

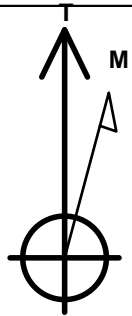
# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Klein 19P-312**

Surface Location: Klein 19O-HZ Pad Sec.19-T5N-R64W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4626.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1384480.15 3253110.75 40.385240 -104.591380  
 RKB - 15' WELL @ 4641.0ft (RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2419'FNL & 2250'FEL, Sec.19	1.0	0.0	0.0	Point
BHL 1653'FSL & 500'FEL, Sec.20	6728.0	-1160.3	7037.3	Point



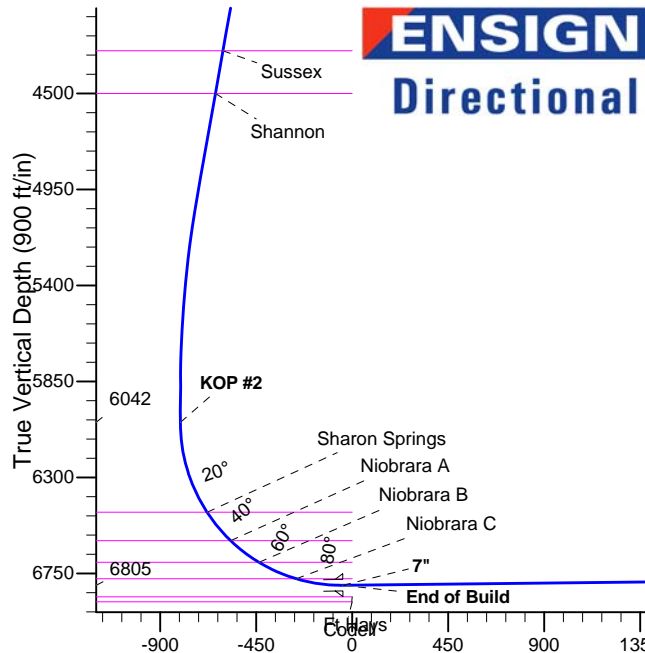
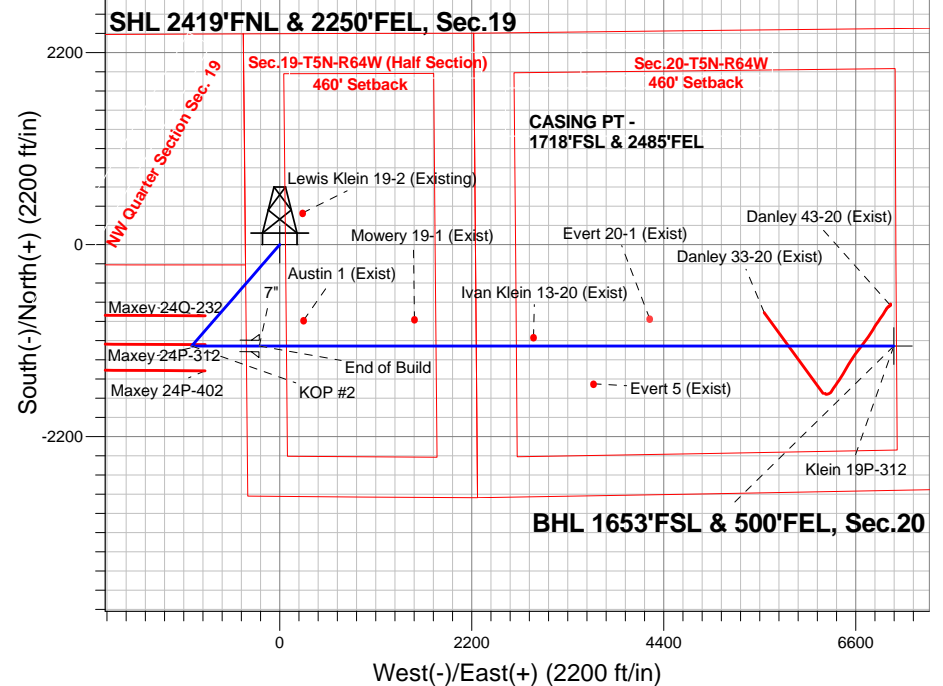
Azimuths to True North  
 Magnetic North: 8.40°

Magnetic Field  
 Strength: 52854.9nT  
 Dip Angle: 66.97°  
 Date: 3/11/2014  
 Model: IGRF2010

Klein 19O-HZ Pad Sec.19-T5N-R64W  
 Klein 19P-312  
 Plan #1 (3-05-14)  
 11:34, March 14 2014

## ANNOTATIONS

TVD	MD	Annotation
400.0	400.0	KOP #1
6041.5	6276.8	KOP #2
6805.4	7484.9	End of Build



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1330.8	18.62	220.95	1314.5	-113.2	-98.2	2.00	220.95	-78.5	
4	5204.5	18.62	220.95	4985.5	-1047.1	-908.8	0.00	0.00	-726.3	
5	6135.3	0.00	0.00	5900.0	-1160.3	-1007.0	2.00	180.00	-804.8	
6	6276.8	0.00	0.00	6041.5	-1160.3	-1007.0	0.00	0.00	-804.8	
7	7484.9	90.61	90.00	6805.4	-1160.3	-234.9	7.50	90.00	-43.0	
8	14757.6	90.61	90.00	6728.0	-1160.3	7037.3	0.00	0.00	7132.3	BHL 1653'FSL & 500'FEL, Sec.20

BHL 1653'FSL & 500'FEL, Sec.20



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

**Klein 19O-HZ Pad Sec.19-T5N-R64W**

**Klein 19P-312**

**Wellbore #1**

**Plan: Plan #1 (3-05-14)**

## **Standard Planning Report**

**14 March, 2014**

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (3-05-14)		

<b>Project</b>	SEC.19-T5N-R64W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,384,542.09 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,253,110.11 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.385410
		<b>Longitude:</b>	-104.591380
		<b>Grid Convergence:</b>	0.59 °

<b>Well</b>	Klein 19P-312		
<b>Well Position</b>	<b>+N/-S</b>	-61.9 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			ft
			<b>Latitude:</b>
			40.385240
			<b>Longitude:</b>
			-104.591380
			<b>Ground Level:</b>
			4,626.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/11/2014	8.40	66.97	52,855

<b>Design</b>	Plan #1 (3-05-14)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	99.36

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,330.8	18.62	220.95	1,314.5	-113.2	-98.2	2.00	2.00	0.00	220.95	
5,204.5	18.62	220.95	4,985.5	-1,047.1	-908.8	0.00	0.00	0.00	0.00	
6,135.3	0.00	0.00	5,900.0	-1,160.3	-1,007.0	2.00	-2.00	0.00	180.00	
6,276.8	0.00	0.00	6,041.5	-1,160.3	-1,007.0	0.00	0.00	0.00	0.00	
7,484.9	90.61	90.00	6,805.4	-1,160.3	-234.9	7.50	7.50	0.00	90.00	
14,757.6	90.61	90.00	6,728.0	-1,160.3	7,037.3	0.00	0.00	0.00	0.00	BHL 1653'FSL & 5C

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (3-05-14)		

#### 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
<b>SHL 2419'FNL &amp; 2250'FEL, Sec.19</b>									
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
<b>KOP #1</b>									
500.0	2.00	220.95	500.0	-1.3	-1.1	-0.9	2.00	2.00	0.00
600.0	4.00	220.95	599.8	-5.3	-4.6	-3.7	2.00	2.00	0.00
700.0	6.00	220.95	699.5	-11.9	-10.3	-8.2	2.00	2.00	0.00
800.0	8.00	220.95	798.7	-21.1	-18.3	-14.6	2.00	2.00	0.00
900.0	10.00	220.95	897.5	-32.9	-28.5	-22.8	2.00	2.00	0.00
1,000.0	12.00	220.95	995.6	-47.3	-41.0	-32.8	2.00	2.00	0.00
1,100.0	14.00	220.95	1,093.1	-64.3	-55.8	-44.6	2.00	2.00	0.00
1,200.0	16.00	220.95	1,189.6	-83.8	-72.7	-58.1	2.00	2.00	0.00
1,300.0	18.00	220.95	1,285.3	-105.9	-91.9	-73.5	2.00	2.00	0.00
1,330.8	18.62	220.95	1,314.5	-113.2	-98.2	-78.5	2.00	2.00	0.00
1,400.0	18.62	220.95	1,380.1	-129.9	-112.7	-90.1	0.00	0.00	0.00
1,500.0	18.62	220.95	1,474.9	-154.0	-133.6	-106.8	0.00	0.00	0.00
1,600.0	18.62	220.95	1,569.6	-178.1	-154.6	-123.5	0.00	0.00	0.00
1,700.0	18.62	220.95	1,664.4	-202.2	-175.5	-140.3	0.00	0.00	0.00
1,800.0	18.62	220.95	1,759.2	-226.3	-196.4	-157.0	0.00	0.00	0.00
1,900.0	18.62	220.95	1,853.9	-250.4	-217.3	-173.7	0.00	0.00	0.00
2,000.0	18.62	220.95	1,948.7	-274.5	-238.3	-190.4	0.00	0.00	0.00
2,100.0	18.62	220.95	2,043.5	-298.6	-259.2	-207.2	0.00	0.00	0.00
2,200.0	18.62	220.95	2,138.2	-322.8	-280.1	-223.9	0.00	0.00	0.00
2,300.0	18.62	220.95	2,233.0	-346.9	-301.0	-240.6	0.00	0.00	0.00
2,400.0	18.62	220.95	2,327.8	-371.0	-322.0	-257.3	0.00	0.00	0.00
2,500.0	18.62	220.95	2,422.5	-395.1	-342.9	-274.0	0.00	0.00	0.00
2,600.0	18.62	220.95	2,517.3	-419.2	-363.8	-290.8	0.00	0.00	0.00
2,700.0	18.62	220.95	2,612.1	-443.3	-384.7	-307.5	0.00	0.00	0.00
2,800.0	18.62	220.95	2,706.8	-467.4	-405.7	-324.2	0.00	0.00	0.00
2,900.0	18.62	220.95	2,801.6	-491.5	-426.6	-340.9	0.00	0.00	0.00
3,000.0	18.62	220.95	2,896.4	-515.6	-447.5	-357.7	0.00	0.00	0.00
3,100.0	18.62	220.95	2,991.1	-539.7	-468.4	-374.4	0.00	0.00	0.00
3,200.0	18.62	220.95	3,085.9	-563.8	-489.3	-391.1	0.00	0.00	0.00
3,300.0	18.62	220.95	3,180.7	-588.0	-510.3	-407.8	0.00	0.00	0.00
3,400.0	18.62	220.95	3,275.4	-612.1	-531.2	-424.5	0.00	0.00	0.00
3,500.0	18.62	220.95	3,370.2	-636.2	-552.1	-441.3	0.00	0.00	0.00
3,600.0	18.62	220.95	3,465.0	-660.3	-573.0	-458.0	0.00	0.00	0.00
3,689.7	18.62	220.95	3,550.0	-681.9	-591.8	-473.0	0.00	0.00	0.00
<b>Parkman</b>									
3,700.0	18.62	220.95	3,559.8	-684.4	-594.0	-474.7	0.00	0.00	0.00
3,800.0	18.62	220.95	3,654.5	-708.5	-614.9	-491.4	0.00	0.00	0.00
3,900.0	18.62	220.95	3,749.3	-732.6	-635.8	-508.2	0.00	0.00	0.00
4,000.0	18.62	220.95	3,844.1	-756.7	-656.7	-524.9	0.00	0.00	0.00
4,100.0	18.62	220.95	3,938.8	-780.8	-677.7	-541.6	0.00	0.00	0.00
4,200.0	18.62	220.95	4,033.6	-804.9	-698.6	-558.3	0.00	0.00	0.00
4,300.0	18.62	220.95	4,128.4	-829.0	-719.5	-575.1	0.00	0.00	0.00
4,400.0	18.62	220.95	4,223.1	-853.2	-740.4	-591.8	0.00	0.00	0.00
4,481.1	18.62	220.95	4,300.0	-872.7	-757.4	-605.3	0.00	0.00	0.00
<b>Sussex</b>									

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<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (3-05-14)		

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)
4,500.0	18.62	220.95	4,317.9	-877.3	-761.4	-608.5	0.00	0.00	0.00
4,600.0	18.62	220.95	4,412.7	-901.4	-782.3	-625.2	0.00	0.00	0.00
4,692.2	18.62	220.95	4,500.0	-923.6	-801.6	-640.6	0.00	0.00	0.00
<b>Shannon</b>									
4,700.0	18.62	220.95	4,507.4	-925.5	-803.2	-641.9	0.00	0.00	0.00
4,800.0	18.62	220.95	4,602.2	-949.6	-824.1	-658.7	0.00	0.00	0.00
4,900.0	18.62	220.95	4,697.0	-973.7	-845.1	-675.4	0.00	0.00	0.00
5,000.0	18.62	220.95	4,791.7	-997.8	-866.0	-692.1	0.00	0.00	0.00
5,100.0	18.62	220.95	4,886.5	-1,021.9	-886.9	-708.8	0.00	0.00	0.00
5,200.0	18.62	220.95	4,981.3	-1,046.0	-907.8	-725.6	0.00	0.00	0.00
5,204.5	18.62	220.95	4,985.5	-1,047.1	-908.8	-726.3	0.00	0.00	0.00
5,300.0	16.71	220.95	5,076.5	-1,069.0	-927.8	-741.5	2.00	-2.00	0.00
5,400.0	14.71	220.95	5,172.8	-1,089.4	-945.5	-755.7	2.00	-2.00	0.00
5,500.0	12.71	220.95	5,269.9	-1,107.3	-961.0	-768.1	2.00	-2.00	0.00
5,600.0	10.71	220.95	5,367.9	-1,122.6	-974.3	-778.7	2.00	-2.00	0.00
5,700.0	8.71	220.95	5,466.4	-1,135.4	-985.4	-787.5	2.00	-2.00	0.00
5,800.0	6.71	220.95	5,565.5	-1,145.5	-994.2	-794.6	2.00	-2.00	0.00
5,900.0	4.71	220.95	5,665.0	-1,153.0	-1,000.7	-799.8	2.00	-2.00	0.00
6,000.0	2.71	220.95	5,764.8	-1,157.9	-1,004.9	-803.2	2.00	-2.00	0.00
6,100.0	0.71	220.95	5,864.7	-1,160.1	-1,006.9	-804.7	2.00	-2.00	0.00
6,135.3	0.00	0.00	5,900.0	-1,160.3	-1,007.0	-804.8	2.00	-2.00	0.00
6,200.0	0.00	0.00	5,964.7	-1,160.3	-1,007.0	-804.8	0.00	0.00	0.00
6,276.8	0.00	0.00	6,041.5	-1,160.3	-1,007.0	-804.8	0.00	0.00	0.00
<b>KOP #2</b>									
6,300.0	1.74	90.00	6,064.7	-1,160.3	-1,006.6	-804.5	7.51	7.51	0.00
6,400.0	9.24	90.00	6,164.2	-1,160.3	-997.1	-795.0	7.50	7.50	0.00
6,500.0	16.74	90.00	6,261.6	-1,160.3	-974.6	-772.9	7.50	7.50	0.00
6,600.0	24.24	90.00	6,355.2	-1,160.3	-939.6	-738.4	7.50	7.50	0.00
6,700.0	31.74	90.00	6,443.4	-1,160.3	-892.7	-692.1	7.50	7.50	0.00
6,723.2	33.48	90.00	6,463.0	-1,160.3	-880.2	-679.7	7.50	7.50	0.00
<b>Sharon Springs</b>									
6,800.0	39.24	90.00	6,524.8	-1,160.3	-834.7	-634.8	7.50	7.50	0.00
6,897.3	46.54	90.00	6,596.0	-1,160.3	-768.6	-569.6	7.50	7.50	0.00
<b>Niobrara A</b>									
6,900.0	46.74	90.00	6,597.9	-1,160.3	-766.6	-567.6	7.50	7.50	0.00
7,000.0	54.24	90.00	6,661.5	-1,160.3	-689.5	-491.5	7.50	7.50	0.00
7,066.7	59.24	90.00	6,698.0	-1,160.3	-633.8	-436.6	7.50	7.50	0.00
<b>Niobrara B</b>									
7,100.0	61.74	90.00	6,714.4	-1,160.3	-604.7	-407.9	7.50	7.50	0.00
7,200.0	69.24	90.00	6,755.9	-1,160.3	-513.8	-318.2	7.50	7.50	0.00
7,260.3	73.76	90.00	6,775.0	-1,160.3	-456.7	-261.8	7.50	7.50	0.00
<b>Niobrara C</b>									
7,300.0	76.74	90.00	6,785.1	-1,160.3	-418.3	-223.9	7.50	7.50	0.00
7,400.0	84.24	90.00	6,801.6	-1,160.3	-319.7	-126.7	7.50	7.50	0.00
7,484.9	90.61	90.00	6,805.4	-1,160.3	-234.9	-43.0	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,500.0	90.61	90.00	6,805.3	-1,160.3	-219.8	-28.1	0.01	0.01	0.00
7,600.0	90.61	90.00	6,804.2	-1,160.3	-119.8	70.5	0.00	0.00	0.00
7,700.0	90.61	90.00	6,803.1	-1,160.3	-19.8	169.2	0.00	0.00	0.00
7,800.0	90.61	90.00	6,802.1	-1,160.3	80.1	267.8	0.00	0.00	0.00
7,900.0	90.61	90.00	6,801.0	-1,160.3	180.1	366.5	0.00	0.00	0.00
8,000.0	90.61	90.00	6,799.9	-1,160.3	280.1	465.2	0.00	0.00	0.00

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (3-05-14)		

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)
8,100.0	90.61	90.00	6,798.9	-1,160.3	380.1	563.8	0.00	0.00	0.00
8,200.0	90.61	90.00	6,797.8	-1,160.3	480.1	662.5	0.00	0.00	0.00
8,300.0	90.61	90.00	6,796.7	-1,160.3	580.1	761.1	0.00	0.00	0.00
8,400.0	90.61	90.00	6,795.7	-1,160.3	680.1	859.8	0.00	0.00	0.00
8,500.0	90.61	90.00	6,794.6	-1,160.3	780.1	958.5	0.00	0.00	0.00
8,600.0	90.61	90.00	6,793.6	-1,160.3	880.1	1,057.1	0.00	0.00	0.00
8,700.0	90.61	90.00	6,792.5	-1,160.3	980.1	1,155.8	0.00	0.00	0.00
8,800.0	90.61	90.00	6,791.4	-1,160.3	1,080.1	1,254.5	0.00	0.00	0.00
8,900.0	90.61	90.00	6,790.4	-1,160.3	1,180.1	1,353.1	0.00	0.00	0.00
9,000.0	90.61	90.00	6,789.3	-1,160.3	1,280.1	1,451.8	0.00	0.00	0.00
9,100.0	90.61	90.00	6,788.2	-1,160.3	1,380.1	1,550.4	0.00	0.00	0.00
9,200.0	90.61	90.00	6,787.2	-1,160.3	1,480.1	1,649.1	0.00	0.00	0.00
9,300.0	90.61	90.00	6,786.1	-1,160.3	1,580.1	1,747.8	0.00	0.00	0.00
9,400.0	90.61	90.00	6,785.0	-1,160.3	1,680.1	1,846.4	0.00	0.00	0.00
9,500.0	90.61	90.00	6,784.0	-1,160.3	1,780.0	1,945.1	0.00	0.00	0.00
9,600.0	90.61	90.00	6,782.9	-1,160.3	1,880.0	2,043.8	0.00	0.00	0.00
9,700.0	90.61	90.00	6,781.8	-1,160.3	1,980.0	2,142.4	0.00	0.00	0.00
9,800.0	90.61	90.00	6,780.8	-1,160.3	2,080.0	2,241.1	0.00	0.00	0.00
9,900.0	90.61	90.00	6,779.7	-1,160.3	2,180.0	2,339.7	0.00	0.00	0.00
10,000.0	90.61	90.00	6,778.7	-1,160.3	2,280.0	2,438.4	0.00	0.00	0.00
10,100.0	90.61	90.00	6,777.6	-1,160.3	2,380.0	2,537.1	0.00	0.00	0.00
10,200.0	90.61	90.00	6,776.5	-1,160.3	2,480.0	2,635.7	0.00	0.00	0.00
10,300.0	90.61	90.00	6,775.5	-1,160.3	2,580.0	2,734.4	0.00	0.00	0.00
10,400.0	90.61	90.00	6,774.4	-1,160.3	2,680.0	2,833.1	0.00	0.00	0.00
10,500.0	90.61	90.00	6,773.3	-1,160.3	2,780.0	2,931.7	0.00	0.00	0.00
10,600.0	90.61	90.00	6,772.3	-1,160.3	2,880.0	3,030.4	0.00	0.00	0.00
10,700.0	90.61	90.00	6,771.2	-1,160.3	2,980.0	3,129.0	0.00	0.00	0.00
10,800.0	90.61	90.00	6,770.1	-1,160.3	3,080.0	3,227.7	0.00	0.00	0.00
10,900.0	90.61	90.00	6,769.1	-1,160.3	3,180.0	3,326.4	0.00	0.00	0.00
11,000.0	90.61	90.00	6,768.0	-1,160.3	3,280.0	3,425.0	0.00	0.00	0.00
11,100.0	90.61	90.00	6,766.9	-1,160.3	3,380.0	3,523.7	0.00	0.00	0.00
11,200.0	90.61	90.00	6,765.9	-1,160.3	3,480.0	3,622.4	0.00	0.00	0.00
11,300.0	90.61	90.00	6,764.8	-1,160.3	3,579.9	3,721.0	0.00	0.00	0.00
11,400.0	90.61	90.00	6,763.7	-1,160.3	3,679.9	3,819.7	0.00	0.00	0.00
11,500.0	90.61	90.00	6,762.7	-1,160.3	3,779.9	3,918.3	0.00	0.00	0.00
11,600.0	90.61	90.00	6,761.6	-1,160.3	3,879.9	4,017.0	0.00	0.00	0.00
11,700.0	90.61	90.00	6,760.6	-1,160.3	3,979.9	4,115.7	0.00	0.00	0.00
11,800.0	90.61	90.00	6,759.5	-1,160.3	4,079.9	4,214.3	0.00	0.00	0.00
11,900.0	90.61	90.00	6,758.4	-1,160.3	4,179.9	4,313.0	0.00	0.00	0.00
12,000.0	90.61	90.00	6,757.4	-1,160.3	4,279.9	4,411.7	0.00	0.00	0.00
12,100.0	90.61	90.00	6,756.3	-1,160.3	4,379.9	4,510.3	0.00	0.00	0.00
12,200.0	90.61	90.00	6,755.2	-1,160.3	4,479.9	4,609.0	0.00	0.00	0.00
12,300.0	90.61	90.00	6,754.2	-1,160.3	4,579.9	4,707.6	0.00	0.00	0.00
12,400.0	90.61	90.00	6,753.1	-1,160.3	4,679.9	4,806.3	0.00	0.00	0.00
12,500.0	90.61	90.00	6,752.0	-1,160.3	4,779.9	4,905.0	0.00	0.00	0.00
12,600.0	90.61	90.00	6,751.0	-1,160.3	4,879.9	5,003.6	0.00	0.00	0.00
12,700.0	90.61	90.00	6,749.9	-1,160.3	4,979.9	5,102.3	0.00	0.00	0.00
12,800.0	90.61	90.00	6,748.8	-1,160.3	5,079.9	5,201.0	0.00	0.00	0.00
12,900.0	90.61	90.00	6,747.8	-1,160.3	5,179.9	5,299.6	0.00	0.00	0.00
13,000.0	90.61	90.00	6,746.7	-1,160.3	5,279.9	5,398.3	0.00	0.00	0.00
13,100.0	90.61	90.00	6,745.6	-1,160.3	5,379.8	5,496.9	0.00	0.00	0.00
13,200.0	90.61	90.00	6,744.6	-1,160.3	5,479.8	5,595.6	0.00	0.00	0.00
13,300.0	90.61	90.00	6,743.5	-1,160.3	5,579.8	5,694.3	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (3-05-14)		

