

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Guttersen 6R-323**

Surface Location: Guttersen 6R-403 Pad Sec.6-T2N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

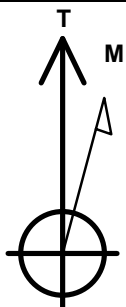
Ground Elevation: 4836.0

+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
SHL 75'FNL, 474'FEL		0.0	0.0	Point
BHL 500' FSL, 840' FEL	6660.0	-4706.7	-408.1	Point



Azimuths to True North
Magnetic North: 8.36°

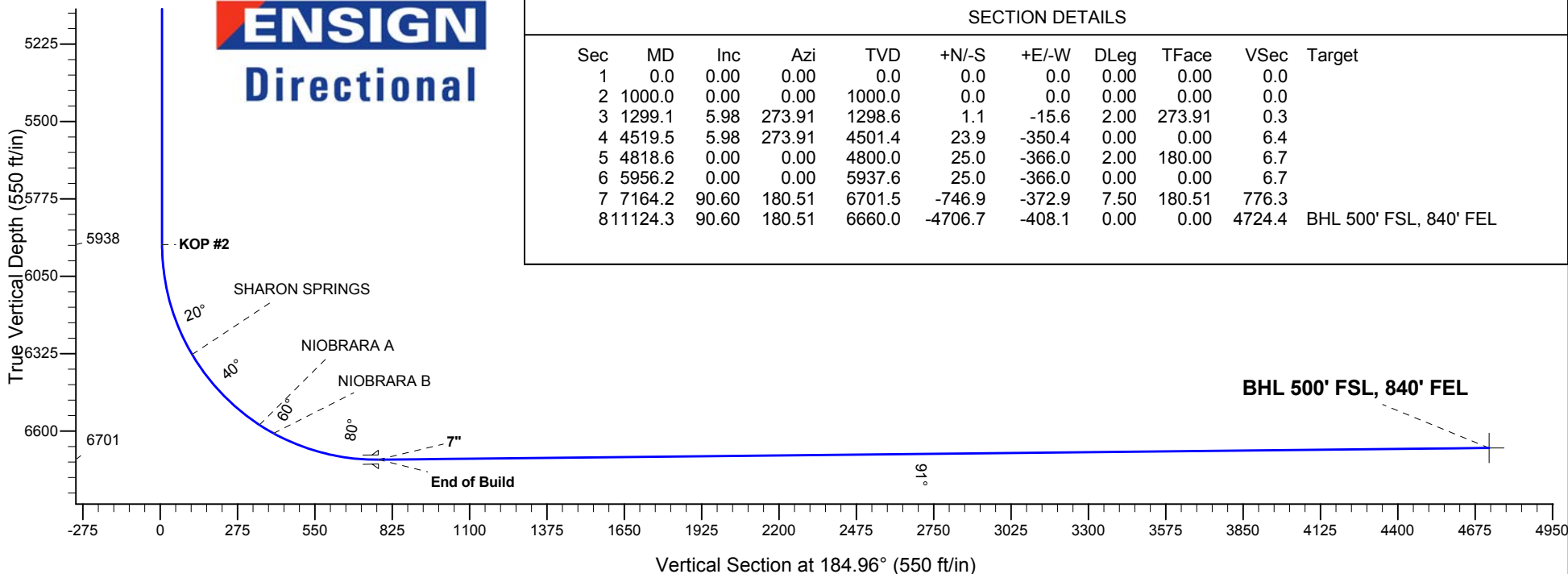
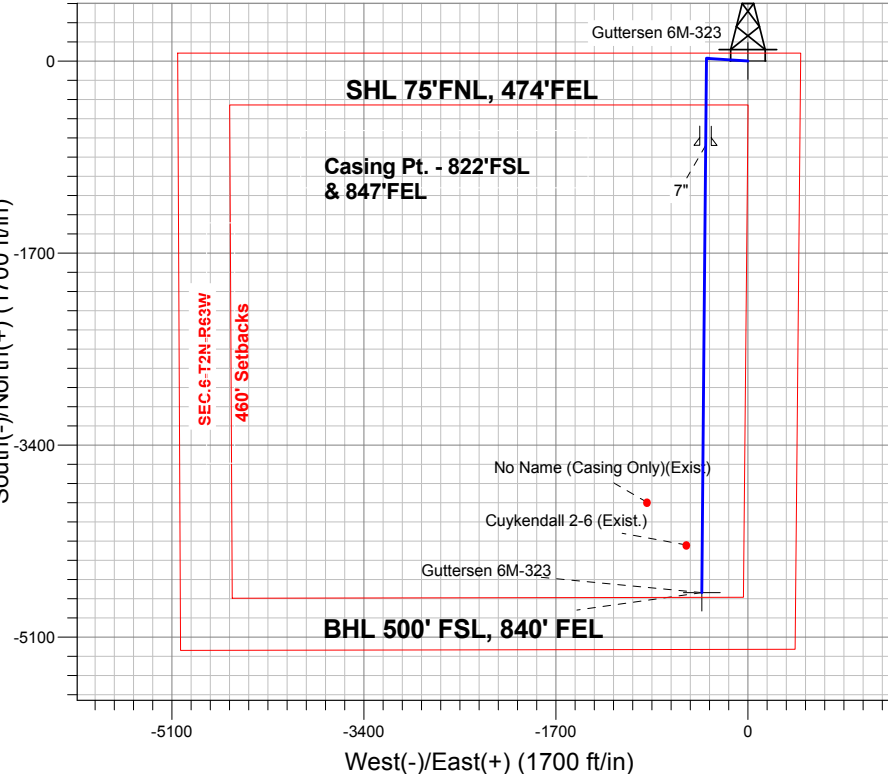
Magnetic Field
Strength: 52788.9snT
Dip Angle: 66.83°
Date: 11/14/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5937.6	5956.2	KOP #2
6701.5	7164.2	End of Build

Guttersen 6R-403 Pad Sec.6-T2N-R63W
Guttersen 6R-323
Plan #2 (11-11-13)
8:29, November 14 2013

South(-)/North(+) (1700 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	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	5956.2	0.00	0.00	5937.6	25.0	-366.0	0.00	0.00	6.7	
7	7164.2	90.60	180.51	6701.5	-746.9	-372.9	7.50	180.51	776.3	
8	11124.3	90.60	180.51	6660.0	-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-323

Wellbore #1

Plan: Plan #2 (11-11-13)

Standard Planning Report

14 November, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6R-323
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	North Reference:	True
Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (11-11-13)		

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

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

Well	Guttersen 6R-323					
Well Position	+N-S	0.0 ft	Northing:	1,308,061.76 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

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/14/2013	8.36	66.83	52,789

Design	Plan #2 (11-11-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	184.96

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
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	
5,956.2	0.00	0.00	5,937.6	25.0	-366.0	0.00	0.00	0.00	0.00	
7,164.2	90.60	180.51	6,701.5	-746.9	-372.9	7.50	7.50	0.00	180.51	
11,124.3	90.60	180.51	6,660.0	-4,706.7	-408.1	0.00	0.00	0.00	0.00	BHL 500' FSL, 840'

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Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	North Reference:	True
Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (11-11-13)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 75'FNL, 474'FEL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,100.0	2.00	273.91	1,100.0	0.1	-1.7	0.0	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
1,299.1	5.98	273.91	1,298.6	1.1	-15.6	0.3	2.00	2.00	0.00
1,300.0	5.98	273.91	1,299.5	1.1	-15.7	0.3	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
1,500.0	5.98	273.91	1,498.4	2.5	-36.5	0.7	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
1,700.0	5.98	273.91	1,697.3	3.9	-57.3	1.0	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
1,900.0	5.98	273.91	1,896.2	5.3	-78.0	1.4	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
2,100.0	5.98	273.91	2,095.1	6.8	-98.8	1.8	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
2,300.0	5.98	273.91	2,294.0	8.2	-119.6	2.2	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
2,500.0	5.98	273.91	2,492.9	9.6	-140.4	2.6	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
2,700.0	5.98	273.91	2,691.8	11.0	-161.2	3.0	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
2,900.0	5.98	273.91	2,890.7	12.4	-182.0	3.3	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
3,100.0	5.98	273.91	3,089.6	13.9	-202.8	3.7	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
3,300.0	5.98	273.91	3,288.6	15.3	-223.6	4.1	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
3,500.0	5.98	273.91	3,487.5	16.7	-244.4	4.5	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
3,673.5	5.98	273.91	3,660.0	17.9	-262.5	4.8	0.00	0.00	0.00
PARKMAN									
3,700.0	5.98	273.91	3,686.4	18.1	-265.2	4.9	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
3,900.0	5.98	273.91	3,885.3	19.5	-286.0	5.2	0.00	0.00	0.00
4,000.0	5.98	273.91	3,984.7	20.2	-296.4	5.4	0.00	0.00	0.00
4,100.0	5.98	273.91	4,084.2	21.0	-306.8	5.6	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
4,226.5	5.98	273.91	4,210.0	21.9	-320.0	5.9	0.00	0.00	0.00
SUSSEX									
4,300.0	5.98	273.91	4,283.1	22.4	-327.6	6.0	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

