

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Guttersen 6U-443**

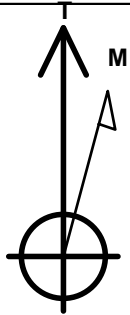
Surface Location: Guttersen 6R-403 Pad Sec.6-T2N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4836.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1308062.10	3287112.20	40.174460	-104.472510	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500' FSL, 520' FEL	6806.0	-4706.7	-117.4	Point



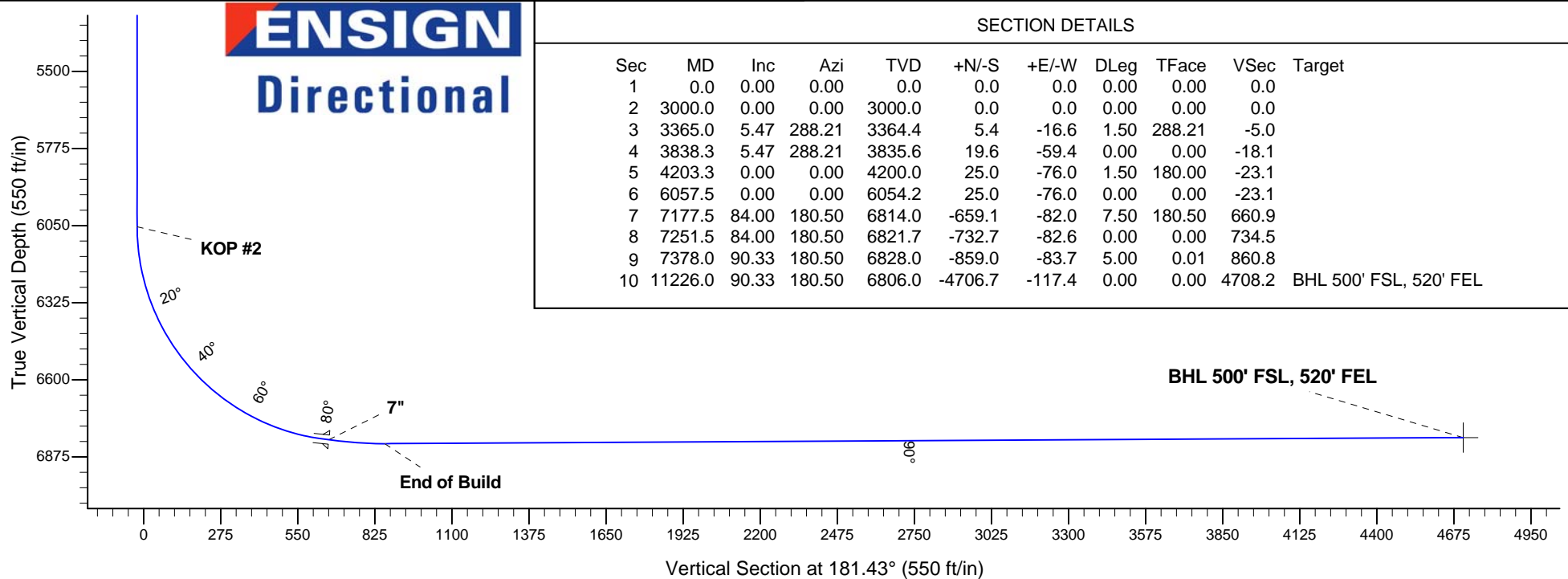
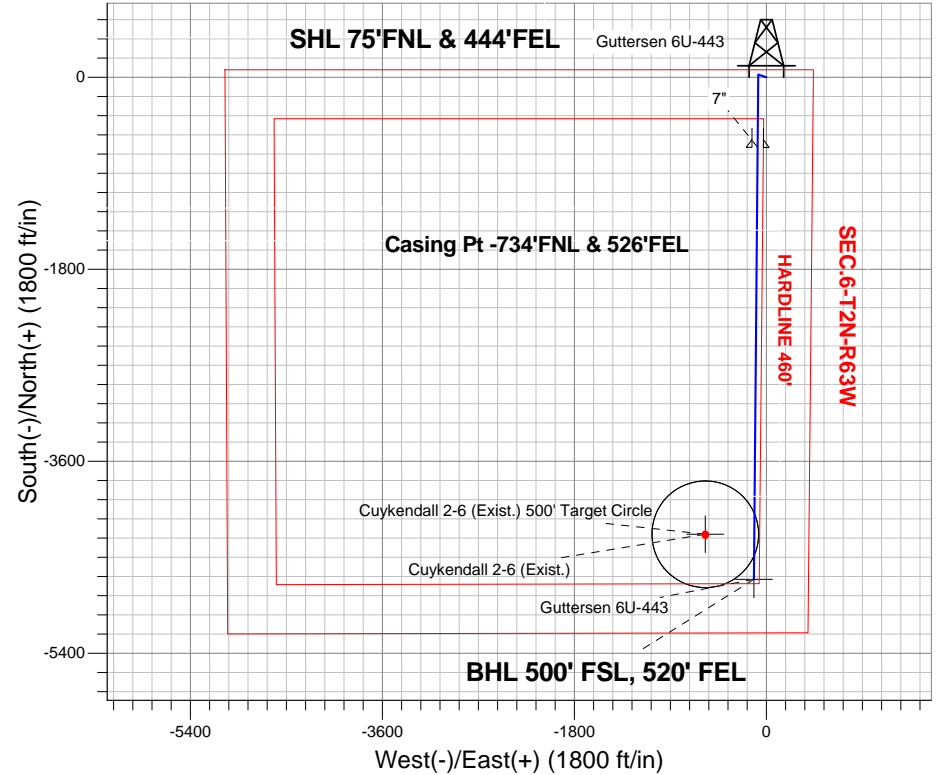
Azimuths to True North
Magnetic North: 8.42°

Magnetic Field
Strength: 52837.2snT
Dip Angle: 66.85°
Date: 5/31/2013
Model: IGRF2010

Guttersen 6R-403 Pad Sec.6-T2N-R63W
Guttersen 6U-443
Plan #1 (5-31-13)
16:00, May 31 2013

ANNOTATIONS

TVD	MD	Annotation
3000.0	3000.0	KOP #1
6054.2	6057.5	KOP #2
6828.0	7378.0	End of Build





Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T2N-R63W

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

Guttersen 6U-443

Wellbore #1

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

Standard Planning Report

31 May, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

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:		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 6U-443					
Well Position	+N-S	0.0 ft	Northing:	1,308,062.10 ft	Latitude:	40.174460
	+E-W	58.7 ft	Easting:	3,287,112.20 ft	Longitude:	-104.472510
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	5/31/2013	8.42	66.85	52,837

Design	Plan #1 (5-31-13)			
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	181.43

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	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,365.0	5.47	288.21	3,364.4	5.4	-16.6	1.50	1.50	0.00	288.21	
3,838.3	5.47	288.21	3,835.6	19.6	-59.4	0.00	0.00	0.00	0.00	
4,203.3	0.00	0.00	4,200.0	25.0	-76.0	1.50	-1.50	0.00	180.00	
6,057.5	0.00	0.00	6,054.2	25.0	-76.0	0.00	0.00	0.00	0.00	
7,177.5	84.00	180.50	6,814.0	-659.1	-82.0	7.50	7.50	0.00	180.50	
7,251.5	84.00	180.50	6,821.7	-732.7	-82.6	0.00	0.00	0.00	0.00	
7,378.0	90.33	180.50	6,828.0	-859.0	-83.7	5.00	5.00	0.00	0.01	
11,226.0	90.33	180.50	6,806.0	-4,706.7	-117.4	0.00	0.00	0.00	0.00	BHL 500' FSL, 520'