#### 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)
13,400.0	90.61	90.00	6,742.5	-1,160.3	5,679.8	5,792.9	0.00	0.00	0.00
13,500.0	90.61	90.00	6,741.4	-1,160.3	5,779.8	5,891.6	0.00	0.00	0.00
13,600.0	90.61	90.00	6,740.3	-1,160.3	5,879.8	5,990.2	0.00	0.00	0.00
13,700.0	90.61	90.00	6,739.3	-1,160.3	5,979.8	6,088.9	0.00	0.00	0.00
13,800.0	90.61	90.00	6,738.2	-1,160.3	6,079.8	6,187.6	0.00	0.00	0.00
13,900.0	90.61	90.00	6,737.1	-1,160.3	6,179.8	6,286.2	0.00	0.00	0.00
14,000.0	90.61	90.00	6,736.1	-1,160.3	6,279.8	6,384.9	0.00	0.00	0.00
14,100.0	90.61	90.00	6,735.0	-1,160.3	6,379.8	6,483.6	0.00	0.00	0.00
14,200.0	90.61	90.00	6,733.9	-1,160.3	6,479.8	6,582.2	0.00	0.00	0.00
14,300.0	90.61	90.00	6,732.9	-1,160.3	6,579.8	6,680.9	0.00	0.00	0.00
14,400.0	90.61	90.00	6,731.8	-1,160.3	6,679.8	6,779.5	0.00	0.00	0.00
14,500.0	90.61	90.00	6,730.7	-1,160.3	6,779.8	6,878.2	0.00	0.00	0.00
14,600.0	90.61	90.00	6,729.7	-1,160.3	6,879.8	6,976.9	0.00	0.00	0.00
14,700.0	90.61	90.00	6,728.6	-1,160.3	6,979.8	7,075.5	0.00	0.00	0.00
14,757.6	90.61	90.00	6,728.0	-1,160.3	7,037.3	7,132.3	0.00	0.00	0.00

BHL 1653'FSL & 500'FEL, Sec.20

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,484.9	6,805.4	7"	7	7-1/2

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,689.7	3,550.0	Parkman		0.00	
4,481.1	4,300.0	Sussex		0.00	
4,692.2	4,500.0	Shannon		0.00	
6,723.2	6,463.0	Sharon Springs		0.00	
6,897.3	6,596.0	Niobrara A		0.00	
7,066.7	6,698.0	Niobrara B		0.00	
7,260.3	6,775.0	Niobrara C		0.00	
	6,860.0	Ft Hays		0.00	
	6,883.0	Codell		0.00	

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
400.0	400.0	0.0	0.0	KOP #1
6,276.8	6,041.5	-1,160.3	-1,007.0	KOP #2
7,484.9	6,805.4	-1,160.3	-234.9	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

**Klein 19O-HZ Pad Sec.19-T5N-R64W**

**Klein 19P-312**

**Wellbore #1**

**Plan #1 (3-05-14)**

## **Anticollision Report**

**14 March, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (3-05-14)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	3/11/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,757.6	Plan #1 (3-05-14) (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
<b>Offset Well - Wellbore - Design</b>						
Klein (Existing) Sec.19-T5N-R64W						
Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1	400.0	384.0	448.7	440.2	52.989	CC
Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1	500.0	484.0	450.4	439.7	42.238	ES
Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1	2,500.0	2,406.5	970.8	918.7	18.655	SF
Klein 19O-HZ Pad Sec.19-T5N-R64W						
Klein 19N-202 - Wellbore #1 - Plan #1 (3-05-14)	400.0	400.0	61.9	60.4	39.361	CC, ES
Klein 19N-202 - Wellbore #1 - Plan #1 (3-05-14)	800.0	798.7	85.0	81.7	25.675	SF
Klein 19N-432 - Wellbore #1 - Plan #1 (3-05-14)	400.0	400.0	29.1	27.6	18.524	CC, ES
Klein 19N-432 - Wellbore #1 - Plan #1 (3-05-14)	600.0	599.8	34.7	32.3	14.319	SF
Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)	400.0	400.0	150.4	148.9	95.614	CC, ES
Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)	14,757.6	14,291.9	734.5	310.3	1.732	SF
Klein 19O-312 - Wellbore #1 - Plan #1 (3-05-14)	400.0	400.0	160.1	158.5	101.764	CC, ES
Klein 19O-312 - Wellbore #1 - Plan #1 (3-05-14)	3,700.0	3,595.1	985.5	966.2	51.174	SF
Klein 19O-412 - Wellbore #1 - Plan #1 (3-05-14)	400.0	400.0	154.0	152.4	97.858	CC, ES
Klein 19O-412 - Wellbore #1 - Plan #1 (3-05-14)	1,100.0	1,093.1	227.9	223.2	48.338	SF
Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)	400.0	400.0	153.2	151.7	97.391	CC, ES
Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)	14,757.6	14,696.6	588.0	164.5	1.388	Level 3, SF
Klein 19P-402 - Wellbore #1 - Plan #1 (3-05-14)	200.0	200.0	29.1	28.5	43.229	CC
Klein 19P-402 - Wellbore #1 - Plan #1 (3-05-14)	14,757.6	14,945.8	285.5	-110.4	0.721	Level 1, ES, SF
Maxey 24O-HZ Pad Sec.24-T5N-R65W						
Maxey 24O-232 - Wellbore #1 - Plan #2 (8-9-13)	6,915.2	11,137.6	374.6	230.2	2.594	CC, ES, SF
Maxey 24P-312 - Wellbore #1 - Plan #2 (8-9-13)	6,953.5	11,245.3	200.4	152.2	4.158	CC, ES, SF
Maxey 24P-402 - Wellbore #1 - Plan #2 (8-9-13)	7,000.0	11,349.1	407.7	298.6	3.739	ES, SF
Maxey 24P-402 - Wellbore #1 - Plan #2 (8-9-13)	7,003.7	11,349.1	407.6	298.6	3.740	CC

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W						
Austin 1 (Exist) - Wellbore #1 - Wellbore #1	7,992.9	6,785.0	293.2	123.4	1.727	CC
Austin 1 (Exist) - Wellbore #1 - Wellbore #1	8,000.0	6,784.9	293.3	123.3	1.726	ES, SF
Danley 33-20 (Exist) - Wellbore #1 - Wellbore #1	13,271.8	6,912.4	381.2	187.4	1.967	CC, ES
Danley 33-20 (Exist) - Wellbore #1 - Wellbore #1	13,300.0	6,912.1	382.2	187.6	1.964	SF
Danley 43-20 (Exist) - Wellbore #1 - Wellbore #1	14,717.9	6,938.3	479.0	247.5	2.069	CC, ES
Danley 43-20 (Exist) - Wellbore #1 - Wellbore #1	14,757.6	6,937.1	480.6	248.0	2.066	SF
Evert 20-1 (Exist) - Wellbore #1 - Wellbore #1	11,960.3	6,750.8	311.8	38.4	1.141	Level 2, CC, ES, SF
Evert 5 (Exist) - Wellbore #1 - Wellbore #1	11,316.8	6,761.6	435.1	179.3	1.701	CC, ES, SF
Ivan Klein 13-20 (Exist) - Wellbore #1 - Wellbore #1	10,628.5	6,755.0	100.3	-136.5	0.424	Level 1, CC, ES, SF
Mowery 19-1 (Exist) - Wellbore #1 - Wellbore #1	9,266.1	6,769.5	304.2	103.8	1.518	CC, ES, SF

