

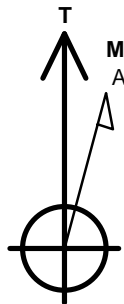
# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Klein 19M-232**

Surface Location: Klein 19MN-HZ Pad Sec.19-T5N-R64W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4628.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1386208.74 3252925.89 40.389990 -104.591980  
 RKB - 13' WELL @ 4641.0ft (RKB - 13')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' N/S Hardlines (Klein 19M-232)	1.0	337.5	5639.2	Rectangle (Sides: L10111.4 W100.0)
SHL 688'FNL & 2402'FEL, SEC.19	1.0	0.0	0.0	Point
BHL 430'FNL & 2306'FEL, Sec.21	6621.0	337.5	10654.9	Point



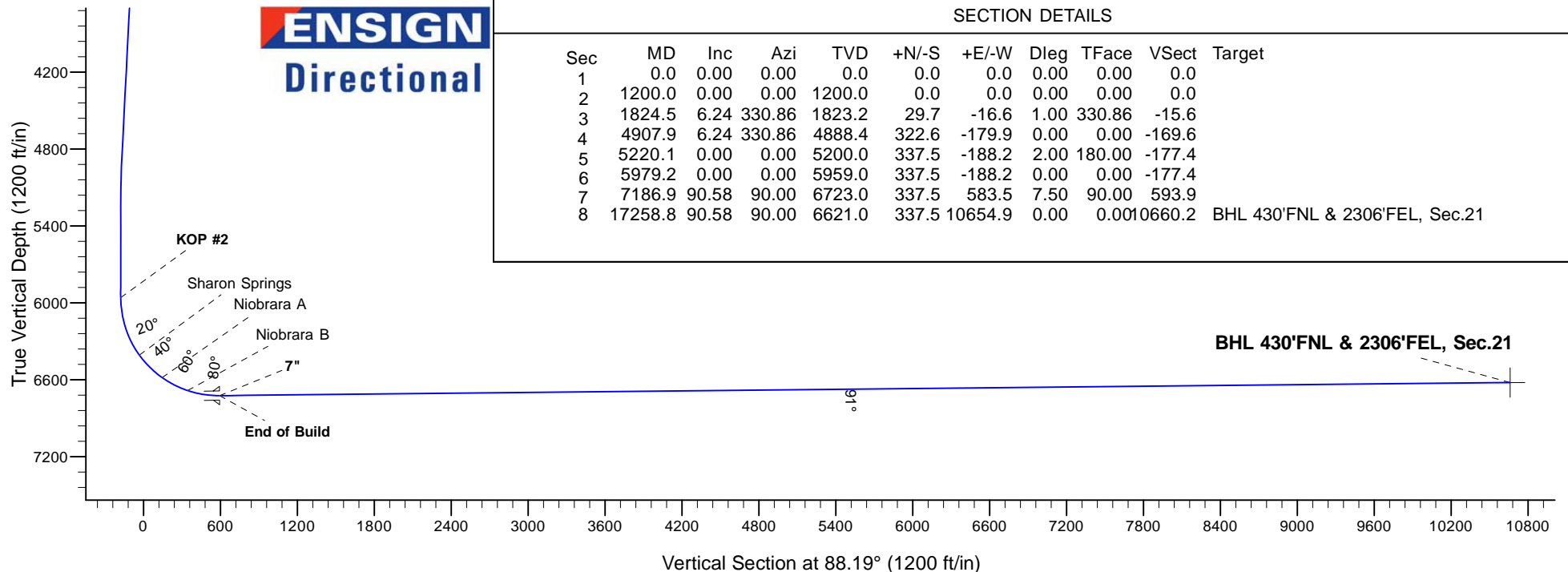
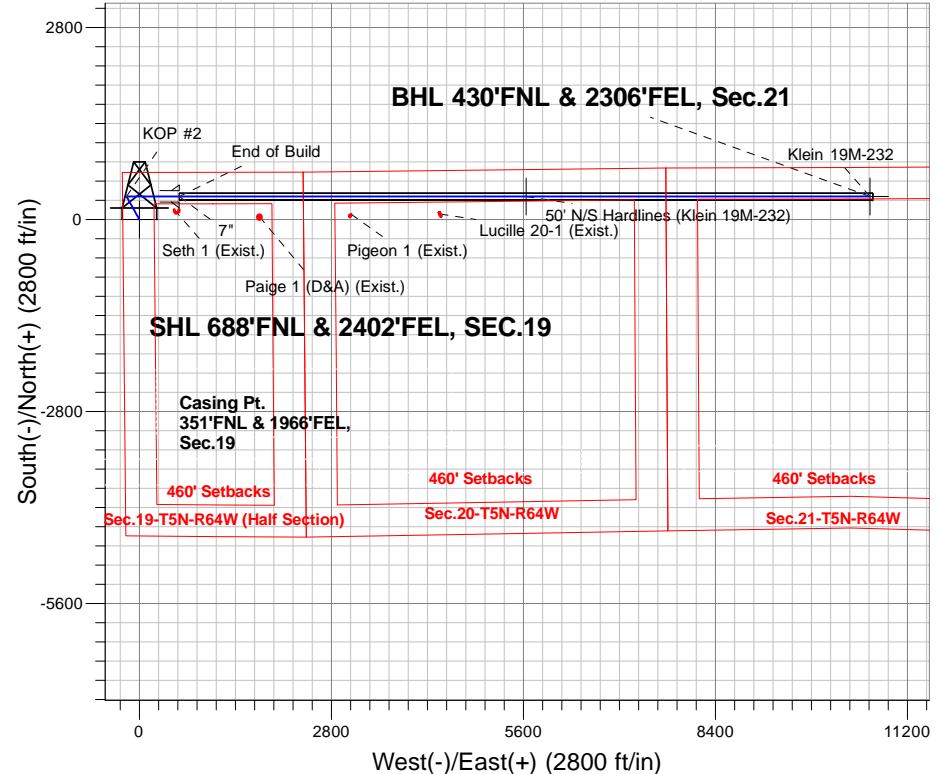
Azimuths to True North  
 Magnetic North: 8.22°

Magnetic Field  
 Strength: 52715.7snT  
 Dip Angle: 66.93°  
 Date: 7/14/2015  
 Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP #1
5959.1	5979.2	KOP #2
6723.0	7186.9	End of Build

Klein 19MN-HZ Pad Sec.19-T5N-R64W  
 Klein 19M-232  
 Plan #3 (7-14-15)



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1824.5	6.24	330.86	1823.2	29.7	-16.6	1.00	330.86	-15.6	
4	4907.9	6.24	330.86	4888.4	322.6	-179.9	0.00	0.00	-169.6	
5	5220.1	0.00	0.00	5200.0	337.5	-188.2	2.00	180.00	-177.4	
6	5979.2	0.00	0.00	5959.0	337.5	-188.2	0.00	0.00	-177.4	
7	7186.9	90.58	90.00	6723.0	337.5	583.5	7.50	90.00	593.9	
8	17258.8	90.58	90.00	6621.0	337.5	10654.9	0.00	0.00	10660.2	BHL 430'FNL & 2306'FEL, Sec.21



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

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

**Klein 19M-232**

**Wellbore #1**

**Plan: Plan #3 (7-14-15)**

## **Standard Planning Report**

**15 July, 2015**

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (7-14-15)		

<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

Site		Klein 19MN-HZ Pad Sec.19-T5N-R64W			
Site Position:		Northing:	1,386,208.48 usft	Latitude:	40.389990
From:	Lat/Long	Easting:	3,252,898.04 usft	Longitude:	-104.592080
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59

Well	Klein 19M-232					
Well Position	+N/-S	0.0 ft	Northing:	1,386,208.74 usft	Latitude:	40.389990
	+E/-W	27.9 ft	Easting:	3,252,925.90 usft	Longitude:	-104.591980
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	4,628.0 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	7/14/2015	8.22	66.93	52,716

<b>Design</b>	Plan #3 (7-14-15)			
<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	88.19

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,824.5	6.24	330.86	1,823.2	29.7	-16.6	1.00	1.00	0.00	330.86	
4,907.9	6.24	330.86	4,888.4	322.6	-179.9	0.00	0.00	0.00	0.00	
5,220.1	0.00	0.00	5,200.0	337.5	-188.2	2.00	-2.00	0.00	180.00	
5,979.2	0.00	0.00	5,959.0	337.5	-188.2	0.00	0.00	0.00	0.00	
7,186.9	90.58	90.00	6,723.0	337.5	583.5	7.50	7.50	0.00	90.00	
17,258.8	90.58	90.00	6,621.0	337.5	10,654.9	0.00	0.00	0.00	0.00	BHL 430'FNL & 2306'

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (7-14-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,300.0	1.00	330.86	1,300.0	0.8	-0.4	-0.4	1.00	1.00	0.00
1,400.0	2.00	330.86	1,400.0	3.0	-1.7	-1.6	1.00	1.00	0.00
1,500.0	3.00	330.86	1,499.9	6.9	-3.8	-3.6	1.00	1.00	0.00
1,600.0	4.00	330.86	1,599.7	12.2	-6.8	-6.4	1.00	1.00	0.00
1,700.0	5.00	330.86	1,699.4	19.0	-10.6	-10.0	1.00	1.00	0.00
1,800.0	6.00	330.86	1,798.9	27.4	-15.3	-14.4	1.00	1.00	0.00
1,824.5	6.24	330.86	1,823.2	29.7	-16.6	-15.6	1.00	1.00	0.00
1,900.0	6.24	330.86	1,898.3	36.9	-20.6	-19.4	0.00	0.00	0.00
2,000.0	6.24	330.86	1,997.7	46.4	-25.9	-24.4	0.00	0.00	0.00
2,100.0	6.24	330.86	2,097.1	55.9	-31.1	-29.4	0.00	0.00	0.00
2,200.0	6.24	330.86	2,196.5	65.4	-36.4	-34.4	0.00	0.00	0.00
2,300.0	6.24	330.86	2,295.9	74.9	-41.7	-39.4	0.00	0.00	0.00
2,400.0	6.24	330.86	2,395.3	84.4	-47.0	-44.3	0.00	0.00	0.00
2,500.0	6.24	330.86	2,494.8	93.9	-52.3	-49.3	0.00	0.00	0.00
2,600.0	6.24	330.86	2,594.2	103.4	-57.6	-54.3	0.00	0.00	0.00
2,700.0	6.24	330.86	2,693.6	112.9	-62.9	-59.3	0.00	0.00	0.00
2,800.0	6.24	330.86	2,793.0	122.4	-68.2	-64.3	0.00	0.00	0.00
2,900.0	6.24	330.86	2,892.4	131.9	-73.5	-69.3	0.00	0.00	0.00
3,000.0	6.24	330.86	2,991.8	141.4	-78.8	-74.3	0.00	0.00	0.00
3,100.0	6.24	330.86	3,091.2	150.9	-84.1	-79.3	0.00	0.00	0.00
3,200.0	6.24	330.86	3,190.6	160.4	-89.4	-84.3	0.00	0.00	0.00
3,300.0	6.24	330.86	3,290.0	169.9	-94.7	-89.3	0.00	0.00	0.00
3,400.0	6.24	330.86	3,389.4	179.4	-100.0	-94.3	0.00	0.00	0.00
3,500.0	6.24	330.86	3,488.8	188.9	-105.3	-99.3	0.00	0.00	0.00
3,600.0	6.24	330.86	3,588.2	198.4	-110.6	-104.3	0.00	0.00	0.00
3,700.0	6.24	330.86	3,687.6	207.9	-115.9	-109.3	0.00	0.00	0.00
3,800.0	6.24	330.86	3,787.0	217.4	-121.2	-114.3	0.00	0.00	0.00
3,900.0	6.24	330.86	3,886.4	226.9	-126.5	-119.2	0.00	0.00	0.00
4,000.0	6.24	330.86	3,985.9	236.4	-131.8	-124.2	0.00	0.00	0.00
4,100.0	6.24	330.86	4,085.3	245.9	-137.1	-129.2	0.00	0.00	0.00
4,200.0	6.24	330.86	4,184.7	255.4	-142.4	-134.2	0.00	0.00	0.00
4,300.0	6.24	330.86	4,284.1	264.9	-147.7	-139.2	0.00	0.00	0.00
4,400.0	6.24	330.86	4,383.5	274.4	-153.0	-144.2	0.00	0.00	0.00
4,500.0	6.24	330.86	4,482.9	283.9	-158.3	-149.2	0.00	0.00	0.00
4,600.0	6.24	330.86	4,582.3	293.4	-163.6	-154.2	0.00	0.00	0.00
4,700.0	6.24	330.86	4,681.7	302.9	-168.9	-159.2	0.00	0.00	0.00
4,800.0	6.24	330.86	4,781.1	312.4	-174.2	-164.2	0.00	0.00	0.00
4,900.0	6.24	330.86	4,880.5	321.9	-179.5	-169.2	0.00	0.00	0.00
4,907.9	6.24	330.86	4,888.4	322.6	-179.9	-169.6	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (7-14-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.0	4.40	330.86	4,980.1	330.1	-184.0	-173.5	2.00	-2.00	0.00
5,100.0	2.40	330.86	5,079.9	335.3	-186.9	-176.2	2.00	-2.00	0.00
5,200.0	0.40	330.86	5,179.9	337.4	-188.1	-177.3	2.00	-2.00	0.00
5,220.1	0.00	0.00	5,200.0	337.5	-188.2	-177.4	2.00	-2.00	0.00
5,300.0	0.00	0.00	5,279.8	337.5	-188.2	-177.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,379.8	337.5	-188.2	-177.4	0.00	0.00	0.00
5,500.0	0.00	0.00	5,479.8	337.5	-188.2	-177.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,579.8	337.5	-188.2	-177.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,679.8	337.5	-188.2	-177.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,779.8	337.5	-188.2	-177.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,879.8	337.5	-188.2	-177.4	0.00	0.00	0.00
5,979.2	0.00	0.00	5,959.0	337.5	-188.2	-177.4	0.00	0.00	0.00
KOP #2									
6,000.0	1.56	90.00	5,979.8	337.5	-187.9	-177.1	7.50	7.50	0.00
6,100.0	9.06	90.00	6,079.3	337.5	-178.6	-167.9	7.50	7.50	0.00
6,200.0	16.56	90.00	6,176.8	337.5	-156.5	-145.7	7.50	7.50	0.00
6,300.0	24.06	90.00	6,270.5	337.5	-121.8	-111.0	7.50	7.50	0.00
6,400.0	31.56	90.00	6,358.9	337.5	-75.2	-64.4	7.50	7.50	0.00
6,500.0	39.06	90.00	6,440.4	337.5	-17.4	-6.7	7.50	7.50	0.00
6,600.0	46.56	90.00	6,513.7	337.5	50.5	61.2	7.50	7.50	0.00
6,700.0	54.06	90.00	6,577.6	337.5	127.4	138.0	7.50	7.50	0.00
6,800.0	61.56	90.00	6,630.8	337.5	212.0	222.5	7.50	7.50	0.00
6,900.0	69.06	90.00	6,672.5	337.5	302.8	313.3	7.50	7.50	0.00
7,000.0	76.56	90.00	6,702.1	337.5	398.2	408.7	7.50	7.50	0.00
7,100.0	84.06	90.00	6,718.9	337.5	496.7	507.2	7.50	7.50	0.00
7,186.9	90.58	90.00	6,723.0	337.5	583.5	593.9	7.50	7.50	0.00
End of Build - 7"									
7,200.0	90.58	90.00	6,722.8	337.5	596.6	607.0	0.02	0.02	0.00
7,300.0	90.58	90.00	6,721.8	337.5	696.6	706.9	0.00	0.00	0.00
7,400.0	90.58	90.00	6,720.8	337.5	796.6	806.9	0.00	0.00	0.00
7,500.0	90.58	90.00	6,719.8	337.5	896.6	906.8	0.00	0.00	0.00
7,600.0	90.58	90.00	6,718.8	337.5	996.6	1,006.8	0.00	0.00	0.00
7,700.0	90.58	90.00	6,717.8	337.5	1,096.6	1,106.7	0.00	0.00	0.00
7,800.0	90.58	90.00	6,716.7	337.5	1,196.6	1,206.6	0.00	0.00	0.00
7,900.0	90.58	90.00	6,715.7	337.5	1,296.6	1,306.6	0.00	0.00	0.00
8,000.0	90.58	90.00	6,714.7	337.5	1,396.5	1,406.5	0.00	0.00	0.00
8,100.0	90.58	90.00	6,713.7	337.5	1,496.5	1,506.5	0.00	0.00	0.00
8,200.0	90.58	90.00	6,712.7	337.5	1,596.5	1,606.4	0.00	0.00	0.00
8,300.0	90.58	90.00	6,711.7	337.5	1,696.5	1,706.4	0.00	0.00	0.00
8,400.0	90.58	90.00	6,710.7	337.5	1,796.5	1,806.3	0.00	0.00	0.00
8,500.0	90.58	90.00	6,709.7	337.5	1,896.5	1,906.3	0.00	0.00	0.00
8,600.0	90.58	90.00	6,708.7	337.5	1,996.5	2,006.2	0.00	0.00	0.00
8,700.0	90.58	90.00	6,707.6	337.5	2,096.5	2,106.1	0.00	0.00	0.00
8,800.0	90.58	90.00	6,706.6	337.5	2,196.5	2,206.1	0.00	0.00	0.00
8,900.0	90.58	90.00	6,705.6	337.5	2,296.5	2,306.0	0.00	0.00	0.00
9,000.0	90.58	90.00	6,704.6	337.5	2,396.5	2,406.0	0.00	0.00	0.00
9,100.0	90.58	90.00	6,703.6	337.5	2,496.5	2,505.9	0.00	0.00	0.00
9,200.0	90.58	90.00	6,702.6	337.5	2,596.5	2,605.9	0.00	0.00	0.00
9,300.0	90.58	90.00	6,701.6	337.5	2,696.5	2,705.8	0.00	0.00	0.00
9,400.0	90.58	90.00	6,700.6	337.5	2,796.5	2,805.8	0.00	0.00	0.00
9,500.0	90.58	90.00	6,699.5	337.5	2,896.5	2,905.7	0.00	0.00	0.00
9,600.0	90.58	90.00	6,698.5	337.5	2,996.5	3,005.6	0.00	0.00	0.00
9,700.0	90.58	90.00	6,697.5	337.5	3,096.5	3,105.6	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (7-14-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,800.0	90.58	90.00	6,696.5	337.5	3,196.5	3,205.5	0.00	0.00	0.00
9,900.0	90.58	90.00	6,695.5	337.5	3,296.4	3,305.5	0.00	0.00	0.00
10,000.0	90.58	90.00	6,694.5	337.5	3,396.4	3,405.4	0.00	0.00	0.00
10,100.0	90.58	90.00	6,693.5	337.5	3,496.4	3,505.4	0.00	0.00	0.00
10,200.0	90.58	90.00	6,692.5	337.5	3,596.4	3,605.3	0.00	0.00	0.00
10,300.0	90.58	90.00	6,691.4	337.5	3,696.4	3,705.3	0.00	0.00	0.00
10,400.0	90.58	90.00	6,690.4	337.5	3,796.4	3,805.2	0.00	0.00	0.00
10,500.0	90.58	90.00	6,689.4	337.5	3,896.4	3,905.1	0.00	0.00	0.00
10,600.0	90.58	90.00	6,688.4	337.5	3,996.4	4,005.1	0.00	0.00	0.00
10,700.0	90.58	90.00	6,687.4	337.5	4,096.4	4,105.0	0.00	0.00	0.00
10,800.0	90.58	90.00	6,686.4	337.5	4,196.4	4,205.0	0.00	0.00	0.00
10,900.0	90.58	90.00	6,685.4	337.5	4,296.4	4,304.9	0.00	0.00	0.00
11,000.0	90.58	90.00	6,684.4	337.5	4,396.4	4,404.9	0.00	0.00	0.00
11,100.0	90.58	90.00	6,683.3	337.5	4,496.4	4,504.8	0.00	0.00	0.00
11,200.0	90.58	90.00	6,682.3	337.5	4,596.4	4,604.8	0.00	0.00	0.00
11,300.0	90.58	90.00	6,681.3	337.5	4,696.4	4,704.7	0.00	0.00	0.00
11,400.0	90.58	90.00	6,680.3	337.5	4,796.4	4,804.7	0.00	0.00	0.00
11,500.0	90.58	90.00	6,679.3	337.5	4,896.4	4,904.6	0.00	0.00	0.00
11,600.0	90.58	90.00	6,678.3	337.5	4,996.4	5,004.5	0.00	0.00	0.00
11,700.0	90.58	90.00	6,677.3	337.5	5,096.4	5,104.5	0.00	0.00	0.00
11,800.0	90.58	90.00	6,676.3	337.5	5,196.4	5,204.4	0.00	0.00	0.00
11,900.0	90.58	90.00	6,675.2	337.5	5,296.3	5,304.4	0.00	0.00	0.00
12,000.0	90.58	90.00	6,674.2	337.5	5,396.3	5,404.3	0.00	0.00	0.00
12,100.0	90.58	90.00	6,673.2	337.5	5,496.3	5,504.3	0.00	0.00	0.00
12,200.0	90.58	90.00	6,672.2	337.5	5,596.3	5,604.2	0.00	0.00	0.00
12,300.0	90.58	90.00	6,671.2	337.5	5,696.3	5,704.2	0.00	0.00	0.00
12,400.0	90.58	90.00	6,670.2	337.5	5,796.3	5,804.1	0.00	0.00	0.00
12,500.0	90.58	90.00	6,669.2	337.5	5,896.3	5,904.0	0.00	0.00	0.00
12,600.0	90.58	90.00	6,668.2	337.5	5,996.3	6,004.0	0.00	0.00	0.00
12,700.0	90.58	90.00	6,667.1	337.5	6,096.3	6,103.9	0.00	0.00	0.00
12,800.0	90.58	90.00	6,666.1	337.5	6,196.3	6,203.9	0.00	0.00	0.00
12,900.0	90.58	90.00	6,665.1	337.5	6,296.3	6,303.8	0.00	0.00	0.00
13,000.0	90.58	90.00	6,664.1	337.5	6,396.3	6,403.8	0.00	0.00	0.00
13,100.0	90.58	90.00	6,663.1	337.5	6,496.3	6,503.7	0.00	0.00	0.00
13,200.0	90.58	90.00	6,662.1	337.5	6,596.3	6,603.7	0.00	0.00	0.00
13,300.0	90.58	90.00	6,661.1	337.5	6,696.3	6,703.6	0.00	0.00	0.00
13,400.0	90.58	90.00	6,660.1	337.5	6,796.3	6,803.5	0.00	0.00	0.00
13,500.0	90.58	90.00	6,659.0	337.5	6,896.3	6,903.5	0.00	0.00	0.00
13,600.0	90.58	90.00	6,658.0	337.5	6,996.3	7,003.4	0.00	0.00	0.00
13,700.0	90.58	90.00	6,657.0	337.5	7,096.3	7,103.4	0.00	0.00	0.00
13,800.0	90.58	90.00	6,656.0	337.5	7,196.2	7,203.3	0.00	0.00	0.00
13,900.0	90.58	90.00	6,655.0	337.5	7,296.2	7,303.3	0.00	0.00	0.00
14,000.0	90.58	90.00	6,654.0	337.5	7,396.2	7,403.2	0.00	0.00	0.00
14,100.0	90.58	90.00	6,653.0	337.5	7,496.2	7,503.2	0.00	0.00	0.00
14,200.0	90.58	90.00	6,652.0	337.5	7,596.2	7,603.1	0.00	0.00	0.00
14,300.0	90.58	90.00	6,651.0	337.5	7,696.2	7,703.0	0.00	0.00	0.00
14,400.0	90.58	90.00	6,649.9	337.5	7,796.2	7,803.0	0.00	0.00	0.00
14,500.0	90.58	90.00	6,648.9	337.5	7,896.2	7,902.9	0.00	0.00	0.00
14,600.0	90.58	90.00	6,647.9	337.5	7,996.2	8,002.9	0.00	0.00	0.00
14,700.0	90.58	90.00	6,646.9	337.5	8,096.2	8,102.8	0.00	0.00	0.00
14,800.0	90.58	90.00	6,645.9	337.5	8,196.2	8,202.8	0.00	0.00	0.00
14,900.0	90.58	90.00	6,644.9	337.5	8,296.2	8,302.7	0.00	0.00	0.00
15,000.0	90.58	90.00	6,643.9	337.5	8,396.2	8,402.7	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (7-14-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,100.0	90.58	90.00	6,642.9	337.5	8,496.2	8,502.6	0.00	0.00	0.00
15,200.0	90.58	90.00	6,641.8	337.5	8,596.2	8,602.6	0.00	0.00	0.00
15,300.0	90.58	90.00	6,640.8	337.5	8,696.2	8,702.5	0.00	0.00	0.00
15,400.0	90.58	90.00	6,639.8	337.5	8,796.2	8,802.4	0.00	0.00	0.00
15,500.0	90.58	90.00	6,638.8	337.5	8,896.2	8,902.4	0.00	0.00	0.00
15,600.0	90.58	90.00	6,637.8	337.5	8,996.2	9,002.3	0.00	0.00	0.00
15,700.0	90.58	90.00	6,636.8	337.5	9,096.2	9,102.3	0.00	0.00	0.00
15,800.0	90.58	90.00	6,635.8	337.5	9,196.1	9,202.2	0.00	0.00	0.00
15,900.0	90.58	90.00	6,634.8	337.5	9,296.1	9,302.2	0.00	0.00	0.00
16,000.0	90.58	90.00	6,633.7	337.5	9,396.1	9,402.1	0.00	0.00	0.00
16,100.0	90.58	90.00	6,632.7	337.5	9,496.1	9,502.1	0.00	0.00	0.00
16,200.0	90.58	90.00	6,631.7	337.5	9,596.1	9,602.0	0.00	0.00	0.00
16,300.0	90.58	90.00	6,630.7	337.5	9,696.1	9,701.9	0.00	0.00	0.00
16,400.0	90.58	90.00	6,629.7	337.5	9,796.1	9,801.9	0.00	0.00	0.00
16,500.0	90.58	90.00	6,628.7	337.5	9,896.1	9,901.8	0.00	0.00	0.00
16,600.0	90.58	90.00	6,627.7	337.5	9,996.1	10,001.8	0.00	0.00	0.00
16,700.0	90.58	90.00	6,626.7	337.5	10,096.1	10,101.7	0.00	0.00	0.00
16,800.0	90.58	90.00	6,625.6	337.5	10,196.1	10,201.7	0.00	0.00	0.00
16,900.0	90.58	90.00	6,624.6	337.5	10,296.1	10,301.6	0.00	0.00	0.00
17,000.0	90.58	90.00	6,623.6	337.5	10,396.1	10,401.6	0.00	0.00	0.00
17,100.0	90.58	90.00	6,622.6	337.5	10,496.1	10,501.5	0.00	0.00	0.00
17,200.0	90.58	90.00	6,621.6	337.5	10,596.1	10,601.4	0.00	0.00	0.00
17,258.8	90.58	90.00	6,621.0	337.5	10,654.9	10,660.2	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 688'FNL & 2402'FE	0.00	0.00	1.0	0.0	0.0	1,386,208.76	3,252,925.90	40.389990	-104.591980
- plan hits target center									
- Point									
50' N/S Hardlines (Klein	0.00	0.00	1.0	337.5	5,639.2	1,386,603.95	3,258,561.11	40.390915	-104.571736
- plan misses target center by 5649.3ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W100.0 H10,111.4 D0.0)									
BHL 430'FNL & 2306'FE	0.00	0.00	6,621.0	337.5	10,654.9	1,386,655.29	3,263,576.33	40.390910	-104.553730
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,186.9	6,723.0	7"	7	7-1/2	