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Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	North Reference:	True
Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (11-11-13)		

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)
4,417.5	5.98	273.91	4,400.0	23.2	-339.8	6.2	0.00	0.00	0.00
SHANNON									
4,500.0	5.98	273.91	4,482.0	23.8	-348.4	6.4	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
4,600.0	4.37	273.91	4,581.6	24.4	-357.7	6.6	2.00	-2.00	0.00
4,700.0	2.37	273.91	4,681.4	24.8	-363.6	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
4,900.0	0.00	0.00	4,881.4	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
5,100.0	0.00	0.00	5,081.4	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
5,300.0	0.00	0.00	5,281.4	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
5,500.0	0.00	0.00	5,481.4	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
5,700.0	0.00	0.00	5,681.4	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
5,900.0	0.00	0.00	5,881.4	25.0	-366.0	6.7	0.00	0.00	0.00
5,956.2	0.00	0.00	5,937.6	25.0	-366.0	6.7	0.00	0.00	0.00
KOP #2									
6,000.0	3.29	180.51	5,981.4	23.7	-366.0	8.0	7.50	7.50	0.00
6,100.0	10.79	180.51	6,080.5	11.5	-366.1	20.2	7.50	7.50	0.00
6,200.0	18.29	180.51	6,177.3	-13.6	-366.3	45.2	7.50	7.50	0.00
6,300.0	25.79	180.51	6,269.9	-51.1	-366.7	82.5	7.50	7.50	0.00
6,366.0	30.74	180.51	6,328.0	-82.3	-367.0	113.7	7.50	7.50	0.00
SHARON SPRINGS									
6,400.0	33.29	180.51	6,356.8	-100.3	-367.1	131.7	7.50	7.50	0.00
6,500.0	40.79	180.51	6,436.6	-160.5	-367.6	191.7	7.50	7.50	0.00
6,600.0	48.29	180.51	6,507.8	-230.6	-368.3	261.5	7.50	7.50	0.00
6,700.0	55.79	180.51	6,569.3	-309.4	-369.0	340.1	7.50	7.50	0.00
6,715.7	56.96	180.51	6,578.0	-322.4	-369.1	353.1	7.50	7.50	0.00
NIOBRARA A									
6,774.2	61.35	180.51	6,608.0	-372.7	-369.5	403.2	7.50	7.50	0.00
NIOBRARA B									
6,800.0	63.29	180.51	6,620.0	-395.5	-369.7	426.0	7.50	7.50	0.00
6,900.0	70.79	180.51	6,659.0	-487.5	-370.6	517.7	7.50	7.50	0.00
7,000.0	78.29	180.51	6,685.6	-583.8	-371.4	613.7	7.50	7.50	0.00
7,100.0	85.79	180.51	6,699.4	-682.8	-372.3	712.4	7.50	7.50	0.00
7,164.2	90.60	180.51	6,701.5	-746.9	-372.9	776.3	7.50	7.50	0.00
End of Build - 7"									
7,200.0	90.60	180.51	6,701.1	-782.7	-373.2	812.0	0.00	0.00	0.00
7,300.0	90.60	180.51	6,700.0	-882.7	-374.1	911.7	0.00	0.00	0.00
7,400.0	90.60	180.51	6,699.0	-982.7	-375.0	1,011.4	0.00	0.00	0.00
7,500.0	90.60	180.51	6,698.0	-1,082.7	-375.8	1,111.1	0.00	0.00	0.00
7,600.0	90.60	180.51	6,696.9	-1,182.7	-376.7	1,210.8	0.00	0.00	0.00
7,700.0	90.60	180.51	6,695.9	-1,282.7	-377.6	1,310.5	0.00	0.00	0.00
7,800.0	90.60	180.51	6,694.8	-1,382.7	-378.5	1,410.2	0.00	0.00	0.00
7,900.0	90.60	180.51	6,693.8	-1,482.7	-379.4	1,509.9	0.00	0.00	0.00
8,000.0	90.60	180.51	6,692.7	-1,582.6	-380.3	1,609.6	0.00	0.00	0.00
8,100.0	90.60	180.51	6,691.7	-1,682.6	-381.2	1,709.3	0.00	0.00	0.00
8,200.0	90.60	180.51	6,690.6	-1,782.6	-382.1	1,809.0	0.00	0.00	0.00

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Wellbore:	Wellbore #1		
Design:	Plan #2 (11-11-13)		

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)
8,300.0	90.60	180.51	6,689.6	-1,882.6	-383.0	1,908.7	0.00	0.00	0.00
8,400.0	90.60	180.51	6,688.5	-1,982.6	-383.9	2,008.3	0.00	0.00	0.00
8,500.0	90.60	180.51	6,687.5	-2,082.6	-384.7	2,108.0	0.00	0.00	0.00
8,600.0	90.60	180.51	6,686.4	-2,182.6	-385.6	2,207.7	0.00	0.00	0.00
8,700.0	90.60	180.51	6,685.4	-2,282.6	-386.5	2,307.4	0.00	0.00	0.00
8,800.0	90.60	180.51	6,684.3	-2,382.6	-387.4	2,407.1	0.00	0.00	0.00
8,900.0	90.60	180.51	6,683.3	-2,482.6	-388.3	2,506.8	0.00	0.00	0.00
9,000.0	90.60	180.51	6,682.2	-2,582.5	-389.2	2,606.5	0.00	0.00	0.00
9,100.0	90.60	180.51	6,681.2	-2,682.5	-390.1	2,706.2	0.00	0.00	0.00
9,200.0	90.60	180.51	6,680.2	-2,782.5	-391.0	2,805.9	0.00	0.00	0.00
9,300.0	90.60	180.51	6,679.1	-2,882.5	-391.9	2,905.6	0.00	0.00	0.00
9,400.0	90.60	180.51	6,678.1	-2,982.5	-392.7	3,005.3	0.00	0.00	0.00
9,500.0	90.60	180.51	6,677.0	-3,082.5	-393.6	3,105.0	0.00	0.00	0.00
9,600.0	90.60	180.51	6,676.0	-3,182.5	-394.5	3,204.7	0.00	0.00	0.00
9,700.0	90.60	180.51	6,674.9	-3,282.5	-395.4	3,304.4	0.00	0.00	0.00
9,800.0	90.60	180.51	6,673.9	-3,382.5	-396.3	3,404.1	0.00	0.00	0.00
9,900.0	90.60	180.51	6,672.8	-3,482.5	-397.2	3,503.8	0.00	0.00	0.00
10,000.0	90.60	180.51	6,671.8	-3,582.5	-398.1	3,603.4	0.00	0.00	0.00
10,100.0	90.60	180.51	6,670.7	-3,682.4	-399.0	3,703.1	0.00	0.00	0.00
10,200.0	90.60	180.51	6,669.7	-3,782.4	-399.9	3,802.8	0.00	0.00	0.00
10,300.0	90.60	180.51	6,668.6	-3,882.4	-400.7	3,902.5	0.00	0.00	0.00
10,400.0	90.60	180.51	6,667.6	-3,982.4	-401.6	4,002.2	0.00	0.00	0.00
10,500.0	90.60	180.51	6,666.5	-4,082.4	-402.5	4,101.9	0.00	0.00	0.00
10,600.0	90.60	180.51	6,665.5	-4,182.4	-403.4	4,201.6	0.00	0.00	0.00
10,700.0	90.60	180.51	6,664.4	-4,282.4	-404.3	4,301.3	0.00	0.00	0.00
10,800.0	90.60	180.51	6,663.4	-4,382.4	-405.2	4,401.0	0.00	0.00	0.00
10,900.0	90.60	180.51	6,662.3	-4,482.4	-406.1	4,500.7	0.00	0.00	0.00
11,000.0	90.60	180.51	6,661.3	-4,582.4	-407.0	4,600.4	0.00	0.00	0.00
11,100.0	90.60	180.51	6,660.3	-4,682.3	-407.9	4,700.1	0.00	0.00	0.00
11,124.3	90.60	180.51	6,660.0	-4,706.7	-408.1	4,724.3	0.00	0.00	0.00
BHL 500' FSL, 840' FEL									

