.7	19.0	-90.06	-648.6	266.5	638.5	600.9	37.52	17.017		
7,050.0	6,640.2	7,045.5	6,640.6	20.3	19.6	-90.03	-698.5	266.0	638.4	599.6	38.80	16.454		
7,100.0	6,641.6	7,095.5	6,641.6	21.0	20.3	-90.00	-748.5	265.6	638.4	598.3	40.13	15.909		
7,112.5	6,641.5	7,108.0	6,641.3	21.1	20.5	-89.99	-760.9	265.5	638.4	598.0	40.47	15.775		
7,200.0	6,639.6	7,195.5	6,639.5	22.3	21.7	-89.99	-848.4	264.7	638.4	595.5	42.92	14.874		
7,300.0	6,637.5	7,295.5	6,637.4	23.7	23.1	-89.99	-948.4	263.7	638.4	592.5	45.86	13.920		
7,400.0	6,635.4	7,395.5	6,635.3	25.2	24.6	-89.99	-1,048.4	262.8	638.3	589.4	48.92	13.049		
7,500.0	6,633.3	7,495.5	6,633.2	26.8	26.2	-89.99	-1,148.4	261.9	638.3	586.2	52.08	12.255		
7,600.0	6,631.2	7,595.5	6,631.0	28.3	27.8	-89.99	-1,248.3	261.0	638.3	582.9	55.33	11.535		
7,700.0	6,629.1	7,695.5	6,628.9	30.0	29.5	-89.99	-1,348.3	260.1	638.2	579.6	58.65	10.882		
7,800.0	6,626.9	7,795.5	6,626.8	31.6	31.2	-89.99	-1,448.3	259.1	638.2	576.2	62.03	10.289		
7,900.0	6,624.8	7,895.5	6,624.7	33.3	32.9	-89.99	-1,548.2	258.2	638.2	572.7	65.45	9.750		
8,000.0	6,622.7	7,995.5	6,622.6	35.0	34.6	-89.99	-1,648.2	257.3	638.2	569.2	68.92	9.259		
8,100.0	6,620.6	8,095.5	6,620.5	36.7	36.3	-89.99	-1,748.2	256.4	638.1	565.7	72.43	8.810		
8,200.0	6,618.5	8,195.5	6,618.4	38.5	38.1	-89.99	-1,848.2	255.5	638.1	562.1	75.97	8.400		
8,300.0	6,616.4	8,295.5	6,616.3	40.3	39.9	-89.99	-1,948.1	254.5	638.1	558.5	79.53	8.023		
8,400.0	6,614.3	8,395.5	6,614.2	42.0	41.7	-89.99	-2,048.1	253.6	638.0	554.9	83.12	7.676		
8,500.0	6,612.2	8,495.5	6,612.0	43.8	43.5	-89.99	-2,148.1	252.7	638.0	551.3	86.73	7.357		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-203 - Wellbore #1 - Plan #1 (1-18-13)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation		Separation Factor
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
8,600.0	6,610.1	8,595.5	6,609.9	45.6	45.3	-89.99	-2,248.1	251.8	638.0	547.6	90.35	7.061	
8,700.0	6,607.9	8,695.5	6,607.8	47.4	47.1	-89.99	-2,348.0	250.9	637.9	543.9	93.99	6.787	
8,800.0	6,605.8	8,795.5	6,605.7	49.2	48.9	-89.99	-2,448.0	249.9	637.9	540.3	97.65	6.533	