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (7-14-15)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,561.5	3,550.0	Parkman		0.00	
4,316.0	4,300.0	Sussex		0.00	
4,517.2	4,500.0	Shannon		0.00	
6,457.9	6,407.0	Sharon Springs		0.00	
6,709.3	6,583.0	Niobrara A		0.00	
6,934.1	6,684.0	Niobrara B		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.0	1,200.0	0.0	0.0	KOP #1
5,979.2	5,959.0	337.5	-188.2	KOP #2
7,186.9	6,723.0	337.5	583.5	End of Build





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

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

**Klein 19M-232**

**Wellbore #1**

**Plan #3 (7-14-15)**

## **Anticollision Report**

**15 July, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #3 (7-14-15)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0 ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b> 7/14/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	17,258.8	Plan #3 (7-14-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Klein (Existing) Sec.19-T5N-R64W						
Lucille 20-1 (Exist.) - Wellbore #1 - Wellbore #1	10,988.2	6,658.3	246.4	110.1	1.807	CC
Lucille 20-1 (Exist.) - Wellbore #1 - Wellbore #1	11,000.0	6,658.3	246.7	110.0	1.805	ES, SF
Paige 1 (D&A) (Exist.) - Wellbore #1 - Wellbore #1	8,354.0	6,685.1	293.7	107.8	1.580	CC, ES, SF
Pigeon 1 (Exist.) - Wellbore #1 - Wellbore #1	9,683.2	6,688.9	266.6	165.9	2.648	CC, ES
Pigeon 1 (Exist.) - Wellbore #1 - Wellbore #1	9,700.0	6,689.3	267.1	166.0	2.641	SF
Seth 1 (Exist.) - Wellbore #1 - Wellbore #1	7,111.0	6,711.0	192.6	157.7	5.513	CC, ES
Seth 1 (Exist.) - Wellbore #1 - Wellbore #1	7,150.0	6,713.3	196.5	160.8	5.502	SF
Klein 19MN-HZ Pad Sec.19-T5N-R64W						
Klein 19M-402 - Wellbore #1 - Plan #3 (7-13-15)	1,000.0	1,000.0	27.9	23.6	6.523	CC
Klein 19M-402 - Wellbore #1 - Plan #3 (7-13-15)	17,258.8	17,445.4	377.9	-142.6	0.726	Level 1, ES, SF
Klein 19N-202 - Wellbore #1 - Plan #3 (7-14-15)	1,200.0	1,200.0	30.6	25.5	5.927	CC
Klein 19N-202 - Wellbore #1 - Plan #3 (7-14-15)	1,300.0	1,300.0	31.1	25.5	5.533	ES
Klein 19N-202 - Wellbore #1 - Plan #3 (7-14-15)	17,258.8	17,263.3	746.8	146.5	1.244	Level 2, SF
Klein 19N-312 - Wellbore #1 - Plan #3 (7-14-15)	1,200.0	1,200.0	61.3	56.1	11.855	CC
Klein 19N-312 - Wellbore #1 - Plan #3 (7-14-15)	17,258.8	17,326.8	423.5	-166.3	0.718	Level 1, ES, SF

