

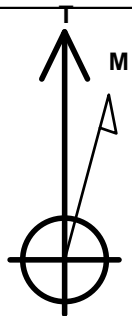
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Klein 19P-402**

Surface Location: Klein 19O-HZ Pad Sec.19-T5N-R64W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4626.0
 +N/-S 0.0 +E/-W 0.0 Northing 1384451.00 Easting 3253111.05 Latitude 40.385160 Longitude -104.591380 Slot
 RKB - 15' WELL @ 4641.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2449'FNL & 2250'FEL, Sec.19	1.0	0.0	0.0	Point
BHL 1395'FSL & 500'FEL, Sec.20	6847.0	-1390.6	7037.4	Point



Azimuths to True North
 Magnetic North: 8.40°

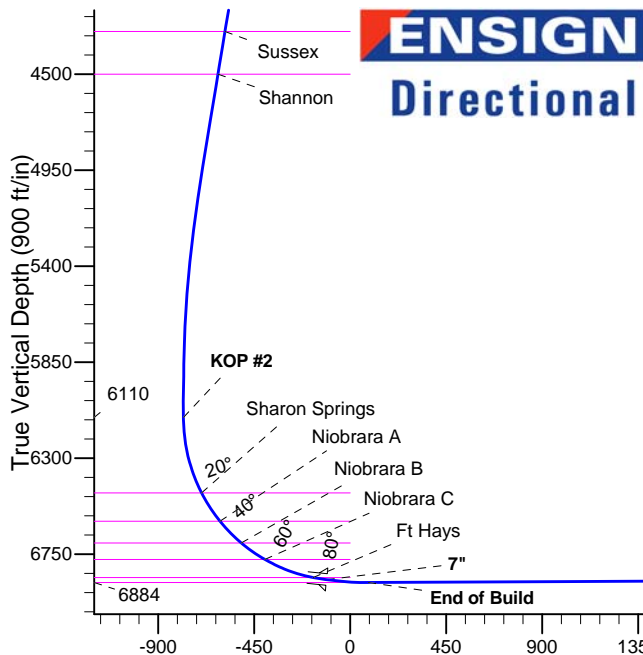
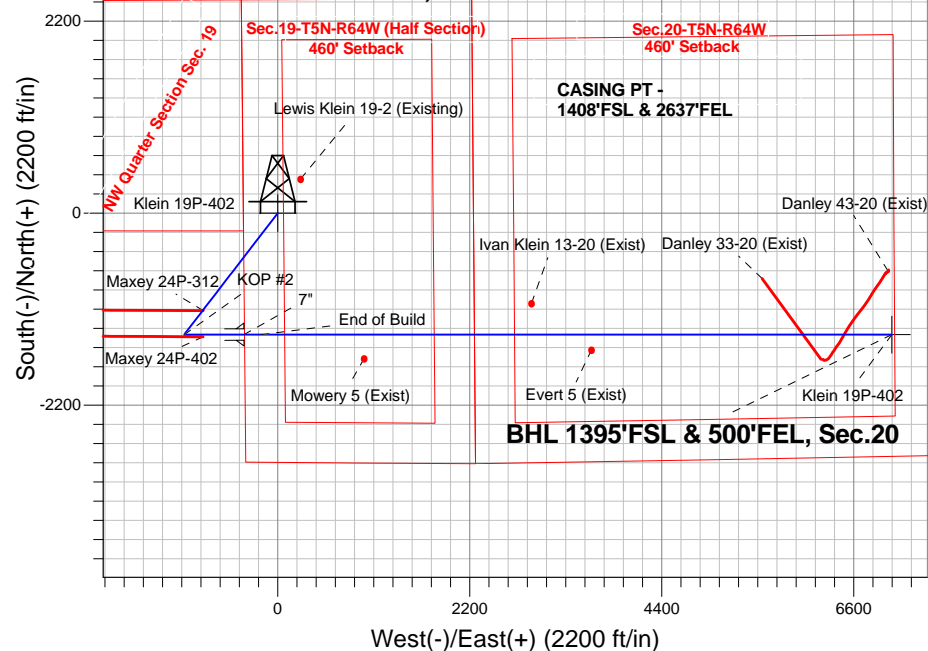
Magnetic Field
 Strength: 52854.9nT
 Dip Angle: 66.97°
 Date: 3/11/2014
 Model: IGRF2010

Klein 19O-HZ Pad Sec.19-T5N-R64W
 Klein 19P-402
 Plan #1 (3-05-14)
 10:00, March 17 2014

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6109.8	6400.7	KOP #2
6883.6	7720.6	End of Build

SHL 2449'FNL & 2250'FEL, Sec.19



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1207.9	20.16	217.60	1187.2	-139.0	-107.1	2.00	217.60	-78.1	
4	5283.1	20.16	217.60	5012.8	-1251.6	-963.9	0.00	0.00	-703.0	
5	6290.9	0.00	0.00	6000.0	-1390.7	-1071.0	2.00	180.00	-781.1	
6	6400.7	0.00	0.00	6109.8	-1390.7	-1071.0	0.00	0.00	-781.1	
7	7520.8	84.00	90.00	6869.6	-1390.7	-386.9	7.50	90.00	-110.0	
8	7594.8	84.00	90.00	6877.3	-1390.7	-313.3	0.00	0.00	-37.8	
9	7720.6	90.29	90.00	6883.6	-1390.7	-187.7	5.00	0.00	85.4	
10	14945.8	90.29	90.00	6847.0	-1390.6	7037.4	0.00	0.00	7173.5	BHL 1395'FSL & 500'FEL, Sec.20

BHL 1395'FSL & 500'FEL, Sec.20

Vertical Section at 101.18° (900 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

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

Klein 19P-402

Wellbore #1

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

Standard Planning Report

14 March, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Klein 19P-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-05-14)		

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

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

Well	Klein 19P-402		
Well Position	+N/-S	-91.1 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			ft
			Latitude:
			40.385160
			Longitude:
			-104.591380
			Ground Level:
			4,626.0 ft

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

Design	Plan #1 (3-05-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	101.18

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,207.9	20.16	217.60	1,187.2	-139.0	-107.1	2.00	2.00	0.00	217.60	
5,283.1	20.16	217.60	5,012.8	-1,251.6	-963.9	0.00	0.00	0.00	0.00	
6,290.9	0.00	0.00	6,000.0	-1,390.7	-1,071.0	2.00	-2.00	0.00	180.00	
6,400.7	0.00	0.00	6,109.8	-1,390.7	-1,071.0	0.00	0.00	0.00	0.00	
7,520.8	84.00	90.00	6,869.6	-1,390.7	-386.9	7.50	7.50	0.00	90.00	
7,594.8	84.00	90.00	6,877.3	-1,390.7	-313.3	0.00	0.00	0.00	0.00	
7,720.6	90.29	90.00	6,883.6	-1,390.7	-187.7	5.00	5.00	0.00	0.00	
14,945.8	90.29	90.00	6,847.0	-1,390.6	7,037.4	0.00	0.00	0.00	0.00	BHL 1395'FSL & 5C

Database:	landmark	Local Co-ordinate Reference:	Well Klein 19P-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-05-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 2449'FNL & 2250'FEL, Sec.19									
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
KOP #1									
300.0	2.00	217.60	300.0	-1.4	-1.1	-0.8	2.00	2.00	0.00
400.0	4.00	217.60	399.8	-5.5	-4.3	-3.1	2.00	2.00	0.00
500.0	6.00	217.60	499.5	-12.4	-9.6	-7.0	2.00	2.00	0.00
600.0	8.00	217.60	598.7	-22.1	-17.0	-12.4	2.00	2.00	0.00
700.0	10.00	217.60	697.5	-34.5	-26.6	-19.4	2.00	2.00	0.00
800.0	12.00	217.60	795.6	-49.6	-38.2	-27.9	2.00	2.00	0.00
900.0	14.00	217.60	893.1	-67.4	-51.9	-37.9	2.00	2.00	0.00
1,000.0	16.00	217.60	989.6	-87.9	-67.7	-49.4	2.00	2.00	0.00
1,100.0	18.00	217.60	1,085.3	-111.1	-85.6	-62.4	2.00	2.00	0.00
1,200.0	20.00	217.60	1,179.8	-136.9	-105.4	-76.9	2.00	2.00	0.00
1,207.9	20.16	217.60	1,187.2	-139.0	-107.1	-78.1	2.00	2.00	0.00
1,300.0	20.16	217.60	1,273.7	-164.2	-126.4	-92.2	0.00	0.00	0.00
1,400.0	20.16	217.60	1,367.6	-191.5	-147.5	-107.5	0.00	0.00	0.00
1,500.0	20.16	217.60	1,461.4	-218.8	-168.5	-122.9	0.00	0.00	0.00
1,600.0	20.16	217.60	1,555.3	-246.1	-189.5	-138.2	0.00	0.00	0.00
1,700.0	20.16	217.60	1,649.2	-273.4	-210.5	-153.6	0.00	0.00	0.00
1,800.0	20.16	217.60	1,743.1	-300.7	-231.6	-168.9	0.00	0.00	0.00
1,900.0	20.16	217.60	1,836.9	-328.0	-252.6	-184.2	0.00	0.00	0.00
2,000.0	20.16	217.60	1,930.8	-355.3	-273.6	-199.6	0.00	0.00	0.00
2,100.0	20.16	217.60	2,024.7	-382.6	-294.6	-214.9	0.00	0.00	0.00
2,200.0	20.16	217.60	2,118.6	-409.9	-315.7	-230.2	0.00	0.00	0.00
2,300.0	20.16	217.60	2,212.4	-437.2	-336.7	-245.6	0.00	0.00	0.00
2,400.0	20.16	217.60	2,306.3	-464.5	-357.7	-260.9	0.00	0.00	0.00
2,500.0	20.16	217.60	2,400.2	-491.8	-378.8	-276.2	0.00	0.00	0.00
2,600.0	20.16	217.60	2,494.1	-519.1	-399.8	-291.6	0.00	0.00	0.00
2,700.0	20.16	217.60	2,587.9	-546.4	-420.8	-306.9	0.00	0.00	0.00
2,800.0	20.16	217.60	2,681.8	-573.7	-441.8	-322.2	0.00	0.00	0.00
2,900.0	20.16	217.60	2,775.7	-601.0	-462.9	-337.6	0.00	0.00	0.00
3,000.0	20.16	217.60	2,869.6	-628.3	-483.9	-352.9	0.00	0.00	0.00
3,100.0	20.16	217.60	2,963.4	-655.6	-504.9	-368.2	0.00	0.00	0.00
3,200.0	20.16	217.60	3,057.3	-682.9	-525.9	-383.6	0.00	0.00	0.00
3,300.0	20.16	217.60	3,151.2	-710.2	-547.0	-398.9	0.00	0.00	0.00
3,400.0	20.16	217.60	3,245.1	-737.5	-568.0	-414.2	0.00	0.00	0.00
3,500.0	20.16	217.60	3,338.9	-764.8	-589.0	-429.6	0.00	0.00	0.00
3,600.0	20.16	217.60	3,432.8	-792.1	-610.0	-444.9	0.00	0.00	0.00
3,700.0	20.16	217.60	3,526.7	-819.4	-631.1	-460.2	0.00	0.00	0.00
3,724.8	20.16	217.60	3,550.0	-826.2	-636.3	-464.1	0.00	0.00	0.00
Parkman									
3,800.0	20.16	217.60	3,620.6	-846.7	-652.1	-475.6	0.00	0.00	0.00
3,900.0	20.16	217.60	3,714.4	-874.0	-673.1	-490.9	0.00	0.00	0.00
4,000.0	20.16	217.60	3,808.3	-901.3	-694.2	-506.3	0.00	0.00	0.00
4,100.0	20.16	217.60	3,902.2	-928.6	-715.2	-521.6	0.00	0.00	0.00
4,200.0	20.16	217.60	3,996.1	-955.9	-736.2	-536.9	0.00	0.00	0.00
4,300.0	20.16	217.60	4,089.9	-983.2	-757.2	-552.3	0.00	0.00	0.00
4,400.0	20.16	217.60	4,183.8	-1,010.5	-778.3	-567.6	0.00	0.00	0.00
4,500.0	20.16	217.60	4,277.7	-1,037.8	-799.3	-582.9	0.00	0.00	0.00
4,523.8	20.16	217.60	4,300.0	-1,044.3	-804.3	-586.6	0.00	0.00	0.00

