

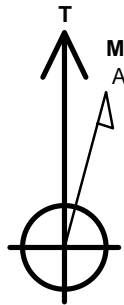
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Schneider 19P-332**

Surface Location: Schneider 19Q-HZ Pad Sec.19-T5N-R64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4652.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1382009.53 3253768.52 40.378440 -104.589110
 RKB - 15' WELL @ 4667.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' N/S Hardline (19P-332)	1.0	690.5	5063.6	Rectangle (Sides: L9480.7 W100.0)
SHL 409'FSL, 1637'FEL, SEC.19	1.0	0.0	0.0	Point
BHL 981'FSL, 2396'FEL, SEC.21	6737.0	690.5	9804.0	Point

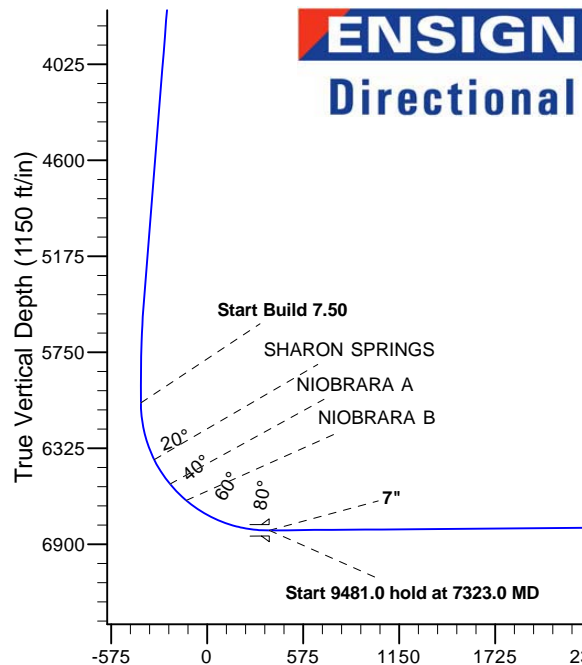
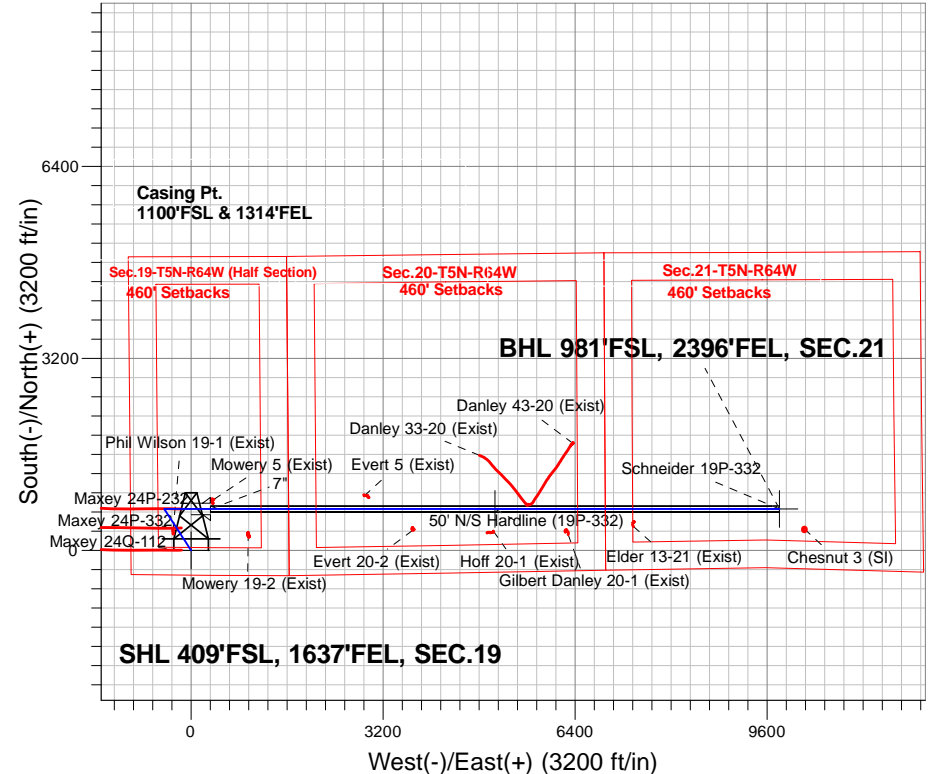


Azimuths to True North
 Magnetic North: 8.21°
 Magnetic Field
 Strength: 52708.0snT
 Dip Angle: 66.92°
 Date: 7/20/2015
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.00
6052.5	6116.6	Start Build 7.50
6816.4	7323.0	Start 9481.0 hold at 7323.0 MD
6737.0	16804.1	TD at 16804.1

Schneider 19Q-HZ Pad Sec.19-T5N-R64W
 Schneider 19P-332
 Plan #3 (7-20-15)
 11:46, July 22 2015



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1134.7	9.35	327.08	1130.6	63.9	-41.3	1.00	327.08	-36.8	
4	5496.8	9.35	327.08	5434.7	658.6	-426.3	0.00	0.00	-379.0	
5	5964.1	0.00	0.00	5900.0	690.5	-447.0	2.00	180.00	-397.4	
6	6116.6	0.00	0.00	6052.5	690.5	-447.0	0.00	0.00	-397.4	
7	7323.0	90.48	90.00	6816.4	690.5	323.3	7.50	90.00	371.1	
8	16804.1	90.48	90.00	6737.0	690.5	9804.0	0.00	0.00	9828.3	BHL 981'FSL, 2396'FEL, SEC.21

BHL 981'FSL, 2396'FEL, SEC.21

TD at 16804.1

Vertical Section at 85.97° (1150 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

Schneider 19Q-HZ Pad Sec.19-T5N-R64W

Schneider 19P-332

Wellbore #1

Plan: Plan #3 (7-20-15)

Standard Planning Report

21 July, 2015

Database:	US_EDM	Local Co-ordinate Reference:	Well Schneider 19P-332
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-20-15)		

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		Schneider 19Q-HZ Pad Sec.19-T5N-R64W			
Site Position:		Northing:	1,382,009.88 usft	Latitude:	40.378440
From:	Lat/Long	Easting:	3,253,799.16 usft	Longitude:	-104.589000
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59

Well	Schneider 19P-332					
Well Position	+N/-S	0.0 ft	Northing:	1,382,009.53 usft	Latitude:	40.378440
	+E/-W	-30.6 ft	Easting:	3,253,768.52 usft	Longitude:	-104.589110
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	4,652.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/20/2015	8.22	66.92	52,708

Design	Plan #3 (7-20-15)			
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	85.97

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,134.7	9.35	327.08	1,130.6	63.9	-41.3	1.00	1.00	0.00	327.08	
5,496.8	9.35	327.08	5,434.7	658.6	-426.3	0.00	0.00	0.00	0.00	
5,964.1	0.00	0.00	5,900.0	690.5	-447.0	2.00	-2.00	0.00	180.00	
6,116.6	0.00	0.00	6,052.5	690.5	-447.0	0.00	0.00	0.00	0.00	
7,323.0	90.48	90.00	6,816.4	690.5	323.3	7.50	7.50	0.00	90.00	
16,804.1	90.48	90.00	6,737.0	690.5	9,804.0	0.00	0.00	0.00	0.00	BHL 981'FSL, 2396'FI

Database:	US_EDM	Local Co-ordinate Reference:	Well Schneider 19P-332
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-20-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
300.0	1.00	327.08	300.0	0.7	-0.5	-0.4	1.00	1.00	0.00
400.0	2.00	327.08	400.0	2.9	-1.9	-1.7	1.00	1.00	0.00
500.0	3.00	327.08	499.9	6.6	-4.3	-3.8	1.00	1.00	0.00
600.0	4.00	327.08	599.7	11.7	-7.6	-6.7	1.00	1.00	0.00
700.0	5.00	327.08	699.4	18.3	-11.8	-10.5	1.00	1.00	0.00
800.0	6.00	327.08	798.9	26.3	-17.1	-15.2	1.00	1.00	0.00
900.0	7.00	327.08	898.3	35.9	-23.2	-20.6	1.00	1.00	0.00
1,000.0	8.00	327.08	997.4	46.8	-30.3	-26.9	1.00	1.00	0.00
1,100.0	9.00	327.08	1,096.3	59.2	-38.3	-34.1	1.00	1.00	0.00
1,134.7	9.35	327.08	1,130.6	63.9	-41.3	-36.8	1.00	1.00	0.00
1,200.0	9.35	327.08	1,195.0	72.8	-47.1	-41.9	0.00	0.00	0.00
1,300.0	9.35	327.08	1,293.7	86.4	-55.9	-49.7	0.00	0.00	0.00
1,400.0	9.35	327.08	1,392.3	100.0	-64.8	-57.6	0.00	0.00	0.00
1,500.0	9.35	327.08	1,491.0	113.7	-73.6	-65.4	0.00	0.00	0.00
1,600.0	9.35	327.08	1,589.7	127.3	-82.4	-73.3	0.00	0.00	0.00
1,700.0	9.35	327.08	1,688.4	140.9	-91.2	-81.1	0.00	0.00	0.00
1,800.0	9.35	327.08	1,787.0	154.6	-100.1	-89.0	0.00	0.00	0.00
1,900.0	9.35	327.08	1,885.7	168.2	-108.9	-96.8	0.00	0.00	0.00
2,000.0	9.35	327.08	1,984.4	181.8	-117.7	-104.6	0.00	0.00	0.00
2,100.0	9.35	327.08	2,083.0	195.5	-126.5	-112.5	0.00	0.00	0.00
2,200.0	9.35	327.08	2,181.7	209.1	-135.4	-120.3	0.00	0.00	0.00
2,300.0	9.35	327.08	2,280.4	222.7	-144.2	-128.2	0.00	0.00	0.00
2,400.0	9.35	327.08	2,379.1	236.4	-153.0	-136.0	0.00	0.00	0.00
2,500.0	9.35	327.08	2,477.7	250.0	-161.8	-143.9	0.00	0.00	0.00
2,600.0	9.35	327.08	2,576.4	263.6	-170.7	-151.7	0.00	0.00	0.00
2,700.0	9.35	327.08	2,675.1	277.3	-179.5	-159.6	0.00	0.00	0.00
2,800.0	9.35	327.08	2,773.7	290.9	-188.3	-167.4	0.00	0.00	0.00
2,900.0	9.35	327.08	2,872.4	304.5	-197.1	-175.3	0.00	0.00	0.00
3,000.0	9.35	327.08	2,971.1	318.2	-206.0	-183.1	0.00	0.00	0.00
3,100.0	9.35	327.08	3,069.8	331.8	-214.8	-190.9	0.00	0.00	0.00
3,200.0	9.35	327.08	3,168.4	345.4	-223.6	-198.8	0.00	0.00	0.00
3,300.0	9.35	327.08	3,267.1	359.1	-232.4	-206.6	0.00	0.00	0.00
3,400.0	9.35	327.08	3,365.8	372.7	-241.3	-214.5	0.00	0.00	0.00
3,500.0	9.35	327.08	3,464.5	386.4	-250.1	-222.3	0.00	0.00	0.00
3,600.0	9.35	327.08	3,563.1	400.0	-258.9	-230.2	0.00	0.00	0.00
3,700.0	9.35	327.08	3,661.8	413.6	-267.7	-238.0	0.00	0.00	0.00
3,800.0	9.35	327.08	3,760.5	427.3	-276.6	-245.9	0.00	0.00	0.00
3,900.0	9.35	327.08	3,859.1	440.9	-285.4	-253.7	0.00	0.00	0.00
4,000.0	9.35	327.08	3,957.8	454.5	-294.2	-261.6	0.00	0.00	0.00
4,100.0	9.35	327.08	4,056.5	468.2	-303.1	-269.4	0.00	0.00	0.00
4,200.0	9.35	327.08	4,155.2	481.8	-311.9	-277.3	0.00	0.00	0.00
4,300.0	9.35	327.08	4,253.8	495.4	-320.7	-285.1	0.00	0.00	0.00
4,400.0	9.35	327.08	4,352.5	509.1	-329.5	-292.9	0.00	0.00	0.00
4,500.0	9.35	327.08	4,451.2	522.7	-338.4	-300.8	0.00	0.00	0.00
4,600.0	9.35	327.08	4,549.8	536.3	-347.2	-308.6	0.00	0.00	0.00
4,700.0	9.35	327.08	4,648.5	550.0	-356.0	-316.5	0.00	0.00	0.00
4,800.0	9.35	327.08	4,747.2	563.6	-364.8	-324.3	0.00	0.00	0.00
4,900.0	9.35	327.08	4,845.9	577.2	-373.7	-332.2	0.00	0.00	0.00
5,000.0	9.35	327.08	4,944.5	590.9	-382.5	-340.0	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Schneider 19P-332
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-20-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.0	9.35	327.08	5,043.2	604.5	-391.3	-347.9	0.00	0.00	0.00
5,200.0	9.35	327.08	5,141.9	618.1	-400.1	-355.7	0.00	0.00	0.00
5,300.0	9.35	327.08	5,240.6	631.8	-409.0	-363.6	0.00	0.00	0.00
5,400.0	9.35	327.08	5,339.2	645.4	-417.8	-371.4	0.00	0.00	0.00
5,496.8	9.35	327.08	5,434.7	658.6	-426.3	-379.0	0.00	0.00	0.00
5,500.0	9.28	327.08	5,437.9	659.0	-426.6	-379.3	2.00	-2.00	0.00
5,600.0	7.28	327.08	5,536.9	671.1	-434.4	-386.2	2.00	-2.00	0.00
5,700.0	5.28	327.08	5,636.2	680.3	-440.4	-391.5	2.00	-2.00	0.00
5,800.0	3.28	327.08	5,736.0	686.6	-444.4	-395.1	2.00	-2.00	0.00
5,900.0	1.28	327.08	5,835.9	689.9	-446.6	-397.0	2.00	-2.00	0.00
5,964.1	0.00	0.00	5,900.0	690.5	-447.0	-397.4	2.00	-2.00	0.00
6,000.0	0.00	0.00	5,935.9	690.5	-447.0	-397.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,035.9	690.5	-447.0	-397.4	0.00	0.00	0.00
6,116.6	0.00	0.00	6,052.5	690.5	-447.0	-397.4	0.00	0.00	0.00
Start Build 7.50									
6,200.0	6.25	90.00	6,135.7	690.5	-442.5	-392.8	7.50	7.50	0.00
6,300.0	13.75	90.00	6,234.1	690.5	-425.1	-375.5	7.50	7.50	0.00
6,400.0	21.25	90.00	6,329.4	690.5	-395.0	-345.6	7.50	7.50	0.00
6,500.0	28.75	90.00	6,420.0	690.5	-352.8	-303.4	7.50	7.50	0.00
6,600.0	36.25	90.00	6,504.3	690.5	-299.1	-249.9	7.50	7.50	0.00
6,700.0	43.75	90.00	6,580.8	690.5	-234.9	-185.8	7.50	7.50	0.00
6,800.0	51.25	90.00	6,648.3	690.5	-161.2	-112.3	7.50	7.50	0.00
6,900.0	58.75	90.00	6,705.6	690.5	-79.3	-30.6	7.50	7.50	0.00
7,000.0	66.25	90.00	6,751.8	690.5	9.3	57.8	7.50	7.50	0.00
7,100.0	73.75	90.00	6,785.9	690.5	103.2	151.5	7.50	7.50	0.00
7,200.0	81.25	90.00	6,807.6	690.5	200.8	248.8	7.50	7.50	0.00
7,300.0	88.75	90.00	6,816.3	690.5	300.3	348.1	7.50	7.50	0.00
7,323.0	90.48	90.00	6,816.4	690.5	323.3	371.0	7.50	7.50	0.00
Start 9481.0 hold at 7323.0 MD - 7"									
7,400.0	90.48	90.00	6,815.8	690.5	400.3	447.8	0.00	0.00	0.00
7,500.0	90.48	90.00	6,814.9	690.5	500.3	547.6	0.00	0.00	0.00
7,600.0	90.48	90.00	6,814.1	690.5	600.3	647.3	0.00	0.00	0.00
7,700.0	90.48	90.00	6,813.3	690.5	700.3	747.1	0.00	0.00	0.00
7,800.0	90.48	90.00	6,812.4	690.5	800.3	846.8	0.00	0.00	0.00
7,900.0	90.48	90.00	6,811.6	690.5	900.3	946.6	0.00	0.00	0.00
8,000.0	90.48	90.00	6,810.8	690.5	1,000.3	1,046.3	0.00	0.00	0.00
8,100.0	90.48	90.00	6,809.9	690.5	1,100.3	1,146.1	0.00	0.00	0.00
8,200.0	90.48	90.00	6,809.1	690.5	1,200.3	1,245.8	0.00	0.00	0.00
8,300.0	90.48	90.00	6,808.2	690.5	1,300.3	1,345.6	0.00	0.00	0.00
8,400.0	90.48	90.00	6,807.4	690.5	1,400.3	1,445.3	0.00	0.00	0.00
8,500.0	90.48	90.00	6,806.6	690.5	1,500.3	1,545.1	0.00	0.00	0.00
8,600.0	90.48	90.00	6,805.7	690.5	1,600.3	1,644.8	0.00	0.00	0.00
8,700.0	90.48	90.00	6,804.9	690.5	1,700.3	1,744.6	0.00	0.00	0.00
8,800.0	90.48	90.00	6,804.1	690.5	1,800.3	1,844.3	0.00	0.00	0.00
8,900.0	90.48	90.00	6,803.2	690.5	1,900.2	1,944.1	0.00	0.00	0.00
9,000.0	90.48	90.00	6,802.4	690.5	2,000.2	2,043.8	0.00	0.00	0.00
9,100.0	90.48	90.00	6,801.5	690.5	2,100.2	2,143.6	0.00	0.00	0.00
9,200.0	90.48	90.00	6,800.7	690.5	2,200.2	2,243.3	0.00	0.00	0.00
9,300.0	90.48	90.00	6,799.9	690.5	2,300.2	2,343.1	0.00	0.00	0.00
9,400.0	90.48	90.00	6,799.0	690.5	2,400.2	2,442.8	0.00	0.00	0.00
9,500.0	90.48	90.00	6,798.2	690.5	2,500.2	2,542.6	0.00	0.00	0.00
9,600.0	90.48	90.00	6,797.4	690.5	2,600.2	2,642.3	0.00	0.00	0.00
9,700.0	90.48	90.00	6,796.5	690.5	2,700.2	2,742.1	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Schneider 19P-332
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-20-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,800.0	90.48	90.00	6,795.7	690.5	2,800.2	2,841.8	0.00	0.00	0.00
9,900.0	90.48	90.00	6,794.8	690.5	2,900.2	2,941.6	0.00	0.00	0.00
10,000.0	90.48	90.00	6,794.0	690.5	3,000.2	3,041.3	0.00	0.00	0.00
10,100.0	90.48	90.00	6,793.2	690.5	3,100.2	3,141.1	0.00	0.00	0.00
10,200.0	90.48	90.00	6,792.3	690.5	3,200.2	3,240.8	0.00	0.00	0.00
10,300.0	90.48	90.00	6,791.5	690.5	3,300.2	3,340.6	0.00	0.00	0.00
10,400.0	90.48	90.00	6,790.6	690.5	3,400.2	3,440.3	0.00	0.00	0.00
10,500.0	90.48	90.00	6,789.8	690.5	3,500.2	3,540.1	0.00	0.00	0.00
10,600.0	90.48	90.00	6,789.0	690.5	3,600.2	3,639.8	0.00	0.00	0.00
10,700.0	90.48	90.00	6,788.1	690.5	3,700.2	3,739.6	0.00	0.00	0.00
10,800.0	90.48	90.00	6,787.3	690.5	3,800.2	3,839.3	0.00	0.00	0.00
10,900.0	90.48	90.00	6,786.5	690.5	3,900.2	3,939.1	0.00	0.00	0.00
11,000.0	90.48	90.00	6,785.6	690.5	4,000.2	4,038.8	0.00	0.00	0.00
11,100.0	90.48	90.00	6,784.8	690.5	4,100.2	4,138.6	0.00	0.00	0.00
11,200.0	90.48	90.00	6,783.9	690.5	4,200.2	4,238.3	0.00	0.00	0.00
11,300.0	90.48	90.00	6,783.1	690.5	4,300.2	4,338.1	0.00	0.00	0.00
11,400.0	90.48	90.00	6,782.3	690.5	4,400.2	4,437.8	0.00	0.00	0.00
11,500.0	90.48	90.00	6,781.4	690.5	4,500.2	4,537.6	0.00	0.00	0.00
11,600.0	90.48	90.00	6,780.6	690.5	4,600.2	4,637.3	0.00	0.00	0.00
11,700.0	90.48	90.00	6,779.8	690.5	4,700.2	4,737.1	0.00	0.00	0.00
11,800.0	90.48	90.00	6,778.9	690.5	4,800.1	4,836.8	0.00	0.00	0.00
11,900.0	90.48	90.00	6,778.1	690.5	4,900.1	4,936.6	0.00	0.00	0.00
12,000.0	90.48	90.00	6,777.2	690.5	5,000.1	5,036.3	0.00	0.00	0.00
12,100.0	90.48	90.00	6,776.4	690.5	5,100.1	5,136.0	0.00	0.00	0.00
12,200.0	90.48	90.00	6,775.6	690.5	5,200.1	5,235.8	0.00	0.00	0.00
12,300.0	90.48	90.00	6,774.7	690.5	5,300.1	5,335.5	0.00	0.00	0.00
12,400.0	90.48	90.00	6,773.9	690.5	5,400.1	5,435.3	0.00	0.00	0.00
12,500.0	90.48	90.00	6,773.1	690.5	5,500.1	5,535.0	0.00	0.00	0.00
12,600.0	90.48	90.00	6,772.2	690.5	5,600.1	5,634.8	0.00	0.00	0.00
12,700.0	90.48	90.00	6,771.4	690.5	5,700.1	5,734.5	0.00	0.00	0.00
12,800.0	90.48	90.00	6,770.5	690.5	5,800.1	5,834.3	0.00	0.00	0.00
12,900.0	90.48	90.00	6,769.7	690.5	5,900.1	5,934.0	0.00	0.00	0.00
13,000.0	90.48	90.00	6,768.9	690.5	6,000.1	6,033.8	0.00	0.00	0.00
13,100.0	90.48	90.00	6,768.0	690.5	6,100.1	6,133.5	0.00	0.00	0.00
13,200.0	90.48	90.00	6,767.2	690.5	6,200.1	6,233.3	0.00	0.00	0.00
13,300.0	90.48	90.00	6,766.4	690.5	6,300.1	6,333.0	0.00	0.00	0.00
13,400.0	90.48	90.00	6,765.5	690.5	6,400.1	6,432.8	0.00	0.00	0.00
13,500.0	90.48	90.00	6,764.7	690.5	6,500.1	6,532.5	0.00	0.00	0.00
13,600.0	90.48	90.00	6,763.8	690.5	6,600.1	6,632.3	0.00	0.00	0.00
13,700.0	90.48	90.00	6,763.0	690.5	6,700.1	6,732.0	0.00	0.00	0.00
13,800.0	90.48	90.00	6,762.2	690.5	6,800.1	6,831.8	0.00	0.00	0.00
13,900.0	90.48	90.00	6,761.3	690.5	6,900.1	6,931.5	0.00	0.00	0.00
14,000.0	90.48	90.00	6,760.5	690.5	7,000.1	7,031.3	0.00	0.00	0.00
14,100.0	90.48	90.00	6,759.7	690.5	7,100.1	7,131.0	0.00	0.00	0.00
14,200.0	90.48	90.00	6,758.8	690.5	7,200.1	7,230.8	0.00	0.00	0.00
14,300.0	90.48	90.00	6,758.0	690.5	7,300.1	7,330.5	0.00	0.00	0.00
14,400.0	90.48	90.00	6,757.1	690.5	7,400.1	7,430.3	0.00	0.00	0.00
14,500.0	90.48	90.00	6,756.3	690.5	7,500.1	7,530.0	0.00	0.00	0.00
14,600.0	90.48	90.00	6,755.5	690.5	7,600.0	7,629.8	0.00	0.00	0.00
14,700.0	90.48	90.00	6,754.6	690.5	7,700.0	7,729.5	0.00	0.00	0.00
14,800.0	90.48	90.00	6,753.8	690.5	7,800.0	7,829.3	0.00	0.00	0.00
14,900.0	90.48	90.00	6,753.0	690.5	7,900.0	7,929.0	0.00	0.00	0.00
15,000.0	90.48	90.00	6,752.1	690.5	8,000.0	8,028.8	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Schneider 19P-332
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-20-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,100.0	90.48	90.00	6,751.3	690.5	8,100.0	8,128.5	0.00	0.00	0.00	
15,200.0	90.48	90.00	6,750.4	690.5	8,200.0	8,228.3	0.00	0.00	0.00	
15,300.0	90.48	90.00	6,749.6	690.5	8,300.0	8,328.0	0.00	0.00	0.00	
15,400.0	90.48	90.00	6,748.8	690.5	8,400.0	8,427.8	0.00	0.00	0.00	
15,500.0	90.48	90.00	6,747.9	690.5	8,500.0	8,527.5	0.00	0.00	0.00	
15,600.0	90.48	90.00	6,747.1	690.5	8,600.0	8,627.3	0.00	0.00	0.00	
15,700.0	90.48	90.00	6,746.2	690.5	8,700.0	8,727.0	0.00	0.00	0.00	
15,800.0	90.48	90.00	6,745.4	690.5	8,800.0	8,826.8	0.00	0.00	0.00	
15,900.0	90.48	90.00	6,744.6	690.5	8,900.0	8,926.5	0.00	0.00	0.00	
16,000.0	90.48	90.00	6,743.7	690.5	9,000.0	9,026.3	0.00	0.00	0.00	
16,100.0	90.48	90.00	6,742.9	690.5	9,100.0	9,126.0	0.00	0.00	0.00	
16,200.0	90.48	90.00	6,742.1	690.5	9,200.0	9,225.8	0.00	0.00	0.00	
16,300.0	90.48	90.00	6,741.2	690.5	9,300.0	9,325.5	0.00	0.00	0.00	
16,400.0	90.48	90.00	6,740.4	690.5	9,400.0	9,425.3	0.00	0.00	0.00	
16,500.0	90.48	90.00	6,739.5	690.5	9,500.0	9,525.0	0.00	0.00	0.00	
16,600.0	90.48	90.00	6,738.7	690.5	9,600.0	9,624.8	0.00	0.00	0.00	
16,700.0	90.48	90.00	6,737.9	690.5	9,700.0	9,724.5	0.00	0.00	0.00	
16,800.0	90.48	90.00	6,737.0	690.5	9,800.0	9,824.3	0.00	0.00	0.00	
16,804.1	90.48	90.00	6,737.0	690.5	9,804.0	9,828.3	0.00	0.00	0.00	
TD at 16804.1										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
50' N/S Hardline (19P-332)	0.00	0.00	1.0	690.5	5,063.6	1,382,751.98	3,258,824.59	40.380334	-104.570935	
- plan misses target center by 5110.5ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)										
- Rectangle (sides W100.0 H9,480.7 D0.0)										
SHL 409'FSL, 1637'FEL	0.00	0.00	1.0	0.0	0.0	1,382,009.56	3,253,768.52	40.378440	-104.589110	
- plan hits target center										
- Point										
BHL 981'FSL, 2396'FEL	0.00	0.00	6,737.0	690.5	9,804.0	1,382,800.70	3,263,564.53	40.380330	-104.553920	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,323.0	6,816.4	7"	7	7-1/2	