<b>Offset Design</b>													<b>Offset Site Error:</b>	0.0 ft
Klein (Existing) Sec.19-T5N-R64W - Lucille 20-1 (Exist.) - Wellbore #1 - Wellbore #1													<b>Offset Well Error:</b>	0.0 ft
Survey Program: 100-NS-GYRO-MS														
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	
10,100.0	6,693.5	6,655.3	6,653.7	100.2	11.6	87.73	91.3	4,384.5	921.7	810.2	111.59	8.260		
10,200.0	6,692.5	6,655.6	6,654.1	102.9	11.6	87.81	91.3	4,384.5	825.8	711.4	114.37	7.221		
10,300.0	6,691.4	6,655.9	6,654.4	105.7	11.6	87.89	91.2	4,384.5	731.0	613.8	117.15	6.240		
10,400.0	6,690.4	6,656.3	6,654.7	108.5	11.6	87.97	91.2	4,384.5	637.7	517.8	119.94	5.317		
10,500.0	6,689.4	6,656.6	6,655.1	111.3	11.6	88.05	91.2	4,384.5	546.9	424.1	122.72	4.456		
10,600.0	6,688.4	6,657.0	6,655.4	114.0	11.6	88.13	91.2	4,384.5	459.8	334.3	125.51	3.663		
10,700.0	6,687.4	6,657.3	6,655.8	116.8	11.6	88.21	91.2	4,384.5	379.2	250.9	128.30	2.955		
10,800.0	6,686.4	6,657.6	6,656.1	119.6	11.6	88.29	91.2	4,384.5	310.1	179.0	131.09	2.365		
10,900.0	6,685.4	6,658.0	6,656.4	122.4	11.6	88.36	91.2	4,384.5	261.7	127.8	133.88	1.955		
10,988.2	6,684.5	6,658.3	6,656.7	124.9	11.6	88.43	91.2	4,384.5	246.4	110.1	136.35	1.807	CC	
11,000.0	6,684.4	6,658.3	6,656.8	125.2	11.6	88.44	91.2	4,384.5	246.7	110.0	136.68	1.805	ES, SF	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Klein (Existing) Sec.19-T5N-R64W - Lucille 20-1 (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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,100.0	6,683.3	6,658.7	6,657.1	128.0	11.6	88.52	91.2	4,384.5	270.6	131.1	139.47	1.940		
11,200.0	6,682.3	6,659.0	6,657.5	130.8	11.6	88.60	91.2	4,384.5	324.9	182.7	142.26	2.284		
11,300.0	6,681.3	6,659.4	6,657.8	133.6	11.6	88.68	91.2	4,384.5	397.4	252.3	145.06	2.740		
11,400.0	6,680.3	6,659.7	6,658.2	136.3	11.6	88.76	91.1	4,384.5	479.9	332.0	147.86	3.246		
11,500.0	6,679.3	6,660.0	6,658.5	139.1	11.6	88.84	91.1	4,384.5	568.0	417.4	150.65	3.770		
11,600.0	6,678.3	6,660.4	6,658.8	141.9	11.6	88.92	91.1	4,384.5	659.6	506.1	153.45	4.298		
11,700.0	6,677.3	6,660.7	6,659.2	144.7	11.6	89.00	91.1	4,384.6	753.2	597.0	156.25	4.821		
11,800.0	6,676.3	6,661.1	6,659.5	147.5	11.6	89.08	91.1	4,384.6	848.4	689.3	159.05	5.334		
11,900.0	6,675.2	6,661.4	6,659.9	150.3	11.6	89.16	91.1	4,384.6	944.5	782.7	161.85	5.836		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Klein (Existing) Sec.19-T5N-R64W - Paige 1 (D&A) (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7003-UNKNOWN												<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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
7,400.0	6,720.8	6,694.8	6,694.8	28.0	133.9	91.88	43.8	1,750.5	998.1	836.4	161.68	6.173	
7,500.0	6,719.8	6,693.8	6,693.8	30.3	133.9	91.69	43.8	1,750.5	903.0	739.0	164.04	5.505	
7,600.0	6,718.8	6,692.8	6,692.8	32.8	133.9	91.49	43.8	1,750.5	809.1	642.7	166.46	4.861	
7,700.0	6,717.8	6,691.8	6,691.8	35.3	133.8	91.29	43.8	1,750.5	716.9	547.9	168.94	4.243	
7,800.0	6,716.7	6,690.7	6,690.7	37.8	133.8	91.09	43.8	1,750.5	627.0	455.5	171.47	3.657	
7,900.0	6,715.7	6,689.7	6,689.7	40.3	133.8	90.90	43.8	1,750.5	540.7	366.6	174.03	3.107	
8,000.0	6,714.7	6,688.7	6,688.7	42.9	133.8	90.70	43.8	1,750.5	459.9	283.3	176.61	2.604	
8,100.0	6,713.7	6,687.7	6,687.7	45.6	133.8	90.50	43.8	1,750.5	388.3	209.1	179.22	2.166	
8,200.0	6,712.7	6,686.7	6,686.7	48.2	133.7	90.30	43.8	1,750.5	331.6	149.8	181.85	1.824	
8,300.0	6,711.7	6,685.7	6,685.7	50.9	133.7	90.11	43.8	1,750.5	298.6	114.1	184.49	1.619	
8,354.0	6,711.1	6,685.1	6,685.1	52.3	133.7	90.00	43.8	1,750.5	293.7	107.8	185.93	1.580 CC, ES, SF	
8,400.0	6,710.7	6,684.7	6,684.7	53.5	133.7	89.91	43.8	1,750.5	297.3	110.1	187.15	1.589	
8,500.0	6,709.7	6,683.7	6,683.7	56.2	133.7	89.71	43.8	1,750.5	328.0	138.2	189.81	1.728	
8,600.0	6,708.7	6,682.7	6,682.7	58.9	133.7	89.51	43.8	1,750.5	383.1	190.6	192.49	1.990	
8,700.0	6,707.6	6,681.6	6,681.6	61.6	133.6	89.32	43.8	1,750.5	453.9	258.7	195.17	2.325	
8,800.0	6,706.6	6,680.6	6,680.6	64.4	133.6	89.12	43.8	1,750.5	534.0	336.2	197.86	2.699	
8,900.0	6,705.6	6,679.6	6,679.6	67.1	133.6	88.92	43.8	1,750.5	620.0	419.4	200.55	3.091	
9,000.0	6,704.6	6,678.6	6,678.6	69.8	133.6	88.72	43.8	1,750.5	709.6	506.4	203.25	3.491	
9,100.0	6,703.6	6,677.6	6,677.6	72.6	133.6	88.53	43.8	1,750.5	801.7	595.8	205.95	3.893	
9,200.0	6,702.6	6,676.6	6,676.6	75.3	133.5	88.33	43.8	1,750.5	895.5	686.9	208.65	4.292	
9,300.0	6,701.6	6,675.6	6,675.6	78.1	133.5	88.13	43.8	1,750.5	990.5	779.2	211.36	4.687	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Klein (Existing) Sec.19-T5N-R64W - Pigeon 1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,800.0	6,706.6	6,663.6	6,662.8	64.4	12.1	86.59	70.2	3,078.8	922.2	846.0	76.21	12.101		
8,900.0	6,705.6	6,666.6	6,665.8	67.1	12.1	87.23	70.3	3,078.9	827.0	748.0	79.00	10.469		
9,000.0	6,704.6	6,669.6	6,668.8	69.8	12.1	87.87	70.4	3,079.0	733.1	651.3	81.78	8.964		
9,100.0	6,703.6	6,672.5	6,671.7	72.6	12.1	88.50	70.5	3,079.1	641.0	556.5	84.57	7.580		
9,200.0	6,702.6	6,675.4	6,674.6	75.3	12.1	89.12	70.6	3,079.2	551.7	464.4	87.35	6.316		
9,300.0	6,701.6	6,678.3	6,677.4	78.1	12.1	89.73	70.7	3,079.3	466.7	376.6	90.12	5.178		
9,400.0	6,700.6	6,681.1	6,680.3	80.8	12.2	90.34	70.8	3,079.4	388.9	296.0	92.89	4.186		
9,500.0	6,699.5	6,683.9	6,683.0	83.6	12.2	90.93	70.9	3,079.5	323.4	227.8	95.66	3.381		
9,600.0	6,698.5	6,686.6	6,685.8	86.3	12.2	91.52	71.0	3,079.7	279.3	180.9	98.42	2.838		
9,683.2	6,697.7	6,688.9	6,688.0	88.6	12.2	92.00	71.0	3,079.7	266.6	165.9	100.70	2.648 CC, ES		
9,700.0	6,697.5	6,689.3	6,688.5	89.1	12.2	92.10	71.1	3,079.8	267.1	166.0	101.16	2.641 SF		
9,800.0	6,696.5	6,692.0	6,691.1	91.8	12.2	92.67	71.2	3,079.8	291.1	187.2	103.91	2.801		
9,900.0	6,695.5	6,694.6	6,693.8	94.6	12.2	93.24	71.2	3,079.9	343.6	237.0	106.64	3.222		
10,000.0	6,694.5	6,697.2	6,696.3	97.4	12.2	93.80	71.3	3,080.0	414.0	304.6	109.36	3.786		
10,100.0	6,693.5	6,700.0	6,699.1	100.2	12.2	94.40	71.4	3,080.1	494.7	382.6	112.07	4.414		
10,200.0	6,692.5	6,700.0	6,699.1	102.9	12.2	94.40	71.4	3,080.1	581.4	466.5	114.84	5.063		
10,300.0	6,691.4	6,700.0	6,699.1	105.7	12.2	94.40	71.4	3,080.1	671.8	554.2	117.61	5.712		
10,400.0	6,690.4	6,706.8	6,705.9	108.5	12.2	95.85	71.7	3,080.4	764.6	644.4	120.16	6.363		
10,500.0	6,689.4	6,709.1	6,708.2	111.3	12.2	96.34	71.7	3,080.5	859.0	736.1	122.84	6.992		
10,600.0	6,688.4	6,711.3	6,710.4	114.0	12.2	96.81	71.8	3,080.5	954.5	829.0	125.51	7.605		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Seth 1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	75.48	149.4	576.6	595.8				
100.0	100.0	82.7	82.7	0.1	0.1	75.51	149.1	576.9	595.9	595.7	0.22	2,679.838	
200.0	200.0	186.0	186.0	0.3	0.4	75.60	148.2	577.6	596.3	595.6	0.69	867.830	
300.0	300.0	287.7	287.7	0.6	0.6	75.72	147.0	577.7	596.1	594.9	1.17	510.550	
400.0	400.0	389.5	389.5	0.8	0.9	75.85	145.6	577.6	595.7	594.0	1.65	361.424	
465.2	465.2	451.3	451.2	0.9	1.0	75.92	144.8	577.5	595.4	593.5	1.95	305.476	
500.0	500.0	483.7	483.7	1.0	1.1	75.96	144.5	577.7	595.5	593.4	2.11	282.437	
600.0	600.0	582.7	582.6	1.2	1.4	76.09	143.2	578.6	596.1	593.5	2.59	230.444	
700.0	700.0	686.7	686.7	1.5	1.6	76.30	141.2	579.4	596.3	593.3	3.08	193.365	
739.0	739.0	725.1	725.0	1.5	1.7	76.38	140.4	579.5	596.3	593.0	3.27	182.234	
800.0	800.0	783.1	783.0	1.7	1.9	76.48	139.4	579.9	596.4	592.9	3.56	167.526	
900.0	900.0	888.5	888.4	1.9	2.1	76.65	137.7	580.5	596.6	592.6	4.06	147.077	
988.4	988.4	974.5	974.4	2.1	2.4	76.81	136.1	580.7	596.4	591.9	4.48	133.137	
1,000.0	1,000.0	985.6	985.5	2.1	2.4	76.83	135.9	580.7	596.4	591.9	4.53	131.513	
1,100.0	1,100.0	1,091.5	1,091.4	2.4	2.7	77.01	134.0	580.8	596.1	591.1	5.03	118.529	
1,200.0	1,200.0	1,186.6	1,186.5	2.6	2.9	77.15	132.4	580.6	595.5	590.0	5.50	108.361	
1,300.0	1,300.0	1,292.4	1,292.3	2.8	3.2	106.48	131.3	580.4	595.3	589.4	5.97	99.791	
1,343.7	1,343.7	1,334.2	1,334.0	2.9	3.3	106.60	130.9	580.1	595.2	589.0	6.16	96.640	
1,400.0	1,400.0	1,386.5	1,386.3	3.0	3.4	106.77	130.5	580.0	595.5	589.1	6.40	92.984	
1,500.0	1,499.9	1,488.3	1,488.2	3.3	3.6	107.26	129.6	580.0	596.6	589.7	6.89	86.632	
1,600.0	1,599.7	1,586.4	1,586.3	3.5	3.9	107.89	128.5	580.0	598.2	590.8	7.37	81.191	
1,700.0	1,699.4	1,693.2	1,693.0	3.7	4.1	108.69	127.8	579.5	600.1	592.2	7.84	76.494	
1,800.0	1,798.9	1,787.1	1,786.9	4.0	4.4	109.56	126.8	578.8	602.3	594.0	8.30	72.608	
1,824.5	1,823.2	1,811.5	1,811.3	4.0	4.4	109.81	126.5	578.8	603.2	594.8	8.41	71.709	
1,900.0	1,898.3	1,893.5	1,893.3	4.2	4.6	110.69	125.5	578.2	605.3	596.5	8.79	68.877	
2,000.0	1,997.7	1,987.8	1,987.6	4.5	4.8	111.71	124.1	577.3	608.1	598.9	9.26	65.683	
2,100.0	2,097.1	2,090.6	2,090.4	4.7	5.1	112.87	122.1	576.7	611.5	601.7	9.77	62.572	
2,200.0	2,196.5	2,191.9	2,191.6	5.0	5.3	114.03	119.6	575.5	614.5	604.2	10.28	59.763	
2,300.0	2,295.9	2,293.6	2,293.3	5.3	5.6	115.14	117.6	574.0	617.4	606.6	10.77	57.318	
2,400.0	2,395.3	2,392.2	2,391.8	5.5	5.8	116.18	116.0	572.4	620.3	609.0	11.25	55.131	
2,500.0	2,494.8	2,496.4	2,496.0	5.8	6.0	117.30	113.8	570.3	623.2	611.4	11.75	53.027	
2,600.0	2,594.2	2,590.4	2,590.0	6.1	6.2	118.23	112.7	568.5	626.2	614.0	12.20	51.340	
2,700.0	2,693.6	2,688.8	2,688.4	6.4	6.4	119.14	112.1	567.0	630.0	617.4	12.65	49.788	
2,800.0	2,793.0	2,786.3	2,785.9	6.6	6.6	120.04	111.5	565.8	634.2	621.1	13.10	48.407	
2,900.0	2,892.4	2,888.4	2,888.0	6.9	6.8	120.91	111.4	564.5	638.5	624.9	13.54	47.169	
3,000.0	2,991.8	2,986.4	2,985.9	7.2	7.0	121.78	110.9	563.1	642.7	628.7	14.00	45.922	
3,100.0	3,091.2	3,080.6	3,080.2	7.5	7.2	122.62	110.1	562.2	647.6	633.1	14.49	44.710	
3,200.0	3,190.6	3,182.7	3,182.3	7.8	7.4	123.48	109.7	561.6	653.1	638.1	14.97	43.630	
3,300.0	3,290.0	3,285.4	3,285.0	8.1	7.6	124.32	109.4	560.4	658.0	642.6	15.43	42.634	
3,400.0	3,389.4	3,385.8	3,385.4	8.4	7.9	125.22	108.2	558.9	662.8	646.8	15.93	41.605	
3,500.0	3,488.8	3,493.7	3,493.2	8.7	8.1	126.22	106.4	556.4	667.1	650.7	16.45	40.563	
3,600.0	3,588.2	3,592.7	3,592.1	8.9	8.4	127.15	104.6	553.4	670.9	653.9	16.94	39.608	
3,700.0	3,687.6	3,688.3	3,687.6	9.2	8.6	128.06	102.5	550.8	675.1	657.7	17.43	38.739	
3,800.0	3,787.0	3,789.9	3,789.2	9.5	8.8	128.93	101.2	548.4	679.7	661.8	17.92	37.932	
3,900.0	3,886.4	3,890.2	3,889.4	9.8	9.1	129.78	100.0	545.6	684.2	665.8	18.41	37.174	
4,000.0	3,985.9	3,984.5	3,983.7	10.1	9.3	130.57	98.8	543.3	689.1	670.2	18.88	36.494	
4,100.0	4,085.3	4,079.4	4,078.6	10.4	9.5	131.31	98.0	541.9	694.9	675.5	19.36	35.888	
4,200.0	4,184.7	4,183.2	4,182.4	10.7	9.8	132.06	97.6	540.4	700.9	681.1	19.85	35.310	
4,300.0	4,284.1	4,277.2	4,276.4	11.0	10.0	132.75	97.1	538.9	706.8	686.5	20.32	34.783	
4,400.0	4,383.5	4,377.4	4,376.6	11.3	10.2	133.50	95.9	537.8	713.5	692.7	20.83	34.262	
4,500.0	4,482.9	4,476.7	4,475.8	11.6	10.5	134.24	94.7	536.4	720.0	698.7	21.32	33.770	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Klein (Existing) Sec.19-T5N-R64W - Seth 1 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program:		100-NS-GYRO-MS											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
4,600.0	4,582.3	4,579.8	4,579.0	11.9	10.7	134.95	94.2	535.1	726.6	704.8	21.82	33.305			
4,700.0	4,681.7	4,682.3	4,681.4	12.2	11.0	135.64	93.8	533.1	732.6	710.3	22.28	32.877			
4,800.0	4,781.1	4,779.9	4,779.0	12.5	11.2	136.26	93.8	531.3	738.7	715.9	22.74	32.488			
4,907.9	4,888.4	4,882.2	4,881.3	12.8	11.4	136.90	93.6	529.9	745.8	722.6	23.21	32.139			
5,000.0	4,980.1	4,977.8	4,976.9	13.0	11.5	137.41	94.1	528.9	751.1	727.5	23.57	31.868			
5,100.0	5,079.9	5,078.7	5,077.8	13.2	11.6	137.72	95.2	527.6	753.9	730.0	23.89	31.559			
5,200.0	5,179.9	5,184.1	5,183.1	13.4	11.8	137.77	96.8	526.1	753.9	729.7	24.17	31.185			
5,220.1	5,200.0	5,205.8	5,204.9	13.4	11.8	108.60	97.3	525.7	753.4	728.9	24.53	30.720			
5,300.0	5,279.8	5,294.5	5,293.5	13.5	11.9	108.44	100.1	523.8	751.0	726.2	24.76	30.335			
5,400.0	5,379.8	5,402.2	5,401.0	13.7	12.0	108.16	105.0	520.6	746.8	721.7	25.06	29.798			
5,500.0	5,479.8	5,507.0	5,505.6	13.9	12.1	107.87	110.3	516.7	741.6	716.3	25.38	29.226			
5,600.0	5,579.8	5,600.0	5,598.5	14.1	12.2	107.61	114.7	513.5	736.9	711.3	25.68	28.693			
5,700.0	5,679.8	5,689.7	5,688.0	14.3	12.3	107.37	118.7	511.5	733.4	707.4	25.98	28.233			
5,800.0	5,779.8	5,783.0	5,781.3	14.5	12.4	107.17	121.8	510.0	730.8	704.5	26.28	27.809			
5,900.0	5,879.8	5,873.2	5,871.4	14.7	12.5	107.04	123.7	509.1	729.4	702.8	26.57	27.453			
5,979.2	5,959.0	5,951.5	5,949.8	14.9	12.6	106.92	125.4	509.2	728.9	702.2	26.79	27.213			
6,000.0	5,979.8	5,973.3	5,971.5	14.9	12.6	16.89	125.9	509.2	728.5	701.9	26.60	27.388			
6,050.0	6,029.7	6,025.5	6,023.7	15.0	12.6	16.93	127.3	509.2	725.2	698.6	26.59	27.269			
6,100.0	6,079.3	6,077.4	6,075.6	15.0	12.7	17.14	128.6	508.9	718.6	692.1	26.49	27.126			
6,150.0	6,128.4	6,125.6	6,123.8	15.1	12.7	17.52	129.6	508.4	708.8	682.5	26.28	26.968			
6,200.0	6,176.8	6,170.9	6,169.1	15.1	12.8	18.04	130.6	508.2	696.1	670.2	25.98	26.801			
6,250.0	6,224.2	6,217.2	6,215.3	15.2	12.8	18.74	131.7	508.2	680.7	655.1	25.58	26.616			
6,300.0	6,270.5	6,265.5	6,263.6	15.2	12.9	19.67	133.0	508.1	662.3	637.2	25.09	26.393			
6,350.0	6,315.5	6,312.3	6,310.4	15.2	12.9	20.83	134.5	508.0	641.0	616.4	24.55	26.109			
6,400.0	6,358.9	6,357.6	6,355.7	15.3	13.0	22.31	136.0	507.8	616.9	592.9	23.97	25.733			
6,450.0	6,400.6	6,400.0	6,398.1	15.3	13.0	24.16	137.3	507.4	590.1	566.7	23.39	25.232			
6,500.0	6,440.4	6,438.2	6,436.2	15.3	13.1	26.40	138.4	507.0	561.0	538.2	22.84	24.560			
6,550.0	6,478.2	6,473.9	6,471.9	15.3	13.1	29.13	139.5	506.8	529.9	507.5	22.41	23.648			
6,600.0	6,513.7	6,507.6	6,505.7	15.4	13.1	32.49	140.5	506.7	497.0	474.8	22.18	22.405			
6,650.0	6,546.9	6,539.1	6,537.1	15.5	13.2	36.59	141.3	506.8	462.5	440.3	22.28	20.760			
6,700.0	6,577.6	6,568.4	6,566.5	15.8	13.2	41.56	142.1	506.9	426.8	404.0	22.83	18.696			
6,750.0	6,605.6	6,595.4	6,593.4	16.2	13.2	47.48	142.7	507.0	390.3	366.4	23.91	16.321			
6,800.0	6,630.8	6,621.2	6,619.1	16.8	13.2	54.50	143.3	507.2	353.4	327.9	25.54	13.835			
6,850.0	6,653.2	6,644.1	6,642.0	17.4	13.3	62.22	143.7	507.3	316.8	289.3	27.50	11.520			
6,900.0	6,672.5	6,663.8	6,661.8	18.1	13.3	70.07	144.1	507.4	281.6	252.1	29.47	9.555			
6,950.0	6,688.9	6,680.3	6,678.3	18.8	13.3	77.37	144.4	507.4	249.1	217.9	31.19	7.988			
7,000.0	6,702.1	6,693.5	6,691.5	19.7	13.3	83.48	144.6	507.4	221.6	189.1	32.57	6.804			
7,050.0	6,712.1	6,703.4	6,701.4	20.6	13.3	87.95	144.8	507.4	201.9	168.2	33.70	5.991			
7,100.0	6,718.9	6,710.0	6,707.9	21.5	13.3	90.57	144.9	507.4	192.9	158.2	34.71	5.557			
7,111.0	6,719.9	6,711.0	6,708.9	21.8	13.3	90.89	144.9	507.4	192.6	157.7	34.93	5.513 CC, ES			
7,150.0	6,722.4	6,713.3	6,711.3	22.5	13.3	91.30	145.0	507.4	196.5	160.8	35.72	5.502 SF			
7,186.9	6,723.0	6,713.8	6,711.7	23.3	13.3	90.60	145.0	507.4	207.1	170.6	36.47	5.678			
7,200.0	6,722.8	6,713.6	6,711.6	23.6	13.3	90.56	145.0	507.4	212.2	175.5	36.74	5.776			
7,300.0	6,721.8	6,712.5	6,710.5	25.7	13.3	90.22	145.0	507.4	270.0	231.1	38.89	6.942			
7,400.0	6,720.8	6,711.3	6,709.3	28.0	13.3	89.88	144.9	507.4	347.5	306.3	41.16	8.442			
7,500.0	6,719.8	6,710.2	6,708.2	30.3	13.3	89.54	144.9	507.4	434.2	390.7	43.51	9.979			
7,600.0	6,718.8	6,709.1	6,707.1	32.8	13.3	89.21	144.9	507.4	525.7	479.8	45.94	11.444			
7,700.0	6,717.8	6,708.0	6,705.9	35.3	13.3	88.88	144.9	507.4	619.9	571.5	48.42	12.802			
7,800.0	6,716.7	6,706.9	6,704.8	37.8	13.3	88.55	144.9	507.4	715.6	664.7	50.94	14.047			
7,900.0	6,715.7	6,705.8	6,703.7	40.3	13.3	88.22	144.8	507.4	812.3	758.9	53.50	15.185			
8,000.0	6,714.7	6,704.7	6,702.6	42.9	13.3	87.89	144.8	507.4	909.8	853.7	56.08	16.223			