**Offset Design**

Klein (Existing) Sec.19-T5N-R64W - Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7082-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Vertical Depth (ft)	Offset Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+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	35.71	364.3	261.9	448.9				
100.0	100.0	84.0	84.0	0.1	1.7	35.71	364.3	261.9	448.7	446.9	1.79	250.284	
200.0	200.0	184.0	184.0	0.3	3.7	35.71	364.3	261.9	448.7	444.6	4.02	111.679	
300.0	300.0	284.0	284.0	0.6	5.7	35.71	364.3	261.9	448.7	442.4	6.24	71.875	
400.0	400.0	384.0	384.0	0.8	7.7	35.71	364.3	261.9	448.7	440.2	8.47	52.989	CC
500.0	500.0	484.0	484.0	1.0	9.7	174.77	364.3	261.9	450.4	439.7	10.66	42.238	ES
600.0	599.8	583.8	583.8	1.2	11.7	174.82	364.3	261.9	455.6	442.8	12.83	35.511	
700.0	699.5	683.5	683.5	1.4	13.7	174.90	364.3	261.9	464.3	449.3	14.98	30.996	
800.0	798.7	782.7	782.7	1.7	15.7	175.01	364.3	261.9	476.4	459.3	17.10	27.864	
900.0	897.5	881.5	881.5	2.0	17.6	175.14	364.3	261.9	492.0	472.8	19.18	25.655	
1,000.0	995.6	979.6	979.6	2.3	19.6	175.29	364.3	261.9	511.0	489.8	21.21	24.093	
1,100.0	1,093.1	1,077.1	1,077.1	2.8	21.5	175.46	364.3	261.9	533.5	510.3	23.19	23.008	
1,200.0	1,189.6	1,173.6	1,173.6	3.3	23.5	175.63	364.3	261.9	559.3	534.2	25.10	22.284	
1,300.0	1,285.3	1,269.3	1,269.3	3.8	25.4	175.80	364.3	261.9	588.4	561.5	26.94	21.845	
1,400.0	1,380.1	1,364.1	1,364.1	4.4	27.3	176.00	364.3	261.9	620.1	591.2	28.93	21.436	
1,500.0	1,474.9	1,458.9	1,458.9	5.0	29.2	176.19	364.3	261.9	652.0	621.0	31.02	21.021	
1,600.0	1,569.6	1,553.6	1,553.6	5.7	31.1	176.37	364.3	261.9	683.8	650.7	33.11	20.655	
1,700.0	1,664.4	1,648.4	1,648.4	6.3	33.0	176.53	364.3	261.9	715.7	680.5	35.20	20.330	
1,800.0	1,759.2	1,743.2	1,743.2	7.0	34.9	176.68	364.3	261.9	747.6	710.3	37.30	20.041	
1,900.0	1,853.9	1,837.9	1,837.9	7.6	36.8	176.82	364.3	261.9	779.4	740.0	39.40	19.781	
2,000.0	1,948.7	1,932.7	1,932.7	8.2	38.7	176.94	364.3	261.9	811.3	769.8	41.51	19.547	
2,100.0	2,043.5	2,027.5	2,027.5	8.9	40.5	177.06	364.3	261.9	843.2	799.6	43.61	19.335	
2,200.0	2,138.2	2,122.2	2,122.2	9.6	42.4	177.17	364.3	261.9	875.1	829.4	45.71	19.142	
2,300.0	2,233.0	2,217.0	2,217.0	10.2	44.3	177.27	364.3	261.9	907.0	859.2	47.82	18.966	
2,400.0	2,327.8	2,311.8	2,311.8	10.9	46.2	177.36	364.3	261.9	938.9	888.9	49.93	18.804	
2,500.0	2,422.5	2,406.5	2,406.5	11.5	48.1	177.44	364.3	261.9	970.8	918.7	52.04	18.655	SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19N-202 - Wellbore #1 - Plan #1 (3-05-14)													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	0.00	61.9	0.0	61.9					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	61.9	0.0	61.9	61.7	0.22	275.526		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	61.9	0.0	61.9	61.3	0.67	91.842		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	61.9	0.0	61.9	60.8	1.12	55.105		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	61.9	0.0	61.9	60.4	1.57	39.361 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	140.06	61.9	0.0	63.3	61.3	2.00	31.593		
600.0	599.8	599.8	599.8	1.2	1.2	142.87	61.9	0.0	67.4	64.9	2.42	27.781		
700.0	699.5	699.5	699.5	1.4	1.5	146.84	61.9	0.0	74.5	71.6	2.86	26.030		
800.0	798.7	798.7	798.7	1.7	1.7	151.23	61.9	0.0	85.0	81.7	3.31	25.675 SF		
900.0	897.5	894.8	894.8	2.0	1.9	154.82	63.4	-0.5	100.3	96.5	3.76	26.657		
1,000.0	995.6	989.4	989.3	2.3	2.1	157.05	67.8	-2.1	121.7	117.5	4.23	28.772		
1,100.0	1,093.1	1,082.2	1,081.7	2.8	2.3	158.24	75.0	-4.6	148.8	144.1	4.71	31.619		
1,200.0	1,189.6	1,172.7	1,171.6	3.3	2.6	158.73	84.8	-8.0	181.5	176.3	5.20	34.905		
1,300.0	1,285.3	1,260.5	1,258.5	3.8	2.8	158.77	96.8	-12.2	219.4	213.7	5.71	38.429		
1,400.0	1,380.1	1,345.7	1,342.4	4.4	3.0	158.71	110.8	-17.1	261.7	255.5	6.25	41.876		
1,500.0	1,474.9	1,428.9	1,423.9	5.0	3.3	158.43	126.8	-22.7	306.2	299.4	6.82	44.902		
1,600.0	1,569.6	1,516.6	1,509.4	5.7	3.6	158.00	145.2	-29.2	352.0	344.6	7.41	47.475		
1,700.0	1,664.4	1,605.5	1,596.0	6.3	4.0	157.66	163.9	-35.7	397.8	389.8	8.02	49.612		
1,800.0	1,759.2	1,694.3	1,682.7	7.0	4.3	157.40	182.6	-42.2	443.6	435.0	8.64	51.370		
1,900.0	1,853.9	1,783.2	1,769.3	7.6	4.7	157.18	201.2	-48.8	489.5	480.2	9.27	52.829		
2,000.0	1,948.7	1,872.1	1,855.9	8.2	5.1	157.00	219.9	-55.3	535.3	525.4	9.90	54.078		
2,100.0	2,043.5	1,960.9	1,942.5	8.9	5.5	156.85	238.6	-61.8	581.2	570.6	10.54	55.139		
2,200.0	2,138.2	2,049.8	2,029.2	9.6	5.9	156.72	257.3	-68.4	627.0	615.8	11.19	56.051		
2,300.0	2,233.0	2,138.7	2,115.8	10.2	6.3	156.61	275.9	-74.9	672.9	661.0	11.84	56.842		
2,400.0	2,327.8	2,227.5	2,202.4	10.9	6.6	156.51	294.6	-81.4	718.7	706.2	12.49	57.532		
2,500.0	2,422.5	2,316.4	2,289.1	11.5	7.0	156.42	313.3	-88.0	764.6	751.4	13.15	58.139		
2,600.0	2,517.3	2,405.2	2,375.7	12.2	7.4	156.35	332.0	-94.5	810.4	796.6	13.81	58.676		
2,700.0	2,612.1	2,494.1	2,462.3	12.8	7.9	156.28	350.6	-101.0	856.3	841.8	14.48	59.153		
2,800.0	2,706.8	2,583.0	2,549.0	13.5	8.3	156.22	369.3	-107.6	902.2	887.0	15.14	59.580		
2,900.0	2,801.6	2,671.8	2,635.6	14.2	8.7	156.16	388.0	-114.1	948.0	932.2	15.81	59.963		
3,000.0	2,896.4	2,760.7	2,722.2	14.8	9.1	156.11	406.7	-120.6	993.9	977.4	16.48	60.310		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19N-432 - Wellbore #1 - Plan #1 (3-05-14)													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	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.668		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.223		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.934		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	141.18	29.1	0.0	30.5	28.5	2.00	15.224		
600.0	599.8	599.8	599.8	1.2	1.2	146.55	29.1	0.0	34.7	32.3	2.42	14.319 SF		
700.0	699.5	699.5	699.5	1.4	1.5	153.00	29.1	0.0	42.3	39.4	2.86	14.778		
800.0	798.7	798.7	798.7	1.7	1.7	158.86	29.1	0.0	53.4	50.1	3.30	16.178		
900.0	897.5	897.5	897.5	2.0	1.9	163.51	29.1	0.0	68.3	64.5	3.75	18.218		
1,000.0	995.6	995.6	995.6	2.3	2.1	167.00	29.1	0.0	86.7	82.6	4.19	20.689		
1,100.0	1,093.1	1,091.2	1,091.2	2.8	2.3	168.88	30.4	-0.7	109.6	105.0	4.64	23.614		
1,200.0	1,189.6	1,185.0	1,184.9	3.3	2.6	169.17	34.5	-2.7	137.6	132.5	5.10	26.966		
1,300.0	1,285.3	1,276.7	1,276.3	3.8	2.8	168.62	41.1	-6.0	170.4	164.9	5.57	30.582		
1,400.0	1,380.1	1,366.4	1,365.4	4.4	3.0	167.74	50.0	-10.6	207.4	201.3	6.08	34.119		
1,500.0	1,474.9	1,454.5	1,452.6	5.0	3.2	166.60	61.3	-16.2	246.2	239.6	6.62	37.208		
1,600.0	1,569.6	1,545.4	1,542.3	5.7	3.5	165.42	74.4	-22.9	286.1	278.9	7.18	39.835		
1,700.0	1,664.4	1,637.0	1,632.7	6.3	3.7	164.52	87.7	-29.6	326.1	318.3	7.76	42.029		
1,800.0	1,759.2	1,728.5	1,723.0	7.0	4.0	163.81	100.9	-36.3	366.1	357.8	8.35	43.866		
1,900.0	1,853.9	1,820.1	1,813.4	7.6	4.3	163.24	114.2	-43.0	406.2	397.2	8.95	45.397		
2,000.0	1,948.7	1,911.7	1,903.7	8.2	4.6	162.78	127.4	-49.7	446.3	436.7	9.55	46.721		
2,100.0	2,043.5	2,003.2	1,994.0	8.9	4.9	162.39	140.7	-56.4	486.4	476.2	10.17	47.851		
2,200.0	2,138.2	2,094.8	2,084.4	9.6	5.2	162.06	153.9	-63.1	526.5	515.8	10.78	48.829		
2,300.0	2,233.0	2,186.3	2,174.7	10.2	5.5	161.78	167.2	-69.7	566.7	555.3	11.41	49.681		
2,400.0	2,327.8	2,277.9	2,265.1	10.9	5.9	161.54	180.4	-76.4	606.9	594.8	12.03	50.430		
2,500.0	2,422.5	2,369.4	2,355.4	11.5	6.2	161.32	193.7	-83.1	647.0	634.4	12.66	51.092		
2,600.0	2,517.3	2,461.0	2,445.7	12.2	6.5	161.13	207.0	-89.8	687.2	673.9	13.30	51.680		
2,700.0	2,612.1	2,552.5	2,536.1	12.8	6.8	160.96	220.2	-96.5	727.4	713.4	13.93	52.207		
2,800.0	2,706.8	2,644.1	2,626.4	13.5	7.2	160.81	233.5	-103.2	767.6	753.0	14.57	52.679		
2,900.0	2,801.6	2,735.6	2,716.8	14.2	7.5	160.68	246.7	-109.9	807.8	792.5	15.21	53.106		
3,000.0	2,896.4	2,827.2	2,807.1	14.8	7.8	160.55	260.0	-116.6	847.9	832.1	15.85	53.493		
3,100.0	2,991.1	2,918.7	2,897.4	15.5	8.2	160.44	273.2	-123.3	888.1	871.6	16.49	53.845		
3,200.0	3,085.9	3,010.3	2,987.8	16.1	8.5	160.34	286.5	-130.0	928.3	911.2	17.14	54.166		
3,300.0	3,180.7	3,101.8	3,078.1	16.8	8.8	160.25	299.7	-136.7	968.5	950.8	17.78	54.461		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)													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	150.4	150.4					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	150.4	150.4	150.2	0.22	669.295		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	150.4	150.4	149.8	0.67	223.098		
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	150.4	150.4	149.3	1.12	133.859		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	150.4	150.4	148.9	1.57	95.614 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-131.44	0.0	150.4	151.6	149.6	2.00	75.762		
600.0	599.8	599.8	599.8	1.2	1.2	-132.83	0.0	150.4	155.1	152.7	2.42	64.056		
700.0	699.5	699.5	699.5	1.4	1.5	-135.01	0.0	150.4	161.2	158.3	2.86	56.326		
800.0	798.7	798.7	798.7	1.7	1.7	-137.79	0.0	150.4	170.0	166.7	3.32	51.213		
900.0	897.5	897.5	897.5	2.0	1.9	-140.93	0.0	150.4	182.0	178.2	3.79	47.948		
1,000.0	995.6	995.6	995.6	2.3	2.1	-144.23	0.0	150.4	197.2	192.9	4.28	46.059		
1,100.0	1,093.1	1,093.1	1,093.1	2.8	2.3	-147.49	0.0	150.4	216.0	211.2	4.78	45.227		
1,200.0	1,189.6	1,189.6	1,189.6	3.3	2.6	-150.58	0.0	150.4	238.4	233.1	5.27	45.219		
1,300.0	1,285.3	1,285.3	1,285.3	3.8	2.8	-153.42	0.0	150.4	264.5	258.7	5.77	45.854		
1,400.0	1,380.1	1,380.1	1,380.1	4.4	3.0	-156.10	0.0	150.4	293.5	287.2	6.27	46.800		
1,500.0	1,474.9	1,474.9	1,474.9	5.0	3.2	-158.38	0.0	150.4	323.1	316.4	6.78	47.690		
1,600.0	1,569.6	1,579.4	1,579.4	5.7	3.4	-160.47	-0.5	149.4	352.2	345.0	7.27	48.419		
1,700.0	1,664.4	1,689.4	1,689.2	6.3	3.6	-162.36	-2.7	144.8	378.2	370.4	7.75	48.772		
1,800.0	1,759.2	1,801.4	1,800.9	7.0	3.9	-164.10	-6.9	136.2	400.6	392.4	8.24	48.634		
1,900.0	1,853.9	1,915.3	1,913.8	7.6	4.1	-165.74	-13.2	123.4	419.5	410.8	8.73	48.039		
2,000.0	1,948.7	2,030.5	2,027.5	8.2	4.4	-167.34	-21.5	106.4	434.8	425.6	9.24	47.058		
2,100.0	2,043.5	2,146.9	2,141.4	8.9	4.8	-168.95	-31.9	85.1	446.4	436.6	9.76	45.740		
2,200.0	2,138.2	2,263.9	2,254.9	9.6	5.2	-170.61	-44.4	59.4	454.3	444.0	10.29	44.137		
2,300.0	2,233.0	2,365.2	2,352.5	10.2	5.6	-172.08	-56.2	35.0	460.1	449.3	10.82	42.531		
2,400.0	2,327.8	2,464.4	2,448.1	10.9	6.0	-173.47	-67.9	11.1	466.1	454.8	11.35	41.057		
2,500.0	2,422.5	2,563.6	2,543.6	11.5	6.5	-174.83	-79.5	-12.8	472.4	460.5	11.91	39.682		
2,600.0	2,517.3	2,662.8	2,639.1	12.2	7.0	-176.15	-91.2	-36.7	479.0	466.5	12.48	38.396		
2,700.0	2,612.1	2,761.9	2,734.7	12.8	7.4	-177.44	-102.8	-60.6	485.8	472.8	13.06	37.188		
2,800.0	2,706.8	2,861.1	2,830.2	13.5	7.9	-178.69	-114.5	-84.5	492.9	479.2	13.67	36.050		
2,900.0	2,801.6	2,960.3	2,925.8	14.2	8.4	-179.90	-126.1	-108.4	500.2	485.9	14.30	34.976		
3,000.0	2,896.4	3,059.4	3,021.3	14.8	9.0	-178.92	-137.8	-132.3	507.7	492.7	14.95	33.959		
3,100.0	2,991.1	3,158.6	3,116.8	15.5	9.5	177.77	-149.4	-156.2	515.4	499.8	15.62	32.995		
3,200.0	3,085.9	3,257.8	3,212.4	16.1	10.0	176.66	-161.1	-180.1	523.3	507.0	16.31	32.081		
3,300.0	3,180.7	3,357.0	3,307.9	16.8	10.5	175.58	-172.7	-204.0	531.4	514.4	17.02	31.214		
3,400.0	3,275.4	3,456.1	3,403.5	17.5	11.1	174.53	-184.4	-227.9	539.7	521.9	17.76	30.392		
3,500.0	3,370.2	3,555.3	3,499.0	18.1	11.6	173.52	-196.0	-251.8	548.2	529.7	18.51	29.611		
3,600.0	3,465.0	3,654.5	3,594.6	18.8	12.2	172.53	-207.7	-275.7	556.8	537.5	19.29	28.870		
3,700.0	3,559.8	3,753.7	3,690.1	19.5	12.7	171.58	-219.3	-299.6	565.6	545.5	20.08	28.168		
3,800.0	3,654.5	3,852.8	3,785.6	20.1	13.3	170.66	-231.0	-323.5	574.6	553.7	20.89	27.501		
3,900.0	3,749.3	3,952.0	3,881.2	20.8	13.8	169.76	-242.6	-347.4	583.6	561.9	21.72	26.869		
4,000.0	3,844.1	4,051.2	3,976.7	21.5	14.4	168.89	-254.3	-371.3	592.9	570.3	22.57	26.270		
4,100.0	3,938.8	4,150.3	4,072.3	22.1	14.9	168.05	-265.9	-395.2	602.2	578.8	23.43	25.701		
4,200.0	4,033.6	4,249.5	4,167.8	22.8	15.5	167.23	-277.6	-419.1	611.7	587.4	24.31	25.162		
4,300.0	4,128.4	4,348.7	4,263.4	23.4	16.0	166.44	-289.2	-443.0	621.3	596.1	25.21	24.651		
4,400.0	4,223.1	4,447.9	4,358.9	24.1	16.6	165.67	-300.9	-466.9	631.1	604.9	26.11	24.166		
4,500.0	4,317.9	4,547.0	4,454.4	24.8	17.2	164.93	-312.5	-490.8	640.9	613.9	27.03	23.707		
4,600.0	4,412.7	4,646.2	4,550.0	25.4	17.7	164.21	-324.2	-514.7	650.8	622.9	27.97	23.271		
4,700.0	4,507.4	4,745.4	4,645.5	26.1	18.3	163.51	-335.8	-538.6	660.9	632.0	28.91	22.857		
4,800.0	4,602.2	4,844.6	4,741.1	26.8	18.8	162.83	-347.5	-562.5	671.0	641.1	29.87	22.464		
4,900.0	4,697.0	4,943.7	4,836.6	27.4	19.4	162.17	-359.2	-586.4	681.2	650.4	30.84	22.091		
5,000.0	4,791.7	5,042.9	4,932.1	28.1	20.0	161.53	-370.8	-610.3	691.5	659.7	31.81	21.737		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)													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)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,886.5	5,142.1	5,027.7	28.8	20.5	160.91	160.91	-382.5	-634.2	701.9	669.1	32.80	21.400	
5,200.0	4,981.3	5,226.4	5,109.3	29.4	20.9	160.46	160.46	-391.9	-653.6	713.4	679.8	33.63	21.215	
5,300.0	5,076.5	5,310.0	5,190.6	30.0	21.2	160.19	160.19	-400.2	-670.6	725.5	691.1	34.40	21.091	
5,400.0	5,172.8	5,400.0	5,278.9	30.4	21.5	159.97	159.97	-408.0	-686.6	736.7	701.6	35.09	20.992	
5,500.0	5,269.9	5,477.1	5,354.9	30.8	21.8	159.83	159.83	-413.7	-698.3	746.6	710.9	35.65	20.944	
5,600.0	5,367.9	5,560.7	5,437.6	31.1	22.0	159.73	159.73	-418.8	-708.9	755.4	719.3	36.15	20.900	
5,700.0	5,466.4	5,644.2	5,520.6	31.4	22.2	159.67	159.67	-422.9	-717.3	763.1	726.6	36.56	20.873	
5,800.0	5,565.5	5,727.8	5,603.8	31.6	22.4	159.65	159.65	-426.0	-723.5	769.7	732.8	36.89	20.863	
5,900.0	5,665.0	5,811.2	5,687.2	31.8	22.5	159.67	159.67	-427.9	-727.6	775.1	738.0	37.14	20.869	
6,000.0	5,764.8	5,900.0	5,775.9	32.0	22.6	159.74	159.74	-428.9	-729.5	779.4	742.1	37.31	20.889	
6,100.0	5,864.7	5,988.8	5,864.7	32.1	22.7	159.81	159.81	-428.9	-729.6	782.0	744.6	37.42	20.901	
6,200.0	5,964.7	6,088.8	5,964.7	32.2	22.8	20.77	20.77	-428.9	-729.6	782.2	732.1	50.09	15.617	
6,300.0	6,064.7	6,163.5	6,039.3	32.2	22.9	-68.99	-68.99	-428.9	-726.4	783.6	745.9	37.69	20.792	
6,400.0	6,164.2	6,236.3	6,111.4	32.2	22.9	-68.68	-68.68	-428.9	-716.4	785.2	747.7	37.43	20.974	
6,500.0	6,261.6	6,309.1	6,182.2	32.1	22.8	-68.63	-68.63	-428.9	-699.6	785.4	748.2	37.18	21.126	
6,600.0	6,355.2	6,381.9	6,251.0	31.9	22.7	-68.84	-68.84	-428.9	-676.1	784.4	747.4	36.96	21.220	
6,700.0	6,443.4	6,450.0	6,313.2	31.7	22.5	-69.30	-69.30	-428.9	-648.3	782.1	745.2	36.85	21.221	
6,800.0	6,524.8	6,528.2	6,381.2	31.4	22.3	-70.07	-70.07	-428.9	-609.6	778.6	741.7	36.93	21.084	
6,900.0	6,597.9	6,600.0	6,439.8	31.1	22.2	-71.06	-71.06	-428.9	-568.2	774.1	736.9	37.25	20.782	
7,000.0	6,661.5	6,676.7	6,497.9	30.8	22.0	-72.34	-72.34	-428.9	-518.1	768.8	730.9	37.91	20.277	
7,100.0	6,714.4	6,750.0	6,548.4	30.5	21.9	-73.81	-73.81	-428.9	-465.1	762.9	724.0	38.93	19.598	
7,200.0	6,755.9	6,828.9	6,596.8	30.2	21.9	-75.58	-75.58	-428.9	-402.8	756.7	716.3	40.37	18.745	
7,300.0	6,785.1	6,907.0	6,638.1	30.0	21.9	-77.53	-77.53	-428.9	-336.6	750.5	708.3	42.15	17.803	
7,400.0	6,801.6	6,986.7	6,673.1	29.9	22.1	-79.67	-79.67	-428.9	-265.0	744.6	700.3	44.27	16.819	
7,500.0	6,805.3	7,068.6	6,701.1	29.8	22.5	-81.92	-81.92	-428.9	-188.1	739.4	692.8	46.61	15.865	
7,600.0	6,804.2	7,154.7	6,721.5	30.0	23.2	-83.56	-83.56	-428.9	-104.5	736.2	687.2	49.01	15.020	
7,700.0	6,803.1	7,244.7	6,732.6	30.4	24.1	-84.50	-84.50	-428.9	-15.3	734.8	683.0	51.77	14.194	
7,789.5	6,802.2	7,328.9	6,733.9	31.2	25.2	-84.67	-84.67	-428.9	68.9	734.6	680.0	54.52	13.474	
7,800.0	6,802.1	7,339.4	6,733.8	31.3	25.3	-84.67	-84.67	-428.9	79.4	734.6	679.7	54.86	13.390	
7,900.0	6,801.0	7,439.4	6,732.8	32.7	26.8	-84.67	-84.67	-428.9	179.4	734.6	676.2	58.33	12.593	
8,000.0	6,799.9	7,539.4	6,731.7	34.4	28.5	-84.67	-84.67	-428.9	279.4	734.6	672.4	62.12	11.825	
8,100.0	6,798.9	7,639.4	6,730.7	36.4	30.5	-84.67	-84.67	-428.9	379.4	734.6	668.4	66.17	11.101	
8,200.0	6,797.8	7,739.4	6,729.6	38.6	32.5	-84.67	-84.67	-428.9	479.4	734.6	664.1	70.43	10.429	
8,300.0	6,796.7	7,839.4	6,728.6	40.9	34.7	-84.67	-84.67	-428.9	579.4	734.6	659.7	74.87	9.810	
8,400.0	6,795.7	7,939.4	6,727.5	43.2	36.9	-84.68	-84.68	-428.9	679.4	734.6	655.1	79.46	9.244	
8,500.0	6,794.6	8,039.4	6,726.5	45.6	39.3	-84.68	-84.68	-428.9	779.4	734.5	650.4	84.18	8.726	
8,600.0	6,793.6	8,139.4	6,725.4	48.1	41.7	-84.68	-84.68	-428.9	879.4	734.5	645.6	88.99	8.254	
8,700.0	6,792.5	8,239.4	6,724.4	50.6	44.1	-84.68	-84.68	-428.9	979.4	734.5	640.6	93.90	7.823	
8,800.0	6,791.4	8,339.4	6,723.3	53.1	46.6	-84.68	-84.68	-428.9	1,079.4	734.5	635.7	98.87	7.429	
8,900.0	6,790.4	8,439.4	6,722.3	55.7	49.1	-84.68	-84.68	-428.9	1,179.4	734.5	630.6	103.91	7.069	
9,000.0	6,789.3	8,539.4	6,721.2	58.2	51.7	-84.68	-84.68	-428.9	1,279.4	734.5	625.5	109.01	6.738	
9,100.0	6,788.2	8,639.4	6,720.2	60.8	54.2	-84.68	-84.68	-428.9	1,379.4	734.5	620.4	114.15	6.435	
9,200.0	6,787.2	8,739.4	6,719.1	63.5	56.8	-84.69	-84.69	-428.9	1,479.4	734.5	615.2	119.34	6.155	
9,300.0	6,786.1	8,839.4	6,718.1	66.1	59.5	-84.69	-84.69	-428.9	1,579.3	734.5	610.0	124.55	5.897	
9,400.0	6,785.0	8,939.4	6,717.1	68.7	62.1	-84.69	-84.69	-428.9	1,679.3	734.5	604.7	129.81	5.659	
9,500.0	6,784.0	9,039.4	6,716.0	71.4	64.7	-84.69	-84.69	-428.9	1,779.3	734.5	599.4	135.08	5.438	
9,600.0	6,782.9	9,139.4	6,715.0	74.1	67.4	-84.69	-84.69	-428.9	1,879.3	734.5	594.1	140.39	5.232	
9,700.0	6,781.8	9,239.4	6,713.9	76.7	70.1	-84.69	-84.69	-428.9	1,979.3	734.5	588.8	145.71	5.041	
9,800.0	6,780.8	9,339.4	6,712.9	79.4	72.8	-84.69	-84.69	-428.9	2,079.3	734.5	583.5	151.06	4.863	
9,900.0	6,779.7	9,439.4	6,711.8	82.1	75.5	-84.70	-84.70	-428.9	2,179.3	734.5	578.1	156.42	4.696	
10,000.0	6,778.7	9,539.4	6,710.8	84.8	78.2	-84.70	-84.70	-428.9	2,279.3	734.5	572.7	161.80	4.540	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)													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