8,900.0	6,603.7	8,895.5	6,603.6	51.1	50.7	-89.99	-2,548.0	249.0	637.9	536.6	101.32	6.296	
9,000.0	6,601.6	8,995.5	6,601.5	52.9	52.6	-89.99	-2,648.0	248.1	637.9	532.8	105.00	6.075	
9,100.0	6,599.5	9,095.5	6,599.4	54.7	54.4	-89.99	-2,747.9	247.2	637.8	529.1	108.69	5.868	
9,200.0	6,597.4	9,195.5	6,597.3	56.6	56.3	-89.99	-2,847.9	246.3	637.8	525.4	112.39	5.675	
9,300.0	6,595.3	9,295.5	6,595.2	58.4	58.1	-89.99	-2,947.9	245.4	637.8	521.7	116.10	5.493	
9,400.0	6,593.2	9,395.5	6,593.0	60.2	60.0	-89.99	-3,047.9	244.4	637.7	517.9	119.82	5.322	
9,500.0	6,591.1	9,495.5	6,590.9	62.1	61.8	-89.99	-3,147.8	243.5	637.7	514.2	123.54	5.162	
9,600.0	6,588.9	9,595.5	6,588.8	64.0	63.7	-89.99	-3,247.8	242.6	637.7	510.4	127.27	5.010	
9,700.0	6,586.8	9,695.5	6,586.7	65.8	65.6	-89.99	-3,347.8	241.7	637.6	506.6	131.01	4.867	
9,800.0	6,584.7	9,795.5	6,584.6	67.7	67.4	-89.99	-3,447.7	240.8	637.6	502.9	134.75	4.732	
9,900.0	6,582.6	9,895.5	6,582.5	69.5	69.3	-89.99	-3,547.7	239.8	637.6	499.1	138.49	4.604	
10,000.0	6,580.5	9,995.5	6,580.4	71.4	71.2	-89.99	-3,647.7	238.9	637.5	495.3	142.24	4.482	
10,100.0	6,578.4	10,095.5	6,578.3	73.3	73.1	-89.99	-3,747.7	238.0	637.5	491.5	146.00	4.367	
10,200.0	6,576.3	10,195.5	6,576.1	75.1	74.9	-89.99	-3,847.6	237.1	637.5	487.7	149.76	4.257	
10,300.0	6,574.2	10,295.5	6,574.0	77.0	76.8	-89.99	-3,947.6	236.2	637.5	483.9	153.52	4.152	
10,400.0	6,572.0	10,395.5	6,571.9	78.9	78.7	-89.99	-4,047.6	235.2	637.4	480.1	157.28	4.053	
10,500.0	6,569.9	10,495.5	6,569.8	80.8	80.6	-89.99	-4,147.6	234.3	637.4	476.3	161.05	3.958	
10,600.0	6,567.8	10,595.5	6,567.7	82.7	82.5	-89.99	-4,247.5	233.4	637.4	472.5	164.82	3.867	
10,700.0	6,565.7	10,695.5	6,565.6	84.5	84.3	-89.99	-4,347.5	232.5	637.3	468.7	168.59	3.780	
10,800.0	6,563.6	10,795.5	6,563.5	86.4	86.2	-89.99	-4,447.5	231.6	637.3	464.9	172.37	3.697	
10,900.0	6,561.5	10,895.5	6,561.4	88.3	88.1	-89.99	-4,547.5	230.6	637.3	461.1	176.15	3.618	
11,000.0	6,559.4	10,995.5	6,559.3	90.2	90.0	-89.99	-4,647.4	229.7	637.2	457.3	179.93	3.542	
11,047.5	6,558.4	11,043.0	6,558.2	91.1	90.9	-89.99	-4,694.9	229.3	637.2	455.5	181.72	3.507	