Database:	US_EDM	Local Co-ordinate Reference:	Well Schneider 19P-332
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-20-15)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,551.2	3,515.0	PARKMAN				
4,359.0	4,312.0	SUSSEX				
4,549.5	4,500.0	SHANNON				
6,469.5	6,393.0	SHARON SPRINGS				
6,644.0	6,539.0	NIOBRARA A				
6,782.2	6,637.0	NIOBRARA B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP - Start Build 1.00	
6,116.6	6,052.5	690.5	-447.0	Start Build 7.50	
7,323.0	6,816.4	690.5	323.3	Start 9481.0 hold at 7323.0 MD	
16,804.1	6,737.0	690.5	9,804.0	TD at 16804.1	



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

Schneider 19Q-HZ Pad Sec.19-T5N-R64W

Schneider 19P-332

Wellbore #1

Plan #3 (7-20-15)

Anticollision Report

22 July, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #3 (7-20-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	7/22/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	16,804.1	Plan #3 (7-20-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.21-T5N-R64W						
Chesnut 3 (SI) - Wellbore #1 - Wellbore #1	16,804.1	6,699.0	531.3	115.7	1.278	Level 3, CC, ES, SF
Elder 13-21 (Exist) - Wellbore #1 - Wellbore #1	14,375.3	6,500.0	375.9	197.3	2.105	CC, ES
Elder 13-21 (Exist) - Wellbore #1 - Wellbore #1	14,400.0	6,500.0	376.7	197.6	2.103	SF
Maxey 24Q-HZ Pad Sec.24-T5N-R65W						
Maxey 24P-232 - Wellbore #1 - Wellbore #1	6,847.3	12,522.0	76.2	26.5	1.533	CC, ES, SF
Maxey 24P-332 - Wellbore #1 - Wellbore #1	6,871.9	12,536.0	334.5	161.4	1.932	CC, ES, SF
Maxey 24Q-112 - Wellbore #1 - Wellbore #1	6,766.7	12,348.3	684.5	503.3	3.777	CC, ES
Maxey 24Q-112 - Wellbore #1 - Wellbore #1	6,800.0	12,358.0	685.0	503.5	3.774	SF
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W						
Danley 33-20 (Exist) - Wellbore #1 - Wellbore #1	11,842.0	6,859.5	879.7	721.6	5.564	CC, ES
Danley 33-20 (Exist) - Wellbore #1 - Wellbore #1	12,000.0	6,838.1	893.5	731.2	5.506	SF
Danley 43-20 (Exist) - Wellbore #1 - Wellbore #1						Out of range
Evert 20-2 (Exist) - Wellbore #1 - Wellbore #1	10,696.4	6,780.6	357.7	234.8	2.911	CC
Evert 20-2 (Exist) - Wellbore #1 - Wellbore #1	10,700.0	6,780.5	357.7	234.7	2.909	ES, SF
Evert 5 (Exist) - Wellbore #1 - Wellbore #1	9,878.9	6,776.0	229.9	128.1	2.259	CC, ES
Evert 5 (Exist) - Wellbore #1 - Wellbore #1	9,900.0	6,776.2	230.8	128.5	2.256	SF
Gilbert Danley 20-1 (Exist) - Wellbore #1 - Wellbore #1	13,285.3	6,734.5	417.3	222.4	2.141	CC
Gilbert Danley 20-1 (Exist) - Wellbore #1 - Wellbore #1	13,300.0	6,734.3	417.5	222.2	2.138	ES, SF
Hoff 20-1 (Exist) - Wellbore #1 - Wellbore #1	12,035.4	6,797.5	372.8	210.7	2.299	CC, ES, SF
Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1	7,949.5	6,802.1	400.1	351.0	8.141	CC, ES
Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1	8,000.0	6,802.1	403.3	352.9	8.002	SF
Mowery 5 (Exist) - Wellbore #1 - Wellbore #1	7,376.6	6,776.9	161.8	124.6	4.355	CC, ES
Mowery 5 (Exist) - Wellbore #1 - Wellbore #1	7,400.0	6,777.0	163.5	125.9	4.348	SF
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	3,116.8	3,060.7	94.0	78.4	6.042	CC, ES
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	3,200.0	3,142.9	95.0	79.0	5.943	SF
Schneider 19Q-HZ Pad Sec.19-T5N-R64W						
Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)	200.0	200.0	30.6	30.0	45.451	CC
Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)	16,804.1	16,608.2	263.8	-271.7	0.493	Level 1, ES, SF
Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)	200.0	201.0	61.3	60.6	90.599	CC, ES
Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)	16,804.1	16,462.9	976.1	420.2	1.756	SF
Schneider 19Q-312 - Wellbore #1 - Plan #2 (7-20-15)	200.0	201.0	89.2	88.5	131.780	CC
Schneider 19Q-312 - Wellbore #1 - Plan #2 (7-20-15)	16,804.1	16,460.2	626.6	69.7	1.125	Level 2, 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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.21-T5N-R64W - Chesnut 3 (SI) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7000-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
16,300.0	6,741.2	6,703.2	6,703.2	267.6	134.1	91.33	359.2	10,219.3	977.2	575.7	401.50	2.434	
16,400.0	6,740.4	6,702.4	6,702.4	270.4	134.0	91.19	359.2	10,219.3	883.8	479.5	404.30	2.186	
16,500.0	6,739.5	6,701.5	6,701.5	273.2	134.0	91.04	359.2	10,219.3	792.0	384.9	407.10	1.945	
16,600.0	6,738.7	6,700.7	6,700.7	276.0	134.0	90.90	359.2	10,219.3	702.4	292.5	409.90	1.714	
16,700.0	6,737.9	6,699.9	6,699.9	278.8	134.0	90.75	359.2	10,219.3	616.0	203.3	412.69	1.493 Level 3	
16,804.1	6,737.0	6,699.0	6,699.0	281.7	134.0	90.60	359.2	10,219.3	531.3	115.7	415.60	1.278 Level 3, CC, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.21-T5N-R64W - Elder 13-21 (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		
13,500.0	6,764.7	6,500.0	6,497.8	189.2	12.4	51.00	398.4	7,373.3	952.6	793.4	159.15	5.985		
13,600.0	6,763.8	6,500.0	6,497.8	192.0	12.4	51.00	398.4	7,373.3	861.6	700.2	161.37	5.339		
13,700.0	6,763.0	6,500.0	6,497.8	194.7	12.4	51.00	398.4	7,373.3	772.8	609.2	163.59	4.724		
13,800.0	6,762.2	6,500.0	6,497.8	197.5	12.4	51.00	398.4	7,373.3	687.2	521.4	165.81	4.144		
13,900.0	6,761.3	6,500.0	6,497.8	200.3	12.4	51.00	398.4	7,373.3	605.9	437.9	168.03	3.606		
14,000.0	6,760.5	6,500.0	6,497.8	203.1	12.4	51.00	398.4	7,373.3	531.1	360.9	170.26	3.120		
14,100.0	6,759.7	6,500.0	6,497.8	205.9	12.4	51.00	398.4	7,373.3	465.9	293.4	172.48	2.701		
14,200.0	6,758.8	6,500.0	6,497.8	208.7	12.4	51.00	398.4	7,373.3	414.8	240.1	174.70	2.374		
14,300.0	6,758.0	6,500.0	6,497.8	211.5	12.4	51.00	398.4	7,373.3	383.4	206.4	176.92	2.167		
14,375.3	6,757.3	6,500.0	6,497.8	213.6	12.4	51.00	398.4	7,373.3	375.9	197.3	178.59	2.105 CC, ES		
14,400.0	6,757.1	6,500.0	6,497.8	214.3	12.4	51.00	398.4	7,373.3	376.7	197.6	179.14	2.103 SF		
14,500.0	6,756.3	6,500.0	6,497.8	217.1	12.4	51.00	398.4	7,373.3	396.1	214.7	181.36	2.184		
14,600.0	6,755.5	6,500.0	6,497.8	219.9	12.4	51.00	398.4	7,373.3	438.0	254.4	183.59	2.386		
14,700.0	6,754.6	6,500.0	6,497.8	222.7	12.4	51.00	398.4	7,373.3	496.8	310.9	185.81	2.673		
14,800.0	6,753.8	6,500.0	6,497.8	225.5	12.4	51.00	398.4	7,373.3	567.2	379.2	188.03	3.016		
14,900.0	6,753.0	6,500.0	6,497.8	228.3	12.4	51.00	398.4	7,373.3	645.5	455.2	190.26	3.393		
15,000.0	6,752.1	6,500.0	6,497.8	231.1	12.4	51.00	398.4	7,373.3	729.1	536.6	192.48	3.788		
15,100.0	6,751.3	6,500.0	6,497.8	233.9	12.4	51.00	398.4	7,373.3	816.4	621.7	194.70	4.193		
15,200.0	6,750.4	6,500.0	6,497.8	236.7	12.4	51.00	398.4	7,373.3	906.4	709.4	196.92	4.603		
15,300.0	6,749.6	6,500.0	6,497.8	239.5	12.4	51.00	398.4	7,373.3	998.2	799.1	199.15	5.013		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 119-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,900.0	5,835.9	12,237.6	6,728.2	19.9	158.0	-179.16	697.1	-451.5	909.4	757.3	152.14	5.977		
5,964.1	5,900.0	12,237.6	6,728.2	20.0	158.0	-34.43	697.1	-451.5	845.3	740.8	104.50	8.089		
6,000.0	5,935.9	12,237.8	6,728.2	20.1	158.0	-33.29	697.1	-451.3	809.4	707.5	101.94	7.940		
6,100.0	6,035.9	12,238.3	6,728.2	20.2	158.0	-29.96	697.1	-450.8	709.4	615.1	94.31	7.522		
6,116.6	6,052.5	12,238.4	6,728.2	20.2	158.0	-29.38	697.1	-450.7	692.8	599.8	92.96	7.452		
6,150.0	6,085.9	12,239.4	6,728.2	20.3	158.1	-168.38	697.2	-449.7	659.4	598.8	60.58	10.885		
6,200.0	6,135.7	12,245.1	6,728.3	20.3	158.2	-174.38	697.2	-444.0	609.6	562.0	47.64	12.796		
6,250.0	6,185.2	12,254.8	6,728.3	20.3	158.5	-176.01	697.2	-434.3	560.1	515.2	44.93	12.466		
6,300.0	6,234.1	12,268.1	6,728.2	20.3	158.9	-176.77	697.2	-421.0	511.1	467.0	44.16	11.574		
6,350.0	6,282.3	12,284.7	6,728.0	20.3	159.3	-177.28	696.8	-404.4	462.9	418.8	44.04	10.510		
6,400.0	6,329.4	12,303.9	6,727.6	20.3	159.9	-177.75	696.1	-385.3	415.4	371.2	44.17	9.404		
6,450.0	6,375.4	12,323.2	6,727.2	20.3	160.4	-178.19	695.2	-365.9	368.9	324.5	44.49	8.293		
6,500.0	6,420.0	12,344.8	6,726.6	20.2	161.0	-178.62	694.1	-344.4	323.8	278.8	44.97	7.200		
6,550.0	6,463.0	12,368.8	6,726.0	20.1	161.7	-179.00	693.0	-320.5	280.1	234.5	45.58	6.146		
6,600.0	6,504.3	12,395.6	6,725.4	20.1	162.4	-179.30	692.2	-293.7	238.2	191.9	46.30	5.145		
6,650.0	6,543.6	12,426.2	6,724.7	20.0	163.3	-179.48	691.7	-263.1	198.1	151.0	47.09	4.208		
6,700.0	6,580.8	12,458.8	6,723.8	19.9	164.2	-179.55	691.4	-230.5	160.0	112.1	47.89	3.342		
6,750.0	6,615.8	12,493.6	6,722.8	19.9	165.2	-179.50	691.3	-195.7	124.1	75.4	48.67	2.550		
6,800.0	6,648.3	12,522.0	6,722.0	19.8	166.0	-179.45	691.2	-167.3	90.9	41.6	49.32	1.843		
6,847.3	6,676.8	12,522.0	6,722.0	19.7	166.0	-179.46	691.2	-167.3	76.2	26.5	49.67	1.533 CC, ES, SF		
6,850.0	6,678.3	12,522.0	6,722.0	19.7	166.0	-179.46	691.2	-167.3	76.2	26.5	49.69	1.534		
6,900.0	6,705.6	12,522.0	6,722.0	19.7	166.0	-179.45	691.2	-167.3	94.1	44.1	49.95	1.884		
6,950.0	6,730.1	12,522.0	6,722.0	19.6	166.0	-179.40	691.2	-167.3	131.8	81.7	50.11	2.631		
7,000.0	6,751.8	12,522.0	6,722.0	19.5	166.0	-179.31	691.2	-167.3	177.1	126.9	50.17	3.529		
7,050.0	6,770.4	12,522.0	6,722.0	19.5	166.0	-179.13	691.2	-167.3	225.2	175.0	50.16	4.490		
7,100.0	6,785.9	12,522.0	6,722.0	19.5	166.0	-178.66	691.2	-167.3	274.5	224.4	50.14	5.476		
7,150.0	6,798.4	12,522.0	6,722.0	19.9	166.0	-176.31	691.2	-167.3	324.4	273.5	50.85	6.379		
7,200.0	6,807.6	12,522.0	6,722.0	20.7	166.0	-3.47	691.2	-167.3	374.4	322.6	51.84	7.222		
7,250.0	6,813.5	12,522.0	6,722.0	21.5	166.0	-1.08	691.2	-167.3	424.3	373.7	50.57	8.391		
7,300.0	6,816.3	12,522.0	6,722.0	22.5	166.0	-0.61	691.2	-167.3	474.0	423.3	50.66	9.355		
7,323.0	6,816.4	12,522.0	6,722.0	22.9	166.0	-0.50	691.2	-167.3	496.7	445.9	50.78	9.781		
7,400.0	6,815.8	12,522.0	6,722.0	24.4	166.0	-0.50	691.2	-167.3	572.8	521.5	51.28	11.169		
7,500.0	6,814.9	12,522.0	6,722.0	26.5	166.0	-0.50	691.2	-167.3	671.9	620.0	51.95	12.934		
7,600.0	6,814.1	12,522.0	6,722.0	28.7	166.0	-0.50	691.2	-167.3	771.3	718.6	52.62	14.656		
7,700.0	6,813.3	12,522.0	6,722.0	31.0	166.0	-0.50	691.2	-167.3	870.8	817.5	53.31	16.334		
7,800.0	6,812.4	12,522.0	6,722.0	33.3	166.0	-0.50	691.2	-167.3	970.4	916.4	54.00	17.969		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.0 ft
Survey Program: 122-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)				
5,964.1	5,900.0	12,244.9	6,768.3	20.0	157.1	-178.46	371.6	-455.6	941.0	904.4	36.60	25.713			
6,000.0	5,935.9	12,244.9	6,768.3	20.1	157.1	-178.46	371.6	-455.6	907.4	870.7	36.65	24.761			
6,100.0	6,035.9	12,245.0	6,768.3	20.2	157.1	-178.47	371.6	-455.5	814.5	777.7	36.79	22.139			
6,116.6	6,052.5	12,245.0	6,768.3	20.2	157.1	-178.47	371.6	-455.5	799.2	762.4	36.82	21.709			
6,150.0	6,085.9	12,245.7	6,768.3	20.3	157.1	96.97	371.6	-454.8	768.8	596.1	172.62	4.453			
6,200.0	6,135.7	12,249.9	6,768.3	20.3	157.2	103.87	371.5	-450.5	723.8	554.1	169.65	4.266			
6,250.0	6,185.2	12,258.3	6,768.3	20.3	157.4	109.15	371.3	-442.2	679.8	513.8	166.00	4.095			
6,300.0	6,234.1	12,270.2	6,768.2	20.3	157.8	113.06	370.9	-430.3	637.1	474.5	162.61	3.918			
6,350.0	6,282.3	12,285.8	6,768.1	20.3	158.2	115.72	370.5	-414.7	596.0	436.0	160.08	3.723			
6,400.0	6,329.4	12,305.9	6,767.8	20.3	158.8	117.19	370.0	-394.6	556.9	398.1	158.81	3.507			
6,450.0	6,375.4	12,327.4	6,767.5	20.3	159.4	118.02	369.7	-373.1	519.9	361.7	158.26	3.285			
6,500.0	6,420.0	12,352.0	6,767.1	20.2	160.1	118.10	369.5	-348.5	485.5	326.8	158.72	3.059			
6,550.0	6,463.0	12,380.6	6,766.7	20.1	160.9	117.36	369.6	-320.0	453.8	293.5	160.29	2.831			
6,600.0	6,504.3	12,415.8	6,766.2	20.1	161.8	115.57	370.2	-284.7	425.0	261.7	163.30	2.603			
6,650.0	6,543.6	12,450.7	6,765.8	20.0	162.8	113.68	372.0	-249.9	398.8	232.5	166.31	2.398			
6,700.0	6,580.8	12,475.0	6,765.9	19.9	163.5	112.74	373.1	-225.6	376.4	208.5	167.94	2.241			
6,750.0	6,615.8	12,509.2	6,766.6	19.9	164.4	110.55	374.3	-191.4	358.1	186.9	171.12	2.092			
6,800.0	6,648.3	12,536.0	6,767.1	19.8	165.2	108.92	375.3	-164.7	343.3	169.8	173.46	1.979			
6,850.0	6,678.3	12,536.0	6,767.1	19.7	165.2	109.49	375.3	-164.7	335.4	162.3	173.11	1.937			
6,871.9	6,690.6	12,536.0	6,767.1	19.7	165.2	109.55	375.3	-164.7	334.5	161.4	173.16	1.932 CC, ES, SF			
6,900.0	6,705.6	12,536.0	6,767.1	19.7	165.2	109.45	375.3	-164.7	335.9	162.5	173.40	1.937			
6,950.0	6,730.1	12,536.0	6,767.1	19.6	165.2	108.81	375.3	-164.7	344.8	170.5	174.34	1.978			
7,000.0	6,751.8	12,536.0	6,767.1	19.5	165.2	107.54	375.3	-164.7	361.5	185.6	175.90	2.055			
7,050.0	6,770.4	12,536.0	6,767.1	19.5	165.2	105.64	375.3	-164.7	384.9	206.9	177.98	2.162			
7,100.0	6,785.9	12,536.0	6,767.1	19.5	165.2	103.07	375.3	-164.7	413.7	233.3	180.41	2.293			
7,150.0	6,798.4	12,536.0	6,767.1	19.9	165.2	99.81	375.3	-164.7	446.8	263.9	182.92	2.443			
7,200.0	6,807.6	12,536.0	6,767.1	20.7	165.2	95.86	375.3	-164.7	483.2	298.0	185.15	2.610			
7,250.0	6,813.5	12,536.0	6,767.1	21.5	165.2	91.24	375.3	-164.7	522.0	335.4	186.62	2.797			
7,300.0	6,816.3	12,536.0	6,767.1	22.5	165.2	86.00	375.3	-164.7	562.7	375.9	186.80	3.012			
7,323.0	6,816.4	12,536.0	6,767.1	22.9	165.2	83.41	375.3	-164.7	581.9	395.6	186.32	3.123			
7,400.0	6,815.8	12,536.0	6,767.1	24.4	165.2	83.41	375.3	-164.7	647.7	460.0	187.77	3.450			
7,500.0	6,814.9	12,536.0	6,767.1	26.5	165.2	83.41	375.3	-164.7	736.6	546.8	189.79	3.881			
7,600.0	6,814.1	12,536.0	6,767.1	28.7	165.2	83.41	375.3	-164.7	827.9	636.0	191.95	4.313			
7,700.0	6,813.3	12,536.0	6,767.1	31.0	165.2	83.41	375.3	-164.7	921.1	726.9	194.21	4.743			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 92-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,964.1	5,900.0	12,070.3	6,593.1	20.0	157.0	-179.79	5.9	-449.5	986.4	953.1	33.33	29.593		
6,000.0	5,935.9	12,070.1	6,593.1	20.1	157.0	-179.77	5.9	-449.8	960.9	927.5	33.39	28.782		
6,100.0	6,035.9	12,069.4	6,593.1	20.2	157.0	-179.71	5.9	-450.4	893.6	860.0	33.55	26.637		
6,116.6	6,052.5	12,069.3	6,593.1	20.2	157.0	-179.70	5.9	-450.6	883.0	849.4	33.57	26.300		
6,150.0	6,085.9	12,069.7	6,593.1	20.3	157.0	92.24	5.9	-450.1	862.3	688.7	173.57	4.968		
6,200.0	6,135.7	12,072.8	6,593.1	20.3	157.1	94.70	5.8	-447.1	833.0	659.5	173.52	4.800		
6,250.0	6,185.2	12,078.8	6,593.0	20.3	157.2	96.61	5.8	-441.0	805.9	632.5	173.38	4.648		
6,300.0	6,234.1	12,085.0	6,593.0	20.3	157.4	98.21	5.7	-434.9	781.3	608.1	173.13	4.513		
6,350.0	6,282.3	12,100.1	6,593.0	20.3	157.8	98.82	5.5	-419.8	759.4	586.1	173.34	4.381		
6,400.0	6,329.4	12,115.4	6,593.0	20.3	158.2	99.16	5.3	-404.4	740.5	566.9	173.61	4.265		
6,450.0	6,375.4	12,134.0	6,593.1	20.3	158.8	99.01	5.1	-385.9	724.6	550.5	174.12	4.161		
6,500.0	6,420.0	12,157.1	6,593.3	20.2	159.4	98.32	4.8	-362.8	711.7	536.8	174.93	4.069		
6,550.0	6,463.0	12,186.5	6,593.7	20.1	160.2	97.02	4.5	-333.4	701.7	525.7	176.07	3.985		
6,600.0	6,504.3	12,219.9	6,594.1	20.1	161.2	95.32	4.4	-300.0	694.4	517.0	177.35	3.915		
6,650.0	6,543.6	12,259.4	6,594.2	20.0	162.3	93.13	4.7	-260.5	689.2	510.5	178.74	3.856		
6,700.0	6,580.8	12,300.7	6,593.7	19.9	163.4	90.78	5.3	-219.2	686.0	506.0	180.00	3.811		
6,750.0	6,615.8	12,336.0	6,593.0	19.9	164.4	88.78	6.1	-183.9	684.6	503.7	180.93	3.784		
6,766.7	6,626.9	12,348.3	6,592.8	19.8	164.8	88.09	6.4	-171.7	684.5	503.3	181.22	3.777 CC, ES		
6,800.0	6,648.3	12,358.0	6,592.6	19.8	165.0	87.51	6.6	-161.9	685.0	503.5	181.49	3.774 SF		
6,850.0	6,678.3	12,358.0	6,592.6	19.7	165.0	87.24	6.6	-161.9	688.6	506.9	181.66	3.790		
6,900.0	6,705.6	12,358.0	6,592.6	19.7	165.0	86.72	6.6	-161.9	695.5	513.7	181.84	3.825		
6,950.0	6,730.1	12,358.0	6,592.6	19.6	165.0	85.93	6.6	-161.9	705.8	523.8	182.03	3.878		
7,000.0	6,751.8	12,358.0	6,592.6	19.5	165.0	84.89	6.6	-161.9	719.2	537.0	182.19	3.948		
7,050.0	6,770.4	12,358.0	6,592.6	19.5	165.0	83.60	6.6	-161.9	735.5	553.2	182.28	4.035		
7,100.0	6,785.9	12,358.0	6,592.6	19.5	165.0	82.08	6.6	-161.9	754.4	572.1	182.26	4.139		
7,150.0	6,798.4	12,358.0	6,592.6	19.9	165.0	80.34	6.6	-161.9	775.7	593.6	182.06	4.260		
7,200.0	6,807.6	12,358.0	6,592.6	20.7	165.0	78.39	6.6	-161.9	799.0	617.4	181.64	4.399		
7,250.0	6,813.5	12,358.0	6,592.6	21.5	165.0	76.26	6.6	-161.9	824.2	643.3	180.92	4.556		
7,300.0	6,816.3	12,358.0	6,592.6	22.5	165.0	73.97	6.6	-161.9	850.9	671.1	179.85	4.731		
7,323.0	6,816.4	12,358.0	6,592.6	22.9	165.0	72.86	6.6	-161.9	863.7	684.5	179.23	4.819		
7,400.0	6,815.8	12,358.0	6,592.6	24.4	165.0	72.86	6.6	-161.9	909.0	728.4	180.63	5.033		
7,500.0	6,814.9	12,358.0	6,592.6	26.5	165.0	72.86	6.6	-161.9	973.9	791.3	182.59	5.334		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	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	