10,100.0	6,777.6	9,639.4	6,709.7	87.5	80.9	-84.70		-428.9	2,379.3	734.5	567.3	167.19	4.393	
10,200.0	6,776.5	9,739.4	6,708.7	90.2	83.6	-84.70		-428.9	2,479.3	734.5	561.9	172.60	4.256	
10,300.0	6,775.5	9,839.4	6,707.6	92.9	86.3	-84.70		-428.9	2,579.3	734.5	556.5	178.01	4.126	
10,400.0	6,774.4	9,939.4	6,706.6	95.7	89.0	-84.70		-428.9	2,679.3	734.5	551.1	183.44	4.004	
10,500.0	6,773.3	10,039.4	6,705.5	98.4	91.8	-84.70		-428.9	2,779.3	734.5	545.6	188.88	3.889	
10,600.0	6,772.3	10,139.4	6,704.5	101.1	94.5	-84.71		-428.9	2,879.3	734.5	540.2	194.33	3.780	
10,700.0	6,771.2	10,239.4	6,703.4	103.9	97.2	-84.71		-428.9	2,979.3	734.5	534.7	199.78	3.677	
10,800.0	6,770.1	10,339.4	6,702.4	106.6	100.0	-84.71		-428.9	3,079.3	734.5	529.3	205.25	3.579	
10,900.0	6,769.1	10,439.4	6,701.3	109.3	102.7	-84.71		-428.9	3,179.3	734.5	523.8	210.72	3.486	
11,000.0	6,768.0	10,539.4	6,700.3	112.1	105.5	-84.71		-428.9	3,279.3	734.5	518.3	216.19	3.397	
11,100.0	6,766.9	10,639.4	6,699.2	114.8	108.2	-84.71		-428.9	3,379.2	734.5	512.8	221.67	3.313	
11,200.0	6,765.9	10,739.4	6,698.2	117.6	111.0	-84.71		-428.9	3,479.2	734.5	507.3	227.16	3.233	
11,300.0	6,764.8	10,839.4	6,697.2	120.3	113.7	-84.71		-428.9	3,579.2	734.5	501.8	232.66	3.157	
11,400.0	6,763.7	10,939.4	6,696.1	123.1	116.5	-84.72		-428.9	3,679.2	734.5	496.3	238.15	3.084	
11,500.0	6,762.7	11,039.4	6,695.1	125.8	119.3	-84.72		-428.9	3,779.2	734.5	490.8	243.66	3.014	
11,600.0	6,761.6	11,139.4	6,694.0	128.6	122.0	-84.72		-428.9	3,879.2	734.5	485.3	249.16	2.948	
11,700.0	6,760.6	11,239.4	6,693.0	131.4	124.8	-84.72		-428.9	3,979.2	734.5	479.8	254.67	2.884	
11,800.0	6,759.5	11,339.4	6,691.9	134.1	127.6	-84.72		-428.9	4,079.2	734.5	474.3	260.19	2.823	
11,900.0	6,758.4	11,439.4	6,690.9	136.9	130.3	-84.72		-428.9	4,179.2	734.5	468.8	265.71	2.764	
12,000.0	6,757.4	11,539.4	6,689.8	139.7	133.1	-84.72		-428.9	4,279.2	734.5	463.3	271.23	2.708	
12,100.0	6,756.3	11,639.4	6,688.8	142.4	135.9	-84.73		-428.9	4,379.2	734.5	457.7	276.75	2.654	
12,200.0	6,755.2	11,739.4	6,687.7	145.2	138.6	-84.73		-428.9	4,479.2	734.5	452.2	282.28	2.602	
12,300.0	6,754.2	11,839.4	6,686.7	148.0	141.4	-84.73		-428.9	4,579.2	734.5	446.7	287.81	2.552	
12,400.0	6,753.1	11,939.4	6,685.6	150.7	144.2	-84.73		-428.9	4,679.2	734.5	441.1	293.34	2.504	
12,500.0	6,752.0	12,039.4	6,684.6	153.5	147.0	-84.73		-428.9	4,779.2	734.5	435.6	298.87	2.458	
12,600.0	6,751.0	12,139.4	6,683.5	156.3	149.8	-84.73		-428.9	4,879.2	734.5	430.1	304.41	2.413	
12,700.0	6,749.9	12,239.4	6,682.5	159.1	152.5	-84.73		-428.9	4,979.2	734.5	424.5	309.95	2.370	
12,800.0	6,748.8	12,339.4	6,681.4	161.8	155.3	-84.73		-428.9	5,079.2	734.5	419.0	315.49	2.328	
12,900.0	6,747.8	12,439.4	6,680.4	164.6	158.1	-84.74		-428.9	5,179.2	734.5	413.4	321.03	2.288	
13,000.0	6,746.7	12,539.4	6,679.4	167.4	160.9	-84.74		-428.9	5,279.1	734.5	407.9	326.58	2.249	
13,100.0	6,745.6	12,639.4	6,678.3	170.2	163.7	-84.74		-428.9	5,379.1	734.5	402.4	332.13	2.211	
13,200.0	6,744.6	12,739.4	6,677.3	173.0	166.5	-84.74		-428.9	5,479.1	734.5	396.8	337.67	2.175	
13,300.0	6,743.5	12,839.4	6,676.2	175.7	169.2	-84.74		-428.9	5,579.1	734.5	391.2	343.22	2.140	
13,400.0	6,742.5	12,939.4	6,675.2	178.5	172.0	-84.74		-428.9	5,679.1	734.5	385.7	348.78	2.106	
13,500.0	6,741.4	13,039.4	6,674.1	181.3	174.8	-84.74		-428.9	5,779.1	734.5	380.1	354.33	2.073	
13,600.0	6,740.3	13,139.4	6,673.1	184.1	177.6	-84.75		-428.9	5,879.1	734.5	374.6	359.88	2.041	
13,700.0	6,739.3	13,239.4	6,672.0	186.9	180.4	-84.75		-428.9	5,979.1	734.5	369.0	365.44	2.010	
13,800.0	6,738.2	13,339.4	6,671.0	189.7	183.2	-84.75		-428.9	6,079.1	734.5	363.5	371.00	1.980	
13,900.0	6,737.1	13,439.4	6,669.9	192.4	186.0	-84.75		-428.9	6,179.1	734.5	357.9	376.55	1.950	
14,000.0	6,736.1	13,539.4	6,668.9	195.2	188.8	-84.75		-428.9	6,279.1	734.5	352.4	382.11	1.922	
14,100.0	6,735.0	13,639.4	6,667.8	198.0	191.6	-84.75		-428.9	6,379.1	734.5	346.8	387.67	1.895	
14,200.0	6,733.9	13,739.4	6,666.8	200.8	194.3	-84.75		-428.9	6,479.1	734.5	341.2	393.23	1.868	
14,300.0	6,732.9	13,839.4	6,665.7	203.6	197.1	-84.76		-428.9	6,579.1	734.5	335.7	398.80	1.842	
14,400.0	6,731.8	13,939.4	6,664.7	206.4	199.9	-84.76		-428.9	6,679.1	734.5	330.1	404.36	1.816	
14,500.0	6,730.7	14,039.4	6,663.6	209.2	202.7	-84.76		-428.9	6,779.1	734.5	324.5	409.92	1.792	
14,600.0	6,729.7	14,139.4	6,662.6	212.0	205.5	-84.76		-428.9	6,879.1	734.5	319.0	415.49	1.768	
14,700.0	6,728.6	14,239.4	6,661.5	214.8	208.3	-84.76		-428.9	6,979.1	734.5	313.4	421.06	1.744	
14,741.6	6,728.2	14,281.0	6,661.1	215.9	209.5	-84.76		-428.9	7,020.6	734.5	311.1	423.37	1.735	
14,757.6	6,728.0	14,291.9	6,661.0	216.4	209.8	-84.76		-428.9	7,031.5	734.5	310.3	424.12	1.732 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-312 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	67.24	61.9	147.6	160.1					
100.0	100.0	100.0	100.0	0.1	0.1	67.24	61.9	147.6	160.1	159.9	0.22	712.349		
200.0	200.0	200.0	200.0	0.3	0.3	67.24	61.9	147.6	160.1	159.4	0.67	237.450		
300.0	300.0	300.0	300.0	0.6	0.6	67.24	61.9	147.6	160.1	159.0	1.12	142.470		
400.0	400.0	400.0	400.0	0.8	0.8	67.24	61.9	147.6	160.1	158.5	1.57	101.764 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-153.97	61.9	147.6	161.7	159.7	2.00	80.752		
600.0	599.8	599.8	599.8	1.2	1.2	-154.72	61.9	147.6	166.4	164.0	2.42	68.684		
700.0	699.5	699.5	699.5	1.4	1.5	-155.88	61.9	147.6	174.3	171.5	2.86	61.031		
800.0	798.7	798.7	798.7	1.7	1.7	-157.33	61.9	147.6	185.5	182.2	3.30	56.215		
900.0	897.5	897.5	897.5	2.0	1.9	-158.95	61.9	147.6	200.1	196.3	3.75	53.319		
1,000.0	995.6	995.6	995.6	2.3	2.1	-160.62	61.9	147.6	218.0	213.8	4.21	51.779		
1,100.0	1,093.1	1,093.1	1,093.1	2.8	2.3	-162.27	61.9	147.6	239.4	234.7	4.67	51.231		
1,200.0	1,189.6	1,189.6	1,189.6	3.3	2.6	-163.84	61.9	147.6	264.2	259.1	5.14	51.425		
1,300.0	1,285.3	1,285.3	1,285.3	3.8	2.8	-165.28	61.9	147.6	292.5	286.9	5.60	52.185		
1,400.0	1,380.1	1,380.1	1,380.1	4.4	3.0	-166.66	61.9	147.6	323.4	317.3	6.09	53.114		
1,500.0	1,474.9	1,474.9	1,474.9	5.0	3.2	-167.85	61.9	147.6	354.6	348.0	6.58	53.867		
1,600.0	1,569.6	1,574.5	1,574.5	5.7	3.4	-169.02	62.3	146.8	385.5	378.4	7.08	54.451		
1,700.0	1,664.4	1,676.3	1,676.2	6.3	3.6	-170.47	64.0	142.6	415.0	407.4	7.57	54.851		
1,800.0	1,759.2	1,778.5	1,778.1	7.0	3.9	-172.16	67.1	135.2	443.2	435.1	8.05	55.035		
1,900.0	1,853.9	1,880.2	1,879.0	7.6	4.1	-174.04	71.6	124.4	470.2	461.7	8.55	55.013		
2,000.0	1,948.7	1,975.4	1,973.5	8.2	4.3	-175.77	76.3	113.0	497.1	488.0	9.05	54.910		
2,100.0	2,043.5	2,070.7	2,068.0	8.9	4.6	-177.32	81.0	101.6	524.3	514.8	9.57	54.764		
2,200.0	2,138.2	2,166.0	2,162.5	9.6	4.8	-178.71	85.8	90.2	551.9	541.8	10.11	54.578		
2,300.0	2,233.0	2,261.3	2,256.9	10.2	5.1	-179.98	90.5	78.8	579.8	569.1	10.66	54.387		
2,400.0	2,327.8	2,356.5	2,351.4	10.9	5.4	-178.87	95.2	67.4	607.9	596.6	11.22	54.161		
2,500.0	2,422.5	2,451.8	2,445.9	11.5	5.6	-177.82	100.0	56.0	636.2	624.4	11.80	53.925		
2,600.0	2,517.3	2,547.1	2,540.4	12.2	5.9	-176.86	104.7	44.6	664.7	652.3	12.38	53.682		
2,700.0	2,612.1	2,642.4	2,634.8	12.8	6.2	-175.97	109.4	33.2	693.3	680.3	12.97	53.435		
2,800.0	2,706.8	2,737.6	2,729.3	13.5	6.5	-175.16	114.1	21.8	722.1	708.5	13.58	53.188		
2,900.0	2,801.6	2,832.9	2,823.8	14.2	6.8	-174.41	118.9	10.4	751.0	736.8	14.19	52.941		
3,000.0	2,896.4	2,928.2	2,918.3	14.8	7.1	-173.71	123.6	-1.0	780.0	765.2	14.80	52.699		
3,100.0	2,991.1	3,023.5	3,012.7	15.5	7.4	-173.06	128.3	-12.4	809.2	793.7	15.42	52.461		
3,200.0	3,085.9	3,118.8	3,107.2	16.1	7.6	-172.46	133.1	-23.8	838.4	822.3	16.05	52.229		
3,300.0	3,180.7	3,214.0	3,201.7	16.8	7.9	-171.90	137.8	-35.2	867.7	851.0	16.68	52.004		
3,400.0	3,275.4	3,309.3	3,296.2	17.5	8.2	-171.37	142.5	-46.6	897.0	879.7	17.32	51.785		
3,500.0	3,370.2	3,404.6	3,390.6	18.1	8.5	-170.88	147.2	-58.0	926.4	908.5	17.96	51.574		
3,600.0	3,465.0	3,499.9	3,485.1	18.8	8.8	-170.42	152.0	-69.4	955.9	937.3	18.61	51.370		
3,700.0	3,559.8	3,595.1	3,579.6	19.5	9.1	-169.98	156.7	-80.8	985.5	966.2	19.26	51.174 SF		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-412 - Wellbore #1 - Plan #1 (3-05-14)													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	77.71	77.71	32.8	150.4	154.0				
100.0	100.0	100.0	100.0	0.1	0.1	77.71	77.71	32.8	150.4	154.0	153.7	0.22	685.003	
200.0	200.0	200.0	200.0	0.3	0.3	77.71	77.71	32.8	150.4	154.0	153.3	0.67	228.334	
300.0	300.0	300.0	300.0	0.6	0.6	77.71	77.71	32.8	150.4	154.0	152.8	1.12	137.001	
400.0	400.0	400.0	400.0	0.8	0.8	77.71	77.71	32.8	150.4	154.0	152.4	1.57	97.858 CC, ES	
500.0	500.0	500.0	500.0	1.0	1.0	-143.62	-143.62	32.8	150.4	155.4	153.4	2.00	77.624	
600.0	599.8	599.8	599.8	1.2	1.2	-144.68	-144.68	32.8	150.4	159.6	157.2	2.42	65.901	
700.0	699.5	699.5	699.5	1.4	1.5	-146.33	-146.33	32.8	150.4	166.8	163.9	2.86	58.360	
800.0	798.7	798.7	798.7	1.7	1.7	-148.40	-148.40	32.8	150.4	177.1	173.8	3.31	53.530	
900.0	897.5	897.5	897.5	2.0	1.9	-150.73	-150.73	32.8	150.4	190.6	186.9	3.77	50.567	
1,000.0	995.6	995.6	995.6	2.3	2.1	-153.14	-153.14	32.8	150.4	207.5	203.3	4.24	48.950	
1,100.0	1,093.1	1,093.1	1,093.1	2.8	2.3	-155.51	-155.51	32.8	150.4	227.9	223.2	4.71	48.338 SF	
1,200.0	1,189.6	1,189.6	1,189.6	3.3	2.6	-157.76	-157.76	32.8	150.4	251.8	246.6	5.19	48.490	
1,300.0	1,285.3	1,285.3	1,285.3	3.8	2.8	-159.82	-159.82	32.8	150.4	279.2	273.5	5.67	49.232	
1,400.0	1,380.1	1,380.1	1,380.1	4.4	3.0	-161.78	-161.78	32.8	150.4	309.4	303.2	6.16	50.197	
1,500.0	1,474.9	1,474.9	1,474.9	5.0	3.2	-163.46	-163.46	32.8	150.4	340.0	333.3	6.66	51.032	
1,600.0	1,569.6	1,569.6	1,569.6	5.7	3.4	-164.86	-164.86	32.8	150.4	370.8	363.6	7.16	51.774	
1,700.0	1,664.4	1,664.4	1,664.4	6.3	3.6	-166.04	-166.04	32.8	150.4	401.8	394.1	7.66	52.432	
1,800.0	1,759.2	1,759.2	1,759.2	7.0	3.8	-167.06	-167.06	32.8	150.4	432.9	424.8	8.17	53.018	
1,900.0	1,853.9	1,853.9	1,853.9	7.6	4.1	-167.94	-167.94	32.8	150.4	464.2	455.5	8.67	53.541	
2,000.0	1,948.7	1,948.7	1,948.7	8.2	4.3	-168.71	-168.71	32.8	150.4	495.5	486.3	9.17	54.009	
2,100.0	2,043.5	2,043.5	2,043.5	8.9	4.5	-169.47	-169.47	32.8	150.0	526.7	517.0	9.68	54.378	
2,200.0	2,138.2	2,138.2	2,138.2	9.6	4.7	-170.46	-170.46	33.4	146.0	555.8	545.6	10.19	54.557	
2,300.0	2,233.0	2,233.0	2,233.0	10.2	5.0	-171.67	-171.67	34.4	137.8	582.5	571.8	10.68	54.533	
2,400.0	2,327.8	2,327.8	2,327.8	10.9	5.2	-173.09	-173.09	36.0	125.3	607.0	595.8	11.18	54.280	
2,500.0	2,422.5	2,422.5	2,422.5	11.5	5.4	-174.36	-174.36	37.7	112.5	630.5	618.8	11.68	54.000	
2,600.0	2,517.3	2,517.3	2,517.3	12.2	5.7	-175.53	-175.53	39.4	99.7	654.2	642.1	12.18	53.706	
2,700.0	2,612.1	2,612.1	2,612.1	12.8	5.9	-176.63	-176.63	41.0	86.9	678.2	665.5	12.70	53.407	
2,800.0	2,706.8	2,706.8	2,706.8	13.5	6.2	-177.65	-177.65	42.7	74.1	702.5	689.2	13.23	53.104	
2,900.0	2,801.6	2,801.6	2,801.6	14.2	6.4	-178.60	-178.60	44.4	61.3	726.9	713.1	13.77	52.794	
3,000.0	2,896.4	2,896.4	2,896.4	14.8	6.7	-179.49	-179.49	46.0	48.6	751.5	737.2	14.32	52.483	
3,100.0	2,991.1	2,991.1	2,991.1	15.5	7.0	-179.68	-179.68	47.7	35.8	776.2	761.4	14.88	52.172	
3,200.0	3,085.9	3,085.9	3,085.9	16.1	7.3	-178.89	-178.89	49.3	23.0	801.2	785.7	15.45	51.863	
3,300.0	3,180.7	3,180.7	3,180.7	16.8	7.5	-178.16	-178.16	51.0	10.2	826.2	810.2	16.03	51.556	
3,400.0	3,275.4	3,275.4	3,275.4	17.5	7.8	-177.46	-177.46	52.7	-2.6	851.4	834.7	16.61	51.254	
3,500.0	3,370.2	3,370.2	3,370.2	18.1	8.1	-176.81	-176.81	54.3	-15.4	876.6	859.4	17.20	50.957	
3,600.0	3,465.0	3,465.0	3,465.0	18.8	8.4	-176.19	-176.19	56.0	-28.1	902.0	884.2	17.80	50.666	
3,700.0	3,559.8	3,559.8	3,559.8	19.5	8.7	-175.61	-175.61	57.6	-40.9	927.5	909.1	18.41	50.381	
3,800.0	3,654.5	3,654.5	3,654.5	20.1	9.0	-175.05	-175.05	59.3	-53.7	953.0	934.0	19.02	50.104	
3,900.0	3,749.3	3,749.3	3,749.3	20.8	9.3	-174.53	-174.53	61.0	-66.5	978.7	959.0	19.64	49.833	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)													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	100.96	-29.1	150.4	153.2					
100.0	100.0	100.0	100.0	0.1	0.1	100.96	-29.1	150.4	153.2	153.0	0.22	681.740		
200.0	200.0	200.0	200.0	0.3	0.3	100.96	-29.1	150.4	153.2	152.6	0.67	227.247		
300.0	300.0	300.0	300.0	0.6	0.6	100.96	-29.1	150.4	153.2	152.1	1.12	136.348		
400.0	400.0	400.0	400.0	0.8	0.8	100.96	-29.1	150.4	153.2	151.7	1.57	97.391 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-120.54	-29.1	150.4	154.1	152.1	2.00	77.046		
600.0	599.8	599.8	599.8	1.2	1.2	-122.14	-29.1	150.4	156.8	154.4	2.42	64.785		
700.0	699.5	699.5	699.5	1.4	1.5	-124.67	-29.1	150.4	161.6	158.8	2.86	56.439		
800.0	798.7	798.7	798.7	1.7	1.7	-127.94	-29.1	150.4	168.9	165.6	3.33	50.704		
900.0	897.5	897.5	897.5	2.0	1.9	-131.71	-29.1	150.4	179.0	175.2	3.82	46.858		
1,000.0	995.6	995.6	995.6	2.3	2.1	-135.73	-29.1	150.4	192.3	188.0	4.33	44.462		
1,100.0	1,093.1	1,100.0	1,100.0	2.8	2.3	-139.93	-29.9	148.9	207.6	202.8	4.83	43.000		
1,200.0	1,189.6	1,205.4	1,205.2	3.3	2.5	-143.88	-32.5	143.9	223.2	217.8	5.32	41.975		
1,300.0	1,285.3	1,311.4	1,310.8	3.8	2.8	-147.62	-36.8	135.3	238.9	233.1	5.81	41.106		
1,400.0	1,380.1	1,418.3	1,416.8	4.4	3.0	-151.22	-42.9	123.2	254.1	247.8	6.32	40.203		
1,500.0	1,474.9	1,526.4	1,523.5	5.0	3.3	-154.42	-50.9	107.4	266.6	259.8	6.84	38.989		
1,600.0	1,569.6	1,635.5	1,630.3	5.7	3.7	-157.32	-60.8	87.8	276.0	268.6	7.36	37.510		
1,700.0	1,664.4	1,745.3	1,736.9	6.3	4.1	-160.04	-72.6	64.4	282.1	274.3	7.88	35.798		
1,800.0	1,759.2	1,852.2	1,839.7	7.0	4.6	-162.63	-85.8	38.2	285.1	276.7	8.40	33.930		
1,900.0	1,853.9	1,951.5	1,934.9	7.6	5.1	-165.00	-98.5	13.1	287.7	278.8	8.92	32.264		
2,000.0	1,948.7	2,050.7	2,030.1	8.2	5.6	-167.32	-111.1	-12.0	290.8	281.3	9.44	30.791		
2,100.0	2,043.5	2,150.0	2,125.3	8.9	6.1	-169.59	-123.8	-37.1	294.3	284.3	9.99	29.473		
2,200.0	2,138.2	2,249.2	2,220.5	9.6	6.7	-171.80	-136.5	-62.2	298.3	287.7	10.55	28.284		
2,300.0	2,233.0	2,348.5	2,315.7	10.2	7.2	-173.95	-149.1	-87.3	302.7	291.6	11.13	27.192		
2,400.0	2,327.8	2,447.7	2,410.9	10.9	7.8	-176.04	-161.8	-112.4	307.5	295.8	11.75	26.178		
2,500.0	2,422.5	2,547.0	2,506.1	11.5	8.3	-178.07	-174.5	-137.5	312.8	300.4	12.40	25.228		
2,600.0	2,517.3	2,646.3	2,601.3	12.2	8.9	179.98	-187.2	-162.6	318.4	305.3	13.09	24.334		
2,700.0	2,612.1	2,745.5	2,696.4	12.8	9.5	178.10	-199.8	-187.7	324.4	310.6	13.81	23.490		
2,800.0	2,706.8	2,844.8	2,791.6	13.5	10.1	176.28	-212.5	-212.8	330.7	316.1	14.57	22.694		
2,900.0	2,801.6	2,944.0	2,886.8	14.2	10.6	174.53	-225.2	-237.9	337.4	322.0	15.37	21.943		
3,000.0	2,896.4	3,043.3	2,982.0	14.8	11.2	172.86	-237.8	-263.0	344.3	328.1	16.21	21.236		
3,100.0	2,991.1	3,142.5	3,077.2	15.5	11.8	171.24	-250.5	-288.1	351.5	334.5	17.09	20.572		
3,200.0	3,085.9	3,241.8	3,172.4	16.1	12.4	169.70	-263.2	-313.2	359.0	341.0	18.00	19.950		
3,300.0	3,180.7	3,341.0	3,267.6	16.8	13.0	168.22	-275.9	-338.3	366.8	347.9	18.94	19.368		
3,400.0	3,275.4	3,440.3	3,362.8	17.5	13.6	166.80	-288.5	-363.4	374.8	354.9	19.91	18.826		
3,500.0	3,370.2	3,539.6	3,458.0	18.1	14.2	165.44	-301.2	-388.5	383.0	362.1	20.91	18.320		
3,600.0	3,465.0	3,638.8	3,553.1	18.8	14.8	164.13	-313.9	-413.6	391.4	369.5	21.93	17.850		
3,700.0	3,559.8	3,738.1	3,648.3	19.5	15.4	162.89	-326.5	-438.7	400.0	377.1	22.97	17.413		
3,800.0	3,654.5	3,837.3	3,743.5	20.1	16.0	161.69	-339.2	-463.8	408.8	384.8	24.04	17.007		
3,900.0	3,749.3	3,936.6	3,838.7	20.8	16.5	160.54	-351.9	-488.9	417.8	392.7	25.12	16.630		
4,000.0	3,844.1	4,035.8	3,933.9	21.5	17.1	159.45	-364.6	-514.0	426.9	400.7	26.22	16.280		
4,100.0	3,938.8	4,135.1	4,029.1	22.1	17.7	158.40	-377.2	-539.1	436.2	408.8	27.34	15.955		
4,200.0	4,033.6	4,234.3	4,124.3	22.8	18.3	157.39	-389.9	-564.2	445.6	417.1	28.47	15.654		
4,300.0	4,128.4	4,333.6	4,219.5	23.4	18.9	156.43	-402.6	-589.3	455.1	425.5	29.61	15.373		
4,400.0	4,223.1	4,432.8	4,314.7	24.1	19.5	155.50	-415.2	-614.4	464.8	434.0	30.76	15.112		
4,500.0	4,317.9	4,532.1	4,409.8	24.8	20.1	154.61	-427.9	-639.5	474.6	442.7	31.92	14.869		
4,600.0	4,412.7	4,631.4	4,505.0	25.4	20.7	153.76	-440.6	-664.6	484.5	451.4	33.08	14.643		
4,700.0	4,507.4	4,730.6	4,600.2	26.1	21.3	152.94	-453.3	-689.7	494.5	460.2	34.26	14.433		
4,800.0	4,602.2	4,829.9	4,695.4	26.8	21.9	152.16	-465.9	-714.8	504.6	469.1	35.44	14.236		
4,900.0	4,697.0	4,929.1	4,790.6	27.4	22.5	151.40	-478.6	-739.9	514.7	478.1	36.63	14.052		
5,000.0	4,791.7	5,028.4	4,885.8	28.1	23.1	150.68	-491.3	-765.0	525.0	487.2	37.82	13.880		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,886.5	5,127.6	4,981.0	28.8	23.7	149.98		-503.9	-790.1	535.3	496.3	39.02	13.720	
5,200.0	4,981.3	5,226.9	5,076.2	29.4	24.3	149.31		-516.6	-815.2	545.8	505.5	40.22	13.569	
5,300.0	5,076.5	5,326.2	5,171.4	30.0	24.9	148.67		-529.3	-840.3	554.9	513.5	41.46	13.386	
5,400.0	5,172.8	5,417.1	5,258.9	30.4	25.4	148.00		-540.5	-862.5	561.8	519.3	42.52	13.213	
5,500.0	5,269.9	5,506.4	5,345.4	30.8	25.7	147.41		-550.3	-881.9	567.7	524.2	43.43	13.071	
5,600.0	5,367.9	5,600.0	5,436.9	31.1	26.1	146.85		-559.3	-899.7	572.5	528.2	44.27	12.933	
5,700.0	5,466.4	5,685.3	5,520.8	31.4	26.3	146.39		-566.3	-913.5	576.2	531.3	44.95	12.818	
5,800.0	5,565.5	5,775.0	5,609.5	31.6	26.6	145.96		-572.4	-925.7	578.9	533.3	45.57	12.704	
5,900.0	5,665.0	5,864.8	5,698.6	31.8	26.8	145.58		-577.3	-935.4	580.4	534.3	46.08	12.595	
6,000.0	5,764.8	5,954.8	5,788.2	32.0	27.0	145.25		-580.9	-942.6	580.8	534.3	46.50	12.491	
6,100.0	5,864.7	6,044.8	5,878.1	32.1	27.1	144.95		-583.3	-947.2	580.1	533.3	46.82	12.391	
6,200.0	5,964.7	6,135.0	5,968.2	32.2	27.2	5.71		-584.4	-949.4	578.8	531.2	47.57	12.168	
6,300.0	6,064.7	6,231.5	6,064.7	32.2	27.3	-84.34		-584.4	-949.6	578.7	531.4	47.32	12.228	
6,400.0	6,164.2	6,327.7	6,160.9	32.2	27.4	-85.12		-584.4	-947.8	578.0	530.2	47.72	12.111	