11,065.2	6,558.0	11,054.8	6,558.0	91.4	91.1	-89.99	-4,706.7	229.2	637.3	455.0	182.28	3.496 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-443 - Wellbore #1 - Plan #1 (1-18-13)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	27.9	27.9	27.7	0.22	124.329	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	27.9	27.9	27.3	0.67	41.443	
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	27.9	27.9	26.8	1.12	24.866	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	27.9	27.9	26.4	1.57	17.761	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	27.9	27.9	25.9	2.02	13.814	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	27.9	27.9	25.5	2.47	11.303	
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	27.9	27.9	25.0	2.92	9.564	
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	27.9	27.9	24.6	3.37	8.289	
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	27.9	27.9	24.1	3.82	7.313	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	27.9	27.9	23.7	4.27	6.544 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	176.32	0.0	27.9	29.7	25.0	4.71	6.308	
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	176.87	0.0	27.9	34.9	29.8	5.13	6.807	
1,299.1	1,298.6	1,298.6	1,298.6	2.8	2.8	177.48	0.0	27.9	43.5	38.0	5.55	7.848	
1,400.0	1,398.9	1,398.9	1,398.9	3.0	3.0	177.97	0.0	27.9	54.0	48.0	5.98	9.032	
1,500.0	1,498.4	1,498.4	1,498.4	3.3	3.3	178.30	0.0	27.9	64.4	58.0	6.42	10.041	
1,600.0	1,597.8	1,597.8	1,597.8	3.5	3.5	178.53	0.0	27.9	74.9	68.0	6.86	10.917	
1,700.0	1,697.3	1,697.3	1,697.3	3.8	3.7	178.71	0.0	27.9	85.3	78.0	7.30	11.684	
1,800.0	1,796.7	1,796.7	1,796.7	4.0	3.9	178.85	0.0	27.9	95.7	88.0	7.74	12.361	
1,900.0	1,896.2	1,896.2	1,896.2	4.3	4.1	178.97	0.0	27.9	106.1	97.9	8.19	12.961	
2,000.0	1,995.6	1,995.6	1,995.6	4.6	4.4	179.06	0.0	27.9	116.5	107.9	8.64	13.497	
2,100.0	2,095.1	2,095.1	2,095.1	4.9	4.6	179.14	0.0	27.9	127.0	117.9	9.08	13.978	
2,200.0	2,194.6	2,194.6	2,194.6	5.2	4.8	179.20	0.0	27.9	137.4	127.9	9.53	14.413	
2,300.0	2,294.0	2,294.0	2,294.0	5.4	5.0	179.26	0.0	27.9	147.8	137.8	9.98	14.807	