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Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-05-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Sussex									
4,600.0	20.16	217.60	4,371.6	-1,065.1	-820.3	-598.3	0.00	0.00	0.00
4,700.0	20.16	217.60	4,465.4	-1,092.4	-841.3	-613.6	0.00	0.00	0.00
4,736.8	20.16	217.60	4,500.0	-1,102.5	-849.1	-619.2	0.00	0.00	0.00
Shannon									
4,800.0	20.16	217.60	4,559.3	-1,119.7	-862.4	-628.9	0.00	0.00	0.00
4,900.0	20.16	217.60	4,653.2	-1,147.0	-883.4	-644.3	0.00	0.00	0.00
5,000.0	20.16	217.60	4,747.1	-1,174.4	-904.4	-659.6	0.00	0.00	0.00
5,100.0	20.16	217.60	4,840.9	-1,201.7	-925.4	-674.9	0.00	0.00	0.00
5,200.0	20.16	217.60	4,934.8	-1,229.0	-946.5	-690.3	0.00	0.00	0.00
5,283.1	20.16	217.60	5,012.8	-1,251.6	-963.9	-703.0	0.00	0.00	0.00
5,300.0	19.82	217.60	5,028.7	-1,256.2	-967.5	-705.6	2.00	-2.00	0.00
5,400.0	17.82	217.60	5,123.4	-1,281.8	-987.1	-719.9	2.00	-2.00	0.00
5,500.0	15.82	217.60	5,219.1	-1,304.7	-1,004.8	-732.8	2.00	-2.00	0.00
5,600.0	13.82	217.60	5,315.7	-1,325.0	-1,020.4	-744.2	2.00	-2.00	0.00
5,700.0	11.82	217.60	5,413.2	-1,342.5	-1,033.9	-754.1	2.00	-2.00	0.00
5,800.0	9.82	217.60	5,511.5	-1,357.4	-1,045.4	-762.4	2.00	-2.00	0.00
5,900.0	7.82	217.60	5,610.3	-1,369.6	-1,054.7	-769.2	2.00	-2.00	0.00
6,000.0	5.82	217.60	5,709.6	-1,379.0	-1,062.0	-774.5	2.00	-2.00	0.00
6,100.0	3.82	217.60	5,809.2	-1,385.6	-1,067.1	-778.3	2.00	-2.00	0.00
6,200.0	1.82	217.60	5,909.1	-1,389.5	-1,070.1	-780.4	2.00	-2.00	0.00
6,290.9	0.00	0.00	6,000.0	-1,390.7	-1,071.0	-781.1	2.00	-2.00	0.00
6,300.0	0.00	0.00	6,009.1	-1,390.7	-1,071.0	-781.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,109.1	-1,390.7	-1,071.0	-781.1	0.00	0.00	0.00
6,400.7	0.00	0.00	6,109.8	-1,390.7	-1,071.0	-781.1	0.00	0.00	0.00
KOP #2									
6,500.0	7.44	90.00	6,208.8	-1,390.7	-1,064.6	-774.8	7.50	7.50	0.00
6,600.0	14.94	90.00	6,306.8	-1,390.7	-1,045.2	-755.7	7.50	7.50	0.00
6,700.0	22.44	90.00	6,401.5	-1,390.7	-1,013.1	-724.3	7.50	7.50	0.00
6,767.9	27.54	90.00	6,463.0	-1,390.7	-984.5	-696.2	7.50	7.50	0.00
Sharon Springs									
6,800.0	29.94	90.00	6,491.1	-1,390.7	-969.0	-681.1	7.50	7.50	0.00
6,900.0	37.44	90.00	6,574.3	-1,390.7	-913.6	-626.7	7.50	7.50	0.00
6,927.8	39.53	90.00	6,596.0	-1,390.7	-896.3	-609.7	7.50	7.50	0.00
Niobrara A									
7,000.0	44.94	90.00	6,649.5	-1,390.7	-847.8	-562.1	7.50	7.50	0.00
7,072.1	50.35	90.00	6,698.0	-1,390.7	-794.5	-509.9	7.50	7.50	0.00
Niobrara B									
7,100.0	52.44	90.00	6,715.4	-1,390.7	-772.7	-488.5	7.50	7.50	0.00
7,200.0	59.94	90.00	6,771.0	-1,390.7	-689.7	-407.0	7.50	7.50	0.00
7,208.0	60.54	90.00	6,775.0	-1,390.7	-682.7	-400.2	7.50	7.50	0.00
Niobrara C									
7,300.0	67.44	90.00	6,815.3	-1,390.7	-600.1	-319.1	7.50	7.50	0.00
7,400.0	74.94	90.00	6,847.5	-1,390.7	-505.5	-226.3	7.50	7.50	0.00
7,455.6	79.11	90.00	6,860.0	-1,390.7	-451.4	-173.2	7.50	7.50	0.00
Ft Hays									
7,500.0	82.44	90.00	6,867.1	-1,390.7	-407.5	-130.2	7.50	7.50	0.00
7,520.8	84.00	90.00	6,869.6	-1,390.7	-386.9	-109.9	7.48	7.48	0.00
7"									
7,594.8	84.00	90.00	6,877.3	-1,390.7	-313.3	-37.8	0.00	0.00	0.00
7,600.0	84.26	90.00	6,877.8	-1,390.7	-308.1	-32.7	5.00	5.00	0.00
7,678.1	88.17	90.00	6,883.0	-1,390.7	-230.1	43.8	5.00	5.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Klein 19P-402
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Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-05-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Codell									
7,700.0	89.26	90.00	6,883.5	-1,390.7	-208.3	65.3	5.00	5.00	0.00
7,720.6	90.29	90.00	6,883.6	-1,390.7	-187.7	85.5	4.99	4.99	0.00
End of Build									
7,800.0	90.29	90.00	6,883.2	-1,390.7	-108.3	163.4	0.00	0.00	0.00
7,900.0	90.29	90.00	6,882.7	-1,390.7	-8.3	261.5	0.00	0.00	0.00
8,000.0	90.29	90.00	6,882.2	-1,390.7	91.7	359.6	0.00	0.00	0.00
8,100.0	90.29	90.00	6,881.6	-1,390.7	191.7	457.7	0.00	0.00	0.00
8,200.0	90.29	90.00	6,881.1	-1,390.7	291.7	555.8	0.00	0.00	0.00
8,300.0	90.29	90.00	6,880.6	-1,390.7	391.7	653.9	0.00	0.00	0.00
8,400.0	90.29	90.00	6,880.1	-1,390.7	491.7	752.0	0.00	0.00	0.00
8,500.0	90.29	90.00	6,879.6	-1,390.7	591.7	850.1	0.00	0.00	0.00
8,600.0	90.29	90.00	6,879.1	-1,390.7	691.7	948.2	0.00	0.00	0.00
8,700.0	90.29	90.00	6,878.6	-1,390.7	791.7	1,046.3	0.00	0.00	0.00
8,800.0	90.29	90.00	6,878.1	-1,390.7	891.7	1,144.4	0.00	0.00	0.00
8,900.0	90.29	90.00	6,877.6	-1,390.7	991.7	1,242.5	0.00	0.00	0.00
9,000.0	90.29	90.00	6,877.1	-1,390.7	1,091.7	1,340.6	0.00	0.00	0.00
9,100.0	90.29	90.00	6,876.6	-1,390.7	1,191.7	1,438.7	0.00	0.00	0.00
9,200.0	90.29	90.00	6,876.1	-1,390.7	1,291.7	1,536.8	0.00	0.00	0.00
9,300.0	90.29	90.00	6,875.6	-1,390.7	1,391.7	1,634.9	0.00	0.00	0.00
9,400.0	90.29	90.00	6,875.1	-1,390.7	1,491.7	1,733.0	0.00	0.00	0.00
9,500.0	90.29	90.00	6,874.6	-1,390.7	1,591.7	1,831.1	0.00	0.00	0.00
9,600.0	90.29	90.00	6,874.1	-1,390.7	1,691.7	1,929.2	0.00	0.00	0.00
9,700.0	90.29	90.00	6,873.6	-1,390.7	1,791.7	2,027.3	0.00	0.00	0.00
9,800.0	90.29	90.00	6,873.0	-1,390.7	1,891.7	2,125.4	0.00	0.00	0.00
9,900.0	90.29	90.00	6,872.5	-1,390.7	1,991.7	2,223.5	0.00	0.00	0.00
10,000.0	90.29	90.00	6,872.0	-1,390.7	2,091.7	2,321.6	0.00	0.00	0.00
10,100.0	90.29	90.00	6,871.5	-1,390.7	2,191.7	2,419.7	0.00	0.00	0.00
10,200.0	90.29	90.00	6,871.0	-1,390.7	2,291.7	2,517.8	0.00	0.00	0.00
10,300.0	90.29	90.00	6,870.5	-1,390.7	2,391.7	2,615.9	0.00	0.00	0.00
10,400.0	90.29	90.00	6,870.0	-1,390.7	2,491.7	2,714.0	0.00	0.00	0.00
10,500.0	90.29	90.00	6,869.5	-1,390.7	2,591.7	2,812.1	0.00	0.00	0.00
10,600.0	90.29	90.00	6,869.0	-1,390.7	2,691.7	2,910.2	0.00	0.00	0.00
10,700.0	90.29	90.00	6,868.5	-1,390.7	2,791.7	3,008.3	0.00	0.00	0.00
10,800.0	90.29	90.00	6,868.0	-1,390.7	2,891.7	3,106.4	0.00	0.00	0.00
10,900.0	90.29	90.00	6,867.5	-1,390.7	2,991.7	3,204.5	0.00	0.00	0.00
11,000.0	90.29	90.00	6,867.0	-1,390.7	3,091.7	3,302.6	0.00	0.00	0.00
11,100.0	90.29	90.00	6,866.5	-1,390.7	3,191.7	3,400.7	0.00	0.00	0.00
11,200.0	90.29	90.00	6,866.0	-1,390.7	3,291.7	3,498.8	0.00	0.00	0.00
11,300.0	90.29	90.00	6,865.5	-1,390.7	3,391.7	3,596.9	0.00	0.00	0.00
11,400.0	90.29	90.00	6,864.9	-1,390.7	3,491.7	3,695.0	0.00	0.00	0.00
11,500.0	90.29	90.00	6,864.4	-1,390.7	3,591.7	3,793.1	0.00	0.00	0.00
11,600.0	90.29	90.00	6,863.9	-1,390.7	3,691.7	3,891.2	0.00	0.00	0.00
11,700.0	90.29	90.00	6,863.4	-1,390.7	3,791.7	3,989.3	0.00	0.00	0.00
11,800.0	90.29	90.00	6,862.9	-1,390.7	3,891.7	4,087.4	0.00	0.00	0.00
11,900.0	90.29	90.00	6,862.4	-1,390.7	3,991.7	4,185.5	0.00	0.00	0.00
12,000.0	90.29	90.00	6,861.9	-1,390.7	4,091.7	4,283.6	0.00	0.00	0.00
12,100.0	90.29	90.00	6,861.4	-1,390.7	4,191.7	4,381.7	0.00	0.00	0.00
12,200.0	90.29	90.00	6,860.9	-1,390.7	4,291.7	4,479.8	0.00	0.00	0.00
12,300.0	90.29	90.00	6,860.4	-1,390.7	4,391.7	4,577.9	0.00	0.00	0.00
12,400.0	90.29	90.00	6,859.9	-1,390.7	4,491.7	4,676.0	0.00	0.00	0.00
12,500.0	90.29	90.00	6,859.4	-1,390.7	4,591.7	4,774.1	0.00	0.00	0.00
12,600.0	90.29	90.00	6,858.9	-1,390.7	4,691.7	4,872.2	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Klein 19P-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-05-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,700.0	90.29	90.00	6,858.4	-1,390.7	4,791.7	4,970.3	0.00	0.00	0.00
12,800.0	90.29	90.00	6,857.9	-1,390.7	4,891.6	5,068.4	0.00	0.00	0.00
12,900.0	90.29	90.00	6,857.4	-1,390.7	4,991.6	5,166.5	0.00	0.00	0.00
13,000.0	90.29	90.00	6,856.8	-1,390.7	5,091.6	5,264.6	0.00	0.00	0.00
13,100.0	90.29	90.00	6,856.3	-1,390.7	5,191.6	5,362.7	0.00	0.00	0.00
13,200.0	90.29	90.00	6,855.8	-1,390.7	5,291.6	5,460.8	0.00	0.00	0.00
13,300.0	90.29	90.00	6,855.3	-1,390.7	5,391.6	5,559.0	0.00	0.00	0.00
13,400.0	90.29	90.00	6,854.8	-1,390.7	5,491.6	5,657.1	0.00	0.00	0.00
13,500.0	90.29	90.00	6,854.3	-1,390.7	5,591.6	5,755.2	0.00	0.00	0.00
13,600.0	90.29	90.00	6,853.8	-1,390.7	5,691.6	5,853.3	0.00	0.00	0.00
13,700.0	90.29	90.00	6,853.3	-1,390.7	5,791.6	5,951.4	0.00	0.00	0.00
13,800.0	90.29	90.00	6,852.8	-1,390.6	5,891.6	6,049.5	0.00	0.00	0.00
13,900.0	90.29	90.00	6,852.3	-1,390.6	5,991.6	6,147.6	0.00	0.00	0.00
14,000.0	90.29	90.00	6,851.8	-1,390.6	6,091.6	6,245.7	0.00	0.00	0.00
14,100.0	90.29	90.00	6,851.3	-1,390.6	6,191.6	6,343.8	0.00	0.00	0.00
14,200.0	90.29	90.00	6,850.8	-1,390.6	6,291.6	6,441.9	0.00	0.00	0.00
14,300.0	90.29	90.00	6,850.3	-1,390.6	6,391.6	6,540.0	0.00	0.00	0.00
14,400.0	90.29	90.00	6,849.8	-1,390.6	6,491.6	6,638.1	0.00	0.00	0.00
14,500.0	90.29	90.00	6,849.3	-1,390.6	6,591.6	6,736.2	0.00	0.00	0.00
14,600.0	90.29	90.00	6,848.8	-1,390.6	6,691.6	6,834.3	0.00	0.00	0.00
14,700.0	90.29	90.00	6,848.2	-1,390.6	6,791.6	6,932.4	0.00	0.00	0.00
14,800.0	90.29	90.00	6,847.7	-1,390.6	6,891.6	7,030.5	0.00	0.00	0.00
14,900.0	90.29	90.00	6,847.2	-1,390.6	6,991.6	7,128.6	0.00	0.00	0.00
14,945.8	90.29	90.00	6,847.0	-1,390.6	7,037.4	7,173.5	0.00	0.00	0.00

BHL 1395'FSL & 500'FEL, Sec.20

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,520.8	6,869.6	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,724.8	3,550.0	Parkman		0.00	
4,523.8	4,300.0	Sussex		0.00	
4,736.8	4,500.0	Shannon		0.00	
6,767.9	6,463.0	Sharon Springs		0.00	
6,927.8	6,596.0	Niobrara A		0.00	
7,072.1	6,698.0	Niobrara B		0.00	
7,208.0	6,775.0	Niobrara C		0.00	
7,455.6	6,860.0	Ft Hays		0.00	
7,678.1	6,883.0	Codell		0.00	

Database:	landmark	Local Co-ordinate Reference:	Well Klein 19P-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-05-14)		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
6,400.7	6,109.8	-1,390.7	-1,071.0	KOP #2
7,720.6	6,883.6	-1,390.7	-187.7	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

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

Klein 19P-402

Wellbore #1

Plan #1 (3-05-14)

Anticollision Report

17 March, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	3/17/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,945.8	Plan #1 (3-05-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Klein (Existing) Sec.19-T5N-R64W						
Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1	200.0	184.0	472.6	468.6	117.647	CC
Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1	300.0	284.0	474.4	468.2	76.272	ES
Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1	2,200.0	2,102.6	989.4	944.0	21.792	SF
Klein 19O-HZ Pad Sec.19-T5N-R64W						
Klein 19N-202 - Wellbore #1 - Plan #1 (3-05-14)	200.0	200.0	91.1	90.4	135.071	CC, ES
Klein 19N-202 - Wellbore #1 - Plan #1 (3-05-14)	800.0	795.6	145.8	142.4	42.628	SF
Klein 19N-432 - Wellbore #1 - Plan #1 (3-05-14)	200.0	200.0	58.3	57.6	86.451	CC, ES
Klein 19N-432 - Wellbore #1 - Plan #1 (3-05-14)	700.0	697.5	96.5	93.6	32.911	SF
Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)	200.0	200.0	153.2	152.6	227.248	CC, ES
Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)	5,600.0	5,533.7	992.8	955.4	26.515	SF
Klein 19O-312 - Wellbore #1 - Plan #1 (3-05-14)	200.0	200.0	173.5	172.8	257.278	CC, ES
Klein 19O-312 - Wellbore #1 - Plan #1 (3-05-14)	3,200.0	3,087.4	983.8	967.3	59.548	SF
Klein 19O-412 - Wellbore #1 - Plan #1 (3-05-14)	200.0	200.0	162.7	162.0	241.265	CC, ES
Klein 19O-412 - Wellbore #1 - Plan #1 (3-05-14)	3,400.0	3,316.6	999.1	982.0	58.285	SF
Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)	200.0	200.0	150.4	149.8	223.099	CC, ES
Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)	14,945.8	14,696.6	835.4	402.8	1.931	SF
Klein 19P-312 - Wellbore #1 - Plan #1 (3-05-14)	200.0	200.0	29.1	28.5	43.229	CC
Klein 19P-312 - Wellbore #1 - Plan #1 (3-05-14)	14,945.8	14,756.4	285.5	-110.4	0.721	Level 1, ES, SF
Maxey 24O-HZ Pad Sec.24-T5N-R65W						
Maxey 24P-312 - Wellbore #1 - Plan #2 (8-9-13)	7,083.0	11,245.3	293.3	146.1	1.992	CC, ES, SF
Maxey 24P-402 - Wellbore #1 - Plan #2 (8-9-13)	7,137.6	11,349.1	200.4	146.4	3.709	CC, ES, SF
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W						
Danley 33-20 (Exist) - Wellbore #1 - Wellbore #1	13,460.0	7,023.1	640.7	445.2	3.278	CC, ES
Danley 33-20 (Exist) - Wellbore #1 - Wellbore #1	13,500.0	7,022.9	641.9	445.3	3.265	SF
Danley 43-20 (Exist) - Wellbore #1 - Wellbore #1	14,903.6	7,073.1	734.9	502.2	3.158	CC, ES
Danley 43-20 (Exist) - Wellbore #1 - Wellbore #1	14,945.8	7,072.1	736.1	502.2	3.147	SF
Evert 5 (Exist) - Wellbore #1 - Wellbore #1	11,505.1	6,861.4	175.6	-83.6	0.677	Level 1, CC, ES, SF
Ivan Klein 13-20 (Exist) - Wellbore #1 - Wellbore #1	10,816.9	6,850.9	359.8	119.6	1.498	Level 3, CC, ES, SF
Mowery 5 (Exist) - Wellbore #1 - Wellbore #1	8,900.1	6,862.6	274.2	84.5	1.445	Level 3, CC, ES, SF
Schneider 19Q-HZ Pad Sec.19-T5N-R64W						
Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)	14,945.8	13,259.8	431.8	76.2	1.214	Level 2, CC, ES, SF