Targets

Target Name	- hit/miss target	- Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 75'FNL, 474'FEL	- plan hits target center	- Point	0.00	0.00	1.0	0.0	0.0	1,308,061.79	3,287,084.26	40.174460	-104.472610
BHL 500' FSL, 840' FI	- plan hits target center	- Point	0.00	0.00	6,660.0	-4,706.7	-408.1	1,303,350.87	3,286,730.76	40.161540	-104.474070

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,164.2	6,701.5	7"	7	8-3/4

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6R-323
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	North Reference:	True
Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (11-11-13)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,673.5	3,660.0	PARKMAN		0.00		
4,226.5	4,210.0	SUSSEX		0.00		
4,417.5	4,400.0	SHANNON		0.00		
6,366.0	6,328.0	SHARON SPRINGS		0.00		
6,715.7	6,578.0	NIOBRARA A		0.00		
6,774.2	6,608.0	NIOBRARA B		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.0	1,000.0	0.0	0.0	KOP #1	
5,956.2	5,937.6	25.0	-366.0	KOP #2	
7,164.2	6,701.5	-746.9	-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-323

Wellbore #1

Plan #2 (11-11-13)

Anticollision Report

14 November, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	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	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)			
9,500.0	6,677.0	6,664.0	6,664.0	61.0	133.3	91.01	-3,905.2	-894.4	963.1	769.2	193.93	4.966	2.358 CC, ES, SF	
9,600.0	6,676.0	6,663.0	6,663.0	62.9	133.3	90.88	-3,905.2	-894.4	878.8	683.0	195.78	4.488		
9,700.0	6,674.9	6,661.9	6,661.9	64.7	133.2	90.76	-3,905.2	-894.4	798.0	600.4	197.63	4.038		
9,800.0	6,673.9	6,660.9	6,660.9	66.6	133.2	90.64	-3,905.2	-894.4	722.1	522.6	199.49	3.620		
9,900.0	6,672.8	6,659.8	6,659.8	68.4	133.2	90.52	-3,905.2	-894.4	652.6	451.3	201.34	3.241		
10,000.0	6,671.8	6,658.8	6,658.8	70.3	133.2	90.40	-3,905.2	-894.4	592.0	388.8	203.20	2.914		
10,100.0	6,670.7	6,657.7	6,657.7	72.2	133.2	90.28	-3,905.2	-894.4	543.2	338.1	205.06	2.649		
10,200.0	6,669.7	6,656.7	6,656.7	74.0	133.1	90.15	-3,905.2	-894.4	509.5	302.6	206.92	2.463		
10,300.0	6,668.6	6,655.6	6,655.6	75.9	133.1	90.03	-3,905.2	-894.4	494.2	285.4	208.78	2.367		
10,327.2	6,668.3	6,655.3	6,655.3	76.4	133.1	90.00	-3,905.2	-894.4	493.4	284.1	209.29			
10,400.0	6,667.6	6,654.6	6,654.6	77.8	133.1	89.91	-3,905.2	-894.4	498.8	288.1	210.64	2.368		
10,500.0	6,666.5	6,653.5	6,653.5	79.7	133.1	89.79	-3,905.2	-894.4	522.8	310.3	212.50	2.460		
10,600.0	6,665.5	6,652.5	6,652.5	81.5	133.0	89.67	-3,905.2	-894.4	563.8	349.4	214.37	2.630		
10,700.0	6,664.4	6,651.4	6,651.4	83.4	133.0	89.55	-3,905.2	-894.4	618.4	402.2	216.23	2.860		
10,800.0	6,663.4	6,650.4	6,650.4	85.3	133.0	89.43	-3,905.2	-894.4	683.4	465.3	218.09	3.133		
10,900.0	6,662.3	6,649.3	6,649.3	87.2	133.0	89.30	-3,905.2	-894.4	756.0	536.0	219.96	3.437		
11,000.0	6,661.3	6,648.3	6,648.3	89.1	133.0	89.18	-3,905.2	-894.4	834.3	612.5	221.82	3.761		
11,100.0	6,660.3	6,647.3	6,647.3	91.0	132.9	89.06	-3,905.2	-894.4	916.8	693.2	223.69	4.099		
11,124.3	6,660.0	6,647.0	6,647.0	91.3	132.9	89.03	-3,905.2	-894.4	937.5	713.4	224.06	4.184		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersten 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersten 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersten 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersten 6R-403 Pad Sec.6-T2N-R63W - Guttersten 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	-89.97	-89.97	0.0	-30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	-89.97	-89.97	0.0	-30.7	30.7	30.5	0.22	136.762	
200.0	200.0	200.0	200.0	0.3	0.3	-89.97	-89.97	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	-89.89	-89.89	0.1	-32.4	32.5	31.4	1.11	29.202	
400.0	400.0	397.6	397.4	0.8	0.8	-89.71	-89.71	0.2	-37.5	37.6	36.1	1.56	24.172	
500.0	500.0	495.8	495.2	1.0	1.0	-89.49	-89.49	0.4	-46.0	46.2	44.2	2.03	22.791	
600.0	600.0	593.3	592.0	1.2	1.3	-89.29	-89.29	0.7	-57.7	58.2	55.7	2.53	22.981	
700.0	700.0	689.9	687.5	1.5	1.6	-89.14	-89.14	1.1	-72.5	73.6	70.5	3.08	23.894	
800.0	800.0	787.4	783.4	1.7	2.0	-89.02	-89.02	1.5	-90.0	91.5	87.8	3.67	24.952	
900.0	900.0	885.7	880.2	1.9	2.4	-88.94	-88.94	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	-88.88	-88.88	2.5	-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	-2.76	-2.76	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	-2.80	-2.80	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	-3.02	-3.02	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	-3.13	-3.13	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	-3.33	-3.33	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	-3.42	-3.42	6.2	-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	-3.50	-3.50	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	-3.65	-3.65	7.6	-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	9.0	-377.8	252.0	241.1	10.91	23.105	
2,500.0	2,492.9	2,477.8	2,445.9	6.0	8.9	-3.89	-3.89	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	-3.94	-3.94	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	-3.99	-3.99	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	-4.08	-4.08	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	-4.12	-4.12	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	-4.16	-4.16	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	-4.30	-4.30	14.1	-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	-4.33	-4.33	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	-4.36	-4.36	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	15.5	-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	-4.44	-4.44	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	16.9	-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	-4.49	-4.49	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	-4.56	-4.56	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	-4.53	-4.53	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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	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)	+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		20.6	-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	-90.22		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		23.8	-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		24.7	-988.1	625.0	598.1	26.94	23.205	