2,400.0	2,393.5	2,393.5	2,393.5	5.7	5.3	179.31	0.0	27.9	158.2	147.8	10.43	15.166	
2,500.0	2,492.9	2,492.9	2,492.9	6.0	5.5	179.35	0.0	27.9	168.7	157.8	10.89	15.494	
2,600.0	2,592.4	2,592.4	2,592.4	6.3	5.7	179.39	0.0	27.9	179.1	167.7	11.34	15.795	
2,700.0	2,691.8	2,691.8	2,691.8	6.6	5.9	179.42	0.0	27.9	189.5	177.7	11.79	16.072	
2,800.0	2,791.3	2,791.3	2,791.3	6.9	6.2	179.45	0.0	27.9	199.9	187.7	12.24	16.328	
2,900.0	2,890.7	2,890.7	2,890.7	7.2	6.4	179.48	0.0	27.9	210.3	197.6	12.70	16.565	
3,000.0	2,990.2	2,990.2	2,990.2	7.5	6.6	179.50	0.0	27.9	220.8	207.6	13.15	16.786	
3,100.0	3,089.6	3,095.2	3,095.2	7.7	6.8	179.45	0.4	26.8	230.1	216.5	13.61	16.909	
3,200.0	3,189.1	3,201.2	3,201.1	8.0	7.1	179.22	1.7	22.9	236.8	222.7	14.06	16.845	
3,300.0	3,288.6	3,307.6	3,307.2	8.3	7.3	178.82	3.9	16.2	240.8	226.3	14.51	16.598	
3,400.0	3,388.0	3,411.0	3,410.3	8.6	7.5	178.28	6.8	7.2	242.4	227.5	14.96	16.211	
3,500.0	3,487.5	3,511.0	3,509.8	8.9	7.7	177.73	9.8	-1.8	243.7	228.3	15.40	15.827	
3,600.0	3,586.9	3,610.9	3,609.3	9.2	8.0	177.19	12.8	-10.9	245.0	229.1	15.84	15.464	
3,700.0	3,686.4	3,710.9	3,708.8	9.5	8.2	176.66	15.8	-20.0	246.3	230.0	16.29	15.120	
3,800.0	3,785.8	3,810.9	3,808.3	9.8	8.4	176.13	18.7	-29.0	247.6	230.9	16.74	14.794	
3,900.0	3,885.3	3,906.6	3,903.6	10.1	8.6	175.67	21.4	-37.1	249.6	232.4	17.17	14.537	
4,000.0	3,984.7	4,000.0	3,996.8	10.4	8.8	175.40	23.3	-42.9	253.8	236.2	17.58	14.436	
4,100.0	4,084.2	4,094.5	4,091.2	10.7	9.0	175.30	24.5	-46.6	260.3	242.4	18.00	14.467	
4,200.0	4,183.7	4,187.9	4,184.7	11.0	9.2	175.36	25.0	-48.0	269.2	250.8	18.40	14.628	
4,300.0	4,283.1	4,286.4	4,283.1	11.3	9.4	175.53	25.0	-48.1	279.6	260.7	18.83	14.845	
4,400.0	4,382.6	4,385.8	4,382.6	11.6	9.6	175.69	25.0	-48.1	290.0	270.7	19.28	15.037	
4,500.0	4,482.0	4,485.3	4,482.0	11.9	9.8	175.84	25.0	-48.1	300.4	280.6	19.74	15.217	
4,519.5	4,501.4	4,504.7	4,501.4	11.9	9.8	175.87	25.0	-48.1	302.4	282.6	19.83	15.251	
4,600.0	4,581.6	4,584.9	4,581.6	12.1	10.0	175.98	25.0	-48.1	309.6	289.4	20.19	15.333	
4,700.0	4,681.4	4,684.7	4,681.4	12.3	10.2	176.06	25.0	-48.1	315.5	294.9	20.60	15.312	