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
14.0	0.00	0.00	14.0	0.0	0.0	0.0	0.00	0.00	0.00
Cuykendall 2-6 (Exist.) 500' Target Circle									
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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	0.00
1,520.0	0.00	0.00	1,520.0	0.0	0.0	0.0	0.00	0.00	0.00
1,560.0	0.00	0.00	1,560.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,640.0	0.00	0.00	1,640.0	0.0	0.0	0.0	0.00	0.00	0.00
1,680.0	0.00	0.00	1,680.0	0.0	0.0	0.0	0.00	0.00	0.00
1,720.0	0.00	0.00	1,720.0	0.0	0.0	0.0	0.00	0.00	0.00
1,760.0	0.00	0.00	1,760.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,840.0	0.00	0.00	1,840.0	0.0	0.0	0.0	0.00	0.00	0.00
1,880.0	0.00	0.00	1,880.0	0.0	0.0	0.0	0.00	0.00	0.00
1,920.0	0.00	0.00	1,920.0	0.0	0.0	0.0	0.00	0.00	0.00
1,960.0	0.00	0.00	1,960.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
2,040.0	0.00	0.00	2,040.0	0.0	0.0	0.0	0.00	0.00	0.00
2,080.0	0.00	0.00	2,080.0	0.0	0.0	0.0	0.00	0.00	0.00
2,120.0	0.00	0.00	2,120.0	0.0	0.0	0.0	0.00	0.00	0.00
2,160.0	0.00	0.00	2,160.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,240.0	0.00	0.00	2,240.0	0.0	0.0	0.0	0.00	0.00	0.00
2,280.0	0.00	0.00	2,280.0	0.0	0.0	0.0	0.00	0.00	0.00
2,320.0	0.00	0.00	2,320.0	0.0	0.0	0.0	0.00	0.00	0.00
2,360.0	0.00	0.00	2,360.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,440.0	0.00	0.00	2,440.0	0.0	0.0	0.0	0.00	0.00	0.00
2,480.0	0.00	0.00	2,480.0	0.0	0.0	0.0	0.00	0.00	0.00
2,520.0	0.00	0.00	2,520.0	0.0	0.0	0.0	0.00	0.00	0.00
2,560.0	0.00	0.00	2,560.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,640.0	0.00	0.00	2,640.0	0.0	0.0	0.0	0.00	0.00	0.00
2,680.0	0.00	0.00	2,680.0	0.0	0.0	0.0	0.00	0.00	0.00
2,720.0	0.00	0.00	2,720.0	0.0	0.0	0.0	0.00	0.00	0.00
2,760.0	0.00	0.00	2,760.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,840.0	0.00	0.00	2,840.0	0.0	0.0	0.0	0.00	0.00	0.00
2,880.0	0.00	0.00	2,880.0	0.0	0.0	0.0	0.00	0.00	0.00
2,920.0	0.00	0.00	2,920.0	0.0	0.0	0.0	0.00	0.00	0.00
2,960.0	0.00	0.00	2,960.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
3,040.0	0.60	288.21	3,040.0	0.1	-0.2	-0.1	1.50	1.50	0.00
3,080.0	1.20	288.21	3,080.0	0.3	-0.8	-0.2	1.50	1.50	0.00
3,120.0	1.80	288.21	3,120.0	0.6	-1.8	-0.5	1.50	1.50	0.00
3,160.0	2.40	288.21	3,160.0	1.0	-3.2	-1.0	1.50	1.50	0.00
3,200.0	3.00	288.21	3,199.9	1.6	-5.0	-1.5	1.50	1.50	0.00
3,240.0	3.60	288.21	3,239.8	2.4	-7.2	-2.2	1.50	1.50	0.00
3,280.0	4.20	288.21	3,279.7	3.2	-9.7	-3.0	1.50	1.50	0.00
3,320.0	4.80	288.21	3,319.6	4.2	-12.7	-3.9	1.50	1.50	0.00
3,360.0	5.40	288.21	3,359.5	5.3	-16.1	-4.9	1.50	1.50	0.00
3,365.0	5.47	288.21	3,364.4	5.4	-16.6	-5.0	1.50	1.50	0.00
3,400.0	5.47	288.21	3,399.3	6.5	-19.7	-6.0	0.00	0.00	0.00
3,440.0	5.47	288.21	3,439.1	7.7	-23.4	-7.1	0.00	0.00	0.00
3,480.0	5.47	288.21	3,478.9	8.9	-27.0	-8.2	0.00	0.00	0.00
3,520.0	5.47	288.21	3,518.7	10.1	-30.6	-9.3	0.00	0.00	0.00
3,560.0	5.47	288.21	3,558.6	11.3	-34.2	-10.4	0.00	0.00	0.00
3,600.0	5.47	288.21	3,598.4	12.5	-37.9	-11.5	0.00	0.00	0.00
3,640.0	5.47	288.21	3,638.2	13.6	-41.5	-12.6	0.00	0.00	0.00
3,680.0	5.47	288.21	3,678.0	14.8	-45.1	-13.7	0.00	0.00	0.00
3,720.0	5.47	288.21	3,717.8	16.0	-48.7	-14.8	0.00	0.00	0.00
3,760.0	5.47	288.21	3,757.6	17.2	-52.4	-15.9	0.00	0.00	0.00
3,800.0	5.47	288.21	3,797.5	18.4	-56.0	-17.0	0.00	0.00	0.00
3,838.3	5.47	288.21	3,835.6	19.6	-59.4	-18.1	0.00	0.00	0.00
3,840.0	5.45	288.21	3,837.3	19.6	-59.6	-18.1	1.50	-1.50	0.00
3,880.0	4.85	288.21	3,877.1	20.7	-63.0	-19.2	1.50	-1.50	0.00
3,920.0	4.25	288.21	3,917.0	21.7	-66.0	-20.1	1.50	-1.50	0.00
3,960.0	3.65	288.21	3,956.9	22.6	-68.6	-20.9	1.50	-1.50	0.00
4,000.0	3.05	288.21	3,996.8	23.3	-70.9	-21.5	1.50	-1.50	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
4,040.0	2.45	288.21	4,036.8	23.9	-72.7	-22.1	1.50	-1.50	0.00
4,080.0	1.85	288.21	4,076.8	24.4	-74.1	-22.5	1.50	-1.50	0.00
4,120.0	1.25	288.21	4,116.7	24.7	-75.1	-22.8	1.50	-1.50	0.00
4,160.0	0.65	288.21	4,156.7	24.9	-75.8	-23.0	1.50	-1.50	0.00
4,200.0	0.05	288.21	4,196.7	25.0	-76.0	-23.1	1.50	-1.50	0.00
4,203.3	0.00	0.00	4,200.0	25.0	-76.0	-23.1	1.50	-1.50	0.00
4,240.0	0.00	0.00	4,236.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,280.0	0.00	0.00	4,276.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,320.0	0.00	0.00	4,316.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,360.0	0.00	0.00	4,356.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,400.0	0.00	0.00	4,396.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,440.0	0.00	0.00	4,436.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,480.0	0.00	0.00	4,476.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,520.0	0.00	0.00	4,516.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,560.0	0.00	0.00	4,556.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,600.0	0.00	0.00	4,596.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,640.0	0.00	0.00	4,636.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,680.0	0.00	0.00	4,676.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,720.0	0.00	0.00	4,716.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,760.0	0.00	0.00	4,756.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,800.0	0.00	0.00	4,796.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,840.0	0.00	0.00	4,836.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,880.0	0.00	0.00	4,876.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,920.0	0.00	0.00	4,916.7	25.0	-76.0	-23.1	0.00	0.00	0.00
4,960.0	0.00	0.00	4,956.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,000.0	0.00	0.00	4,996.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,040.0	0.00	0.00	5,036.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,080.0	0.00	0.00	5,076.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,120.0	0.00	0.00	5,116.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,160.0	0.00	0.00	5,156.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,200.0	0.00	0.00	5,196.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,240.0	0.00	0.00	5,236.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,280.0	0.00	0.00	5,276.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,320.0	0.00	0.00	5,316.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,360.0	0.00	0.00	5,356.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,396.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,440.0	0.00	0.00	5,436.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,480.0	0.00	0.00	5,476.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,520.0	0.00	0.00	5,516.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,560.0	0.00	0.00	5,556.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,596.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,640.0	0.00	0.00	5,636.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,680.0	0.00	0.00	5,676.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,720.0	0.00	0.00	5,716.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,760.0	0.00	0.00	5,756.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,796.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,840.0	0.00	0.00	5,836.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,880.0	0.00	0.00	5,876.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,920.0	0.00	0.00	5,916.7	25.0	-76.0	-23.1	0.00	0.00	0.00
5,960.0	0.00	0.00	5,956.7	25.0	-76.0	-23.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,996.7	25.0	-76.0	-23.1	0.00	0.00	0.00
6,040.0	0.00	0.00	6,036.7	25.0	-76.0	-23.1	0.00	0.00	0.00
6,057.5	0.00	0.00	6,054.2	25.0	-76.0	-23.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
KOP #2									
6,080.0	1.69	180.50	6,076.7	24.7	-76.0	-22.8	7.50	7.50	0.00
6,120.0	4.69	180.50	6,116.7	22.4	-76.0	-20.5	7.50	7.50	0.00
6,160.0	7.69	180.50	6,156.4	18.1	-76.1	-16.2	7.50	7.50	0.00
6,200.0	10.69	180.50	6,195.9	11.7	-76.1	-9.8	7.50	7.50	0.00
6,240.0	13.69	180.50	6,235.0	3.3	-76.2	-1.4	7.50	7.50	0.00
6,280.0	16.69	180.50	6,273.6	-7.2	-76.3	9.1	7.50	7.50	0.00
6,320.0	19.69	180.50	6,311.6	-19.7	-76.4	21.6	7.50	7.50	0.00
6,360.0	22.69	180.50	6,348.9	-34.1	-76.5	36.0	7.50	7.50	0.00
6,400.0	25.69	180.50	6,385.4	-50.5	-76.7	52.4	7.50	7.50	0.00
6,440.0	28.69	180.50	6,420.9	-68.8	-76.8	70.7	7.50	7.50	0.00
6,480.0	31.69	180.50	6,455.5	-88.9	-77.0	90.8	7.50	7.50	0.00
6,520.0	34.69	180.50	6,489.0	-110.8	-77.2	112.7	7.50	7.50	0.00
6,560.0	37.69	180.50	6,521.3	-134.4	-77.4	136.3	7.50	7.50	0.00
6,600.0	40.69	180.50	6,552.3	-159.7	-77.6	161.5	7.50	7.50	0.00
6,640.0	43.69	180.50	6,581.9	-186.5	-77.8	188.4	7.50	7.50	0.00
6,680.0	46.69	180.50	6,610.1	-214.9	-78.1	216.8	7.50	7.50	0.00
6,720.0	49.69	180.50	6,636.8	-244.7	-78.4	246.6	7.50	7.50	0.00
6,760.0	52.69	180.50	6,661.8	-275.9	-78.6	277.7	7.50	7.50	0.00
6,800.0	55.69	180.50	6,685.2	-308.3	-78.9	310.2	7.50	7.50	0.00
6,840.0	58.69	180.50	6,706.9	-341.9	-79.2	343.8	7.50	7.50	0.00
6,880.0	61.69	180.50	6,726.8	-376.6	-79.5	378.5	7.50	7.50	0.00
6,920.0	64.69	180.50	6,744.8	-412.3	-79.8	414.2	7.50	7.50	0.00
6,960.0	67.69	180.50	6,761.0	-448.9	-80.1	450.7	7.50	7.50	0.00
7,000.0	70.69	180.50	6,775.2	-486.3	-80.5	488.1	7.50	7.50	0.00
7,040.0	73.69	180.50	6,787.4	-524.3	-80.8	526.2	7.50	7.50	0.00
7,080.0	76.69	180.50	6,797.6	-563.0	-81.1	564.9	7.50	7.50	0.00
7,120.0	79.69	180.50	6,805.8	-602.2	-81.5	604.0	7.50	7.50	0.00
7,160.0	82.69	180.50	6,812.0	-641.7	-81.8	643.5	7.50	7.50	0.00
7,177.5	84.00	180.50	6,814.0	-659.1	-82.0	660.9	7.50	7.50	0.00
7"									
7,200.0	84.00	180.50	6,816.3	-681.4	-82.2	683.3	0.00	0.00	0.00
7,240.0	84.00	180.50	6,820.5	-721.2	-82.5	723.1	0.00	0.00	0.00
7,251.5	84.00	180.50	6,821.7	-732.7	-82.6	734.5	0.00	0.00	0.00
7,280.0	85.42	180.50	6,824.4	-761.0	-82.9	762.9	5.00	5.00	0.00
7,320.0	87.42	180.50	6,826.8	-801.0	-83.2	802.8	5.00	5.00	0.00
7,360.0	89.42	180.50	6,827.9	-840.9	-83.6	842.8	5.00	5.00	0.00
7,378.0	90.32	180.50	6,828.0	-858.9	-83.7	860.8	5.00	5.00	0.00
End of Build									
7,400.0	90.33	180.50	6,827.9	-880.9	-83.9	882.7	0.01	0.01	0.00
7,440.0	90.33	180.50	6,827.6	-920.9	-84.3	922.7	0.00	0.00	0.00
7,480.0	90.33	180.50	6,827.4	-960.9	-84.6	962.7	0.00	0.00	0.00
7,520.0	90.33	180.50	6,827.2	-1,000.9	-85.0	1,002.7	0.00	0.00	0.00
7,560.0	90.33	180.50	6,826.9	-1,040.9	-85.3	1,042.7	0.00	0.00	0.00
7,600.0	90.33	180.50	6,826.7	-1,080.9	-85.7	1,082.7	0.00	0.00	0.00
7,640.0	90.33	180.50	6,826.5	-1,120.9	-86.0	1,122.7	0.00	0.00	0.00
7,680.0	90.33	180.50	6,826.3	-1,160.9	-86.4	1,162.7	0.00	0.00	0.00
7,720.0	90.33	180.50	6,826.0	-1,200.9	-86.7	1,202.7	0.00	0.00	0.00
7,760.0	90.33	180.50	6,825.8	-1,240.9	-87.1	1,242.7	0.00	0.00	0.00
7,800.0	90.33	180.50	6,825.6	-1,280.9	-87.4	1,282.7	0.00	0.00	0.00
7,840.0	90.33	180.50	6,825.3	-1,320.9	-87.8	1,322.7	0.00	0.00	0.00
7,880.0	90.33	180.50	6,825.1	-1,360.9	-88.1	1,362.7	0.00	0.00	0.00
7,920.0	90.33	180.50	6,824.9	-1,400.9	-88.5	1,402.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	90.33	180.50	6,824.7	-1,440.9	-88.8	1,442.7	0.00	0.00	0.00
8,000.0	90.33	180.50	6,824.4	-1,480.9	-89.2	1,482.7	0.00	0.00	0.00
8,040.0	90.33	180.50	6,824.2	-1,520.9	-89.5	1,522.7	0.00	0.00	0.00
8,080.0	90.33	180.50	6,824.0	-1,560.9	-89.9	1,562.6	0.00	0.00	0.00
8,120.0	90.33	180.50	6,823.7	-1,600.9	-90.2	1,602.6	0.00	0.00	0.00
8,160.0	90.33	180.50	6,823.5	-1,640.9	-90.6	1,642.6	0.00	0.00	0.00
8,200.0	90.33	180.50	6,823.3	-1,680.9	-90.9	1,682.6	0.00	0.00	0.00
8,240.0	90.33	180.50	6,823.1	-1,720.9	-91.3	1,722.6	0.00	0.00	0.00
8,280.0	90.33	180.50	6,822.8	-1,760.9	-91.6	1,762.6	0.00	0.00	0.00
8,320.0	90.33	180.50	6,822.6	-1,800.9	-92.0	1,802.6	0.00	0.00	0.00
8,360.0	90.33	180.50	6,822.4	-1,840.9	-92.3	1,842.6	0.00	0.00	0.00
8,400.0	90.33	180.50	6,822.1	-1,880.9	-92.7	1,882.6	0.00	0.00	0.00
8,440.0	90.33	180.50	6,821.9	-1,920.9	-93.0	1,922.6	0.00	0.00	0.00
8,480.0	90.33	180.50	6,821.7	-1,960.9	-93.4	1,962.6	0.00	0.00	0.00
8,520.0	90.33	180.50	6,821.5	-2,000.9	-93.7	2,002.6	0.00	0.00	0.00
8,560.0	90.33	180.50	6,821.2	-2,040.9	-94.1	2,042.6	0.00	0.00	0.00
8,600.0	90.33	180.50	6,821.0	-2,080.9	-94.4	2,082.6	0.00	0.00	0.00
8,640.0	90.33	180.50	6,820.8	-2,120.9	-94.8	2,122.6	0.00	0.00	0.00
8,680.0	90.33	180.50	6,820.5	-2,160.9	-95.1	2,162.6	0.00	0.00	0.00
8,720.0	90.33	180.50	6,820.3	-2,200.9	-95.5	2,202.6	0.00	0.00	0.00
8,760.0	90.33	180.50	6,820.1	-2,240.9	-95.8	2,242.5	0.00	0.00	0.00
8,800.0	90.33	180.50	6,819.9	-2,280.9	-96.2	2,282.5	0.00	0.00	0.00
8,840.0	90.33	180.50	6,819.6	-2,320.9	-96.5	2,322.5	0.00	0.00	0.00
8,880.0	90.33	180.50	6,819.4	-2,360.8	-96.9	2,362.5	0.00	0.00	0.00
8,920.0	90.33	180.50	6,819.2	-2,400.8	-97.2	2,402.5	0.00	0.00	0.00
8,960.0	90.33	180.50	6,818.9	-2,440.8	-97.6	2,442.5	0.00	0.00	0.00
9,000.0	90.33	180.50	6,818.7	-2,480.8	-97.9	2,482.5	0.00	0.00	0.00
9,040.0	90.33	180.50	6,818.5	-2,520.8	-98.3	2,522.5	0.00	0.00	0.00
9,080.0	90.33	180.50	6,818.3	-2,560.8	-98.6	2,562.5	0.00	0.00	0.00
9,120.0	90.33	180.50	6,818.0	-2,600.8	-99.0	2,602.5	0.00	0.00	0.00
9,160.0	90.33	180.50	6,817.8	-2,640.8	-99.3	2,642.5	0.00	0.00	0.00
9,200.0	90.33	180.50	6,817.6	-2,680.8	-99.7	2,682.5	0.00	0.00	0.00
9,240.0	90.33	180.50	6,817.3	-2,720.8	-100.0	2,722.5	0.00	0.00	0.00
9,280.0	90.33	180.50	6,817.1	-2,760.8	-100.4	2,762.5	0.00	0.00	0.00
9,320.0	90.33	180.50	6,816.9	-2,800.8	-100.7	2,802.5	0.00	0.00	0.00
9,360.0	90.33	180.50	6,816.7	-2,840.8	-101.1	2,842.5	0.00	0.00	0.00
9,400.0	90.33	180.50	6,816.4	-2,880.8	-101.4	2,882.5	0.00	0.00	0.00
9,440.0	90.33	180.50	6,816.2	-2,920.8	-101.8	2,922.4	0.00	0.00	0.00
9,480.0	90.33	180.50	6,816.0	-2,960.8	-102.1	2,962.4	0.00	0.00	0.00
9,520.0	90.33	180.50	6,815.7	-3,000.8	-102.5	3,002.4	0.00	0.00	0.00
9,560.0	90.33	180.50	6,815.5	-3,040.8	-102.8	3,042.4	0.00	0.00	0.00
9,600.0	90.33	180.50	6,815.3	-3,080.8	-103.2	3,082.4	0.00	0.00	0.00
9,640.0	90.33	180.50	6,815.1	-3,120.8	-103.5	3,122.4	0.00	0.00	0.00
9,680.0	90.33	180.50	6,814.8	-3,160.8	-103.9	3,162.4	0.00	0.00	0.00
9,720.0	90.33	180.50	6,814.6	-3,200.8	-104.2	3,202.4	0.00	0.00	0.00
9,760.0	90.33	180.50	6,814.4	-3,240.8	-104.6	3,242.4	0.00	0.00	0.00
9,800.0	90.33	180.50	6,814.1	-3,280.8	-104.9	3,282.4	0.00	0.00	0.00
9,840.0	90.33	180.50	6,813.9	-3,320.8	-105.3	3,322.4	0.00	0.00	0.00
9,880.0	90.33	180.50	6,813.7	-3,360.8	-105.6	3,362.4	0.00	0.00	0.00
9,920.0	90.33	180.50	6,813.5	-3,400.8	-106.0	3,402.4	0.00	0.00	0.00
9,960.0	90.33	180.50	6,813.2	-3,440.8	-106.3	3,442.4	0.00	0.00	0.00
10,000.0	90.33	180.50	6,813.0	-3,480.8	-106.7	3,482.4	0.00	0.00	0.00
10,040.0	90.33	180.50	6,812.8	-3,520.8	-107.0	3,522.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	90.33	180.50	6,812.5	-3,560.8	-107.4	3,562.4	0.00	0.00	0.00
10,120.0	90.33	180.50	6,812.3	-3,600.8	-107.7	3,602.3	0.00	0.00	0.00
10,160.0	90.33	180.50	6,812.1	-3,640.8	-108.1	3,642.3	0.00	0.00	0.00
10,200.0	90.33	180.50	6,811.9	-3,680.8	-108.4	3,682.3	0.00	0.00	0.00
10,240.0	90.33	180.50	6,811.6	-3,720.8	-108.8	3,722.3	0.00	0.00	0.00
10,280.0	90.33	180.50	6,811.4	-3,760.8	-109.1	3,762.3	0.00	0.00	0.00
10,320.0	90.33	180.50	6,811.2	-3,800.8	-109.5	3,802.3	0.00	0.00	0.00
10,360.0	90.33	180.50	6,810.9	-3,840.8	-109.8	3,842.3	0.00	0.00	0.00
10,400.0	90.33	180.50	6,810.7	-3,880.8	-110.2	3,882.3	0.00	0.00	0.00
10,440.0	90.33	180.50	6,810.5	-3,920.8	-110.5	3,922.3	0.00	0.00	0.00
10,480.0	90.33	180.50	6,810.3	-3,960.8	-110.9	3,962.3	0.00	0.00	0.00
10,520.0	90.33	180.50	6,810.0	-4,000.8	-111.2	4,002.3	0.00	0.00	0.00
10,560.0	90.33	180.50	6,809.8	-4,040.8	-111.6	4,042.3	0.00	0.00	0.00
10,600.0	90.33	180.50	6,809.6	-4,080.8	-111.9	4,082.3	0.00	0.00	0.00
10,640.0	90.33	180.50	6,809.3	-4,120.8	-112.3	4,122.3	0.00	0.00	0.00
10,680.0	90.33	180.50	6,809.1	-4,160.8	-112.6	4,162.3	0.00	0.00	0.00
10,720.0	90.33	180.50	6,808.9	-4,200.7	-113.0	4,202.3	0.00	0.00	0.00
10,760.0	90.33	180.50	6,808.7	-4,240.7	-113.3	4,242.3	0.00	0.00	0.00
10,800.0	90.33	180.50	6,808.4	-4,280.7	-113.7	4,282.2	0.00	0.00	0.00
10,840.0	90.33	180.50	6,808.2	-4,320.7	-114.0	4,322.2	0.00	0.00	0.00
10,880.0	90.33	180.50	6,808.0	-4,360.7	-114.4	4,362.2	0.00	0.00	0.00
10,920.0	90.33	180.50	6,807.7	-4,400.7	-114.7	4,402.2	0.00	0.00	0.00
10,960.0	90.33	180.50	6,807.5	-4,440.7	-115.1	4,442.2	0.00	0.00	0.00
11,000.0	90.33	180.50	6,807.3	-4,480.7	-115.4	4,482.2	0.00	0.00	0.00
11,040.0	90.33	180.50	6,807.1	-4,520.7	-115.8	4,522.2	0.00	0.00	0.00
11,080.0	90.33	180.50	6,806.8	-4,560.7	-116.1	4,562.2	0.00	0.00	0.00
11,120.0	90.33	180.50	6,806.6	-4,600.7	-116.5	4,602.2	0.00	0.00	0.00
11,160.0	90.33	180.50	6,806.4	-4,640.7	-116.8	4,642.2	0.00	0.00	0.00
11,200.0	90.33	180.50	6,806.1	-4,680.7	-117.2	4,682.2	0.00	0.00	0.00
11,226.0	90.33	180.50	6,806.0	-4,706.7	-117.4	4,708.2	0.00	0.00	0.00