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19M-402 - Wellbore #1 - Plan #3 (7-13-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.01	0.0	-27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.01	0.0	-27.9	27.9	27.6	0.22	123.935	
200.0	200.0	200.0	200.0	0.3	0.3	-90.01	0.0	-27.9	27.9	27.2	0.67	41.312	
300.0	300.0	300.0	300.0	0.6	0.6	-90.01	0.0	-27.9	27.9	26.7	1.12	24.787	
400.0	400.0	400.0	400.0	0.8	0.8	-90.01	0.0	-27.9	27.9	26.3	1.57	17.705	
500.0	500.0	500.0	500.0	1.0	1.0	-90.01	0.0	-27.9	27.9	25.8	2.02	13.771	
600.0	600.0	600.0	600.0	1.2	1.2	-90.01	0.0	-27.9	27.9	25.4	2.47	11.267	
700.0	700.0	700.0	700.0	1.5	1.5	-90.01	0.0	-27.9	27.9	24.9	2.92	9.533	
800.0	800.0	800.0	800.0	1.7	1.7	-90.01	0.0	-27.9	27.9	24.5	3.37	8.262	
900.0	900.0	900.0	900.0	1.9	1.9	-90.01	0.0	-27.9	27.9	24.0	3.82	7.290	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.01	0.0	-27.9	27.9	23.6	4.27	6.523 CC	
1,100.0	1,100.0	1,099.9	1,099.9	2.4	2.4	-88.28	0.8	-28.1	28.1	23.4	4.72	5.950	
1,200.0	1,200.0	1,199.7	1,199.6	2.6	2.6	-83.29	3.4	-28.7	28.9	23.7	5.17	5.591	
1,300.0	1,300.0	1,299.4	1,299.3	2.8	2.8	-47.73	7.6	-29.7	30.1	24.5	5.61	5.363	
1,400.0	1,400.0	1,399.1	1,398.8	3.0	3.0	-41.33	13.5	-31.2	31.3	25.2	6.06	5.167	
1,500.0	1,499.9	1,498.7	1,498.1	3.3	3.3	-34.89	21.1	-33.0	32.5	26.0	6.50	5.002	
1,600.0	1,599.7	1,598.2	1,597.1	3.5	3.5	-28.38	30.3	-35.3	33.9	26.9	6.95	4.872	
1,700.0	1,699.4	1,697.7	1,695.9	3.7	3.8	-21.80	41.2	-38.0	35.4	28.0	7.40	4.779	
1,800.0	1,798.9	1,797.0	1,794.5	4.0	4.0	-15.20	53.7	-41.1	37.1	29.3	7.85	4.728	
1,824.5	1,823.2	1,821.3	1,818.5	4.0	4.1	-13.58	57.1	-41.9	37.6	29.6	7.96	4.722	
1,900.0	1,898.3	1,896.3	1,892.7	4.2	4.3	-8.52	67.9	-44.6	39.7	31.4	8.31	4.775	
2,000.0	1,997.7	1,996.0	1,991.0	4.5	4.6	-2.21	83.3	-48.4	43.8	35.1	8.77	4.997	
2,100.0	2,097.1	2,095.8	2,089.6	4.7	4.9	2.98	98.8	-52.2	48.5	39.2	9.23	5.247	
2,200.0	2,196.5	2,195.6	2,188.1	5.0	5.2	7.25	114.3	-56.0	53.4	43.7	9.70	5.503	
2,300.0	2,295.9	2,295.4	2,286.6	5.3	5.6	10.77	129.8	-59.9	58.6	48.4	10.18	5.757	
2,400.0	2,395.3	2,395.2	2,385.1	5.5	5.9	13.71	145.3	-63.7	64.0	53.3	10.66	6.002	
2,500.0	2,494.8	2,495.0	2,483.6	5.8	6.2	16.19	160.8	-67.5	69.5	58.4	11.15	6.236	
2,600.0	2,594.2	2,594.8	2,582.2	6.1	6.6	18.30	176.3	-71.3	75.2	63.5	11.64	6.456	
2,700.0	2,693.6	2,694.6	2,680.7	6.4	6.9	20.12	191.8	-75.1	80.9	68.7	12.14	6.663	
2,800.0	2,793.0	2,794.4	2,779.2	6.6	7.2	21.69	207.3	-78.9	86.7	74.0	12.64	6.857	
2,900.0	2,892.4	2,894.2	2,877.7	6.9	7.6	23.07	222.8	-82.8	92.5	79.4	13.15	7.038	
3,000.0	2,991.8	2,994.0	2,976.3	7.2	7.9	24.28	238.3	-86.6	98.4	84.8	13.66	7.207	
3,100.0	3,091.2	3,093.8	3,074.8	7.5	8.3	25.35	253.7	-90.4	104.4	90.2	14.17	7.366	
3,200.0	3,190.6	3,193.6	3,173.3	7.8	8.6	26.31	269.2	-94.2	110.3	95.6	14.68	7.514	
3,300.0	3,290.0	3,293.4	3,271.8	8.1	9.0	27.17	284.7	-98.0	116.3	101.1	15.20	7.652	
3,400.0	3,389.4	3,393.2	3,370.3	8.4	9.4	27.94	300.2	-101.9	122.3	106.6	15.72	7.781	
3,500.0	3,488.8	3,493.0	3,468.9	8.7	9.7	28.65	315.7	-105.7	128.4	112.1	16.25	7.903	
3,600.0	3,588.2	3,592.8	3,567.4	8.9	10.1	29.29	331.2	-109.5	134.4	117.7	16.77	8.017	
3,700.0	3,687.6	3,692.7	3,665.9	9.2	10.4	29.87	346.7	-113.3	140.5	123.2	17.30	8.124	
3,800.0	3,787.0	3,792.5	3,764.4	9.5	10.8	30.41	362.2	-117.1	146.6	128.8	17.82	8.225	
3,900.0	3,886.4	3,892.3	3,863.0	9.8	11.1	30.90	377.7	-120.9	152.7	134.4	18.35	8.320	
4,000.0	3,985.9	3,992.1	3,961.5	10.1	11.5	31.35	393.2	-124.8	158.8	139.9	18.89	8.410	
4,100.0	4,085.3	4,091.9	4,060.0	10.4	11.9	31.77	408.7	-128.6	164.9	145.5	19.42	8.494	
4,200.0	4,184.7	4,191.7	4,158.5	10.7	12.2	32.17	424.2	-132.4	171.1	151.1	19.95	8.574	
4,300.0	4,284.1	4,291.5	4,257.0	11.0	12.6	32.53	439.6	-136.2	177.2	156.7	20.48	8.650	
4,400.0	4,383.5	4,391.3	4,355.6	11.3	12.9	32.87	455.1	-140.0	183.3	162.3	21.02	8.722	
4,500.0	4,482.9	4,491.1	4,454.1	11.6	13.3	33.19	470.6	-143.9	189.5	167.9	21.56	8.791	
4,600.0	4,582.3	4,590.9	4,552.6	11.9	13.7	33.48	486.1	-147.7	195.6	173.5	22.09	8.855	
4,700.0	4,681.7	4,690.7	4,651.1	12.2	14.0	33.76	501.6	-151.5	201.8	179.2	22.63	8.917	
4,800.0	4,781.1	4,790.5	4,749.7	12.5	14.4	34.03	517.1	-155.3	208.0	184.8	23.17	8.976	
4,907.9	4,888.4	4,898.2	4,856.0	12.8	14.8	34.29	533.8	-159.4	214.6	190.9	23.75	9.036	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19M-402 - Wellbore #1 - Plan #3 (7-13-15)												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
5,000.0	4,980.1	4,990.0	4,946.6	13.0	15.1	34.37	548.1	-162.9	221.5	197.3	24.19	9.156	
5,100.0	5,079.9	5,089.5	5,044.8	13.2	15.5	34.01	563.5	-166.7	231.8	207.2	24.58	9.428	
5,200.0	5,179.9	5,188.6	5,142.6	13.4	15.9	33.27	578.9	-170.5	244.9	220.0	24.91	9.833	
5,220.1	5,200.0	5,208.5	5,162.2	13.4	15.9	3.95	582.0	-171.3	247.9	219.5	28.44	8.719	
5,300.0	5,279.8	5,287.3	5,240.0	13.5	16.2	3.09	594.2	-174.3	260.1	231.2	28.91	8.998	
5,400.0	5,379.8	5,386.0	5,337.5	13.7	16.6	2.12	609.5	-178.1	275.5	246.0	29.52	9.333	
5,500.0	5,479.8	5,484.7	5,434.9	13.9	16.9	1.25	624.8	-181.9	290.9	260.8	30.12	9.658	
5,600.0	5,579.8	5,594.0	5,543.0	14.1	17.2	0.48	640.1	-185.6	304.8	274.1	30.66	9.940	
5,700.0	5,679.8	5,705.1	5,653.5	14.3	17.5	-0.05	651.4	-188.4	315.0	283.9	31.15	10.113	
5,800.0	5,779.8	5,816.9	5,765.1	14.5	17.7	-0.36	658.6	-190.2	321.5	289.9	31.59	10.179	
5,900.0	5,879.8	5,929.2	5,877.4	14.7	17.9	-0.49	661.6	-190.9	324.2	292.2	31.97	10.140	
5,979.2	5,959.0	6,010.9	5,959.0	14.9	18.0	-0.49	661.7	-191.0	324.2	292.0	32.25	10.056	
6,000.0	5,979.8	6,031.7	5,979.8	14.9	18.1	-90.54	661.7	-191.0	324.3	296.3	27.98	11.588	
6,050.0	6,029.7	6,081.6	6,029.7	15.0	18.1	-91.07	661.7	-191.0	324.3	296.2	28.13	11.528	
6,100.0	6,079.3	6,131.2	6,079.3	15.0	18.2	-92.15	661.7	-191.0	324.5	296.2	28.23	11.493	
6,150.0	6,128.4	6,180.7	6,128.8	15.1	18.3	-93.75	661.7	-190.8	325.0	296.7	28.29	11.486	
6,200.0	6,176.8	6,231.4	6,179.5	15.1	18.4	-95.49	661.7	-188.2	325.8	297.5	28.33	11.500	
6,250.0	6,224.2	6,282.9	6,230.6	15.2	18.4	-97.21	661.7	-182.1	326.9	298.6	28.36	11.527	
6,300.0	6,270.5	6,335.1	6,281.9	15.2	18.5	-98.91	661.7	-172.4	328.4	300.0	28.40	11.563	
6,350.0	6,315.5	6,388.1	6,333.1	15.2	18.5	-100.56	661.7	-159.0	330.0	301.6	28.44	11.606	
6,400.0	6,358.9	6,441.8	6,384.0	15.3	18.6	-102.17	661.7	-141.8	332.0	303.5	28.49	11.651	
6,450.0	6,400.6	6,496.4	6,434.3	15.3	18.6	-103.72	661.7	-120.7	334.1	305.5	28.57	11.695	
6,500.0	6,440.4	6,551.7	6,483.7	15.3	18.6	-105.20	661.7	-95.7	336.4	307.7	28.67	11.732	
6,550.0	6,478.2	6,607.9	6,531.8	15.3	18.7	-106.61	661.7	-66.8	338.8	309.9	28.82	11.754	
6,600.0	6,513.7	6,664.8	6,578.3	15.4	18.7	-107.94	661.7	-34.0	341.2	312.2	29.03	11.754	
6,650.0	6,546.9	6,722.5	6,622.8	15.5	18.8	-109.17	661.7	2.8	343.7	314.4	29.33	11.717	
6,700.0	6,577.6	6,781.0	6,664.9	15.8	18.8	-110.32	661.7	43.4	346.2	316.5	29.68	11.663	
6,750.0	6,605.6	6,840.2	6,704.3	16.2	18.9	-111.36	661.7	87.6	348.5	318.3	30.18	11.549	
6,800.0	6,630.8	6,900.1	6,740.5	16.8	19.0	-112.30	661.7	135.3	350.8	320.0	30.81	11.387	
6,850.0	6,653.2	6,960.7	6,773.2	17.4	19.2	-113.13	661.7	186.2	352.8	321.2	31.60	11.168	
6,900.0	6,672.5	7,021.8	6,802.0	18.1	19.6	-113.84	661.7	240.1	354.7	322.1	32.55	10.897	
6,950.0	6,688.9	7,083.4	6,826.6	18.8	20.1	-114.44	661.7	296.6	356.3	322.6	33.68	10.580	
7,000.0	6,702.1	7,145.4	6,846.6	19.7	20.8	-114.91	661.7	355.2	357.6	322.6	34.98	10.223	
7,050.0	6,712.1	7,207.8	6,861.9	20.6	21.7	-115.26	661.7	415.7	358.6	322.1	36.46	9.835	
7,100.0	6,718.9	7,270.4	6,872.3	21.5	22.7	-115.49	661.7	477.4	359.2	321.1	38.10	9.427	
7,150.0	6,722.4	7,333.1	6,877.6	22.5	23.8	-115.59	661.7	539.9	359.5	319.6	39.90	9.011	
7,184.0	6,723.0	7,374.8	6,878.3	23.2	24.6	-115.59	661.7	581.6	359.5	318.3	41.17	8.732	
7,186.9	6,723.0	7,377.7	6,878.3	23.3	24.7	-115.59	661.7	584.5	359.5	318.2	41.27	8.712	
7,200.0	6,722.8	7,390.8	6,878.2	23.6	25.0	-115.60	661.7	597.6	359.5	317.8	41.76	8.610	
7,300.0	6,721.8	7,490.8	6,877.5	25.7	27.0	-115.66	661.7	697.6	359.7	314.0	45.67	7.876	
7,400.0	6,720.8	7,590.8	6,876.9	28.0	29.2	-115.71	661.7	797.6	359.9	310.1	49.78	7.229	
7,500.0	6,719.8	7,690.8	6,876.3	30.3	31.5	-115.77	661.7	897.6	360.0	306.0	54.06	6.660	
7,600.0	6,718.8	7,790.8	6,875.7	32.8	33.9	-115.82	661.7	997.6	360.2	301.7	58.46	6.162	
7,700.0	6,717.8	7,890.8	6,875.0	35.3	36.3	-115.88	661.7	1,097.5	360.4	297.4	62.96	5.724	
7,800.0	6,716.7	7,990.8	6,874.4	37.8	38.8	-115.93	661.7	1,197.5	360.5	293.0	67.53	5.339	
7,900.0	6,715.7	8,090.8	6,873.8	40.3	41.3	-115.99	661.7	1,297.5	360.7	288.5	72.17	4.998	
8,000.0	6,714.7	8,190.8	6,873.1	42.9	43.9	-116.04	661.7	1,397.5	360.9	284.0	76.85	4.696	
8,100.0	6,713.7	8,290.8	6,872.5	45.6	46.5	-116.10	661.7	1,497.5	361.0	279.5	81.57	4.426	
8,200.0	6,712.7	8,390.8	6,871.9	48.2	49.1	-116.15	661.7	1,597.5	361.2	274.9	86.33	4.184	
8,300.0	6,711.7	8,490.8	6,871.3	50.9	51.7	-116.20	661.7	1,697.5	361.4	270.3	91.12	3.966	
8,400.0	6,710.7	8,590.8	6,870.6	53.5	54.4	-116.26	661.7	1,797.5	361.5	265.6	95.92	3.769	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19M-402 - Wellbore #1 - Plan #3 (7-13-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,500.0	6,709.7	8,690.8	6,870.0	56.2	57.1	-116.31	661.7	1,897.5	361.7	261.0	100.75	3.590	
8,600.0	6,708.7	8,790.8	6,869.4	58.9	59.7	-116.37	661.7	1,997.5	361.9	256.3	105.59	3.427	
8,700.0	6,707.6	8,890.8	6,868.7	61.6	62.4	-116.42	661.7	2,097.5	362.1	251.6	110.44	3.278	
8,800.0	6,706.6	8,990.8	6,868.1	64.4	65.1	-116.48	661.7	2,197.5	362.2	246.9	115.30	3.142	
8,900.0	6,705.6	9,090.8	6,867.5	67.1	67.8	-116.53	661.7	2,297.5	362.4	242.2	120.17	3.016	
9,000.0	6,704.6	9,190.8	6,866.9	69.8	70.6	-116.59	661.7	2,397.5	362.6	237.5	125.05	2.899	
9,100.0	6,703.6	9,290.8	6,866.2	72.6	73.3	-116.64	661.7	2,497.5	362.7	232.8	129.93	2.792	
9,200.0	6,702.6	9,390.8	6,865.6	75.3	76.0	-116.69	661.7	2,597.5	362.9	228.1	134.82	2.692	
9,300.0	6,701.6	9,490.8	6,865.0	78.1	78.8	-116.75	661.7	2,697.5	363.1	223.4	139.71	2.599	
9,400.0	6,700.6	9,590.8	6,864.4	80.8	81.5	-116.80	661.7	2,797.5	363.3	218.7	144.61	2.512	
9,500.0	6,699.5	9,690.8	6,863.7	83.6	84.2	-116.86	661.7	2,897.5	363.4	213.9	149.51	2.431	
9,600.0	6,698.5	9,790.8	6,863.1	86.3	87.0	-116.91	661.7	2,997.5	363.6	209.2	154.40	2.355	
9,700.0	6,697.5	9,890.8	6,862.5	89.1	89.7	-116.96	661.7	3,097.5	363.8	204.5	159.30	2.284	
9,800.0	6,696.5	9,990.8	6,861.8	91.8	92.5	-117.02	661.7	3,197.5	364.0	199.8	164.20	2.217	
9,900.0	6,695.5	10,090.8	6,861.2	94.6	95.3	-117.07	661.7	3,297.5	364.1	195.0	169.10	2.153	
10,000.0	6,694.5	10,190.8	6,860.6	97.4	98.0	-117.13	661.7	3,397.5	364.3	190.3	174.00	2.094	
10,100.0	6,693.5	10,290.8	6,860.0	100.2	100.8	-117.18	661.7	3,497.5	364.5	185.6	178.90	2.037	
10,200.0	6,692.5	10,390.8	6,859.3	102.9	103.6	-117.23	661.7	3,597.5	364.7	180.9	183.80	1.984	
10,300.0	6,691.4	10,490.8	6,858.7	105.7	106.3	-117.29	661.7	3,697.5	364.8	176.1	188.69	1.934	
10,400.0	6,690.4	10,590.8	6,858.1	108.5	109.1	-117.34	661.7	3,797.5	365.0	171.4	193.58	1.886	
10,500.0	6,689.4	10,690.8	6,857.4	111.3	111.9	-117.39	661.7	3,897.5	365.2	166.7	198.48	1.840	
10,600.0	6,688.4	10,790.8	6,856.8	114.0	114.6	-117.45	661.7	3,997.5	365.4	162.0	203.37	1.797	
10,700.0	6,687.4	10,890.8	6,856.2	116.8	117.4	-117.50	661.7	4,097.5	365.5	157.3	208.25	1.755	
10,800.0	6,686.4	10,990.8	6,855.6	119.6	120.2	-117.55	661.7	4,197.5	365.7	152.6	213.14	1.716	
10,900.0	6,685.4	11,090.8	6,854.9	122.4	123.0	-117.61	661.7	4,297.5	365.9	147.9	218.02	1.678	
11,000.0	6,684.4	11,190.8	6,854.3	125.2	125.8	-117.66	661.7	4,397.5	366.1	143.2	222.90	1.642	
11,100.0	6,683.3	11,290.8	6,853.7	128.0	128.5	-117.71	661.7	4,497.5	366.3	138.5	227.78	1.608	
11,200.0	6,682.3	11,390.8	6,853.0	130.8	131.3	-117.77	661.7	4,597.5	366.4	133.8	232.65	1.575	
11,300.0	6,681.3	11,490.8	6,852.4	133.6	134.1	-117.82	661.7	4,697.5	366.6	129.1	237.53	1.543	
11,400.0	6,680.3	11,590.8	6,851.8	136.3	136.9	-117.87	661.7	4,797.4	366.8	124.4	242.39	1.513	
11,500.0	6,679.3	11,690.8	6,851.2	139.1	139.7	-117.93	661.7	4,897.4	367.0	119.7	247.26	1.484	Level 3
11,600.0	6,678.3	11,790.8	6,850.5	141.9	142.5	-117.98	661.7	4,997.4	367.1	115.0	252.12	1.456	Level 3
11,700.0	6,677.3	11,890.8	6,849.9	144.7	145.3	-118.03	661.7	5,097.4	367.3	110.4	256.98	1.429	Level 3
11,800.0	6,676.3	11,990.8	6,849.3	147.5	148.1	-118.08	661.7	5,197.4	367.5	105.7	261.83	1.404	Level 3
11,900.0	6,675.2	12,090.8	6,848.6	150.3	150.8	-118.14	661.7	5,297.4	367.7	101.0	266.68	1.379	Level 3
12,000.0	6,674.2	12,190.8	6,848.0	153.1	153.6	-118.19	661.7	5,397.4	367.9	96.3	271.53	1.355	Level 3
12,100.0	6,673.2	12,290.8	6,847.4	155.9	156.4	-118.24	661.7	5,497.4	368.1	91.7	276.38	1.332	Level 3
12,200.0	6,672.2	12,390.8	6,846.8	158.7	159.2	-118.30	661.7	5,597.4	368.2	87.0	281.22	1.309	Level 3
12,300.0	6,671.2	12,490.8	6,846.1	161.5	162.0	-118.35	661.7	5,697.4	368.4	82.4	286.05	1.288	Level 3
12,400.0	6,670.2	12,590.8	6,845.5	164.3	164.8	-118.40	661.7	5,797.4	368.6	77.7	290.88	1.267	Level 3
12,500.0	6,669.2	12,690.8	6,844.9	167.1	167.6	-118.45	661.7	5,897.4	368.8	73.1	295.71	1.247	Level 2
12,600.0	6,668.2	12,790.8	6,844.2	169.9	170.4	-118.51	661.7	5,997.4	369.0	68.4	300.54	1.228	Level 2
12,700.0	6,667.1	12,890.8	6,843.6	172.7	173.2	-118.56	661.7	6,097.4	369.2	63.8	305.36	1.209	Level 2
12,800.0	6,666.1	12,990.8	6,843.0	175.5	176.0	-118.61	661.7	6,197.4	369.3	59.2	310.18	1.191	Level 2
12,900.0	6,665.1	13,090.8	6,842.4	178.3	178.8	-118.66	661.7	6,297.4	369.5	54.5	314.99	1.173	Level 2
13,000.0	6,664.1	13,190.8	6,841.7	181.1	181.6	-118.71	661.7	6,397.4	369.7	49.9	319.80	1.156	Level 2
13,100.0	6,663.1	13,290.8	6,841.1	183.9	184.4	-118.77	661.7	6,497.4	369.9	45.3	324.60	1.140	Level 2
13,200.0	6,662.1	13,390.8	6,840.5	186.7	187.2	-118.82	661.7	6,597.4	370.1	40.7	329.40	1.123	Level 2
13,300.0	6,661.1	13,490.8	6,839.8	189.5	190.0	-118.87	661.7	6,697.4	370.3	36.1	334.20	1.108	Level 2
13,400.0	6,660.1	13,590.8	6,839.2	192.3	192.8	-118.92	661.7	6,797.4	370.4	31.4	338.99	1.093	Level 2
13,500.0	6,659.0	13,690.8	6,838.6	195.1	195.6	-118.98	661.7	6,897.4	370.6	26.8	343.78	1.078	Level 2