11,400.0	6,782.3	6,919.1	6,779.2	130.6	16.9	-90.56	1,572.1	4,834.1	982.7	836.7	145.96	6.732	
11,500.0	6,781.4	6,905.6	6,765.9	133.3	16.8	-89.69	1,571.4	4,835.8	942.7	793.9	148.77	6.337	
11,600.0	6,780.6	6,892.1	6,752.5	136.1	16.8	-88.82	1,570.6	4,837.5	911.8	760.2	151.54	6.017	
11,700.0	6,779.8	6,878.6	6,739.1	138.9	16.8	-87.95	1,569.8	4,839.3	890.9	736.6	154.28	5.774	
11,800.0	6,778.9	6,865.1	6,725.8	141.7	16.7	-87.08	1,569.1	4,841.0	880.7	723.7	156.99	5.610	
11,842.0	6,778.6	6,859.5	6,720.2	142.9	16.7	-86.71	1,568.8	4,841.7	879.7	721.6	158.12	5.564 CC, ES	
11,900.0	6,778.1	6,851.6	6,712.4	144.5	16.7	-86.21	1,568.3	4,842.7	881.6	721.9	159.66	5.521	
12,000.0	6,777.2	6,838.1	6,699.0	147.3	16.7	-85.34	1,567.5	4,844.4	893.5	731.2	162.29	5.506 SF	
12,100.0	6,776.4	6,824.6	6,685.7	150.1	16.6	-84.47	1,566.8	4,846.1	916.1	751.2	164.89	5.556	
12,200.0	6,775.6	6,811.1	6,672.3	152.8	16.6	-83.60	1,566.0	4,847.8	948.5	781.1	167.44	5.665	
12,300.0	6,774.7	6,797.6	6,658.9	155.6	16.6	-82.73	1,565.3	4,849.5	989.9	819.9	169.94	5.825	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Evert 20-2 (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							
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	
9,800.0	6,795.7	6,812.4	6,810.8	86.3	12.1	94.89	332.7	3,695.7	964.6	866.6	97.98	9.845		
9,900.0	6,794.8	6,808.7	6,807.2	89.0	12.1	94.32	332.7	3,695.8	872.6	771.8	100.77	8.659		
10,000.0	6,794.0	6,805.1	6,803.6	91.8	12.1	93.74	332.7	3,695.9	782.5	679.0	103.56	7.556		
10,100.0	6,793.2	6,801.5	6,799.9	94.5	12.1	93.16	332.8	3,696.0	695.1	588.8	106.35	6.536		
10,200.0	6,792.3	6,797.8	6,796.3	97.3	12.0	92.58	332.8	3,696.1	611.6	502.5	109.13	5.604		
10,300.0	6,791.5	6,794.3	6,792.8	100.0	12.0	92.01	332.8	3,696.2	533.7	421.8	111.91	4.769		
10,400.0	6,790.6	6,790.8	6,789.2	102.8	12.0	91.45	332.8	3,696.3	464.4	349.7	114.68	4.050		
10,500.0	6,789.8	6,787.3	6,785.8	105.6	12.0	90.90	332.8	3,696.4	408.0	290.6	117.45	3.474		
10,600.0	6,789.0	6,783.9	6,782.3	108.3	12.0	90.35	332.8	3,696.5	370.4	250.2	120.21	3.082		
10,696.4	6,788.2	6,780.6	6,779.1	111.0	12.0	89.83	332.9	3,696.6	357.7	234.8	122.86	2.911 CC		
10,700.0	6,788.1	6,780.5	6,779.0	111.1	12.0	89.81	332.9	3,696.6	357.7	234.7	122.96	2.909 ES, SF		
10,800.0	6,787.3	6,777.2	6,775.6	113.9	12.0	89.27	332.9	3,696.7	372.4	246.7	125.70	2.962		
10,900.0	6,786.5	6,773.9	6,772.3	116.7	12.0	88.74	332.9	3,696.8	411.5	283.1	128.43	3.204		
11,000.0	6,785.6	6,770.6	6,769.1	119.4	12.0	88.22	332.9	3,696.9	469.0	337.9	131.16	3.576		
11,100.0	6,784.8	6,767.4	6,765.9	122.2	12.0	87.71	332.9	3,696.9	539.1	405.2	133.88	4.027		
11,200.0	6,783.9	6,764.2	6,762.7	125.0	12.0	87.20	332.9	3,697.0	617.5	480.9	136.58	4.521		
11,300.0	6,783.1	6,761.1	6,759.5	127.8	12.0	86.70	332.9	3,697.1	701.3	562.0	139.28	5.035		
11,400.0	6,782.3	6,758.0	6,756.4	130.6	12.0	86.20	332.9	3,697.2	788.9	647.0	141.97	5.557		
11,500.0	6,781.4	6,754.9	6,753.4	133.3	12.0	85.72	332.9	3,697.3	879.2	734.5	144.64	6.078		
11,600.0	6,780.6	6,751.9	6,750.3	136.1	11.9	85.23	332.9	3,697.3	971.3	824.0	147.31	6.594		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	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: 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	
9,000.0	6,802.4	6,767.2	6,765.0	64.4	13.6	-89.75	920.6	2,879.0	908.4	830.5	77.83	11.671	
9,100.0	6,801.5	6,768.1	6,765.9	67.2	13.6	-89.98	920.5	2,879.0	812.0	731.5	80.53	10.083	
9,200.0	6,800.7	6,769.0	6,766.9	69.9	13.6	-90.21	920.5	2,879.0	716.7	633.4	83.24	8.610	
9,300.0	6,799.9	6,770.0	6,767.8	72.6	13.6	-90.45	920.5	2,879.0	622.8	536.8	85.96	7.245	
9,400.0	6,799.0	6,771.0	6,768.8	75.3	13.6	-90.69	920.4	2,879.0	531.1	442.5	88.68	5.990	
9,500.0	6,798.2	6,772.0	6,769.8	78.0	13.6	-90.94	920.4	2,879.1	443.1	351.7	91.40	4.848	
9,600.0	6,797.4	6,773.0	6,770.8	80.8	13.6	-91.19	920.4	2,879.1	361.4	267.2	94.12	3.839	
9,700.0	6,796.5	6,774.0	6,771.8	83.5	13.6	-91.45	920.3	2,879.1	291.2	194.4	96.85	3.007	
9,800.0	6,795.7	6,775.1	6,772.9	86.3	13.6	-91.72	920.3	2,879.1	243.0	143.4	99.58	2.440	
9,878.9	6,795.0	6,776.0	6,773.8	88.4	13.6	-91.93	920.3	2,879.1	229.9	128.1	101.73	2.259 CC, ES	
9,900.0	6,794.8	6,776.2	6,774.0	89.0	13.6	-91.99	920.3	2,879.1	230.8	128.5	102.31	2.256 SF	
10,000.0	6,794.0	6,777.3	6,775.1	91.8	13.6	-92.27	920.2	2,879.2	259.8	154.8	105.04	2.474	
10,100.0	6,793.2	6,778.5	6,776.3	94.5	13.6	-92.56	920.2	2,879.2	319.0	211.2	107.77	2.960	
10,200.0	6,792.3	6,779.6	6,777.4	97.3	13.6	-92.85	920.1	2,879.2	394.9	284.4	110.49	3.574	
10,300.0	6,791.5	6,780.8	6,778.6	100.0	13.6	-93.15	920.1	2,879.2	479.8	366.5	113.22	4.237	
10,400.0	6,790.6	6,782.1	6,779.9	102.8	13.6	-93.45	920.1	2,879.3	569.6	453.6	115.94	4.912	
10,500.0	6,789.8	6,783.3	6,781.1	105.6	13.6	-93.77	920.0	2,879.3	662.3	543.6	118.66	5.581	
10,600.0	6,789.0	6,784.6	6,782.4	108.3	13.6	-94.09	920.0	2,879.3	756.8	635.5	121.37	6.236	
10,700.0	6,788.1	6,785.9	6,783.7	111.1	13.6	-94.42	919.9	2,879.3	852.7	728.6	124.08	6.872	
10,800.0	6,787.3	6,787.3	6,785.1	113.9	13.6	-94.75	919.9	2,879.4	949.3	822.5	126.78	7.488	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Gilbert Danley 20-1 (Exist) - Wellbore #1 - Wellb												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,400.0	6,773.9	6,743.8	6,741.6	158.4	12.2	88.23	273.4	6,285.2	978.6	808.2	170.41	5.743	
12,500.0	6,773.1	6,742.7	6,740.6	161.2	12.2	88.10	273.4	6,285.2	889.2	716.0	173.18	5.135	
12,600.0	6,772.2	6,741.7	6,739.6	164.0	12.2	87.96	273.5	6,285.2	802.3	626.3	175.95	4.560	
12,700.0	6,771.4	6,740.7	6,738.6	166.8	12.2	87.82	273.5	6,285.2	718.8	540.0	178.72	4.022	
12,800.0	6,770.5	6,739.7	6,737.5	169.6	12.2	87.67	273.6	6,285.2	640.0	458.5	181.49	3.526	
12,900.0	6,769.7	6,738.6	6,736.5	172.4	12.2	87.53	273.6	6,285.2	567.9	383.7	184.26	3.082	
13,000.0	6,768.9	6,737.6	6,735.4	175.2	12.2	87.38	273.7	6,285.2	505.5	318.4	187.03	2.703	
13,100.0	6,768.0	6,736.5	6,734.4	178.0	12.2	87.24	273.7	6,285.2	456.5	266.8	189.79	2.405	
13,200.0	6,767.2	6,735.4	6,733.3	180.8	12.2	87.09	273.8	6,285.2	425.9	233.3	192.56	2.212	
13,285.3	6,766.5	6,734.5	6,732.4	183.2	12.2	86.96	273.8	6,285.2	417.3	222.4	194.91	2.141 CC	
13,300.0	6,766.4	6,734.3	6,732.2	183.6	12.2	86.94	273.9	6,285.2	417.5	222.2	195.32	2.138 ES, SF	
13,400.0	6,765.5	6,733.2	6,731.1	186.4	12.2	86.79	273.9	6,285.2	432.8	234.7	198.08	2.185	
13,500.0	6,764.7	6,732.1	6,730.0	189.2	12.2	86.64	274.0	6,285.2	469.3	268.4	200.84	2.337	
13,600.0	6,763.8	6,731.0	6,728.9	192.0	12.2	86.48	274.0	6,285.2	522.7	319.1	203.59	2.567	
13,700.0	6,763.0	6,729.9	6,727.8	194.7	12.2	86.33	274.1	6,285.2	588.3	382.0	206.35	2.851	
13,800.0	6,762.2	6,728.7	6,726.6	197.5	12.2	86.17	274.2	6,285.2	662.6	453.5	209.10	3.169	
13,900.0	6,761.3	6,727.6	6,725.5	200.3	12.2	86.01	274.2	6,285.2	742.9	531.1	211.85	3.507	
14,000.0	6,760.5	6,726.4	6,724.3	203.1	12.2	85.85	274.3	6,285.2	827.6	613.0	214.59	3.857	
14,100.0	6,759.7	6,725.2	6,723.1	205.9	12.2	85.69	274.3	6,285.2	915.3	698.0	217.33	4.212	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Hoff 20-1 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,200.0	6,783.9	6,805.4	6,803.3	125.0	14.0	93.13	318.2	5,035.6	914.8	776.0	138.80	6.590		
11,300.0	6,783.1	6,804.5	6,802.4	127.8	14.0	92.99	318.1	5,035.6	824.4	682.9	141.59	5.823		
11,400.0	6,782.3	6,803.5	6,801.4	130.6	14.0	92.84	318.1	5,035.6	736.7	592.3	144.38	5.102		
11,500.0	6,781.4	6,802.6	6,800.5	133.3	14.0	92.69	318.1	5,035.6	652.4	505.2	147.18	4.433		
11,600.0	6,780.6	6,801.6	6,799.5	136.1	14.0	92.55	318.1	5,035.6	573.2	423.2	149.97	3.822		
11,700.0	6,779.8	6,800.7	6,798.6	138.9	14.0	92.40	318.0	5,035.6	501.5	348.7	152.76	3.283		
11,800.0	6,778.9	6,799.7	6,797.6	141.7	14.0	92.25	318.0	5,035.6	440.9	285.3	155.56	2.834		
11,900.0	6,778.1	6,798.7	6,796.7	144.5	14.0	92.11	318.0	5,035.6	396.6	238.3	158.35	2.505		
12,000.0	6,777.2	6,797.8	6,795.7	147.3	14.0	91.96	317.9	5,035.6	374.5	213.4	161.15	2.324		
12,035.4	6,776.9	6,797.5	6,795.4	148.3	14.0	91.91	317.9	5,035.6	372.8	210.7	162.14	2.299 CC, ES, SF		
12,100.0	6,776.4	6,796.8	6,794.8	150.1	14.0	91.81	317.9	5,035.6	378.4	214.4	163.94	2.308		
12,200.0	6,775.6	6,795.9	6,793.8	152.8	14.0	91.67	317.9	5,035.6	407.6	240.8	166.74	2.444		
12,300.0	6,774.7	6,794.9	6,792.8	155.6	14.0	91.52	317.8	5,035.6	457.2	287.7	169.53	2.697		
12,400.0	6,773.9	6,794.0	6,791.9	158.4	14.0	91.37	317.8	5,035.6	521.5	349.2	172.33	3.026		
12,500.0	6,773.1	6,793.0	6,790.9	161.2	14.0	91.23	317.8	5,035.6	595.7	420.6	175.13	3.402		
12,600.0	6,772.2	6,792.1	6,790.0	164.0	14.0	91.08	317.7	5,035.6	676.6	498.7	177.92	3.803		
12,700.0	6,771.4	6,791.1	6,789.0	166.8	14.0	90.93	317.7	5,035.6	762.0	581.3	180.72	4.217		
12,800.0	6,770.5	6,790.2	6,788.1	169.6	14.0	90.79	317.7	5,035.6	850.7	667.1	183.51	4.635		
12,900.0	6,769.7	6,789.2	6,787.1	172.4	14.0	90.64	317.6	5,035.6	941.6	755.2	186.30	5.054		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS														
Reference				Offset			Semi Major Axis		Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	76.12	236.8	958.4	987.3					
100.0	100.0	88.0	88.0	0.1	0.1	76.13	236.7	958.4	987.2	986.9	0.23	4,306.762		
140.7	140.7	126.7	126.7	0.2	0.2	76.14	236.5	958.3	987.1	986.7	0.40	2,495.806		
200.0	200.0	181.4	181.4	0.3	0.3	76.15	236.3	958.5	987.2	986.6	0.65	1,519.806		
300.0	300.0	280.3	280.3	0.6	0.5	109.12	236.1	959.2	988.1	987.1	1.06	930.000		
400.0	400.0	384.2	384.2	0.8	0.7	109.25	236.4	959.5	989.4	987.9	1.46	679.453		
500.0	499.9	487.7	487.7	1.0	0.8	109.48	236.5	959.5	990.8	989.0	1.83	541.492		
600.0	599.7	584.0	584.0	1.3	1.0	109.80	236.2	959.5	992.8	990.6	2.24	443.968		
700.0	699.4	679.1	679.1	1.5	1.2	110.20	235.8	960.0	995.9	993.2	2.69	370.510		
800.0	798.9	782.1	782.1	1.8	1.4	110.70	235.9	960.6	999.8	996.7	3.17	315.557		
7,050.0	6,770.4	6,752.6	6,751.6	19.5	12.3	52.26	289.9	949.3	979.3	955.1	24.16	40.531		
7,100.0	6,785.9	6,768.6	6,767.6	19.5	12.4	58.97	290.1	949.4	936.2	909.8	26.46	35.385		
7,150.0	6,798.4	6,781.5	6,780.5	19.9	12.4	66.21	290.2	949.6	892.7	863.8	28.90	30.895		
7,200.0	6,807.6	6,791.2	6,790.2	20.7	12.4	73.67	290.3	949.7	849.1	818.0	31.19	27.221		
7,250.0	6,813.5	6,797.6	6,796.6	21.5	12.4	80.94	290.4	949.7	805.7	772.6	33.14	24.313		
7,300.0	6,816.3	6,800.8	6,799.8	22.5	12.5	87.63	290.4	949.8	762.8	728.2	34.65	22.014		
7,323.0	6,816.4	6,801.2	6,800.2	22.9	12.5	90.44	290.4	949.8	743.3	708.1	35.21	21.109		
7,400.0	6,815.8	6,801.3	6,800.3	24.4	12.5	90.45	290.4	949.8	679.7	643.0	36.67	18.537		
7,500.0	6,814.9	6,801.5	6,800.5	26.5	12.5	90.47	290.4	949.8	601.8	563.1	38.71	15.547		
7,600.0	6,814.1	6,801.6	6,800.6	28.7	12.5	90.49	290.4	949.8	531.3	490.4	40.87	12.997		
7,700.0	6,813.3	6,801.7	6,800.7	31.0	12.5	90.51	290.4	949.8	471.5	428.4	43.15	10.928		
7,800.0	6,812.4	6,801.9	6,800.9	33.3	12.5	90.53	290.4	949.8	427.1	381.6	45.50	9.387		
7,900.0	6,811.6	6,802.0	6,801.0	35.7	12.5	90.55	290.4	949.8	403.2	355.3	47.93	8.413		
7,949.5	6,811.2	6,802.1	6,801.1	37.0	12.5	90.56	290.4	949.8	400.1	351.0	49.15	8.141 CC, ES		
8,000.0	6,810.8	6,802.1	6,801.2	38.2	12.5	90.57	290.4	949.8	403.3	352.9	50.40	8.002 SF		
8,100.0	6,809.9	6,802.3	6,801.3	40.7	12.5	90.59	290.4	949.8	427.5	374.6	52.92	8.078		
8,200.0	6,809.1	6,802.4	6,801.4	43.3	12.5	90.61	290.4	949.8	472.1	416.6	55.48	8.510		
8,300.0	6,808.2	6,802.5	6,801.6	45.9	12.5	90.63	290.4	949.8	532.0	473.9	58.06	9.162		
8,400.0	6,807.4	6,802.7	6,801.7	48.5	12.5	90.65	290.4	949.8	602.6	541.9	60.67	9.932		
8,500.0	6,806.6	6,802.8	6,801.8	51.1	12.5	90.67	290.4	949.8	680.6	617.3	63.30	10.751		
8,600.0	6,805.7	6,803.0	6,802.0	53.7	12.5	90.69	290.4	949.8	763.8	697.8	65.95	11.580		
8,700.0	6,804.9	6,803.1	6,802.1	56.4	12.5	90.71	290.4	949.8	850.5	781.9	68.62	12.395		
8,800.0	6,804.1	6,803.2	6,802.2	59.1	12.5	90.73	290.4	949.8	940.0	868.7	71.30	13.184		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 5 (Exist) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program:		100-NS-GYRO-MS												
Reference				Offset				Semi Major Axis				Distance		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	24.65	783.3	359.4	862.8					
100.0	100.0	59.0	59.0	0.1	0.1	24.66	783.2	359.5	861.8	861.6	0.19	4,516.240		
200.0	200.0	161.7	161.7	0.3	0.3	24.71	782.8	360.2	861.7	861.1	0.63	1,372.317		
300.0	300.0	261.9	261.9	0.6	0.5	57.71	782.2	360.5	860.8	859.8	1.07	807.402		
400.0	400.0	356.8	356.8	0.8	0.6	57.86	782.2	360.4	859.3	857.9	1.43	602.500		
500.0	499.9	453.0	453.0	1.0	0.8	58.11	782.7	360.6	857.6	855.8	1.78	481.724		
600.0	599.7	552.7	552.7	1.3	0.9	58.50	783.2	361.1	855.1	852.9	2.19	391.202		
700.0	699.4	652.4	652.4	1.5	1.1	58.97	783.8	361.4	851.7	849.0	2.63	323.454		
800.0	798.9	751.8	751.8	1.8	1.4	59.56	784.5	361.7	847.5	844.4	3.11	272.325		
900.0	898.3	852.1	852.1	2.1	1.6	60.28	785.0	362.1	842.5	838.9	3.62	232.414		
1,000.0	997.4	953.5	953.5	2.4	1.8	61.13	785.5	362.4	836.6	832.4	4.14	201.843		
1,100.0	1,096.3	1,057.7	1,057.7	2.7	2.0	62.11	785.7	362.2	829.6	824.9	4.62	179.500		
1,134.7	1,130.6	1,094.4	1,094.4	2.8	2.0	62.49	785.5	362.1	826.8	822.0	4.78	173.025		
1,200.0	1,195.0	1,154.7	1,154.7	3.0	2.1	63.10	785.3	362.1	821.7	816.6	5.08	161.631		
1,300.0	1,293.7	1,250.8	1,250.8	3.4	2.3	64.10	785.3	362.5	814.6	809.0	5.59	145.702		
1,400.0	1,392.3	1,349.1	1,349.1	3.7	2.5	65.12	785.5	362.5	807.7	801.6	6.14	131.598		
1,500.0	1,491.0	1,447.9	1,447.9	4.1	2.7	66.17	785.7	362.8	801.3	794.6	6.70	119.641		
1,600.0	1,589.7	1,546.1	1,546.1	4.5	2.9	67.27	785.5	363.4	795.0	787.8	7.26	109.452		
1,700.0	1,688.4	1,644.3	1,644.2	4.8	3.1	68.35	785.8	363.8	789.3	781.5	7.85	100.556		
1,800.0	1,787.0	1,739.6	1,739.6	5.2	3.4	69.41	786.1	364.1	783.7	775.3	8.45	92.754		
1,900.0	1,885.7	1,828.8	1,828.8	5.6	3.6	70.44	786.9	365.3	779.7	770.6	9.04	86.252		
2,000.0	1,984.4	1,927.0	1,927.0	5.9	3.8	71.54	788.8	366.4	776.5	766.9	9.66	80.423		
2,100.0	2,083.0	2,032.9	2,032.8	6.3	4.1	72.75	790.1	367.5	773.2	762.9	10.30	75.074		
2,200.0	2,181.7	2,135.6	2,135.5	6.7	4.4	73.94	790.7	368.1	769.3	758.4	10.94	70.347		
2,300.0	2,280.4	2,236.0	2,235.9	7.0	4.6	75.09	791.4	368.3	765.5	754.0	11.55	66.292		
2,400.0	2,379.1	2,337.2	2,337.1	7.4	4.8	76.23	792.1	367.9	761.7	749.6	12.12	62.831		
2,500.0	2,477.7	2,439.3	2,439.2	7.8	4.9	77.39	792.7	367.4	758.0	745.3	12.66	59.855		
2,600.0	2,576.4	2,543.9	2,543.8	8.2	5.0	78.60	792.5	366.2	753.7	740.5	13.16	57.282		
2,700.0	2,675.1	2,643.4	2,643.3	8.5	5.1	79.77	792.2	365.0	749.4	735.8	13.62	55.005		
2,800.0	2,773.7	2,738.2	2,738.1	8.9	5.2	80.86	792.1	363.5	745.5	731.4	14.12	52.788		
2,900.0	2,872.4	2,831.6	2,831.4	9.3	5.4	81.88	793.4	362.3	742.9	728.2	14.66	50.659		
3,000.0	2,971.1	2,932.8	2,932.6	9.7	5.6	82.93	795.2	360.2	740.3	725.1	15.25	48.554		
3,100.0	3,069.8	3,028.0	3,027.8	10.0	5.8	83.93	797.1	358.7	738.5	722.7	15.83	46.667		
3,200.0	3,168.4	3,129.0	3,128.8	10.4	6.0	84.98	799.2	356.8	736.8	720.3	16.42	44.863		
3,300.0	3,267.1	3,224.2	3,223.9	10.8	6.2	85.95	801.6	355.1	735.5	718.5	17.01	43.239		
3,400.0	3,365.8	3,322.4	3,322.0	11.2	6.5	86.95	804.4	353.5	734.9	717.3	17.62	41.720		
3,500.0	3,464.5	3,421.5	3,421.1	11.5	6.7	87.99	806.8	352.1	734.4	716.2	18.22	40.299		
3,521.5	3,485.7	3,441.4	3,441.0	11.6	6.7	88.21	807.2	351.9	734.4	716.1	18.35	40.015		
3,600.0	3,563.1	3,516.8	3,516.3	11.9	6.9	89.00	809.3	351.2	734.7	715.9	18.83	39.023		
3,700.0	3,661.8	3,623.6	3,623.2	12.3	7.2	90.14	811.7	349.7	734.6	715.2	19.45	37.766		
3,745.7	3,706.9	3,667.6	3,667.1	12.5	7.3	90.59	812.7	348.9	734.6	714.9	19.72	37.242		
3,800.0	3,760.5	3,719.8	3,719.3	12.7	7.4	91.13	814.1	348.0	734.7	714.6	20.05	36.643		
3,900.0	3,859.1	3,818.4	3,817.8	13.0	7.6	92.14	816.8	346.6	735.3	714.7	20.66	35.599		
4,000.0	3,957.8	3,927.0	3,926.4	13.4	7.9	93.26	819.2	344.2	735.3	714.0	21.27	34.567		
4,100.0	4,056.5	4,026.1	4,025.4	13.8	8.1	94.27	821.3	341.4	735.0	713.1	21.86	33.624		
4,117.0	4,073.3	4,042.2	4,041.5	13.9	8.1	94.43	821.7	341.0	735.0	713.0	21.96	33.472		
4,200.0	4,155.2	4,120.8	4,120.1	14.2	8.3	95.21	823.7	339.0	735.2	712.8	22.44	32.764		
4,300.0	4,253.8	4,216.7	4,216.0	14.5	8.6	96.19	826.1	337.2	736.3	713.3	23.03	31.968		
4,400.0	4,352.5	4,315.4	4,314.6	14.9	8.8	97.20	828.6	335.4	737.7	714.1	23.63	31.219		
4,500.0	4,451.2	4,409.6	4,408.8	15.3	9.0	98.17	830.9	334.2	739.8	715.6	24.22	30.546		
4,600.0	4,549.8	4,500.0	4,499.1	15.7	9.3	99.09	833.5	333.4	742.7	717.9	24.80	29.946		