6,500.0	6,261.6	6,421.7	6,254.1	32.1	27.4	-86.08		-584.4	-935.7	577.2	529.2	47.98	12.030	
6,600.0	6,355.2	6,516.9	6,346.1	31.9	27.2	-87.12		-584.4	-911.9	576.6	528.5	48.07	11.996	
6,700.0	6,443.4	6,613.3	6,435.7	31.7	27.0	-88.20		-584.4	-876.3	576.1	528.1	48.00	12.004	
6,800.0	6,524.8	6,711.0	6,521.1	31.4	26.7	-89.33		-584.4	-829.0	575.9	528.1	47.83	12.041	
6,858.9	6,568.9	6,769.3	6,568.9	31.2	26.6	-90.00		-584.4	-795.7	575.9	528.1	47.72	12.067	
6,900.0	6,597.9	6,810.2	6,601.0	31.1	26.4	-90.47		-584.4	-770.2	575.9	528.2	47.64	12.089	
7,000.0	6,661.5	6,911.0	6,673.5	30.8	26.2	-91.62		-584.4	-700.5	576.1	528.6	47.53	12.120	
7,100.0	6,714.4	7,013.3	6,737.2	30.5	26.0	-92.74		-584.4	-620.5	576.5	528.9	47.64	12.101	
7,200.0	6,755.9	7,117.2	6,790.4	30.2	26.0	-93.83		-584.4	-531.4	577.2	529.1	48.10	11.999	
7,300.0	6,785.1	7,222.7	6,831.5	30.0	26.2	-94.85		-584.4	-434.2	577.9	528.9	49.01	11.792	
7,400.0	6,801.6	7,329.8	6,859.2	29.9	26.6	-95.79		-584.4	-330.9	578.8	528.4	50.44	11.476	
7,500.0	6,805.3	7,434.7	6,873.0	29.8	27.3	-96.70		-584.4	-227.0	579.9	527.5	52.37	11.072	
7,600.0	6,804.2	7,538.7	6,881.8	30.0	28.3	-97.67		-584.4	-123.3	581.1	526.1	54.92	10.580	
7,700.0	6,803.1	7,642.6	6,882.7	30.4	29.5	-97.87		-584.4	-19.4	581.3	523.4	57.90	10.041	
7,800.0	6,802.1	7,742.6	6,882.2	31.3	30.9	-97.92		-584.4	80.6	581.4	520.2	61.18	9.503	
7,900.0	6,801.0	7,842.6	6,881.7	32.7	32.6	-97.98		-584.4	180.5	581.5	516.7	64.77	8.977	
8,000.0	6,799.9	7,942.6	6,881.2	34.4	34.4	-98.03		-584.4	280.5	581.6	512.9	68.63	8.474	
8,100.0	6,798.9	8,042.6	6,880.7	36.4	36.4	-98.08		-584.4	380.5	581.6	508.9	72.71	8.000	
8,200.0	6,797.8	8,142.6	6,880.2	38.6	38.4	-98.14		-584.4	480.5	581.7	504.7	76.97	7.558	
8,300.0	6,796.7	8,242.6	6,879.7	40.9	40.6	-98.19		-584.4	580.5	581.8	500.4	81.39	7.149	
8,400.0	6,795.7	8,342.6	6,879.2	43.2	42.9	-98.25		-584.4	680.5	581.9	495.9	85.93	6.771	
8,500.0	6,794.6	8,442.6	6,878.7	45.6	45.2	-98.30		-584.4	780.5	582.0	491.4	90.59	6.424	
8,600.0	6,793.6	8,542.6	6,878.1	48.1	47.6	-98.36		-584.4	880.5	582.0	486.7	95.35	6.104	
8,700.0	6,792.5	8,642.6	6,877.6	50.6	50.0	-98.41		-584.4	980.5	582.1	481.9	100.19	5.810	
8,800.0	6,791.4	8,742.6	6,877.1	53.1	52.4	-98.47		-584.4	1,080.5	582.2	477.1	105.09	5.540	
8,900.0	6,790.4	8,842.6	6,876.6	55.7	54.9	-98.52		-584.4	1,180.5	582.3	472.2	110.06	5.291	
9,000.0	6,789.3	8,942.6	6,876.1	58.2	57.5	-98.57		-584.4	1,280.5	582.4	467.3	115.07	5.061	
9,100.0	6,788.2	9,042.6	6,875.6	60.8	60.0	-98.63		-584.4	1,380.5	582.4	462.3	120.14	4.848	
9,200.0	6,787.2	9,142.6	6,875.1	63.5	62.6	-98.68		-584.4	1,480.5	582.5	457.3	125.24	4.651	
9,300.0	6,786.1	9,242.6	6,874.6	66.1	65.2	-98.74		-584.4	1,580.5	582.6	452.2	130.37	4.469	
9,400.0	6,785.0	9,342.6	6,874.1	68.7	67.8	-98.79		-584.4	1,680.5	582.7	447.2	135.54	4.299	
9,500.0	6,784.0	9,442.6	6,873.6	71.4	70.4	-98.85		-584.4	1,780.5	582.8	442.1	140.74	4.141	
9,600.0	6,782.9	9,542.6	6,873.1	74.1	73.1	-98.90		-584.4	1,880.5	582.9	436.9	145.95	3.994	
9,700.0	6,781.8	9,642.6	6,872.6	76.7	75.7	-98.95		-584.4	1,980.5	583.0	431.8	151.19	3.856	
9,800.0	6,780.8	9,742.6	6,872.1	79.4	78.4	-99.01		-584.4	2,080.5	583.0	426.6	156.45	3.727	
9,900.0	6,779.7	9,842.6	6,871.6	82.1	81.1	-99.06		-584.4	2,180.5	583.1	421.4	161.72	3.606	
10,000.0	6,778.7	9,942.6	6,871.1	84.8	83.7	-99.12		-584.4	2,280.5	583.2	416.2	167.01	3.492	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)											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)				
10,100.0	6,777.6	10,042.6	6,870.6	87.5	86.4	-99.17	-584.4	2,380.5	583.3	411.0	172.32	3.385			
10,200.0	6,776.5	10,142.6	6,870.0	90.2	89.1	-99.23	-584.4	2,480.5	583.4	405.8	177.63	3.284			
10,300.0	6,775.5	10,242.6	6,869.5	92.9	91.8	-99.28	-584.4	2,580.5	583.5	400.5	182.96	3.189			
10,400.0	6,774.4	10,342.6	6,869.0	95.7	94.5	-99.33	-584.4	2,680.5	583.6	395.3	188.30	3.099			
10,500.0	6,773.3	10,442.6	6,868.5	98.4	97.3	-99.39	-584.4	2,780.5	583.7	390.0	193.64	3.014			
10,600.0	6,772.3	10,542.6	6,868.0	101.1	100.0	-99.44	-584.4	2,880.5	583.8	384.8	198.99	2.934			
10,700.0	6,771.2	10,642.6	6,867.5	103.9	102.7	-99.50	-584.4	2,980.5	583.9	379.5	204.35	2.857			
10,800.0	6,770.1	10,742.6	6,867.0	106.6	105.4	-99.55	-584.4	3,080.5	583.9	374.2	209.72	2.784			
10,900.0	6,769.1	10,842.6	6,866.5	109.3	108.2	-99.60	-584.4	3,180.5	584.0	368.9	215.09	2.715			
11,000.0	6,768.0	10,942.6	6,866.0	112.1	110.9	-99.66	-584.4	3,280.5	584.1	363.7	220.47	2.649			
11,100.0	6,766.9	11,042.6	6,865.5	114.8	113.6	-99.71	-584.4	3,380.5	584.2	358.4	225.85	2.587			
11,200.0	6,765.9	11,142.6	6,865.0	117.6	116.4	-99.77	-584.4	3,480.5	584.3	353.1	231.24	2.527			
11,300.0	6,764.8	11,242.6	6,864.5	120.3	119.1	-99.82	-584.4	3,580.5	584.4	347.8	236.63	2.470			
11,400.0	6,763.7	11,342.6	6,864.0	123.1	121.9	-99.87	-584.4	3,680.4	584.5	342.5	242.03	2.415			
11,500.0	6,762.7	11,442.6	6,863.5	125.8	124.6	-99.93	-584.4	3,780.4	584.6	337.2	247.42	2.363			
11,600.0	6,761.6	11,542.6	6,863.0	128.6	127.4	-99.98	-584.4	3,880.4	584.7	331.9	252.82	2.313			
11,700.0	6,760.6	11,642.6	6,862.5	131.4	130.2	-100.04	-584.4	3,980.4	584.8	326.6	258.22	2.265			
11,800.0	6,759.5	11,742.6	6,862.0	134.1	132.9	-100.09	-584.4	4,080.4	584.9	321.3	263.63	2.219			
11,900.0	6,758.4	11,842.6	6,861.4	136.9	135.7	-100.14	-584.4	4,180.4	585.0	316.0	269.04	2.174			
12,000.0	6,757.4	11,942.6	6,860.9	139.7	138.4	-100.20	-584.4	4,280.4	585.1	310.7	274.44	2.132			
12,100.0	6,756.3	12,042.5	6,860.4	142.4	141.2	-100.25	-584.4	4,380.4	585.2	305.3	279.85	2.091			
12,200.0	6,755.2	12,142.5	6,859.9	145.2	144.0	-100.30	-584.4	4,480.4	585.3	300.0	285.26	2.052			
12,300.0	6,754.2	12,242.5	6,859.4	148.0	146.7	-100.36	-584.4	4,580.4	585.4	294.7	290.67	2.014			
12,400.0	6,753.1	12,342.5	6,858.9	150.7	149.5	-100.41	-584.4	4,680.4	585.5	289.4	296.09	1.977			
12,500.0	6,752.0	12,442.5	6,858.4	153.5	152.3	-100.47	-584.4	4,780.4	585.6	284.1	301.50	1.942			
12,600.0	6,751.0	12,542.5	6,857.9	156.3	155.0	-100.52	-584.4	4,880.4	585.7	278.8	306.91	1.908			
12,700.0	6,749.9	12,642.5	6,857.4	159.1	157.8	-100.57	-584.4	4,980.4	585.8	273.5	312.33	1.876			
12,800.0	6,748.8	12,742.5	6,856.9	161.8	160.6	-100.63	-584.4	5,080.4	585.9	268.2	317.74	1.844			
12,900.0	6,747.8	12,842.5	6,856.4	164.6	163.4	-100.68	-584.4	5,180.4	586.0	262.9	323.16	1.813			
13,000.0	6,746.7	12,942.5	6,855.9	167.4	166.2	-100.73	-584.4	5,280.4	586.1	257.5	328.57	1.784			
13,100.0	6,745.6	13,042.5	6,855.4	170.2	168.9	-100.79	-584.4	5,380.4	586.2	252.2	333.99	1.755			
13,200.0	6,744.6	13,142.5	6,854.9	173.0	171.7	-100.84	-584.4	5,480.4	586.3	246.9	339.40	1.728			
13,300.0	6,743.5	13,242.5	6,854.4	175.7	174.5	-100.90	-584.4	5,580.4	586.4	241.6	344.81	1.701			
13,400.0	6,742.5	13,342.5	6,853.9	178.5	177.3	-100.95	-584.4	5,680.4	586.5	236.3	350.23	1.675			
13,500.0	6,741.4	13,442.5	6,853.3	181.3	180.1	-101.00	-584.4	5,780.4	586.6	231.0	355.64	1.650			
13,600.0	6,740.3	13,542.5	6,852.8	184.1	182.8	-101.06	-584.4	5,880.4	586.7	225.7	361.05	1.625			
13,700.0	6,739.3	13,642.5	6,852.3	186.9	185.6	-101.11	-584.4	5,980.4	586.9	220.4	366.46	1.601			
13,800.0	6,738.2	13,742.5	6,851.8	189.7	188.4	-101.16	-584.4	6,080.4	587.0	215.1	371.87	1.578			
13,900.0	6,737.1	13,842.5	6,851.3	192.4	191.2	-101.22	-584.4	6,180.4	587.1	209.8	377.28	1.556			
14,000.0	6,736.1	13,942.5	6,850.8	195.2	194.0	-101.27	-584.4	6,280.4	587.2	204.5	382.69	1.534			
14,100.0	6,735.0	14,042.5	6,850.3	198.0	196.8	-101.32	-584.4	6,380.4	587.3	199.2	388.10	1.513			
14,200.0	6,733.9	14,142.5	6,849.8	200.8	199.5	-101.38	-584.4	6,480.4	587.4	193.9	393.51	1.493 Level 3			
14,300.0	6,732.9	14,242.5	6,849.3	203.6	202.3	-101.43	-584.4	6,580.4	587.5	188.6	398.92	1.473 Level 3			
14,400.0	6,731.8	14,342.5	6,848.8	206.4	205.1	-101.48	-584.4	6,680.4	587.6	183.3	404.32	1.453 Level 3			
14,500.0	6,730.7	14,442.5	6,848.3	209.2	207.9	-101.54	-584.4	6,780.4	587.7	178.0	409.72	1.434 Level 3			
14,600.0	6,729.7	14,542.5	6,847.8	212.0	210.7	-101.59	-584.4	6,880.4	587.8	172.7	415.13	1.416 Level 3			
14,700.0	6,728.6	14,642.5	6,847.3	214.8	213.5	-101.64	-584.4	6,980.4	588.0	167.4	420.53	1.398 Level 3			
14,724.0	6,728.4	14,666.5	6,847.2	215.4	214.2	-101.66	-584.4	7,004.4	588.0	166.2	421.82	1.394 Level 3			
14,757.6	6,728.0	14,696.6	6,847.0	216.4	215.0	-101.67	-584.4	7,034.4	588.0	164.5	423.54	1.388 Level 3, SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19P-402 - Wellbore #1 - Plan #1 (3-05-14)													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	-180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-29.1	0.0	29.1	28.9	0.22	129.686		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.67	43.229 CC		
300.0	300.0	299.2	299.1	0.6	0.5	-178.03	-30.5	-1.0	30.5	29.4	1.10	27.723		
400.0	400.0	398.1	397.9	0.8	0.8	-173.11	-34.6	-4.2	34.9	33.4	1.54	22.719		
500.0	500.0	496.7	496.2	1.0	1.0	-29.26	-41.3	-9.4	41.0	39.0	1.96	20.930		
600.0	599.8	595.1	593.8	1.2	1.3	-25.96	-50.7	-16.6	47.4	45.0	2.38	19.895		
700.0	699.5	693.2	690.8	1.4	1.6	-23.67	-62.7	-25.8	53.9	51.1	2.83	19.063		
800.0	798.7	791.2	787.0	1.7	2.0	-22.06	-77.3	-37.1	60.5	57.2	3.29	18.355		
900.0	897.5	888.9	882.2	2.0	2.4	-20.95	-94.5	-50.3	67.1	63.3	3.78	17.720		
1,000.0	995.6	986.4	976.5	2.3	2.9	-20.19	-114.1	-65.4	73.7	69.4	4.30	17.125		
1,100.0	1,093.1	1,083.6	1,069.7	2.8	3.5	-19.71	-136.3	-82.5	80.3	75.4	4.85	16.552		
1,200.0	1,189.6	1,180.7	1,161.7	3.3	4.1	-19.43	-160.8	-101.4	86.8	81.4	5.43	15.986		
1,300.0	1,285.3	1,279.7	1,254.7	3.8	4.7	-19.47	-187.8	-122.2	92.5	86.5	6.06	15.273		
1,400.0	1,380.1	1,379.7	1,348.5	4.4	5.4	-20.04	-215.1	-143.2	95.8	89.1	6.74	14.217		
1,500.0	1,474.9	1,479.6	1,442.3	5.0	6.1	-20.62	-242.4	-164.2	99.0	91.5	7.47	13.250		
1,600.0	1,569.6	1,579.6	1,536.1	5.7	6.8	-21.15	-269.6	-185.2	102.2	94.0	8.22	12.435		
1,700.0	1,664.4	1,679.5	1,630.0	6.3	7.5	-21.66	-296.9	-206.2	105.4	96.4	8.98	11.736		
1,800.0	1,759.2	1,779.5	1,723.8	7.0	8.2	-22.13	-324.2	-227.2	108.6	98.8	9.75	11.131		
1,900.0	1,853.9	1,879.4	1,817.6	7.6	8.9	-22.58	-351.5	-248.3	111.8	101.2	10.54	10.602		
2,000.0	1,948.7	1,979.3	1,911.4	8.2	9.6	-23.01	-378.8	-269.3	115.0	103.6	11.34	10.138		
2,100.0	2,043.5	2,079.3	2,005.3	8.9	10.3	-23.41	-406.1	-290.3	118.2	106.0	12.15	9.728		
2,200.0	2,138.2	2,179.2	2,099.1	9.6	11.0	-23.79	-433.4	-311.3	121.4	108.5	12.97	9.363		
2,300.0	2,233.0	2,279.2	2,192.9	10.2	11.7	-24.14	-460.7	-332.3	124.6	110.8	13.79	9.036		
2,400.0	2,327.8	2,379.1	2,286.7	10.9	12.4	-24.49	-487.9	-353.3	127.9	113.2	14.63	8.742		
2,500.0	2,422.5	2,479.1	2,380.5	11.5	13.1	-24.81	-515.2	-374.4	131.1	115.6	15.47	8.476		
2,600.0	2,517.3	2,579.0	2,474.4	12.2	13.8	-25.12	-542.5	-395.4	134.3	118.0	16.31	8.235		
2,700.0	2,612.1	2,679.0	2,568.2	12.8	14.5	-25.41	-569.8	-416.4	137.6	120.4	17.17	8.015		
2,800.0	2,706.8	2,778.9	2,662.0	13.5	15.2	-25.69	-597.1	-437.4	140.8	122.8	18.02	7.814		
2,900.0	2,801.6	2,878.8	2,755.8	14.2	15.9	-25.96	-624.4	-458.4	144.1	125.2	18.88	7.630		
3,000.0	2,896.4	2,978.8	2,849.7	14.8	16.7	-26.22	-651.7	-479.4	147.3	127.6	19.75	7.460		
3,100.0	2,991.1	3,078.7	2,943.5	15.5	17.4	-26.46	-679.0	-500.4	150.6	130.0	20.62	7.303		
3,200.0	3,085.9	3,178.7	3,037.3	16.1	18.1	-26.70	-706.2	-521.5	153.9	132.4	21.50	7.157		
3,300.0	3,180.7	3,278.6	3,131.1	16.8	18.8	-26.92	-733.5	-542.5	157.1	134.7	22.37	7.022		
3,400.0	3,275.4	3,378.6	3,225.0	17.5	19.5	-27.14	-760.8	-563.5	160.4	137.1	23.26	6.896		
3,500.0	3,370.2	3,478.5	3,318.8	18.1	20.2	-27.35	-788.1	-584.5	163.6	139.5	24.14	6.779		
3,600.0	3,465.0	3,578.5	3,412.6	18.8	20.9	-27.54	-815.4	-605.5	166.9	141.9	25.03	6.669		
3,700.0	3,559.8	3,678.4	3,506.4	19.5	21.6	-27.74	-842.7	-626.5	170.2	144.3	25.92	6.566		
3,800.0	3,654.5	3,778.4	3,600.2	20.1	22.3	-27.92	-870.0	-647.5	173.4	146.6	26.81	6.469		
3,900.0	3,749.3	3,878.3	3,694.1	20.8	23.0	-28.10	-897.3	-668.6	176.7	149.0	27.71	6.378		
4,000.0	3,844.1	3,978.2	3,787.9	21.5	23.7	-28.27	-924.5	-689.6	180.0	151.4	28.60	6.292		
4,100.0	3,938.8	4,078.2	3,881.7	22.1	24.4	-28.43	-951.8	-710.6	183.3	153.8	29.50	6.211		
4,200.0	4,033.6	4,178.1	3,975.5	22.8	25.2	-28.59	-979.1	-731.6	186.5	156.1	30.41	6.135		
4,300.0	4,128.4	4,278.1	4,069.4	23.4	25.9	-28.75	-1,006.4	-752.6	189.8	158.5	31.31	6.063		
4,400.0	4,223.1	4,378.0	4,163.2	24.1	26.6	-28.89	-1,033.7	-773.6	193.1	160.9	32.22	5.994		
4,500.0	4,317.9	4,478.0	4,257.0	24.8	27.3	-29.04	-1,061.0	-794.7	196.4	163.3	33.12	5.929		
4,600.0	4,412.7	4,577.9	4,350.8	25.4	28.0	-29.18	-1,088.3	-815.7	199.7	165.6	34.03	5.867		
4,700.0	4,507.4	4,677.9	4,444.7	26.1	28.7	-29.31	-1,115.5	-836.7	202.9	168.0	34.94	5.808		
4,800.0	4,602.2	4,777.8	4,538.5	26.8	29.4	-29.44	-1,142.8	-857.7	206.2	170.4	35.86	5.752		
4,900.0	4,697.0	4,877.7	4,632.3	27.4	30.1	-29.57	-1,170.1	-878.7	209.5	172.7	36.77	5.698		
5,000.0	4,791.7	4,977.7	4,726.1	28.1	30.8	-29.69	-1,197.4	-899.7	212.8	175.1	37.68	5.647		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19P-402 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,886.5	5,077.6	4,819.9	28.8	31.5	-29.81	-1,224.7	-920.7	216.1	177.5	38.60	5.598		
5,200.0	4,981.3	5,177.6	4,913.8	29.4	32.3	-29.92	-1,252.0	-941.8	219.4	179.9	39.52	5.551		
5,300.0	5,076.5	5,277.5	5,007.5	30.0	33.0	-29.87	-1,279.3	-962.8	224.0	183.8	40.29	5.561		
5,400.0	5,172.8	5,384.5	5,108.6	30.4	33.5	-29.58	-1,307.1	-984.2	230.2	189.5	40.78	5.646		
5,500.0	5,269.9	5,492.2	5,211.5	30.8	34.0	-29.28	-1,332.1	-1,003.5	236.1	194.9	41.19	5.732		
5,600.0	5,367.9	5,600.1	5,315.8	31.1	34.4	-28.97	-1,354.1	-1,020.4	241.7	200.2	41.53	5.820		
5,700.0	5,466.4	5,708.3	5,421.3	31.4	34.8	-28.67	-1,373.0	-1,035.0	246.9	205.1	41.78	5.910		
5,800.0	5,565.5	5,816.7	5,527.9	31.6	35.1	-28.36	-1,388.8	-1,047.1	251.8	209.8	41.96	6.001		
5,900.0	5,665.0	5,925.3	5,635.4	31.8	35.4	-28.04	-1,401.3	-1,056.8	256.3	214.3	42.05	6.095		
6,000.0	5,764.8	6,034.1	5,743.6	32.0	35.6	-27.72	-1,410.7	-1,064.0	260.5	218.4	42.07	6.192		
6,100.0	5,864.7	6,143.2	5,852.3	32.1	35.8	-27.40	-1,416.8	-1,068.7	264.3	222.3	42.00	6.292		
6,200.0	5,964.7	6,252.4	5,961.5	32.2	35.9	-166.17	-1,419.6	-1,070.8	267.1	203.7	63.32	4.218		
6,300.0	6,064.7	6,355.7	6,064.7	32.2	36.0	103.92	-1,419.8	-1,071.0	267.4	225.2	42.18	6.338		
6,400.0	6,164.2	6,460.9	6,169.9	32.2	36.0	105.41	-1,419.8	-1,068.6	269.2	227.9	41.32	6.516		
6,500.0	6,261.6	6,571.5	6,279.2	32.1	36.0	106.96	-1,419.8	-1,052.0	271.4	231.1	40.26	6.741		
6,600.0	6,355.2	6,683.4	6,386.1	31.9	35.8	108.20	-1,419.8	-1,019.3	273.2	234.0	39.25	6.961		
6,700.0	6,443.4	6,796.3	6,487.9	31.7	35.6	109.10	-1,419.8	-970.9	274.6	236.3	38.38	7.156		
6,800.0	6,524.8	6,909.9	6,582.1	31.4	35.2	109.65	-1,419.8	-907.5	275.5	237.8	37.78	7.293		
6,900.0	6,597.9	7,023.8	6,666.0	31.1	34.9	109.83	-1,419.8	-830.7	275.9	238.2	37.61	7.334		
7,000.0	6,661.5	7,137.7	6,737.6	30.8	34.5	109.66	-1,419.8	-742.3	275.6	237.5	38.05	7.243		
7,100.0	6,714.4	7,251.2	6,795.2	30.5	34.1	109.12	-1,419.8	-644.5	274.7	235.5	39.21	7.005		
7,200.0	6,755.9	7,364.1	6,837.4	30.2	33.8	108.23	-1,419.8	-539.9	273.3	232.1	41.15	6.641		
7,300.0	6,785.1	7,476.1	6,863.6	30.0	33.5	107.01	-1,419.8	-431.2	271.4	227.6	43.78	6.200		
7,396.8	6,801.3	7,577.3	6,875.5	29.9	33.3	106.04	-1,419.8	-330.7	270.0	223.4	46.60	5.795		
7,400.0	6,801.6	7,580.5	6,875.8	29.9	33.3	106.04	-1,419.8	-327.5	270.0	223.3	46.68	5.785		
7,500.0	6,805.3	7,686.5	6,883.2	29.8	33.2	106.72	-1,419.8	-221.8	271.0	221.7	49.27	5.499		
7,600.0	6,804.2	7,788.8	6,883.2	30.0	33.1	106.94	-1,419.8	-119.4	271.3	219.5	51.80	5.237		
7,700.0	6,803.1	7,888.8	6,882.7	30.4	33.2	107.05	-1,419.8	-19.4	271.4	216.7	54.75	4.958		
7,800.0	6,802.1	7,988.8	6,882.2	31.3	33.7	107.16	-1,419.8	80.6	271.6	213.6	58.04	4.680		
7,900.0	6,801.0	8,088.8	6,881.7	32.7	34.7	107.27	-1,419.8	180.5	271.8	210.1	61.61	4.411		
8,000.0	6,799.9	8,188.8	6,881.2	34.4	36.3	107.39	-1,419.8	280.5	271.9	206.5	65.43	4.156		
8,100.0	6,798.9	8,288.8	6,880.7	36.4	38.2	107.50	-1,419.8	380.5	272.1	202.7	69.44	3.918		
8,200.0	6,797.8	8,388.8	6,880.2	38.6	40.3	107.61	-1,419.8	480.5	272.3	198.6	73.62	3.698		
8,300.0	6,796.7	8,488.8	6,879.7	40.9	42.6	107.72	-1,419.8	580.5	272.4	194.5	77.94	3.495		
8,400.0	6,795.7	8,588.8	6,879.2	43.2	45.0	107.83	-1,419.8	680.5	272.6	190.2	82.37	3.310		
8,500.0	6,794.6	8,688.8	6,878.7	45.6	47.4	107.95	-1,419.8	780.5	272.8	185.9	86.89	3.139		
8,600.0	6,793.6	8,788.8	6,878.2	48.1	49.8	108.06	-1,419.8	880.5	272.9	181.4	91.50	2.983		
8,700.0	6,792.5	8,888.8	6,877.7	50.6	52.3	108.17	-1,419.8	980.5	273.1	176.9	96.17	2.840		
8,800.0	6,791.4	8,988.8	6,877.2	53.1	54.8	108.28	-1,419.8	1,080.5	273.3	172.4	100.90	2.709		
8,900.0	6,790.4	9,088.8	6,876.6	55.7	57.4	108.39	-1,419.8	1,180.5	273.5	167.8	105.68	2.588		
9,000.0	6,789.3	9,188.8	6,876.1	58.2	59.9	108.50	-1,419.8	1,280.5	273.6	163.2	110.50	2.477		
9,100.0	6,788.2	9,288.8	6,875.6	60.8	62.5	108.61	-1,419.8	1,380.5	273.8	158.5	115.35	2.374		
9,200.0	6,787.2	9,388.8	6,875.1	63.5	65.1	108.72	-1,419.8	1,480.5	274.0	153.8	120.23	2.279		
9,300.0	6,786.1	9,488.8	6,874.6	66.1	67.7	108.83	-1,419.8	1,580.5	274.2	149.0	125.14	2.191		
9,400.0	6,785.0	9,588.8	6,874.1	68.7	70.4	108.95	-1,419.8	1,680.5	274.4	144.3	130.07	2.109		
9,500.0	6,784.0	9,688.8	6,873.6	71.4	73.0	109.06	-1,419.8	1,780.5	274.5	139.5	135.02	2.033		
9,600.0	6,782.9	9,788.8	6,873.1	74.1	75.7	109.17	-1,419.8	1,880.5	274.7	134.7	139.99	1.963		
9,700.0	6,781.8	9,888.8	6,872.6	76.7	78.4	109.28	-1,419.8	1,980.5	274.9	129.9	144.97	1.896		
9,800.0	6,780.8	9,988.8	6,872.1	79.4	81.0	109.39	-1,419.8	2,080.5	275.1	125.1	149.96	1.835		
9,900.0	6,779.7	10,088.8	6,871.6	82.1	83.7	109.49	-1,419.8	2,180.5	275.3	120.3	154.96	1.777		
10,000.0	6,778.7	10,188.8	6,871.1	84.8	86.4	109.60	-1,419.8	2,280.5	275.5	115.5	159.96	1.722		