4,800.0	4,781.4	4,784.6	4,781.4	12.5	10.5	176.09	25.0	-48.1	317.9	296.9	20.99	15.144	
4,818.6	4,800.0	4,803.3	4,800.0	12.5	10.5	90.00	25.0	-48.1	317.9	296.9	21.06	15.095	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-443 - Wellbore #1 - Plan #1 (1-18-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,881.4	4,884.6	4,881.4	12.6	10.7	90.00		25.0	-48.1	317.9	296.5	21.40	14.855	
5,000.0	4,981.4	4,984.6	4,981.4	12.8	10.9	90.00		25.0	-48.1	317.9	296.1	21.83	14.565	
5,100.0	5,081.4	5,084.6	5,081.4	13.0	11.1	90.00		25.0	-48.1	317.9	295.7	22.26	14.286	
5,200.0	5,181.4	5,184.6	5,181.4	13.2	11.4	90.00		25.0	-48.1	317.9	295.3	22.68	14.016	
5,300.0	5,281.4	5,284.6	5,281.4	13.4	11.6	90.00		25.0	-48.1	317.9	294.8	23.11	13.756	
5,400.0	5,381.4	5,384.6	5,381.4	13.6	11.8	90.00		25.0	-48.1	317.9	294.4	23.54	13.505	
5,500.0	5,481.4	5,484.6	5,481.4	13.7	12.0	90.00		25.0	-48.1	317.9	294.0	23.97	13.262	
5,600.0	5,581.4	5,584.6	5,581.4	13.9	12.2	90.00		25.0	-48.1	317.9	293.5	24.40	13.028	
5,700.0	5,681.4	5,684.6	5,681.4	14.1	12.5	90.00		25.0	-48.1	317.9	293.1	24.84	12.802	
5,800.0	5,781.4	5,784.6	5,781.4	14.3	12.7	90.00		25.0	-48.1	317.9	292.7	25.27	12.583	
5,896.3	5,877.7	5,881.0	5,877.7	14.5	12.9	90.00		25.0	-48.1	317.9	292.3	25.69	12.378	
5,900.0	5,881.4	5,884.6	5,881.4	14.5	12.9	-90.51		25.0	-48.1	317.9	292.2	25.70	12.372	
5,950.0	5,931.3	5,934.6	5,931.3	14.6	13.0	-90.85		25.0	-48.1	318.0	292.1	25.90	12.274	
6,000.0	5,981.1	5,984.3	5,981.1	14.7	13.1	-91.76		25.0	-48.1	318.1	292.0	26.11	12.183	
6,050.0	6,030.3	6,033.6	6,030.3	14.7	13.2	-93.22		25.0	-48.1	318.5	292.1	26.32	12.102	
6,100.0	6,079.0	6,083.2	6,080.0	14.8	13.4	-95.14		24.6	-48.1	319.3	292.8	26.51	12.042	
6,150.0	6,126.7	6,134.2	6,130.8	14.9	13.4	-97.14		21.1	-48.1	320.6	293.9	26.69	12.008	
6,200.0	6,173.4	6,186.1	6,182.2	15.0	13.5	-99.11		14.2	-48.1	322.2	295.4	26.86	11.996	
6,250.0	6,218.9	6,238.8	6,233.8	15.1	13.6	-101.03		3.6	-48.2	324.2	297.2	27.01	12.002	
6,300.0	6,262.8	6,292.4	6,285.4	15.2	13.7	-102.91		-10.8	-48.4	326.6	299.4	27.16	12.025	