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 5 (Exist) - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													
Reference				Offset			Semi Major Axis		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,700.0	4,648.5	4,591.6	4,590.6	16.1	9.5	99.99	836.8	333.4	746.9	721.5	25.38	29.429	
4,800.0	4,747.2	4,691.7	4,690.7	16.4	9.7	101.01	840.1	334.5	752.2	726.2	25.96	28.969	
4,900.0	4,845.9	4,784.9	4,783.9	16.8	10.0	101.97	842.9	335.8	757.9	731.3	26.53	28.571	
5,000.0	4,944.5	4,878.6	4,877.5	17.2	10.2	102.92	846.1	337.7	764.5	737.5	27.08	28.236	
5,100.0	5,043.2	4,979.9	4,978.7	17.6	10.4	103.96	849.2	340.2	771.7	744.1	27.63	27.929	
5,200.0	5,141.9	5,076.0	5,074.7	17.9	10.6	104.91	852.4	342.3	779.0	750.8	28.18	27.641	
5,300.0	5,240.6	5,176.1	5,174.7	18.3	10.9	105.81	856.6	344.5	786.7	758.0	28.75	27.368	
5,400.0	5,339.2	5,273.2	5,271.7	18.7	11.1	106.75	859.6	346.9	794.5	765.3	29.28	27.136	
5,496.8	5,434.7	5,372.4	5,370.8	19.1	11.2	107.86	860.5	349.9	802.4	772.7	29.73	26.987	
5,500.0	5,437.9	5,375.8	5,374.2	19.1	11.2	107.90	860.5	350.0	802.7	772.9	29.75	26.983	
5,600.0	5,536.9	5,472.0	5,470.4	19.3	11.3	109.16	858.7	353.3	810.2	780.1	30.05	26.963	
5,700.0	5,636.2	5,568.5	5,566.7	19.6	11.4	110.22	856.3	357.2	817.3	786.9	30.31	26.962	
5,800.0	5,736.0	5,672.2	5,675.3	19.8	11.5	111.05	854.3	361.1	823.0	792.5	30.56	26.929	
5,900.0	5,835.9	5,779.2	5,777.3	19.9	11.6	111.53	852.6	363.6	826.6	795.8	30.80	26.837	
5,964.1	5,900.0	5,844.7	5,842.8	20.0	11.7	78.75	852.1	365.1	828.2	801.3	26.85	30.845	
6,000.0	5,935.9	5,882.0	5,880.1	20.1	11.7	78.79	851.6	365.9	828.9	801.9	26.96	30.746	
6,100.0	6,035.9	5,986.6	5,984.7	20.2	11.9	78.90	850.4	367.8	830.4	803.1	27.27	30.448	
6,116.6	6,052.5	6,003.8	6,001.9	20.2	11.9	78.91	850.3	368.0	830.6	803.3	27.33	30.396	
6,150.0	6,085.9	6,036.2	6,034.3	20.3	11.9	-11.08	850.1	368.5	830.3	798.9	31.39	26.454	
6,200.0	6,135.7	6,084.6	6,082.7	20.3	12.0	-11.17	850.1	369.1	827.2	795.9	31.35	26.385	
6,250.0	6,185.2	6,134.4	6,132.4	20.3	12.1	-11.37	850.3	369.8	821.0	789.8	31.21	26.302	
6,300.0	6,234.1	6,184.3	6,182.4	20.3	12.2	-11.67	850.6	370.5	811.6	780.6	30.96	26.211	
6,350.0	6,282.3	6,233.8	6,231.8	20.3	12.3	-12.08	850.9	371.1	799.0	768.4	30.60	26.112	
6,400.0	6,329.4	6,282.3	6,280.4	20.3	12.4	-12.63	851.3	371.5	783.3	753.2	30.12	26.001	
6,450.0	6,375.4	6,328.2	6,326.2	20.3	12.5	-13.32	851.7	371.9	764.5	735.0	29.54	25.883	
6,500.0	6,420.0	6,371.9	6,369.9	20.2	12.6	-14.15	852.0	372.4	743.0	714.1	28.85	25.750	
6,550.0	6,463.0	6,414.8	6,412.8	20.1	12.7	-15.18	852.1	372.9	718.7	690.6	28.08	25.590	
6,600.0	6,504.3	6,457.1	6,455.1	20.1	12.8	-16.46	852.2	373.4	691.7	664.5	27.25	25.380	
6,650.0	6,543.6	6,497.4	6,495.4	20.0	12.9	-18.04	852.2	373.9	662.2	635.8	26.40	25.083	
6,700.0	6,580.8	6,535.0	6,533.1	19.9	12.9	-19.99	852.2	374.3	630.3	604.7	25.57	24.654	
6,750.0	6,615.8	6,570.4	6,568.4	19.9	13.0	-22.40	852.3	374.7	596.2	571.4	24.82	24.021	
6,800.0	6,648.3	6,603.3	6,601.4	19.8	13.1	-25.42	852.3	375.0	560.1	535.9	24.26	23.087	
6,850.0	6,678.3	6,633.8	6,631.8	19.7	13.1	-29.21	852.3	375.4	522.3	498.3	24.02	21.743	
6,900.0	6,705.6	6,661.6	6,659.6	19.7	13.2	-33.94	852.3	375.7	482.9	458.7	24.25	19.911	
6,950.0	6,730.1	6,686.6	6,684.6	19.6	13.2	-39.80	852.3	375.9	442.4	417.3	25.10	17.622	
7,000.0	6,751.8	6,708.7	6,706.7	19.5	13.3	-46.88	852.3	376.2	401.0	374.4	26.61	15.069	
7,050.0	6,770.4	6,727.8	6,725.8	19.5	13.3	-55.06	852.3	376.4	359.2	330.6	28.61	12.555	
7,100.0	6,785.9	6,743.9	6,741.9	19.5	13.3	-63.85	852.3	376.6	317.7	286.9	30.74	10.333	
7,150.0	6,798.4	6,756.8	6,754.8	19.9	13.4	-72.45	852.3	376.7	277.2	244.6	32.59	8.505	
7,200.0	6,807.6	6,766.6	6,764.6	20.7	13.4	-79.93	852.3	376.8	239.1	205.1	33.96	7.040	
7,250.0	6,813.5	6,773.1	6,771.1	21.5	13.4	-85.60	852.3	376.9	205.4	170.4	34.94	5.877	
7,300.0	6,816.3	6,776.4	6,774.4	22.5	13.4	-89.09	852.3	376.9	179.0	143.3	35.76	5.006	
7,323.0	6,816.4	6,776.8	6,774.8	22.9	13.4	-89.93	852.3	376.9	170.4	134.3	36.14	4.716	
7,376.6	6,816.0	6,776.9	6,774.9	23.9	13.4	-89.98	852.3	376.9	161.8	124.6	37.15	4.355 CC, ES	
7,400.0	6,815.8	6,777.0	6,775.0	24.4	13.4	-90.01	852.3	376.9	163.5	125.9	37.59	4.348 SF	
7,500.0	6,814.9	6,777.2	6,775.3	26.5	13.4	-90.10	852.3	376.9	203.5	163.8	39.63	5.135	
7,600.0	6,814.1	6,777.5	6,775.5	28.7	13.4	-90.19	852.3	376.9	275.8	234.0	41.79	6.600	
7,700.0	6,813.3	6,777.8	6,775.8	31.0	13.4	-90.28	852.3	376.9	361.6	317.5	44.06	8.207	
7,800.0	6,812.4	6,778.0	6,776.0	33.3	13.4	-90.38	852.3	376.9	453.2	406.8	46.41	9.765	
7,900.0	6,811.6	6,778.3	6,776.3	35.7	13.4	-90.47	852.3	376.9	547.8	499.0	48.83	11.219	
8,000.0	6,810.8	6,778.5	6,776.6	38.2	13.4	-90.56	852.3	376.9	644.0	592.7	51.30	12.554	