5,900.0	5,881.4	5,933.5	5,847.8	14.5	22.6	-90.01		24.9	-997.7	632.6	605.2	27.37	23.112	
5,956.2	5,937.6	6,005.5	5,919.8	14.6	22.7	-90.00		25.0	-1,000.6	634.9	607.3	27.61	22.994	
6,000.0	5,981.4	6,061.8	5,976.0	14.7	22.8	89.58		25.0	-1,001.6	635.7	607.9	27.79	22.875	
6,050.0	6,031.1	6,116.9	6,031.1	14.8	22.8	90.01		25.0	-1,001.7	635.7	607.7	27.97	22.727	
6,100.0	6,080.5	6,166.5	6,080.8	14.8	22.9	90.66		24.6	-1,001.7	635.8	607.6	28.15	22.588	
6,150.0	6,129.3	6,216.7	6,130.8	14.9	23.0	91.34		21.2	-1,001.8	635.9	607.6	28.32	22.455	
6,200.0	6,177.3	6,267.3	6,181.0	15.0	23.0	92.02		14.4	-1,001.8	636.1	607.6	28.50	22.321	
6,250.0	6,224.2	6,318.5	6,231.1	15.1	23.1	92.69		4.3	-1,001.9	636.4	607.7	28.69	22.184	
6,300.0	6,269.9	6,370.2	6,281.0	15.2	23.1	93.35		-9.4	-1,002.1	636.8	607.9	28.90	22.037	
6,350.0	6,314.2	6,422.5	6,330.4	15.3	23.2	94.01		-26.6	-1,002.2	637.3	608.2	29.13	21.879	
6,400.0	6,356.8	6,475.3	6,378.9	15.4	23.3	94.64		-47.4	-1,002.4	637.9	608.5	29.39	21.702	
6,450.0	6,397.7	6,528.7	6,426.4	15.6	23.3	95.26		-71.8	-1,002.6	638.5	608.8	29.69	21.505	
6,500.0	6,436.6	6,582.7	6,472.6	15.7	23.4	95.86		-99.7	-1,002.9	639.2	609.1	30.03	21.282	
6,550.0	6,473.4	6,637.2	6,517.1	15.9	23.5	96.44		-131.1	-1,003.2	639.9	609.4	30.42	21.032	
6,600.0	6,507.8	6,692.2	6,559.6	16.1	23.6	96.98		-166.0	-1,003.5	640.6	609.7	30.87	20.753	
6,650.0	6,539.9	6,747.8	6,599.9	16.3	23.8	97.50		-204.3	-1,003.9	641.4	610.0	31.37	20.442	
6,700.0	6,569.3	6,803.9	6,637.6	16.6	23.9	97.98		-245.7	-1,004.2	642.1	610.2	31.95	20.100	
6,750.0	6,596.0	6,860.4	6,672.5	16.9	24.1	98.43		-290.2	-1,004.7	642.8	610.2	32.59	19.726	
6,800.0	6,620.0	6,917.4	6,704.3	17.3	24.3	98.83		-337.6	-1,005.1	643.5	610.2	33.30	19.326	
6,850.0	6,641.0	6,974.9	6,732.6	17.7	24.6	99.20		-387.5	-1,005.6	644.2	610.1	34.08	18.901	
6,900.0	6,659.0	7,032.7	6,757.2	18.1	24.9	99.52		-439.8	-1,006.0	644.8	609.9	34.94	18.455	
6,950.0	6,673.9	7,090.8	6,777.9	18.6	25.2	99.79		-494.1	-1,006.5	645.3	609.5	35.86	17.994	
7,000.0	6,685.6	7,149.3	6,794.5	19.1	25.6	100.02		-550.2	-1,007.1	645.8	608.9	36.86	17.521	
7,050.0	6,694.1	7,208.0	6,806.8	19.7	26.0	100.19		-607.5	-1,007.6	646.1	608.2	37.92	17.039	
7,100.0	6,699.4	7,265.8	6,814.6	20.3	26.4	100.32		-664.8	-1,008.1	646.4	607.4	39.03	16.562	
7,150.0	6,701.5	7,315.7	6,819.8	20.9	26.9	100.55		-714.4	-1,008.6	647.0	606.9	40.07	16.147	
7,164.2	6,701.5	7,329.8	6,821.3	21.1	27.0	100.66		-728.4	-1,008.7	647.3	606.9	40.36	16.038	
7,200.0	6,701.1	7,369.2	6,824.9	21.6	27.4	101.00		-767.7	-1,009.1	648.0	606.7	41.27	15.702	
7,300.0	6,700.0	7,479.2	6,827.9	23.0	28.5	101.36		-877.6	-1,010.1	648.8	604.7	44.03	14.736	
7,400.0	6,699.0	7,579.2	6,827.3	24.4	29.6	101.41		-977.6	-1,011.0	648.9	602.0	46.87	13.845	
7,500.0	6,698.0	7,679.2	6,826.7	25.9	30.8	101.45		-1,077.6	-1,011.9	649.0	599.2	49.83	13.025	
7,600.0	6,696.9	7,779.2	6,826.2	27.4	32.1	101.49		-1,177.6	-1,012.8	649.1	596.2	52.89	12.274	
7,700.0	6,695.9	7,879.2	6,825.6	29.0	33.5	101.53		-1,277.6	-1,013.8	649.3	593.2	56.03	11.588	
7,800.0	6,694.8	7,979.2	6,825.0	30.7	34.9	101.57		-1,377.6	-1,014.7	649.4	590.1	59.24	10.961	
7,900.0	6,693.8	8,079.2	6,824.5	32.3	36.4	101.61		-1,477.5	-1,015.6	649.5	587.0	62.52	10.389	
8,000.0	6,692.7	8,179.2	6,823.9	34.0	37.9	101.65		-1,577.5	-1,016.5	649.6	583.8	65.84	9.867	
8,100.0	6,691.7	8,279.2	6,823.3	35.7	39.4	101.69		-1,677.5	-1,017.4	649.8	580.5	69.21	9.388	
8,200.0	6,690.6	8,379.2	6,822.7	37.5	41.0	101.73		-1,777.5	-1,018.4	649.9	577.3	72.61	8.950	
8,300.0	6,689.6	8,479.2	6,822.2	39.2	42.6	101.77		-1,877.5	-1,019.3	650.0	574.0	76.05	8.547	
8,400.0	6,688.5	8,579.2	6,821.6	41.0	44.2	101.81		-1,977.5	-1,020.2	650.1	570.6	79.51	8.177	
8,500.0	6,687.5	8,679.2	6,821.0	42.8	45.9	101.85		-2,077.5	-1,021.1	650.3	567.3	83.00	7.835	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	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		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
8,600.0	6,686.4	8,779.2	6,820.5	44.6	47.6	101.89	-2,177.5	-1,022.0	650.4	563.9	86.51	7.518	
8,700.0	6,685.4	8,879.2	6,819.9	46.4	49.2	101.93	-2,277.5	-1,023.0	650.5	560.5	90.03	7.225	
8,800.0	6,684.3	8,979.2	6,819.3	48.2	51.0	101.97	-2,377.5	-1,023.9	650.6	557.1	93.57	6.953	
8,900.0	6,683.3	9,079.2	6,818.8	50.0	52.7	102.01	-2,477.5	-1,024.8	650.8	553.6	97.13	6.700	
9,000.0	6,682.2	9,179.2	6,818.2	51.8	54.4	102.05	-2,577.5	-1,025.7	650.9	550.2	100.70	6.464	
9,100.0	6,681.2	9,279.2	6,817.6	53.6	56.2	102.09	-2,677.5	-1,026.6	651.0	546.8	104.28	6.243	
9,200.0	6,680.2	9,379.2	6,817.0	55.5	57.9	102.14	-2,777.5	-1,027.6	651.2	543.3	107.87	6.036	
9,300.0	6,679.1	9,479.2	6,816.5	57.3	59.7	102.18	-2,877.4	-1,028.5	651.3	539.8	111.47	5.843	
9,400.0	6,678.1	9,579.2	6,815.9	59.2	61.5	102.22	-2,977.4	-1,029.4	651.4	536.3	115.08	5.661	
9,500.0	6,677.0	9,679.2	6,815.3	61.0	63.2	102.26	-3,077.4	-1,030.3	651.6	532.9	118.70	5.489	
9,600.0	6,676.0	9,779.2	6,814.8	62.9	65.0	102.30	-3,177.4	-1,031.2	651.7	529.4	122.32	5.328	
9,700.0	6,674.9	9,879.2	6,814.2	64.7	66.8	102.34	-3,277.4	-1,032.2	651.8	525.9	125.94	5.175	
9,800.0	6,673.9	9,979.2	6,813.6	66.6	68.6	102.38	-3,377.4	-1,033.1	651.9	522.4	129.58	5.031	
9,900.0	6,672.8	10,079.1	6,813.0	68.4	70.5	102.42	-3,477.4	-1,034.0	652.1	518.9	133.21	4.895	
10,000.0	6,671.8	10,179.1	6,812.5	70.3	72.3	102.46	-3,577.4	-1,034.9	652.2	515.4	136.85	4.766	
10,100.0	6,670.7	10,279.1	6,811.9	72.2	74.1	102.50	-3,677.4	-1,035.8	652.3	511.8	140.50	4.643	
10,200.0	6,669.7	10,379.1	6,811.3	74.0	75.9	102.54	-3,777.4	-1,036.8	652.5	508.3	144.15	4.526	
10,300.0	6,668.6	10,479.1	6,810.8	75.9	77.8	102.58	-3,877.4	-1,037.7	652.6	504.8	147.80	4.416	
10,400.0	6,667.6	10,579.1	6,810.2	77.8	79.6	102.62	-3,977.4	-1,038.6	652.7	501.3	151.45	4.310	
10,500.0	6,666.5	10,679.1	6,809.6	79.7	81.4	102.66	-4,077.4	-1,039.5	652.9	497.8	155.11	4.209	
10,600.0	6,665.5	10,779.1	6,809.0	81.5	83.3	102.70	-4,177.4	-1,040.4	653.0	494.2	158.77	4.113	
10,700.0	6,664.4	10,879.1	6,808.5	83.4	85.1	102.74	-4,277.4	-1,041.4	653.1	490.7	162.43	4.021	
10,800.0	6,663.4	10,979.1	6,807.9	85.3	87.0	102.78	-4,377.3	-1,042.3	653.3	487.2	166.10	3.933	