6,350.0	6,305.2	6,346.9	6,336.8	15.3	13.8	-104.72		-29.2	-48.5	329.2	301.9	27.30	12.062	
6,400.0	6,345.7	6,402.4	6,387.5	15.5	13.9	-106.46		-51.5	-48.7	332.1	304.7	27.43	12.106	
6,450.0	6,384.2	6,458.8	6,437.4	15.6	14.0	-108.11		-78.0	-49.0	335.2	307.6	27.58	12.153	
6,500.0	6,420.5	6,516.2	6,485.9	15.8	14.2	-109.68		-108.6	-49.2	338.4	310.6	27.75	12.194	
6,550.0	6,454.5	6,574.6	6,532.7	16.0	14.3	-111.14		-143.4	-49.5	341.6	313.7	27.96	12.221	
6,600.0	6,486.0	6,633.9	6,577.4	16.2	14.5	-112.50		-182.3	-49.9	344.9	316.7	28.21	12.224	
6,650.0	6,514.9	6,694.1	6,619.6	16.5	14.8	-113.74		-225.2	-50.2	348.0	319.5	28.54	12.196	
6,700.0	6,541.1	6,755.1	6,658.9	16.9	15.1	-114.86		-272.0	-50.6	351.1	322.1	28.95	12.125	
6,750.0	6,564.5	6,817.0	6,694.7	17.2	15.5	-115.86		-322.5	-51.1	353.9	324.4	29.48	12.006	
6,800.0	6,584.9	6,879.7	6,726.6	17.6	16.0	-116.73		-376.3	-51.6	356.5	326.3	30.12	11.835	
6,850.0	6,602.3	6,943.0	6,754.3	18.1	16.6	-117.46		-433.2	-52.1	358.7	327.8	30.89	11.613	
6,900.0	6,616.6	7,006.9	6,777.4	18.6	17.2	-118.06		-492.8	-52.6	360.6	328.8	31.80	11.340	
6,950.0	6,627.7	7,071.2	6,795.6	19.2	17.9	-118.52		-554.5	-53.1	362.1	329.2	32.85	11.021	
7,000.0	6,635.6	7,135.9	6,808.5	19.7	18.6	-118.83		-617.9	-53.7	363.1	329.0	34.04	10.667	
7,050.0	6,640.2	7,195.5	6,815.9	20.3	19.3	-119.02		-676.9	-54.2	363.8	328.5	35.29	10.308	
7,100.0	6,641.6	7,245.3	6,821.1	21.0	20.0	-119.42		-726.5	-54.6	365.7	329.2	36.46	10.029	
7,112.5	6,641.5	7,258.9	6,822.5	21.1	20.2	-119.59		-740.0	-54.7	366.4	329.6	36.76	9.968	
7,200.0	6,639.6	7,363.0	6,828.0	22.3	21.6	-120.62		-844.0	-55.6	369.7	330.9	38.81	9.525	
7,300.0	6,637.5	7,465.5	6,827.5	23.7	23.1	-120.84		-946.4	-56.5	370.5	329.2	41.33	8.964	
7,400.0	6,635.4	7,565.5	6,826.9	25.2	24.6	-121.05		-1,046.4	-57.4	371.3	327.4	43.93	8.453	
7,500.0	6,633.3	7,665.5	6,826.3	26.8	26.1	-121.25		-1,146.4	-58.3	372.1	325.5	46.60	7.985	
7,600.0	6,631.2	7,765.4	6,825.8	28.3	27.7	-121.45		-1,246.4	-59.2	372.9	323.6	49.35	7.557	
7,700.0	6,629.1	7,865.4	6,825.2	30.0	29.4	-121.65		-1,346.3	-60.0	373.7	321.6	52.14	7.168	
7,800.0	6,626.9	7,965.4	6,824.6	31.6	31.1	-121.85		-1,446.3	-60.9	374.6	319.6	54.98	6.813	