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	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: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,100.0	6,809.9	6,778.8	6,776.8	40.7	13.4	-90.65	852.3	376.9	741.2	687.4	53.82	13.774		
8,200.0	6,809.1	6,779.1	6,777.1	43.3	13.4	-90.75	852.3	376.9	839.1	782.8	56.37	14.887		
8,300.0	6,808.2	6,779.3	6,777.3	45.9	13.4	-90.84	852.3	377.0	937.4	878.5	58.95	15.903		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore												Offset Well Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													
Reference				Offset				Semi Major Axis				Distance	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-47.76	273.3	-300.9	407.3				
100.0	100.0	76.5	76.5	0.1	0.1	-47.74	273.2	-300.7	406.2	406.0	0.21	1,898.164	
193.2	193.2	167.2	167.2	0.3	0.2	-47.72	273.0	-300.3	405.8	405.2	0.56	730.930	
200.0	200.0	173.7	173.7	0.3	0.2	-47.73	273.0	-300.3	405.8	405.2	0.58	699.521	
300.0	300.0	275.5	275.5	0.6	0.4	-14.85	273.0	-300.3	405.0	404.0	0.97	417.425	
400.0	400.0	374.0	374.0	0.8	0.6	-14.92	272.9	-299.9	402.1	400.8	1.36	294.752	
500.0	499.9	473.8	473.8	1.0	0.7	-15.07	273.1	-299.9	398.0	396.3	1.76	226.233	
600.0	599.7	573.7	573.7	1.3	0.9	-15.22	273.6	-299.4	392.1	389.9	2.16	181.565	
700.0	699.4	674.1	674.1	1.5	1.1	-15.53	273.6	-299.3	384.5	381.9	2.56	149.909	
800.0	798.9	773.8	773.8	1.8	1.3	-15.86	273.9	-298.7	375.0	372.0	2.98	125.681	
900.0	898.3	870.2	870.2	2.1	1.5	-16.33	274.1	-298.6	364.2	360.8	3.40	107.247	
1,000.0	997.4	971.3	971.3	2.4	1.6	-16.86	274.9	-298.6	352.2	348.4	3.82	92.109	
1,100.0	1,096.3	1,068.6	1,068.6	2.7	1.8	-17.53	275.3	-298.3	338.1	333.8	4.25	79.563	
1,134.7	1,130.6	1,101.6	1,101.6	2.8	1.9	-17.81	275.5	-298.4	333.0	328.6	4.40	75.752	
1,200.0	1,195.0	1,167.0	1,167.0	3.0	2.0	-18.34	276.1	-298.6	323.4	318.8	4.68	69.040	
1,300.0	1,293.7	1,266.2	1,266.2	3.4	2.2	-19.15	277.0	-298.5	308.5	303.4	5.13	60.159	
1,400.0	1,392.3	1,366.7	1,366.7	3.7	2.4	-20.18	277.3	-298.7	293.5	287.9	5.58	52.614	
1,500.0	1,491.0	1,465.5	1,465.4	4.1	2.6	-21.25	277.4	-298.2	278.0	272.0	6.01	46.246	
1,600.0	1,589.7	1,562.6	1,562.6	4.5	2.7	-22.53	277.4	-298.3	263.0	256.6	6.44	40.861	
1,700.0	1,688.4	1,660.7	1,660.7	4.8	2.9	-23.90	278.0	-298.7	248.7	241.8	6.90	36.048	
1,800.0	1,787.0	1,761.2	1,761.2	5.2	3.1	-25.40	278.7	-298.8	234.3	226.9	7.39	31.723	
1,900.0	1,885.7	1,859.4	1,859.3	5.6	3.3	-27.11	278.8	-298.4	219.5	211.6	7.87	27.869	
2,000.0	1,984.4	1,958.7	1,958.6	5.9	3.5	-29.10	279.3	-298.6	205.4	197.0	8.37	24.535	
2,100.0	2,083.0	2,057.8	2,057.7	6.3	3.6	-31.47	279.1	-298.1	190.9	182.0	8.86	21.541	
2,200.0	2,181.7	2,155.9	2,155.9	6.7	3.8	-34.21	278.9	-298.0	177.0	167.6	9.37	18.891	
2,300.0	2,280.4	2,255.4	2,255.3	7.0	4.0	-37.19	279.5	-297.6	163.5	153.6	9.93	16.469	
2,400.0	2,379.1	2,353.9	2,353.8	7.4	4.1	-40.88	279.3	-296.9	150.1	139.6	10.52	14.272	
2,500.0	2,477.7	2,451.8	2,451.8	7.8	4.3	-45.29	279.1	-296.7	138.0	126.8	11.14	12.390	
2,600.0	2,576.4	2,550.7	2,550.6	8.2	4.5	-50.26	279.6	-296.6	126.9	115.1	11.81	10.748	
2,700.0	2,675.1	2,649.3	2,649.2	8.5	4.7	-56.43	279.4	-296.3	116.9	104.3	12.52	9.335	
2,800.0	2,773.7	2,748.3	2,748.3	8.9	4.8	-63.63	279.2	-296.2	108.5	95.3	13.26	8.181	
2,900.0	2,872.4	2,847.5	2,847.4	9.3	5.0	-71.58	279.7	-295.4	101.4	87.3	14.04	7.219	
3,000.0	2,971.1	2,946.1	2,946.0	9.7	5.2	-80.22	280.7	-294.7	96.3	81.5	14.79	6.511	
3,100.0	3,069.8	3,044.3	3,044.2	10.0	5.4	-89.73	281.2	-294.0	94.0	78.6	15.46	6.083	
3,116.8	3,086.3	3,060.7	3,060.7	10.1	5.5	-91.32	281.2	-294.0	94.0	78.4	15.56	6.042 CC, ES	
3,200.0	3,168.4	3,142.9	3,142.9	10.4	5.6	-98.93	282.0	-294.3	95.0	79.0	15.99	5.943 SF	
3,300.0	3,267.1	3,242.5	3,242.4	10.8	5.8	-107.39	283.7	-294.8	97.9	81.5	16.40	5.969	
3,400.0	3,365.8	3,341.4	3,341.3	11.2	6.0	-115.08	285.9	-295.2	102.2	85.5	16.73	6.111	
3,500.0	3,464.5	3,439.8	3,439.7	11.5	6.2	-121.93	287.5	-296.0	108.9	91.9	17.00	6.407	
3,600.0	3,563.1	3,538.6	3,538.5	11.9	6.4	-128.21	289.0	-296.2	117.1	99.9	17.24	6.793	
3,700.0	3,661.8	3,637.2	3,637.1	12.3	6.6	-133.58	290.2	-296.7	126.8	109.3	17.48	7.256	
3,800.0	3,760.5	3,736.6	3,736.4	12.7	6.8	-138.33	291.4	-296.8	137.4	119.7	17.73	7.750	
3,900.0	3,859.1	3,835.6	3,835.4	13.0	7.1	-142.44	293.0	-296.7	148.4	130.4	18.00	8.244	
4,000.0	3,957.8	3,934.4	3,934.2	13.4	7.3	-145.74	294.3	-297.2	160.2	141.9	18.30	8.757	
4,100.0	4,056.5	4,034.7	4,034.5	13.8	7.5	-148.44	296.2	-298.3	172.0	153.4	18.63	9.236	
4,200.0	4,155.2	4,135.0	4,134.8	14.2	7.7	-150.82	298.9	-299.4	183.4	164.4	18.98	9.661	
4,300.0	4,253.8	4,234.9	4,234.6	14.5	7.9	-152.94	302.2	-300.3	194.4	175.1	19.35	10.049	
4,400.0	4,352.5	4,334.3	4,333.9	14.9	8.2	-154.79	305.6	-301.4	205.5	185.7	19.74	10.412	
4,500.0	4,451.2	4,433.7	4,433.2	15.3	8.4	-156.42	309.0	-302.7	216.8	196.7	20.13	10.768	
4,600.0	4,549.8	4,534.1	4,533.6	15.7	8.6	-157.83	312.9	-304.3	227.7	207.1	20.55	11.080	
4,700.0	4,648.5	4,632.5	4,631.9	16.1	8.9	-159.29	316.9	-305.1	238.7	217.8	20.96	11.390	