BHL 500' FSL, 520' FEL

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 500' FSL, 520' FI	- plan hits target center	0.00	0.00	6,806.0	-4,706.7	-117.4	1,303,354.55	3,287,049.36	40.161540	-104.472930
Cuykendall 2-6 (Exist.)	- plan misses target center by 4322.3ft at 14.0ft MD (14.0 TVD, 0.0 N, 0.0 E)	0.00	0.00	14.0	-4,284.1	-573.0	1,303,771.82	3,286,588.93	40.162700	-104.474560

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,177.5	6,814.0	7"	7	8-3/4

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,000.0	3,000.0	0.0	0.0	KOP #1
6,057.5	6,054.2	25.0	-76.0	KOP #2
7,378.0	6,828.0	-858.9	-83.7	End of Build



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T2N-R63W

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

Guttersen 6U-443

Wellbore #1

Plan #1 (5-31-13)

Anticollision Report

31 May, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date 5/31/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,225.5	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)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.6-T2N-R63W						
Cuykendall 2-6 (Exist.) - Wellbore #1 - Wellbore #1	10,807.4	6,795.4	459.3	240.2	2.097	CC, ES, SF
Guttersen 6R-403 Pad Sec.6-T2N-R63W						
Guttersen 6R-223 - Wellbore #1 - Plan #1 (5-31-13)	1,000.0	1,000.0	27.9	23.7	6.544	CC, ES
Guttersen 6R-223 - Wellbore #1 - Plan #1 (5-31-13)	11,226.0	11,057.1	403.7	253.3	2.684	SF
Guttersen 6R-403 - Wellbore #1 - Plan #1 (5-31-13)	200.0	200.0	58.7	58.0	87.030	CC, ES
Guttersen 6R-403 - Wellbore #1 - Plan #1 (5-31-13)	11,226.0	11,299.7	955.8	773.3	5.237	SF
Guttersen 6U-203 - Wellbore #1 - Plan #1 (1-18-13)	1,000.0	1,000.0	30.7	26.5	7.198	CC, ES
Guttersen 6U-203 - Wellbore #1 - Plan #1 (1-18-13)	11,226.0	11,052.5	403.8	253.9	2.693	SF

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				Minimum Separation	Separation Factor	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)		
0.0	0.0	0.0	0.0	0.0	0.0	-172.38	-4,284.1	-573.0	4,322.3			
100.0	100.0	87.0	87.0	0.1	1.7	-172.38	-4,284.1	-573.0	4,322.3	4,320.4	1.85	2,333.107
200.0	200.0	187.0	187.0	0.3	3.7	-172.38	-4,284.1	-573.0	4,322.3	4,318.2	4.08	1,060.070
300.0	300.0	287.0	287.0	0.6	5.7	-172.38	-4,284.1	-573.0	4,322.3	4,316.0	6.30	685.845
400.0	400.0	387.0	387.0	0.8	7.7	-172.38	-4,284.1	-573.0	4,322.3	4,313.7	8.53	506.900
500.0	500.0	487.0	487.0	1.0	9.7	-172.38	-4,284.1	-573.0	4,322.3	4,311.5	10.75	402.010
600.0	600.0	587.0	587.0	1.2	11.7	-172.38	-4,284.1	-573.0	4,322.3	4,309.3	12.98	333.087
700.0	700.0	687.0	687.0	1.5	13.7	-172.38	-4,284.1	-573.0	4,322.3	4,307.1	15.20	284.338
800.0	800.0	787.0	787.0	1.7	15.7	-172.38	-4,284.1	-573.0	4,322.3	4,304.8	17.43	248.037
900.0	900.0	887.0	887.0	1.9	17.7	-172.38	-4,284.1	-573.0	4,322.3	4,302.6	19.65	219.955
1,000.0	1,000.0	987.0	987.0	2.1	19.7	-172.38	-4,284.1	-573.0	4,322.3	4,300.4	21.88	197.585
1,100.0	1,100.0	1,087.0	1,087.0	2.4	21.7	-172.38	-4,284.1	-573.0	4,322.3	4,298.2	24.10	179.346
1,200.0	1,200.0	1,187.0	1,187.0	2.6	23.7	-172.38	-4,284.1	-573.0	4,322.3	4,295.9	26.32	164.189
1,300.0	1,300.0	1,287.0	1,287.0	2.8	25.7	-172.38	-4,284.1	-573.0	4,322.3	4,293.7	28.55	151.394
1,400.0	1,400.0	1,387.0	1,387.0	3.0	27.7	-172.38	-4,284.1	-573.0	4,322.3	4,291.5	30.77	140.450
1,500.0	1,500.0	1,487.0	1,487.0	3.3	29.7	-172.38	-4,284.1	-573.0	4,322.3	4,289.3	33.00	130.981
1,600.0	1,600.0	1,587.0	1,587.0	3.5	31.7	-172.38	-4,284.1	-573.0	4,322.3	4,287.0	35.22	122.708
1,700.0	1,700.0	1,687.0	1,687.0	3.7	33.7	-172.38	-4,284.1	-573.0	4,322.3	4,284.8	37.45	115.418

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	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 (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		
1,800.0	1,800.0	1,787.0	1,787.0	3.9	35.7	-172.38	-4,284.1	-573.0	4,322.3	4,282.6	39.67	108.946		
1,900.0	1,900.0	1,887.0	1,887.0	4.2	37.7	-172.38	-4,284.1	-573.0	4,322.3	4,280.4	41.90	103.161		
2,000.0	2,000.0	1,987.0	1,987.0	4.4	39.7	-172.38	-4,284.1	-573.0	4,322.3	4,278.1	44.12	97.959		
2,100.0	2,100.0	2,087.0	2,087.0	4.6	41.7	-172.38	-4,284.1	-573.0	4,322.3	4,275.9	46.35	93.257		
2,200.0	2,200.0	2,187.0	2,187.0	4.8	43.7	-172.38	-4,284.1	-573.0	4,322.3	4,273.7	48.57	88.986		
2,300.0	2,300.0	2,287.0	2,287.0	5.1	45.7	-172.38	-4,284.1	-573.0	4,322.3	4,271.5	50.80	85.088		
2,400.0	2,400.0	2,387.0	2,387.0	5.3	47.7	-172.38	-4,284.1	-573.0	4,322.3	4,269.2	53.02	81.518		
2,500.0	2,500.0	2,487.0	2,487.0	5.5	49.7	-172.38	-4,284.1	-573.0	4,322.3	4,267.0	55.25	78.236		
2,600.0	2,600.0	2,587.0	2,587.0	5.7	51.7	-172.38	-4,284.1	-573.0	4,322.3	4,264.8	57.47	75.207		
2,700.0	2,700.0	2,687.0	2,687.0	6.0	53.7	-172.38	-4,284.1	-573.0	4,322.3	4,262.6	59.70	72.404		
2,800.0	2,800.0	2,787.0	2,787.0	6.2	55.7	-172.38	-4,284.1	-573.0	4,322.3	4,260.3	61.92	69.803		
2,900.0	2,900.0	2,887.0	2,887.0	6.4	57.7	-172.38	-4,284.1	-573.0	4,322.3	4,258.1	64.15	67.382		
3,000.0	3,000.0	2,987.0	2,987.0	6.6	59.7	-172.38	-4,284.1	-573.0	4,322.3	4,255.9	66.37	65.123		
3,100.0	3,100.0	3,087.0	3,087.0	6.8	61.7	-100.60	-4,284.1	-573.0	4,322.5	4,253.9	68.59	63.024		
3,200.0	3,199.9	3,186.9	3,186.9	7.1	63.7	-100.64	-4,284.1	-573.0	4,323.2	4,252.4	70.79	61.071		
3,300.0	3,299.7	3,286.7	3,286.7	7.3	65.7	-100.71	-4,284.1	-573.0	4,324.4	4,251.5	72.99	59.244		
3,365.0	3,364.4	3,351.4	3,351.4	7.4	67.0	-100.77	-4,284.1	-573.0	4,325.5	4,251.1	74.43	58.118		
3,400.0	3,399.3	3,386.3	3,386.3	7.5	67.7	-100.81	-4,284.1	-573.0	4,326.1	4,250.9	75.20	57.528		
3,500.0	3,498.8	3,485.8	3,485.8	7.7	69.7	-100.94	-4,284.1	-573.0	4,327.9	4,250.5	77.41	55.906		
3,600.0	3,598.4	3,585.4	3,585.4	7.9	71.7	-101.06	-4,284.1	-573.0	4,329.8	4,250.1	79.63	54.372		
3,700.0	3,697.9	3,684.9	3,684.9	8.2	73.7	-101.18	-4,284.1	-573.0	4,331.6	4,249.8	81.85	52.919		
3,800.0	3,797.5	3,784.5	3,784.5	8.4	75.7	-101.31	-4,284.1	-573.0	4,333.5	4,249.4	84.08	51.540		
3,838.3	3,835.6	3,822.6	3,822.6	8.5	76.5	-101.35	-4,284.1	-573.0	4,334.2	4,249.3	84.93	51.032		
3,900.0	3,897.0	3,884.0	3,884.0	8.6	77.7	-101.44	-4,284.1	-573.0	4,335.3	4,249.0	86.30	50.236		
4,000.0	3,996.8	3,983.8	3,983.8	8.8	79.7	-101.54	-4,284.1	-573.0	4,336.6	4,248.1	88.49	49.005		
4,100.0	4,096.7	4,083.7	4,083.7	9.0	81.7	-101.61	-4,284.1	-573.0	4,337.4	4,246.7	90.69	47.828		
4,203.3	4,200.0	4,187.0	4,187.0	9.2	83.7	-173.42	-4,284.1	-573.0	4,337.7	4,244.7	92.94	46.671		
4,300.0	4,296.7	4,283.7	4,283.7	9.4	85.7	-173.42	-4,284.1	-573.0	4,337.7	4,242.6	95.07	45.627		
4,400.0	4,396.7	4,383.7	4,383.7	9.6	87.7	-173.42	-4,284.1	-573.0	4,337.7	4,240.4	97.29	44.586		
4,500.0	4,496.7	4,483.7	4,483.7	9.8	89.7	-173.42	-4,284.1	-573.0	4,337.7	4,238.2	99.51	43.590		
4,600.0	4,596.7	4,583.7	4,583.7	10.1	91.7	-173.42	-4,284.1	-573.0	4,337.7	4,236.0	101.73	42.638		
4,700.0	4,696.7	4,683.7	4,683.7	10.3	93.7	-173.42	-4,284.1	-573.0	4,337.7	4,233.7	103.95	41.727		
4,800.0	4,796.7	4,783.7	4,783.7	10.5	95.7	-173.42	-4,284.1	-573.0	4,337.7	4,231.5	106.18	40.854		
4,900.0	4,896.7	4,883.7	4,883.7	10.7	97.7	-173.42	-4,284.1	-573.0	4,337.7	4,229.3	108.40	40.017		
5,000.0	4,996.7	4,983.7	4,983.7	10.9	99.7	-173.42	-4,284.1	-573.0	4,337.7	4,227.1	110.62	39.213		
5,100.0	5,096.7	5,083.7	5,083.7	11.2	101.7	-173.42	-4,284.1	-573.0	4,337.7	4,224.8	112.84	38.441		
5,200.0	5,196.7	5,183.7	5,183.7	11.4	103.7	-173.42	-4,284.1	-573.0	4,337.7	4,222.6	115.06	37.698		
5,300.0	5,296.7	5,283.7	5,283.7	11.6	105.7	-173.42	-4,284.1	-573.0	4,337.7	4,220.4	117.29	36.984		
5,400.0	5,396.7	5,383.7	5,383.7	11.8	107.7	-173.42	-4,284.1	-573.0	4,337.7	4,218.2	119.51	36.296		
5,500.0	5,496.7	5,483.7	5,483.7	12.1	109.7	-173.42	-4,284.1	-573.0	4,337.7	4,216.0	121.73	35.633		
5,600.0	5,596.7	5,583.7	5,583.7	12.3	111.7	-173.42	-4,284.1	-573.0	4,337.7	4,213.7	123.95	34.994		
5,700.0	5,696.7	5,683.7	5,683.7	12.5	113.7	-173.42	-4,284.1	-573.0	4,337.7	4,211.5	126.18	34.378		
5,800.0	5,796.7	5,783.7	5,783.7	12.7	115.7	-173.42	-4,284.1	-573.0	4,337.7	4,209.3	128.40	33.783		
5,900.0	5,896.7	5,883.7	5,883.7	12.9	117.7	-173.42	-4,284.1	-573.0	4,337.7	4,207.1	130.62	33.208		
6,000.0	5,996.7	5,983.7	5,983.7	13.2	119.7	-173.42	-4,284.1	-573.0	4,337.7	4,204.8	132.85	32.652		
6,057.5	6,054.2	6,041.2	6,041.2	13.3	120.8	-173.42	-4,284.1	-573.0	4,337.7	4,203.6	134.12	32.341		
6,100.0	6,096.7	6,083.7	6,083.7	13.4	121.7	6.09	-4,284.1	-573.0	4,336.5	4,201.7	134.85	32.157		
6,150.0	6,146.5	6,133.5	6,133.5	13.5	122.7	6.13	-4,284.1	-573.0	4,332.1	4,197.0	135.17	32.050		
6,200.0	6,195.9	6,182.9	6,182.9	13.6	123.7	6.20	-4,284.1	-573.0	4,324.5	4,189.6	134.90	32.057		
6,250.0	6,244.7	6,231.7	6,231.7	13.6	124.6	6.31	-4,284.1	-573.0	4,313.7	4,179.7	134.04	32.183		
6,300.0	6,292.7	6,279.7	6,279.7	13.7	125.6	6.45	-4,284.1	-573.0	4,299.7	4,167.2	132.58	32.432		