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Lewis Klein 19-2 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7082-UNKNOWN												Offset Well Error:	0.0 ft
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	33.65	393.5	261.9	472.9				
100.0	100.0	84.0	84.0	0.1	1.7	33.65	393.5	261.9	472.6	470.8	1.79	263.659	
200.0	200.0	184.0	184.0	0.3	3.7	33.65	393.5	261.9	472.6	468.6	4.02	117.647 CC	
300.0	300.0	284.0	284.0	0.5	5.7	176.06	393.5	261.9	474.4	468.2	6.22	76.272 ES	
400.0	399.8	383.8	383.8	0.8	7.7	176.09	393.5	261.9	479.6	471.2	8.41	57.060	
500.0	499.5	483.5	483.5	1.0	9.7	176.15	393.5	261.9	488.3	477.7	10.58	46.156	
600.0	598.7	582.7	582.7	1.3	11.7	176.23	393.5	261.9	500.4	487.7	12.73	39.318	
700.0	697.5	681.5	681.5	1.6	13.6	176.32	393.5	261.9	516.1	501.2	14.84	34.769	
800.0	795.6	779.6	779.6	2.0	15.6	176.43	393.5	261.9	535.1	518.2	16.91	31.638	
900.0	893.1	877.1	877.1	2.5	17.5	176.55	393.5	261.9	557.6	538.6	18.93	29.450	
1,000.0	989.6	973.6	973.6	3.0	19.5	176.67	393.5	261.9	583.4	562.5	20.89	27.924	
1,100.0	1,085.3	1,069.3	1,069.3	3.5	21.4	176.79	393.5	261.9	612.6	589.8	22.78	26.886	
1,200.0	1,179.8	1,163.8	1,163.8	4.2	23.3	176.92	393.5	261.9	645.1	620.5	24.60	26.219	
1,300.0	1,273.7	1,257.7	1,257.7	4.9	25.2	177.07	393.5	261.9	679.5	652.9	26.65	25.498	
1,400.0	1,367.6	1,351.6	1,351.6	5.5	27.0	177.21	393.5	261.9	713.9	685.2	28.72	24.854	
1,500.0	1,461.4	1,445.4	1,445.4	6.2	28.9	177.34	393.5	261.9	748.4	717.5	30.80	24.295	
1,600.0	1,555.3	1,539.3	1,539.3	6.9	30.8	177.46	393.5	261.9	782.8	749.9	32.88	23.804	
1,700.0	1,649.2	1,633.2	1,633.2	7.6	32.7	177.56	393.5	261.9	817.2	782.2	34.97	23.371	
1,800.0	1,743.1	1,727.1	1,727.1	8.3	34.5	177.66	393.5	261.9	851.6	814.6	37.05	22.985	
1,900.0	1,836.9	1,820.9	1,820.9	9.0	36.4	177.75	393.5	261.9	886.1	846.9	39.14	22.640	
2,000.0	1,930.8	1,914.8	1,914.8	9.7	38.3	177.84	393.5	261.9	920.5	879.3	41.22	22.329	
2,100.0	2,024.7	2,008.7	2,008.7	10.4	40.2	177.92	393.5	261.9	955.0	911.6	43.31	22.048	
2,200.0	2,118.6	2,102.6	2,102.6	11.1	42.1	177.99	393.5	261.9	989.4	944.0	45.40	21.792 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19N-202 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	91.1	0.0	91.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	91.1	0.0	91.1	90.9	0.22	405.212		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	91.1	0.0	91.1	90.4	0.67	135.071 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.6	143.04	91.1	0.0	92.5	91.4	1.11	83.451		
400.0	399.8	399.8	399.8	0.8	0.8	144.86	91.1	0.0	96.7	95.2	1.55	62.584		
500.0	499.5	499.5	499.5	1.0	1.0	147.54	91.1	0.0	104.0	102.0	2.00	51.970		
600.0	598.7	598.7	598.7	1.3	1.2	150.71	91.1	0.0	114.4	112.0	2.47	46.381		
700.0	697.5	697.5	697.5	1.6	1.5	154.00	91.1	0.0	128.3	125.4	2.94	43.627		
800.0	795.6	795.6	795.6	2.0	1.7	157.14	91.1	0.0	145.8	142.4	3.42	42.628 SF		
900.0	893.1	888.9	888.9	2.5	1.9	159.57	92.4	-0.5	167.9	164.0	3.90	43.074		
1,000.0	989.6	980.2	980.1	3.0	2.1	161.12	96.4	-1.9	196.0	191.6	4.39	44.628		
1,100.0	1,085.3	1,069.2	1,068.8	3.5	2.3	161.99	103.0	-4.2	229.6	224.7	4.89	46.918		
1,200.0	1,179.8	1,155.5	1,154.6	4.2	2.5	162.36	111.9	-7.3	268.6	263.2	5.41	49.637		
1,300.0	1,273.7	1,239.4	1,237.7	4.9	2.7	162.59	122.8	-11.1	311.4	305.4	5.95	52.359		
1,400.0	1,367.6	1,321.6	1,318.7	5.5	3.0	162.50	135.8	-15.6	356.2	349.7	6.50	54.783		
1,500.0	1,461.4	1,400.0	1,395.6	6.2	3.2	162.20	150.2	-20.7	402.9	395.8	7.07	57.007		
1,600.0	1,555.3	1,484.8	1,478.4	6.9	3.5	161.74	167.7	-26.8	451.2	443.5	7.67	58.805		
1,700.0	1,649.2	1,572.2	1,563.5	7.6	3.9	161.32	186.0	-33.2	499.8	491.6	8.28	60.335		
1,800.0	1,743.1	1,659.5	1,648.7	8.3	4.2	160.98	204.4	-39.7	548.5	539.6	8.90	61.626		
1,900.0	1,836.9	1,746.8	1,733.8	9.0	4.6	160.70	222.7	-46.1	597.2	587.6	9.54	62.602		
2,000.0	1,930.8	1,834.1	1,818.9	9.7	4.9	160.46	241.1	-52.5	645.8	635.7	10.17	63.490		
2,100.0	2,024.7	1,921.5	1,904.1	10.4	5.3	160.25	259.5	-58.9	694.5	683.7	10.81	64.226		
2,200.0	2,118.6	2,008.8	1,989.2	11.1	5.7	160.07	277.8	-65.3	743.2	731.7	11.46	64.851		
2,300.0	2,212.4	2,096.1	2,074.4	11.8	6.1	159.91	296.2	-71.8	791.9	779.8	12.11	65.388		
2,400.0	2,306.3	2,183.5	2,159.5	12.6	6.5	159.77	314.5	-78.2	840.6	827.8	12.76	65.851		
2,500.0	2,400.2	2,270.8	2,244.6	13.3	6.8	159.65	332.9	-84.6	889.3	875.8	13.42	66.255		
2,600.0	2,494.1	2,358.1	2,329.8	14.0	7.2	159.54	351.2	-91.0	938.0	923.9	14.08	66.609		
2,700.0	2,587.9	2,445.4	2,414.9	14.7	7.6	159.43	369.6	-97.5	986.7	971.9	14.74	66.922		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19N-432 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	58.3	0.0	58.3					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	58.3	0.0	58.3	58.1	0.22	259.354		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.67	86.451 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.6	143.40	58.3	0.0	59.7	58.6	1.11	53.864		
400.0	399.8	399.8	399.8	0.8	0.8	146.15	58.3	0.0	64.0	62.4	1.55	41.393		
500.0	499.5	499.5	499.5	1.0	1.0	149.97	58.3	0.0	71.4	69.4	2.00	35.691		
600.0	598.7	598.7	598.7	1.3	1.2	154.13	58.3	0.0	82.2	79.7	2.46	33.349		
700.0	697.5	697.5	697.5	1.6	1.5	158.07	58.3	0.0	96.5	93.6	2.93	32.911 SF		
800.0	795.6	795.6	795.6	2.0	1.7	161.52	58.3	0.0	114.5	111.1	3.40	33.641		
900.0	893.1	893.1	893.1	2.5	1.9	164.40	58.3	0.0	136.0	132.1	3.87	35.119		
1,000.0	989.6	989.6	989.6	3.0	2.1	166.75	58.3	0.0	161.1	156.8	4.34	37.092		
1,100.0	1,085.3	1,082.0	1,082.0	3.5	2.3	168.29	59.3	-0.5	190.5	185.7	4.82	39.548		
1,200.0	1,179.8	1,172.0	1,171.9	4.2	2.5	168.91	62.9	-2.3	224.9	219.6	5.30	42.413		
1,300.0	1,273.7	1,260.1	1,259.7	4.9	2.7	169.01	68.8	-5.3	263.0	257.2	5.81	45.232		
1,400.0	1,367.6	1,346.8	1,346.0	5.5	2.9	168.65	77.0	-9.5	302.6	296.3	6.34	47.718		
1,500.0	1,461.4	1,432.1	1,430.5	6.2	3.1	167.99	87.3	-14.7	344.0	337.1	6.89	49.927		
1,600.0	1,555.3	1,519.8	1,517.1	6.9	3.4	167.17	99.8	-21.0	386.7	379.2	7.46	51.810		
1,700.0	1,649.2	1,610.0	1,606.1	7.6	3.7	166.47	112.9	-27.6	429.6	421.5	8.05	53.379		
1,800.0	1,743.1	1,700.3	1,695.1	8.3	3.9	165.90	126.0	-34.2	472.5	463.9	8.64	54.672		
1,900.0	1,836.9	1,790.5	1,784.1	9.0	4.2	165.42	139.0	-40.8	515.5	506.3	9.25	55.752		
2,000.0	1,930.8	1,880.7	1,873.1	9.7	4.5	165.02	152.1	-47.4	558.5	548.7	9.86	56.642		
2,100.0	2,024.7	1,970.9	1,962.2	10.4	4.8	164.67	165.1	-54.0	601.5	591.1	10.47	57.427		
2,200.0	2,118.6	2,061.1	2,051.2	11.1	5.1	164.37	178.2	-60.6	644.6	633.5	11.10	58.090		
2,300.0	2,212.4	2,151.3	2,140.2	11.8	5.4	164.11	191.3	-67.2	687.6	675.9	11.72	58.664		
2,400.0	2,306.3	2,241.6	2,229.2	12.6	5.7	163.88	204.3	-73.8	730.7	718.3	12.35	59.163		
2,500.0	2,400.2	2,331.8	2,318.3	13.3	6.1	163.67	217.4	-80.4	773.8	760.8	12.98	59.602		
2,600.0	2,494.1	2,422.0	2,407.3	14.0	6.4	163.49	230.5	-87.0	816.8	803.2	13.62	59.988		
2,700.0	2,587.9	2,512.2	2,496.3	14.7	6.7	163.32	243.5	-93.6	859.9	845.7	14.25	60.332		
2,800.0	2,681.8	2,602.4	2,585.3	15.4	7.0	163.17	256.6	-100.2	903.0	888.1	14.89	60.638		
2,900.0	2,775.7	2,692.6	2,674.3	16.1	7.3	163.03	269.6	-106.8	946.1	930.6	15.53	60.912		
3,000.0	2,869.6	2,782.9	2,763.4	16.8	7.7	162.91	282.7	-113.4	989.2	973.0	16.17	61.159		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	79.03	29.1	150.4	153.2					
100.0	100.0	100.0	100.0	0.1	0.1	79.03	29.1	150.4	153.2	153.0	0.22	681.744		
200.0	200.0	200.0	200.0	0.3	0.3	79.03	29.1	150.4	153.2	152.6	0.67	227.248 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.6	-138.98	29.1	150.4	154.5	153.4	1.11	139.639		
400.0	399.8	399.8	399.8	0.8	0.8	-140.17	29.1	150.4	158.5	157.0	1.54	102.748		
500.0	499.5	499.5	499.5	1.0	1.0	-142.02	29.1	150.4	165.3	163.3	2.00	82.653		
600.0	598.7	598.7	598.7	1.3	1.2	-144.35	29.1	150.4	175.1	172.6	2.47	70.762		
700.0	697.5	697.5	697.5	1.6	1.5	-146.98	29.1	150.4	188.1	185.1	2.96	63.485		
800.0	795.6	795.6	795.6	2.0	1.7	-149.71	29.1	150.4	204.4	200.9	3.46	59.078		
900.0	893.1	893.1	893.1	2.5	1.9	-152.41	29.1	150.4	224.2	220.3	3.96	56.583		
1,000.0	989.6	989.6	989.6	3.0	2.1	-154.97	29.1	150.4	247.6	243.1	4.47	55.420		
1,100.0	1,085.3	1,085.3	1,085.3	3.5	2.3	-157.32	29.1	150.4	274.5	269.5	4.97	55.213		
1,200.0	1,179.8	1,179.8	1,179.8	4.2	2.5	-159.44	29.1	150.4	305.0	299.5	5.48	55.690		
1,300.0	1,273.7	1,273.7	1,273.7	4.9	2.8	-161.46	29.1	150.4	337.7	331.7	5.99	56.407		
1,400.0	1,367.6	1,367.6	1,367.6	5.5	3.0	-163.15	29.1	150.4	370.7	364.2	6.50	57.048		
1,500.0	1,461.4	1,461.4	1,461.4	6.2	3.2	-164.56	29.1	150.4	404.0	396.9	7.01	57.632		
1,600.0	1,555.3	1,555.0	1,555.0	6.9	3.4	-165.89	28.8	149.8	436.8	429.3	7.52	58.075		
1,700.0	1,649.2	1,677.3	1,677.2	7.6	3.6	-167.23	26.7	145.5	466.5	458.5	8.02	58.203		
1,800.0	1,743.1	1,791.9	1,791.4	8.3	3.8	-168.56	22.6	137.1	492.7	484.2	8.51	57.887		
1,900.0	1,836.9	1,908.7	1,907.3	9.0	4.1	-169.89	16.4	124.3	515.3	506.3	9.02	57.125		
2,000.0	1,930.8	2,027.1	2,024.1	9.7	4.4	-171.27	8.0	107.0	534.3	524.8	9.55	55.967		
2,100.0	2,024.7	2,146.8	2,141.3	10.4	4.8	-172.72	-2.7	85.1	549.6	539.6	10.09	54.464		
2,200.0	2,118.6	2,267.5	2,258.3	11.1	5.2	-174.25	-15.6	58.6	561.3	550.6	10.66	52.657		
2,300.0	2,212.4	2,368.1	2,355.2	11.8	5.6	-175.56	-27.4	34.3	570.9	559.7	11.22	50.905		
2,400.0	2,306.3	2,466.8	2,450.3	12.6	6.0	-176.81	-39.0	10.6	580.9	569.1	11.79	49.270		
2,500.0	2,400.2	2,565.5	2,545.4	13.3	6.5	-178.01	-50.6	-13.2	591.0	578.7	12.38	47.726		
2,600.0	2,494.1	2,664.2	2,640.5	14.0	7.0	-179.17	-62.2	-37.0	601.5	588.5	13.00	46.266		
2,700.0	2,587.9	2,762.9	2,735.6	14.7	7.4	179.70	-73.8	-60.8	612.2	598.5	13.64	44.886		
2,800.0	2,681.8	2,861.6	2,830.7	15.4	7.9	178.62	-85.4	-84.6	623.1	608.8	14.30	43.580		
2,900.0	2,775.7	2,960.3	2,925.8	16.1	8.4	177.57	-97.0	-108.4	634.2	619.2	14.98	42.343		
3,000.0	2,869.6	3,059.0	3,020.9	16.8	9.0	176.56	-108.6	-132.2	645.5	629.8	15.68	41.172		
3,100.0	2,963.4	3,157.8	3,116.0	17.5	9.5	175.59	-120.2	-156.0	657.0	640.6	16.40	40.063		
3,200.0	3,057.3	3,256.5	3,211.1	18.2	10.0	174.64	-131.8	-179.8	668.7	651.6	17.14	39.013		
3,300.0	3,151.2	3,355.2	3,306.2	18.9	10.5	173.73	-143.4	-203.6	680.6	662.7	17.90	38.018		
3,400.0	3,245.1	3,453.9	3,401.3	19.6	11.1	172.85	-155.0	-227.4	692.7	674.0	18.68	37.077		
3,500.0	3,338.9	3,552.6	3,496.4	20.3	11.6	172.00	-166.6	-251.1	704.9	685.4	19.48	36.187		
3,600.0	3,432.8	3,651.3	3,591.5	21.1	12.2	171.18	-178.2	-274.9	717.2	696.9	20.29	35.344		
3,700.0	3,526.7	3,750.0	3,686.6	21.8	12.7	170.39	-189.8	-298.7	729.7	708.6	21.12	34.546		
3,800.0	3,620.6	3,848.7	3,781.7	22.5	13.2	169.62	-201.4	-322.5	742.3	720.4	21.97	33.791		
3,900.0	3,714.4	3,947.5	3,876.8	23.2	13.8	168.88	-213.0	-346.3	755.1	732.3	22.83	33.077		
4,000.0	3,808.3	4,046.2	3,971.9	23.9	14.3	168.16	-224.6	-370.1	768.0	744.3	23.70	32.400		
4,100.0	3,902.2	4,144.9	4,067.0	24.6	14.9	167.47	-236.2	-393.9	781.0	756.4	24.59	31.759		
4,200.0	3,996.1	4,243.6	4,162.1	25.3	15.4	166.80	-247.8	-417.7	794.1	768.6	25.49	31.152		
4,300.0	4,089.9	4,342.3	4,257.2	26.0	16.0	166.15	-259.4	-441.5	807.3	780.9	26.40	30.577		
4,400.0	4,183.8	4,441.0	4,352.3	26.7	16.6	165.52	-270.9	-465.3	820.6	793.3	27.32	30.032		
4,500.0	4,277.7	4,539.7	4,447.4	27.4	17.1	164.92	-282.5	-489.1	834.0	805.7	28.26	29.515		
4,600.0	4,371.6	4,638.4	4,542.5	28.2	17.7	164.33	-294.1	-512.8	847.5	818.3	29.20	29.024		
4,700.0	4,465.4	4,737.2	4,637.6	28.9	18.2	163.76	-305.7	-536.6	861.0	830.9	30.15	28.558		
4,800.0	4,559.3	4,835.9	4,732.7	29.6	18.8	163.20	-317.3	-560.4	874.7	843.6	31.11	28.115		
4,900.0	4,653.2	4,934.6	4,827.8	30.3	19.4	162.67	-328.9	-584.2	888.4	856.4	32.08	27.694		
5,000.0	4,747.1	5,033.3	4,922.9	31.0	19.9	162.15	-340.5	-608.0	902.2	869.2	33.06	27.294		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-232 - Wellbore #1 - Plan #1 (3-05-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.0	4,840.9	5,132.0	5,018.0	31.7	20.5	161.64	-352.1	-631.8	916.1	882.1	34.04	26.913	
5,200.0	4,934.8	5,214.8	5,098.0	32.4	20.9	161.27	-361.5	-651.1	930.8	895.9	34.88	26.688	
5,300.0	5,028.7	5,300.0	5,180.9	33.1	21.2	161.01	-370.1	-668.7	947.4	911.8	35.65	26.579	
5,400.0	5,123.4	5,374.3	5,253.6	33.6	21.5	160.95	-376.7	-682.3	963.9	927.5	36.31	26.547	
5,500.0	5,219.1	5,454.0	5,332.1	34.0	21.7	160.90	-382.9	-695.0	979.0	942.1	36.92	26.520	
5,600.0	5,315.7	5,533.7	5,410.8	34.4	21.9	160.89	-388.1	-705.7	992.8	955.4	37.44	26.515 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-312 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	58.33	91.1	147.6	173.5					
100.0	100.0	100.0	100.0	0.1	0.1	58.33	91.1	147.6	173.5	173.3	0.22	771.835		
200.0	200.0	200.0	200.0	0.3	0.3	58.33	91.1	147.6	173.5	172.8	0.67	257.278 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.6	-159.46	91.1	147.6	175.1	174.0	1.11	157.882		
400.0	399.8	399.8	399.8	0.8	0.8	-160.01	91.1	147.6	180.0	178.5	1.55	116.461		
500.0	499.5	499.5	499.5	1.0	1.0	-160.86	91.1	147.6	188.2	186.2	2.00	94.280		
600.0	598.7	598.7	598.7	1.3	1.2	-161.94	91.1	147.6	199.8	197.3	2.46	81.332		
700.0	697.5	697.5	697.5	1.6	1.5	-163.14	91.1	147.6	214.7	211.8	2.92	73.453		
800.0	795.6	795.6	795.6	2.0	1.7	-164.40	91.1	147.6	233.1	229.7	3.40	68.642		
900.0	893.1	893.1	893.1	2.5	1.9	-165.65	91.1	147.6	254.9	251.0	3.87	65.820		
1,000.0	989.6	989.6	989.6	3.0	2.1	-166.84	91.1	147.6	280.0	275.7	4.35	64.358		
1,100.0	1,085.3	1,085.3	1,085.3	3.5	2.3	-167.95	91.1	147.6	308.6	303.8	4.83	63.858		
1,200.0	1,179.8	1,179.8	1,179.8	4.2	2.5	-168.96	91.1	147.6	340.6	335.3	5.32	64.043		
1,300.0	1,273.7	1,273.7	1,273.7	4.9	2.8	-169.96	91.1	147.6	374.5	368.7	5.82	64.372		
1,400.0	1,367.6	1,367.6	1,367.6	5.5	3.0	-170.80	91.1	147.6	408.6	402.2	6.32	64.596		