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (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		
13,600.0	6,658.0	13,790.8	6,838.0	197.9	198.4	-119.03	661.7	6,997.4	370.8	22.2	348.57	1.064	Level 2	
13,700.0	6,657.0	13,890.8	6,837.3	200.7	201.2	-119.08	661.7	7,097.4	371.0	17.7	353.35	1.050	Level 2	
13,800.0	6,656.0	13,990.8	6,836.7	203.5	204.0	-119.13	661.7	7,197.4	371.2	13.1	358.12	1.036	Level 2	
13,900.0	6,655.0	14,090.8	6,836.1	206.3	206.8	-119.18	661.7	7,297.4	371.4	8.5	362.89	1.023	Level 2	
14,000.0	6,654.0	14,190.8	6,835.4	209.1	209.6	-119.23	661.7	7,397.4	371.6	3.9	367.66	1.011	Level 2	
14,100.0	6,653.0	14,290.7	6,834.8	211.9	212.4	-119.29	661.7	7,497.4	371.7	-0.7	372.42	0.998	Level 1	
14,200.0	6,652.0	14,390.7	6,834.2	214.7	215.2	-119.34	661.7	7,597.4	371.9	-5.2	377.18	0.986	Level 1	
14,300.0	6,651.0	14,490.7	6,833.6	217.5	218.0	-119.39	661.7	7,697.4	372.1	-9.8	381.94	0.974	Level 1	
14,400.0	6,649.9	14,590.7	6,832.9	220.3	220.8	-119.44	661.7	7,797.4	372.3	-14.4	386.69	0.963	Level 1	
14,500.0	6,648.9	14,690.7	6,832.3	223.1	223.6	-119.49	661.7	7,897.4	372.5	-18.9	391.43	0.952	Level 1	
14,600.0	6,647.9	14,790.7	6,831.7	225.9	226.4	-119.54	661.7	7,997.4	372.7	-23.5	396.17	0.941	Level 1	
14,700.0	6,646.9	14,890.7	6,831.1	228.7	229.2	-119.59	661.7	8,097.4	372.9	-28.0	400.91	0.930	Level 1	
14,800.0	6,645.9	14,990.7	6,830.4	231.5	232.0	-119.65	661.7	8,197.4	373.1	-32.6	405.64	0.920	Level 1	
14,900.0	6,644.9	15,090.7	6,829.8	234.3	234.8	-119.70	661.7	8,297.4	373.3	-37.1	410.37	0.910	Level 1	
15,000.0	6,643.9	15,190.7	6,829.2	237.1	237.6	-119.75	661.7	8,397.4	373.5	-41.6	415.09	0.900	Level 1	
15,100.0	6,642.9	15,290.7	6,828.5	239.9	240.4	-119.80	661.7	8,497.3	373.6	-46.2	419.81	0.890	Level 1	
15,200.0	6,641.8	15,390.7	6,827.9	242.7	243.2	-119.85	661.7	8,597.3	373.8	-50.7	424.53	0.881	Level 1	
15,300.0	6,640.8	15,490.7	6,827.3	245.5	246.0	-119.90	661.7	8,697.3	374.0	-55.2	429.24	0.871	Level 1	
15,400.0	6,639.8	15,590.7	6,826.7	248.3	248.8	-119.95	661.7	8,797.3	374.2	-59.7	433.94	0.862	Level 1	
15,500.0	6,638.8	15,690.7	6,826.0	251.1	251.6	-120.00	661.7	8,897.3	374.4	-64.2	438.64	0.854	Level 1	
15,600.0	6,637.8	15,790.7	6,825.4	253.9	254.4	-120.05	661.7	8,997.3	374.6	-68.7	443.34	0.845	Level 1	
15,700.0	6,636.8	15,890.7	6,824.8	256.7	257.2	-120.11	661.7	9,097.3	374.8	-73.2	448.03	0.837	Level 1	
15,800.0	6,635.8	15,990.7	6,824.1	259.5	260.0	-120.16	661.7	9,197.3	375.0	-77.7	452.72	0.828	Level 1	
15,900.0	6,634.8	16,090.7	6,823.5	262.3	262.8	-120.21	661.7	9,297.3	375.2	-82.2	457.40	0.820	Level 1	
16,000.0	6,633.7	16,190.7	6,822.9	265.1	265.6	-120.26	661.7	9,397.3	375.4	-86.7	462.08	0.812	Level 1	
16,100.0	6,632.7	16,290.7	6,822.3	267.9	268.4	-120.31	661.7	9,497.3	375.6	-91.2	466.76	0.805	Level 1	
16,200.0	6,631.7	16,390.7	6,821.6	270.7	271.2	-120.36	661.7	9,597.3	375.8	-95.7	471.43	0.797	Level 1	
16,300.0	6,630.7	16,490.7	6,821.0	273.5	274.0	-120.41	661.7	9,697.3	376.0	-100.1	476.09	0.790	Level 1	
16,400.0	6,629.7	16,590.7	6,820.4	276.3	276.8	-120.46	661.7	9,797.3	376.1	-104.6	480.75	0.782	Level 1	
16,500.0	6,628.7	16,690.7	6,819.7	279.1	279.6	-120.51	661.7	9,897.3	376.3	-109.1	485.41	0.775	Level 1	
16,600.0	6,627.7	16,790.7	6,819.1	281.9	282.4	-120.56	661.7	9,997.3	376.5	-113.5	490.06	0.768	Level 1	
16,700.0	6,626.7	16,890.7	6,818.5	284.8	285.2	-120.61	661.7	10,097.3	376.7	-118.0	494.70	0.762	Level 1	
16,800.0	6,625.6	16,990.7	6,817.9	287.6	288.0	-120.66	661.7	10,197.3	376.9	-122.4	499.35	0.755	Level 1	
16,900.0	6,624.6	17,090.7	6,817.2	290.4	290.8	-120.71	661.7	10,297.3	377.1	-126.9	503.98	0.748	Level 1	
17,000.0	6,623.6	17,190.7	6,816.6	293.2	293.6	-120.76	661.7	10,397.3	377.3	-131.3	508.62	0.742	Level 1	
17,100.0	6,622.6	17,290.7	6,816.0	296.0	296.4	-120.81	661.7	10,497.3	377.5	-135.7	513.25	0.736	Level 1	
17,200.0	6,621.6	17,390.7	6,815.3	298.8	299.2	-120.86	661.7	10,597.3	377.7	-140.2	517.87	0.729	Level 1	
17,224.8	6,621.3	17,415.6	6,815.2	299.5	299.9	-120.87	661.7	10,622.1	377.8	-141.3	519.02	0.728	Level 1	
17,258.8	6,621.0	17,445.4	6,815.0	300.4	300.8	-120.89	661.7	10,652.0	377.9	-142.6	520.50	0.726	Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-202 - Wellbore #1 - Plan #3 (7-14-15)												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	90.01	0.0	30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	30.6	30.6	30.4	0.22	136.328	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	30.6	30.6	30.0	0.67	45.443	
300.0	300.0	300.0	300.0	0.6	0.6	90.01	0.0	30.6	30.6	29.5	1.12	27.266	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	30.6	30.6	29.1	1.57	19.475	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	30.6	30.6	28.6	2.02	15.148	
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	30.6	30.6	28.2	2.47	12.393	
700.0	700.0	700.0	700.0	1.5	1.5	90.01	0.0	30.6	30.6	27.7	2.92	10.487	
800.0	800.0	800.0	800.0	1.7	1.7	90.01	0.0	30.6	30.6	27.3	3.37	9.089	
900.0	900.0	900.0	900.0	1.9	1.9	90.01	0.0	30.6	30.6	26.8	3.82	8.019	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.01	0.0	30.6	30.6	26.4	4.27	7.175	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.01	0.0	30.6	30.6	25.9	4.72	6.492	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.01	0.0	30.6	30.6	25.5	5.17	5.927 CC	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	120.55	0.0	30.6	31.1	25.5	5.62	5.533 ES	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	124.52	0.0	30.6	32.5	26.4	6.06	5.359	
1,500.0	1,499.9	1,499.9	1,499.9	3.3	3.3	130.36	0.0	30.6	35.1	28.6	6.51	5.401	
1,600.0	1,599.7	1,599.8	1,599.8	3.5	3.5	138.37	-0.8	30.2	39.2	32.3	6.92	5.667	
1,700.0	1,699.4	1,699.4	1,699.3	3.7	3.6	148.20	-3.1	29.0	45.4	38.1	7.32	6.207	
1,800.0	1,798.9	1,798.5	1,798.3	4.0	3.8	158.03	-6.9	27.1	54.5	46.8	7.71	7.065	
1,824.5	1,823.2	1,822.6	1,822.5	4.0	3.9	160.29	-8.1	26.4	57.2	49.4	7.81	7.326	
1,900.0	1,898.3	1,897.1	1,896.7	4.2	4.0	166.61	-12.2	24.3	66.5	58.4	8.12	8.187	
2,000.0	1,997.7	1,995.2	1,994.6	4.5	4.2	173.57	-19.0	20.8	80.3	71.8	8.54	9.403	
2,100.0	2,097.1	2,092.8	2,091.8	4.7	4.4	179.29	-27.2	16.5	95.9	86.9	8.97	10.687	
2,200.0	2,196.5	2,189.9	2,188.2	5.0	4.6	-175.93	-36.8	11.5	113.2	103.7	9.41	12.022	
2,300.0	2,295.9	2,286.4	2,283.9	5.3	4.8	-171.90	-47.8	5.8	132.1	122.2	9.86	13.395	
2,400.0	2,395.3	2,383.9	2,380.5	5.5	5.1	-168.58	-59.8	-0.5	152.2	141.9	10.32	14.750	
2,500.0	2,494.8	2,481.5	2,477.2	5.8	5.3	-166.03	-71.7	-6.7	172.7	161.9	10.78	16.017	
2,600.0	2,594.2	2,579.1	2,573.9	6.1	5.6	-164.02	-83.7	-13.0	193.4	182.2	11.25	17.199	
2,700.0	2,693.6	2,676.8	2,670.5	6.4	5.9	-162.40	-95.7	-19.2	214.4	202.6	11.72	18.296	
2,800.0	2,793.0	2,774.4	2,767.2	6.6	6.2	-161.07	-107.7	-25.4	235.4	223.2	12.19	19.314	
2,900.0	2,892.4	2,872.0	2,863.9	6.9	6.5	-159.95	-119.7	-31.7	256.6	243.9	12.67	20.260	
3,000.0	2,991.8	2,969.6	2,960.6	7.2	6.8	-159.01	-131.7	-37.9	277.8	264.7	13.14	21.138	
3,100.0	3,091.2	3,067.2	3,057.3	7.5	7.1	-158.20	-143.7	-44.2	299.2	285.5	13.63	21.956	
3,200.0	3,190.6	3,164.9	3,153.9	7.8	7.4	-157.50	-155.6	-50.4	320.5	306.4	14.11	22.717	
3,300.0	3,290.0	3,262.5	3,250.6	8.1	7.7	-156.89	-167.6	-56.7	341.9	327.3	14.59	23.428	
3,400.0	3,389.4	3,360.1	3,347.3	8.4	8.0	-156.35	-179.6	-62.9	363.4	348.3	15.08	24.093	
3,500.0	3,488.8	3,457.7	3,444.0	8.7	8.3	-155.86	-191.6	-69.1	384.8	369.2	15.57	24.715	
3,600.0	3,588.2	3,555.4	3,540.7	8.9	8.6	-155.43	-203.6	-75.4	406.3	390.2	16.06	25.298	
3,700.0	3,687.6	3,653.0	3,637.4	9.2	8.9	-155.05	-215.6	-81.6	427.8	411.2	16.55	25.846	
3,800.0	3,787.0	3,750.6	3,734.0	9.5	9.2	-154.70	-227.5	-87.9	449.3	432.3	17.04	26.362	
3,900.0	3,886.4	3,848.2	3,830.7	9.8	9.5	-154.38	-239.5	-94.1	470.9	453.3	17.54	26.847	
4,000.0	3,985.9	3,945.8	3,927.4	10.1	9.9	-154.09	-251.5	-100.3	492.4	474.4	18.03	27.305	
4,100.0	4,085.3	4,043.5	4,024.1	10.4	10.2	-153.82	-263.5	-106.6	514.0	495.4	18.53	27.738	
4,200.0	4,184.7	4,141.1	4,120.8	10.7	10.5	-153.58	-275.5	-112.8	535.5	516.5	19.03	28.147	
4,300.0	4,284.1	4,238.7	4,217.4	11.0	10.8	-153.35	-287.5	-119.1	557.1	537.6	19.52	28.535	
4,400.0	4,383.5	4,336.3	4,314.1	11.3	11.2	-153.14	-299.5	-125.3	578.7	558.7	20.02	28.903	
4,500.0	4,482.9	4,434.0	4,410.8	11.6	11.5	-152.95	-311.4	-131.6	600.3	579.8	20.52	29.252	
4,600.0	4,582.3	4,531.6	4,507.5	11.9	11.8	-152.77	-323.4	-137.8	621.9	600.9	21.02	29.584	
4,700.0	4,681.7	4,629.2	4,604.2	12.2	12.1	-152.60	-335.4	-144.0	643.5	622.0	21.52	29.899	
4,800.0	4,781.1	4,726.8	4,700.9	12.5	12.5	-152.44	-347.4	-150.3	665.1	643.1	22.02	30.200	
4,907.9	4,888.4	4,832.2	4,805.2	12.8	12.8	-152.28	-360.3	-157.0	688.4	665.8	22.56	30.510	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-202 - Wellbore #1 - Plan #3 (7-14-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (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		
5,000.0	4,980.1	4,922.3	4,894.5	13.0	13.1	-152.28	-371.4	-162.8	707.0	684.0	23.05	30.677		
5,100.0	5,079.9	5,020.7	4,991.9	13.2	13.5	-152.12	-383.5	-169.1	724.4	700.8	23.51	30.804		
5,200.0	5,179.9	5,145.1	5,115.4	13.4	13.8	-151.79	-396.8	-176.0	737.2	713.2	23.98	30.741		
5,220.1	5,200.0	5,171.0	5,141.2	13.4	13.9	179.14	-399.0	-177.1	738.9	712.6	26.31	28.087		
5,300.0	5,279.8	5,274.2	5,244.1	13.5	14.1	179.42	-405.6	-180.6	744.0	717.3	26.66	27.905		
5,400.0	5,379.8	5,404.0	5,373.8	13.7	14.3	179.57	-409.3	-182.5	746.8	719.7	27.09	27.567		
5,500.0	5,479.8	5,510.0	5,479.8	13.9	14.5	179.57	-409.4	-182.6	746.9	719.4	27.46	27.195		
5,600.0	5,579.8	5,610.0	5,579.8	14.1	14.6	179.57	-409.4	-182.6	746.9	719.1	27.82	26.846		
5,700.0	5,679.8	5,710.0	5,679.8	14.3	14.8	179.57	-409.4	-182.6	746.9	718.7	28.18	26.504		
5,800.0	5,779.8	5,810.0	5,779.8	14.5	15.0	179.57	-409.4	-182.6	746.9	718.3	28.54	26.168		
5,900.0	5,879.8	5,910.0	5,879.8	14.7	15.1	179.57	-409.4	-182.6	746.9	718.0	28.91	25.838		
5,979.2	5,959.0	5,989.2	5,959.0	14.9	15.2	179.57	-409.4	-182.6	746.9	717.7	29.20	25.582		
6,000.0	5,979.8	6,009.9	5,979.7	14.9	15.3	89.57	-409.4	-182.3	746.9	719.6	27.26	27.394		
6,050.0	6,029.7	6,059.5	6,029.2	15.0	15.3	89.57	-409.4	-179.3	746.9	719.5	27.42	27.236		
6,100.0	6,079.3	6,109.2	6,078.5	15.0	15.4	89.58	-409.4	-173.2	746.9	719.3	27.56	27.102		
6,150.0	6,128.4	6,158.8	6,127.2	15.1	15.5	89.58	-409.4	-163.8	746.9	719.2	27.67	26.990		
6,200.0	6,176.8	6,208.4	6,175.3	15.1	15.5	89.59	-409.4	-151.3	746.9	719.1	27.77	26.893		
6,250.0	6,224.2	6,258.1	6,222.4	15.2	15.5	89.60	-409.4	-135.7	746.9	719.0	27.86	26.804		
6,300.0	6,270.5	6,307.8	6,268.4	15.2	15.5	89.61	-409.4	-117.1	746.9	718.9	27.96	26.714		
6,350.0	6,315.5	6,357.4	6,313.2	15.2	15.6	89.62	-409.4	-95.5	746.9	718.8	28.07	26.612		
6,400.0	6,358.9	6,407.1	6,356.4	15.3	15.6	89.63	-409.4	-71.1	746.9	718.7	28.20	26.484		
6,450.0	6,400.6	6,456.8	6,398.0	15.3	15.6	89.65	-409.4	-43.9	746.9	718.5	28.38	26.315		
6,500.0	6,440.4	6,506.5	6,437.7	15.3	15.6	89.67	-409.4	-14.0	746.9	718.2	28.63	26.089		
6,550.0	6,478.2	6,556.2	6,475.4	15.3	15.6	89.68	-409.4	18.4	746.9	717.9	28.96	25.792		
6,600.0	6,513.7	6,606.0	6,511.0	15.4	15.6	89.70	-409.4	53.2	746.9	717.5	29.39	25.409		
6,650.0	6,546.9	6,655.7	6,544.2	15.5	15.7	89.72	-409.4	90.2	746.9	716.9	29.95	24.933		
6,700.0	6,577.6	6,705.5	6,574.9	15.8	15.7	89.75	-409.4	129.4	746.9	716.2	30.66	24.361		
6,750.0	6,605.6	6,755.3	6,603.0	16.2	15.8	89.77	-409.4	170.4	746.9	715.3	31.52	23.697		
6,800.0	6,630.8	6,805.1	6,628.5	16.8	16.2	89.79	-409.4	213.3	746.9	714.3	32.54	22.952		
6,850.0	6,653.2	6,855.0	6,651.0	17.4	16.7	89.82	-409.4	257.7	746.9	713.1	33.73	22.141		
6,900.0	6,672.5	6,904.8	6,670.7	18.1	17.4	89.85	-409.4	303.5	746.9	711.8	35.09	21.285		
6,950.0	6,688.9	6,954.7	6,687.3	18.8	18.1	89.87	-409.4	350.5	746.9	710.3	36.60	20.404		
7,000.0	6,702.1	7,004.6	6,700.8	19.7	18.9	89.90	-409.4	398.5	746.9	708.6	38.26	19.519		
7,050.0	6,712.1	7,054.5	6,711.2	20.6	19.8	89.93	-409.4	447.4	746.9	706.8	40.05	18.646		
7,100.0	6,718.9	7,104.5	6,718.3	21.5	20.8	89.95	-409.4	496.8	746.9	704.9	41.96	17.801		
7,150.0	6,722.4	7,154.4	6,722.2	22.5	21.8	89.98	-409.4	546.6	746.9	702.9	43.95	16.995		
7,186.9	6,723.0	7,191.4	6,723.0	23.3	22.6	90.00	-409.4	583.5	746.9	701.4	45.47	16.427		
7,200.0	6,722.8	7,204.4	6,722.9	23.6	22.8	90.00	-409.4	596.6	746.9	700.8	46.01	16.232		
7,300.0	6,721.8	7,304.4	6,721.9	25.7	25.0	90.00	-409.4	696.6	746.9	696.5	50.35	14.834		
7,400.0	6,720.8	7,404.4	6,720.9	28.0	27.3	90.00	-409.4	796.6	746.9	691.9	54.91	13.601		
7,500.0	6,719.8	7,504.4	6,719.8	30.3	29.7	90.00	-409.4	896.6	746.9	687.2	59.66	12.518		
7,600.0	6,718.8	7,604.4	6,718.8	32.8	32.1	90.00	-409.4	996.6	746.9	682.3	64.55	11.570		
7,700.0	6,717.8	7,704.4	6,717.8	35.3	34.6	90.00	-409.4	1,096.6	746.9	677.3	69.55	10.739		
7,800.0	6,716.7	7,804.4	6,716.8	37.8	37.1	90.00	-409.4	1,196.6	746.9	672.2	74.63	10.007		
7,900.0	6,715.7	7,904.4	6,715.8	40.3	39.7	90.00	-409.4	1,296.6	746.9	667.1	79.79	9.360		
8,000.0	6,714.7	8,004.4	6,714.8	42.9	42.3	90.00	-409.4	1,396.5	746.9	661.8	85.01	8.786		
8,100.0	6,713.7	8,104.4	6,713.8	45.6	45.0	90.00	-409.4	1,496.5	746.9	656.6	90.27	8.273		
8,200.0	6,712.7	8,204.4	6,712.8	48.2	47.6	90.00	-409.4	1,596.5	746.9	651.3	95.58	7.814		
8,300.0	6,711.7	8,304.4	6,711.7	50.9	50.3	90.00	-409.4	1,696.5	746.9	645.9	100.92	7.401		
8,400.0	6,710.7	8,404.4	6,710.7	53.5	53.0	90.00	-409.4	1,796.5	746.9	640.6	106.29	7.027		
8,500.0	6,709.7	8,504.4	6,709.7	56.2	55.7	90.00	-409.4	1,896.5	746.9	635.2	111.68	6.688		