10,900.0	6,662.3	11,079.1	6,807.3	87.2	88.8	102.82	-4,477.3	-1,043.2	653.4	483.7	169.76	3.849	
11,000.0	6,661.3	11,179.1	6,806.8	89.1	90.7	102.86	-4,577.3	-1,044.1	653.6	480.1	173.43	3.768	
11,100.0	6,660.3	11,279.1	6,806.2	91.0	92.5	102.90	-4,677.3	-1,045.0	653.7	476.6	177.09	3.691	
11,124.3	6,660.0	11,303.5	6,806.0	91.3	93.0	102.91	-4,701.7	-1,045.3	653.7	475.8	177.90	3.675 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-203 - 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	89.98	89.98	0.0	58.7	58.7	58.5	0.22	261.091	
100.0	100.0	100.0	100.0	0.1	0.1	89.98	89.98	0.0	58.7	58.7	58.5	0.22	261.091	
200.0	200.0	200.0	200.0	0.3	0.3	89.98	89.98	0.0	58.7	58.7	58.0	0.67	87.030	
300.0	300.0	300.0	300.0	0.6	0.6	89.98	89.98	0.0	58.7	58.7	57.6	1.12	52.218	
400.0	400.0	400.0	400.0	0.8	0.8	89.98	89.98	0.0	58.7	58.7	57.1	1.57	37.299	
500.0	500.0	500.0	500.0	1.0	1.0	89.98	89.98	0.0	58.7	58.7	56.7	2.02	29.010	
600.0	600.0	600.0	600.0	1.2	1.2	89.98	89.98	0.0	58.7	58.7	56.2	2.47	23.736	
700.0	700.0	700.0	700.0	1.5	1.5	89.98	89.98	0.0	58.7	58.7	55.8	2.92	20.084	
800.0	800.0	800.0	800.0	1.7	1.7	89.98	89.98	0.0	58.7	58.7	55.3	3.37	17.406	
900.0	900.0	900.0	900.0	1.9	1.9	89.98	89.98	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	89.98	89.98	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	176.04	176.04	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	175.96	175.96	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	175.87	175.87	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	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	175.73	175.73	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	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	175.65	175.65	5.0	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	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	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	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	175.57	175.57	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	175.56	175.56	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	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	175.54	175.54	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	175.53	175.53	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	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	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	175.51	175.51	15.0	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	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	175.50	175.50	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	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	175.49	175.49	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	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	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	175.48	175.48	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	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	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	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	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	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	9.7	175.67	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	175.74	175.74	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	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	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	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	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	176.03	25.0	272.7	630.4	610.2	20.16	31.276	
4,700.0	4,681.4	4,689.7	4,681.4	12.3	10.8	176.07	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	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	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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-203 - 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	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	4,889.6	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		
5,900.0	5,881.4	5,889.6	5,881.4	14.5	13.3	90.00	25.0	272.7	638.7	613.1	25.59	24.962		
5,956.2	5,937.6	5,946.2	5,937.8	14.6	13.4	90.21	22.6	272.7	638.7	612.9	25.81	24.747		
6,000.0	5,981.4	5,990.0	5,981.4	14.7	13.5	-89.99	18.0	272.6	638.7	612.7	25.97	24.592		
6,003.0	5,984.3	5,992.9	5,984.3	14.7	13.5	-89.97	17.5	272.6	638.7	612.7	25.98	24.582		
6,050.0	6,031.1	6,039.7	6,030.4	14.8	13.6	-89.64	9.6	272.5	638.7	612.5	26.15	24.427		
6,100.0	6,080.5	6,089.2	6,078.5	14.8	13.7	-89.29	-1.8	272.4	638.7	612.4	26.32	24.266		
6,150.0	6,129.3	6,138.4	6,125.5	14.9	13.8	-88.95	-16.3	272.3	638.8	612.3	26.50	24.105		
6,200.0	6,177.3	6,187.4	6,171.3	15.0	13.8	-88.61	-33.7	272.1	638.8	612.1	26.68	23.940		
6,250.0	6,224.2	6,236.1	6,215.7	15.1	13.9	-88.27	-53.8	272.0	638.9	612.0	26.89	23.764		
6,300.0	6,269.9	6,284.7	6,258.5	15.2	14.1	-87.95	-76.7	271.7	639.0	611.9	27.11	23.572		
6,350.0	6,314.2	6,333.0	6,299.6	15.3	14.2	-87.63	-102.1	271.5	639.2	611.8	27.36	23.358		
6,400.0	6,356.8	6,381.1	6,338.9	15.4	14.3	-87.33	-129.9	271.3	639.3	611.7	27.66	23.117		
6,450.0	6,397.7	6,429.0	6,376.2	15.6	14.5	-87.03	-160.0	271.0	639.5	611.5	27.99	22.843		
6,500.0	6,436.6	6,476.8	6,411.3	15.7	14.6	-86.75	-192.3	270.7	639.6	611.2	28.38	22.534		
6,550.0	6,473.4	6,524.3	6,444.3	15.9	14.9	-86.48	-226.5	270.4	639.8	611.0	28.84	22.186		
6,600.0	6,507.8	6,571.7	6,475.0	16.1	15.1	-86.23	-262.6	270.0	640.0	610.6	29.36	21.800		
6,650.0	6,539.9	6,619.0	6,503.3	16.3	15.4	-86.00	-300.5	269.7	640.1	610.2	29.94	21.377		
6,700.0	6,569.3	6,666.1	6,529.1	16.6	15.7	-85.78	-339.9	269.3	640.3	609.7	30.61	20.919		
6,750.0	6,596.0	6,713.1	6,552.4	16.9	16.1	-85.57	-380.6	269.0	640.5	609.1	31.35	20.430		
6,800.0	6,620.0	6,759.9	6,573.1	17.3	16.5	-85.39	-422.7	268.6	640.6	608.4	32.16	19.917		
6,850.0	6,641.0	6,806.7	6,591.2	17.7	16.9	-85.22	-465.8	268.2	640.7	607.7	33.06	19.384		
6,900.0	6,659.0	6,853.4	6,606.5	18.1	17.4	-85.07	-509.9	267.8	640.9	606.8	34.02	18.838		
6,950.0	6,673.9	6,900.0	6,619.1	18.6	17.9	-84.95	-554.8	267.4	641.0	605.9	35.05	18.286		
7,000.0	6,685.6	6,946.4	6,628.9	19.1	18.4	-84.84	-600.1	266.9	641.1	604.9	36.15	17.733		
7,050.0	6,694.1	6,992.9	6,636.0	19.7	19.0	-84.75	-646.1	266.5	641.1	603.8	37.31	17.185		