1,500.0	1,461.4	1,461.4	1,461.4	6.2	3.2	-171.51	91.1	147.6	442.7	435.8	6.83	64.768		
1,600.0	1,555.3	1,559.1	1,559.1	6.9	3.4	-172.22	91.3	147.1	476.6	469.3	7.35	64.869		
1,700.0	1,649.2	1,659.7	1,659.6	7.6	3.6	-173.20	92.8	143.5	509.5	501.6	7.85	64.893		
1,800.0	1,743.1	1,760.6	1,760.2	8.3	3.8	-174.42	95.6	136.7	541.3	532.9	8.35	64.799		
1,900.0	1,836.9	1,861.5	1,860.6	9.0	4.1	-175.85	99.8	126.6	572.2	563.3	8.86	64.544		
2,000.0	1,930.8	1,956.5	1,954.7	9.7	4.3	-177.25	104.5	115.3	602.7	593.3	9.39	64.216		
2,100.0	2,024.7	2,050.7	2,048.2	10.4	4.5	-178.50	109.2	104.0	633.5	623.6	9.92	63.847		
2,200.0	2,118.6	2,145.0	2,141.6	11.1	4.8	-179.64	113.9	92.7	664.6	654.1	10.47	63.446		
2,300.0	2,212.4	2,239.2	2,235.1	11.8	5.0	179.32	118.6	81.4	695.8	684.8	11.04	63.045		
2,400.0	2,306.3	2,333.5	2,328.5	12.6	5.3	178.37	123.2	70.2	727.3	715.7	11.61	62.631		
2,500.0	2,400.2	2,427.7	2,422.0	13.3	5.6	177.50	127.9	58.9	759.0	746.8	12.20	62.215		
2,600.0	2,494.1	2,522.0	2,515.4	14.0	5.8	176.70	132.6	47.6	790.8	778.0	12.79	61.803		
2,700.0	2,587.9	2,616.2	2,608.9	14.7	6.1	175.96	137.3	36.3	822.7	809.3	13.40	61.398		
2,800.0	2,681.8	2,710.4	2,702.3	15.4	6.4	175.27	141.9	25.0	854.7	840.7	14.01	61.004		
2,900.0	2,775.7	2,804.7	2,795.8	16.1	6.7	174.63	146.6	13.8	886.9	872.2	14.63	60.620		
3,000.0	2,869.6	2,898.9	2,889.2	16.8	7.0	174.04	151.3	2.5	919.1	903.8	15.25	60.250		
3,100.0	2,963.4	2,993.2	2,982.7	17.5	7.3	173.49	156.0	-8.8	951.4	935.5	15.89	59.892		
3,200.0	3,057.3	3,087.4	3,076.1	18.2	7.5	172.97	160.7	-20.1	983.8	967.3	16.52	59.548 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-412 - Wellbore #1 - Plan #1 (3-05-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	67.62	61.9	150.4	162.7				
100.0	100.0	100.0	100.0	0.1	0.1	67.62	61.9	150.4	162.7	162.5	0.22	723.795	
200.0	200.0	200.0	200.0	0.3	0.3	67.62	61.9	150.4	162.7	162.0	0.67	241.265 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.6	-150.27	61.9	150.4	164.2	163.1	1.11	148.171	
400.0	399.8	399.8	399.8	0.8	0.8	-151.10	61.9	150.4	168.8	167.2	1.54	109.260	
500.0	499.5	499.5	499.5	1.0	1.0	-152.40	61.9	150.4	176.4	174.4	2.00	88.311	
600.0	598.7	598.7	598.7	1.3	1.2	-154.03	61.9	150.4	187.3	184.9	2.46	76.040	
700.0	697.5	697.5	697.5	1.6	1.5	-155.85	61.9	150.4	201.5	198.6	2.94	68.576	
800.0	795.6	795.6	795.6	2.0	1.7	-157.76	61.9	150.4	219.1	215.7	3.42	64.052	
900.0	893.1	893.1	893.1	2.5	1.9	-159.63	61.9	150.4	240.2	236.3	3.91	61.454	
1,000.0	989.6	989.6	989.6	3.0	2.1	-161.42	61.9	150.4	264.7	260.3	4.40	60.181	
1,100.0	1,085.3	1,085.3	1,085.3	3.5	2.3	-163.06	61.9	150.4	292.6	287.7	4.89	59.855	
1,200.0	1,179.8	1,179.8	1,179.8	4.2	2.5	-164.56	61.9	150.4	324.0	318.6	5.38	60.200	
1,300.0	1,273.7	1,273.7	1,273.7	4.9	2.8	-166.01	61.9	150.4	357.5	351.6	5.89	60.726	
1,400.0	1,367.6	1,367.6	1,367.6	5.5	3.0	-167.23	61.9	150.4	391.1	384.7	6.40	61.153	
1,500.0	1,461.4	1,461.4	1,461.4	6.2	3.2	-168.25	61.9	150.4	424.9	418.0	6.91	61.521	
1,600.0	1,555.3	1,555.3	1,555.3	6.9	3.4	-169.13	61.9	150.4	458.7	451.3	7.42	61.838	
1,700.0	1,649.2	1,649.2	1,649.2	7.6	3.6	-169.88	61.9	150.4	492.7	484.8	7.93	62.113	
1,800.0	1,743.1	1,743.1	1,743.1	8.3	3.8	-170.54	61.9	150.4	526.7	518.3	8.45	62.353	
1,900.0	1,836.9	1,836.9	1,836.9	9.0	4.0	-171.12	61.9	150.4	560.8	551.8	8.96	62.561	
2,000.0	1,930.8	1,930.8	1,930.8	9.7	4.2	-171.63	61.9	150.4	594.9	585.4	9.48	62.744	
2,100.0	2,024.7	2,028.5	2,028.5	10.4	4.4	-172.11	62.0	150.3	629.0	619.0	10.00	62.875	
2,200.0	2,118.6	2,137.8	2,137.7	11.1	4.7	-172.81	62.4	147.1	661.5	651.0	10.52	62.853	
2,300.0	2,212.4	2,248.2	2,247.9	11.8	4.9	-173.74	63.3	139.8	692.0	680.9	11.04	62.697	
2,400.0	2,306.3	2,359.4	2,358.5	12.6	5.2	-174.87	64.8	128.1	720.4	708.8	11.55	62.345	
2,500.0	2,400.2	2,458.5	2,456.6	13.3	5.4	-175.97	66.5	115.1	747.5	735.4	12.07	61.945	
2,600.0	2,494.1	2,553.8	2,551.1	14.0	5.6	-176.96	68.2	102.4	774.8	762.2	12.59	61.544	
2,700.0	2,587.9	2,649.2	2,645.6	14.7	5.9	-177.88	69.8	89.7	802.3	789.2	13.12	61.131	
2,800.0	2,681.8	2,744.5	2,740.1	15.4	6.1	-178.74	71.5	77.1	830.0	816.3	13.67	60.725	
2,900.0	2,775.7	2,839.9	2,834.6	16.1	6.4	-179.55	73.1	64.4	857.9	843.6	14.22	60.307	
3,000.0	2,869.6	2,935.2	2,929.1	16.8	6.6	-179.69	74.7	51.8	885.9	871.1	14.79	59.892	
3,100.0	2,963.4	3,030.6	3,023.6	17.5	6.9	178.98	76.4	39.1	914.0	898.6	15.37	59.481	
3,200.0	3,057.3	3,125.9	3,118.1	18.2	7.2	178.31	78.0	26.4	942.3	926.3	15.95	59.075	
3,300.0	3,151.2	3,221.3	3,212.6	18.9	7.5	177.68	79.7	13.8	970.6	954.1	16.54	58.676	
3,400.0	3,245.1	3,316.6	3,307.1	19.6	7.7	177.08	81.3	1.1	999.1	982.0	17.14	58.285 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	150.4	150.4					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	150.4	150.4	150.2	0.22	669.296		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	150.4	150.4	149.8	0.67	223.099 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.6	-128.11	0.0	150.4	151.5	150.4	1.11	137.064		
400.0	399.8	399.8	399.8	0.8	0.8	-129.58	0.0	150.4	154.8	153.3	1.54	100.431		
500.0	499.5	499.5	499.5	1.0	1.0	-131.89	0.0	150.4	160.5	158.5	2.00	80.141		
600.0	598.7	598.7	598.7	1.3	1.2	-134.84	0.0	150.4	168.9	166.4	2.49	67.929		
700.0	697.5	697.5	697.5	1.6	1.5	-138.19	0.0	150.4	180.3	177.3	2.99	60.335		
800.0	795.6	795.6	795.6	2.0	1.7	-141.72	0.0	150.4	195.0	191.5	3.50	55.671		
900.0	893.1	893.1	893.1	2.5	1.9	-145.22	0.0	150.4	213.3	209.3	4.02	52.993		
1,000.0	989.6	989.6	989.6	3.0	2.1	-148.56	0.0	150.4	235.2	230.7	4.55	51.720		
1,100.0	1,085.3	1,093.8	1,093.8	3.5	2.3	-151.90	-0.7	149.1	259.4	254.4	5.06	51.321		
1,200.0	1,179.8	1,199.8	1,199.6	4.2	2.5	-155.03	-3.1	144.2	283.9	278.4	5.54	51.281		
1,300.0	1,273.7	1,307.1	1,306.5	4.9	2.8	-158.05	-7.4	135.8	307.2	301.2	6.03	50.970		
1,400.0	1,367.6	1,416.1	1,414.7	5.5	3.0	-160.74	-13.6	123.5	327.5	321.0	6.53	50.171		
1,500.0	1,461.4	1,526.7	1,523.7	6.2	3.3	-163.22	-21.8	107.3	344.6	337.6	7.04	48.975		
1,600.0	1,555.3	1,638.4	1,633.2	6.9	3.7	-165.59	-31.9	87.2	358.5	350.9	7.56	47.433		
1,700.0	1,649.2	1,751.0	1,742.5	7.6	4.1	-167.93	-44.1	63.1	368.9	360.9	8.09	45.583		
1,800.0	1,743.1	1,858.9	1,846.1	8.3	4.6	-170.18	-57.5	36.6	376.4	367.7	8.64	43.547		
1,900.0	1,836.9	1,957.7	1,940.9	9.0	5.1	-172.20	-70.1	11.6	383.5	374.3	9.20	41.699		
2,000.0	1,930.8	2,056.6	2,035.7	9.7	5.6	-174.14	-82.7	-13.4	391.1	381.4	9.78	39.996		
2,100.0	2,024.7	2,155.4	2,130.5	10.4	6.2	-176.00	-95.3	-38.4	399.2	388.8	10.39	38.413		
2,200.0	2,118.6	2,254.2	2,225.3	11.1	6.7	-177.80	-108.0	-63.4	407.7	396.6	11.03	36.950		
2,300.0	2,212.4	2,353.0	2,320.1	11.8	7.2	-179.51	-120.6	-88.4	416.5	404.8	11.70	35.585		
2,400.0	2,306.3	2,451.9	2,414.8	12.6	7.8	-178.84	-133.2	-113.4	425.7	413.3	12.41	34.307		
2,500.0	2,400.2	2,550.7	2,509.6	13.3	8.4	-177.26	-145.8	-138.4	435.3	422.1	13.15	33.110		
2,600.0	2,494.1	2,649.5	2,604.4	14.0	8.9	-175.75	-158.4	-163.4	445.1	431.2	13.92	31.988		
2,700.0	2,587.9	2,748.4	2,699.2	14.7	9.5	-174.31	-171.0	-188.4	455.3	440.6	14.72	30.938		
2,800.0	2,681.8	2,847.2	2,794.0	15.4	10.1	-172.93	-183.7	-213.4	465.7	450.2	15.55	29.955		
2,900.0	2,775.7	2,946.0	2,888.8	16.1	10.7	-171.61	-196.3	-238.4	476.4	460.0	16.41	29.038		
3,000.0	2,869.6	3,044.9	2,983.5	16.8	11.2	-170.35	-208.9	-263.4	487.4	470.1	17.29	28.182		
3,100.0	2,963.4	3,143.7	3,078.3	17.5	11.8	-169.14	-221.5	-288.4	498.5	480.3	18.21	27.383		
3,200.0	3,057.3	3,242.5	3,173.1	18.2	12.4	-167.99	-234.1	-313.4	509.9	490.8	19.14	26.639		
3,300.0	3,151.2	3,341.4	3,267.9	18.9	13.0	-166.89	-246.7	-338.4	521.5	501.4	20.10	25.946		
3,400.0	3,245.1	3,440.2	3,362.7	19.6	13.6	-165.83	-259.4	-363.4	533.2	512.2	21.08	25.301		
3,500.0	3,338.9	3,539.0	3,457.5	20.3	14.2	-164.82	-272.0	-388.3	545.2	523.1	22.07	24.699		
3,600.0	3,432.8	3,637.9	3,552.2	21.1	14.8	-163.85	-284.6	-413.3	557.3	534.2	23.08	24.139		
3,700.0	3,526.7	3,736.7	3,647.0	21.8	15.4	-162.93	-297.2	-438.3	569.5	545.4	24.11	23.618		
3,800.0	3,620.6	3,835.5	3,741.8	22.5	15.9	-162.04	-309.8	-463.3	581.9	556.7	25.16	23.131		
3,900.0	3,714.4	3,934.4	3,836.6	23.2	16.5	-161.19	-322.5	-488.3	594.4	568.2	26.21	22.677		
4,000.0	3,808.3	4,033.2	3,931.4	23.9	17.1	-160.37	-335.1	-513.3	607.0	579.8	27.28	22.253		
4,100.0	3,902.2	4,132.0	4,026.2	24.6	17.7	-159.59	-347.7	-538.3	619.8	591.4	28.36	21.857		
4,200.0	3,996.1	4,230.9	4,120.9	25.3	18.3	-158.84	-360.3	-563.3	632.7	603.2	29.44	21.487		
4,300.0	4,089.9	4,329.7	4,215.7	26.0	18.9	-158.12	-372.9	-588.3	645.6	615.1	30.54	21.140		
4,400.0	4,183.8	4,428.5	4,310.5	26.7	19.5	-157.43	-385.5	-613.3	658.7	627.1	31.65	20.814		
4,500.0	4,277.7	4,527.4	4,405.3	27.4	20.1	-156.76	-398.2	-638.3	671.9	639.1	32.76	20.509		
4,600.0	4,371.6	4,626.2	4,500.1	28.2	20.7	-156.12	-410.8	-663.3	685.1	651.2	33.88	20.223		
4,700.0	4,465.4	4,725.0	4,594.9	28.9	21.3	-155.51	-423.4	-688.3	698.4	663.4	35.00	19.953		
4,800.0	4,559.3	4,823.9	4,689.6	29.6	21.9	-154.91	-436.0	-713.3	711.8	675.7	36.13	19.700		
4,900.0	4,653.2	4,922.7	4,784.4	30.3	22.5	-154.34	-448.6	-738.3	725.3	688.0	37.27	19.461		
5,000.0	4,747.1	5,021.5	4,879.2	31.0	23.1	-153.79	-461.2	-763.3	738.9	700.4	38.41	19.236		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,840.9	5,120.4	4,974.0	31.7	23.7	153.26		-473.9	-788.3	752.5	712.9	39.56	19.023	
5,200.0	4,934.8	5,219.2	5,068.8	32.4	24.3	152.75		-486.5	-813.2	766.1	725.4	40.70	18.822	
5,300.0	5,028.7	5,318.0	5,163.6	33.1	24.9	152.28		-499.1	-838.2	779.8	738.0	41.86	18.629	
5,400.0	5,123.4	5,400.0	5,242.3	33.6	25.3	151.97		-509.3	-858.5	792.1	749.2	42.83	18.496	
5,500.0	5,219.1	5,491.6	5,331.0	34.0	25.7	151.65		-519.6	-878.9	803.0	759.3	43.70	18.375	
5,600.0	5,315.7	5,576.7	5,414.1	34.4	26.0	151.41		-528.0	-895.5	812.7	768.2	44.44	18.285	
5,700.0	5,413.2	5,661.9	5,497.7	34.8	26.3	151.20		-535.3	-910.0	821.1	776.0	45.10	18.207	
5,800.0	5,511.5	5,747.2	5,581.9	35.1	26.5	151.03		-541.5	-922.2	828.2	782.5	45.66	18.140	
5,900.0	5,610.3	5,832.6	5,666.6	35.4	26.7	150.90		-546.5	-932.2	834.0	787.9	46.12	18.082	
6,000.0	5,709.6	5,918.0	5,751.6	35.6	26.9	150.80		-550.4	-939.9	838.5	792.0	46.50	18.034	
6,100.0	5,809.2	6,000.0	5,833.3	35.7	27.1	150.73		-553.1	-945.2	841.7	795.0	46.77	17.996	
6,200.0	5,909.1	6,089.0	5,922.2	35.9	27.2	150.68		-554.8	-948.6	843.6	796.6	46.96	17.963	
6,300.0	6,009.1	6,175.8	6,009.1	36.0	27.3	8.27		-555.3	-949.6	844.1	791.4	52.72	16.011	
6,400.0	6,109.1	6,275.8	6,109.1	36.0	27.4	8.27		-555.3	-949.6	844.1	791.2	52.92	15.952	
6,500.0	6,208.8	6,362.2	6,195.2	36.0	27.4	-81.78		-555.3	-944.7	844.0	796.7	47.33	17.832	
6,600.0	6,306.8	6,450.0	6,281.7	35.9	27.3	-81.97		-555.3	-929.8	843.7	796.4	47.26	17.853	
6,700.0	6,401.5	6,535.3	6,363.6	35.8	27.2	-82.26		-555.3	-906.0	843.1	796.0	47.09	17.902	
6,800.0	6,491.1	6,622.5	6,444.0	35.5	27.0	-82.68		-555.3	-872.3	842.3	795.4	46.89	17.962	
6,900.0	6,574.3	6,710.3	6,520.5	35.3	26.7	-83.20		-555.3	-829.4	841.3	794.6	46.70	18.015	
7,000.0	6,649.5	6,800.0	6,593.1	34.9	26.5	-83.84		-555.3	-776.8	840.3	793.7	46.59	18.034	
7,100.0	6,715.4	6,888.2	6,658.0	34.6	26.2	-84.57		-555.3	-717.1	839.2	792.5	46.65	17.989	
7,200.0	6,771.0	6,978.7	6,716.9	34.3	26.1	-85.38		-555.3	-648.5	838.1	791.2	46.96	17.849	
7,300.0	6,815.3	7,070.5	6,768.0	34.0	26.0	-86.28		-555.3	-572.3	837.2	789.6	47.59	17.591	
7,400.0	6,847.5	7,163.6	6,810.2	33.7	26.0	-87.24		-555.3	-489.3	836.3	787.7	48.61	17.204	
7,500.0	6,867.1	7,258.4	6,842.4	33.5	26.3	-88.25		-555.3	-400.3	835.8	785.7	50.06	16.696	
7,600.0	6,877.8	7,355.3	6,863.6	33.3	26.7	-89.01		-555.3	-305.8	835.5	783.6	51.86	16.110	
7,700.0	6,883.5	7,454.4	6,875.0	33.1	27.4	-89.42		-555.3	-207.4	835.4	781.3	54.11	15.438	
7,800.0	6,883.2	7,553.8	6,882.4	33.1	28.4	-89.95		-555.3	-108.3	835.4	778.6	56.80	14.708	
7,843.5	6,882.9	7,597.3	6,882.9	33.2	28.9	-90.00		-555.3	-64.8	835.4	777.3	58.07	14.386	
7,900.0	6,882.7	7,653.8	6,882.6	33.3	29.7	-90.00		-555.3	-8.3	835.4	775.5	59.81	13.966	
8,000.0	6,882.2	7,753.8	6,882.1	33.8	31.1	-90.00		-555.3	91.7	835.4	772.2	63.17	13.223	
8,100.0	6,881.6	7,853.8	6,881.6	34.9	32.8	-90.00		-555.3	191.7	835.4	768.5	66.84	12.498	
8,200.0	6,881.1	7,953.8	6,881.1	36.5	34.6	-90.00		-555.3	291.7	835.4	764.6	70.76	11.806	
8,300.0	6,880.6	8,053.8	6,880.6	38.4	36.6	-90.00		-555.3	391.7	835.4	760.5	74.90	11.154	
8,400.0	6,880.1	8,153.8	6,880.1	40.6	38.7	-90.00		-555.3	491.7	835.4	756.1	79.22	10.545	
8,500.0	6,879.6	8,253.8	6,879.6	42.9	40.9	-90.00		-555.3	591.7	835.4	751.7	83.69	9.981	
8,600.0	6,879.1	8,353.8	6,879.1	45.2	43.1	-90.00		-555.3	691.7	835.4	747.1	88.30	9.461	
8,700.0	6,878.6	8,453.8	6,878.6	47.6	45.4	-90.00		-555.3	791.7	835.4	742.3	93.02	8.981	
8,800.0	6,878.1	8,553.8	6,878.1	50.1	47.8	-90.00		-555.3	891.7	835.4	737.5	97.83	8.539	
8,900.0	6,877.6	8,653.8	6,877.6	52.6	50.3	-90.00		-555.3	991.7	835.4	732.6	102.72	8.132	
9,000.0	6,877.1	8,753.8	6,877.1	55.1	52.7	-90.00		-555.3	1,091.7	835.4	727.7	107.69	7.757	
9,100.0	6,876.6	8,853.8	6,876.6	57.6	55.2	-90.00		-555.3	1,191.7	835.4	722.6	112.72	7.411	
9,200.0	6,876.1	8,953.8	6,876.1	60.2	57.8	-90.00		-555.3	1,291.7	835.4	717.6	117.80	7.092	
9,300.0	6,875.6	9,053.8	6,875.6	62.8	60.3	-90.00		-555.3	1,391.7	835.4	712.4	122.92	6.796	
9,400.0	6,875.1	9,153.8	6,875.1	65.4	62.9	-90.00		-555.3	1,491.7	835.4	707.3	128.09	6.522	
9,500.0	6,874.6	9,253.8	6,874.5	68.0	65.5	-90.00		-555.3	1,591.7	835.4	702.1	133.30	6.267	
9,600.0	6,874.1	9,353.8	6,874.0	70.7	68.1	-90.00		-555.3	1,691.7	835.4	696.8	138.53	6.030	
9,700.0	6,873.6	9,453.8	6,873.5	73.3	70.7	-90.00		-555.3	1,791.7	835.4	691.6	143.80	5.809	
9,800.0	6,873.0	9,553.8	6,873.0	76.0	73.4	-90.00		-555.3	1,891.7	835.4	686.3	149.09	5.603	