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	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
6,350.0	6,339.6	6,326.6	6,326.6	13.8	126.5	6.63	6.63	-4,284.1	-573.0	4,282.7	4,152.2	130.52	32.813	
6,400.0	6,385.4	6,372.4	6,372.4	13.9	127.4	6.86	6.86	-4,284.1	-573.0	4,262.6	4,134.8	127.86	33.337	
6,450.0	6,429.7	6,416.7	6,416.7	14.0	128.3	7.13	7.13	-4,284.1	-573.0	4,239.6	4,115.0	124.63	34.018	
6,500.0	6,472.4	6,459.4	6,459.4	14.1	129.2	7.47	7.47	-4,284.1	-573.0	4,213.8	4,093.0	120.83	34.875	
6,550.0	6,513.3	6,500.3	6,500.3	14.2	130.0	7.87	7.87	-4,284.1	-573.0	4,185.3	4,068.8	116.49	35.928	
6,600.0	6,552.3	6,539.3	6,539.3	14.4	130.8	8.35	8.35	-4,284.1	-573.0	4,154.1	4,042.5	111.65	37.206	
6,650.0	6,589.1	6,576.1	6,576.1	14.6	131.5	8.93	8.93	-4,284.1	-573.0	4,120.5	4,014.1	106.37	38.739	
6,700.0	6,623.6	6,610.6	6,610.6	14.8	132.2	9.63	9.63	-4,284.1	-573.0	4,084.6	3,983.9	100.72	40.556	
6,750.0	6,655.7	6,642.7	6,642.7	15.1	132.9	10.50	10.50	-4,284.1	-573.0	4,046.5	3,951.7	94.81	42.681	
6,800.0	6,685.2	6,672.2	6,672.2	15.4	133.4	11.57	11.57	-4,284.1	-573.0	4,006.4	3,917.6	88.81	45.111	
6,850.0	6,712.0	6,699.0	6,699.0	15.8	134.0	12.92	12.92	-4,284.1	-573.0	3,964.5	3,881.5	83.00	47.766	
6,900.0	6,736.0	6,723.0	6,723.0	16.2	134.5	14.66	14.66	-4,284.1	-573.0	3,920.9	3,843.1	77.81	50.393	
6,950.0	6,757.1	6,744.1	6,744.1	16.6	134.9	16.94	16.94	-4,284.1	-573.0	3,875.9	3,802.0	73.98	52.392	
7,000.0	6,775.2	6,762.2	6,762.2	17.1	135.2	20.07	20.07	-4,284.1	-573.0	3,829.7	3,756.9	72.74	52.652	
7,050.0	6,790.2	6,777.2	6,777.2	17.6	135.5	24.51	24.51	-4,284.1	-573.0	3,782.3	3,706.4	75.95	49.802	
7,100.0	6,802.0	6,789.0	6,789.0	18.2	135.8	31.20	31.20	-4,284.1	-573.0	3,734.1	3,648.0	86.11	43.367	
7,150.0	6,810.6	6,797.6	6,797.6	18.8	136.0	41.85	41.85	-4,284.1	-573.0	3,685.2	3,579.4	105.82	34.827	
7,177.5	6,814.0	6,801.0	6,801.0	19.1	136.0	50.45	50.45	-4,284.1	-573.0	3,658.2	3,537.2	120.96	30.243	
7,200.0	6,816.3	6,803.3	6,803.3	19.4	136.1	50.62	50.62	-4,284.1	-573.0	3,636.0	3,514.5	121.51	29.924	
7,251.5	6,821.7	6,808.7	6,808.7	20.1	136.2	51.02	51.02	-4,284.1	-573.0	3,585.2	3,462.4	122.78	29.200	
7,300.0	6,825.8	6,812.8	6,812.8	20.7	136.3	64.54	64.54	-4,284.1	-573.0	3,537.2	3,395.1	142.17	24.880	
7,378.0	6,828.0	6,815.0	6,815.0	21.8	136.3	92.44	92.44	-4,284.1	-573.0	3,459.9	3,302.0	157.91	21.911	
7,400.0	6,827.9	6,814.9	6,814.9	22.1	136.3	92.43	92.43	-4,284.1	-573.0	3,438.2	3,279.9	158.22	21.730	
7,500.0	6,827.3	6,814.3	6,814.3	23.6	136.3	92.36	92.36	-4,284.1	-573.0	3,339.1	3,179.4	159.69	20.910	
7,600.0	6,826.7	6,813.7	6,813.7	25.1	136.3	92.28	92.28	-4,284.1	-573.0	3,240.1	3,078.8	161.21	20.098	
7,700.0	6,826.1	6,813.1	6,813.1	26.7	136.3	92.21	92.21	-4,284.1	-573.0	3,141.1	2,978.3	162.79	19.296	
7,800.0	6,825.6	6,812.6	6,812.6	28.3	136.3	92.14	92.14	-4,284.1	-573.0	3,042.2	2,877.8	164.41	18.504	
7,900.0	6,825.0	6,812.0	6,812.0	30.0	136.2	92.07	92.07	-4,284.1	-573.0	2,943.4	2,777.3	166.06	17.725	
8,000.0	6,824.4	6,811.4	6,811.4	31.6	136.2	92.00	92.00	-4,284.1	-573.0	2,844.7	2,676.9	167.74	16.959	
8,100.0	6,823.9	6,810.9	6,810.9	33.3	136.2	91.93	91.93	-4,284.1	-573.0	2,746.0	2,576.6	169.44	16.206	
8,200.0	6,823.3	6,810.3	6,810.3	35.1	136.2	91.86	91.86	-4,284.1	-573.0	2,647.5	2,476.3	171.17	15.467	
8,300.0	6,822.7	6,809.7	6,809.7	36.8	136.2	91.79	91.79	-4,284.1	-573.0	2,549.1	2,376.2	172.92	14.742	
8,400.0	6,822.1	6,809.1	6,809.1	38.6	136.2	91.72	91.72	-4,284.1	-573.0	2,450.8	2,276.1	174.68	14.030	
8,500.0	6,821.6	6,808.6	6,808.6	40.4	136.2	91.64	91.64	-4,284.1	-573.0	2,352.6	2,176.2	176.45	13.333	
8,600.0	6,821.0	6,808.0	6,808.0	42.2	136.2	91.57	91.57	-4,284.1	-573.0	2,254.6	2,076.4	178.23	12.650	
8,700.0	6,820.4	6,807.4	6,807.4	44.0	136.1	91.50	91.50	-4,284.1	-573.0	2,156.8	1,976.8	180.03	11.980	
8,800.0	6,819.9	6,806.9	6,806.9	45.8	136.1	91.43	91.43	-4,284.1	-573.0	2,059.2	1,877.4	181.83	11.325	
8,900.0	6,819.3	6,806.3	6,806.3	47.6	136.1	91.36	91.36	-4,284.1	-573.0	1,961.9	1,778.2	183.65	10.683	
9,000.0	6,818.7	6,805.7	6,805.7	49.4	136.1	91.29	91.29	-4,284.1	-573.0	1,864.8	1,679.3	185.47	10.055	
9,100.0	6,818.1	6,805.1	6,805.1	51.2	136.1	91.22	91.22	-4,284.1	-573.0	1,768.1	1,580.8	187.29	9.440	
9,200.0	6,817.6	6,804.6	6,804.6	53.1	136.1	91.15	91.15	-4,284.1	-573.0	1,671.7	1,482.6	189.13	8.839	
9,300.0	6,817.0	6,804.0	6,804.0	54.9	136.1	91.07	91.07	-4,284.1	-573.0	1,575.8	1,384.8	190.96	8.252	
9,400.0	6,816.4	6,803.4	6,803.4	56.8	136.1	91.00	91.00	-4,284.1	-573.0	1,480.4	1,287.6	192.80	7.678	
9,500.0	6,815.9	6,802.9	6,802.9	58.6	136.1	90.93	90.93	-4,284.1	-573.0	1,385.7	1,191.0	194.65	7.119	
9,600.0	6,815.3	6,802.3	6,802.3	60.5	136.0	90.86	90.86	-4,284.1	-573.0	1,291.8	1,095.3	196.50	6.574	
9,700.0	6,814.7	6,801.7	6,801.7	62.3	136.0	90.79	90.79	-4,284.1	-573.0	1,198.8	1,000.5	198.35	6.044	
9,800.0	6,814.1	6,801.1	6,801.1	64.2	136.0	90.72	90.72	-4,284.1	-573.0	1,107.1	906.9	200.21	5.530	
9,900.0	6,813.6	6,800.6	6,800.6	66.1	136.0	90.65	90.65	-4,284.1	-573.0	1,017.0	814.9	202.06	5.033	
10,000.0	6,813.0	6,800.0	6,800.0	67.9	136.0	90.58	90.58	-4,284.1	-573.0	928.9	724.9	203.92	4.555	
10,100.0	6,812.4	6,799.4	6,799.4	69.8	136.0	90.50	90.50	-4,284.1	-573.0	843.4	637.6	205.79	4.098	
10,200.0	6,811.9	6,798.9	6,798.9	71.7	136.0	90.43	90.43	-4,284.1	-573.0	761.5	553.8	207.65	3.667	