7,100.0	6,699.4	7,039.3	6,640.2	20.3	19.6	-84.69	-692.3	266.1	641.2	602.7	38.51	16.648		
7,150.0	6,701.5	7,085.7	6,641.6	20.9	20.2	-84.64	-738.6	265.7	641.2	601.5	39.77	16.125		
7,164.2	6,701.5	7,098.9	6,641.5	21.1	20.3	-84.64	-751.8	265.5	641.2	601.1	40.13	15.980		
7,200.0	6,701.1	7,134.4	6,640.8	21.6	20.8	-84.60	-787.3	265.2	641.3	600.2	41.10	15.601		
7,300.0	6,700.0	7,234.4	6,638.7	23.0	22.2	-84.51	-887.3	264.3	641.3	597.4	43.93	14.600		
7,400.0	6,699.0	7,334.4	6,636.6	24.4	23.7	-84.41	-987.2	263.4	641.4	594.5	46.89	13.679		
7,500.0	6,698.0	7,434.4	6,634.5	25.9	25.3	-84.32	-1,087.2	262.5	641.5	591.5	49.97	12.838		
7,600.0	6,696.9	7,534.4	6,632.3	27.4	26.8	-84.22	-1,187.2	261.5	641.6	588.4	53.14	12.074		
7,700.0	6,695.9	7,634.4	6,630.2	29.0	28.5	-84.13	-1,287.2	260.6	641.6	585.2	56.38	11.380		
7,800.0	6,694.8	7,734.4	6,628.1	30.7	30.1	-84.03	-1,387.1	259.7	641.7	582.0	59.70	10.749		
7,900.0	6,693.8	7,834.4	6,626.0	32.3	31.8	-83.94	-1,487.1	258.8	641.8	578.7	63.06	10.177		
8,000.0	6,692.7	7,934.4	6,623.9	34.0	33.5	-83.84	-1,587.1	257.9	641.9	575.4	66.48	9.656		
8,100.0	6,691.7	8,034.4	6,621.8	35.7	35.3	-83.75	-1,687.0	256.9	642.0	572.0	69.93	9.180		
8,200.0	6,690.6	8,134.3	6,619.7	37.5	37.0	-83.65	-1,787.0	256.0	642.0	568.6	73.41	8.746		
8,300.0	6,689.6	8,234.3	6,617.6	39.2	38.8	-83.56	-1,887.0	255.1	642.1	565.2	76.93	8.347		
8,400.0	6,688.5	8,334.3	6,615.4	41.0	40.6	-83.47	-1,986.9	254.2	642.2	561.8	80.46	7.981		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-203 - 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						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)		
8,500.0	6,687.5	8,434.3	6,613.3	42.8	42.4	-83.37	-2,086.9	253.3	642.3	558.3	84.02	7.644	
8,600.0	6,686.4	8,534.3	6,611.2	44.6	44.2	-83.28	-2,186.9	252.3	642.4	554.8	87.60	7.333	
8,700.0	6,685.4	8,634.3	6,609.1	46.4	46.0	-83.18	-2,286.8	251.4	642.5	551.3	91.19	7.045	
8,800.0	6,684.3	8,734.3	6,607.0	48.2	47.8	-83.09	-2,386.8	250.5	642.6	547.8	94.80	6.778	
8,900.0	6,683.3	8,834.3	6,604.9	50.0	49.6	-82.99	-2,486.8	249.6	642.7	544.3	98.42	6.530	
9,000.0	6,682.2	8,934.3	6,602.8	51.8	51.5	-82.90	-2,586.7	248.7	642.8	540.7	102.05	6.299	
9,100.0	6,681.2	9,034.3	6,600.7	53.6	53.3	-82.80	-2,686.7	247.8	642.9	537.2	105.69	6.083	
9,200.0	6,680.2	9,134.3	6,598.6	55.5	55.1	-82.71	-2,786.7	246.8	643.0	533.7	109.34	5.881	
9,300.0	6,679.1	9,234.3	6,596.4	57.3	57.0	-82.61	-2,886.6	245.9	643.1	530.1	113.00	5.691	
9,400.0	6,678.1	9,334.3	6,594.3	59.2	58.8	-82.52	-2,986.6	245.0	643.2	526.6	116.66	5.514	
9,500.0	6,677.0	9,434.3	6,592.2	61.0	60.7	-82.43	-3,086.6	244.1	643.3	523.0	120.33	5.347	
9,600.0	6,676.0	9,534.3	6,590.1	62.9	62.6	-82.33	-3,186.5	243.2	643.4	519.4	124.00	5.189	
9,700.0	6,674.9	9,634.3	6,588.0	64.7	64.4	-82.24	-3,286.5	242.2	643.6	515.9	127.68	5.041	
9,800.0	6,673.9	9,734.3	6,585.9	66.6	66.3	-82.14	-3,386.5	241.3	643.7	512.3	131.36	4.900	
9,900.0	6,672.8	9,834.2	6,583.8	68.4	68.1	-82.05	-3,486.4	240.4	643.8	508.7	135.04	4.767	
10,000.0	6,671.8	9,934.2	6,581.7	70.3	70.0	-81.95	-3,586.4	239.5	643.9	505.2	138.73	4.641	
10,100.0	6,670.7	10,034.2	6,579.6	72.2	71.9	-81.86	-3,686.4	238.6	644.0	501.6	142.42	4.522	
10,200.0	6,669.7	10,134.2	6,577.4	74.0	73.8	-81.77	-3,786.3	237.6	644.1	498.0	146.11	4.409	
10,300.0	6,668.6	10,234.2	6,575.3	75.9	75.6	-81.67	-3,886.3	236.7	644.3	494.5	149.81	4.301	
10,400.0	6,667.6	10,334.2	6,573.2	77.8	77.5	-81.58	-3,986.3	235.8	644.4	490.9	153.50	4.198	
10,500.0	6,666.5	10,434.2	6,571.1	79.7	79.4	-81.48	-4,086.2	234.9	644.5	487.3	157.20	4.100	
10,600.0	6,665.5	10,534.2	6,569.0	81.5	81.3	-81.39	-4,186.2	234.0	644.7	483.8	160.90	4.007	
10,700.0	6,664.4	10,634.2	6,566.9	83.4	83.2	-81.30	-4,286.2	233.0	644.8	480.2	164.60	3.917	
10,800.0	6,663.4	10,734.2	6,564.8	85.3	85.1	-81.20	-4,386.2	232.1	644.9	476.6	168.30	3.832	
10,900.0	6,662.3	10,834.2	6,562.7	87.2	86.9	-81.11	-4,486.1	231.2	645.0	473.1	172.00	3.750	
11,000.0	6,661.3	10,934.2	6,560.5	89.1	88.8	-81.01	-4,586.1	230.3	645.2	469.5	175.70	3.672	
11,100.0	6,660.3	11,034.2	6,558.4	91.0	90.7	-80.92	-4,686.1	229.4	645.3	465.9	179.40	3.597	
11,124.3	6,660.0	11,054.8	6,558.0	91.3	91.1	-80.90	-4,706.7	229.2	645.4	465.2	180.15	3.582 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-443 - 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	89.97	89.97	0.0	27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	89.97	89.97	0.0	27.9	27.9	27.7	0.22	124.329	
200.0	200.0	200.0	200.0	0.3	0.3	89.97	89.97	0.0	27.9	27.9	27.3	0.67	41.443	
300.0	300.0	300.0	300.0	0.6	0.6	89.97	89.97	0.0	27.9	27.9	26.8	1.12	24.866	
400.0	400.0	400.0	400.0	0.8	0.8	89.97	89.97	0.0	27.9	27.9	26.4	1.57	17.761	
500.0	500.0	500.0	500.0	1.0	1.0	89.97	89.97	0.0	27.9	27.9	25.9	2.02	13.814	
600.0	600.0	600.0	600.0	1.2	1.2	89.97	89.97	0.0	27.9	27.9	25.5	2.47	11.303	
700.0	700.0	700.0	700.0	1.5	1.5	89.97	89.97	0.0	27.9	27.9	25.0	2.92	9.564	
800.0	800.0	800.0	800.0	1.7	1.7	89.97	89.97	0.0	27.9	27.9	24.6	3.37	8.289	
900.0	900.0	900.0	900.0	1.9	1.9	89.97	89.97	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	89.97	89.97	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	176.29	176.29	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	176.84	176.84	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	177.46	177.46	0.0	27.9	43.5	38.0	5.55	7.847	
1,400.0	1,398.9	1,398.9	1,398.9	3.0	3.0	177.95	177.95	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	178.28	178.28	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	178.52	178.52	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	178.70	178.70	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	178.84	178.84	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	178.96	178.96	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	179.05	179.05	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	179.13	179.13	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	179.19	179.19	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	179.25	179.25	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	179.30	179.30	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	179.34	179.34	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	179.38	179.38	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	