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore													Offset Well Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS														
Reference				Offset			Semi Major Axis		Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,800.0	4,747.2	4,731.2	4,730.5	16.4	9.1	-160.65	320.6	-305.7	250.3	228.9	21.38	11.705		
4,900.0	4,845.9	4,830.2	4,829.5	16.8	9.3	-161.73	324.1	-306.9	262.0	240.1	21.82	12.007		
5,000.0	4,944.5	4,928.4	4,927.6	17.2	9.6	-162.76	327.4	-307.9	274.0	251.7	22.26	12.310		
5,100.0	5,043.2	5,025.8	5,024.9	17.6	9.8	-163.79	330.4	-308.3	286.5	263.8	22.70	12.624		
5,200.0	5,141.9	5,121.1	5,120.2	17.9	10.0	-164.74	332.5	-308.3	300.1	276.9	23.13	12.971		
5,300.0	5,240.6	5,215.7	5,214.8	18.3	10.2	-165.75	333.5	-307.2	315.2	291.6	23.54	13.390		
5,400.0	5,339.2	5,316.0	5,315.1	18.7	10.5	-166.78	334.5	-305.5	330.6	306.6	23.95	13.805		
5,496.8	5,434.7	5,409.9	5,409.0	19.1	10.6	-167.69	335.5	-303.8	345.6	321.2	24.34	14.197		
5,500.0	5,437.9	5,413.1	5,412.1	19.1	10.7	-167.72	335.5	-303.7	346.1	321.7	24.36	14.210		
5,600.0	5,536.9	5,510.1	5,509.1	19.3	10.8	-168.58	336.0	-301.8	360.5	335.7	24.73	14.574		
5,700.0	5,636.2	5,611.6	5,610.6	19.6	11.0	-169.17	336.3	-300.5	371.3	346.2	25.10	14.792		
5,800.0	5,736.0	5,710.2	5,709.2	19.8	11.2	-169.67	336.9	-298.9	378.8	353.3	25.45	14.882		
5,900.0	5,835.9	5,811.0	5,810.0	19.9	11.5	-170.06	337.6	-297.2	382.7	357.0	25.77	14.853		
5,964.1	5,900.0	5,874.2	5,873.2	20.0	11.6	-156.86	337.9	-296.3	383.5	352.1	31.42	12.205		
6,000.0	5,935.9	5,910.2	5,909.2	20.1	11.7	-156.77	338.1	-295.7	383.6	352.0	31.54	12.160		
6,100.0	6,035.9	6,013.7	6,012.7	20.2	11.9	-156.69	338.6	-295.3	383.2	351.3	31.90	12.012		
6,116.6	6,052.5	6,030.3	6,029.3	20.2	11.9	-156.69	338.7	-295.4	383.1	351.1	31.97	11.985		
6,150.0	6,085.9	6,063.6	6,062.5	20.3	12.0	-66.81	339.0	-295.4	382.6	355.9	26.67	14.345		
6,200.0	6,135.7	6,113.3	6,112.3	20.3	12.1	-67.42	339.4	-295.3	380.7	353.9	26.82	14.198		
6,250.0	6,185.2	6,162.8	6,161.8	20.3	12.2	-68.58	339.8	-295.2	377.7	350.7	26.98	14.002		
6,300.0	6,234.1	6,211.5	6,210.5	20.3	12.3	-70.31	340.1	-295.4	373.7	346.5	27.17	13.755		
6,350.0	6,282.3	6,258.7	6,257.7	20.3	12.4	-72.52	340.3	-295.5	369.0	341.6	27.40	13.468		
6,400.0	6,329.4	6,305.4	6,304.4	20.3	12.5	-75.19	340.5	-295.3	364.0	336.3	27.69	13.146		
6,450.0	6,375.4	6,353.5	6,352.4	20.3	12.6	-78.46	340.8	-295.2	358.8	330.8	28.07	12.783		
6,500.0	6,420.0	6,399.9	6,398.8	20.2	12.7	-82.15	341.3	-295.3	354.0	325.4	28.51	12.414		
6,550.0	6,463.0	6,441.3	6,440.2	20.1	12.8	-85.87	341.8	-295.4	350.2	321.3	28.94	12.102		
6,600.0	6,504.3	6,480.9	6,479.9	20.1	12.9	-89.69	342.1	-295.6	348.5	319.1	29.35	11.873		
6,608.9	6,511.4	6,487.8	6,486.7	20.1	12.9	-90.37	342.1	-295.6	348.5	319.0	29.42	11.843		
6,650.0	6,543.6	6,519.4	6,518.3	20.0	13.0	-93.54	342.2	-295.8	349.4	319.7	29.71	11.760		
6,700.0	6,580.8	6,556.4	6,555.4	19.9	13.0	-97.29	342.3	-296.0	353.6	323.6	30.00	11.787		
6,750.0	6,615.8	6,591.2	6,590.1	19.9	13.1	-100.71	342.4	-296.2	361.4	331.3	30.19	11.972		
6,800.0	6,648.3	6,623.5	6,622.5	19.8	13.2	-103.68	342.4	-296.3	373.4	343.1	30.30	12.322		
6,850.0	6,678.3	6,653.3	6,652.3	19.7	13.2	-106.11	342.5	-296.5	389.7	359.3	30.38	12.827		
6,900.0	6,705.6	6,680.4	6,679.4	19.7	13.3	-107.92	342.6	-296.6	410.2	379.8	30.46	13.466		
6,950.0	6,730.1	6,704.7	6,703.7	19.6	13.3	-109.04	342.6	-296.8	434.9	404.3	30.62	14.205		
7,000.0	6,751.8	6,726.1	6,725.0	19.5	13.4	-109.42	342.7	-296.9	463.4	432.5	30.90	14.997		
7,050.0	6,770.4	6,744.4	6,743.4	19.5	13.4	-108.99	342.7	-297.0	495.3	464.0	31.36	15.796		
7,100.0	6,785.9	6,759.7	6,758.7	19.5	13.4	-107.67	342.8	-297.1	530.2	498.2	32.02	16.559		
7,150.0	6,798.4	6,771.9	6,770.8	19.9	13.4	-105.38	342.8	-297.1	567.7	534.8	32.89	17.262		
7,200.0	6,807.6	6,780.8	6,779.8	20.7	13.5	-102.01	342.8	-297.2	607.3	573.4	33.91	17.912		
7,250.0	6,813.5	6,786.5	6,785.5	21.5	13.5	-97.49	342.9	-297.2	648.7	613.7	34.96	18.555		
7,300.0	6,816.3	6,789.0	6,788.0	22.5	13.5	-91.77	342.9	-297.2	691.3	655.5	35.85	19.282		
7,323.0	6,816.4	6,789.0	6,788.0	22.9	13.5	-88.74	342.9	-297.2	711.3	675.2	36.14	19.680		
7,400.0	6,815.8	6,788.0	6,786.9	24.4	13.5	-88.57	342.9	-297.2	779.4	741.8	37.59	20.735		
7,500.0	6,814.9	6,786.6	6,785.6	26.5	13.5	-88.34	342.9	-297.2	870.0	830.4	39.61	21.966		
7,600.0	6,814.1	6,785.2	6,784.2	28.7	13.5	-88.12	342.9	-297.2	962.5	920.7	41.76	23.049		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference				Offset			Semi Major Axis		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.95	0.0	30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	89.95	0.0	30.6	30.6	30.4	0.22	136.352	
200.0	200.0	200.0	200.0	0.3	0.3	89.95	0.0	30.6	30.6	30.0	0.67	45.451 CC	
300.0	300.0	300.0	300.0	0.6	0.6	124.22	0.0	30.6	31.1	30.0	1.12	27.718	
400.0	400.0	400.0	400.0	0.8	0.8	128.00	0.0	30.6	32.7	31.1	1.57	20.762	
500.0	499.9	499.9	499.9	1.0	1.0	133.53	0.0	30.6	35.5	33.5	2.03	17.513	
600.0	599.7	599.7	599.7	1.3	1.2	139.85	0.0	30.6	40.0	37.5	2.49	16.073	
700.0	699.4	699.4	699.4	1.5	1.5	146.09	0.0	30.6	46.3	43.3	2.95	15.689	
800.0	798.9	798.9	798.9	1.8	1.7	151.68	0.0	30.6	54.5	51.1	3.41	15.977	
900.0	898.3	898.3	898.3	2.1	1.9	156.39	0.0	30.6	64.7	60.8	3.87	16.708	
1,000.0	997.4	997.4	997.4	2.4	2.1	160.25	0.0	30.6	76.8	72.5	4.33	17.738	
1,100.0	1,096.3	1,097.8	1,097.8	2.7	2.4	163.32	0.7	30.1	90.1	85.3	4.79	18.810	
1,134.7	1,130.6	1,132.8	1,132.8	2.8	2.4	164.22	1.2	29.6	94.7	89.8	4.95	19.146	
1,200.0	1,195.0	1,198.6	1,198.5	3.0	2.6	165.71	2.6	28.4	103.1	97.9	5.24	19.669	
1,300.0	1,293.7	1,299.8	1,299.6	3.4	2.8	167.51	5.9	25.5	114.6	108.9	5.70	20.113	
1,400.0	1,392.3	1,401.4	1,401.0	3.7	3.0	168.94	10.6	21.4	124.5	118.3	6.16	20.202	
1,500.0	1,491.0	1,503.3	1,502.6	4.1	3.3	170.14	16.7	16.2	132.6	126.0	6.63	20.008	
1,600.0	1,589.7	1,605.5	1,604.3	4.5	3.5	171.19	24.2	9.7	139.1	132.0	7.10	19.583	
1,700.0	1,688.4	1,707.9	1,706.1	4.8	3.8	172.14	33.0	2.0	143.7	136.2	7.58	18.971	
1,800.0	1,787.0	1,809.8	1,807.1	5.2	4.1	173.04	43.1	-6.8	146.7	138.7	8.06	18.212	
1,900.0	1,885.7	1,909.7	1,906.1	5.6	4.3	173.90	53.5	-15.7	149.2	140.7	8.53	17.485	
2,000.0	1,984.4	2,009.7	2,005.1	5.9	4.6	174.72	63.8	-24.7	151.7	142.7	9.01	16.833	
2,100.0	2,083.0	2,109.6	2,104.1	6.3	4.9	175.52	74.1	-33.6	154.3	144.8	9.50	16.246	
2,200.0	2,181.7	2,209.6	2,203.1	6.7	5.2	176.30	84.5	-42.6	156.8	146.9	9.98	15.715	
2,300.0	2,280.4	2,309.5	2,302.1	7.0	5.5	177.05	94.8	-51.6	159.4	149.0	10.47	15.232	
2,400.0	2,379.1	2,409.4	2,401.1	7.4	5.9	177.77	105.1	-60.5	162.1	151.1	10.96	14.792	
2,500.0	2,477.7	2,509.4	2,500.1	7.8	6.2	178.47	115.4	-69.5	164.7	153.3	11.45	14.390	
2,600.0	2,576.4	2,609.3	2,599.1	8.2	6.5	179.15	125.8	-78.5	167.4	155.5	11.94	14.019	
2,700.0	2,675.1	2,709.3	2,698.1	8.5	6.8	179.81	136.1	-87.4	170.1	157.7	12.44	13.678	
2,800.0	2,773.7	2,809.2	2,797.1	8.9	7.1	-179.56	146.4	-96.4	172.9	159.9	12.94	13.362	
2,900.0	2,872.4	2,909.2	2,896.1	9.3	7.4	-178.94	156.8	-105.3	175.6	162.2	13.44	13.069	
3,000.0	2,971.1	3,009.1	2,995.2	9.7	7.8	-178.34	167.1	-114.3	178.4	164.4	13.94	12.796	
3,100.0	3,069.8	3,109.1	3,094.2	10.0	8.1	-177.76	177.4	-123.3	181.1	166.7	14.44	12.542	
3,200.0	3,168.4	3,209.0	3,193.2	10.4	8.4	-177.20	187.7	-132.2	184.0	169.0	14.95	12.304	
3,300.0	3,267.1	3,309.0	3,292.2	10.8	8.7	-176.66	198.1	-141.2	186.8	171.3	15.46	12.082	
3,400.0	3,365.8	3,408.9	3,391.2	11.2	9.1	-176.13	208.4	-150.1	189.6	173.6	15.97	11.873	
3,500.0	3,464.5	3,508.8	3,490.2	11.5	9.4	-175.62	218.7	-159.1	192.5	176.0	16.48	11.676	
3,600.0	3,563.1	3,608.8	3,589.2	11.9	9.7	-175.12	229.0	-168.1	195.3	178.3	17.00	11.491	
3,700.0	3,661.8	3,708.7	3,688.2	12.3	10.1	-174.63	239.4	-177.0	198.2	180.7	17.52	11.316	
3,800.0	3,760.5	3,808.7	3,787.2	12.7	10.4	-174.16	249.7	-186.0	201.1	183.1	18.03	11.151	
3,900.0	3,859.1	3,908.6	3,886.2	13.0	10.7	-173.71	260.0	-194.9	204.0	185.5	18.56	10.995	
4,000.0	3,957.8	4,008.6	3,985.2	13.4	11.1	-173.27	270.4	-203.9	206.9	187.9	19.08	10.847	
4,100.0	4,056.5	4,108.5	4,084.2	13.8	11.4	-172.83	280.7	-212.9	209.9	190.3	19.60	10.706	
4,200.0	4,155.2	4,208.5	4,183.2	14.2	11.7	-172.42	291.0	-221.8	212.8	192.7	20.13	10.572	
4,300.0	4,253.8	4,308.4	4,282.2	14.5	12.1	-172.01	301.3	-230.8	215.8	195.1	20.66	10.445	
4,400.0	4,352.5	4,408.3	4,381.2	14.9	12.4	-171.61	311.7	-239.8	218.7	197.5	21.19	10.324	
4,500.0	4,451.2	4,508.3	4,480.2	15.3	12.7	-171.22	322.0	-248.7	221.7	200.0	21.72	10.208	
4,600.0	4,549.8	4,608.2	4,579.2	15.7	13.1	-170.85	332.3	-257.7	224.7	202.4	22.25	10.097	
4,700.0	4,648.5	4,708.2	4,678.2	16.1	13.4	-170.48	342.7	-266.6	227.7	204.9	22.79	9.992	
4,800.0	4,747.2	4,808.1	4,777.2	16.4	13.7	-170.13	353.0	-275.6	230.7	207.4	23.32	9.891	
4,900.0	4,845.9	4,908.1	4,876.2	16.8	14.1	-169.78	363.3	-284.6	233.7	209.8	23.86	9.794	