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-202 - Wellbore #1 - Plan #3 (7-14-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,600.0	6,708.7	8,604.4	6,708.7	58.9	58.4	90.00	-409.4	1,996.5	746.9	629.8	117.09	6.378	
8,700.0	6,707.6	8,704.4	6,707.7	61.6	61.1	90.00	-409.4	2,096.5	746.9	624.3	122.52	6.096	
8,800.0	6,706.6	8,804.4	6,706.7	64.4	63.8	90.00	-409.4	2,196.5	746.9	618.9	127.97	5.836	
8,900.0	6,705.6	8,904.4	6,705.7	67.1	66.5	90.00	-409.4	2,296.5	746.9	613.4	133.44	5.597	
9,000.0	6,704.6	9,004.4	6,704.7	69.8	69.3	90.00	-409.4	2,396.5	746.9	607.9	138.91	5.377	
9,100.0	6,703.6	9,104.4	6,703.6	72.6	72.0	90.00	-409.4	2,496.5	746.9	602.5	144.40	5.172	
9,200.0	6,702.6	9,204.4	6,702.6	75.3	74.8	90.00	-409.4	2,596.5	746.9	597.0	149.89	4.983	
9,300.0	6,701.6	9,304.4	6,701.6	78.1	77.5	90.00	-409.4	2,696.5	746.9	591.5	155.40	4.806	
9,400.0	6,700.6	9,404.4	6,700.6	80.8	80.3	90.00	-409.4	2,796.5	746.9	585.9	160.91	4.641	
9,500.0	6,699.5	9,504.4	6,699.6	83.6	83.0	90.00	-409.4	2,896.5	746.9	580.4	166.43	4.487	
9,600.0	6,698.5	9,604.4	6,698.6	86.3	85.8	90.00	-409.4	2,996.5	746.9	574.9	171.96	4.343	
9,700.0	6,697.5	9,704.4	6,697.6	89.1	88.6	90.00	-409.4	3,096.5	746.9	569.4	177.49	4.208	
9,800.0	6,696.5	9,804.4	6,696.6	91.8	91.3	90.00	-409.4	3,196.5	746.9	563.8	183.03	4.081	
9,900.0	6,695.5	9,904.4	6,695.6	94.6	94.1	90.00	-409.4	3,296.4	746.9	558.3	188.57	3.961	
10,000.0	6,694.5	10,004.4	6,694.5	97.4	96.9	90.00	-409.4	3,396.4	746.9	552.7	194.12	3.847	
10,100.0	6,693.5	10,104.4	6,693.5	100.2	99.6	90.00	-409.4	3,496.4	746.9	547.2	199.67	3.741	
10,200.0	6,692.5	10,204.4	6,692.5	102.9	102.4	90.00	-409.4	3,596.4	746.9	541.6	205.22	3.639	
10,300.0	6,691.4	10,304.4	6,691.5	105.7	105.2	90.00	-409.4	3,696.4	746.9	536.1	210.78	3.543	
10,400.0	6,690.4	10,404.4	6,690.5	108.5	108.0	90.00	-409.4	3,796.4	746.9	530.5	216.34	3.452	
10,500.0	6,689.4	10,504.4	6,689.5	111.3	110.8	90.00	-409.4	3,896.4	746.9	524.9	221.90	3.366	
10,600.0	6,688.4	10,604.4	6,688.5	114.0	113.5	90.00	-409.4	3,996.4	746.9	519.4	227.47	3.283	
10,700.0	6,687.4	10,704.4	6,687.5	116.8	116.3	90.00	-409.4	4,096.4	746.9	513.8	233.04	3.205	
10,800.0	6,686.4	10,804.4	6,686.4	119.6	119.1	90.00	-409.4	4,196.4	746.9	508.2	238.61	3.130	
10,900.0	6,685.4	10,904.4	6,685.4	122.4	121.9	90.00	-409.4	4,296.4	746.9	502.7	244.18	3.059	
11,000.0	6,684.4	11,004.4	6,684.4	125.2	124.7	90.00	-409.4	4,396.4	746.9	497.1	249.76	2.990	
11,100.0	6,683.3	11,104.4	6,683.4	128.0	127.5	90.00	-409.4	4,496.4	746.9	491.5	255.34	2.925	
11,200.0	6,682.3	11,204.4	6,682.4	130.8	130.3	90.00	-409.4	4,596.4	746.9	485.9	260.92	2.862	
11,300.0	6,681.3	11,304.4	6,681.4	133.6	133.0	90.00	-409.4	4,696.4	746.9	480.4	266.50	2.802	
11,400.0	6,680.3	11,404.4	6,680.4	136.3	135.8	90.00	-409.4	4,796.4	746.8	474.8	272.08	2.745	
11,500.0	6,679.3	11,504.4	6,679.4	139.1	138.6	90.00	-409.4	4,896.4	746.8	469.2	277.66	2.690	
11,600.0	6,678.3	11,604.4	6,678.3	141.9	141.4	90.00	-409.4	4,996.4	746.8	463.6	283.25	2.637	
11,700.0	6,677.3	11,704.4	6,677.3	144.7	144.2	90.00	-409.4	5,096.4	746.8	458.0	288.84	2.586	
11,800.0	6,676.3	11,804.4	6,676.3	147.5	147.0	90.00	-409.4	5,196.4	746.8	452.4	294.42	2.537	
11,900.0	6,675.2	11,904.4	6,675.3	150.3	149.8	90.00	-409.4	5,296.3	746.8	446.8	300.01	2.489	
12,000.0	6,674.2	12,004.4	6,674.3	153.1	152.6	90.00	-409.4	5,396.3	746.8	441.2	305.60	2.444	
12,100.0	6,673.2	12,104.4	6,673.3	155.9	155.4	90.00	-409.4	5,496.3	746.8	435.7	311.20	2.400	
12,200.0	6,672.2	12,204.4	6,672.3	158.7	158.2	90.00	-409.4	5,596.3	746.8	430.1	316.79	2.358	
12,300.0	6,671.2	12,304.4	6,671.3	161.5	161.0	90.00	-409.4	5,696.3	746.8	424.5	322.38	2.317	
12,400.0	6,670.2	12,404.4	6,670.2	164.3	163.8	90.00	-409.4	5,796.3	746.8	418.9	327.98	2.277	
12,500.0	6,669.2	12,504.4	6,669.2	167.1	166.6	90.00	-409.4	5,896.3	746.8	413.3	333.57	2.239	
12,600.0	6,668.2	12,604.4	6,668.2	169.9	169.4	90.00	-409.4	5,996.3	746.8	407.7	339.17	2.202	
12,700.0	6,667.1	12,704.4	6,667.2	172.7	172.2	90.00	-409.4	6,096.3	746.8	402.1	344.76	2.166	
12,800.0	6,666.1	12,804.4	6,666.2	175.5	175.0	90.00	-409.4	6,196.3	746.8	396.5	350.36	2.132	
12,900.0	6,665.1	12,904.4	6,665.2	178.3	177.8	90.00	-409.4	6,296.3	746.8	390.9	355.96	2.098	
13,000.0	6,664.1	13,004.4	6,664.2	181.1	180.6	90.00	-409.4	6,396.3	746.8	385.3	361.56	2.066	
13,100.0	6,663.1	13,104.4	6,663.2	183.9	183.4	90.00	-409.4	6,496.3	746.8	379.7	367.16	2.034	
13,200.0	6,662.1	13,204.4	6,662.1	186.7	186.2	90.00	-409.4	6,596.3	746.8	374.1	372.75	2.004	
13,300.0	6,661.1	13,304.4	6,661.1	189.5	189.0	90.00	-409.4	6,696.3	746.8	368.5	378.36	1.974	
13,400.0	6,660.1	13,404.4	6,660.1	192.3	191.8	90.00	-409.4	6,796.3	746.8	362.9	383.96	1.945	
13,500.0	6,659.0	13,504.4	6,659.1	195.1	194.6	90.00	-409.4	6,896.3	746.8	357.3	389.56	1.917	
13,600.0	6,658.0	13,604.4	6,658.1	197.9	197.4	90.00	-409.4	6,996.3	746.8	351.7	395.16	1.890	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (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	
13,700.0	6,657.0	13,704.4	6,657.1	200.7	200.2	90.00	-409.4	7,096.3	746.8	346.1	400.76	1.864	
13,800.0	6,656.0	13,804.4	6,656.1	203.5	203.0	90.00	-409.4	7,196.3	746.8	340.5	406.36	1.838	
13,900.0	6,655.0	13,904.4	6,655.1	206.3	205.8	90.00	-409.4	7,296.2	746.8	334.9	411.97	1.813	
14,000.0	6,654.0	14,004.4	6,654.0	209.1	208.6	90.00	-409.4	7,396.2	746.8	329.3	417.57	1.789	
14,100.0	6,653.0	14,104.4	6,653.0	211.9	211.4	90.00	-409.4	7,496.2	746.8	323.7	423.18	1.765	
14,200.0	6,652.0	14,204.4	6,652.0	214.7	214.2	90.00	-409.4	7,596.2	746.8	318.1	428.78	1.742	
14,300.0	6,651.0	14,304.4	6,651.0	217.5	217.0	90.00	-409.4	7,696.2	746.8	312.5	434.39	1.719	
14,400.0	6,649.9	14,404.4	6,650.0	220.3	219.8	90.00	-409.4	7,796.2	746.8	306.9	439.99	1.697	
14,500.0	6,648.9	14,504.4	6,649.0	223.1	222.6	90.00	-409.4	7,896.2	746.8	301.2	445.60	1.676	
14,600.0	6,647.9	14,604.4	6,648.0	225.9	225.4	90.00	-409.4	7,996.2	746.8	295.6	451.20	1.655	
14,700.0	6,646.9	14,704.4	6,647.0	228.7	228.2	90.00	-409.4	8,096.2	746.8	290.0	456.81	1.635	
14,800.0	6,645.9	14,804.4	6,645.9	231.5	231.0	90.00	-409.4	8,196.2	746.8	284.4	462.41	1.615	
14,900.0	6,644.9	14,904.4	6,644.9	234.3	233.8	90.00	-409.4	8,296.2	746.8	278.8	468.02	1.596	
15,000.0	6,643.9	15,004.4	6,643.9	237.1	236.6	90.00	-409.4	8,396.2	746.8	273.2	473.63	1.577	
15,100.0	6,642.9	15,104.4	6,642.9	239.9	239.4	90.00	-409.4	8,496.2	746.8	267.6	479.24	1.558	
15,200.0	6,641.8	15,204.4	6,641.9	242.7	242.2	90.00	-409.4	8,596.2	746.8	262.0	484.84	1.540	
15,300.0	6,640.8	15,304.4	6,640.9	245.5	245.0	90.00	-409.4	8,696.2	746.8	256.4	490.45	1.523	
15,400.0	6,639.8	15,404.4	6,639.9	248.3	247.8	90.00	-409.4	8,796.2	746.8	250.8	496.06	1.506	
15,500.0	6,638.8	15,504.4	6,638.9	251.1	250.6	90.00	-409.4	8,896.2	746.8	245.2	501.67	1.489 Level 3	
15,600.0	6,637.8	15,604.4	6,637.9	253.9	253.4	90.00	-409.4	8,996.2	746.8	239.6	507.28	1.472 Level 3	
15,700.0	6,636.8	15,704.4	6,636.8	256.7	256.2	90.00	-409.4	9,096.2	746.8	234.0	512.89	1.456 Level 3	
15,800.0	6,635.8	15,804.4	6,635.8	259.5	259.0	90.00	-409.4	9,196.1	746.8	228.3	518.50	1.440 Level 3	
15,900.0	6,634.8	15,904.4	6,634.8	262.3	261.8	90.00	-409.4	9,296.1	746.8	222.7	524.10	1.425 Level 3	
16,000.0	6,633.7	16,004.4	6,633.8	265.1	264.6	90.00	-409.4	9,396.1	746.8	217.1	529.71	1.410 Level 3	
16,100.0	6,632.7	16,104.4	6,632.8	267.9	267.5	90.00	-409.4	9,496.1	746.8	211.5	535.32	1.395 Level 3	
16,200.0	6,631.7	16,204.4	6,631.8	270.7	270.3	90.00	-409.4	9,596.1	746.8	205.9	540.93	1.381 Level 3	
16,300.0	6,630.7	16,304.4	6,630.8	273.5	273.1	90.00	-409.4	9,696.1	746.8	200.3	546.54	1.366 Level 3	
16,400.0	6,629.7	16,404.4	6,629.8	276.3	275.9	90.00	-409.4	9,796.1	746.8	194.7	552.15	1.353 Level 3	
16,500.0	6,628.7	16,504.4	6,628.7	279.1	278.7	90.00	-409.4	9,896.1	746.8	189.1	557.76	1.339 Level 3	
16,600.0	6,627.7	16,604.4	6,627.7	281.9	281.5	90.00	-409.4	9,996.1	746.8	183.5	563.38	1.326 Level 3	
16,700.0	6,626.7	16,704.4	6,626.7	284.8	284.3	90.00	-409.4	10,096.1	746.8	177.9	568.99	1.313 Level 3	
16,800.0	6,625.6	16,804.4	6,625.7	287.6	287.1	90.00	-409.4	10,196.1	746.8	172.2	574.60	1.300 Level 3	
16,900.0	6,624.6	16,904.4	6,624.7	290.4	289.9	90.00	-409.4	10,296.1	746.8	166.6	580.21	1.287 Level 3	
17,000.0	6,623.6	17,004.4	6,623.7	293.2	292.7	90.00	-409.4	10,396.1	746.8	161.0	585.82	1.275 Level 3	
17,100.0	6,622.6	17,104.4	6,622.7	296.0	295.5	90.00	-409.4	10,496.1	746.8	155.4	591.43	1.263 Level 3	
17,200.0	6,621.6	17,204.4	6,621.7	298.8	298.3	90.00	-409.4	10,596.1	746.8	149.8	597.04	1.251 Level 3	
17,258.8	6,621.0	17,263.3	6,621.1	300.4	300.0	90.00	-409.4	10,654.9	746.8	146.5	600.34	1.244 Level 2, SF	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-312 - Wellbore #1 - Plan #3 (7-14-15)												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	90.01	0.0	61.3	61.3				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	61.3	61.3	61.1	0.22	272.656	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	61.3	61.3	60.6	0.67	90.885	
300.0	300.0	300.0	300.0	0.6	0.6	90.01	0.0	61.3	61.3	60.2	1.12	54.531	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	61.3	61.3	59.7	1.57	38.951	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	61.3	61.3	59.3	2.02	30.295	
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	61.3	61.3	58.8	2.47	24.787	
700.0	700.0	700.0	700.0	1.5	1.5	90.01	0.0	61.3	61.3	58.4	2.92	20.974	
800.0	800.0	800.0	800.0	1.7	1.7	90.01	0.0	61.3	61.3	57.9	3.37	18.177	
900.0	900.0	900.0	900.0	1.9	1.9	90.01	0.0	61.3	61.3	57.5	3.82	16.039	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.01	0.0	61.3	61.3	57.0	4.27	14.350	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.01	0.0	61.3	61.3	56.6	4.72	12.984	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.01	0.0	61.3	61.3	56.1	5.17	11.855 CC	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	119.85	0.0	61.3	61.7	56.1	5.62	10.987	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	121.90	0.0	61.3	63.1	57.0	6.06	10.402	
1,500.0	1,499.9	1,499.9	1,499.9	3.3	3.3	125.12	0.0	61.3	65.5	59.0	6.51	10.061	
1,600.0	1,599.7	1,599.7	1,599.7	3.5	3.5	129.23	0.0	61.3	69.2	62.2	6.95	9.947	
1,700.0	1,699.4	1,699.4	1,699.4	3.7	3.7	133.87	0.0	61.3	74.4	67.0	7.40	10.053	
1,800.0	1,798.9	1,798.9	1,798.9	4.0	3.9	138.69	0.0	61.3	81.3	73.5	7.84	10.367	
1,824.5	1,823.2	1,823.2	1,823.2	4.0	4.0	139.86	0.0	61.3	83.3	75.4	7.95	10.475	
1,900.0	1,898.3	1,898.3	1,898.3	4.2	4.2	143.23	0.0	61.3	89.8	81.5	8.29	10.823	
2,000.0	1,997.7	1,997.7	1,997.7	4.5	4.4	147.01	0.0	61.3	98.7	90.0	8.75	11.287	
2,100.0	2,097.1	2,097.1	2,097.1	4.7	4.6	150.15	0.0	61.3	108.0	98.8	9.20	11.744	
2,200.0	2,196.5	2,196.5	2,196.5	5.0	4.8	152.78	0.0	61.3	117.6	107.9	9.65	12.185	
2,300.0	2,295.9	2,295.9	2,295.9	5.3	5.0	155.02	0.0	61.3	127.4	117.3	10.10	12.607	
2,400.0	2,395.3	2,395.3	2,395.3	5.5	5.3	156.94	0.0	61.3	137.3	126.8	10.56	13.008	
2,500.0	2,494.8	2,494.8	2,494.8	5.8	5.5	158.59	0.0	61.3	147.4	136.4	11.01	13.388	
2,600.0	2,594.2	2,595.5	2,595.5	6.1	5.7	160.30	-0.3	60.5	157.2	145.7	11.45	13.730	
2,700.0	2,693.6	2,696.4	2,696.3	6.4	5.9	162.34	-1.0	58.1	166.2	154.3	11.87	14.007	
2,800.0	2,793.0	2,797.2	2,797.0	6.6	6.1	164.69	-2.4	53.9	174.6	162.4	12.29	14.212	
2,900.0	2,892.4	2,897.9	2,897.6	6.9	6.3	167.31	-4.2	48.1	182.6	169.9	12.71	14.363	
3,000.0	2,991.8	2,998.4	2,997.8	7.2	6.5	170.20	-6.6	40.6	190.3	177.1	13.15	14.473	
3,100.0	3,091.2	3,098.7	3,097.6	7.5	6.7	173.34	-9.5	31.5	197.8	184.2	13.59	14.558	
3,200.0	3,190.6	3,198.7	3,197.0	7.8	6.9	176.69	-12.9	20.7	205.5	191.4	14.04	14.630	
3,300.0	3,290.0	3,298.1	3,295.5	8.1	7.2	-179.81	-16.8	8.6	213.4	198.9	14.52	14.704	
3,400.0	3,389.4	3,396.9	3,393.5	8.4	7.4	-176.52	-20.8	-3.8	222.1	207.1	15.00	14.807	
3,500.0	3,488.8	3,495.7	3,491.5	8.7	7.7	-173.49	-24.7	-16.1	231.5	216.0	15.50	14.935	
3,600.0	3,588.2	3,594.6	3,589.4	8.9	7.9	-170.69	-28.7	-28.5	241.4	225.4	16.01	15.082	
3,700.0	3,687.6	3,693.4	3,687.4	9.2	8.2	-168.12	-32.6	-40.9	251.9	235.4	16.53	15.243	
3,800.0	3,787.0	3,792.2	3,785.4	9.5	8.4	-165.76	-36.6	-53.2	262.9	245.8	17.05	15.415	
3,900.0	3,886.4	3,891.1	3,883.4	9.8	8.7	-163.58	-40.5	-65.6	274.3	256.7	17.59	15.595	
4,000.0	3,985.9	3,989.9	3,981.3	10.1	9.0	-161.58	-44.4	-77.9	286.0	267.9	18.13	15.778	
4,100.0	4,085.3	4,088.7	4,079.3	10.4	9.3	-159.74	-48.4	-90.3	298.0	279.4	18.67	15.965	
4,200.0	4,184.7	4,187.5	4,177.3	10.7	9.6	-158.04	-52.3	-102.7	310.4	291.2	19.21	16.153	
4,300.0	4,284.1	4,286.4	4,275.3	11.0	9.8	-156.47	-56.3	-115.0	322.9	303.2	19.76	16.340	
4,400.0	4,383.5	4,385.2	4,373.2	11.3	10.1	-155.02	-60.2	-127.4	335.8	315.4	20.32	16.526	
4,500.0	4,482.9	4,484.0	4,471.2	11.6	10.4	-153.68	-64.2	-139.7	348.8	327.9	20.87	16.710	
4,600.0	4,582.3	4,582.9	4,569.2	11.9	10.7	-152.43	-68.1	-152.1	361.9	340.5	21.43	16.891	
4,700.0	4,681.7	4,683.4	4,668.9	12.2	11.0	-151.31	-72.0	-164.3	375.2	353.2	21.98	17.072	
4,800.0	4,781.1	4,786.7	4,771.7	12.5	11.2	-150.67	-75.1	-173.9	387.6	365.1	22.47	17.246	
4,907.9	4,888.4	4,898.6	4,883.4	12.8	11.5	-150.61	-77.1	-180.4	399.8	376.8	22.98	17.396	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-312 - Wellbore #1 - Plan #3 (7-14-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor			
5,000.0	4,980.1	4,994.4	4,979.2	13.0	11.7	-150.99	-77.8	-182.5	407.9	384.6	23.39	17.440			
5,100.0	5,079.9	5,095.1	5,079.9	13.2	11.9	-151.44	-77.9	-182.6	413.2	389.4	23.76	17.387			
5,200.0	5,179.9	5,195.1	5,179.9	13.4	12.1	-151.62	-77.9	-182.6	415.3	391.2	24.12	17.217			
5,220.1	5,200.0	5,215.2	5,200.0	13.4	12.1	179.24	-77.9	-182.6	415.4	391.2	24.21	17.160			
5,300.0	5,279.8	5,295.1	5,279.8	13.5	12.3	179.24	-77.9	-182.6	415.4	390.9	24.52	16.944			
5,400.0	5,379.8	5,395.1	5,379.8	13.7	12.5	179.24	-77.9	-182.6	415.4	390.5	24.92	16.668			
5,500.0	5,479.8	5,495.1	5,479.8	13.9	12.7	179.24	-77.9	-182.6	415.4	390.1	25.33	16.399			
5,600.0	5,579.8	5,595.1	5,579.8	14.1	12.9	179.24	-77.9	-182.6	415.4	389.7	25.74	16.138			
5,700.0	5,679.8	5,695.1	5,679.8	14.3	13.1	179.24	-77.9	-182.6	415.4	389.2	26.15	15.885			
5,800.0	5,779.8	5,795.1	5,779.8	14.5	13.3	179.24	-77.9	-182.6	415.4	388.8	26.56	15.639			
5,900.0	5,879.8	5,895.1	5,879.8	14.7	13.5	179.24	-77.9	-182.6	415.4	388.4	26.97	15.399			
5,979.2	5,959.0	5,974.3	5,959.0	14.9	13.6	179.24	-77.9	-182.6	415.4	388.1	27.30	15.214			
6,000.0	5,979.8	5,995.1	5,979.8	14.9	13.7	89.28	-77.9	-182.6	415.4	388.0	27.41	15.154			
6,050.0	6,029.7	6,045.0	6,029.7	15.0	13.8	89.69	-77.9	-182.6	415.4	387.8	27.60	15.048			
6,072.6	6,052.2	6,067.4	6,052.2	15.0	13.8	90.00	-77.9	-182.5	415.4	387.7	27.68	15.005			
6,100.0	6,079.3	6,094.8	6,079.5	15.0	13.9	90.38	-77.9	-181.4	415.4	387.6	27.78	14.954			
6,150.0	6,128.4	6,144.9	6,129.4	15.1	13.9	91.08	-77.9	-177.0	415.4	387.5	27.92	14.877			
6,200.0	6,176.8	6,195.3	6,179.2	15.1	14.0	91.78	-77.9	-169.2	415.6	387.5	28.05	14.814			
6,250.0	6,224.2	6,246.1	6,228.7	15.2	14.1	92.47	-77.9	-158.1	415.7	387.6	28.17	14.760			
6,300.0	6,270.5	6,297.2	6,277.8	15.2	14.1	93.15	-77.9	-143.6	416.0	387.7	28.27	14.713			
6,350.0	6,315.5	6,348.7	6,326.0	15.2	14.1	93.82	-77.9	-125.7	416.3	387.9	28.38	14.667			
6,400.0	6,358.9	6,400.5	6,373.3	15.3	14.2	94.48	-77.9	-104.5	416.6	388.1	28.51	14.615			
6,450.0	6,400.6	6,452.7	6,419.3	15.3	14.2	95.11	-77.9	-79.9	417.0	388.4	28.66	14.550			
6,500.0	6,440.4	6,505.2	6,463.8	15.3	14.3	95.73	-77.9	-52.1	417.5	388.6	28.87	14.462			
6,550.0	6,478.2	6,558.0	6,506.6	15.3	14.4	96.32	-77.9	-21.0	417.9	388.8	29.14	14.342			
6,600.0	6,513.7	6,611.2	6,547.4	15.4	14.6	96.88	-77.9	13.1	418.4	388.9	29.51	14.180			
6,650.0	6,546.9	6,664.7	6,585.9	15.5	14.8	97.41	-77.9	50.2	418.9	388.9	29.99	13.968			
6,700.0	6,577.6	6,718.5	6,621.9	15.8	15.1	97.91	-77.9	90.2	419.4	388.8	30.61	13.702			
6,750.0	6,605.6	6,772.7	6,655.2	16.2	15.4	98.38	-77.9	132.8	419.8	388.5	31.38	13.379			
6,800.0	6,630.8	6,827.0	6,685.5	16.8	15.9	98.80	-77.9	177.9	420.3	388.0	32.33	13.002			
6,850.0	6,653.2	6,881.7	6,712.7	17.4	16.5	99.19	-77.9	225.3	420.8	387.3	33.45	12.578			
6,900.0	6,672.5	6,936.5	6,736.5	18.1	17.1	99.53	-77.9	274.7	421.2	386.4	34.76	12.118			
6,950.0	6,688.9	6,991.6	6,756.7	18.8	17.9	99.83	-77.9	325.9	421.5	385.3	36.24	11.631			
7,000.0	6,702.1	7,046.8	6,773.3	19.7	18.8	100.08	-77.9	378.6	421.9	384.0	37.89	11.133			
7,050.0	6,712.1	7,102.2	6,786.1	20.6	19.7	100.29	-77.9	432.5	422.1	382.4	39.70	10.633			
7,100.0	6,718.9	7,157.7	6,794.9	21.5	20.8	100.44	-77.9	487.3	422.4	380.7	41.64	10.143			
7,150.0	6,722.4	7,213.3	6,799.7	22.5	21.9	100.55	-77.9	542.7	422.5	378.8	43.69	9.671			
7,186.9	6,723.0	7,254.4	6,800.7	23.3	22.7	100.60	-77.9	583.8	422.6	377.3	45.26	9.337			
7,200.0	6,722.8	7,268.0	6,800.6	23.6	23.0	100.60	-77.9	597.3	422.6	376.8	45.80	9.226			
7,300.0	6,721.8	7,368.0	6,799.6	25.7	25.1	100.61	-77.9	697.3	422.6	372.5	50.04	8.444			
7,400.0	6,720.8	7,468.0	6,798.7	28.0	27.4	100.62	-77.9	797.3	422.6	368.1	54.50	7.753			
7,500.0	6,719.8	7,568.0	6,797.7	30.3	29.7	100.62	-77.9	897.3	422.6	363.4	59.14	7.145			
7,600.0	6,718.8	7,668.0	6,796.7	32.8	32.2	100.63	-77.9	997.3	422.6	358.7	63.93	6.611			
7,700.0	6,717.8	7,768.0	6,795.8	35.3	34.6	100.64	-77.9	1,097.3	422.6	353.8	68.82	6.140			
7,800.0	6,716.7	7,868.0	6,794.8	37.8	37.2	100.65	-77.9	1,197.3	422.6	348.8	73.81	5.726			
7,900.0	6,715.7	7,968.0	6,793.9	40.3	39.7	100.65	-77.9	1,297.3	422.6	343.8	78.87	5.359			
8,000.0	6,714.7	8,068.0	6,792.9	42.9	42.3	100.66	-77.9	1,397.3	422.6	338.7	83.98	5.032			
8,100.0	6,713.7	8,168.0	6,791.9	45.6	45.0	100.67	-77.9	1,497.3	422.6	333.5	89.15	4.741			
8,200.0	6,712.7	8,268.0	6,791.0	48.2	47.6	100.67	-77.9	1,597.3	422.7	328.3	94.36	4.479			
8,300.0	6,711.7	8,368.0	6,790.0	50.9	50.3	100.68	-77.9	1,697.3	422.7	323.1	99.60	4.244			
8,400.0	6,710.7	8,468.0	6,789.1	53.5	53.0	100.69	-77.9	1,797.3	422.7	317.8	104.87	4.030			