9,900.0	6,872.5	9,653.8	6,872.5	78.7	76.0	-90.00		-555.3	1,991.7	835.4	681.0	154.41	5.410	
10,000.0	6,872.0	9,753.8	6,872.0	81.3	78.7	-90.00		-555.3	2,091.7	835.4	675.6	159.74	5.229	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-432 - Wellbore #1 - Plan #2 (3-11-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,100.0	6,871.5	9,853.8	6,871.5	84.0	81.4	-90.00	-555.3	2,191.7	835.4	670.3	165.10	5.060	
10,200.0	6,871.0	9,953.8	6,871.0	86.7	84.0	-90.00	-555.3	2,291.7	835.4	664.9	170.47	4.900	
10,300.0	6,870.5	10,053.8	6,870.5	89.4	86.7	-90.00	-555.3	2,391.7	835.4	659.5	175.85	4.750	
10,400.0	6,870.0	10,153.8	6,870.0	92.1	89.4	-90.00	-555.3	2,491.7	835.4	654.1	181.25	4.609	
10,500.0	6,869.5	10,253.8	6,869.5	94.8	92.1	-90.00	-555.3	2,591.7	835.4	648.7	186.67	4.475	
10,600.0	6,869.0	10,353.8	6,869.0	97.5	94.8	-90.00	-555.3	2,691.7	835.4	643.3	192.09	4.349	
10,700.0	6,868.5	10,453.8	6,868.5	100.3	97.6	-90.00	-555.3	2,791.7	835.4	637.8	197.53	4.229	
10,800.0	6,868.0	10,553.8	6,868.0	103.0	100.3	-90.00	-555.3	2,891.7	835.4	632.4	202.97	4.116	
10,900.0	6,867.5	10,653.8	6,867.5	105.7	103.0	-90.00	-555.3	2,991.7	835.4	626.9	208.43	4.008	
11,000.0	6,867.0	10,753.8	6,867.0	108.5	105.7	-90.00	-555.3	3,091.7	835.4	621.5	213.89	3.906	
11,100.0	6,866.5	10,853.8	6,866.5	111.2	108.5	-90.00	-555.3	3,191.7	835.4	616.0	219.36	3.808	
11,200.0	6,866.0	10,953.8	6,865.9	113.9	111.2	-90.00	-555.3	3,291.7	835.4	610.5	224.84	3.715	
11,300.0	6,865.5	11,053.8	6,865.4	116.7	114.0	-90.00	-555.3	3,391.7	835.4	605.0	230.33	3.627	
11,400.0	6,864.9	11,153.8	6,864.9	119.4	116.7	-90.00	-555.3	3,491.7	835.4	599.5	235.82	3.542	
11,500.0	6,864.4	11,253.8	6,864.4	122.2	119.4	-90.00	-555.3	3,591.7	835.4	594.0	241.31	3.462	
11,600.0	6,863.9	11,353.8	6,863.9	124.9	122.2	-90.00	-555.3	3,691.7	835.4	588.5	246.82	3.385	
11,700.0	6,863.4	11,453.8	6,863.4	127.7	124.9	-90.00	-555.3	3,791.7	835.4	583.0	252.32	3.311	
11,800.0	6,862.9	11,553.8	6,862.9	130.4	127.7	-90.00	-555.3	3,891.7	835.4	577.5	257.84	3.240	
11,900.0	6,862.4	11,653.8	6,862.4	133.2	130.5	-90.00	-555.3	3,991.7	835.4	572.0	263.35	3.172	
12,000.0	6,861.9	11,753.8	6,861.9	135.9	133.2	-90.00	-555.3	4,091.7	835.4	566.5	268.87	3.107	
12,100.0	6,861.4	11,853.8	6,861.4	138.7	136.0	-90.00	-555.3	4,191.7	835.4	561.0	274.40	3.044	
12,200.0	6,860.9	11,953.8	6,860.9	141.5	138.7	-90.00	-555.3	4,291.7	835.4	555.4	279.93	2.984	
12,300.0	6,860.4	12,053.8	6,860.4	144.2	141.5	-90.00	-555.3	4,391.7	835.4	549.9	285.46	2.926	
12,400.0	6,859.9	12,153.8	6,859.9	147.0	144.3	-90.00	-555.3	4,491.7	835.4	544.4	290.99	2.871	
12,500.0	6,859.4	12,253.8	6,859.4	149.8	147.0	-90.00	-555.3	4,591.7	835.4	538.8	296.53	2.817	
12,600.0	6,858.9	12,353.8	6,858.9	152.5	149.8	-90.00	-555.3	4,691.7	835.4	533.3	302.07	2.765	
12,700.0	6,858.4	12,453.8	6,858.4	155.3	152.6	-90.00	-555.3	4,791.7	835.4	527.7	307.62	2.716	
12,800.0	6,857.9	12,553.8	6,857.8	158.1	155.4	-90.00	-555.3	4,891.6	835.4	522.2	313.17	2.667	
12,900.0	6,857.4	12,653.8	6,857.3	160.9	158.1	-90.00	-555.3	4,991.6	835.4	516.6	318.71	2.621	
13,000.0	6,856.8	12,753.8	6,856.8	163.6	160.9	-90.00	-555.3	5,091.6	835.4	511.1	324.27	2.576	
13,100.0	6,856.3	12,853.8	6,856.3	166.4	163.7	-90.00	-555.3	5,191.6	835.4	505.5	329.82	2.533	
13,200.0	6,855.8	12,953.8	6,855.8	169.2	166.5	-90.00	-555.3	5,291.6	835.4	500.0	335.38	2.491	
13,300.0	6,855.3	13,053.8	6,855.3	172.0	169.2	-90.00	-555.3	5,391.6	835.4	494.4	340.93	2.450	
13,400.0	6,854.8	13,153.8	6,854.8	174.7	172.0	-90.00	-555.3	5,491.6	835.4	488.9	346.49	2.411	
13,500.0	6,854.3	13,253.8	6,854.3	177.5	174.8	-90.00	-555.3	5,591.6	835.4	483.3	352.05	2.373	
13,600.0	6,853.8	13,353.8	6,853.8	180.3	177.6	-90.00	-555.3	5,691.6	835.4	477.7	357.62	2.336	
13,700.0	6,853.3	13,453.8	6,853.3	183.1	180.4	-90.00	-555.3	5,791.6	835.4	472.2	363.18	2.300	
13,800.0	6,852.8	13,553.8	6,852.8	185.9	183.1	-90.00	-555.3	5,891.6	835.4	466.6	368.75	2.265	
13,900.0	6,852.3	13,653.8	6,852.3	188.6	185.9	-90.00	-555.3	5,991.6	835.4	461.0	374.32	2.232	
14,000.0	6,851.8	13,753.8	6,851.8	191.4	188.7	-90.00	-555.3	6,091.6	835.4	455.5	379.89	2.199	
14,100.0	6,851.3	13,853.8	6,851.3	194.2	191.5	-90.00	-555.3	6,191.6	835.4	449.9	385.46	2.167	
14,200.0	6,850.8	13,953.8	6,850.8	197.0	194.3	-90.00	-555.3	6,291.6	835.4	444.3	391.03	2.136	
14,300.0	6,850.3	14,053.8	6,850.3	199.8	197.1	-90.00	-555.3	6,391.6	835.4	438.7	396.60	2.106	
14,400.0	6,849.8	14,153.8	6,849.7	202.6	199.9	-90.00	-555.3	6,491.6	835.4	433.2	402.18	2.077	
14,500.0	6,849.3	14,253.8	6,849.2	205.3	202.6	-90.00	-555.3	6,591.6	835.4	427.6	407.76	2.049	
14,600.0	6,848.8	14,353.8	6,848.7	208.1	205.4	-90.00	-555.3	6,691.6	835.4	422.0	413.33	2.021	
14,700.0	6,848.2	14,453.8	6,848.2	210.9	208.2	-90.00	-555.3	6,791.6	835.4	416.4	418.91	1.994	
14,800.0	6,847.7	14,553.8	6,847.7	213.7	211.0	-90.00	-555.3	6,891.6	835.4	410.9	424.49	1.968	
14,900.0	6,847.2	14,653.8	6,847.2	216.5	213.8	-90.00	-555.3	6,991.6	835.4	405.3	430.07	1.942	
14,934.5	6,847.1	14,688.2	6,847.0	217.5	214.8	-90.00	-555.3	7,026.1	835.4	403.4	431.99	1.934	
14,945.8	6,847.0	14,696.6	6,847.0	217.8	215.0	-90.00	-555.3	7,034.4	835.4	402.8	432.54	1.931 SF	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19P-312 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.686		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.229 CC		
300.0	300.0	300.0	300.0	0.5	0.6	144.38	29.1	0.0	30.6	29.4	1.11	27.567		
400.0	399.8	399.8	399.8	0.8	0.8	149.34	29.1	0.0	34.9	33.4	1.55	22.603		
500.0	499.5	500.7	500.7	1.0	1.0	154.17	27.8	-1.2	41.1	39.2	1.97	20.849		
600.0	598.7	601.9	601.7	1.3	1.2	157.47	23.8	-4.7	47.6	45.2	2.40	19.862		
700.0	697.5	703.3	702.7	1.6	1.4	159.75	17.0	-10.5	54.2	51.4	2.84	19.065		
800.0	795.6	804.9	803.6	2.0	1.7	161.33	7.6	-18.7	60.9	57.6	3.31	18.382		
900.0	893.1	906.8	904.2	2.5	2.0	162.41	-4.6	-29.3	67.7	63.9	3.81	17.762		
1,000.0	989.6	1,009.0	1,004.4	3.0	2.4	163.13	-19.5	-42.3	74.4	70.1	4.33	17.175		
1,100.0	1,085.3	1,111.3	1,104.1	3.5	2.8	163.56	-37.2	-57.6	81.2	76.3	4.89	16.602		
1,200.0	1,179.8	1,214.0	1,203.1	4.2	3.3	163.78	-57.6	-75.3	87.9	82.5	5.49	16.030		
1,300.0	1,273.7	1,316.9	1,301.3	4.9	3.9	163.61	-80.7	-95.4	93.2	87.1	6.15	15.168		
1,400.0	1,367.6	1,417.3	1,396.5	5.5	4.5	163.01	-104.9	-116.3	96.4	89.6	6.86	14.053		
1,500.0	1,461.4	1,517.2	1,491.2	6.2	5.1	162.44	-129.0	-137.3	99.6	92.0	7.58	13.134		
1,600.0	1,555.3	1,617.2	1,585.9	6.9	5.8	161.91	-153.1	-158.2	102.8	94.5	8.33	12.334		
1,700.0	1,649.2	1,717.1	1,680.6	7.6	6.4	161.41	-177.2	-179.1	106.0	96.9	9.10	11.648		
1,800.0	1,743.1	1,817.1	1,775.3	8.3	7.1	160.94	-201.3	-200.0	109.2	99.3	9.88	11.054		
1,900.0	1,836.9	1,917.0	1,870.0	9.0	7.7	160.50	-225.4	-220.9	112.4	101.7	10.67	10.535		
2,000.0	1,930.8	2,017.0	1,964.8	9.7	8.4	160.08	-249.5	-241.8	115.6	104.1	11.47	10.079		
2,100.0	2,024.7	2,116.9	2,059.5	10.4	9.0	159.68	-273.6	-262.7	118.8	106.5	12.28	9.675		
2,200.0	2,118.6	2,216.8	2,154.2	11.1	9.7	159.31	-297.7	-283.6	122.0	108.9	13.10	9.315		
2,300.0	2,212.4	2,316.8	2,248.9	11.8	10.3	158.95	-321.8	-304.5	125.3	111.3	13.93	8.993		
2,400.0	2,306.3	2,416.7	2,343.6	12.6	11.0	158.62	-345.9	-325.5	128.5	113.7	14.76	8.704		
2,500.0	2,400.2	2,516.7	2,438.3	13.3	11.6	158.29	-370.0	-346.4	131.7	116.1	15.60	8.441		
2,600.0	2,494.1	2,616.6	2,533.1	14.0	12.3	157.99	-394.0	-367.3	135.0	118.5	16.45	8.203		
2,700.0	2,587.9	2,716.6	2,627.8	14.7	13.0	157.70	-418.1	-388.2	138.2	120.9	17.30	7.986		
2,800.0	2,681.8	2,816.5	2,722.5	15.4	13.6	157.42	-442.2	-409.1	141.4	123.3	18.16	7.788		
2,900.0	2,775.7	2,916.5	2,817.2	16.1	14.3	157.15	-466.3	-430.0	144.7	125.7	19.03	7.605		
3,000.0	2,869.6	3,016.4	2,911.9	16.8	14.9	156.90	-490.4	-450.9	148.0	128.1	19.89	7.437		
3,100.0	2,963.4	3,116.3	3,006.6	17.5	15.6	156.66	-514.5	-471.8	151.2	130.4	20.76	7.282		
3,200.0	3,057.3	3,216.3	3,101.3	18.2	16.3	156.42	-538.6	-492.8	154.5	132.8	21.64	7.138		
3,300.0	3,151.2	3,316.2	3,196.1	18.9	16.9	156.20	-562.7	-513.7	157.7	135.2	22.52	7.004		
3,400.0	3,245.1	3,416.2	3,290.8	19.6	17.6	155.99	-586.8	-534.6	161.0	137.6	23.40	6.879		
3,500.0	3,338.9	3,516.1	3,385.5	20.3	18.2	155.78	-610.9	-555.5	164.3	140.0	24.29	6.763		
3,600.0	3,432.8	3,616.1	3,480.2	21.1	18.9	155.58	-635.0	-576.4	167.5	142.3	25.17	6.654		
3,700.0	3,526.7	3,716.0	3,574.9	21.8	19.6	155.39	-659.1	-597.3	170.8	144.7	26.07	6.552		
3,800.0	3,620.6	3,816.0	3,669.6	22.5	20.2	155.21	-683.2	-618.2	174.1	147.1	26.96	6.456		
3,900.0	3,714.4	3,915.9	3,764.4	23.2	20.9	155.03	-707.3	-639.1	177.3	149.5	27.86	6.366		
4,000.0	3,808.3	4,015.9	3,859.1	23.9	21.6	154.86	-731.4	-660.1	180.6	151.9	28.75	6.281		
4,100.0	3,902.2	4,115.8	3,953.8	24.6	22.2	154.70	-755.5	-681.0	183.9	154.2	29.65	6.201		
4,200.0	3,996.1	4,215.7	4,048.5	25.3	22.9	154.54	-779.6	-701.9	187.2	156.6	30.56	6.125		
4,300.0	4,089.9	4,315.7	4,143.2	26.0	23.5	154.39	-803.7	-722.8	190.4	159.0	31.46	6.053		
4,400.0	4,183.8	4,415.6	4,237.9	26.7	24.2	154.24	-827.8	-743.7	193.7	161.3	32.37	5.985		
4,500.0	4,277.7	4,515.6	4,332.7	27.4	24.9	154.10	-851.9	-764.6	197.0	163.7	33.27	5.920		
4,600.0	4,371.6	4,615.5	4,427.4	28.2	25.5	153.96	-876.0	-785.5	200.3	166.1	34.18	5.859		
4,700.0	4,465.4	4,715.5	4,522.1	28.9	26.2	153.83	-900.1	-806.4	203.6	168.5	35.10	5.800		
4,800.0	4,559.3	4,815.4	4,616.8	29.6	26.9	153.70	-924.2	-827.4	206.8	170.8	36.01	5.744		
4,900.0	4,653.2	4,915.4	4,711.5	30.3	27.5	153.57	-948.3	-848.3	210.1	173.2	36.92	5.691		
5,000.0	4,747.1	5,015.3	4,806.2	31.0	28.2	153.45	-972.3	-869.2	213.4	175.6	37.84	5.640		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19P-312 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,840.9	5,115.2	4,900.9	31.7	28.9	153.33		-996.4	-890.1	216.7	178.0	38.75	5.592	
5,200.0	4,934.8	5,214.5	4,995.0	32.4	29.5	153.22		-1,020.4	-910.9	220.0	180.3	39.66	5.547	
5,300.0	5,028.7	5,308.1	5,084.3	33.1	30.0	153.36		-1,041.6	-929.3	225.0	184.6	40.37	5.573	
5,400.0	5,123.4	5,400.0	5,172.8	33.6	30.4	153.67		-1,060.3	-945.5	230.7	189.9	40.85	5.649	
5,500.0	5,219.1	5,494.7	5,264.8	34.0	30.7	153.98		-1,077.3	-960.3	236.2	194.9	41.26	5.724	
5,600.0	5,315.7	5,587.8	5,355.8	34.4	31.1	154.29		-1,091.8	-972.8	241.4	199.8	41.61	5.801	
5,700.0	5,413.2	5,680.7	5,447.4	34.8	31.3	154.59		-1,104.0	-983.4	246.2	204.4	41.88	5.880	
5,800.0	5,511.5	5,773.5	5,539.2	35.1	31.6	154.90		-1,113.9	-992.1	250.8	208.7	42.08	5.960	
5,900.0	5,610.3	5,866.2	5,631.4	35.4	31.7	155.20		-1,121.6	-998.7	255.1	212.9	42.20	6.043	
6,000.0	5,709.6	5,958.8	5,723.7	35.6	31.9	155.50		-1,127.0	-1,003.4	259.0	216.8	42.26	6.129	
6,100.0	5,809.2	6,051.3	5,816.0	35.7	32.0	155.81		-1,130.2	-1,006.2	262.6	220.4	42.24	6.218	
6,200.0	5,909.1	6,144.3	5,909.1	35.9	32.1	156.12		-1,131.2	-1,007.0	266.0	223.8	42.15	6.309	
6,300.0	6,009.1	6,244.3	6,009.1	36.0	32.2	13.85		-1,131.2	-1,007.0	267.3	203.9	63.41	4.215	
6,301.0	6,010.0	6,245.3	6,010.0	36.0	32.2	13.85		-1,131.2	-1,007.0	267.3	203.9	63.41	4.215	
6,400.0	6,109.1	6,339.0	6,103.6	36.0	32.2	14.38		-1,131.2	-1,004.5	267.9	204.2	63.73	4.205	
6,500.0	6,208.8	6,430.2	6,193.9	36.0	32.2	-74.04		-1,131.2	-991.6	270.0	228.9	41.04	6.578	
6,600.0	6,306.8	6,520.8	6,281.4	35.9	32.1	-72.71		-1,131.2	-968.4	271.8	231.8	40.04	6.789	
6,700.0	6,401.5	6,610.8	6,365.0	35.8	31.9	-71.66		-1,131.2	-935.1	273.4	234.3	39.12	6.990	
6,800.0	6,491.1	6,700.0	6,443.4	35.5	31.7	-70.89		-1,131.2	-892.7	274.7	236.3	38.34	7.164	
6,900.0	6,574.3	6,789.7	6,516.8	35.3	31.4	-70.39		-1,131.2	-841.2	275.5	237.7	37.79	7.290	
7,000.0	6,649.5	6,878.8	6,583.2	34.9	31.1	-70.18		-1,131.2	-781.8	275.8	238.3	37.59	7.337	
7,100.0	6,715.4	6,967.9	6,642.2	34.6	30.9	-70.25		-1,131.2	-715.1	275.7	237.9	37.87	7.280	
7,200.0	6,771.0	7,057.1	6,693.1	34.3	30.6	-70.60		-1,131.2	-641.9	275.1	236.4	38.72	7.105	
7,300.0	6,815.3	7,146.5	6,735.2	34.0	30.4	-71.23		-1,131.2	-563.1	274.1	233.9	40.20	6.818	
7,400.0	6,847.5	7,236.3	6,767.9	33.7	30.1	-72.14		-1,131.2	-479.6	272.7	230.4	42.28	6.449	
7,500.0	6,867.1	7,326.6	6,790.7	33.5	30.0	-73.33		-1,131.2	-392.3	270.9	226.1	44.88	6.037	
7,582.6	6,876.9	7,400.0	6,801.6	33.3	29.9	-73.78		-1,131.2	-319.7	270.3	223.7	46.61	5.798	
7,600.0	6,877.8	7,417.5	6,803.2	33.3	29.9	-73.90		-1,131.2	-302.3	270.1	223.1	47.03	5.743	
7,700.0	6,883.5	7,510.7	6,805.2	33.1	29.8	-73.21		-1,131.2	-209.1	271.1	221.7	49.41	5.486	
7,800.0	6,883.2	7,610.7	6,804.1	33.1	30.0	-73.05		-1,131.2	-109.1	271.3	219.2	52.08	5.209	
7,900.0	6,882.7	7,710.7	6,803.0	33.3	30.5	-72.94		-1,131.2	-9.1	271.4	216.4	55.07	4.929	
8,000.0	6,882.2	7,810.7	6,802.0	33.8	31.4	-72.83		-1,131.2	90.9	271.6	213.2	58.40	4.651	
8,100.0	6,881.6	7,910.7	6,800.9	34.9	32.8	-72.71		-1,131.2	190.8	271.8	209.8	62.01	4.383	
8,200.0	6,881.1	8,010.7	6,799.8	36.5	34.6	-72.60		-1,131.2	290.8	271.9	206.1	65.85	4.130	
8,300.0	6,880.6	8,110.7	6,798.8	38.4	36.7	-72.49		-1,131.2	390.8	272.1	202.2	69.89	3.894	
8,400.0	6,880.1	8,210.7	6,797.7	40.6	38.8	-72.38		-1,131.2	490.8	272.3	198.2	74.08	3.675	
8,500.0	6,879.6	8,310.7	6,796.6	42.9	41.1	-72.26		-1,131.2	590.8	272.5	194.0	78.42	3.474	
8,600.0	6,879.1	8,410.7	6,795.6	45.2	43.5	-72.15		-1,131.2	690.8	272.6	189.8	82.86	3.290	
8,700.0	6,878.6	8,510.7	6,794.5	47.6	45.9	-72.04		-1,131.2	790.8	272.8	185.4	87.40	3.121	
8,800.0	6,878.1	8,610.7	6,793.4	50.1	48.4	-71.93		-1,131.2	890.8	273.0	181.0	92.01	2.967	
8,900.0	6,877.6	8,710.7	6,792.4	52.6	50.9	-71.82		-1,131.2	990.8	273.1	176.4	96.69	2.825	
9,000.0	6,877.1	8,810.7	6,791.3	55.1	53.4	-71.71		-1,131.2	1,090.8	273.3	171.9	101.43	2.695	
9,100.0	6,876.6	8,910.7	6,790.2	57.6	55.9	-71.60		-1,131.2	1,190.8	273.5	167.3	106.21	2.575	