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19P-402 - Wellbore #1 - Plan #1 (3-05-14)													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
10,100.0	6,777.6	10,288.8	6,870.6	87.5	89.1	109.71		-1,419.8	2,380.5	275.7	110.7	164.98	1.671	
10,200.0	6,776.5	10,388.8	6,870.1	90.2	91.8	109.82		-1,419.8	2,480.5	275.8	105.9	170.00	1.623	
10,300.0	6,775.5	10,488.8	6,869.6	92.9	94.5	109.93		-1,419.8	2,580.5	276.0	101.0	175.02	1.577	
10,400.0	6,774.4	10,588.8	6,869.1	95.7	97.2	110.04		-1,419.8	2,680.5	276.2	96.2	180.05	1.534	
10,500.0	6,773.3	10,688.8	6,868.5	98.4	100.0	110.15		-1,419.8	2,780.5	276.4	91.3	185.07	1.494	Level 3
10,600.0	6,772.3	10,788.8	6,868.0	101.1	102.7	110.26		-1,419.8	2,880.5	276.6	86.5	190.10	1.455	Level 3
10,700.0	6,771.2	10,888.8	6,867.5	103.9	105.4	110.37		-1,419.8	2,980.5	276.8	81.7	195.13	1.419	Level 3
10,800.0	6,770.1	10,988.8	6,867.0	106.6	108.1	110.48		-1,419.8	3,080.5	277.0	76.8	200.16	1.384	Level 3
10,900.0	6,769.1	11,088.8	6,866.5	109.3	110.9	110.58		-1,419.8	3,180.5	277.2	72.0	205.19	1.351	Level 3
11,000.0	6,768.0	11,188.8	6,866.0	112.1	113.6	110.69		-1,419.8	3,280.5	277.4	67.2	210.22	1.320	Level 3
11,100.0	6,766.9	11,288.8	6,865.5	114.8	116.4	110.80		-1,419.8	3,380.5	277.6	62.3	215.25	1.290	Level 3
11,200.0	6,765.9	11,388.8	6,865.0	117.6	119.1	110.91		-1,419.8	3,480.5	277.8	57.5	220.28	1.261	Level 3
11,300.0	6,764.8	11,488.8	6,864.5	120.3	121.9	111.01		-1,419.8	3,580.5	278.0	52.7	225.30	1.234	Level 2
11,400.0	6,763.7	11,588.8	6,864.0	123.1	124.6	111.12		-1,419.8	3,680.4	278.2	47.9	230.32	1.208	Level 2
11,500.0	6,762.7	11,688.8	6,863.5	125.8	127.4	111.23		-1,419.8	3,780.4	278.4	43.1	235.34	1.183	Level 2
11,600.0	6,761.6	11,788.8	6,863.0	128.6	130.1	111.34		-1,419.8	3,880.4	278.6	38.2	240.35	1.159	Level 2
11,700.0	6,760.6	11,888.8	6,862.5	131.4	132.9	111.44		-1,419.8	3,980.4	278.8	33.4	245.36	1.136	Level 2
11,800.0	6,759.5	11,988.8	6,862.0	134.1	135.6	111.55		-1,419.8	4,080.4	279.0	28.6	250.37	1.114	Level 2
11,900.0	6,758.4	12,088.8	6,861.5	136.9	138.4	111.66		-1,419.8	4,180.4	279.2	23.8	255.37	1.093	Level 2
12,000.0	6,757.4	12,188.8	6,861.0	139.7	141.2	111.76		-1,419.8	4,280.4	279.4	19.0	260.37	1.073	Level 2
12,100.0	6,756.3	12,288.8	6,860.4	142.4	143.9	111.87		-1,419.8	4,380.4	279.6	14.3	265.36	1.054	Level 2
12,200.0	6,755.2	12,388.8	6,859.9	145.2	146.7	111.98		-1,419.8	4,480.4	279.8	9.5	270.35	1.035	Level 2
12,300.0	6,754.2	12,488.8	6,859.4	148.0	149.5	112.08		-1,419.8	4,580.4	280.0	4.7	275.33	1.017	Level 2
12,400.0	6,753.1	12,588.8	6,858.9	150.7	152.2	112.19		-1,419.8	4,680.4	280.3	-0.1	280.31	1.000	Level 1
12,500.0	6,752.0	12,688.8	6,858.4	153.5	155.0	112.29		-1,419.8	4,780.4	280.5	-4.8	285.28	0.983	Level 1
12,600.0	6,751.0	12,788.8	6,857.9	156.3	157.8	112.40		-1,419.8	4,880.4	280.7	-9.6	290.25	0.967	Level 1
12,700.0	6,749.9	12,888.8	6,857.4	159.1	160.5	112.50		-1,419.8	4,980.4	280.9	-14.3	295.21	0.951	Level 1
12,800.0	6,748.8	12,988.8	6,856.9	161.8	163.3	112.61		-1,419.8	5,080.4	281.1	-19.1	300.16	0.936	Level 1
12,900.0	6,747.8	13,088.8	6,856.4	164.6	166.1	112.71		-1,419.8	5,180.4	281.3	-23.8	305.11	0.922	Level 1
13,000.0	6,746.7	13,188.8	6,855.9	167.4	168.9	112.82		-1,419.8	5,280.4	281.5	-28.5	310.06	0.908	Level 1
13,100.0	6,745.6	13,288.8	6,855.4	170.2	171.6	112.92		-1,419.8	5,380.4	281.7	-33.2	314.99	0.894	Level 1
13,200.0	6,744.6	13,388.8	6,854.9	173.0	174.4	113.03		-1,419.8	5,480.4	282.0	-38.0	319.92	0.881	Level 1
13,300.0	6,743.5	13,488.8	6,854.4	175.7	177.2	113.13		-1,419.8	5,580.4	282.2	-42.7	324.85	0.869	Level 1
13,400.0	6,742.5	13,588.8	6,853.9	178.5	180.0	113.24		-1,419.8	5,680.4	282.4	-47.4	329.77	0.856	Level 1
13,500.0	6,741.4	13,688.8	6,853.4	181.3	182.8	113.34		-1,419.8	5,780.4	282.6	-52.1	334.68	0.844	Level 1
13,600.0	6,740.3	13,788.7	6,852.9	184.1	185.5	113.44		-1,419.8	5,880.4	282.8	-56.7	339.58	0.833	Level 1
13,700.0	6,739.3	13,888.7	6,852.4	186.9	188.3	113.55		-1,419.8	5,980.4	283.1	-61.4	344.48	0.822	Level 1
13,800.0	6,738.2	13,988.7	6,851.8	189.7	191.1	113.65		-1,419.8	6,080.4	283.3	-66.1	349.37	0.811	Level 1
13,900.0	6,737.1	14,088.7	6,851.3	192.4	193.9	113.75		-1,419.8	6,180.4	283.5	-70.7	354.26	0.800	Level 1
14,000.0	6,736.1	14,188.7	6,850.8	195.2	196.7	113.86		-1,419.8	6,280.4	283.7	-75.4	359.13	0.790	Level 1
14,100.0	6,735.0	14,288.7	6,850.3	198.0	199.5	113.96		-1,419.8	6,380.4	284.0	-80.0	364.00	0.780	Level 1
14,200.0	6,733.9	14,388.7	6,849.8	200.8	202.2	114.06		-1,419.8	6,480.4	284.2	-84.7	368.87	0.770	Level 1
14,300.0	6,732.9	14,488.7	6,849.3	203.6	205.0	114.17		-1,419.8	6,580.4	284.4	-89.3	373.72	0.761	Level 1
14,400.0	6,731.8	14,588.7	6,848.8	206.4	207.8	114.27		-1,419.8	6,680.4	284.7	-93.9	378.57	0.752	Level 1
14,500.0	6,730.7	14,688.7	6,848.3	209.2	210.6	114.37		-1,419.8	6,780.4	284.9	-98.5	383.41	0.743	Level 1
14,600.0	6,729.7	14,788.7	6,847.8	212.0	213.4	114.47		-1,419.8	6,880.4	285.1	-103.1	388.25	0.734	Level 1
14,700.0	6,728.6	14,888.7	6,847.3	214.8	216.2	114.58		-1,419.8	6,980.4	285.3	-107.7	393.08	0.726	Level 1
14,757.6	6,728.0	14,945.8	6,847.0	216.4	217.8	114.63		-1,419.8	7,037.4	285.5	-110.4	395.84	0.721	Level 1, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore:</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Maxey 24O-HZ Pad Sec.24-T5N-R65W - Maxey 24O-232 - Wellbore #1 - Plan #2 (8-9-13)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,100.0	5,864.7	10,989.4	6,726.7	32.1	124.5	141.08	-814.2	-1,001.2	919.5	771.2	148.25	6.202	
6,200.0	5,964.7	10,988.8	6,726.7	32.2	124.5	0.87	-814.2	-1,001.8	827.8	785.3	42.43	19.508	
6,300.0	6,064.7	10,988.7	6,726.7	32.2	124.5	-92.49	-814.2	-1,001.9	738.1	588.8	149.31	4.943	
6,400.0	6,164.2	10,997.8	6,726.6	32.2	124.8	-103.71	-814.3	-992.7	651.9	503.6	148.28	4.396	
6,500.0	6,261.6	11,019.8	6,726.5	32.1	125.4	-110.21	-814.4	-970.7	571.5	426.0	145.55	3.927	
6,600.0	6,355.2	11,054.3	6,726.4	31.9	126.3	-112.77	-814.6	-936.2	500.0	355.7	144.31	3.465	
6,700.0	6,443.4	11,100.8	6,726.2	31.7	127.6	-112.19	-814.8	-889.7	440.2	294.8	145.37	3.028	
6,800.0	6,524.8	11,137.6	6,726.0	31.4	128.7	-111.36	-815.0	-852.9	395.1	248.8	146.27	2.701	
6,900.0	6,597.9	11,137.6	6,726.0	31.1	128.7	-112.81	-815.0	-852.9	375.0	230.5	144.53	2.595	
6,915.2	6,608.2	11,137.6	6,726.0	31.0	128.7	-112.83	-815.0	-852.9	374.6	230.2	144.42	2.594 CC, ES, SF	
7,000.0	6,661.5	11,137.6	6,726.0	30.8	128.7	-112.04	-815.0	-852.9	385.9	241.3	144.54	2.670	
7,100.0	6,714.4	11,137.6	6,726.0	30.5	128.7	-109.00	-815.0	-852.9	425.2	278.9	146.35	2.906	
7,200.0	6,755.9	11,137.6	6,726.0	30.2	128.7	-103.50	-815.0	-852.9	485.6	336.2	149.44	3.249	
7,300.0	6,785.1	11,137.6	6,726.0	30.0	128.7	-95.37	-815.0	-852.9	559.4	407.1	152.32	3.673	
7,400.0	6,801.6	11,137.6	6,726.0	29.9	128.7	-84.76	-815.0	-852.9	641.0	488.7	152.35	4.208	
7,500.0	6,805.3	11,137.6	6,726.0	29.8	128.7	-74.46	-815.0	-852.9	726.6	578.3	148.29	4.900	
7,600.0	6,804.2	11,137.6	6,726.0	30.0	128.7	-74.46	-815.0	-852.9	815.1	665.6	149.56	5.450	
7,700.0	6,803.1	11,137.6	6,726.0	30.4	128.7	-74.46	-815.0	-852.9	906.0	755.0	151.05	5.998	
7,800.0	6,802.1	11,137.6	6,726.0	31.3	128.7	-74.46	-815.0	-852.9	998.6	845.9	152.72	6.539	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Maxey 24O-HZ Pad Sec.24-T5N-R65W - Maxey 24P-312 - Wellbore #1 - Plan #2 (8-9-13)													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)			
6,100.0	5,864.7	11,096.4	6,799.8	32.1	125.1	167.61	-1,145.7	-1,001.8	924.2	793.5	130.72	7.070		
6,200.0	5,964.7	11,095.7	6,799.8	32.2	125.0	17.27	-1,145.7	-1,002.5	824.2	759.1	65.11	12.659		
6,300.0	6,064.7	11,095.5	6,799.8	32.2	125.0	-140.96	-1,145.7	-1,002.6	724.2	617.5	106.70	6.788		
6,400.0	6,164.2	11,104.5	6,799.8	32.2	125.3	-171.46	-1,145.7	-993.6	624.7	574.3	50.41	12.394		
6,500.0	6,261.6	11,126.5	6,799.6	32.1	125.9	-174.47	-1,145.9	-971.7	527.3	479.5	47.76	11.041		
6,600.0	6,355.2	11,160.9	6,799.5	31.9	126.9	-175.37	-1,146.1	-937.2	433.5	385.7	47.78	9.072		
6,700.0	6,443.4	11,207.4	6,799.2	31.7	128.2	-175.55	-1,146.3	-890.8	345.1	296.8	48.28	7.147		
6,800.0	6,524.8	11,245.3	6,799.0	31.4	129.2	-175.64	-1,146.5	-852.8	264.2	215.6	48.63	5.433		
6,900.0	6,597.9	11,245.3	6,799.0	31.1	129.2	-176.01	-1,146.5	-852.8	209.2	160.9	48.37	4.326		
6,953.5	6,633.2	11,245.3	6,799.0	30.9	129.2	-176.06	-1,146.5	-852.8	200.4	152.2	48.19	4.158 CC, ES, SF		
7,000.0	6,661.5	11,245.3	6,799.0	30.8	129.2	-176.03	-1,146.5	-852.8	207.1	159.1	48.02	4.312		
7,100.0	6,714.4	11,245.3	6,799.0	30.5	129.2	-175.68	-1,146.5	-852.8	259.1	211.4	47.71	5.431		
7,200.0	6,755.9	11,245.3	6,799.0	30.2	129.2	-174.76	-1,146.5	-852.8	340.8	292.9	47.89	7.116		
7,300.0	6,785.1	11,245.3	6,799.0	30.0	129.2	-172.35	-1,146.5	-852.8	434.8	384.7	50.13	8.674		
7,400.0	6,801.6	11,245.3	6,799.0	29.9	129.2	-160.99	-1,146.5	-852.8	533.5	465.0	68.47	7.792		
7,500.0	6,805.3	11,245.3	6,799.0	29.8	129.2	-29.83	-1,146.5	-852.8	633.4	549.9	83.50	7.585		
7,600.0	6,804.2	11,245.3	6,799.0	30.0	129.2	-29.83	-1,146.5	-852.8	733.3	649.0	84.28	8.701		
7,700.0	6,803.1	11,245.3	6,799.0	30.4	129.2	-29.83	-1,146.5	-852.8	833.2	748.1	85.17	9.784		
7,800.0	6,802.1	11,245.3	6,799.0	31.3	129.2	-29.83	-1,146.5	-852.8	933.2	847.0	86.16	10.831		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Maxey 24O-HZ Pad Sec.24-T5N-R65W - Maxey 24P-402 - Wellbore #1 - Plan #2 (8-9-13)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,200.0	5,964.7	11,196.0	6,912.0	32.2	125.4	-179.66	-1,444.4	-1,008.7	978.4	928.2	50.22	19.480	
6,300.0	6,064.7	11,196.4	6,912.0	32.2	125.4	95.44	-1,444.4	-1,008.3	883.2	734.8	148.36	5.953	
6,400.0	6,164.2	11,206.0	6,912.0	32.2	125.7	112.88	-1,444.5	-998.7	789.7	651.6	138.04	5.721	
6,500.0	6,261.6	11,228.4	6,912.0	32.1	126.3	123.16	-1,444.6	-976.3	699.8	572.1	127.71	5.479	
6,600.0	6,355.2	11,263.4	6,912.0	31.9	127.3	128.41	-1,444.8	-941.3	615.5	494.1	121.41	5.069	
6,700.0	6,443.4	11,310.3	6,912.0	31.7	128.6	130.37	-1,445.1	-894.3	538.9	420.0	118.94	4.531	
6,800.0	6,524.8	11,349.1	6,912.0	31.4	129.6	131.73	-1,445.3	-855.6	472.4	355.6	116.86	4.043	
6,900.0	6,597.9	11,349.1	6,912.0	31.1	129.6	134.68	-1,445.3	-855.6	425.5	314.0	111.46	3.817	
7,000.0	6,661.5	11,349.1	6,912.0	30.8	129.6	135.65	-1,445.3	-855.6	407.7	298.6	109.02	3.739 ES, SF	
7,003.7	6,663.6	11,349.1	6,912.0	30.8	129.6	135.65	-1,445.3	-855.6	407.6	298.6	108.99	3.740 CC	
7,100.0	6,714.4	11,349.1	6,912.0	30.5	129.6	134.81	-1,445.3	-855.6	423.0	313.3	109.78	3.853	
7,200.0	6,755.9	11,349.1	6,912.0	30.2	129.6	132.03	-1,445.3	-855.6	468.1	353.9	114.20	4.099	
7,300.0	6,785.1	11,349.1	6,912.0	30.0	129.6	126.79	-1,445.3	-855.6	534.7	412.0	122.69	4.358	
7,400.0	6,801.6	11,349.1	6,912.0	29.9	129.6	118.18	-1,445.3	-855.6	615.1	480.0	135.07	4.554	
7,500.0	6,805.3	11,349.1	6,912.0	29.8	129.6	107.34	-1,445.3	-855.6	703.3	556.2	147.08	4.782	
7,600.0	6,804.2	11,349.1	6,912.0	30.0	129.6	107.34	-1,445.3	-855.6	795.0	646.6	148.34	5.359	
7,700.0	6,803.1	11,349.1	6,912.0	30.4	129.6	107.34	-1,445.3	-855.6	888.4	738.6	149.82	5.930	
7,800.0	6,802.1	11,349.1	6,912.0	31.3	129.6	107.34	-1,445.3	-855.6	983.2	831.7	151.48	6.491	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Austin 1 (Exist) - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 ft
Survey Program: 6997-UNKNOWN													
Reference				Offset			Semi Major Axis			Distance			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	162.52	-867.1	273.0	909.1				
100.0	100.0	85.0	85.0	0.1	1.7	162.52	-867.1	273.0	909.0	907.2	1.81	501.506	
200.0	200.0	185.0	185.0	0.3	3.7	162.52	-867.1	273.0	909.0	905.0	4.04	225.153	
300.0	300.0	285.0	285.0	0.6	5.7	162.52	-867.1	273.0	909.0	902.8	6.26	145.162	
400.0	400.0	385.0	385.0	0.8	7.7	162.52	-867.1	273.0	909.0	900.5	8.49	107.109	
500.0	500.0	485.0	485.0	1.0	9.7	-58.54	-867.1	273.0	908.1	897.4	10.69	84.971	
600.0	599.8	584.8	584.8	1.2	11.7	-58.87	-867.1	273.0	905.4	892.5	12.87	70.323	
700.0	699.5	684.5	684.5	1.4	13.7	-59.42	-867.1	273.0	900.9	885.8	15.08	59.758	
800.0	798.7	783.7	783.7	1.7	15.7	-60.20	-867.1	273.0	894.7	877.4	17.29	51.737	
900.0	897.5	882.5	882.5	2.0	17.6	-61.20	-867.1	273.0	887.0	867.5	19.54	45.404	
1,000.0	995.6	980.6	980.6	2.3	19.6	-62.44	-867.1	273.0	877.9	856.1	21.81	40.253	
1,100.0	1,093.1	1,078.1	1,078.1	2.8	21.6	-63.92	-867.1	273.0	867.5	843.4	24.12	35.964	
1,200.0	1,189.6	1,174.6	1,174.6	3.3	23.5	-65.63	-867.1	273.0	856.2	829.7	26.48	32.328	
1,300.0	1,285.3	1,270.3	1,270.3	3.8	25.4	-67.60	-867.1	273.0	844.1	815.2	28.90	29.206	
1,400.0	1,380.1	1,365.1	1,365.1	4.4	27.3	-69.60	-867.1	273.0	832.0	800.6	31.40	26.497	
1,500.0	1,474.9	1,459.9	1,459.9	5.0	29.2	-71.59	-867.1	273.0	820.9	786.9	33.94	24.188	
1,600.0	1,569.6	1,554.6	1,554.6	5.7	31.1	-73.63	-867.1	273.0	810.9	774.4	36.49	22.219	
1,700.0	1,664.4	1,649.4	1,649.4	6.3	33.0	-75.71	-867.1	273.0	802.0	762.9	39.07	20.528	
1,800.0	1,759.2	1,744.2	1,744.2	7.0	34.9	-77.83	-867.1	273.0	794.3	752.6	41.65	19.071	
1,900.0	1,853.9	1,838.9	1,838.9	7.6	36.8	-79.99	-867.1	273.0	787.8	743.6	44.24	17.808	
2,000.0	1,948.7	1,933.7	1,933.7	8.2	38.7	-82.17	-867.1	273.0	782.6	735.8	46.83	16.712	
2,100.0	2,043.5	2,028.5	2,028.5	8.9	40.6	-84.38	-867.1	273.0	778.7	729.3	49.42	15.757	
2,200.0	2,138.2	2,123.2	2,123.2	9.6	42.5	-86.60	-867.1	273.0	776.0	724.0	52.00	14.924	
2,300.0	2,233.0	2,218.0	2,218.0	10.2	44.4	-88.84	-867.1	273.0	774.7	720.1	54.57	14.197	
2,352.0	2,282.3	2,267.3	2,267.3	10.6	45.3	-90.00	-867.1	273.0	774.5	718.6	55.90	13.856	
2,400.0	2,327.8	2,312.8	2,312.8	10.9	46.3	-91.07	-867.1	273.0	774.7	717.5	57.12	13.561	
2,500.0	2,422.5	2,407.5	2,407.5	11.5	48.2	-93.31	-867.1	273.0	775.9	716.3	59.66	13.006	
2,600.0	2,517.3	2,502.3	2,502.3	12.2	50.0	-95.53	-867.1	273.0	778.5	716.4	62.18	12.522	
2,700.0	2,612.1	2,597.1	2,597.1	12.8	51.9	-97.74	-867.1	273.0	782.4	717.8	64.67	12.099	
2,800.0	2,706.8	2,691.8	2,691.8	13.5	53.8	-99.93	-867.1	273.0	787.6	720.5	67.13	11.732	
2,900.0	2,801.6	2,786.6	2,786.6	14.2	55.7	-102.08	-867.1	273.0	794.0	724.4	69.57	11.413	
3,000.0	2,896.4	2,881.4	2,881.4	14.8	57.6	-104.20	-867.1	273.0	801.7	729.7	71.98	11.137	
3,100.0	2,991.1	2,976.1	2,976.1	15.5	59.5	-106.29	-867.1	273.0	810.5	736.1	74.36	10.900	
3,200.0	3,085.9	3,070.9	3,070.9	16.1	61.4	-108.33	-867.1	273.0	820.5	743.7	76.71	10.696	
3,300.0	3,180.7	3,165.7	3,165.7	16.8	63.3	-110.32	-867.1	273.0	831.5	752.5	79.03	10.522	
3,400.0	3,275.4	3,260.4	3,260.4	17.5	65.2	-112.26	-867.1	273.0	843.7	762.4	81.32	10.375	
3,500.0	3,370.2	3,355.2	3,355.2	18.1	67.1	-114.15	-867.1	273.0	856.8	773.3	83.58	10.251	