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	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	179.47	179.47	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	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	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	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	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	178.27	178.27	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	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	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	176.65	176.65	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	176.12	176.12	18.8	-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	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	175.39	175.39	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	175.29	175.29	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	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	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	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	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	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	175.97	175.97	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	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	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	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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersten 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersten 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersten 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersten 6R-403 Pad Sec.6-T2N-R63W - Guttersten 6U-443 - 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)	+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	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	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	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	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	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	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	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	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	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	90.00	25.0	-48.1	317.9	292.7	25.27	12.583	
5,900.0	5,881.4	5,884.6	5,881.4	14.5	12.9	90.00	90.00	25.0	-48.1	317.9	292.2	25.70	12.371	
5,956.2	5,937.6	5,940.8	5,937.6	14.6	13.0	90.00	90.00	25.0	-48.1	317.9	292.0	25.95	12.255	
6,000.0	5,981.4	5,984.6	5,981.4	14.7	13.1	-90.74	90.00	25.0	-48.1	318.0	291.8	26.13	12.169	
6,050.0	6,031.1	6,034.4	6,031.1	14.8	13.2	-91.54	90.00	25.0	-48.1	318.0	291.7	26.33	12.078	
6,100.0	6,080.5	6,084.4	6,081.1	14.8	13.4	-92.83	90.00	24.5	-48.1	318.3	291.8	26.53	11.998	
6,150.0	6,129.3	6,135.1	6,131.7	14.9	13.4	-94.18	90.00	21.1	-48.1	318.8	292.1	26.71	11.934	
6,200.0	6,177.3	6,186.3	6,182.5	15.0	13.5	-95.51	90.00	14.2	-48.1	319.4	292.6	26.89	11.882	
6,250.0	6,224.2	6,238.1	6,233.2	15.1	13.6	-96.82	90.00	3.8	-48.2	320.3	293.2	27.05	11.837	
6,300.0	6,269.9	6,290.5	6,283.6	15.2	13.7	-98.11	90.00	-10.2	-48.4	321.2	294.0	27.22	11.799	
6,350.0	6,314.2	6,343.4	6,333.5	15.3	13.8	-99.35	90.00	-27.8	-48.5	322.3	294.9	27.40	11.765	
6,400.0	6,356.8	6,396.8	6,382.5	15.4	13.9	-100.56	90.00	-49.1	-48.7	323.5	295.9	27.58	11.731	
6,450.0	6,397.7	6,450.9	6,430.4	15.6	14.0	-101.72	90.00	-74.0	-48.9	324.8	297.1	27.78	11.692	
6,500.0	6,436.6	6,505.4	6,476.9	15.7	14.1	-102.82	90.00	-102.6	-49.2	326.2	298.2	28.02	11.643	
6,550.0	6,473.4	6,560.5	6,521.7	15.9	14.3	-103.86	90.00	-134.7	-49.4	327.6	299.3	28.29	11.580	
6,600.0	6,507.8	6,616.2	6,564.4	16.1	14.5	-104.84	90.00	-170.3	-49.8	329.1	300.4	28.62	11.496	
6,650.0	6,539.9	6,672.3	6,604.8	16.3	14.7	-105.74	90.00	-209.3	-50.1	330.5	301.5	29.02	11.388	
6,700.0	6,569.3	6,728.9	6,642.5	16.6	15.0	-106.58	90.00	-251.5	-50.5	331.9	302.4	29.50	11.251	
6,750.0	6,596.0	6,786.0	6,677.2	16.9	15.3	-107.33	90.00	-296.8	-50.9	333.2	303.1	30.07	11.082	
6,800.0	6,620.0	6,843.5	6,708.7	17.3	15.7	-108.00	90.00	-344.9	-51.3	334.4	303.7	30.74	10.880	
6,850.0	6,641.0	6,901.3	6,736.6	17.7	16.2	-108.58	90.00	-395.5	-51.7	335.6	304.0	31.52	10.646	
6,900.0	6,659.0	6,959.5	6,760.8	18.1	16.7	-109.07	90.00	-448.4	-52.2	336.5	304.1	32.42	10.381	
6,950.0	6,673.9	7,018.0	6,780.9	18.6	17.3	-109.48	90.00	-503.3	-52.7	337.4	303.9	33.43	10.091	
7,000.0	6,685.6	7,076.7	6,796.9	19.1	17.9	-109.79	90.00	-559.7	-53.2	338.0	303.4	34.55	9.782	
7,050.0	6,694.1	7,135.5	6,808.5	19.7	18.6	-110.00	90.00	-617.4	-53.7	338.5	302.7	35.79	9.458	
7,100.0	6,699.4	7,191.9	6,815.5	20.3	19.3	-110.14	90.00	-673.4	-54.1	338.8	301.7	37.08	9.136	
7,150.0	6,701.5	7,241.8	6,820.7	20.9	19.9	-110.56	90.00	-723.0	-54.6	339.9	301.6	38.32	8.870	
7,164.2	6,701.5	7,256.4	6,822.2	21.1	20.1	-110.77	90.00	-737.5	-54.7	340.4	301.8	38.67	8.804	
7,200.0	6,701.1	7,296.4	6,825.5	21.6	20.7	-111.35	90.00	-777.3	-55.1	341.6	302.1	39.52	8.645	
7,300.0	6,700.0	7,405.3	6,827.8	23.0	22.2	-111.89	90.00	-886.2	-56.0	342.8	300.6	42.17	8.128	
7,400.0	6,699.0	7,505.3	6,827.3	24.4	23.7	-111.96	90.00	-986.2	-56.9	343.0	298.0	44.93	7.633	
7,500.0	6,698.0	7,605.3	6,826.7	25.9	25.2	-112.03	90.00	-1,086.2	-57.8	343.2	295.4	47.80	7.180	
7,600.0	6,696.9	7,705.3	6,826.1	27.4	26.8	-112.11	90.00	-1,186.2	-58.6	343.4	292.6	50.75	6.766	
7,700.0	6,695.9	7,805.3	6,825.5	29.0	28.4	-112.18	90.00	-1,286.2	-59.5	343.6	289.8	53.77	6.389	
7,800.0	6,694.8	7,905.3	6,825.0	30.7	30.0	-112.25	90.00	-1,386.2	-60.4	343.7	286.9	56.86	6.046	
7,900.0	6,693.8	8,005.3	6,824.4	32.3	31.7	-112.32	90.00	-1,486.2	-61.3	343.9	283.9	60.00	5.733	
8,000.0	6,692.7	8,105.3	6,823.8	34.0	33.4	-112.40	90.00	-1,586.2	-62.1	344.1	281.0	63.17	5.447	
8,100.0	6,691.7	8,205.3	6,823.3	35.7	35.2	-112.47	90.00	-1,686.2	-63.0	344.3	277.9	66.39	5.186	
8,200.0	6,690.6	8,305.3	6,822.7	37.5	36.9	-112.54	90.00	-1,786.2	-63.9	344.5	274.9	69.64	4.948	
8,300.0	6,689.6	8,405.3	6,822.1	39.2	38.7	-112.61	90.00	-1,886.2	-64.8	344.7	271.8	72.91	4.728	
8,400.0	6,688.5	8,505.3	6,821.5	41.0	40.5	-112.68	90.00	-1,986.1	-65.6	344.9	268.7	76.20	4.526	
8,500.0	6,687.5	8,605.3	6,821.0	42.8	42.3	-112.76	90.00	-2,086.1	-66.5	345.1	265.6	79.51	4.340	