7,900.0	6,624.8	8,065.4	6,824.1	33.3	32.8	-122.05		-1,546.3	-61.8	375.4	317.5	57.85	6.489	
8,000.0	6,622.7	8,165.4	6,823.5	35.0	34.5	-122.25		-1,646.3	-62.7	376.2	315.5	60.75	6.193	
8,100.0	6,620.6	8,265.4	6,822.9	36.7	36.2	-122.44		-1,746.3	-63.5	377.1	313.4	63.68	5.922	
8,200.0	6,618.5	8,365.4	6,822.3	38.5	38.0	-122.64		-1,846.3	-64.4	377.9	311.3	66.62	5.673	
8,300.0	6,616.4	8,465.4	6,821.8	40.3	39.8	-122.83		-1,946.2	-65.3	378.8	309.2	69.57	5.444	
8,400.0	6,614.3	8,565.4	6,821.2	42.0	41.5	-123.03		-2,046.2	-66.2	379.6	307.1	72.54	5.233	
8,500.0	6,612.2	8,665.3	6,820.6	43.8	43.3	-123.22		-2,146.2	-67.0	380.5	304.9	75.51	5.039	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-443 - Wellbore #1 - Plan #1 (1-18-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,600.0	6,610.1	8,765.3	6,820.1	45.6	45.1	-123.41	-123.41	-2,246.2	-67.9	381.3	302.8	78.49	4.858	
8,700.0	6,607.9	8,865.3	6,819.5	47.4	47.0	-123.61	-123.61	-2,346.2	-68.8	382.2	300.7	81.47	4.691	
8,800.0	6,605.8	8,965.3	6,818.9	49.2	48.8	-123.80	-123.80	-2,446.2	-69.7	383.0	298.6	84.45	4.536	
8,900.0	6,603.7	9,065.3	6,818.3	51.1	50.6	-123.99	-123.99	-2,546.1	-70.5	383.9	296.5	87.43	4.391	
9,000.0	6,601.6	9,165.3	6,817.8	52.9	52.5	-124.18	-124.18	-2,646.1	-71.4	384.8	294.4	90.42	4.256	
9,100.0	6,599.5	9,265.3	6,817.2	54.7	54.3	-124.36	-124.36	-2,746.1	-72.3	385.7	292.3	93.40	4.129	
9,200.0	6,597.4	9,365.3	6,816.6	56.6	56.1	-124.55	-124.55	-2,846.1	-73.2	386.5	290.2	96.38	4.011	
9,300.0	6,595.3	9,465.2	6,816.1	58.4	58.0	-124.74	-124.74	-2,946.1	-74.0	387.4	288.1	99.35	3.900	
9,400.0	6,593.2	9,565.2	6,815.5	60.2	59.8	-124.92	-124.92	-3,046.0	-74.9	388.3	286.0	102.32	3.795	
9,500.0	6,591.1	9,665.2	6,814.9	62.1	61.7	-125.11	-125.11	-3,146.0	-75.8	389.2	283.9	105.28	3.697	
9,600.0	6,588.9	9,765.2	6,814.3	64.0	63.6	-125.29	-125.29	-3,246.0	-76.7	390.1	281.9	108.24	3.604	
9,700.0	6,586.8	9,865.2	6,813.8	65.8	65.4	-125.48	-125.48	-3,346.0	-77.5	391.0	279.8	111.20	3.517	
9,800.0	6,584.7	9,965.2	6,813.2	67.7	67.3	-125.66	-125.66	-3,446.0	-78.4	391.9	277.8	114.14	3.434	