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 Gutttersen 6U-443
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Gutttersen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gutttersen 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	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)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,300.0	6,811.3	6,798.3	6,798.3	73.6	136.0	90.36	-4,284.1	-573.0	684.4	474.9	209.52	3.266		
10,400.0	6,810.7	6,797.7	6,797.7	75.4	136.0	90.29	-4,284.1	-573.0	613.9	402.5	211.39	2.904		
10,500.0	6,810.1	6,797.1	6,797.1	77.3	135.9	90.22	-4,284.1	-573.0	552.6	339.4	213.26	2.591		
10,600.0	6,809.6	6,796.6	6,796.6	79.2	135.9	90.15	-4,284.1	-573.0	503.9	288.8	215.13	2.342		
10,700.0	6,809.0	6,796.0	6,796.0	81.1	135.9	90.08	-4,284.1	-573.0	471.7	254.7	217.00	2.174		
10,800.0	6,808.4	6,795.4	6,795.4	83.0	135.9	90.01	-4,284.1	-573.0	459.3	240.4	218.87	2.099		
10,807.4	6,808.4	6,795.4	6,795.4	83.1	135.9	90.00	-4,284.1	-573.0	459.3	240.2	219.01	2.097	CC, ES, SF	
10,900.0	6,807.9	6,794.9	6,794.9	84.9	135.9	89.93	-4,284.1	-573.0	468.5	247.8	220.75	2.122		
11,000.0	6,807.3	6,794.3	6,794.3	86.7	135.9	89.86	-4,284.1	-573.0	498.0	275.4	222.62	2.237		
11,100.0	6,806.7	6,793.7	6,793.7	88.6	135.9	89.79	-4,284.1	-573.0	544.5	320.0	224.50	2.426		
11,200.0	6,806.1	6,793.1	6,793.1	90.5	135.9	89.72	-4,284.1	-573.0	604.2	377.8	226.38	2.669		
11,226.0	6,806.0	6,793.0	6,793.0	90.9	135.9	89.70	-4,284.1	-573.0	621.4	394.6	226.77	2.740		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6R-223 - 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	-27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	-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	-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	-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	-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	-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	-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	-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	-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	-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	-90.00	0.0	-27.9	27.9	23.7	4.27	6.544 CC, ES	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.3	-89.77	-89.77	0.1	-29.7	29.7	25.0	4.71	6.305	
1,200.0	1,200.0	1,197.8	1,197.6	2.6	2.6	-89.23	-89.23	0.5	-34.8	34.8	29.7	5.14	6.783	
1,300.0	1,300.0	1,296.1	1,295.5	2.8	2.8	-88.62	-88.62	1.0	-43.2	43.4	37.9	5.58	7.788	
1,400.0	1,400.0	1,395.5	1,394.4	3.0	3.0	-88.13	-88.13	1.7	-53.5	53.8	47.8	6.04	8.922	
1,500.0	1,500.0	1,494.9	1,493.3	3.3	3.3	-87.80	-87.80	2.5	-63.9	64.3	57.8	6.50	9.883	
1,600.0	1,600.0	1,594.4	1,592.2	3.5	3.5	-87.56	-87.56	3.2	-74.2	74.7	67.7	6.98	10.702	
1,700.0	1,700.0	1,693.8	1,691.1	3.7	3.8	-87.38	-87.38	3.9	-84.6	85.1	77.6	7.46	11.408	
1,800.0	1,800.0	1,793.3	1,790.0	3.9	4.0	-87.24	-87.24	4.6	-94.9	95.5	87.6	7.95	12.020	
1,900.0	1,900.0	1,892.7	1,889.0	4.2	4.3	-87.13	-87.13	5.3	-105.2	105.9	97.5	8.44	12.556	
2,000.0	2,000.0	1,992.2	1,987.9	4.4	4.6	-87.04	-87.04	6.0	-115.6	116.4	107.4	8.93	13.027	
2,100.0	2,100.0	2,091.6	2,086.8	4.6	4.8	-86.96	-86.96	6.7	-125.9	126.8	117.4	9.43	13.445	
2,200.0	2,200.0	2,191.1	2,185.7	4.8	5.1	-86.89	-86.89	7.4	-136.3	137.2	127.3	9.93	13.818	
2,300.0	2,300.0	2,290.6	2,284.6	5.1	5.4	-86.84	-86.84	8.1	-146.6	147.6	137.2	10.43	14.152	
2,400.0	2,400.0	2,390.0	2,383.5	5.3	5.7	-86.79	-86.79	8.8	-156.9	158.1	147.1	10.94	14.454	
2,500.0	2,500.0	2,489.5	2,482.4	5.5	6.0	-86.74	-86.74	9.5	-167.3	168.5	157.0	11.44	14.727	
2,600.0	2,600.0	2,588.9	2,581.4	5.7	6.3	-86.71	-86.71	10.2	-177.6	178.9	167.0	11.95	14.975	
2,700.0	2,700.0	2,688.4	2,680.3	6.0	6.5	-86.67	-86.67	10.9	-188.0	189.3	176.9	12.45	15.202	
2,800.0	2,800.0	2,787.8	2,779.2	6.2	6.8	-86.64	-86.64	11.6	-198.3	199.7	186.8	12.96	15.410	
2,900.0	2,900.0	2,887.3	2,878.1	6.4	7.1	-86.61	-86.61	12.3	-208.7	210.2	196.7	13.47	15.601	
3,000.0	3,000.0	2,986.7	2,977.0	6.6	7.4	-86.59	-86.59	13.0	-219.0	220.6	206.6	13.98	15.777	
3,100.0	3,100.0	3,086.3	3,076.0	6.8	7.7	-14.82	-14.82	13.8	-229.4	229.7	216.1	13.62	16.873	
3,200.0	3,199.9	3,186.1	3,175.3	7.1	8.0	-15.02	-15.02	14.5	-239.7	236.4	222.3	14.05	16.824	
3,300.0	3,299.7	3,286.0	3,274.6	7.3	8.3	-15.37	-15.37	15.2	-250.1	240.5	226.0	14.48	16.610	
3,365.0	3,364.4	3,351.0	3,339.2	7.4	8.5	-15.69	-15.69	15.6	-256.9	241.8	227.1	14.76	16.391	
3,400.0	3,399.3	3,386.0	3,374.0	7.5	8.6	-15.89	-15.89	15.9	-260.5	242.3	227.4	14.91	16.250	
3,500.0	3,498.8	3,485.9	3,473.5	7.7	8.9	-16.43	-16.43	16.6	-270.9	243.5	228.2	15.35	15.864	
3,600.0	3,598.4	3,585.9	3,572.9	7.9	9.2	-16.97	-16.97	17.3	-281.3	244.8	229.0	15.80	15.499	
3,700.0	3,697.9	3,685.8	3,672.3	8.2	9.5	-17.51	-17.51	18.0	-291.7	246.1	229.9	16.24	15.153	
3,800.0	3,797.5	3,785.8	3,771.7	8.4	9.8	-18.04	-18.04	18.7	-302.1	247.5	230.8	16.69	14.825	
3,838.3	3,835.6	3,824.1	3,809.8	8.5	9.9	-18.24	-18.24	19.0	-306.1	248.0	231.1	16.86	14.704	
3,900.0	3,897.0	3,885.8	3,871.1	8.6	10.1	-18.53	-18.53	19.4	-312.5	249.3	232.1	17.14	14.541	
4,000.0	3,996.8	3,985.7	3,970.5	8.8	10.3	-18.85	-18.85	20.1	-322.9	253.4	235.8	17.57	14.419	
4,100.0	4,096.7	4,085.5	4,069.7	9.0	10.6	-18.98	-18.98	20.9	-333.2	260.0	242.0	18.00	14.448	
4,203.3	4,200.0	4,188.3	4,172.0	9.2	10.9	-90.73	-90.73	21.6	-343.9	269.4	251.0	18.41	14.631	
4,300.0	4,296.7	4,284.5	4,267.7	9.4	11.2	-90.56	-90.56	22.3	-353.9	279.5	260.6	18.83	14.840	
4,400.0	4,396.7	4,383.9	4,366.6	9.6	11.5	-90.40	-90.40	23.0	-364.3	289.9	270.6	19.29	15.029	
4,500.0	4,496.7	4,483.4	4,465.5	9.8	11.8	-90.25	-90.25	23.7	-374.6	300.3	280.5	19.74	15.210	
4,600.0	4,596.7	4,590.5	4,572.1	10.1	12.1	-90.11	-90.11	24.4	-384.9	309.9	289.7	20.20	15.343	
4,700.0	4,696.7	4,702.6	4,684.0	10.3	12.3	-90.03	-90.03	24.8	-391.6	315.9	295.2	20.63	15.314	
4,800.0	4,796.7	4,814.9	4,796.3	10.5	12.5	-90.00	-90.00	25.0	-393.9	317.9	296.9	21.05	15.105	

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6R-223 - 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		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)			
4,900.0	4,896.7	4,915.4	4,896.7	10.7	12.7	-90.00	25.0	-393.9	317.9	296.5	21.47	14.810	
5,000.0	4,996.7	5,015.4	4,996.7	10.9	12.9	-90.00	25.0	-393.9	317.9	296.1	21.89	14.522	
5,100.0	5,096.7	5,115.4	5,096.7	11.2	13.0	-90.00	25.0	-393.9	317.9	295.6	22.32	14.244	
5,200.0	5,196.7	5,215.4	5,196.7	11.4	13.2	-90.00	25.0	-393.9	317.9	295.2	22.75	13.975	
5,300.0	5,296.7	5,315.4	5,296.7	11.6	13.4	-90.00	25.0	-393.9	317.9	294.8	23.18	13.717	
5,400.0	5,396.7	5,415.4	5,396.7	11.8	13.6	-90.00	25.0	-393.9	317.9	294.3	23.61	13.467	
5,500.0	5,496.7	5,515.4	5,496.7	12.1	13.8	-90.00	25.0	-393.9	317.9	293.9	24.04	13.226	
5,600.0	5,596.7	5,615.4	5,596.7	12.3	14.0	-90.00	25.0	-393.9	317.9	293.5	24.47	12.993	
5,700.0	5,696.7	5,715.4	5,696.7	12.5	14.1	-90.00	25.0	-393.9	317.9	293.0	24.90	12.767	
5,800.0	5,796.7	5,815.4	5,796.7	12.7	14.3	-90.00	25.0	-393.9	317.9	292.6	25.34	12.550	
5,859.2	5,855.9	5,874.6	5,855.9	12.9	14.4	-90.00	25.0	-393.9	317.9	292.4	25.59	12.424	
5,900.0	5,896.7	5,915.3	5,896.7	12.9	14.5	-90.04	24.8	-393.9	317.9	292.2	25.76	12.341	
6,000.0	5,996.7	6,014.0	5,994.9	13.2	14.7	-91.63	16.0	-394.0	318.2	292.0	26.17	12.158	
6,057.5	6,054.2	6,069.2	6,049.1	13.3	14.8	-93.50	5.5	-394.1	318.8	292.4	26.40	12.075	
6,100.0	6,096.7	6,109.2	6,087.8	13.4	14.8	84.34	-4.5	-394.2	319.6	293.0	26.56	12.034	
6,150.0	6,146.5	6,155.7	6,132.1	13.5	14.9	82.44	-18.6	-394.3	320.9	294.1	26.73	12.005	
6,200.0	6,195.9	6,200.0	6,173.4	13.6	15.0	80.64	-34.6	-394.5	322.5	295.6	26.89	11.993	
6,250.0	6,244.7	6,247.0	6,216.2	13.6	15.1	78.79	-54.1	-394.6	324.4	297.3	27.05	11.992	
6,300.0	6,292.7	6,291.8	6,255.8	13.7	15.2	77.07	-75.1	-394.8	326.6	299.4	27.20	12.004	
6,350.0	6,339.6	6,336.3	6,293.7	13.8	15.3	75.42	-98.2	-395.0	328.9	301.6	27.35	12.026	
6,400.0	6,385.4	6,380.2	6,329.9	13.9	15.4	73.85	-123.2	-395.3	331.5	304.0	27.50	12.054	
6,450.0	6,429.7	6,423.8	6,364.3	14.0	15.5	72.37	-150.0	-395.5	334.1	306.5	27.64	12.087	
6,500.0	6,472.4	6,467.0	6,396.8	14.1	15.7	70.97	-178.4	-395.8	336.9	309.1	27.80	12.119	
6,550.0	6,513.3	6,509.9	6,427.4	14.2	15.8	69.66	-208.4	-396.0	339.6	311.7	27.96	12.146	
6,600.0	6,552.3	6,550.0	6,454.5	14.4	16.0	68.50	-238.0	-396.3	342.4	314.3	28.14	12.168	
6,650.0	6,589.1	6,594.7	6,482.8	14.6	16.2	67.32	-272.6	-396.6	345.1	316.8	28.37	12.166	
6,700.0	6,623.6	6,636.7	6,507.5	14.8	16.5	66.28	-306.5	-396.9	347.8	319.2	28.63	12.146	
6,750.0	6,655.7	6,678.4	6,530.2	15.1	16.7	65.35	-341.6	-397.2	350.3	321.4	28.95	12.102	
6,800.0	6,685.2	6,720.0	6,550.8	15.4	17.0	64.50	-377.6	-397.5	352.7	323.4	29.32	12.030	
6,850.0	6,712.0	6,761.3	6,569.4	15.8	17.3	63.74	-414.6	-397.9	354.9	325.1	29.76	11.925	
6,900.0	6,736.0	6,800.0	6,584.9	16.2	17.6	63.11	-450.0	-398.2	356.9	326.7	30.26	11.793	
6,950.0	6,757.1	6,843.5	6,600.2	16.6	18.0	62.51	-490.7	-398.5	358.7	327.8	30.89	11.612	
7,000.0	6,775.2	6,884.5	6,612.4	17.1	18.5	62.03	-529.8	-398.9	360.2	328.6	31.59	11.404	
7,050.0	6,790.2	6,925.3	6,622.6	17.6	18.9	61.64	-569.3	-399.2	361.5	329.1	32.38	11.165	
7,100.0	6,802.0	6,966.0	6,630.6	18.2	19.3	61.34	-609.2	-399.6	362.5	329.2	33.26	10.899	
7,150.0	6,810.6	7,006.7	6,636.4	18.8	19.8	61.12	-649.5	-399.9	363.2	329.0	34.23	10.610	
7,177.5	6,814.0	7,029.0	6,638.7	19.1	20.1	61.05	-671.7	-400.1	363.5	328.7	34.81	10.442	
7,200.0	6,816.3	7,050.0	6,640.2	19.4	20.3	60.96	-692.6	-400.3	363.8	328.5	35.27	10.314	
7,251.5	6,821.7	7,089.0	6,641.6	20.1	20.8	60.59	-731.6	-400.7	365.5	329.3	36.22	10.091	
7,300.0	6,825.8	7,131.7	6,641.1	20.7	21.4	59.94	-774.3	-401.1	367.8	330.6	37.20	9.888	
7,378.0	6,828.0	7,209.6	6,639.4	21.8	22.5	59.34	-852.2	-401.7	369.8	330.7	39.07	9.464	
7,400.0	6,827.9	7,231.6	6,639.0	22.1	22.8	59.29	-874.1	-401.9	370.0	330.4	39.62	9.339	
7,500.0	6,827.3	7,331.5	6,636.8	23.6	24.2	59.09	-974.1	-402.8	370.8	328.6	42.14	8.798	
7,600.0	6,826.7	7,431.5	6,634.7	25.1	25.7	58.89	-1,074.0	-403.7	371.6	326.8	44.76	8.301	
7,700.0	6,826.1	7,531.5	6,632.6	26.7	27.3	58.68	-1,174.0	-404.6	372.4	324.9	47.46	7.846	
7,800.0	6,825.6	7,631.5	6,630.5	28.3	28.9	58.48	-1,274.0	-405.5	373.2	323.0	50.22	7.431	
7,900.0	6,825.0	7,731.5	6,628.4	30.0	30.5	58.28	-1,373.9	-406.4	374.0	321.0	53.03	7.053	
8,000.0	6,824.4	7,831.5	6,626.3	31.6	32.2	58.08	-1,473.9	-407.3	374.8	319.0	55.88	6.708	
8,100.0	6,823.9	7,931.5	6,624.2	33.3	33.8	57.89	-1,573.8	-408.2	375.7	316.9	58.76	6.393	
8,200.0	6,823.3	8,031.5	6,622.1	35.1	35.6	57.69	-1,673.8	-409.1	376.5	314.8	61.67	6.105	
8,300.0	6,822.7	8,131.4	6,620.0	36.8	37.3	57.49	-1,773.8	-409.9	377.3	312.7	64.60	5.841	