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-312 - Wellbore #1 - Plan #3 (7-14-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,500.0	6,709.7	8,568.0	6,788.1	56.2	55.7	100.69	-77.9	1,897.3	422.7	312.5	110.17	3.837	
8,600.0	6,708.7	8,668.0	6,787.1	58.9	58.4	100.70	-77.9	1,997.3	422.7	307.2	115.48	3.660	
8,700.0	6,707.6	8,768.0	6,786.2	61.6	61.1	100.71	-77.9	2,097.3	422.7	301.9	120.82	3.499	
8,800.0	6,706.6	8,868.0	6,785.2	64.4	63.8	100.72	-77.8	2,197.3	422.7	296.5	126.17	3.350	
8,900.0	6,705.6	8,968.0	6,784.3	67.1	66.5	100.72	-77.8	2,297.3	422.7	291.2	131.54	3.214	
9,000.0	6,704.6	9,068.0	6,783.3	69.8	69.3	100.73	-77.8	2,397.3	422.7	285.8	136.92	3.087	
9,100.0	6,703.6	9,168.0	6,782.3	72.6	72.0	100.74	-77.8	2,497.2	422.7	280.4	142.31	2.971	
9,200.0	6,702.6	9,268.0	6,781.4	75.3	74.7	100.74	-77.8	2,597.2	422.8	275.0	147.71	2.862	
9,300.0	6,701.6	9,368.0	6,780.4	78.1	77.5	100.75	-77.8	2,697.2	422.8	269.6	153.12	2.761	
9,400.0	6,700.6	9,468.0	6,779.5	80.8	80.2	100.76	-77.8	2,797.2	422.8	264.2	158.54	2.667	
9,500.0	6,699.5	9,568.0	6,778.5	83.6	83.0	100.76	-77.8	2,897.2	422.8	258.8	163.96	2.579	
9,600.0	6,698.5	9,668.0	6,777.5	86.3	85.8	100.77	-77.8	2,997.2	422.8	253.4	169.39	2.496	
9,700.0	6,697.5	9,768.0	6,776.6	89.1	88.5	100.78	-77.8	3,097.2	422.8	248.0	174.83	2.418	
9,800.0	6,696.5	9,868.0	6,775.6	91.8	91.3	100.79	-77.8	3,197.2	422.8	242.5	180.27	2.345	
9,900.0	6,695.5	9,968.0	6,774.7	94.6	94.1	100.79	-77.8	3,297.2	422.8	237.1	185.71	2.277	
10,000.0	6,694.5	10,068.0	6,773.7	97.4	96.8	100.80	-77.8	3,397.2	422.8	231.7	191.16	2.212	
10,100.0	6,693.5	10,168.0	6,772.7	100.2	99.6	100.81	-77.8	3,497.2	422.8	226.2	196.62	2.151	
10,200.0	6,692.5	10,268.0	6,771.8	102.9	102.4	100.81	-77.8	3,597.2	422.8	220.8	202.08	2.093	
10,300.0	6,691.4	10,368.0	6,770.8	105.7	105.2	100.82	-77.8	3,697.2	422.9	215.3	207.54	2.038	
10,400.0	6,690.4	10,468.0	6,769.9	108.5	107.9	100.83	-77.8	3,797.2	422.9	209.9	213.00	1.985	
10,500.0	6,689.4	10,568.0	6,768.9	111.3	110.7	100.83	-77.8	3,897.2	422.9	204.4	218.47	1.936	
10,600.0	6,688.4	10,668.0	6,767.9	114.0	113.5	100.84	-77.8	3,997.2	422.9	198.9	223.94	1.888	
10,700.0	6,687.4	10,768.0	6,767.0	116.8	116.3	100.85	-77.8	4,097.2	422.9	193.5	229.41	1.843	
10,800.0	6,686.4	10,868.0	6,766.0	119.6	119.1	100.85	-77.8	4,197.2	422.9	188.0	234.88	1.800	
10,900.0	6,685.4	10,968.0	6,765.1	122.4	121.9	100.86	-77.8	4,297.2	422.9	182.6	240.36	1.760	
11,000.0	6,684.4	11,068.0	6,764.1	125.2	124.7	100.87	-77.8	4,397.2	422.9	177.1	245.84	1.720	
11,100.0	6,683.3	11,168.0	6,763.1	128.0	127.4	100.88	-77.8	4,497.2	422.9	171.6	251.31	1.683	
11,200.0	6,682.3	11,268.0	6,762.2	130.8	130.2	100.88	-77.8	4,597.1	422.9	166.1	256.80	1.647	
11,300.0	6,681.3	11,368.0	6,761.2	133.6	133.0	100.89	-77.8	4,697.1	423.0	160.7	262.28	1.613	
11,400.0	6,680.3	11,468.0	6,760.3	136.3	135.8	100.90	-77.8	4,797.1	423.0	155.2	267.76	1.580	
11,500.0	6,679.3	11,568.0	6,759.3	139.1	138.6	100.90	-77.8	4,897.1	423.0	149.7	273.25	1.548	
11,600.0	6,678.3	11,668.0	6,758.3	141.9	141.4	100.91	-77.8	4,997.1	423.0	144.2	278.73	1.518	
11,700.0	6,677.3	11,768.0	6,757.4	144.7	144.2	100.92	-77.8	5,097.1	423.0	138.8	284.22	1.488 Level 3	
11,800.0	6,676.3	11,868.0	6,756.4	147.5	147.0	100.92	-77.8	5,197.1	423.0	133.3	289.71	1.460 Level 3	
11,900.0	6,675.2	11,968.0	6,755.5	150.3	149.8	100.93	-77.8	5,297.1	423.0	127.8	295.20	1.433 Level 3	
12,000.0	6,674.2	12,068.0	6,754.5	153.1	152.6	100.94	-77.8	5,397.1	423.0	122.3	300.69	1.407 Level 3	
12,100.0	6,673.2	12,168.0	6,753.5	155.9	155.4	100.95	-77.8	5,497.1	423.0	116.8	306.18	1.382 Level 3	
12,200.0	6,672.2	12,268.0	6,752.6	158.7	158.2	100.95	-77.8	5,597.1	423.0	111.4	311.67	1.357 Level 3	
12,300.0	6,671.2	12,368.0	6,751.6	161.5	161.0	100.96	-77.8	5,697.1	423.0	105.9	317.16	1.334 Level 3	
12,400.0	6,670.2	12,468.0	6,750.7	164.3	163.8	100.97	-77.8	5,797.1	423.1	100.4	322.66	1.311 Level 3	
12,500.0	6,669.2	12,568.0	6,749.7	167.1	166.6	100.97	-77.8	5,897.1	423.1	94.9	328.15	1.289 Level 3	
12,600.0	6,668.2	12,668.0	6,748.7	169.9	169.4	100.98	-77.8	5,997.1	423.1	89.4	333.65	1.268 Level 3	
12,700.0	6,667.1	12,768.0	6,747.8	172.7	172.1	100.99	-77.8	6,097.1	423.1	83.9	339.14	1.248 Level 2	
12,800.0	6,666.1	12,868.0	6,746.8	175.5	174.9	100.99	-77.8	6,197.1	423.1	78.5	344.64	1.228 Level 2	
12,900.0	6,665.1	12,968.0	6,745.9	178.3	177.7	101.00	-77.8	6,297.1	423.1	73.0	350.13	1.208 Level 2	
13,000.0	6,664.1	13,068.0	6,744.9	181.1	180.5	101.01	-77.8	6,397.1	423.1	67.5	355.63	1.190 Level 2	
13,100.0	6,663.1	13,168.0	6,743.9	183.9	183.3	101.02	-77.8	6,497.1	423.1	62.0	361.12	1.172 Level 2	
13,200.0	6,662.1	13,268.0	6,743.0	186.7	186.1	101.02	-77.8	6,597.1	423.1	56.5	366.62	1.154 Level 2	
13,300.0	6,661.1	13,368.0	6,742.0	189.5	188.9	101.03	-77.8	6,697.1	423.1	51.0	372.12	1.137 Level 2	
13,400.0	6,660.1	13,468.0	6,741.1	192.3	191.7	101.04	-77.8	6,797.0	423.2	45.5	377.62	1.121 Level 2	
13,500.0	6,659.0	13,568.0	6,740.1	195.1	194.5	101.04	-77.8	6,897.0	423.2	40.0	383.11	1.105 Level 2	