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

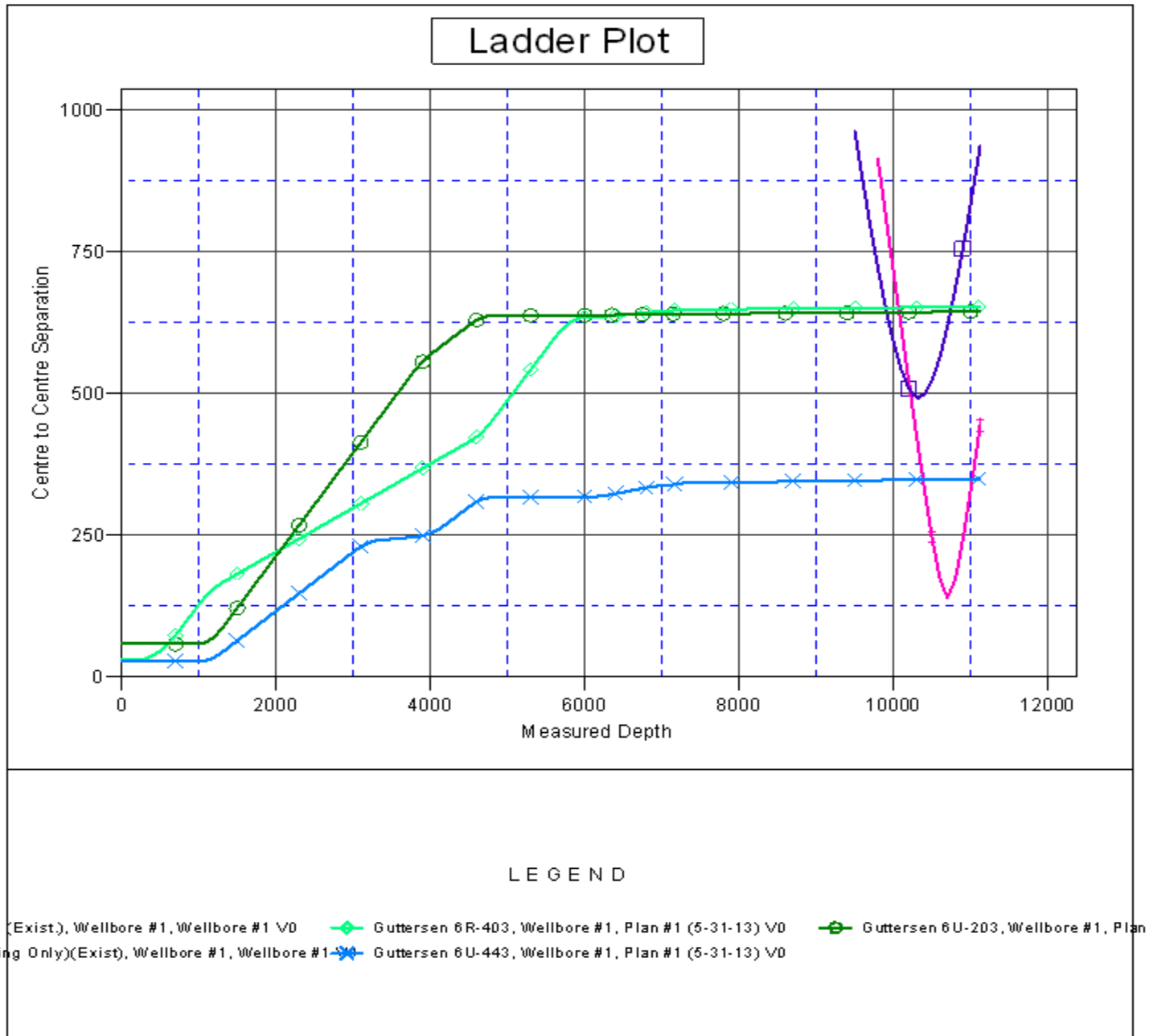
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6U-443 - 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,600.0	6,686.4	8,705.3	6,820.4	44.6	44.1	-112.83	-112.83	-2,186.1	-67.4	345.3	262.5	82.84	4.168	
8,700.0	6,685.4	8,805.3	6,819.8	46.4	45.9	-112.90	-112.90	-2,286.1	-68.3	345.5	259.3	86.19	4.009	
8,800.0	6,684.3	8,905.3	6,819.3	48.2	47.7	-112.97	-112.97	-2,386.1	-69.1	345.7	256.2	89.54	3.861	
8,900.0	6,683.3	9,005.3	6,818.7	50.0	49.5	-113.04	-113.04	-2,486.1	-70.0	345.9	253.0	92.91	3.723	
9,000.0	6,682.2	9,105.3	6,818.1	51.8	51.3	-113.11	-113.11	-2,586.1	-70.9	346.1	249.8	96.28	3.595	
9,100.0	6,681.2	9,205.3	6,817.5	53.6	53.2	-113.19	-113.19	-2,686.1	-71.8	346.3	246.6	99.66	3.475	
9,200.0	6,680.2	9,305.3	6,817.0	55.5	55.0	-113.26	-113.26	-2,786.1	-72.6	346.5	243.5	103.05	3.362	
9,300.0	6,679.1	9,405.3	6,816.4	57.3	56.9	-113.33	-113.33	-2,886.1	-73.5	346.7	240.3	106.45	3.257	
9,400.0	6,678.1	9,505.3	6,815.8	59.2	58.7	-113.40	-113.40	-2,986.1	-74.4	346.9	237.1	109.84	3.158	
9,500.0	6,677.0	9,605.3	6,815.3	61.0	60.6	-113.47	-113.47	-3,086.1	-75.3	347.1	233.9	113.25	3.065	
9,600.0	6,676.0	9,705.3	6,814.7	62.9	62.4	-113.54	-113.54	-3,186.1	-76.1	347.3	230.7	116.65	2.977	
9,700.0	6,674.9	9,805.3	6,814.1	64.7	64.3	-113.61	-113.61	-3,286.1	-77.0	347.5	227.5	120.06	2.894	
9,800.0	6,673.9	9,905.3	6,813.5	66.6	66.2	-113.68	-113.68	-3,386.1	-77.9	347.7	224.2	123.47	2.816	
9,900.0	6,672.8	10,005.3	6,813.0	68.4	68.0	-113.76	-113.76	-3,486.0	-78.8	347.9	221.0	126.89	2.742	
10,000.0	6,671.8	10,105.3	6,812.4	70.3	69.9	-113.83	-113.83	-3,586.0	-79.6	348.1	217.8	130.30	2.672	
10,100.0	6,670.7	10,205.3	6,811.8	72.2	71.8	-113.90	-113.90	-3,686.0	-80.5	348.3	214.6	133.72	2.605	
10,200.0	6,669.7	10,305.3	6,811.3	74.0	73.7	-113.97	-113.97	-3,786.0	-81.4	348.5	211.4	137.13	2.542	
10,300.0	6,668.6	10,405.3	6,810.7	75.9	75.5	-114.04	-114.04	-3,886.0	-82.3	348.7	208.2	140.55	2.481	
10,400.0	6,667.6	10,505.3	6,810.1	77.8	77.4	-114.11	-114.11	-3,986.0	-83.1	349.0	205.0	143.97	2.424	
10,500.0	6,666.5	10,605.3	6,809.5	79.7	79.3	-114.18	-114.18	-4,086.0	-84.0	349.2	201.8	147.38	2.369	
10,600.0	6,665.5	10,705.3	6,809.0	81.5	81.2	-114.25	-114.25	-4,186.0	-84.9	349.4	198.6	150.80	2.317	
10,700.0	6,664.4	10,805.3	6,808.4	83.4	83.1	-114.32	-114.32	-4,286.0	-85.8	349.6	195.4	154.22	2.267	
10,800.0	6,663.4	10,905.3	6,807.8	85.3	85.0	-114.39	-114.39	-4,386.0	-86.6	349.8	192.2	157.63	2.219	
10,900.0	6,662.3	11,005.3	6,807.3	87.2	86.8	-114.46	-114.46	-4,486.0	-87.5	350.0	188.9	161.05	2.173	
11,000.0	6,661.3	11,105.3	6,806.7	89.1	88.7	-114.53	-114.53	-4,586.0	-88.4	350.2	185.7	164.46	2.129	
11,100.0	6,660.3	11,205.3	6,806.1	91.0	90.6	-114.60	-114.60	-4,686.0	-89.3	350.4	182.6	167.85	2.088	
11,124.3	6,660.0	11,226.0	6,806.0	91.3	90.9	-114.61	-114.61	-4,706.7	-89.4	350.5	182.0	168.47	2.080 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Guttersen 6R-323	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (11-11-13)	Offset TVD Reference:	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-323
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.66°



Coordinates are relative to: Guttersten 6R-323
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.66°