9,900.0	6,582.6	10,065.2	6,812.6	69.5	69.2	-125.84	-125.84	-3,546.0	-79.3	392.8	275.8	117.08	3.355	
10,000.0	6,580.5	10,165.2	6,812.1	71.4	71.0	-126.02	-126.02	-3,645.9	-80.2	393.8	273.7	120.01	3.281	
10,100.0	6,578.4	10,265.2	6,811.5	73.3	72.9	-126.20	-126.20	-3,745.9	-81.0	394.7	271.7	122.94	3.210	
10,200.0	6,576.3	10,365.1	6,810.9	75.1	74.8	-126.38	-126.38	-3,845.9	-81.9	395.6	269.7	125.86	3.143	
10,300.0	6,574.2	10,465.1	6,810.3	77.0	76.7	-126.56	-126.56	-3,945.9	-82.8	396.5	267.8	128.76	3.079	
10,400.0	6,572.0	10,565.1	6,809.8	78.9	78.6	-126.73	-126.73	-4,045.9	-83.7	397.5	265.8	131.66	3.019	
10,500.0	6,569.9	10,665.1	6,809.2	80.8	80.4	-126.91	-126.91	-4,145.9	-84.5	398.4	263.8	134.56	2.961	
10,600.0	6,567.8	10,765.1	6,808.6	82.7	82.3	-127.08	-127.08	-4,245.8	-85.4	399.3	261.9	137.44	2.905	
10,700.0	6,565.7	10,865.1	6,808.1	84.5	84.2	-127.26	-127.26	-4,345.8	-86.3	400.3	260.0	140.31	2.853	
10,800.0	6,563.6	10,965.1	6,807.5	86.4	86.1	-127.43	-127.43	-4,445.8	-87.2	401.2	258.0	143.18	2.802	
10,900.0	6,561.5	11,065.1	6,806.9	88.3	88.0	-127.61	-127.61	-4,545.8	-88.0	402.2	256.1	146.04	2.754	
11,000.0	6,559.4	11,165.0	6,806.3	90.2	89.9	-127.78	-127.78	-4,645.8	-88.9	403.1	254.2	148.88	2.708	
11,065.2	6,558.0	11,226.0	6,806.0	91.4	90.9	-127.88	-127.88	-4,706.7	-89.4	403.8	253.2	150.59	2.681 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (RKB - 15')

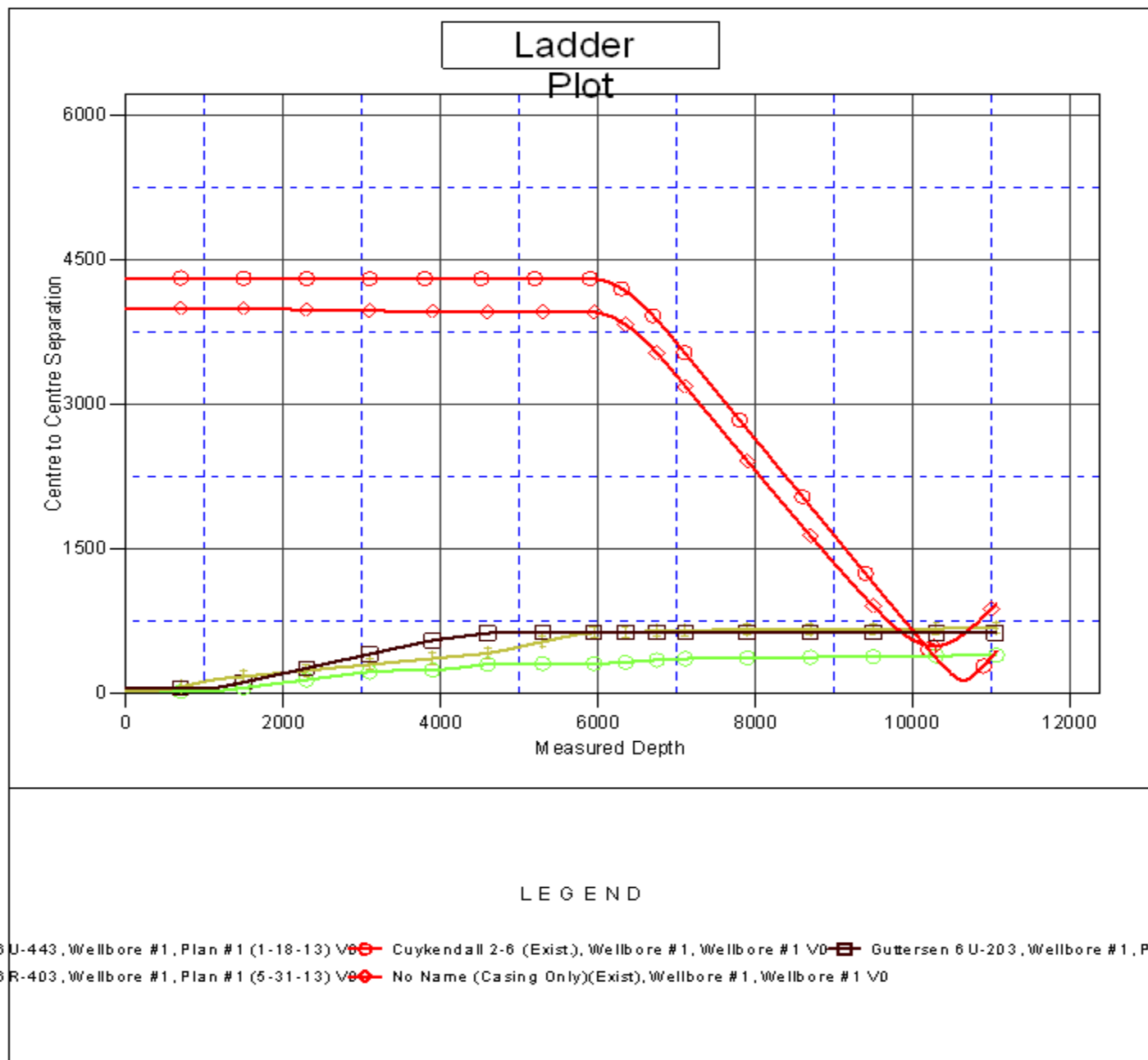
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Guttersen 6R-223

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.66°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Guttersen 6R-223
<b>Project:</b>	SEC.6-T2N-R63W	<b>TVD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Reference Site:</b>	Guttersen 6R-403 Pad Sec.6-T2N-R63W	<b>MD Reference:</b>	WELL @ 4851.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Guttersen 6R-223	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-31-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Guttersen 6R-223

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.66°