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,944.5	5,008.0	4,975.3	17.2	14.4	-169.44	373.6	-293.5	236.7	212.3	24.40	9.701		
5,100.0	5,043.2	5,108.0	5,074.3	17.6	14.7	-169.11	384.0	-302.5	239.8	214.8	24.94	9.612		
5,200.0	5,141.9	5,207.9	5,173.3	17.9	15.1	-168.79	394.3	-311.4	242.8	217.3	25.49	9.527		
5,300.0	5,240.6	5,307.8	5,272.3	18.3	15.4	-168.48	404.6	-320.4	245.8	219.8	26.03	9.445		
5,400.0	5,339.2	5,407.8	5,371.3	18.7	15.7	-168.17	415.0	-329.4	248.9	222.3	26.57	9.366		
5,496.8	5,434.7	5,500.0	5,462.7	19.1	16.0	-167.94	424.1	-337.3	252.4	225.3	27.07	9.324		
5,500.0	5,437.9	5,500.0	5,462.7	19.1	16.0	-167.94	424.1	-337.3	252.6	225.5	27.08	9.328		
5,600.0	5,536.9	5,595.1	5,557.3	19.3	16.2	-167.86	431.4	-343.6	257.2	229.7	27.47	9.362		
5,700.0	5,636.2	5,687.2	5,649.2	19.6	16.4	-167.87	436.1	-347.7	261.5	233.7	27.81	9.402		
5,800.0	5,736.0	5,779.2	5,741.1	19.8	16.6	-167.94	438.7	-350.0	265.3	237.3	28.09	9.446		
5,900.0	5,835.9	5,874.0	5,835.9	19.9	16.7	-168.08	439.1	-350.4	268.6	240.3	28.33	9.482		
5,964.1	5,900.0	5,938.1	5,900.0	20.0	16.8	158.97	439.1	-350.4	269.3	233.2	36.16	7.447		
6,000.0	5,935.9	5,974.0	5,935.9	20.1	16.9	158.97	439.1	-350.4	269.3	233.1	36.27	7.425		
6,025.0	5,960.9	5,999.0	5,960.9	20.1	16.9	158.97	439.1	-350.4	269.3	233.0	36.35	7.409		
6,100.0	6,035.9	6,067.6	6,029.5	20.2	17.0	158.65	439.1	-348.7	270.0	233.4	36.58	7.380		
6,116.6	6,052.5	6,082.3	6,044.1	20.2	17.0	158.44	439.1	-347.7	270.4	233.8	36.64	7.380		
6,150.0	6,085.9	6,111.7	6,073.3	20.3	17.1	67.90	439.1	-344.6	271.4	242.5	28.99	9.363		
6,200.0	6,135.7	6,155.5	6,116.7	20.3	17.1	67.16	439.1	-338.0	272.9	243.9	28.96	9.424		
6,250.0	6,185.2	6,200.0	6,160.2	20.3	17.1	66.50	439.1	-328.8	274.2	245.3	28.90	9.488		
6,300.0	6,234.1	6,242.8	6,201.5	20.3	17.1	65.94	439.1	-317.5	275.4	246.6	28.82	9.555		
6,350.0	6,282.3	6,286.3	6,242.7	20.3	17.1	65.46	439.1	-303.7	276.4	247.7	28.72	9.623		
6,400.0	6,329.4	6,329.7	6,283.0	20.3	17.1	65.06	439.1	-287.7	277.3	248.7	28.61	9.690		
6,450.0	6,375.4	6,373.0	6,322.2	20.3	17.1	64.75	439.1	-269.4	278.0	249.5	28.50	9.753		
6,500.0	6,420.0	6,416.2	6,360.3	20.2	17.0	64.52	439.1	-248.9	278.5	250.1	28.39	9.809		
6,550.0	6,463.0	6,459.4	6,397.2	20.1	17.0	64.38	439.1	-226.4	278.8	250.5	28.30	9.853		
6,600.0	6,504.3	6,500.0	6,430.6	20.1	17.0	64.32	439.1	-203.3	278.9	250.7	28.23	9.882		
6,650.0	6,543.6	6,545.8	6,466.7	20.0	16.9	64.35	439.1	-175.2	278.9	250.6	28.22	9.883		
6,700.0	6,580.8	6,588.9	6,499.2	19.9	16.9	64.46	439.1	-146.8	278.6	250.3	28.27	9.854		
6,750.0	6,615.8	6,632.2	6,530.0	19.9	16.9	64.66	439.1	-116.5	278.2	249.7	28.42	9.787		
6,800.0	6,648.3	6,675.4	6,559.2	19.8	16.8	64.94	439.1	-84.5	277.5	248.9	28.67	9.678		
6,850.0	6,678.3	6,718.8	6,586.5	19.7	16.8	65.31	439.1	-50.9	276.7	247.7	29.06	9.523		
6,900.0	6,705.6	6,762.2	6,611.9	19.7	16.8	65.76	439.1	-15.7	275.7	246.2	29.59	9.320		
6,950.0	6,730.1	6,805.8	6,635.3	19.6	16.9	66.30	439.1	21.0	274.6	244.3	30.28	9.070		
7,000.0	6,751.8	6,850.0	6,656.9	19.5	17.1	66.93	439.1	59.6	273.4	242.2	31.14	8.777		
7,050.0	6,770.4	6,893.2	6,675.9	19.5	17.4	67.63	439.1	98.5	272.0	239.8	32.18	8.451		
7,100.0	6,785.9	6,937.2	6,692.8	19.5	17.9	68.42	439.1	139.0	270.5	237.1	33.40	8.098		
7,150.0	6,798.4	6,981.4	6,707.5	19.9	18.4	69.30	439.1	180.7	268.9	234.1	34.78	7.731		
7,200.0	6,807.6	7,025.8	6,719.8	20.7	19.1	70.27	439.1	223.3	267.2	230.9	36.33	7.356		
7,250.0	6,813.5	7,070.4	6,729.7	21.5	19.8	71.32	439.1	266.8	265.5	227.5	38.02	6.985		
7,300.0	6,816.3	7,115.2	6,737.0	22.5	20.5	72.45	439.1	311.0	263.8	224.0	39.83	6.623		
7,323.0	6,816.4	7,135.9	6,739.5	22.9	20.9	73.00	439.1	331.6	263.0	222.3	40.71	6.461		
7,400.0	6,815.8	7,205.9	6,743.8	24.4	22.2	74.02	439.1	401.4	261.5	217.9	43.62	5.994		
7,434.2	6,815.5	7,238.3	6,743.7	25.1	22.8	74.07	439.1	433.9	261.4	216.5	44.92	5.820		
7,500.0	6,814.9	7,304.1	6,743.1	26.5	24.2	74.05	439.1	499.6	261.4	214.0	47.48	5.507		
7,600.0	6,814.1	7,404.1	6,742.2	28.7	26.3	74.04	439.1	599.6	261.5	209.8	51.62	5.065		
7,700.0	6,813.3	7,504.1	6,741.3	31.0	28.5	74.02	439.1	699.6	261.5	205.5	55.99	4.671		
7,800.0	6,812.4	7,604.1	6,740.3	33.3	30.9	74.00	439.1	799.6	261.5	201.0	60.52	4.321		
7,900.0	6,811.6	7,704.1	6,739.4	35.7	33.3	73.98	439.1	899.6	261.5	196.4	65.18	4.012		
8,000.0	6,810.8	7,804.1	6,738.5	38.2	35.8	73.96	439.1	999.6	261.6	191.6	69.95	3.739		
8,100.0	6,809.9	7,904.1	6,737.6	40.7	38.3	73.94	439.1	1,099.6	261.6	186.8	74.81	3.497		
8,200.0	6,809.1	8,004.1	6,736.6	43.3	40.8	73.93	439.1	1,199.6	261.6	181.9	79.74	3.281		

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,300.0	6,808.2	8,104.1	6,735.7	45.9	43.4	73.91	439.1	1,299.6	261.6	176.9	84.72	3.088		
8,400.0	6,807.4	8,204.1	6,734.8	48.5	46.0	73.89	439.1	1,399.6	261.7	171.9	89.75	2.915		
8,500.0	6,806.6	8,304.1	6,733.9	51.1	48.6	73.87	439.1	1,499.6	261.7	166.9	94.83	2.760		
8,600.0	6,805.7	8,404.1	6,732.9	53.7	51.3	73.85	439.1	1,599.6	261.7	161.8	99.93	2.619		
8,700.0	6,804.9	8,504.1	6,732.0	56.4	54.0	73.83	439.1	1,699.6	261.7	156.7	105.07	2.491		
8,800.0	6,804.1	8,604.1	6,731.1	59.1	56.6	73.82	439.1	1,799.6	261.8	151.5	110.23	2.375		
8,900.0	6,803.2	8,704.1	6,730.2	61.8	59.3	73.80	439.1	1,899.6	261.8	146.4	115.41	2.268		
9,000.0	6,802.4	8,804.1	6,729.2	64.4	62.0	73.78	439.1	1,999.6	261.8	141.2	120.61	2.171		
9,100.0	6,801.5	8,904.1	6,728.3	67.2	64.7	73.76	439.1	2,099.6	261.8	136.0	125.82	2.081		
9,200.0	6,800.7	9,004.1	6,727.4	69.9	67.4	73.74	439.1	2,199.6	261.9	130.8	131.05	1.998		
9,300.0	6,799.9	9,104.1	6,726.5	72.6	70.2	73.72	439.1	2,299.6	261.9	125.6	136.29	1.921		
9,400.0	6,799.0	9,204.1	6,725.5	75.3	72.9	73.71	439.1	2,399.6	261.9	120.4	141.54	1.850		
9,500.0	6,798.2	9,304.1	6,724.6	78.0	75.6	73.69	439.1	2,499.5	261.9	115.1	146.80	1.784		
9,600.0	6,797.4	9,404.1	6,723.7	80.8	78.4	73.67	439.1	2,599.5	262.0	109.9	152.07	1.723		
9,700.0	6,796.5	9,504.1	6,722.8	83.5	81.1	73.65	439.1	2,699.5	262.0	104.6	157.34	1.665		
9,800.0	6,795.7	9,604.1	6,721.8	86.3	83.9	73.63	439.1	2,799.5	262.0	99.4	162.63	1.611		
9,900.0	6,794.8	9,704.1	6,720.9	89.0	86.6	73.61	439.1	2,899.5	262.0	94.1	167.92	1.560		
10,000.0	6,794.0	9,804.1	6,720.0	91.8	89.4	73.60	439.1	2,999.5	262.0	88.8	173.21	1.513		
10,100.0	6,793.2	9,904.1	6,719.1	94.5	92.2	73.58	439.1	3,099.5	262.1	83.6	178.51	1.468 Level 3		
10,200.0	6,792.3	10,004.1	6,718.1	97.3	94.9	73.56	439.1	3,199.5	262.1	78.3	183.81	1.426 Level 3		
10,300.0	6,791.5	10,104.1	6,717.2	100.0	97.7	73.54	439.1	3,299.5	262.1	73.0	189.12	1.386 Level 3		
10,400.0	6,790.6	10,204.1	6,716.3	102.8	100.5	73.52	439.1	3,399.5	262.1	67.7	194.43	1.348 Level 3		
10,500.0	6,789.8	10,304.1	6,715.4	105.6	103.2	73.50	439.1	3,499.5	262.2	62.4	199.74	1.313 Level 3		
10,600.0	6,789.0	10,404.1	6,714.4	108.3	106.0	73.49	439.1	3,599.5	262.2	57.1	205.06	1.279 Level 3		
10,700.0	6,788.1	10,504.1	6,713.5	111.1	108.8	73.47	439.1	3,699.5	262.2	51.8	210.37	1.246 Level 2		
10,800.0	6,787.3	10,604.1	6,712.6	113.9	111.5	73.45	439.1	3,799.5	262.2	46.6	215.69	1.216 Level 2		
10,900.0	6,786.5	10,704.1	6,711.7	116.7	114.3	73.43	439.2	3,899.5	262.3	41.3	221.02	1.187 Level 2		
11,000.0	6,785.6	10,804.1	6,710.7	119.4	117.1	73.41	439.2	3,999.5	262.3	36.0	226.34	1.159 Level 2		
11,100.0	6,784.8	10,904.1	6,709.8	122.2	119.9	73.39	439.2	4,099.5	262.3	30.7	231.66	1.132 Level 2		
11,200.0	6,783.9	11,004.1	6,708.9	125.0	122.7	73.38	439.2	4,199.5	262.3	25.4	236.99	1.107 Level 2		
11,300.0	6,783.1	11,104.1	6,708.0	127.8	125.5	73.36	439.2	4,299.5	262.4	20.0	242.32	1.083 Level 2		
11,400.0	6,782.3	11,204.1	6,707.0	130.6	128.2	73.34	439.2	4,399.5	262.4	14.7	247.65	1.060 Level 2		
11,500.0	6,781.4	11,304.1	6,706.1	133.3	131.0	73.32	439.2	4,499.5	262.4	9.4	252.98	1.037 Level 2		
11,600.0	6,780.6	11,404.1	6,705.2	136.1	133.8	73.30	439.2	4,599.5	262.4	4.1	258.31	1.016 Level 2		
11,700.0	6,779.8	11,504.1	6,704.3	138.9	136.6	73.28	439.2	4,699.5	262.5	-1.2	263.64	0.996 Level 1		
11,800.0	6,778.9	11,604.1	6,703.3	141.7	139.4	73.27	439.2	4,799.4	262.5	-6.5	268.97	0.976 Level 1		
11,900.0	6,778.1	11,704.1	6,702.4	144.5	142.2	73.25	439.2	4,899.4	262.5	-11.8	274.31	0.957 Level 1		
12,000.0	6,777.2	11,804.1	6,701.5	147.3	145.0	73.23	439.2	4,999.4	262.5	-17.1	279.64	0.939 Level 1		
12,100.0	6,776.4	11,904.1	6,700.6	150.1	147.8	73.21	439.2	5,099.4	262.6	-22.4	284.97	0.921 Level 1		
12,200.0	6,775.6	12,004.1	6,699.6	152.8	150.5	73.19	439.2	5,199.4	262.6	-27.7	290.31	0.905 Level 1		
12,300.0	6,774.7	12,104.1	6,698.7	155.6	153.3	73.18	439.2	5,299.4	262.6	-33.0	295.64	0.888 Level 1		
12,400.0	6,773.9	12,204.1	6,697.8	158.4	156.1	73.16	439.2	5,399.4	262.6	-38.3	300.97	0.873 Level 1		
12,500.0	6,773.1	12,304.1	6,696.9	161.2	158.9	73.14	439.2	5,499.4	262.7	-43.6	306.31	0.858 Level 1		
12,600.0	6,772.2	12,404.1	6,695.9	164.0	161.7	73.12	439.2	5,599.4	262.7	-48.9	311.64	0.843 Level 1		
12,700.0	6,771.4	12,504.1	6,695.0	166.8	164.5	73.10	439.2	5,699.4	262.7	-54.3	316.98	0.829 Level 1		
12,800.0	6,770.5	12,604.1	6,694.1	169.6	167.3	73.08	439.2	5,799.4	262.7	-59.6	322.31	0.815 Level 1		
12,900.0	6,769.7	12,704.1	6,693.2	172.4	170.1	73.07	439.2	5,899.4	262.8	-64.9	327.64	0.802 Level 1		
13,000.0	6,768.9	12,804.1	6,692.2	175.2	172.9	73.05	439.2	5,999.4	262.8	-70.2	332.98	0.789 Level 1		
13,100.0	6,768.0	12,904.1	6,691.3	178.0	175.7	73.03	439.2	6,099.4	262.8	-75.5	338.31	0.777 Level 1		
13,200.0	6,767.2	13,004.1	6,690.4	180.8	178.5	73.01	439.2	6,199.4	262.8	-80.8	343.65	0.765 Level 1		
13,300.0	6,766.4	13,104.1	6,689.5	183.6	181.3	72.99	439.2	6,299.4	262.9	-86.1	348.98	0.753 Level 1		