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-312 - Wellbore #1 - Plan #3 (7-14-15)													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	
13,600.0	6,658.0	13,668.0	6,739.1	197.9	197.3	101.05	-77.8	6,997.0	423.2	34.6	388.61	1.089	Level 2	
13,700.0	6,657.0	13,768.0	6,738.2	200.7	200.1	101.06	-77.8	7,097.0	423.2	29.1	394.11	1.074	Level 2	
13,800.0	6,656.0	13,868.0	6,737.2	203.5	202.9	101.06	-77.8	7,197.0	423.2	23.6	399.61	1.059	Level 2	
13,900.0	6,655.0	13,968.0	6,736.3	206.3	205.7	101.07	-77.8	7,297.0	423.2	18.1	405.11	1.045	Level 2	
14,000.0	6,654.0	14,068.0	6,735.3	209.1	208.5	101.08	-77.8	7,397.0	423.2	12.6	410.61	1.031	Level 2	
14,100.0	6,653.0	14,168.0	6,734.3	211.9	211.4	101.09	-77.8	7,497.0	423.2	7.1	416.11	1.017	Level 2	
14,200.0	6,652.0	14,268.0	6,733.4	214.7	214.2	101.09	-77.8	7,597.0	423.2	1.6	421.61	1.004	Level 2	
14,300.0	6,651.0	14,368.0	6,732.4	217.5	217.0	101.10	-77.8	7,697.0	423.2	-3.9	427.11	0.991	Level 1	
14,400.0	6,649.9	14,468.0	6,731.5	220.3	219.8	101.11	-77.8	7,797.0	423.3	-9.4	432.61	0.978	Level 1	
14,500.0	6,648.9	14,568.0	6,730.5	223.1	222.6	101.11	-77.8	7,897.0	423.3	-14.8	438.11	0.966	Level 1	
14,600.0	6,647.9	14,668.0	6,729.5	225.9	225.4	101.12	-77.8	7,997.0	423.3	-20.3	443.61	0.954	Level 1	
14,700.0	6,646.9	14,768.0	6,728.6	228.7	228.2	101.13	-77.8	8,097.0	423.3	-25.8	449.11	0.942	Level 1	
14,800.0	6,645.9	14,868.0	6,727.6	231.5	231.0	101.13	-77.8	8,197.0	423.3	-31.3	454.61	0.931	Level 1	
14,900.0	6,644.9	14,968.0	6,726.7	234.3	233.8	101.14	-77.8	8,297.0	423.3	-36.8	460.11	0.920	Level 1	
15,000.0	6,643.9	15,068.0	6,725.7	237.1	236.6	101.15	-77.8	8,397.0	423.3	-42.3	465.61	0.909	Level 1	
15,100.0	6,642.9	15,168.0	6,724.7	239.9	239.4	101.15	-77.8	8,497.0	423.3	-47.8	471.11	0.899	Level 1	
15,200.0	6,641.8	15,268.0	6,723.8	242.7	242.2	101.16	-77.8	8,597.0	423.3	-53.3	476.61	0.888	Level 1	
15,300.0	6,640.8	15,368.0	6,722.8	245.5	245.0	101.17	-77.8	8,697.0	423.3	-58.8	482.11	0.878	Level 1	
15,400.0	6,639.8	15,468.0	6,721.9	248.3	247.8	101.18	-77.8	8,797.0	423.3	-64.3	487.61	0.868	Level 1	
15,500.0	6,638.8	15,568.0	6,720.9	251.1	250.6	101.18	-77.8	8,897.0	423.4	-69.8	493.11	0.859	Level 1	
15,600.0	6,637.8	15,668.0	6,719.9	253.9	253.4	101.19	-77.8	8,996.9	423.4	-75.2	498.61	0.849	Level 1	
15,700.0	6,636.8	15,768.0	6,719.0	256.7	256.2	101.20	-77.8	9,096.9	423.4	-80.7	504.11	0.840	Level 1	
15,800.0	6,635.8	15,868.0	6,718.0	259.5	259.0	101.20	-77.8	9,196.9	423.4	-86.2	509.61	0.831	Level 1	
15,900.0	6,634.8	15,968.0	6,717.1	262.3	261.8	101.21	-77.8	9,296.9	423.4	-91.7	515.11	0.822	Level 1	
16,000.0	6,633.7	16,068.0	6,716.1	265.1	264.6	101.22	-77.8	9,396.9	423.4	-97.2	520.61	0.813	Level 1	
16,100.0	6,632.7	16,168.0	6,715.1	267.9	267.4	101.22	-77.8	9,496.9	423.4	-102.7	526.11	0.805	Level 1	
16,200.0	6,631.7	16,268.0	6,714.2	270.7	270.2	101.23	-77.8	9,596.9	423.4	-108.2	531.61	0.796	Level 1	
16,300.0	6,630.7	16,368.0	6,713.2	273.5	273.0	101.24	-77.8	9,696.9	423.4	-113.7	537.11	0.788	Level 1	
16,400.0	6,629.7	16,468.0	6,712.3	276.3	275.8	101.25	-77.8	9,796.9	423.4	-119.2	542.61	0.780	Level 1	
16,500.0	6,628.7	16,568.0	6,711.3	279.1	278.6	101.25	-77.8	9,896.9	423.5	-124.7	548.11	0.773	Level 1	
16,600.0	6,627.7	16,668.0	6,710.3	281.9	281.4	101.26	-77.8	9,996.9	423.5	-130.1	553.61	0.765	Level 1	
16,700.0	6,626.7	16,768.0	6,709.4	284.8	284.3	101.27	-77.8	10,096.9	423.5	-135.6	559.11	0.757	Level 1	
16,800.0	6,625.6	16,868.0	6,708.4	287.6	287.1	101.27	-77.8	10,196.9	423.5	-141.1	564.61	0.750	Level 1	
16,900.0	6,624.6	16,968.0	6,707.5	290.4	289.9	101.28	-77.8	10,296.9	423.5	-146.6	570.11	0.743	Level 1	
17,000.0	6,623.6	17,068.0	6,706.5	293.2	292.7	101.29	-77.8	10,396.9	423.5	-152.1	575.61	0.736	Level 1	
17,100.0	6,622.6	17,168.0	6,705.5	296.0	295.5	101.29	-77.8	10,496.9	423.5	-157.6	581.11	0.729	Level 1	
17,200.0	6,621.6	17,268.0	6,704.6	298.8	298.3	101.30	-77.8	10,596.9	423.5	-163.1	586.61	0.722	Level 1	
17,258.8	6,621.0	17,326.8	6,704.0	300.4	299.9	101.30	-77.8	10,655.7	423.5	-166.3	589.84	0.718	Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4641.0ft (RKB - 13')

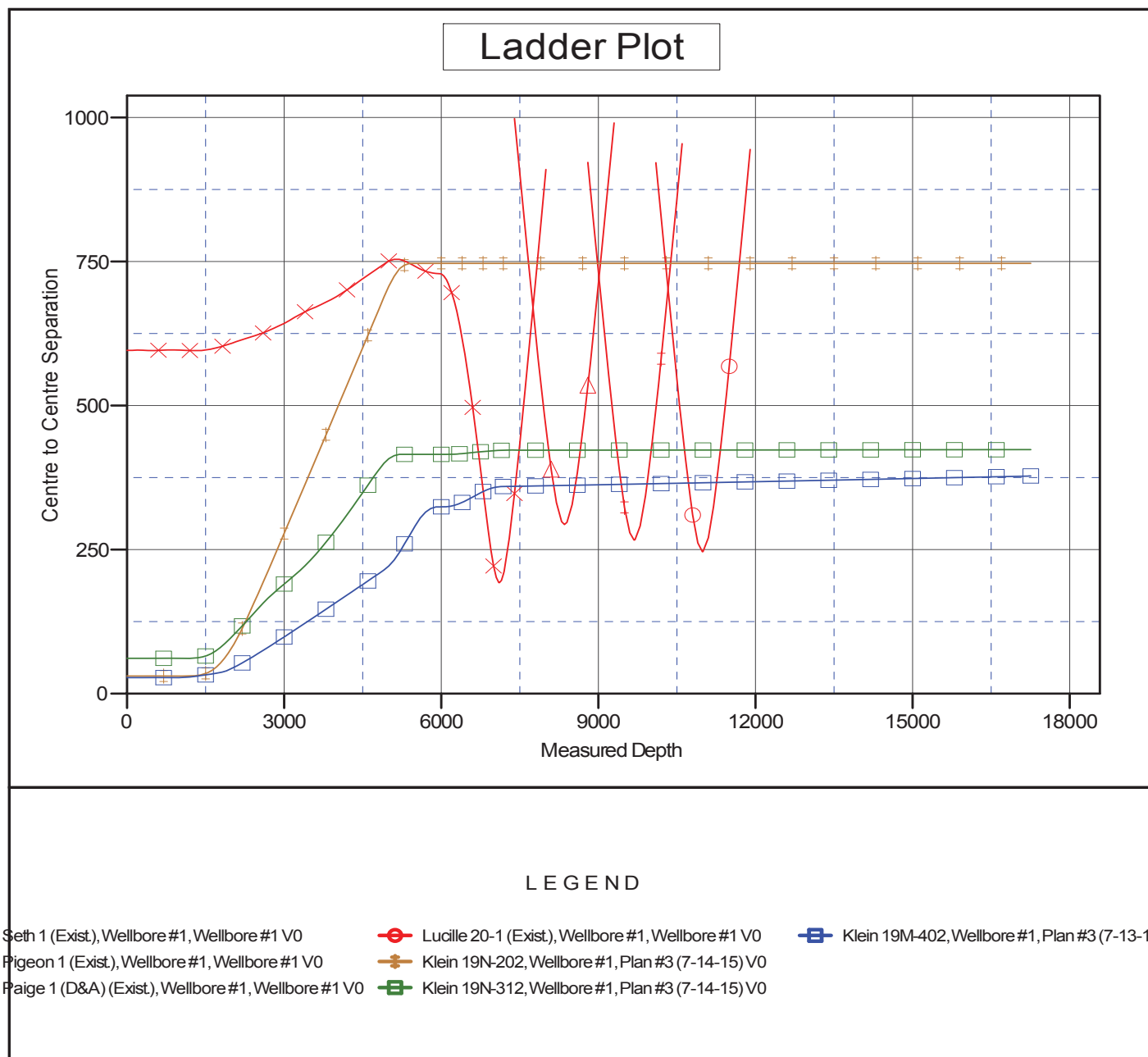
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Klein 19M-232

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 19M-232
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4641.0ft (RKB - 13')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #3 (7-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4641.0ft (RKB - 13')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Klein 19M-232

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°