3,600.0	3,465.0	3,450.0	3,450.0	18.8	69.0	-115.99	-867.1	273.0	871.0	785.1	85.82	10.149	
3,700.0	3,559.8	3,544.8	3,544.8	19.5	70.9	-117.77	-867.1	273.0	886.0	798.0	88.03	10.065	
3,800.0	3,654.5	3,639.5	3,639.5	20.1	72.8	-119.49	-867.1	273.0	902.0	811.7	90.21	9.998	
3,900.0	3,749.3	3,734.3	3,734.3	20.8	74.7	-121.16	-867.1	273.0	918.7	826.3	92.38	9.945	
4,000.0	3,844.1	3,829.1	3,829.1	21.5	76.6	-122.77	-867.1	273.0	936.3	841.8	94.52	9.905	
4,100.0	3,938.8	3,923.8	3,923.8	22.1	78.5	-124.32	-867.1	273.0	954.6	857.9	96.65	9.877	
4,200.0	4,033.6	4,018.6	4,018.6	22.8	80.4	-125.82	-867.1	273.0	973.6	874.8	98.76	9.859	
4,300.0	4,128.4	4,113.4	4,113.4	23.4	82.3	-127.27	-867.1	273.0	993.3	892.4	100.85	9.849	
7,100.0	6,714.4	6,699.4	6,699.4	30.5	134.0	-35.21	-867.1	273.0	925.5	821.7	103.80	8.916	
7,200.0	6,755.9	6,740.9	6,740.9	30.2	134.8	-46.44	-867.1	273.0	839.7	722.9	116.81	7.189	
7,300.0	6,785.1	6,770.1	6,770.1	30.0	135.4	-61.60	-867.1	273.0	750.9	612.0	138.87	5.407	
7,400.0	6,801.6	6,786.6	6,786.6	29.9	135.7	-78.54	-867.1	273.0	661.3	504.8	156.50	4.225	
7,500.0	6,805.3	6,790.3	6,790.3	29.8	135.8	-91.03	-867.1	273.0	573.5	411.9	161.65	3.548	
7,600.0	6,804.2	6,789.2	6,789.2	30.0	135.8	-90.82	-867.1	273.0	490.2	327.3	162.95	3.009	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Austin 1 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6997-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,700.0	6,803.1	6,788.1	6,788.1	30.4	135.8	-90.61	-867.1	273.0	414.4	250.0	164.47	2.520		
7,800.0	6,802.1	6,787.1	6,787.1	31.3	135.7	-90.40	-867.1	273.0	351.0	184.8	166.17	2.112		
7,900.0	6,801.0	6,786.0	6,786.0	32.7	135.7	-90.19	-867.1	273.0	307.6	139.6	168.01	1.831		
7,992.9	6,800.0	6,785.0	6,785.0	34.3	135.7	-90.00	-867.1	273.0	293.2	123.4	169.85	1.727 CC		
8,000.0	6,799.9	6,784.9	6,784.9	34.4	135.7	-89.99	-867.1	273.0	293.3	123.3	169.99	1.726 ES, SF		
8,100.0	6,798.9	6,783.9	6,783.9	36.4	135.7	-89.78	-867.1	273.0	312.2	140.1	172.07	1.814		
8,200.0	6,797.8	6,782.8	6,782.8	38.6	135.7	-89.57	-867.1	273.0	359.0	184.8	174.23	2.061		
8,300.0	6,796.7	6,781.7	6,781.7	40.9	135.6	-89.36	-867.1	273.0	424.6	248.2	176.47	2.406		
8,400.0	6,795.7	6,780.7	6,780.7	43.2	135.6	-89.15	-867.1	273.0	501.7	323.0	178.76	2.807		
8,500.0	6,794.6	6,779.6	6,779.6	45.6	135.6	-88.95	-867.1	273.0	585.8	404.7	181.11	3.234		
8,600.0	6,793.6	6,778.6	6,778.6	48.1	135.6	-88.74	-867.1	273.0	674.2	490.7	183.50	3.674		
8,700.0	6,792.5	6,777.5	6,777.5	50.6	135.5	-88.53	-867.1	273.0	765.5	579.5	185.93	4.117		
8,800.0	6,791.4	6,776.4	6,776.4	53.1	135.5	-88.32	-867.1	273.0	858.7	670.3	188.39	4.558		
8,900.0	6,790.4	6,775.4	6,775.4	55.7	135.5	-88.11	-867.1	273.0	953.3	762.4	190.87	4.994		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Danley 33-20 (Exist) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 100-NS-GYRO-MS													<b>Offset Well Error:</b>	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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,400.0	6,753.1	6,921.7	6,771.1	150.7	20.6	-91.39	-779.1	5,551.7	951.5	781.9	169.57	5.611		
12,500.0	6,752.0	6,920.6	6,770.0	153.5	20.6	-91.23	-779.1	5,551.7	860.8	688.4	172.35	4.994		
12,600.0	6,751.0	6,919.6	6,769.0	156.3	20.6	-91.07	-779.1	5,551.7	772.4	597.3	175.13	4.410		
12,700.0	6,749.9	6,918.5	6,767.9	159.1	20.6	-90.91	-779.1	5,551.7	687.2	509.3	177.92	3.863		
12,800.0	6,748.8	6,917.4	6,766.8	161.8	20.5	-90.75	-779.1	5,551.7	606.6	425.9	180.70	3.357		
12,900.0	6,747.8	6,916.4	6,765.8	164.6	20.5	-90.59	-779.1	5,551.7	532.5	349.0	183.48	2.902		
13,000.0	6,746.7	6,915.3	6,764.7	167.4	20.5	-90.43	-779.1	5,551.7	468.2	281.9	186.26	2.514		
13,100.0	6,745.6	6,914.2	6,763.6	170.2	20.5	-90.27	-779.1	5,551.7	418.1	229.1	189.05	2.212		
13,200.0	6,744.6	6,913.2	6,762.6	173.0	20.5	-90.11	-779.1	5,551.7	387.9	196.1	191.83	2.022		
13,271.8	6,743.8	6,912.4	6,761.8	175.0	20.5	-90.00	-779.1	5,551.7	381.2	187.4	193.83	1.967 CC, ES		
13,300.0	6,743.5	6,912.1	6,761.5	175.7	20.5	-89.95	-779.1	5,551.7	382.2	187.6	194.61	1.964 SF		
13,400.0	6,742.5	6,911.0	6,760.5	178.5	20.5	-89.79	-779.1	5,551.7	402.1	204.8	197.39	2.037		
13,500.0	6,741.4	6,910.0	6,759.4	181.3	20.5	-89.63	-779.1	5,551.7	444.2	244.1	200.17	2.219		
13,600.0	6,740.3	6,908.9	6,758.3	184.1	20.5	-89.47	-779.1	5,551.7	503.0	300.0	202.95	2.478		
13,700.0	6,739.3	6,907.8	6,757.3	186.9	20.5	-89.31	-779.1	5,551.7	573.2	367.5	205.73	2.786		
13,800.0	6,738.2	6,906.8	6,756.2	189.7	20.5	-89.15	-779.1	5,551.7	651.3	442.8	208.51	3.124		
13,900.0	6,737.1	6,905.7	6,755.1	192.4	20.5	-88.99	-779.1	5,551.7	734.7	523.5	211.28	3.477		
14,000.0	6,736.1	6,904.6	6,754.1	195.2	20.5	-88.83	-779.1	5,551.7	821.9	607.8	214.06	3.839		
14,100.0	6,735.0	6,903.6	6,753.0	198.0	20.5	-88.68	-779.1	5,551.7	911.6	694.8	216.83	4.204		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Danley 43-20 (Exist) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 453-NS-GYRO-MS													<b>Offset Well Error:</b>	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	
13,900.0	6,737.1	6,963.1	6,781.6	192.4	18.5	-94.21	-682.0	6,997.4	947.6	739.4	208.20	4.551		
14,000.0	6,736.1	6,960.0	6,778.5	195.2	18.5	-93.84	-682.0	6,997.4	862.8	651.7	211.07	4.088		
14,100.0	6,735.0	6,957.0	6,775.5	198.0	18.5	-93.48	-681.9	6,997.5	781.6	567.7	213.93	3.654		
14,200.0	6,733.9	6,953.9	6,772.4	200.8	18.5	-93.11	-681.8	6,997.5	705.3	488.5	216.79	3.253		
14,300.0	6,732.9	6,950.9	6,769.4	203.6	18.5	-92.75	-681.7	6,997.6	635.6	415.9	219.64	2.894		
14,400.0	6,731.8	6,947.9	6,766.4	206.4	18.5	-92.39	-681.7	6,997.6	574.8	352.3	222.49	2.583		
14,500.0	6,730.7	6,944.9	6,763.4	209.2	18.5	-92.03	-681.6	6,997.7	526.2	300.8	225.33	2.335		
14,600.0	6,729.7	6,941.8	6,760.4	212.0	18.5	-91.67	-681.5	6,997.7	493.2	265.1	228.17	2.162		
14,700.0	6,728.6	6,938.8	6,757.4	214.8	18.5	-91.31	-681.5	6,997.8	479.3	248.3	230.99	2.075		
14,717.9	6,728.4	6,938.3	6,756.8	215.3	18.5	-91.25	-681.5	6,997.8	479.0	247.5	231.50	2.069 CC, ES		
14,757.6	6,728.0	6,937.1	6,755.7	216.4	18.5	-91.11	-681.4	6,997.8	480.6	248.0	232.62	2.066 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Evert 20-1 (Exist) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7000-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,100.0	6,766.9	6,759.9	6,759.9	114.8	135.2	-91.68	-848.5	4,240.2	915.0	665.2	249.79	3.663	
11,200.0	6,765.9	6,758.9	6,758.9	117.6	135.2	-91.49	-848.5	4,240.2	821.7	569.2	252.54	3.254	
11,300.0	6,764.8	6,757.8	6,757.8	120.3	135.2	-91.29	-848.5	4,240.2	730.2	474.9	255.28	2.860	
11,400.0	6,763.7	6,756.7	6,756.7	123.1	135.1	-91.10	-848.5	4,240.2	641.2	383.1	258.02	2.485	
11,500.0	6,762.7	6,755.7	6,755.7	125.8	135.1	-90.90	-848.5	4,240.2	555.9	295.2	260.77	2.132	
11,600.0	6,761.6	6,754.6	6,754.6	128.6	135.1	-90.70	-848.5	4,240.2	476.5	212.9	263.51	1.808	
11,700.0	6,760.6	6,753.6	6,753.6	131.4	135.1	-90.51	-848.5	4,240.2	406.2	139.9	266.25	1.525	
11,800.0	6,759.5	6,752.5	6,752.5	134.1	135.0	-90.31	-848.5	4,240.2	350.6	81.6	269.00	1.303	Level 3
11,900.0	6,758.4	6,751.4	6,751.4	136.9	135.0	-90.12	-848.5	4,240.2	317.6	45.9	271.74	1.169	Level 2
11,960.3	6,757.8	6,750.8	6,750.8	138.6	135.0	-90.00	-848.5	4,240.2	311.8	38.4	273.39	1.141	Level 2, CC, ES, SF
12,000.0	6,757.4	6,750.4	6,750.4	139.7	135.0	-89.92	-848.5	4,240.2	314.3	39.9	274.48	1.145	Level 2
12,100.0	6,756.3	6,749.3	6,749.3	142.4	135.0	-89.73	-848.5	4,240.2	341.7	64.5	277.21	1.233	Level 2
12,200.0	6,755.2	6,748.2	6,748.2	145.2	135.0	-89.53	-848.5	4,240.2	393.3	113.4	279.95	1.405	Level 3
12,300.0	6,754.2	6,747.2	6,747.2	148.0	134.9	-89.34	-848.5	4,240.2	461.1	178.4	282.68	1.631	
12,400.0	6,753.1	6,746.1	6,746.1	150.7	134.9	-89.14	-848.5	4,240.2	539.1	253.6	285.42	1.889	
12,500.0	6,752.0	6,745.0	6,745.0	153.5	134.9	-88.94	-848.5	4,240.2	623.3	335.2	288.15	2.163	
12,600.0	6,751.0	6,744.0	6,744.0	156.3	134.9	-88.75	-848.5	4,240.2	711.7	420.8	290.88	2.447	
12,700.0	6,749.9	6,742.9	6,742.9	159.1	134.9	-88.55	-848.5	4,240.2	802.7	509.1	293.60	2.734	
12,800.0	6,748.8	6,741.8	6,741.8	161.8	134.8	-88.36	-848.5	4,240.2	895.7	599.4	296.33	3.023	
12,900.0	6,747.8	6,740.8	6,740.8	164.6	134.8	-88.16	-848.5	4,240.2	990.1	691.0	299.05	3.311	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Evert 5 (Exist) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7077-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,500.0	6,773.3	6,770.3	6,770.3	98.4	135.4	91.14	-1,595.4	3,596.7	925.4	691.9	233.50	3.963	
10,600.0	6,772.3	6,769.3	6,769.3	101.1	135.4	91.00	-1,595.4	3,596.7	838.5	602.3	236.22	3.550	
10,700.0	6,771.2	6,768.2	6,768.2	103.9	135.4	90.86	-1,595.4	3,596.7	754.8	515.8	238.95	3.159	
10,800.0	6,770.1	6,767.1	6,767.1	106.6	135.3	90.72	-1,595.4	3,596.7	675.6	433.9	241.68	2.795	
10,900.0	6,769.1	6,766.1	6,766.1	109.3	135.3	90.58	-1,595.4	3,596.7	602.5	358.1	244.42	2.465	
11,000.0	6,768.0	6,765.0	6,765.0	112.1	135.3	90.44	-1,595.4	3,596.7	538.2	291.1	247.15	2.178	
11,100.0	6,766.9	6,763.9	6,763.9	114.8	135.3	90.30	-1,595.4	3,596.7	486.1	236.2	249.89	1.945	
11,200.0	6,765.9	6,762.9	6,762.9	117.6	135.3	90.16	-1,595.4	3,596.7	450.5	197.9	252.63	1.783	
11,300.0	6,764.8	6,761.8	6,761.8	120.3	135.2	90.02	-1,595.4	3,596.7	435.4	180.1	255.37	1.705	
11,316.8	6,764.6	6,761.6	6,761.6	120.8	135.2	90.00	-1,595.4	3,596.7	435.1	179.3	255.83	1.701	CC, ES, SF
11,400.0	6,763.7	6,760.7	6,760.7	123.1	135.2	89.88	-1,595.4	3,596.7	443.0	184.9	258.11	1.716	
11,500.0	6,762.7	6,759.7	6,759.7	125.8	135.2	89.74	-1,595.4	3,596.7	472.1	211.3	260.85	1.810	
11,600.0	6,761.6	6,758.6	6,758.6	128.6	135.2	89.60	-1,595.4	3,596.7	519.2	255.6	263.59	1.970	
11,700.0	6,760.6	6,757.6	6,757.6	131.4	135.2	89.46	-1,595.4	3,596.7	579.8	313.5	266.33	2.177	
11,800.0	6,759.5	6,756.5	6,756.5	134.1	135.1	89.32	-1,595.4	3,596.7	650.2	381.1	269.08	2.417	
11,900.0	6,758.4	6,755.4	6,755.4	136.9	135.1	89.18	-1,595.4	3,596.7	727.6	455.8	271.82	2.677	
12,000.0	6,757.4	6,754.4	6,754.4	139.7	135.1	89.04	-1,595.4	3,596.7	810.0	535.4	274.56	2.950	
12,100.0	6,756.3	6,753.3	6,753.3	142.4	135.1	88.90	-1,595.4	3,596.7	895.9	618.6	277.30	3.231	
12,200.0	6,755.2	6,752.2	6,752.2	145.2	135.0	88.76	-1,595.4	3,596.7	984.5	704.5	280.04	3.516	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Ivan Klein 13-20 (Exist) - Wellbore #1 - Wellbore										Offset Site Error:		0.0 ft	
Survey Program: 7000-UNKNOWN										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
9,700.0	6,781.8	6,764.8	6,764.8	76.7	135.3	-95.63	-1,060.0	2,908.5	933.9	722.8	211.13	4.423	
9,800.0	6,780.8	6,763.8	6,763.8	79.4	135.3	-95.02	-1,060.0	2,908.5	834.6	620.6	213.95	3.901	
9,900.0	6,779.7	6,762.7	6,762.7	82.1	135.3	-94.42	-1,060.0	2,908.5	735.4	518.6	216.75	3.393	
10,000.0	6,778.7	6,761.7	6,761.7	84.8	135.2	-93.82	-1,060.0	2,908.5	636.5	416.9	219.55	2.899	
10,100.0	6,777.6	6,760.6	6,760.6	87.5	135.2	-93.21	-1,060.0	2,908.5	538.0	315.6	222.34	2.420	
10,200.0	6,776.5	6,759.5	6,759.5	90.2	135.2	-92.60	-1,060.0	2,908.5	440.1	215.0	225.11	1.955	
10,300.0	6,775.5	6,758.5	6,758.5	92.9	135.2	-92.00	-1,060.0	2,908.5	343.5	115.6	227.87	1.507	
10,400.0	6,774.4	6,757.4	6,757.4	95.7	135.1	-91.39	-1,060.0	2,908.5	249.6	19.0	230.61	1.082	Level 2
10,500.0	6,773.3	6,756.3	6,756.3	98.4	135.1	-90.78	-1,060.0	2,908.5	163.1	-70.3	233.33	0.699	Level 1
10,600.0	6,772.3	6,755.3	6,755.3	101.1	135.1	-90.17	-1,060.0	2,908.5	104.3	-131.7	236.03	0.442	Level 1
10,628.5	6,772.0	6,755.0	6,755.0	101.9	135.1	-90.00	-1,060.0	2,908.5	100.3	-136.5	236.80	0.424	Level 1, CC, ES, SF
10,700.0	6,771.2	6,754.2	6,754.2	103.9	135.1	-89.57	-1,060.0	2,908.5	123.2	-115.5	238.71	0.516	Level 1
10,800.0	6,770.1	6,753.1	6,753.1	106.6	135.1	-88.96	-1,060.0	2,908.5	198.6	-42.7	241.37	0.823	Level 1
10,900.0	6,769.1	6,752.1	6,752.1	109.3	135.0	-88.35	-1,060.0	2,908.5	289.4	45.4	244.01	1.186	Level 2
11,000.0	6,768.0	6,751.0	6,751.0	112.1	135.0	-87.74	-1,060.0	2,908.5	384.7	138.1	246.62	1.560	
11,100.0	6,766.9	6,749.9	6,749.9	114.8	135.0	-87.14	-1,060.0	2,908.5	482.0	232.8	249.21	1.934	
11,200.0	6,765.9	6,748.9	6,748.9	117.6	135.0	-86.53	-1,060.0	2,908.5	580.2	328.4	251.77	2.304	
11,300.0	6,764.8	6,747.8	6,747.8	120.3	135.0	-85.92	-1,060.0	2,908.5	678.9	424.6	254.30	2.670	
11,400.0	6,763.7	6,746.7	6,746.7	123.1	134.9	-85.32	-1,060.0	2,908.5	777.9	521.1	256.81	3.029	
11,500.0	6,762.7	6,745.7	6,745.7	125.8	134.9	-84.72	-1,060.0	2,908.5	877.2	617.9	259.29	3.383	
11,600.0	6,761.6	6,744.6	6,744.6	128.6	134.9	-84.11	-1,060.0	2,908.5	976.6	714.8	261.73	3.731	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-1 (Exist) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 6975-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,795.7	6,778.7	6,778.7	43.2	135.6	-91.74	-856.1	1,546.2	918.0	739.1	178.81	5.134	
8,500.0	6,794.6	6,777.6	6,777.6	45.6	135.6	-91.54	-856.1	1,546.2	824.3	643.1	181.18	4.549	
8,600.0	6,793.6	6,776.6	6,776.6	48.1	135.5	-91.34	-856.1	1,546.2	732.3	548.7	183.60	3.988	
8,700.0	6,792.5	6,775.5	6,775.5	50.6	135.5	-91.13	-856.1	1,546.2	642.7	456.6	186.05	3.454	
8,800.0	6,791.4	6,774.4	6,774.4	53.1	135.5	-90.93	-856.1	1,546.2	556.6	368.1	188.54	2.952	
8,900.0	6,790.4	6,773.4	6,773.4	55.7	135.5	-90.73	-856.1	1,546.2	476.0	285.0	191.05	2.491	
9,000.0	6,789.3	6,772.3	6,772.3	58.2	135.4	-90.53	-856.1	1,546.2	404.2	210.6	193.59	2.088	
9,100.0	6,788.2	6,771.2	6,771.2	60.8	135.4	-90.33	-856.1	1,546.2	346.6	150.5	196.15	1.767	
9,200.0	6,787.2	6,770.2	6,770.2	63.5	135.4	-90.13	-856.1	1,546.2	311.3	112.6	198.72	1.567	
9,266.1	6,786.5	6,769.5	6,769.5	65.2	135.4	-90.00	-856.1	1,546.2	304.2	103.8	200.43	1.518 CC, ES, SF	
9,300.0	6,786.1	6,769.1	6,769.1	66.1	135.4	-89.93	-856.1	1,546.2	306.1	104.8	201.31	1.521	
9,400.0	6,785.0	6,768.0	6,768.0	68.7	135.4	-89.73	-856.1	1,546.2	332.4	128.5	203.91	1.630	
9,500.0	6,784.0	6,767.0	6,767.0	71.4	135.3	-89.53	-856.1	1,546.2	383.7	177.2	206.53	1.858	
9,600.0	6,782.9	6,765.9	6,765.9	74.1	135.3	-89.33	-856.1	1,546.2	451.7	242.5	209.15	2.160	
9,700.0	6,781.8	6,764.8	6,764.8	76.7	135.3	-89.13	-856.1	1,546.2	529.9	318.1	211.78	2.502	
9,800.0	6,780.8	6,763.8	6,763.8	79.4	135.3	-88.93	-856.1	1,546.2	614.4	400.0	214.42	2.866	
9,900.0	6,779.7	6,762.7	6,762.7	82.1	135.3	-88.73	-856.1	1,546.2	703.1	486.0	217.06	3.239	
10,000.0	6,778.7	6,761.7	6,761.7	84.8	135.2	-88.53	-856.1	1,546.2	794.4	574.7	219.71	3.616	
10,100.0	6,777.6	6,760.6	6,760.6	87.5	135.2	-88.33	-856.1	1,546.2	887.6	665.2	222.36	3.992	
10,200.0	6,776.5	6,759.5	6,759.5	90.2	135.2	-88.13	-856.1	1,546.2	982.1	757.1	225.01	4.365	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4641.0ft (RKB - 15')