9,200.0	6,876.1	9,010.7	6,789.2	60.2	58.5	-71.49		-1,131.2	1,290.8	273.7	162.6	111.04	2.465	
9,300.0	6,875.6	9,110.7	6,788.1	62.8	61.1	-71.37		-1,131.2	1,390.8	273.8	157.9	115.89	2.363	
9,400.0	6,875.1	9,210.7	6,787.1	65.4	63.7	-71.26		-1,131.2	1,490.8	274.0	153.2	120.78	2.269	
9,500.0	6,874.6	9,310.7	6,786.0	68.0	66.4	-71.15		-1,131.2	1,590.7	274.2	148.5	125.70	2.181	
9,600.0	6,874.1	9,410.7	6,784.9	70.7	69.0	-71.04		-1,131.2	1,690.7	274.4	143.8	130.63	2.100	
9,700.0	6,873.6	9,510.7	6,783.9	73.3	71.7	-70.93		-1,131.2	1,790.7	274.6	139.0	135.58	2.025	
9,800.0	6,873.0	9,610.7	6,782.8	76.0	74.3	-70.82		-1,131.2	1,890.7	274.7	134.2	140.55	1.955	
9,900.0	6,872.5	9,710.7	6,781.7	78.7	77.0	-70.71		-1,131.2	1,990.7	274.9	129.4	145.53	1.889	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19P-312 - Wellbore #1 - Plan #1 (3-05-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	6,872.0	9,810.7	6,780.7	81.3	79.7	-70.60	-1,131.2	2,090.7	275.1	124.6	150.52	1.828		
10,100.0	6,871.5	9,910.7	6,779.6	84.0	82.4	-70.49	-1,131.2	2,190.7	275.3	119.8	155.52	1.770		
10,200.0	6,871.0	10,010.7	6,778.5	86.7	85.1	-70.38	-1,131.2	2,290.7	275.5	115.0	160.53	1.716		
10,300.0	6,870.5	10,110.7	6,777.5	89.4	87.8	-70.27	-1,131.2	2,390.7	275.7	110.1	165.55	1.665		
10,400.0	6,870.0	10,210.7	6,776.4	92.1	90.5	-70.17	-1,131.2	2,490.7	275.9	105.3	170.57	1.617		
10,500.0	6,869.5	10,310.7	6,775.3	94.8	93.2	-70.06	-1,131.2	2,590.7	276.1	100.5	175.59	1.572		
10,600.0	6,869.0	10,410.7	6,774.3	97.5	95.9	-69.95	-1,131.2	2,690.7	276.2	95.6	180.62	1.529		
10,700.0	6,868.5	10,510.7	6,773.2	100.3	98.7	-69.84	-1,131.2	2,790.7	276.4	90.8	185.65	1.489 Level 3		
10,800.0	6,868.0	10,610.7	6,772.1	103.0	101.4	-69.73	-1,131.2	2,890.7	276.6	86.0	190.68	1.451 Level 3		
10,900.0	6,867.5	10,710.7	6,771.1	105.7	104.1	-69.62	-1,131.2	2,990.6	276.8	81.1	195.71	1.414 Level 3		
11,000.0	6,867.0	10,810.7	6,770.0	108.5	106.9	-69.51	-1,131.2	3,090.6	277.0	76.3	200.74	1.380 Level 3		
11,100.0	6,866.5	10,910.7	6,769.0	111.2	109.6	-69.40	-1,131.2	3,190.6	277.2	71.4	205.77	1.347 Level 3		
11,200.0	6,866.0	11,010.7	6,767.9	113.9	112.4	-69.30	-1,131.2	3,290.6	277.4	66.6	210.80	1.316 Level 3		
11,300.0	6,865.5	11,110.7	6,766.8	116.7	115.1	-69.19	-1,131.2	3,390.6	277.6	61.8	215.83	1.286 Level 3		
11,400.0	6,864.9	11,210.7	6,765.8	119.4	117.9	-69.08	-1,131.2	3,490.6	277.8	57.0	220.85	1.258 Level 3		
11,500.0	6,864.4	11,310.7	6,764.7	122.2	120.6	-68.97	-1,131.2	3,590.6	278.0	52.1	225.87	1.231 Level 2		
11,600.0	6,863.9	11,410.7	6,763.6	124.9	123.4	-68.87	-1,131.2	3,690.6	278.2	47.3	230.89	1.205 Level 2		
11,700.0	6,863.4	11,510.7	6,762.6	127.7	126.1	-68.76	-1,131.2	3,790.6	278.4	42.5	235.91	1.180 Level 2		
11,800.0	6,862.9	11,610.7	6,761.5	130.4	128.9	-68.65	-1,131.2	3,890.6	278.6	37.7	240.93	1.156 Level 2		
11,900.0	6,862.4	11,710.7	6,760.4	133.2	131.7	-68.55	-1,131.2	3,990.6	278.8	32.9	245.94	1.134 Level 2		
12,000.0	6,861.9	11,810.7	6,759.4	135.9	134.4	-68.44	-1,131.2	4,090.6	279.0	28.1	250.94	1.112 Level 2		
12,100.0	6,861.4	11,910.6	6,758.3	138.7	137.2	-68.33	-1,131.2	4,190.6	279.2	23.3	255.94	1.091 Level 2		
12,200.0	6,860.9	12,010.6	6,757.2	141.5	140.0	-68.23	-1,131.2	4,290.6	279.4	18.5	260.94	1.071 Level 2		
12,300.0	6,860.4	12,110.6	6,756.2	144.2	142.7	-68.12	-1,131.2	4,390.5	279.6	13.7	265.93	1.052 Level 2		
12,400.0	6,859.9	12,210.6	6,755.1	147.0	145.5	-68.01	-1,131.2	4,490.5	279.9	8.9	270.92	1.033 Level 2		
12,500.0	6,859.4	12,310.6	6,754.1	149.8	148.3	-67.91	-1,131.2	4,590.5	280.1	4.2	275.90	1.015 Level 2		
12,600.0	6,858.9	12,410.6	6,753.0	152.5	151.0	-67.80	-1,131.2	4,690.5	280.3	-0.6	280.88	0.998 Level 1		
12,700.0	6,858.4	12,510.6	6,751.9	155.3	153.8	-67.70	-1,131.2	4,790.5	280.5	-5.4	285.85	0.981 Level 1		
12,800.0	6,857.9	12,610.6	6,750.9	158.1	156.6	-67.59	-1,131.2	4,890.5	280.7	-10.1	290.82	0.965 Level 1		
12,900.0	6,857.4	12,710.6	6,749.8	160.9	159.4	-67.49	-1,131.2	4,990.5	280.9	-14.9	295.78	0.950 Level 1		
13,000.0	6,856.8	12,810.6	6,748.7	163.6	162.1	-67.38	-1,131.2	5,090.5	281.1	-19.6	300.74	0.935 Level 1		
13,100.0	6,856.3	12,910.6	6,747.7	166.4	164.9	-67.28	-1,131.2	5,190.5	281.3	-24.3	305.69	0.920 Level 1		
13,200.0	6,855.8	13,010.6	6,746.6	169.2	167.7	-67.17	-1,131.2	5,290.5	281.6	-29.1	310.63	0.906 Level 1		
13,300.0	6,855.3	13,110.6	6,745.5	172.0	170.5	-67.07	-1,131.2	5,390.5	281.8	-33.8	315.57	0.893 Level 1		
13,400.0	6,854.8	13,210.6	6,744.5	174.7	173.3	-66.96	-1,131.2	5,490.5	282.0	-38.5	320.50	0.880 Level 1		
13,500.0	6,854.3	13,310.6	6,743.4	177.5	176.0	-66.86	-1,131.2	5,590.5	282.2	-43.2	325.42	0.867 Level 1		
13,600.0	6,853.8	13,410.6	6,742.3	180.3	178.8	-66.75	-1,131.2	5,690.5	282.4	-47.9	330.34	0.855 Level 1		
13,700.0	6,853.3	13,510.6	6,741.3	183.1	181.6	-66.65	-1,131.2	5,790.4	282.7	-52.6	335.25	0.843 Level 1		
13,800.0	6,852.8	13,610.6	6,740.2	185.9	184.4	-66.54	-1,131.2	5,890.4	282.9	-57.3	340.15	0.832 Level 1		
13,900.0	6,852.3	13,710.6	6,739.1	188.6	187.2	-66.44	-1,131.2	5,990.4	283.1	-62.0	345.05	0.820 Level 1		
14,000.0	6,851.8	13,810.6	6,738.1	191.4	190.0	-66.34	-1,131.2	6,090.4	283.3	-66.6	349.94	0.810 Level 1		
14,100.0	6,851.3	13,910.6	6,737.0	194.2	192.7	-66.23	-1,131.2	6,190.4	283.5	-71.3	354.83	0.799 Level 1		
14,200.0	6,850.8	14,010.6	6,736.0	197.0	195.5	-66.13	-1,131.2	6,290.4	283.8	-75.9	359.70	0.789 Level 1		
14,300.0	6,850.3	14,110.6	6,734.9	199.8	198.3	-66.03	-1,131.2	6,390.4	284.0	-80.6	364.57	0.779 Level 1		
14,400.0	6,849.8	14,210.6	6,733.8	202.6	201.1	-65.92	-1,131.2	6,490.4	284.2	-85.2	369.43	0.769 Level 1		
14,500.0	6,849.3	14,310.6	6,732.8	205.3	203.9	-65.82	-1,131.2	6,590.4	284.5	-89.8	374.29	0.760 Level 1		
14,600.0	6,848.8	14,410.6	6,731.7	208.1	206.7	-65.72	-1,131.2	6,690.4	284.7	-94.5	379.14	0.751 Level 1		
14,700.0	6,848.2	14,510.6	6,730.6	210.9	209.5	-65.62	-1,131.2	6,790.4	284.9	-99.1	383.98	0.742 Level 1		
14,800.0	6,847.7	14,610.6	6,729.6	213.7	212.3	-65.52	-1,131.2	6,890.4	285.1	-103.7	388.81	0.733 Level 1		
14,900.0	6,847.2	14,710.6	6,728.5	216.5	215.1	-65.41	-1,131.2	6,990.4	285.4	-108.3	393.64	0.725 Level 1		
14,945.8	6,847.0	14,756.4	6,728.0	217.8	216.3	-65.37	-1,131.2	7,036.1	285.5	-110.4	395.85	0.721 Level 1, ES, SF		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24O-HZ Pad Sec.24-T5N-R65W - Maxey 24P-312 - Wellbore #1 - Plan #2 (8-9-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						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)		
6,200.0	5,909.1	11,034.3	6,800.1	35.9	123.3	146.90	-1,116.2	-1,063.8	921.5	773.9	147.65	6.242	
6,300.0	6,009.1	11,032.9	6,800.1	36.0	123.3	1.20	-1,116.2	-1,065.2	827.0	777.5	49.48	16.713	
6,400.0	6,109.1	11,032.4	6,800.2	36.0	123.3	1.09	-1,116.2	-1,065.8	733.4	683.8	49.58	14.791	
6,500.0	6,208.8	11,038.3	6,800.1	36.0	123.4	-104.42	-1,116.2	-1,059.9	642.0	493.9	148.04	4.336	
6,600.0	6,306.8	11,057.1	6,800.0	35.9	124.0	-113.69	-1,116.3	-1,041.0	554.8	411.5	143.28	3.872	
6,700.0	6,401.5	11,088.7	6,799.8	35.8	124.9	-117.80	-1,116.5	-1,009.5	474.6	334.3	140.31	3.382	
6,800.0	6,491.1	11,132.3	6,799.6	35.5	126.1	-118.02	-1,116.8	-965.9	404.4	263.8	140.62	2.876	
6,900.0	6,574.3	11,187.3	6,799.3	35.3	127.6	-115.07	-1,117.1	-910.9	347.4	203.4	143.95	2.413	
7,000.0	6,649.5	11,245.3	6,799.0	34.9	129.2	-110.37	-1,117.4	-852.8	306.4	158.0	148.37	2.065	
7,083.0	6,704.9	11,245.3	6,799.0	34.7	129.2	-111.31	-1,117.4	-852.8	293.3	146.1	147.22	1.992 CC, ES, SF	
7,100.0	6,715.4	11,245.3	6,799.0	34.6	129.2	-111.27	-1,117.4	-852.8	293.9	146.7	147.14	1.997	
7,200.0	6,771.0	11,245.3	6,799.0	34.3	129.2	-109.43	-1,117.4	-852.8	318.7	170.7	147.99	2.154	
7,300.0	6,815.3	11,245.3	6,799.0	34.0	129.2	-104.71	-1,117.4	-852.8	373.2	222.6	150.62	2.478	
7,400.0	6,847.5	11,245.3	6,799.0	33.7	129.2	-96.83	-1,117.4	-852.8	445.9	292.4	153.56	2.904	
7,500.0	6,867.1	11,245.3	6,799.0	33.5	129.2	-85.84	-1,117.4	-852.8	528.4	374.7	153.71	3.438	
7,600.0	6,877.8	11,245.3	6,799.0	33.3	129.2	-82.71	-1,117.4	-852.8	616.0	462.4	153.60	4.011	
7,700.0	6,883.5	11,245.3	6,799.0	33.1	129.2	-72.30	-1,117.4	-852.8	706.6	558.3	148.30	4.765	
7,800.0	6,883.2	11,245.3	6,799.0	33.1	129.2	-70.10	-1,117.4	-852.8	798.8	651.1	147.68	5.409	
7,900.0	6,882.7	11,245.3	6,799.0	33.3	129.2	-70.10	-1,117.4	-852.8	892.7	743.5	149.18	5.984	
8,000.0	6,882.2	11,245.3	6,799.0	33.8	129.2	-70.10	-1,117.4	-852.8	987.8	836.9	150.86	6.548	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24O-HZ Pad Sec.24-T5N-R65W - Maxey 24P-402 - Wellbore #1 - Plan #2 (8-9-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,200.0	5,909.1	11,134.3	6,912.0	35.9	123.7	-126.08	-1,415.0	-1,070.4	992.2	938.9	53.33	18.607	
6,300.0	6,009.1	11,133.4	6,912.0	36.0	123.6	-179.33	-1,415.0	-1,071.3	892.2	838.4	53.87	16.563	
6,400.0	6,109.1	11,133.4	6,912.0	36.0	123.6	-179.37	-1,415.0	-1,071.3	792.3	738.3	53.97	14.681	
6,500.0	6,208.8	11,139.9	6,912.0	36.0	123.8	164.86	-1,415.0	-1,064.8	692.6	619.9	72.66	9.532	
6,600.0	6,306.8	11,159.3	6,912.0	35.9	124.4	170.95	-1,415.1	-1,045.4	594.7	531.1	63.52	9.361	
6,700.0	6,401.5	11,191.3	6,912.0	35.8	125.3	172.65	-1,415.3	-1,013.4	500.1	439.5	60.59	8.253	
6,800.0	6,491.1	11,235.5	6,912.0	35.5	126.5	173.08	-1,415.5	-969.2	410.6	351.5	59.12	6.945	
6,900.0	6,574.3	11,290.9	6,912.0	35.3	128.0	172.79	-1,415.8	-913.8	327.7	269.5	58.23	5.628	
7,000.0	6,649.5	11,349.1	6,912.0	34.9	129.6	172.09	-1,416.1	-855.6	252.9	195.4	57.50	4.399	
7,100.0	6,715.4	11,349.1	6,912.0	34.6	129.6	172.66	-1,416.1	-855.6	204.8	150.0	54.89	3.732	
7,137.6	6,737.6	11,349.1	6,912.0	34.5	129.6	172.70	-1,416.1	-855.6	200.4	146.4	54.04	3.709 CC, ES, SF	
7,200.0	6,771.0	11,349.1	6,912.0	34.3	129.6	172.59	-1,416.1	-855.6	212.3	159.6	52.76	4.024	
7,300.0	6,815.3	11,349.1	6,912.0	34.0	129.6	171.82	-1,416.1	-855.6	270.7	219.5	51.25	5.282	
7,400.0	6,847.5	11,349.1	6,912.0	33.7	129.6	169.88	-1,416.1	-855.6	355.1	303.7	51.36	6.914	
7,500.0	6,867.1	11,349.1	6,912.0	33.5	129.6	164.61	-1,416.1	-855.6	450.1	392.8	57.31	7.854	
7,600.0	6,877.8	11,349.1	6,912.0	33.3	129.6	161.88	-1,416.1	-855.6	548.6	486.6	62.07	8.839	
7,700.0	6,883.5	11,349.1	6,912.0	33.1	129.6	135.43	-1,416.1	-855.6	648.1	536.9	111.14	5.831	
7,800.0	6,883.2	11,349.1	6,912.0	33.1	129.6	118.89	-1,416.1	-855.6	748.0	610.4	137.61	5.436	
7,900.0	6,882.7	11,349.1	6,912.0	33.3	129.6	118.89	-1,416.1	-855.6	847.9	708.9	139.03	6.099	
8,000.0	6,882.2	11,349.1	6,912.0	33.8	129.6	118.89	-1,416.1	-855.6	947.9	807.3	140.60	6.741	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Danley 33-20 (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	
12,700.0	6,858.4	7,026.9	6,876.4	155.3	20.8	-90.34	-750.0	5,551.7	994.0	819.7	174.37	5.701	
12,800.0	6,857.9	7,026.4	6,875.9	158.1	20.8	-90.30	-750.0	5,551.7	919.8	742.7	177.15	5.193	
12,900.0	6,857.4	7,025.9	6,875.4	160.9	20.8	-90.25	-750.0	5,551.7	850.9	671.0	179.92	4.730	
13,000.0	6,856.8	7,025.4	6,874.8	163.6	20.8	-90.21	-750.0	5,551.7	788.7	606.0	182.70	4.317	
13,100.0	6,856.3	7,024.9	6,874.3	166.4	20.8	-90.16	-750.0	5,551.7	734.9	549.4	185.47	3.962	
13,200.0	6,855.8	7,024.4	6,873.8	169.2	20.8	-90.12	-750.0	5,551.7	691.4	503.2	188.25	3.673	
13,300.0	6,855.3	7,023.9	6,873.3	172.0	20.8	-90.07	-750.0	5,551.7	660.4	469.3	191.03	3.457	
13,400.0	6,854.8	7,023.4	6,872.8	174.7	20.8	-90.03	-750.0	5,551.7	643.5	449.7	193.81	3.320	
13,460.0	6,854.5	7,023.1	6,872.5	176.4	20.8	-90.00	-750.0	5,551.7	640.7	445.2	195.48	3.278 CC, ES	
13,500.0	6,854.3	7,022.9	6,872.3	177.5	20.8	-89.98	-750.0	5,551.7	641.9	445.3	196.59	3.265 SF	
13,600.0	6,853.8	7,022.4	6,871.8	180.3	20.8	-89.94	-750.0	5,551.7	655.8	456.4	199.37	3.289	
13,700.0	6,853.3	7,021.9	6,871.3	183.1	20.8	-89.89	-750.0	5,551.7	684.1	482.0	202.15	3.384	
13,800.0	6,852.8	7,021.4	6,870.8	185.9	20.8	-89.85	-750.0	5,551.7	725.3	520.4	204.93	3.539	
13,900.0	6,852.3	7,020.9	6,870.3	188.6	20.8	-89.80	-750.0	5,551.7	777.2	569.5	207.71	3.742	
14,000.0	6,851.8	7,020.4	6,869.8	191.4	20.8	-89.76	-750.0	5,551.7	837.9	627.4	210.50	3.980	
14,100.0	6,851.3	7,019.9	6,869.3	194.2	20.8	-89.71	-750.0	5,551.7	905.5	692.3	213.28	4.246	
14,200.0	6,850.8	7,019.4	6,868.8	197.0	20.8	-89.67	-750.0	5,551.7	978.8	762.7	216.06	4.530	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Danley 43-20 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 453-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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,300.0	6,850.3	7,088.0	6,906.4	199.8	18.5	-93.22	-656.8	6,995.1	950.9	735.2	215.70	4.408		
14,400.0	6,849.8	7,085.6	6,904.0	202.6	18.5	-93.02	-656.7	6,995.1	890.8	672.3	218.52	4.077		
14,500.0	6,849.3	7,083.1	6,901.5	205.3	18.5	-92.83	-656.6	6,995.2	838.4	617.0	221.34	3.788		
14,600.0	6,848.8	7,080.6	6,899.1	208.1	18.5	-92.64	-656.5	6,995.2	795.1	571.0	224.16	3.547		
14,700.0	6,848.2	7,078.2	6,896.6	210.9	18.5	-92.45	-656.4	6,995.3	762.6	535.6	226.97	3.360		
14,800.0	6,847.7	7,075.7	6,894.2	213.7	18.5	-92.26	-656.3	6,995.3	742.2	512.4	229.79	3.230		
14,900.0	6,847.2	7,073.2	6,891.7	216.5	18.5	-92.06	-656.2	6,995.3	734.9	502.3	232.60	3.160		
14,903.6	6,847.2	7,073.1	6,891.6	216.6	18.5	-92.06	-656.2	6,995.4	734.9	502.2	232.71	3.158 CC, ES		
14,945.8	6,847.0	7,072.1	6,890.5	217.8	18.5	-91.98	-656.2	6,995.4	736.1	502.2	233.89	3.147 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Evert 5 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7077-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,600.0	6,869.0	6,866.0	6,866.0	97.5	137.3	91.49	-1,566.3	3,596.7	921.9	687.5	234.43	3.933		