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Guttersen 6R-403 Pad Sec.6-T2N-R63W - Guttersen 6R-223 - Wellbore #1 - Plan #1 (5-31-13)													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,822.1	8,231.4	6,617.8	38.6	39.0	57.30	-1,873.7	-410.8	378.2	310.6	67.54	5.599	
8,500.0	6,821.6	8,331.4	6,615.7	40.4	40.8	57.10	-1,973.7	-411.7	379.0	308.5	70.50	5.376	
8,600.0	6,821.0	8,431.4	6,613.6	42.2	42.6	56.91	-2,073.7	-412.6	379.9	306.4	73.47	5.171	
8,700.0	6,820.4	8,531.4	6,611.5	44.0	44.4	56.71	-2,173.6	-413.5	380.7	304.3	76.44	4.981	
8,800.0	6,819.9	8,631.4	6,609.4	45.8	46.2	56.52	-2,273.6	-414.4	381.6	302.2	79.42	4.805	
8,900.0	6,819.3	8,731.4	6,607.3	47.6	48.0	56.33	-2,373.5	-415.3	382.5	300.1	82.40	4.641	
9,000.0	6,818.7	8,831.4	6,605.2	49.4	49.8	56.14	-2,473.5	-416.2	383.3	297.9	85.39	4.489	
9,100.0	6,818.1	8,931.3	6,603.1	51.2	51.6	55.95	-2,573.5	-417.0	384.2	295.8	88.37	4.348	
9,200.0	6,817.6	9,031.3	6,600.9	53.1	53.5	55.76	-2,673.4	-417.9	385.1	293.7	91.35	4.215	
9,300.0	6,817.0	9,131.3	6,598.8	54.9	55.3	55.57	-2,773.4	-418.8	386.0	291.6	94.33	4.091	
9,400.0	6,816.4	9,231.3	6,596.7	56.8	57.1	55.39	-2,873.3	-419.7	386.8	289.5	97.31	3.975	
9,500.0	6,815.9	9,331.3	6,594.6	58.6	59.0	55.20	-2,973.3	-420.6	387.7	287.4	100.28	3.866	
9,600.0	6,815.3	9,431.3	6,592.5	60.5	60.8	55.02	-3,073.3	-421.5	388.6	285.4	103.25	3.764	
9,700.0	6,814.7	9,531.3	6,590.4	62.3	62.7	54.83	-3,173.2	-422.4	389.5	283.3	106.21	3.667	
9,800.0	6,814.1	9,631.3	6,588.3	64.2	64.5	54.65	-3,273.2	-423.3	390.4	281.3	109.17	3.576	
9,900.0	6,813.6	9,731.3	6,586.2	66.1	66.4	54.46	-3,373.2	-424.2	391.3	279.2	112.12	3.490	
10,000.0	6,813.0	9,831.2	6,584.1	67.9	68.3	54.28	-3,473.1	-425.0	392.2	277.2	115.06	3.409	
10,100.0	6,812.4	9,931.2	6,581.9	69.8	70.1	54.10	-3,573.1	-425.9	393.1	275.1	118.00	3.332	
10,200.0	6,811.9	10,031.2	6,579.8	71.7	72.0	53.92	-3,673.0	-426.8	394.1	273.1	120.93	3.259	
10,300.0	6,811.3	10,131.2	6,577.7	73.6	73.9	53.74	-3,773.0	-427.7	395.0	271.1	123.85	3.189	
10,400.0	6,810.7	10,231.2	6,575.6	75.4	75.7	53.56	-3,873.0	-428.6	395.9	269.1	126.76	3.123	
10,500.0	6,810.1	10,331.2	6,573.5	77.3	77.6	53.39	-3,972.9	-429.5	396.8	267.2	129.67	3.060	
10,600.0	6,809.6	10,431.2	6,571.4	79.2	79.5	53.21	-4,072.9	-430.4	397.8	265.2	132.57	3.000	
10,700.0	6,809.0	10,531.2	6,569.3	81.1	81.4	53.03	-4,172.9	-431.3	398.7	263.2	135.46	2.943	
10,800.0	6,808.4	10,631.1	6,567.2	83.0	83.3	52.86	-4,272.8	-432.2	399.6	261.3	138.34	2.889	
10,900.0	6,807.9	10,731.1	6,565.1	84.9	85.1	52.68	-4,372.8	-433.0	400.6	259.4	141.21	2.837	
11,000.0	6,807.3	10,831.1	6,562.9	86.7	87.0	52.51	-4,472.7	-433.9	401.5	257.5	144.07	2.787	
11,100.0	6,806.7	10,931.1	6,560.8	88.6	88.9	52.34	-4,572.7	-434.8	402.5	255.6	146.92	2.739	
11,200.0	6,806.1	11,031.1	6,558.7	90.5	90.8	52.16	-4,672.7	-435.7	403.4	253.7	149.77	2.694	
11,226.0	6,806.0	11,057.1	6,558.2	90.9	91.3	52.12	-4,698.6	-435.9	403.7	253.3	150.42	2.684 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	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 (ft)	Offset (ft)	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	
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 CC, ES		
300.0	300.0	298.0	297.9	0.6	0.5	-89.96	0.0	-60.4	60.4	59.3	1.11	54.415		
400.0	400.0	395.7	395.5	0.8	0.8	-89.85	0.2	-65.4	65.5	64.0	1.55	42.176		
500.0	500.0	493.0	492.4	1.0	1.0	-89.70	0.4	-73.6	74.0	72.0	2.02	36.628		
600.0	600.0	589.6	588.4	1.2	1.3	-89.54	0.7	-85.1	85.9	83.4	2.52	34.099		
700.0	700.0	685.3	683.0	1.5	1.6	-89.39	1.1	-99.7	101.1	98.1	3.05	33.106		
800.0	800.0	782.3	778.5	1.7	2.0	-89.26	1.5	-117.0	119.0	115.4	3.63	32.782		
900.0	900.0	880.7	875.2	1.9	2.3	-89.17	2.0	-134.8	137.1	132.9	4.23	32.445		
1,000.0	1,000.0	979.0	971.9	2.1	2.7	-89.09	2.4	-152.6	155.2	150.4	4.83	32.140		
1,100.0	1,100.0	1,077.4	1,068.6	2.4	3.1	-89.03	2.9	-170.4	173.3	167.9	5.44	31.873		
1,200.0	1,200.0	1,175.7	1,165.4	2.6	3.5	-88.98	3.3	-188.2	191.4	185.3	6.05	31.641		
1,300.0	1,300.0	1,274.1	1,262.1	2.8	3.9	-88.95	3.8	-206.0	209.5	202.8	6.66	31.441		
1,400.0	1,400.0	1,372.4	1,358.8	3.0	4.3	-88.91	4.3	-223.8	227.6	220.3	7.28	31.267		
1,500.0	1,500.0	1,470.8	1,455.5	3.3	4.7	-88.88	4.7	-241.6	245.7	237.8	7.90	31.116		
1,600.0	1,600.0	1,569.1	1,552.2	3.5	5.1	-88.86	5.2	-259.4	263.8	255.3	8.51	30.982		
1,700.0	1,700.0	1,667.5	1,649.0	3.7	5.5	-88.84	5.6	-277.2	281.9	272.8	9.13	30.864		
1,800.0	1,800.0	1,765.8	1,745.7	3.9	5.9	-88.82	6.1	-295.0	300.0	290.3	9.75	30.760		
1,900.0	1,900.0	1,864.2	1,842.4	4.2	6.4	-88.80	6.5	-312.8	318.1	307.7	10.37	30.666		
2,000.0	2,000.0	1,962.5	1,939.1	4.4	6.8	-88.79	7.0	-330.6	336.2	325.2	10.99	30.581		
2,100.0	2,100.0	2,060.9	2,035.9	4.6	7.2	-88.77	7.5	-348.4	354.3	342.7	11.61	30.505		
2,200.0	2,200.0	2,159.2	2,132.6	4.8	7.6	-88.76	7.9	-366.2	372.4	360.2	12.24	30.436		
2,300.0	2,300.0	2,257.6	2,229.3	5.1	8.0	-88.75	8.4	-384.0	390.5	377.7	12.86	30.373		
2,400.0	2,400.0	2,355.9	2,326.0	5.3	8.4	-88.74	8.8	-401.8	408.6	395.1	13.48	30.315		
2,500.0	2,500.0	2,454.3	2,422.8	5.5	8.8	-88.73	9.3	-419.6	426.7	412.6	14.10	30.262		
2,600.0	2,600.0	2,552.6	2,519.5	5.7	9.2	-88.72	9.7	-437.4	444.8	430.1	14.72	30.213		
2,700.0	2,700.0	2,651.0	2,616.2	6.0	9.6	-88.72	10.2	-455.2	462.9	447.6	15.34	30.168		
2,800.0	2,800.0	2,749.3	2,712.9	6.2	10.0	-88.71	10.7	-473.0	481.0	465.1	15.97	30.126		
2,900.0	2,900.0	2,847.6	2,809.6	6.4	10.4	-88.70	11.1	-490.8	499.1	482.5	16.59	30.087		
3,000.0	3,000.0	2,946.0	2,906.4	6.6	10.8	-88.70	11.6	-508.6	517.2	500.0	17.21	30.051		
3,100.0	3,100.0	3,044.6	3,003.3	6.8	11.2	-16.86	12.0	-526.4	534.1	519.9	14.23	37.527		
3,200.0	3,199.9	3,143.5	3,100.6	7.1	11.7	-16.92	12.5	-544.3	548.5	533.8	14.70	37.301		
3,300.0	3,299.7	3,242.8	3,198.2	7.3	12.1	-17.05	13.0	-562.3	560.4	545.2	15.17	36.938		
3,365.0	3,364.4	3,307.4	3,261.8	7.4	12.3	-17.18	13.3	-574.0	566.8	551.4	15.47	36.635		
3,400.0	3,399.3	3,342.3	3,296.1	7.5	12.5	-17.27	13.4	-580.3	570.0	554.4	15.63	36.457		
3,500.0	3,498.8	3,441.8	3,394.0	7.7	12.9	-17.54	13.9	-598.3	579.1	563.0	16.10	35.968		
3,600.0	3,598.4	3,541.4	3,491.9	7.9	13.3	-17.79	14.4	-616.3	588.2	571.6	16.57	35.502		
3,700.0	3,697.9	3,640.9	3,589.8	8.2	13.7	-18.03	14.8	-634.3	597.3	580.2	17.04	35.060		
3,800.0	3,797.5	3,740.5	3,687.7	8.4	14.1	-18.27	15.3	-652.3	606.4	588.9	17.51	34.638		
3,838.3	3,835.6	3,778.6	3,725.2	8.5	14.3	-18.36	15.5	-659.2	609.9	592.2	17.69	34.481		
3,900.0	3,897.0	3,840.0	3,785.6	8.6	14.6	-18.52	15.7	-670.3	616.0	598.0	17.97	34.281		
4,000.0	3,996.8	3,939.3	3,883.2	8.8	15.0	-18.71	16.2	-688.3	627.8	609.4	18.40	34.119		
4,100.0	4,096.7	4,038.2	3,980.6	9.0	15.4	-18.84	16.7	-706.2	642.2	623.4	18.82	34.117		
4,203.3	4,200.0	4,140.0	4,080.7	9.2	15.8	-90.69	17.1	-724.6	659.6	640.3	19.24	34.280		
4,300.0	4,296.7	4,235.2	4,174.2	9.4	16.2	-90.64	17.6	-741.8	677.1	657.4	19.68	34.410		
4,400.0	4,396.7	4,333.5	4,271.0	9.6	16.6	-90.58	18.0	-759.6	695.2	675.0	20.15	34.499		
4,500.0	4,496.7	4,431.9	4,367.7	9.8	17.0	-90.53	18.5	-777.4	713.2	692.6	20.62	34.585		
4,600.0	4,596.7	4,530.2	4,464.4	10.1	17.4	-90.48	19.0	-795.2	731.3	710.2	21.10	34.666		
4,700.0	4,696.7	4,628.6	4,561.1	10.3	17.8	-90.43	19.4	-813.0	749.4	727.9	21.57	34.743		
4,800.0	4,796.7	4,726.9	4,657.9	10.5	18.2	-90.39	19.9	-830.8	767.5	745.5	22.04	34.817		

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,896.7	4,825.3	4,754.6	10.7	18.6	-90.35	-90.35	20.3	-848.6	785.6	763.1	22.52	34.887	
5,000.0	4,996.7	4,923.6	4,851.3	10.9	19.1	-90.30	-90.30	20.8	-866.4	803.7	780.7	22.99	34.955	
5,100.0	5,096.7	5,022.0	4,948.0	11.2	19.5	-90.27	-90.27	21.3	-884.2	821.8	798.3	23.47	35.019	
5,200.0	5,196.7	5,120.3	5,044.8	11.4	19.9	-90.23	-90.23	21.7	-902.0	839.9	816.0	23.94	35.081	
5,300.0	5,296.7	5,218.7	5,141.5	11.6	20.3	-90.19	-90.19	22.2	-919.8	858.0	833.6	24.42	35.141	
5,400.0	5,396.7	5,317.0	5,238.2	11.8	20.7	-90.16	-90.16	22.6	-937.6	876.1	851.2	24.89	35.198	
5,500.0	5,496.7	5,415.3	5,334.9	12.1	21.1	-90.12	-90.12	23.1	-955.4	894.2	868.8	25.37	35.252	
5,600.0	5,596.7	5,513.7	5,431.6	12.3	21.5	-90.09	-90.09	23.5	-973.2	912.3	886.4	25.84	35.305	
5,700.0	5,696.7	5,635.0	5,551.1	12.5	21.9	-90.06	-90.06	24.1	-994.3	929.8	903.4	26.34	35.293	
5,800.0	5,796.7	5,782.2	5,697.1	12.7	22.3	-90.03	-90.03	24.6	-1,013.6	942.9	916.1	26.85	35.114	
5,900.0	5,896.7	5,931.1	5,845.4	12.9	22.6	-90.01	-90.01	24.9	-1,025.5	950.9	923.6	27.34	34.779	
6,000.0	5,996.7	6,080.9	5,995.1	13.2	22.8	-90.00	-90.00	25.0	-1,029.7	953.7	925.9	27.82	34.284	
6,057.5	6,054.2	6,140.0	6,054.2	13.3	22.9	-90.00	-90.00	25.0	-1,029.7	953.7	925.6	28.05	34.001	
6,100.0	6,096.7	6,182.0	6,096.2	13.4	22.9	-89.50	-89.50	23.8	-1,029.7	953.7	925.5	28.20	33.813	
6,150.0	6,146.5	6,231.4	6,145.5	13.5	23.0	-89.50	-89.50	19.5	-1,029.7	953.7	925.3	28.37	33.613	
6,200.0	6,195.9	6,280.9	6,194.3	13.6	23.0	-89.51	-89.51	12.0	-1,029.8	953.7	925.2	28.54	33.419	
6,250.0	6,244.7	6,330.3	6,242.6	13.6	23.1	-89.52	-89.52	1.4	-1,029.9	953.7	925.0	28.70	33.227	
6,300.0	6,292.7	6,379.8	6,290.1	13.7	23.1	-89.52	-89.52	-12.3	-1,030.0	953.7	924.8	28.87	33.032	
6,350.0	6,339.6	6,429.2	6,336.6	13.8	23.2	-89.54	-89.54	-29.1	-1,030.2	953.7	924.7	29.05	32.828	
6,400.0	6,385.4	6,478.7	6,382.0	13.9	23.3	-89.55	-89.55	-48.9	-1,030.4	953.7	924.5	29.25	32.607	
6,450.0	6,429.7	6,528.2	6,425.9	14.0	23.3	-89.56	-89.56	-71.5	-1,030.6	953.7	924.3	29.47	32.362	
6,500.0	6,472.4	6,577.7	6,468.4	14.1	23.4	-89.58	-89.58	-97.0	-1,030.8	953.7	924.0	29.73	32.085	
6,550.0	6,513.3	6,627.2	6,509.1	14.2	23.5	-89.60	-89.60	-125.2	-1,031.1	953.7	923.7	30.02	31.768	
6,600.0	6,552.3	6,676.8	6,547.9	14.4	23.6	-89.62	-89.62	-155.9	-1,031.4	953.8	923.4	30.37	31.407	
6,650.0	6,589.1	6,726.4	6,584.7	14.6	23.7	-89.64	-89.64	-189.2	-1,031.7	953.8	923.0	30.77	30.994	
6,700.0	6,623.6	6,776.0	6,619.3	14.8	23.8	-89.67	-89.67	-224.8	-1,032.0	953.8	922.6	31.24	30.529	
6,750.0	6,655.7	6,825.6	6,651.4	15.1	24.0	-89.69	-89.69	-262.5	-1,032.3	953.8	922.0	31.78	30.010	
6,800.0	6,685.2	6,875.3	6,681.1	15.4	24.2	-89.72	-89.72	-302.3	-1,032.7	953.8	921.4	32.40	29.438	
6,850.0	6,712.0	6,924.9	6,708.2	15.8	24.3	-89.74	-89.74	-344.0	-1,033.1	953.9	920.8	33.10	28.818	
6,900.0	6,736.0	6,974.7	6,732.5	16.2	24.6	-89.77	-89.77	-387.4	-1,033.5	953.9	920.0	33.88	28.156	
6,950.0	6,757.1	7,024.4	6,753.9	16.6	24.8	-89.80	-89.80	-432.2	-1,033.9	953.9	919.2	34.74	27.459	
7,000.0	6,775.2	7,074.2	6,772.4	17.1	25.1	-89.83	-89.83	-478.5	-1,034.3	953.9	918.2	35.68	26.736	
7,050.0	6,790.2	7,124.0	6,787.9	17.6	25.4	-89.86	-89.86	-525.8	-1,034.8	953.9	917.2	36.70	25.996	
7,100.0	6,802.0	7,173.9	6,800.2	18.2	25.7	-89.90	-89.90	-574.1	-1,035.2	954.0	916.2	37.78	25.249	
7,150.0	6,810.6	7,223.8	6,809.4	18.8	26.1	-89.93	-89.93	-623.1	-1,035.7	954.0	915.1	38.93	24.502	
7,177.5	6,814.0	7,251.2	6,813.0	19.1	26.3	-89.95	-89.95	-650.4	-1,035.9	954.0	914.4	39.59	24.097	
7,200.0	6,816.3	7,273.7	6,815.4	19.4	26.5	-89.95	-89.95	-672.7	-1,036.1	954.0	913.9	40.14	23.765	
7,251.5	6,821.7	7,325.2	6,820.8	20.1	27.0	-89.95	-89.95	-723.9	-1,036.6	954.0	912.6	41.45	23.019	
7,300.0	6,825.8	7,373.7	6,825.2	20.7	27.4	-89.97	-89.97	-772.2	-1,037.1	954.1	911.3	42.72	22.333	
7,378.0	6,828.0	7,451.8	6,828.0	21.8	28.2	-90.00	-90.00	-850.2	-1,037.8	954.1	909.3	44.85	21.276	
7,400.0	6,827.9	7,473.7	6,827.9	22.1	28.4	-90.00	-90.00	-872.2	-1,038.0	954.1	908.7	45.46	20.988	
7,500.0	6,827.3	7,573.7	6,827.3	23.6	29.6	-90.00	-90.00	-972.1	-1,038.9	954.2	905.8	48.35	19.734	
7,600.0	6,826.7	7,673.7	6,826.8	25.1	30.8	-90.00	-90.00	-1,072.1	-1,039.8	954.2	902.8	51.36	18.578	
7,700.0	6,826.1	7,773.7	6,826.2	26.7	32.1	-90.00	-90.00	-1,172.1	-1,040.7	954.2	899.8	54.47	17.517	
7,800.0	6,825.6	7,873.7	6,825.6	28.3	33.4	-90.00	-90.00	-1,272.1	-1,041.7	954.3	896.6	57.67	16.547	
7,900.0	6,825.0	7,973.7	6,825.1	30.0	34.8	-90.00	-90.00	-1,372.1	-1,042.6	954.3	893.4	60.94	15.659	
8,000.0	6,824.4	8,073.7	6,824.5	31.6	36.3	-90.00	-90.00	-1,472.1	-1,043.5	954.4	890.1	64.28	14.848	
8,100.0	6,823.9	8,173.7	6,823.9	33.3	37.8	-90.00	-90.00	-1,572.1	-1,044.4	954.4	886.8	67.66	14.105	
8,200.0	6,823.3	8,273.7	6,823.4	35.1	39.3	-90.00	-90.00	-1,672.1	-1,045.3	954.5	883.4	71.10	13.425	
8,300.0	6,822.7	8,373.7	6,822.8	36.8	40.9	-90.00	-90.00	-1,772.1	-1,046.3	954.5	879.9	74.57	12.801	
8,400.0	6,822.1	8,473.7	6,822.2	38.6	42.5	-90.00	-90.00	-1,872.1	-1,047.2	954.6	876.5	78.07	12.227	