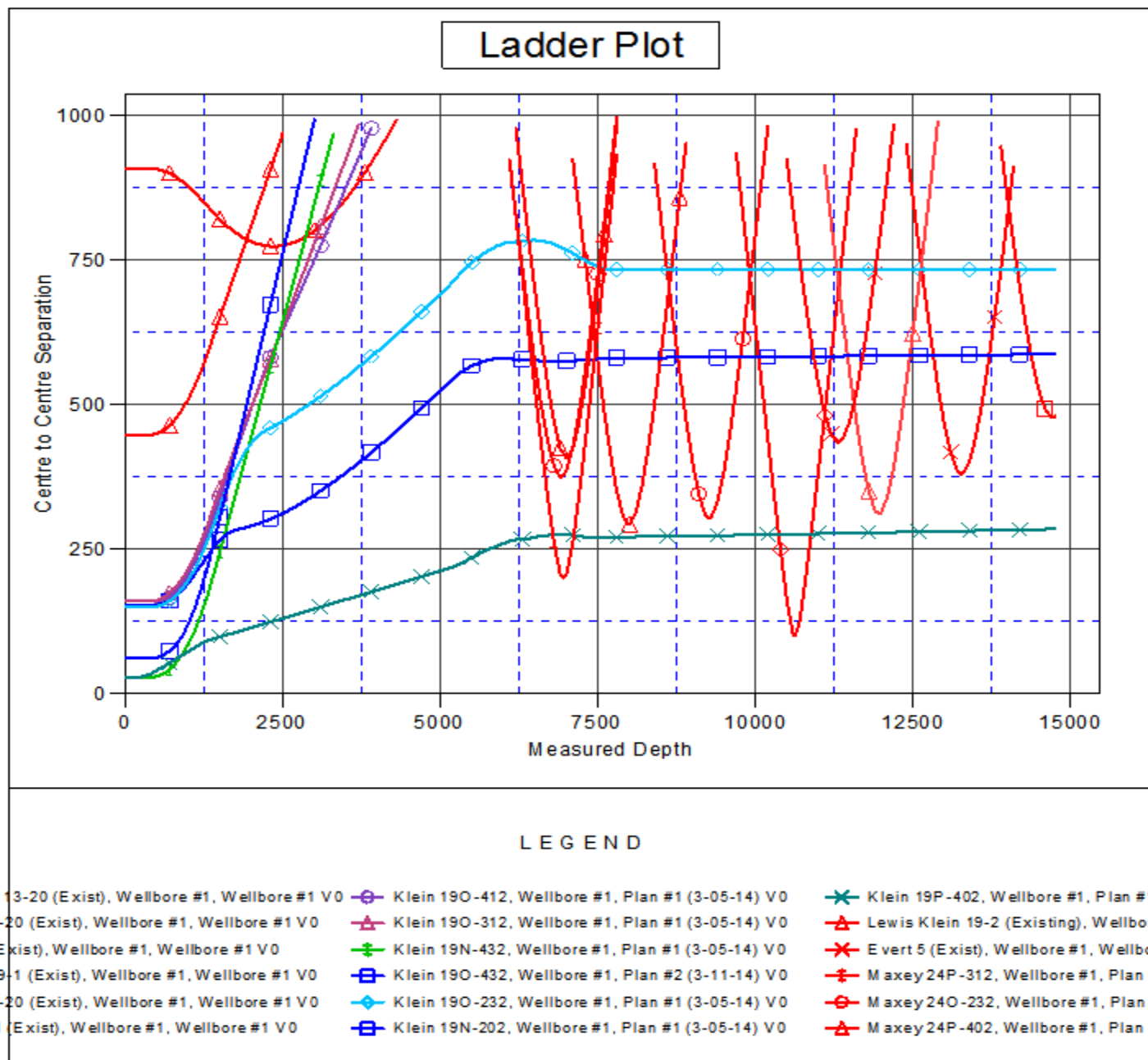
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Klein 19P-312

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19P-312
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19O-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19P-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (3-05-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4641.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Klein 19P-312

Coordinate System is US State Plane 1983, Colorado Northern Zone

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