10,700.0	6,868.5	6,865.5	6,865.5	100.3	137.3	91.33	-1,566.3	3,596.7	824.0	586.8	237.16	3.474		
10,800.0	6,868.0	6,865.0	6,865.0	103.0	137.3	91.16	-1,566.3	3,596.7	726.6	486.7	239.90	3.029		
10,900.0	6,867.5	6,864.5	6,864.5	105.7	137.3	91.00	-1,566.3	3,596.7	630.0	387.4	242.64	2.597		
11,000.0	6,867.0	6,864.0	6,864.0	108.5	137.3	90.83	-1,566.3	3,596.7	534.7	289.3	245.38	2.179		
11,100.0	6,866.5	6,863.5	6,863.5	111.2	137.3	90.67	-1,566.3	3,596.7	441.5	193.4	248.13	1.779		
11,200.0	6,866.0	6,863.0	6,863.0	113.9	137.3	90.50	-1,566.3	3,596.7	352.0	101.1	250.88	1.403	Level 3	
11,300.0	6,865.5	6,862.5	6,862.5	116.7	137.2	90.34	-1,566.3	3,596.7	270.0	16.4	253.62	1.065	Level 2	
11,400.0	6,864.9	6,861.9	6,861.9	119.4	137.2	90.17	-1,566.3	3,596.7	204.6	-51.7	256.37	0.798	Level 1	
11,500.0	6,864.4	6,861.4	6,861.4	122.2	137.2	90.01	-1,566.3	3,596.7	175.7	-83.4	259.12	0.678	Level 1	
11,505.1	6,864.4	6,861.4	6,861.4	122.3	137.2	90.00	-1,566.3	3,596.7	175.6	-83.6	259.26	0.677	Level 1, CC, ES, SF	
11,600.0	6,863.9	6,860.9	6,860.9	124.9	137.2	89.84	-1,566.3	3,596.7	199.6	-62.2	261.87	0.762	Level 1	
11,700.0	6,863.4	6,860.4	6,860.4	127.7	137.2	89.68	-1,566.3	3,596.7	262.4	-2.3	264.62	0.991	Level 1	
11,800.0	6,862.9	6,859.9	6,859.9	130.4	137.2	89.51	-1,566.3	3,596.7	343.3	75.9	267.37	1.284	Level 3	
11,900.0	6,862.4	6,859.4	6,859.4	133.2	137.2	89.35	-1,566.3	3,596.7	432.2	162.1	270.12	1.600		
12,000.0	6,861.9	6,858.9	6,858.9	135.9	137.2	89.18	-1,566.3	3,596.7	525.2	252.3	272.87	1.925		
12,100.0	6,861.4	6,858.4	6,858.4	138.7	137.2	89.02	-1,566.3	3,596.7	620.3	344.7	275.62	2.251		
12,200.0	6,860.9	6,857.9	6,857.9	141.5	137.2	88.85	-1,566.3	3,596.7	716.8	438.4	278.37	2.575		
12,300.0	6,860.4	6,857.4	6,857.4	144.2	137.1	88.69	-1,566.3	3,596.7	814.1	533.0	281.11	2.896		
12,400.0	6,859.9	6,856.9	6,856.9	147.0	137.1	88.52	-1,566.3	3,596.7	912.0	628.1	283.86	3.213		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Ivan Klein 13-20 (Exist) - Wellbore #1 - Wellbore												Offset Site Error:	0.0 ft
Survey Program: 7000-UNKNOWN												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,900.0	6,872.5	6,855.5	6,855.5	78.7	137.1	-90.74	-1,030.8	2,908.5	984.9	769.4	215.53	4.570	
10,000.0	6,872.0	6,855.0	6,855.0	81.3	137.1	-90.66	-1,030.8	2,908.5	892.6	674.4	218.20	4.091	
10,100.0	6,871.5	6,854.5	6,854.5	84.0	137.1	-90.58	-1,030.8	2,908.5	802.1	581.2	220.86	3.632	
10,200.0	6,871.0	6,854.0	6,854.0	86.7	137.1	-90.50	-1,030.8	2,908.5	714.1	490.6	223.54	3.195	
10,300.0	6,870.5	6,853.5	6,853.5	89.4	137.1	-90.42	-1,030.8	2,908.5	629.8	403.5	226.23	2.784	
10,400.0	6,870.0	6,853.0	6,853.0	92.1	137.1	-90.34	-1,030.8	2,908.5	550.7	321.8	228.92	2.406	
10,500.0	6,869.5	6,852.5	6,852.5	94.8	137.1	-90.26	-1,030.8	2,908.5	479.4	247.8	231.61	2.070	
10,600.0	6,869.0	6,852.0	6,852.0	97.5	137.0	-90.17	-1,030.8	2,908.5	420.1	185.8	234.31	1.793	
10,700.0	6,868.5	6,851.5	6,851.5	100.3	137.0	-90.09	-1,030.8	2,908.5	378.3	141.3	237.02	1.596	
10,800.0	6,868.0	6,851.0	6,851.0	103.0	137.0	-90.01	-1,030.8	2,908.5	360.2	120.5	239.73	1.503	
10,816.9	6,867.9	6,850.9	6,850.9	103.5	137.0	-90.00	-1,030.8	2,908.5	359.8	119.6	240.19	1.498	Level 3, CC, ES, SF
10,900.0	6,867.5	6,850.5	6,850.5	105.7	137.0	-89.93	-1,030.8	2,908.5	369.3	126.9	242.45	1.523	
11,000.0	6,867.0	6,850.0	6,850.0	108.5	137.0	-89.85	-1,030.8	2,908.5	403.8	158.6	245.17	1.647	
11,100.0	6,866.5	6,849.5	6,849.5	111.2	137.0	-89.77	-1,030.8	2,908.5	457.9	210.0	247.89	1.847	
11,200.0	6,866.0	6,849.0	6,849.0	113.9	137.0	-89.69	-1,030.8	2,908.5	525.6	275.0	250.61	2.097	
11,300.0	6,865.5	6,848.5	6,848.5	116.7	137.0	-89.61	-1,030.8	2,908.5	602.4	349.1	253.34	2.378	
11,400.0	6,864.9	6,847.9	6,847.9	119.4	137.0	-89.53	-1,030.8	2,908.5	685.2	429.2	256.07	2.676	
11,500.0	6,864.4	6,847.4	6,847.4	122.2	136.9	-89.45	-1,030.8	2,908.5	772.1	513.3	258.80	2.983	
11,600.0	6,863.9	6,846.9	6,846.9	124.9	136.9	-89.37	-1,030.8	2,908.5	861.8	600.3	261.54	3.295	
11,700.0	6,863.4	6,846.4	6,846.4	127.7	136.9	-89.29	-1,030.8	2,908.5	953.6	689.4	264.27	3.608	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 5 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7012-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)	Factor	
8,000.0	6,882.2	6,867.2	6,867.2	33.8	137.3	90.95	-1,664.9	991.8	941.0	771.3	169.61	5.548	
8,100.0	6,881.6	6,866.6	6,866.6	34.9	137.3	90.85	-1,664.9	991.8	845.8	674.3	171.51	4.931	
8,200.0	6,881.1	6,866.1	6,866.1	36.5	137.3	90.74	-1,664.9	991.8	751.9	578.4	173.53	4.333	
8,300.0	6,880.6	6,865.6	6,865.6	38.4	137.3	90.63	-1,664.9	991.8	659.8	484.2	175.65	3.756	
8,400.0	6,880.1	6,865.1	6,865.1	40.6	137.3	90.53	-1,664.9	991.8	570.4	392.5	177.85	3.207	
8,500.0	6,879.6	6,864.6	6,864.6	42.9	137.3	90.42	-1,664.9	991.8	485.1	304.9	180.12	2.693	
8,600.0	6,879.1	6,864.1	6,864.1	45.2	137.3	90.32	-1,664.9	991.8	406.5	224.1	182.45	2.228	
8,700.0	6,878.6	6,863.6	6,863.6	47.6	137.3	90.21	-1,664.9	991.8	339.5	154.6	184.83	1.837	
8,800.0	6,878.1	6,863.1	6,863.1	50.1	137.3	90.11	-1,664.9	991.8	291.9	104.7	187.26	1.559	
8,900.0	6,877.6	6,862.6	6,862.6	52.6	137.3	90.00	-1,664.9	991.8	274.2	84.5	189.72	1.445 Level 3	
8,900.1	6,877.6	6,862.6	6,862.6	52.6	137.3	90.00	-1,664.9	991.8	274.2	84.5	189.72	1.445 Level 3, CC, ES, SF	
9,000.0	6,877.1	6,862.1	6,862.1	55.1	137.2	89.89	-1,664.9	991.8	291.8	99.6	192.21	1.518	
9,100.0	6,876.6	6,861.6	6,861.6	57.6	137.2	89.79	-1,664.9	991.8	339.3	144.6	194.73	1.743	
9,200.0	6,876.1	6,861.1	6,861.1	60.2	137.2	89.68	-1,664.9	991.8	406.4	209.1	197.28	2.060	
9,300.0	6,875.6	6,860.6	6,860.6	62.8	137.2	89.58	-1,664.9	991.8	484.9	285.0	199.85	2.426	
9,400.0	6,875.1	6,860.1	6,860.1	65.4	137.2	89.47	-1,664.9	991.8	570.1	367.7	202.44	2.816	
9,500.0	6,874.6	6,859.6	6,859.6	68.0	137.2	89.37	-1,664.9	991.8	659.6	454.5	205.04	3.217	
9,600.0	6,874.1	6,859.1	6,859.1	70.7	137.2	89.26	-1,664.9	991.8	751.7	544.0	207.65	3.620	
9,700.0	6,873.6	6,858.6	6,858.6	73.3	137.2	89.15	-1,664.9	991.8	845.6	635.3	210.28	4.021	
9,800.0	6,873.0	6,858.0	6,858.0	76.0	137.2	89.05	-1,664.9	991.8	940.7	727.8	212.92	4.418	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,500.0	6,867.1	6,450.0	6,357.1	33.5	19.8	30.83		-1,765.7	330.0	985.8	957.5	28.32	34.812	
7,600.0	6,877.8	6,483.3	6,383.6	33.3	19.8	32.73		-1,765.7	350.1	918.9	889.3	29.58	31.061	
7,700.0	6,883.5	6,516.4	6,409.2	33.1	19.7	36.45		-1,765.7	371.2	852.5	820.6	31.84	26.775	
7,800.0	6,883.2	6,550.0	6,434.1	33.1	19.7	38.44		-1,765.7	393.7	786.3	752.6	33.70	23.331	
7,900.0	6,882.7	6,588.3	6,461.3	33.3	19.6	40.11		-1,765.7	420.7	724.4	688.8	35.57	20.363	
8,000.0	6,882.2	6,630.1	6,489.4	33.8	19.6	41.97		-1,765.7	451.5	667.5	629.8	37.69	17.711	
8,100.0	6,881.6	6,676.1	6,518.3	34.9	19.5	44.04		-1,765.7	487.4	616.1	576.1	40.07	15.375	
8,200.0	6,881.1	6,726.9	6,547.7	36.5	19.4	46.31		-1,765.7	528.8	571.0	528.3	42.75	13.356	
8,300.0	6,880.6	6,782.6	6,576.6	38.4	19.3	48.73		-1,765.7	576.4	532.6	486.9	45.73	11.646	
8,400.0	6,880.1	6,850.0	6,606.9	40.6	19.3	51.48		-1,765.7	636.6	501.2	452.0	49.16	10.195	
8,500.0	6,879.6	6,908.8	6,628.9	42.9	19.2	53.63		-1,765.7	691.1	476.6	424.1	52.49	9.078	
8,600.0	6,879.1	6,978.8	6,649.5	45.2	19.3	55.76		-1,765.7	757.9	458.7	402.5	56.16	8.167	
8,700.0	6,878.6	7,050.0	6,664.1	47.6	20.4	57.35		-1,765.7	827.6	447.0	387.1	59.81	7.473	
8,800.0	6,878.1	7,128.0	6,672.6	50.1	21.7	58.32		-1,765.7	905.1	440.9	377.5	63.47	6.947	
8,900.0	6,877.6	7,214.1	6,673.8	52.6	23.4	58.50		-1,765.7	991.1	439.8	372.8	67.02	6.563	
9,000.0	6,877.1	7,314.1	6,673.5	55.1	25.4	58.53		-1,765.7	1,091.1	439.7	368.8	70.88	6.204	
9,100.0	6,876.6	7,414.1	6,673.3	57.6	27.6	58.56		-1,765.7	1,191.1	439.6	364.7	74.89	5.869	
9,200.0	6,876.1	7,514.1	6,673.0	60.2	29.8	58.59		-1,765.7	1,291.1	439.4	360.4	79.04	5.560	
9,300.0	6,875.6	7,614.1	6,672.8	62.8	32.2	58.62		-1,765.7	1,391.1	439.3	356.0	83.28	5.275	
9,400.0	6,875.1	7,714.1	6,672.6	65.4	34.6	58.65		-1,765.7	1,491.1	439.2	351.6	87.60	5.013	
9,500.0	6,874.6	7,814.1	6,672.3	68.0	37.1	58.67		-1,765.7	1,591.1	439.0	347.0	92.00	4.772	
9,600.0	6,874.1	7,914.1	6,672.1	70.7	39.6	58.70		-1,765.7	1,691.1	438.9	342.4	96.45	4.551	
9,700.0	6,873.6	8,014.1	6,671.8	73.3	42.1	58.73		-1,765.7	1,791.1	438.8	337.8	100.95	4.346	
9,800.0	6,873.0	8,114.1	6,671.6	76.0	44.7	58.76		-1,765.7	1,891.1	438.6	333.1	105.49	4.158	
9,900.0	6,872.5	8,214.1	6,671.3	78.7	47.3	58.79		-1,765.7	1,991.1	438.5	328.4	110.06	3.984	
10,000.0	6,872.0	8,314.1	6,671.1	81.3	49.9	58.82		-1,765.7	2,091.1	438.3	323.7	114.66	3.823	
10,100.0	6,871.5	8,414.1	6,670.8	84.0	52.5	58.85		-1,765.7	2,191.1	438.2	318.9	119.30	3.673	
10,200.0	6,871.0	8,514.1	6,670.6	86.7	55.2	58.88		-1,765.7	2,291.1	438.1	314.1	123.95	3.534	
10,300.0	6,870.5	8,614.1	6,670.4	89.4	57.9	58.91		-1,765.7	2,391.1	437.9	309.3	128.63	3.405	
10,400.0	6,870.0	8,714.1	6,670.1	92.1	60.5	58.94		-1,765.7	2,491.1	437.8	304.5	133.33	3.284	
10,500.0	6,869.5	8,814.1	6,669.9	94.8	63.2	58.97		-1,765.7	2,591.1	437.7	299.6	138.04	3.171	
10,600.0	6,869.0	8,914.1	6,669.6	97.5	65.9	59.00		-1,765.7	2,691.1	437.5	294.8	142.77	3.065	
10,700.0	6,868.5	9,014.1	6,669.4	100.3	68.6	59.03		-1,765.7	2,791.1	437.4	289.9	147.51	2.965	
10,800.0	6,868.0	9,114.1	6,669.1	103.0	71.4	59.06		-1,765.7	2,891.1	437.3	285.0	152.27	2.872	
10,900.0	6,867.5	9,214.1	6,668.9	105.7	74.1	59.08		-1,765.7	2,991.1	437.1	280.1	157.04	2.784	
11,000.0	6,867.0	9,314.1	6,668.6	108.5	76.8	59.11		-1,765.7	3,091.1	437.0	275.2	161.82	2.701	
11,100.0	6,866.5	9,414.1	6,668.4	111.2	79.6	59.14		-1,765.7	3,191.1	436.9	270.3	166.61	2.622	
11,200.0	6,866.0	9,514.1	6,668.2	113.9	82.3	59.17		-1,765.7	3,291.1	436.7	265.3	171.41	2.548	
11,300.0	6,865.5	9,614.1	6,667.9	116.7	85.0	59.20		-1,765.7	3,391.1	436.6	260.4	176.22	2.478	
11,400.0	6,864.9	9,714.1	6,667.7	119.4	87.8	59.23		-1,765.7	3,491.1	436.5	255.4	181.04	2.411	
11,500.0	6,864.4	9,814.1	6,667.4	122.2	90.5	59.26		-1,765.7	3,591.1	436.3	250.5	185.87	2.348	
11,600.0	6,863.9	9,914.1	6,667.2	124.9	93.3	59.29		-1,765.7	3,691.1	436.2	245.5	190.70	2.287	
11,700.0	6,863.4	10,014.1	6,666.9	127.7	96.1	59.32		-1,765.7	3,791.1	436.1	240.5	195.54	2.230	
11,800.0	6,862.9	10,114.1	6,666.7	130.4	98.8	59.35		-1,765.7	3,891.1	435.9	235.5	200.39	2.175	
11,900.0	6,862.4	10,214.1	6,666.5	133.2	101.6	59.38		-1,765.7	3,991.1	435.8	230.5	205.25	2.123	
12,000.0	6,861.9	10,314.1	6,666.2	135.9	104.3	59.41		-1,765.7	4,091.1	435.7	225.5	210.11	2.073	
12,100.0	6,861.4	10,414.1	6,666.0	138.7	107.1	59.44		-1,765.7	4,191.1	435.5	220.5	214.98	2.026	
12,200.0	6,860.9	10,514.1	6,665.7	141.5	109.9	59.47		-1,765.7	4,291.1	435.4	215.5	219.86	1.980	
12,300.0	6,860.4	10,614.1	6,665.5	144.2	112.7	59.50		-1,765.7	4,391.1	435.3	210.5	224.74	1.937	
12,400.0	6,859.9	10,714.1	6,665.2	147.0	115.4	59.53		-1,765.7	4,491.1	435.1	205.5	229.63	1.895	
12,500.0	6,859.4	10,814.1	6,665.0	149.8	118.2	59.56		-1,765.7	4,591.1	435.0	200.5	234.52	1.855	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
12,600.0	6,858.9	10,914.1	6,664.7	152.5	121.0	59.59	-1,765.7	4,691.1	434.9	195.4	239.42	1.816		
12,700.0	6,858.4	11,014.0	6,664.5	155.3	123.8	59.62	-1,765.7	4,791.1	434.7	190.4	244.32	1.779		
12,800.0	6,857.9	11,114.0	6,664.3	158.1	126.5	59.65	-1,765.7	4,891.1	434.6	185.4	249.22	1.744		
12,900.0	6,857.4	11,214.0	6,664.0	160.9	129.3	59.68	-1,765.7	4,991.1	434.5	180.3	254.14	1.710		
13,000.0	6,856.8	11,314.0	6,663.8	163.6	132.1	59.71	-1,765.7	5,091.1	434.3	175.3	259.05	1.677		
13,100.0	6,856.3	11,414.0	6,663.5	166.4	134.9	59.74	-1,765.7	5,191.1	434.2	170.2	263.98	1.645		
13,200.0	6,855.8	11,514.0	6,663.3	169.2	137.7	59.77	-1,765.7	5,291.1	434.1	165.2	268.90	1.614		
13,300.0	6,855.3	11,614.0	6,663.0	172.0	140.5	59.80	-1,765.7	5,391.1	433.9	160.1	273.83	1.585		
13,400.0	6,854.8	11,714.0	6,662.8	174.7	143.2	59.83	-1,765.7	5,491.1	433.8	155.0	278.77	1.556		
13,500.0	6,854.3	11,814.0	6,662.5	177.5	146.0	59.86	-1,765.7	5,591.1	433.7	150.0	283.71	1.529		
13,600.0	6,853.8	11,914.0	6,662.3	180.3	148.8	59.89	-1,765.7	5,691.1	433.5	144.9	288.65	1.502		
13,700.0	6,853.3	12,014.0	6,662.1	183.1	151.6	59.92	-1,765.7	5,791.1	433.4	139.8	293.60	1.476 Level 3		
13,800.0	6,852.8	12,114.0	6,661.8	185.9	154.4	59.95	-1,765.7	5,891.1	433.3	134.7	298.55	1.451 Level 3		
13,900.0	6,852.3	12,214.0	6,661.6	188.6	157.2	59.98	-1,765.7	5,991.1	433.1	129.6	303.50	1.427 Level 3		
14,000.0	6,851.8	12,314.0	6,661.3	191.4	160.0	60.01	-1,765.7	6,091.1	433.0	124.6	308.46	1.404 Level 3		
14,100.0	6,851.3	12,414.0	6,661.1	194.2	162.8	60.04	-1,765.7	6,191.1	432.9	119.5	313.42	1.381 Level 3		
14,200.0	6,850.8	12,514.0	6,660.8	197.0	165.6	60.07	-1,765.7	6,291.1	432.8	114.4	318.39	1.359 Level 3		
14,300.0	6,850.3	12,614.0	6,660.6	199.8	168.4	60.10	-1,765.7	6,391.1	432.6	109.3	323.36	1.338 Level 3		
14,400.0	6,849.8	12,714.0	6,660.3	202.6	171.1	60.13	-1,765.7	6,491.1	432.5	104.2	328.33	1.317 Level 3		
14,500.0	6,849.3	12,814.0	6,660.1	205.3	173.9	60.16	-1,765.7	6,591.1	432.4	99.1	333.31	1.297 Level 3		
14,600.0	6,848.8	12,914.0	6,659.9	208.1	176.7	60.19	-1,765.7	6,691.1	432.2	93.9	338.29	1.278 Level 3		
14,700.0	6,848.2	13,014.0	6,659.6	210.9	179.5	60.22	-1,765.7	6,791.1	432.1	88.8	343.28	1.259 Level 3		
14,800.0	6,847.7	13,114.0	6,659.4	213.7	182.3	60.25	-1,765.7	6,891.1	432.0	83.7	348.27	1.240 Level 2		
14,900.0	6,847.2	13,214.0	6,659.1	216.5	185.1	60.28	-1,765.7	6,991.1	431.8	78.6	353.26	1.222 Level 2		
14,945.8	6,847.0	13,259.8	6,659.0	217.8	186.4	60.29	-1,765.7	7,036.9	431.8	76.2	355.55	1.214 Level 2, CC, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