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	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	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
8,500.0	6,821.6	8,573.7	6,821.6	40.4	44.1	90.00	-1,972.1	-1,048.1	954.6	873.0	81.60	11.698	
8,600.0	6,821.0	8,673.7	6,821.1	42.2	45.8	90.00	-2,072.1	-1,049.0	954.6	869.5	85.16	11.210	
8,700.0	6,820.4	8,773.7	6,820.5	44.0	47.5	90.00	-2,172.1	-1,049.9	954.7	865.9	88.74	10.758	
8,800.0	6,819.9	8,873.7	6,819.9	45.8	49.2	90.00	-2,272.1	-1,050.9	954.7	862.4	92.34	10.339	
8,900.0	6,819.3	8,973.7	6,819.4	47.6	50.9	90.00	-2,372.1	-1,051.8	954.8	858.8	95.96	9.949	
9,000.0	6,818.7	9,073.7	6,818.8	49.4	52.6	90.00	-2,472.1	-1,052.7	954.8	855.2	99.60	9.587	
9,100.0	6,818.1	9,173.7	6,818.2	51.2	54.3	90.00	-2,572.1	-1,053.6	954.9	851.6	103.25	9.248	
9,200.0	6,817.6	9,273.7	6,817.6	53.1	56.1	90.00	-2,672.0	-1,054.5	954.9	848.0	106.91	8.932	
9,300.0	6,817.0	9,373.7	6,817.1	54.9	57.8	90.00	-2,772.0	-1,055.5	955.0	844.4	110.58	8.636	
9,400.0	6,816.4	9,473.7	6,816.5	56.8	59.6	90.00	-2,872.0	-1,056.4	955.0	840.7	114.27	8.358	
9,500.0	6,815.9	9,573.7	6,815.9	58.6	61.4	90.00	-2,972.0	-1,057.3	955.0	837.1	117.96	8.096	
9,600.0	6,815.3	9,673.7	6,815.4	60.5	63.2	90.00	-3,072.0	-1,058.2	955.1	833.4	121.66	7.850	
9,700.0	6,814.7	9,773.7	6,814.8	62.3	64.9	90.00	-3,172.0	-1,059.1	955.1	829.8	125.37	7.619	
9,800.0	6,814.1	9,873.7	6,814.2	64.2	66.7	90.00	-3,272.0	-1,060.1	955.2	826.1	129.09	7.400	
9,900.0	6,813.6	9,973.7	6,813.6	66.1	68.6	90.00	-3,372.0	-1,061.0	955.2	822.4	132.81	7.193	
10,000.0	6,813.0	10,073.7	6,813.1	67.9	70.4	90.00	-3,472.0	-1,061.9	955.3	818.7	136.54	6.996	
10,100.0	6,812.4	10,173.7	6,812.5	69.8	72.2	90.00	-3,572.0	-1,062.8	955.3	815.0	140.27	6.810	
10,200.0	6,811.9	10,273.7	6,811.9	71.7	74.0	90.00	-3,672.0	-1,063.7	955.4	811.3	144.01	6.634	
10,300.0	6,811.3	10,373.7	6,811.4	73.6	75.8	90.00	-3,772.0	-1,064.6	955.4	807.6	147.75	6.466	
10,400.0	6,810.7	10,473.7	6,810.8	75.4	77.7	90.00	-3,872.0	-1,065.6	955.4	803.9	151.50	6.306	
10,500.0	6,810.1	10,573.7	6,810.2	77.3	79.5	90.00	-3,972.0	-1,066.5	955.5	800.2	155.25	6.154	
10,600.0	6,809.6	10,673.7	6,809.6	79.2	81.3	90.00	-4,072.0	-1,067.4	955.5	796.5	159.01	6.009	
10,700.0	6,809.0	10,773.7	6,809.1	81.1	83.2	90.00	-4,172.0	-1,068.3	955.6	792.8	162.77	5.871	
10,800.0	6,808.4	10,873.7	6,808.5	83.0	85.0	90.00	-4,272.0	-1,069.2	955.6	789.1	166.53	5.738	
10,900.0	6,807.9	10,973.7	6,807.9	84.9	86.9	90.00	-4,372.0	-1,070.2	955.7	785.4	170.30	5.612	
11,000.0	6,807.3	11,073.7	6,807.4	86.7	88.7	90.00	-4,471.9	-1,071.1	955.7	781.6	174.07	5.491	
11,100.0	6,806.7	11,173.7	6,806.8	88.6	90.6	90.00	-4,571.9	-1,072.0	955.8	777.9	177.84	5.374	
11,200.0	6,806.1	11,273.7	6,806.2	90.5	92.4	90.00	-4,671.9	-1,072.9	955.8	774.2	181.61	5.263	
11,226.0	6,806.0	11,299.7	6,806.1	90.9	92.9	90.00	-4,697.9	-1,073.2	955.8	773.3	182.50	5.237 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersten 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	Offset Datum

Offset Design Guttersten 6R-403 Pad Sec.6-T2N-R63W - Guttersten 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	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.99	89.99	0.0	30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	89.99	89.99	0.0	30.7	30.7	30.5	0.22	136.762	
200.0	200.0	200.0	200.0	0.3	0.3	89.99	89.99	0.0	30.7	30.7	30.1	0.67	45.587	
300.0	300.0	300.0	300.0	0.6	0.6	89.99	89.99	0.0	30.7	30.7	29.6	1.12	27.352	
400.0	400.0	400.0	400.0	0.8	0.8	89.99	89.99	0.0	30.7	30.7	29.2	1.57	19.537	
500.0	500.0	500.0	500.0	1.0	1.0	89.99	89.99	0.0	30.7	30.7	28.7	2.02	15.196	
600.0	600.0	600.0	600.0	1.2	1.2	89.99	89.99	0.0	30.7	30.7	28.3	2.47	12.433	
700.0	700.0	700.0	700.0	1.5	1.5	89.99	89.99	0.0	30.7	30.7	27.8	2.92	10.520	
800.0	800.0	800.0	800.0	1.7	1.7	89.99	89.99	0.0	30.7	30.7	27.4	3.37	9.117	
900.0	900.0	900.0	900.0	1.9	1.9	89.99	89.99	0.0	30.7	30.7	26.9	3.82	8.045	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.99	89.99	0.0	30.7	30.7	26.5	4.27	7.198 CC, ES	
1,100.0	1,100.0	1,099.2	1,099.2	2.4	2.3	89.73	89.73	0.2	32.0	32.0	27.3	4.71	6.805	
1,200.0	1,200.0	1,198.2	1,198.1	2.6	2.6	89.04	89.04	0.6	35.8	35.9	30.8	5.14	6.990	
1,300.0	1,300.0	1,297.0	1,296.7	2.8	2.8	88.18	88.18	1.3	42.2	42.4	36.8	5.57	7.600	
1,400.0	1,400.0	1,396.6	1,396.0	3.0	3.0	87.41	87.41	2.3	50.1	50.3	44.3	6.02	8.353	
1,500.0	1,500.0	1,496.3	1,495.4	3.3	3.2	86.85	86.85	3.2	58.0	58.2	51.8	6.47	8.996	
1,600.0	1,600.0	1,596.0	1,594.7	3.5	3.5	86.43	86.43	4.1	65.9	66.2	59.3	6.93	9.548	
1,700.0	1,700.0	1,695.7	1,694.1	3.7	3.7	86.10	86.10	5.0	73.7	74.2	66.8	7.40	10.026	
1,800.0	1,800.0	1,795.3	1,793.5	3.9	3.9	85.83	85.83	6.0	81.6	82.1	74.3	7.86	10.444	
1,900.0	1,900.0	1,895.0	1,892.8	4.2	4.2	85.61	85.61	6.9	89.5	90.1	81.7	8.33	10.812	
2,000.0	2,000.0	1,994.7	1,992.2	4.4	4.4	85.43	85.43	7.8	97.4	98.0	89.2	8.80	11.138	
2,100.0	2,100.0	2,094.4	2,091.6	4.6	4.7	85.27	85.27	8.7	105.3	106.0	96.7	9.28	11.429	
2,200.0	2,200.0	2,194.1	2,190.9	4.8	4.9	85.13	85.13	9.6	113.2	114.0	104.2	9.75	11.689	
2,300.0	2,300.0	2,293.8	2,290.3	5.1	5.2	85.02	85.02	10.6	121.1	121.9	111.7	10.23	11.924	
2,400.0	2,400.0	2,393.4	2,389.7	5.3	5.5	84.91	84.91	11.5	129.0	129.9	119.2	10.70	12.137	
2,500.0	2,500.0	2,493.1	2,489.0	5.5	5.7	84.82	84.82	12.4	136.9	137.9	126.7	11.18	12.330	
2,600.0	2,600.0	2,592.8	2,588.4	5.7	6.0	84.74	84.74	13.3	144.8	145.8	134.2	11.66	12.507	
2,700.0	2,700.0	2,692.5	2,687.7	6.0	6.2	84.67	84.67	14.2	152.6	153.8	141.7	12.14	12.669	
2,800.0	2,800.0	2,792.2	2,787.1	6.2	6.5	84.60	84.60	15.2	160.5	161.8	149.1	12.62	12.817	
2,900.0	2,900.0	2,891.8	2,886.5	6.4	6.8	84.54	84.54	16.1	168.4	169.7	156.6	13.10	12.955	
3,000.0	3,000.0	2,991.5	2,985.8	6.6	7.0	84.49	84.49	17.0	176.3	177.7	164.1	13.58	13.082	
3,100.0	3,100.0	3,091.1	3,085.1	6.8	7.3	156.34	156.34	17.9	184.2	186.9	173.3	13.57	13.772	
3,200.0	3,199.9	3,190.4	3,184.1	7.1	7.5	156.67	156.67	18.8	192.1	198.4	184.4	13.98	14.190	
3,300.0	3,299.7	3,289.4	3,282.8	7.3	7.8	157.23	157.23	19.8	199.9	212.4	198.0	14.39	14.760	
3,365.0	3,364.4	3,353.6	3,346.7	7.4	8.0	157.68	157.68	20.4	205.0	222.7	208.1	14.65	15.206	
3,400.0	3,399.3	3,388.0	3,381.1	7.5	8.1	157.97	157.97	20.7	207.7	228.6	213.8	14.80	15.448	
3,500.0	3,498.8	3,486.6	3,479.3	7.7	8.3	158.70	158.70	21.6	215.5	245.4	230.1	15.23	16.112	
3,600.0	3,598.4	3,585.1	3,577.5	7.9	8.6	159.35	159.35	22.5	223.3	262.2	246.5	15.66	16.739	
3,700.0	3,697.9	3,683.7	3,675.8	8.2	8.8	159.91	159.91	23.4	231.1	279.0	262.9	16.10	17.332	
3,800.0	3,797.5	3,788.7	3,780.6	8.4	9.1	160.46	160.46	24.3	238.5	295.0	278.5	16.53	17.847	
3,838.3	3,835.6	3,829.8	3,821.6	8.5	9.2	160.68	160.68	24.5	240.6	300.4	283.7	16.69	18.002	
3,900.0	3,897.0	3,896.3	3,888.1	8.6	9.3	161.03	161.03	24.8	243.1	307.8	290.9	16.95	18.156	
4,000.0	3,996.8	4,004.8	3,996.5	8.8	9.5	161.46	161.46	25.0	244.7	315.6	298.2	17.37	18.165	
4,100.0	4,096.7	4,105.0	4,096.7	9.0	9.7	161.71	161.71	25.0	244.7	319.4	301.6	17.78	17.960	
4,203.3	4,200.0	4,208.3	4,200.0	9.2	9.9	90.00	90.00	25.0	244.7	320.7	302.5	18.20	17.620	
4,300.0	4,296.7	4,305.0	4,296.7	9.4	10.1	90.00	90.00	25.0	244.7	320.7	302.1	18.60	17.245	
4,400.0	4,396.7	4,405.0	4,396.7	9.6	10.3	90.00	90.00	25.0	244.7	320.7	301.7	19.03	16.853	
4,500.0	4,496.7	4,505.0	4,496.7	9.8	10.5	90.00	90.00	25.0	244.7	320.7	301.3	19.47	16.477	
4,600.0	4,496.7	4,605.0	4,596.7	10.1	10.7	90.00	90.00	25.0	244.7	320.7	300.8	19.90	16.117	
4,700.0	4,496.7	4,705.0	4,696.7	10.3	10.9	90.00	90.00	25.0	244.7	320.7	300.4	20.34	15.773	
4,800.0	4,796.7	4,805.0	4,796.7	10.5	11.1	90.00	90.00	25.0	244.7	320.7	300.0	20.77	15.442	