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

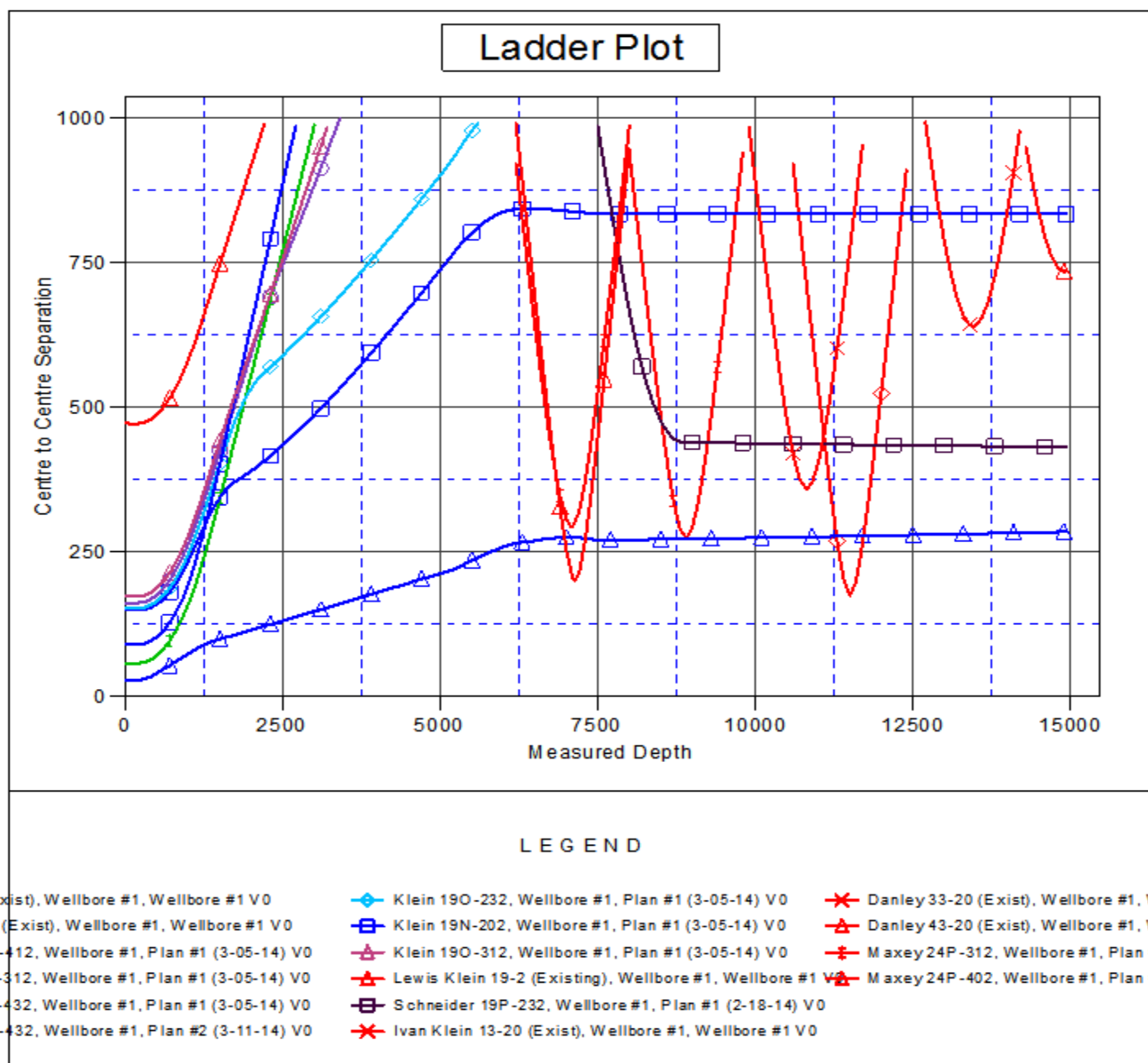
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Klein 19P-402

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19P-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4641.0ft (RKB - 15')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4641.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Klein 19P-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (3-05-14)	Offset TVD Reference:	Offset Datum

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

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Klein 19P-402

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°