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	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		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)			
4,900.0	4,896.7	4,905.0	4,896.7	10.7	11.3	90.00	25.0	244.7	320.7	299.5	21.21	15.124	
5,000.0	4,996.7	5,005.0	4,996.7	10.9	11.5	90.00	25.0	244.7	320.7	299.1	21.64	14.819	
5,100.0	5,096.7	5,105.0	5,096.7	11.2	11.7	90.00	25.0	244.7	320.7	298.7	22.08	14.525	
5,200.0	5,196.7	5,205.0	5,196.7	11.4	11.9	90.00	25.0	244.7	320.7	298.2	22.52	14.243	
5,300.0	5,296.7	5,305.0	5,296.7	11.6	12.1	90.00	25.0	244.7	320.7	297.8	22.96	13.971	
5,400.0	5,396.7	5,405.0	5,396.7	11.8	12.3	90.00	25.0	244.7	320.7	297.3	23.40	13.709	
5,500.0	5,496.7	5,505.0	5,496.7	12.1	12.5	90.00	25.0	244.7	320.7	296.9	23.83	13.457	
5,600.0	5,596.7	5,605.0	5,596.7	12.3	12.7	90.00	25.0	244.7	320.7	296.5	24.27	13.213	
5,700.0	5,696.7	5,705.0	5,696.7	12.5	12.9	90.00	25.0	244.7	320.7	296.0	24.71	12.978	
5,800.0	5,796.7	5,805.0	5,796.7	12.7	13.1	90.00	25.0	244.7	320.7	295.6	25.15	12.751	
5,900.0	5,896.7	5,905.1	5,896.8	12.9	13.3	90.04	24.8	244.7	320.7	295.1	25.59	12.533	
5,948.0	5,944.8	5,953.1	5,944.8	13.1	13.4	90.53	22.1	244.7	320.7	294.9	25.78	12.438	
6,000.0	5,996.7	6,004.5	5,995.8	13.2	13.5	91.64	15.8	244.7	320.8	294.8	25.99	12.342	
6,057.5	6,054.2	6,060.1	6,050.3	13.3	13.6	93.53	5.2	244.6	321.2	295.0	26.22	12.252	
6,100.0	6,096.7	6,100.0	6,088.9	13.4	13.7	-85.33	-4.8	244.5	321.8	295.5	26.37	12.206	
6,150.0	6,146.5	6,147.1	6,133.8	13.5	13.8	-83.40	-19.2	244.3	322.9	296.4	26.53	12.172	
6,200.0	6,195.9	6,193.3	6,176.8	13.6	13.9	-81.54	-36.0	244.2	324.4	297.7	26.69	12.153	
6,250.0	6,244.7	6,239.0	6,218.3	13.6	14.0	-79.73	-55.1	244.0	326.1	299.3	26.85	12.146	
6,300.0	6,292.7	6,284.1	6,258.1	13.7	14.1	-77.99	-76.4	243.8	328.2	301.2	27.01	12.150	
6,350.0	6,339.6	6,328.8	6,296.1	13.8	14.2	-76.31	-99.8	243.6	330.4	303.2	27.17	12.162	
6,400.0	6,385.4	6,373.0	6,332.4	13.9	14.3	-74.72	-125.0	243.4	332.8	305.5	27.33	12.179	
6,450.0	6,429.7	6,416.7	6,366.8	14.0	14.4	-73.20	-152.1	243.1	335.4	307.9	27.50	12.198	
6,500.0	6,472.4	6,460.1	6,399.3	14.1	14.6	-71.77	-180.8	242.8	338.1	310.4	27.68	12.216	
6,550.0	6,513.3	6,500.0	6,427.7	14.2	14.7	-70.51	-208.8	242.6	340.8	312.9	27.86	12.233	
6,600.0	6,552.3	6,545.8	6,458.5	14.4	15.0	-69.17	-242.7	242.3	343.5	315.4	28.09	12.230	
6,650.0	6,589.1	6,588.2	6,485.2	14.6	15.2	-68.01	-275.7	242.0	346.2	317.9	28.34	12.218	
6,700.0	6,623.6	6,630.4	6,509.8	14.8	15.5	-66.94	-309.9	241.7	348.9	320.3	28.63	12.188	
6,750.0	6,655.7	6,672.2	6,532.3	15.1	15.8	-65.96	-345.1	241.3	351.4	322.5	28.96	12.137	
6,800.0	6,685.2	6,713.9	6,552.8	15.4	16.1	-65.07	-381.4	241.0	353.9	324.5	29.34	12.062	
6,850.0	6,712.0	6,755.3	6,571.2	15.8	16.4	-64.27	-418.5	240.7	356.1	326.3	29.78	11.960	
6,900.0	6,736.0	6,800.0	6,588.7	16.2	16.8	-63.52	-459.6	240.3	358.2	327.9	30.31	11.820	
6,950.0	6,757.1	6,837.7	6,601.6	16.6	17.2	-62.95	-495.0	240.0	360.1	329.2	30.87	11.665	
7,000.0	6,775.2	6,878.7	6,613.7	17.1	17.6	-62.43	-534.1	239.6	361.7	330.2	31.52	11.474	
7,050.0	6,790.2	6,919.5	6,623.6	17.6	18.1	-62.00	-573.8	239.2	363.1	330.8	32.25	11.256	
7,100.0	6,802.0	6,960.3	6,631.3	18.2	18.6	-61.65	-613.8	238.9	364.2	331.1	33.07	11.013	
7,150.0	6,810.6	7,000.0	6,636.8	18.8	19.1	-61.40	-653.1	238.5	365.0	331.0	33.95	10.752	
7,177.5	6,814.0	7,023.4	6,639.1	19.1	19.4	-61.29	-676.4	238.3	365.3	330.8	34.48	10.595	
7,200.0	6,816.3	7,041.6	6,640.4	19.4	19.6	-61.20	-694.6	238.1	365.7	330.8	34.92	10.473	
7,251.5	6,821.7	7,083.3	6,641.6	20.1	20.1	-60.78	-736.2	237.7	367.5	331.6	35.89	10.241	
7,300.0	6,825.8	7,127.1	6,640.9	20.7	20.7	-60.10	-780.0	237.3	369.9	333.1	36.81	10.049	
7,378.0	6,828.0	7,205.0	6,639.3	21.8	21.8	-59.50	-857.9	236.6	371.8	333.2	38.56	9.641	
7,400.0	6,827.9	7,227.0	6,638.8	22.1	22.1	-59.45	-879.9	236.4	371.9	332.8	39.11	9.511	
7,500.0	6,827.3	7,327.0	6,636.7	23.6	23.6	-59.24	-979.8	235.5	372.7	331.1	41.64	8.951	
7,600.0	6,826.7	7,427.0	6,634.6	25.1	25.1	-59.04	-1,079.8	234.6	373.4	329.2	44.26	8.438	
7,700.0	6,826.1	7,526.9	6,632.5	26.7	26.7	-58.83	-1,179.8	233.7	374.2	327.2	46.96	7.969	
7,800.0	6,825.6	7,626.9	6,630.4	28.3	28.3	-58.63	-1,279.7	232.7	375.0	325.2	49.72	7.541	
7,900.0	6,825.0	7,726.9	6,628.3	30.0	30.0	-58.42	-1,379.7	231.8	375.7	323.2	52.53	7.152	
8,000.0	6,824.4	7,826.9	6,626.2	31.6	31.7	-58.22	-1,479.7	230.9	376.5	321.1	55.39	6.798	
8,100.0	6,823.9	7,926.9	6,624.1	33.3	33.4	-58.02	-1,579.6	230.0	377.3	319.0	58.27	6.474	
8,200.0	6,823.3	8,026.9	6,621.9	35.1	35.1	-57.82	-1,679.6	229.1	378.1	316.9	61.18	6.179	
8,300.0	6,822.7	8,126.9	6,619.8	36.8	36.9	-57.61	-1,779.5	228.1	378.8	314.7	64.12	5.909	

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 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	Offset TVD Reference:	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
8,400.0	6,822.1	8,226.9	6,617.7	38.6	38.7	-57.41	-1,879.5	227.2	379.6	312.6	67.06	5.661	
8,500.0	6,821.6	8,326.8	6,615.6	40.4	40.4	-57.22	-1,979.5	226.3	380.4	310.4	70.02	5.433	
8,600.0	6,821.0	8,426.8	6,613.5	42.2	42.2	-57.02	-2,079.4	225.4	381.2	308.2	72.99	5.223	
8,700.0	6,820.4	8,526.8	6,611.4	44.0	44.0	-56.82	-2,179.4	224.5	382.0	306.1	75.97	5.029	
8,800.0	6,819.9	8,626.8	6,609.3	45.8	45.8	-56.62	-2,279.3	223.6	382.8	303.9	78.95	4.849	
8,900.0	6,819.3	8,726.8	6,607.2	47.6	47.7	-56.43	-2,379.3	222.6	383.7	301.7	81.94	4.682	
9,000.0	6,818.7	8,826.8	6,605.0	49.4	49.5	-56.23	-2,479.3	221.7	384.5	299.5	84.92	4.527	
9,100.0	6,818.1	8,926.8	6,602.9	51.2	51.3	-56.04	-2,579.2	220.8	385.3	297.4	87.91	4.383	
9,200.0	6,817.6	9,026.8	6,600.8	53.1	53.2	-55.85	-2,679.2	219.9	386.1	295.2	90.89	4.248	
9,300.0	6,817.0	9,126.8	6,598.7	54.9	55.0	-55.65	-2,779.2	219.0	386.9	293.1	93.87	4.122	
9,400.0	6,816.4	9,226.7	6,596.6	56.8	56.9	-55.46	-2,879.1	218.0	387.8	290.9	96.85	4.004	
9,500.0	6,815.9	9,326.7	6,594.5	58.6	58.7	-55.27	-2,979.1	217.1	388.6	288.8	99.82	3.893	
9,600.0	6,815.3	9,426.7	6,592.4	60.5	60.6	-55.08	-3,079.0	216.2	389.5	286.7	102.79	3.789	
9,700.0	6,814.7	9,526.7	6,590.3	62.3	62.4	-54.89	-3,179.0	215.3	390.3	284.6	105.75	3.691	
9,800.0	6,814.1	9,626.7	6,588.2	64.2	64.3	-54.70	-3,279.0	214.4	391.2	282.5	108.71	3.598	
9,900.0	6,813.6	9,726.7	6,586.0	66.1	66.1	-54.52	-3,378.9	213.4	392.0	280.4	111.65	3.511	
10,000.0	6,813.0	9,826.7	6,583.9	67.9	68.0	-54.33	-3,478.9	212.5	392.9	278.3	114.60	3.428	
10,100.0	6,812.4	9,926.7	6,581.8	69.8	69.9	-54.14	-3,578.8	211.6	393.7	276.2	117.53	3.350	
10,200.0	6,811.9	10,026.6	6,579.7	71.7	71.8	-53.96	-3,678.8	210.7	394.6	274.2	120.46	3.276	
10,300.0	6,811.3	10,126.6	6,577.6	73.6	73.6	-53.77	-3,778.8	209.8	395.5	272.1	123.38	3.205	
10,400.0	6,810.7	10,226.6	6,575.5	75.4	75.5	-53.59	-3,878.7	208.8	396.4	270.1	126.29	3.139	
10,500.0	6,810.1	10,326.6	6,573.4	77.3	77.4	-53.41	-3,978.7	207.9	397.2	268.1	129.19	3.075	
10,600.0	6,809.6	10,426.6	6,571.3	79.2	79.3	-53.23	-4,078.7	207.0	398.1	266.0	132.08	3.014	
10,700.0	6,809.0	10,526.6	6,569.2	81.1	81.2	-53.05	-4,178.6	206.1	399.0	264.1	134.97	2.956	
10,800.0	6,808.4	10,626.6	6,567.0	83.0	83.0	-52.87	-4,278.6	205.2	399.9	262.1	137.84	2.901	
10,900.0	6,807.9	10,726.6	6,564.9	84.9	84.9	-52.69	-4,378.5	204.3	400.8	260.1	140.71	2.848	
11,000.0	6,807.3	10,826.6	6,562.8	86.7	86.8	-52.51	-4,478.5	203.3	401.7	258.1	143.57	2.798	
11,100.0	6,806.7	10,926.5	6,560.7	88.6	88.7	-52.33	-4,578.5	202.4	402.6	256.2	146.42	2.750	
11,200.0	6,806.1	11,026.5	6,558.6	90.5	90.6	-52.15	-4,678.4	201.5	403.5	254.3	149.25	2.704	
11,226.0	6,806.0	11,052.5	6,558.0	90.9	91.1	-52.11	-4,704.4	201.3	403.8	253.9	149.90	2.693 SF	

Reference Depths are relative to WELL @ 4851.0ft (RKB - 15')	Coordinates are relative to: Gutteresen 6U-443
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.66°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Guttersen 6U-443
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 6U-443	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (5-31-13)	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 6U-443

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.66°