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
13,400.0	6,765.5	13,204.1	6,688.5	186.4	184.1	72.97	439.2	6,399.4	262.9	-91.4	354.31	0.742	Level 1	
13,500.0	6,764.7	13,304.1	6,687.6	189.2	186.9	72.96	439.2	6,499.4	262.9	-96.7	359.64	0.731	Level 1	
13,600.0	6,763.8	13,404.1	6,686.7	192.0	189.7	72.94	439.2	6,599.4	262.9	-102.0	364.98	0.720	Level 1	
13,700.0	6,763.0	13,504.1	6,685.8	194.7	192.5	72.92	439.2	6,699.4	263.0	-107.3	370.31	0.710	Level 1	
13,800.0	6,762.2	13,604.1	6,684.8	197.5	195.3	72.90	439.2	6,799.4	263.0	-112.6	375.64	0.700	Level 1	
13,900.0	6,761.3	13,704.1	6,683.9	200.3	198.1	72.88	439.2	6,899.4	263.0	-117.9	380.97	0.690	Level 1	
14,000.0	6,760.5	13,804.1	6,683.0	203.1	200.9	72.87	439.2	6,999.4	263.1	-123.2	386.30	0.681	Level 1	
14,100.0	6,759.7	13,904.1	6,682.1	205.9	203.7	72.85	439.2	7,099.3	263.1	-128.6	391.63	0.672	Level 1	
14,200.0	6,758.8	14,004.1	6,681.1	208.7	206.5	72.83	439.2	7,199.3	263.1	-133.9	396.96	0.663	Level 1	
14,300.0	6,758.0	14,104.1	6,680.2	211.5	209.3	72.81	439.2	7,299.3	263.1	-139.2	402.29	0.654	Level 1	
14,400.0	6,757.1	14,204.1	6,679.3	214.3	212.1	72.79	439.2	7,399.3	263.2	-144.5	407.61	0.646	Level 1	
14,500.0	6,756.3	14,304.1	6,678.4	217.1	214.9	72.78	439.2	7,499.3	263.2	-149.8	412.94	0.637	Level 1	
14,600.0	6,755.5	14,404.1	6,677.4	219.9	217.7	72.76	439.2	7,599.3	263.2	-155.1	418.27	0.629	Level 1	
14,700.0	6,754.6	14,504.1	6,676.5	222.7	220.5	72.74	439.2	7,699.3	263.2	-160.4	423.59	0.621	Level 1	
14,800.0	6,753.8	14,604.1	6,675.6	225.5	223.3	72.72	439.2	7,799.3	263.3	-165.7	428.92	0.614	Level 1	
14,900.0	6,753.0	14,704.1	6,674.7	228.3	226.1	72.70	439.2	7,899.3	263.3	-171.0	434.25	0.606	Level 1	
15,000.0	6,752.1	14,804.1	6,673.7	231.1	228.9	72.68	439.2	7,999.3	263.3	-176.3	439.57	0.599	Level 1	
15,100.0	6,751.3	14,904.1	6,672.8	233.9	231.7	72.67	439.2	8,099.3	263.3	-181.6	444.89	0.592	Level 1	
15,200.0	6,750.4	15,004.1	6,671.9	236.7	234.5	72.65	439.2	8,199.3	263.4	-186.9	450.22	0.585	Level 1	
15,300.0	6,749.6	15,104.1	6,671.0	239.5	237.3	72.63	439.2	8,299.3	263.4	-192.2	455.54	0.578	Level 1	
15,400.0	6,748.8	15,204.1	6,670.0	242.3	240.1	72.61	439.2	8,399.3	263.4	-197.4	460.86	0.572	Level 1	
15,500.0	6,747.9	15,304.1	6,669.1	245.1	242.9	72.59	439.2	8,499.3	263.4	-202.7	466.18	0.565	Level 1	
15,600.0	6,747.1	15,404.1	6,668.2	247.9	245.7	72.58	439.2	8,599.3	263.5	-208.0	471.50	0.559	Level 1	
15,700.0	6,746.2	15,504.1	6,667.3	250.7	248.5	72.56	439.2	8,699.3	263.5	-213.3	476.82	0.553	Level 1	
15,800.0	6,745.4	15,604.1	6,666.3	253.5	251.3	72.54	439.2	8,799.3	263.5	-218.6	482.14	0.547	Level 1	
15,900.0	6,744.6	15,704.1	6,665.4	256.3	254.1	72.52	439.2	8,899.3	263.5	-223.9	487.46	0.541	Level 1	
16,000.0	6,743.7	15,804.1	6,664.5	259.2	256.9	72.50	439.2	8,999.3	263.6	-229.2	492.77	0.535	Level 1	
16,100.0	6,742.9	15,904.1	6,663.6	262.0	259.7	72.49	439.2	9,099.3	263.6	-234.5	498.09	0.529	Level 1	
16,200.0	6,742.1	16,004.1	6,662.6	264.8	262.5	72.47	439.2	9,199.3	263.6	-239.8	503.40	0.524	Level 1	
16,300.0	6,741.2	16,104.1	6,661.7	267.6	265.3	72.45	439.2	9,299.3	263.6	-245.1	508.72	0.518	Level 1	
16,400.0	6,740.4	16,204.1	6,660.8	270.4	268.1	72.43	439.2	9,399.3	263.7	-250.4	514.03	0.513	Level 1	
16,500.0	6,739.5	16,304.1	6,659.9	273.2	270.9	72.41	439.2	9,499.2	263.7	-255.6	519.34	0.508	Level 1	
16,600.0	6,738.7	16,404.1	6,658.9	276.0	273.7	72.39	439.2	9,599.2	263.7	-260.9	524.66	0.503	Level 1	
16,700.0	6,737.9	16,504.1	6,658.0	278.8	276.5	72.38	439.2	9,699.2	263.8	-266.2	529.97	0.498	Level 1	
16,804.1	6,737.0	16,608.2	6,657.1	281.7	279.5	72.36	439.2	9,803.3	263.8	-271.7	535.49	0.493	Level 1, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)		Offset Site Error:		0.0 ft
Survey Program:				0-MWD									Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance						Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor					
0.0	0.0	1.0	1.0	0.0	0.0	89.98	0.0	61.3	61.3	61.3	0.00	N/A					
100.0	100.0	101.0	101.0	0.1	0.1	89.98	0.0	61.3	61.3	61.1	0.23	270.003					
200.0	200.0	201.0	201.0	0.3	0.3	89.98	0.0	61.3	61.3	60.6	0.68	90.599 CC, ES					
300.0	300.0	301.0	301.0	0.6	0.6	123.58	0.0	61.3	61.8	60.6	1.13	54.896					
400.0	400.0	401.0	401.0	0.8	0.8	125.54	0.0	61.3	63.3	61.7	1.58	40.151					
500.0	499.9	500.9	500.9	1.0	1.0	128.60	0.0	61.3	65.9	63.9	2.03	32.460					
600.0	599.7	600.7	600.7	1.3	1.2	132.49	0.0	61.3	69.9	67.4	2.49	28.070					
700.0	699.4	700.4	700.4	1.5	1.5	136.84	0.0	61.3	75.4	72.4	2.95	25.537					
800.0	798.9	799.9	799.9	1.8	1.7	141.34	0.0	61.3	82.7	79.2	3.42	24.178					
900.0	898.3	899.3	899.3	2.1	1.9	145.70	0.0	61.3	91.8	87.9	3.89	23.618					
1,000.0	997.4	998.4	998.4	2.4	2.1	149.73	0.0	61.3	102.9	98.5	4.35	23.625					
1,100.0	1,096.3	1,097.3	1,097.3	2.7	2.4	153.35	0.0	61.3	115.9	111.1	4.82	24.043					
1,134.7	1,130.6	1,131.6	1,131.6	2.8	2.4	154.50	0.0	61.3	120.9	115.9	4.98	24.263					
1,200.0	1,195.0	1,196.0	1,196.0	3.0	2.6	156.50	0.0	61.3	130.5	125.3	5.28	24.708					
1,300.0	1,293.7	1,295.1	1,295.1	3.4	2.8	159.37	-0.5	60.7	145.5	139.8	5.72	25.424					
1,400.0	1,392.3	1,394.1	1,394.0	3.7	3.0	162.30	-2.2	58.9	160.5	154.3	6.14	26.142					
1,500.0	1,491.0	1,492.8	1,492.7	4.1	3.1	165.28	-5.1	55.8	175.7	169.1	6.56	26.785					
1,600.0	1,589.7	1,591.3	1,591.0	4.5	3.3	168.29	-9.1	51.6	191.2	184.2	6.99	27.372					
1,700.0	1,688.4	1,689.4	1,688.8	4.8	3.5	171.30	-14.3	46.1	207.2	199.8	7.42	27.917					
1,800.0	1,787.0	1,787.2	1,786.2	5.2	3.8	174.30	-20.6	39.4	223.9	216.0	7.88	28.429					
1,900.0	1,885.7	1,885.1	1,883.5	5.6	4.0	177.06	-27.3	32.2	241.2	232.8	8.34	28.904					
2,000.0	1,984.4	1,982.9	1,980.9	5.9	4.2	179.44	-34.1	25.0	258.9	250.1	8.82	29.343					
2,100.0	2,083.0	2,080.8	2,078.3	6.3	4.5	-178.48	-40.9	17.8	277.0	267.7	9.31	29.746					
2,200.0	2,181.7	2,178.7	2,175.7	6.7	4.7	-176.66	-47.6	10.7	295.4	285.6	9.81	30.113					
2,300.0	2,280.4	2,276.6	2,273.0	7.0	5.0	-175.05	-54.4	3.5	314.1	303.8	10.32	30.450					
2,400.0	2,379.1	2,374.4	2,370.4	7.4	5.2	-173.62	-61.1	-3.7	333.0	322.2	10.83	30.758					
2,500.0	2,477.7	2,472.3	2,467.8	7.8	5.5	-172.34	-67.9	-10.9	352.1	340.7	11.34	31.041					
2,600.0	2,576.4	2,570.2	2,565.2	8.2	5.8	-171.20	-74.7	-18.1	371.3	359.5	11.86	31.301					
2,700.0	2,675.1	2,668.1	2,662.6	8.5	6.0	-170.17	-81.4	-25.3	390.7	378.3	12.39	31.541					
2,800.0	2,773.7	2,765.9	2,759.9	8.9	6.3	-169.23	-88.2	-32.4	410.1	397.2	12.91	31.763					
2,900.0	2,872.4	2,863.8	2,857.3	9.3	6.6	-168.38	-94.9	-39.6	429.7	416.3	13.44	31.968					
3,000.0	2,971.1	2,961.7	2,954.7	9.7	6.8	-167.61	-101.7	-46.8	449.4	435.4	13.97	32.158					
3,100.0	3,069.8	3,059.6	3,052.1	10.0	7.1	-166.89	-108.4	-54.0	469.1	454.6	14.51	32.335					
3,200.0	3,168.4	3,157.5	3,149.4	10.4	7.4	-166.24	-115.2	-61.2	488.9	473.8	15.04	32.500					
3,300.0	3,267.1	3,255.3	3,246.8	10.8	7.7	-165.64	-122.0	-68.4	508.7	493.1	15.58	32.655					
3,400.0	3,365.8	3,353.2	3,344.2	11.2	7.9	-165.08	-128.7	-75.6	528.6	512.5	16.12	32.799					
3,500.0	3,464.5	3,451.1	3,441.6	11.5	8.2	-164.56	-135.5	-82.7	548.5	531.9	16.66	32.935					
3,600.0	3,563.1	3,549.0	3,539.0	11.9	8.5	-164.08	-142.2	-89.9	568.5	551.3	17.20	33.062					
3,700.0	3,661.8	3,646.8	3,636.3	12.3	8.8	-163.63	-149.0	-97.1	588.5	570.8	17.74	33.182					
3,800.0	3,760.5	3,744.7	3,733.7	12.7	9.1	-163.21	-155.8	-104.3	608.6	590.3	18.28	33.295					
3,900.0	3,859.1	3,842.6	3,831.1	13.0	9.3	-162.82	-162.5	-111.5	628.6	609.8	18.82	33.402					
4,000.0	3,957.8	3,940.5	3,928.5	13.4	9.6	-162.45	-169.3	-118.7	648.7	629.4	19.36	33.503					
4,100.0	4,056.5	4,038.3	4,025.8	13.8	9.9	-162.11	-176.0	-125.9	668.9	649.0	19.91	33.598					
4,200.0	4,155.2	4,136.2	4,123.2	14.2	10.2	-161.78	-182.8	-133.0	689.0	668.6	20.45	33.689					
4,300.0	4,253.8	4,234.1	4,220.6	14.5	10.5	-161.47	-189.6	-140.2	709.2	688.2	21.00	33.775					
4,400.0	4,352.5	4,332.0	4,318.0	14.9	10.8	-161.18	-196.3	-147.4	729.4	707.8	21.54	33.857					
4,500.0	4,451.2	4,429.8	4,415.4	15.3	11.1	-160.91	-203.1	-154.6	749.6	727.5	22.09	33.935					
4,600.0	4,549.8	4,527.7	4,512.7	15.7	11.3	-160.65	-209.8	-161.8	769.8	747.2	22.63	34.010					
4,700.0	4,648.5	4,625.6	4,610.1	16.1	11.6	-160.40	-216.6	-169.0	790.0	766.9	23.18	34.080					
4,800.0	4,747.2	4,723.5	4,707.5	16.4	11.9	-160.16	-223.4	-176.2	810.3	786.6	23.73	34.148					
4,900.0	4,845.9	4,821.3	4,804.9	16.8	12.2	-159.94	-230.1	-183.3	830.5	806.3	24.28	34.213					

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,944.5	4,919.2	4,902.2	17.2	12.5	-159.73	-236.9	-190.5	850.8	826.0	24.82	34.275		
5,100.0	5,043.2	5,017.1	4,999.6	17.6	12.8	-159.53	-243.6	-197.7	871.1	845.7	25.37	34.334		
5,200.0	5,141.9	5,115.0	5,097.0	17.9	13.1	-159.33	-250.4	-204.9	891.4	865.5	25.92	34.391		
5,300.0	5,240.6	5,212.8	5,194.4	18.3	13.4	-159.15	-257.1	-212.1	911.7	885.2	26.47	34.445		
5,400.0	5,339.2	5,310.7	5,291.8	18.7	13.6	-158.97	-263.9	-219.3	932.0	905.0	27.02	34.498		
5,496.8	5,434.7	5,405.4	5,386.0	19.1	13.9	-158.81	-270.4	-226.2	951.7	924.1	27.55	34.547		
5,500.0	5,437.9	5,408.6	5,389.1	19.1	13.9	-158.81	-270.7	-226.4	952.3	924.7	27.57	34.546		
5,600.0	5,536.9	5,523.1	5,503.1	19.3	14.2	-158.78	-277.6	-233.8	970.3	942.2	28.11	34.518		
5,700.0	5,636.2	5,643.7	5,623.6	19.6	14.4	-158.86	-281.5	-238.0	983.0	954.4	28.56	34.414		
5,800.0	5,736.0	5,757.0	5,737.0	19.8	14.6	-159.04	-282.2	-238.7	990.4	961.4	28.94	34.216		
5,900.0	5,835.9	5,856.9	5,836.9	19.9	14.8	-159.15	-282.2	-238.7	994.1	964.8	29.26	33.969		
5,964.1	5,900.0	5,921.1	5,901.0	20.0	14.9	167.91	-282.2	-238.7	994.8	962.0	32.76	30.367		
6,000.0	5,935.9	5,956.9	5,936.9	20.1	15.0	167.91	-282.2	-238.7	994.8	961.9	32.87	30.262		
6,100.0	6,035.9	6,041.3	6,021.2	20.2	15.1	167.79	-282.2	-236.6	995.3	962.2	33.17	30.007		
6,116.6	6,052.5	6,050.0	6,029.8	20.2	15.1	167.76	-282.2	-235.9	995.7	962.4	33.21	29.980		
6,150.0	6,085.9	6,080.3	6,059.9	20.3	15.1	77.56	-282.2	-232.7	996.3	966.3	29.98	33.228		
6,200.0	6,135.7	6,119.1	6,098.3	20.3	15.2	77.34	-282.2	-226.9	997.1	967.0	30.04	33.194		
6,250.0	6,185.2	6,157.8	6,136.3	20.3	15.2	77.16	-282.2	-219.1	997.7	967.7	30.07	33.186		
6,300.0	6,234.1	6,200.0	6,177.1	20.3	15.2	77.02	-282.2	-208.5	998.2	968.2	30.07	33.199		
6,350.0	6,282.3	6,235.1	6,210.5	20.3	15.2	76.94	-282.2	-198.0	998.6	968.5	30.05	33.230		
6,400.0	6,329.4	6,273.7	6,246.7	20.3	15.2	76.89	-282.2	-184.6	998.7	968.7	30.02	33.269		
6,450.0	6,375.4	6,312.2	6,282.2	20.3	15.2	76.89	-282.2	-169.5	998.7	968.8	29.98	33.310		
6,500.0	6,420.0	6,350.0	6,316.1	20.2	15.2	76.94	-282.2	-152.9	998.6	968.6	29.95	33.342		
6,550.0	6,463.0	6,389.4	6,350.6	20.1	15.2	77.03	-282.2	-133.9	998.2	968.3	29.93	33.352		
6,600.0	6,504.3	6,428.1	6,383.5	20.1	15.2	77.16	-282.2	-113.5	997.7	967.8	29.94	33.327		
6,650.0	6,543.6	6,466.8	6,415.3	20.0	15.2	77.34	-282.2	-91.4	997.1	967.1	29.99	33.251		
6,700.0	6,580.8	6,505.6	6,446.0	19.9	15.2	77.56	-282.2	-67.7	996.3	966.2	30.09	33.110		
6,750.0	6,615.8	6,544.5	6,475.6	19.9	15.2	77.82	-282.2	-42.4	995.3	965.1	30.27	32.885		
6,800.0	6,648.3	6,583.6	6,504.0	19.8	15.2	78.13	-282.2	-15.6	994.3	963.7	30.54	32.558		
6,850.0	6,678.3	6,622.9	6,531.0	19.7	15.2	78.47	-282.2	12.9	993.1	962.1	30.91	32.125		
6,900.0	6,705.6	6,662.3	6,556.7	19.7	15.3	78.86	-282.2	42.8	991.8	960.4	31.40	31.581		
6,950.0	6,730.1	6,700.0	6,579.8	19.6	15.4	79.27	-282.2	72.6	990.4	958.4	32.01	30.943		
7,000.0	6,751.8	6,741.8	6,603.6	19.5	15.6	79.75	-282.2	106.9	988.9	956.1	32.79	30.161		
7,050.0	6,770.4	6,781.9	6,624.7	19.5	15.8	80.26	-282.2	141.0	987.4	953.7	33.70	29.301		
7,100.0	6,785.9	6,822.3	6,644.1	19.5	16.2	80.79	-282.2	176.5	985.9	951.1	34.75	28.370		
7,150.0	6,798.4	6,863.0	6,661.7	19.9	16.6	81.37	-282.2	213.2	984.3	948.4	35.94	27.388		
7,200.0	6,807.6	6,904.1	6,677.5	20.7	17.2	81.97	-282.2	251.1	982.8	945.5	37.26	26.374		
7,250.0	6,813.5	6,945.6	6,691.3	21.5	17.8	82.60	-282.2	290.2	981.3	942.6	38.72	25.345		
7,300.0	6,816.3	6,987.5	6,703.1	22.5	18.4	83.27	-282.2	330.4	979.9	939.6	40.29	24.322		
7,323.0	6,816.4	7,006.9	6,707.8	22.9	18.7	83.58	-282.2	349.3	979.2	938.2	41.04	23.859		
7,400.0	6,815.8	7,073.3	6,720.3	24.4	19.9	84.34	-282.2	414.5	977.6	933.9	43.72	22.361		
7,500.0	6,814.9	7,162.1	6,728.0	26.5	21.6	84.84	-282.2	502.9	976.7	929.2	47.48	20.571		
7,550.5	6,814.5	7,209.4	6,728.2	27.6	22.6	84.87	-282.2	550.1	976.6	927.1	49.53	19.719		
7,600.0	6,814.1	7,258.9	6,727.8	28.7	23.6	84.87	-282.2	599.6	976.6	925.0	51.64	18.912		
7,700.0	6,813.3	7,358.9	6,727.0	31.0	25.8	84.87	-282.2	699.6	976.6	920.5	56.09	17.412		
7,800.0	6,812.4	7,458.9	6,726.3	33.3	28.1	84.88	-282.2	799.6	976.6	915.9	60.73	16.081		
7,900.0	6,811.6	7,558.9	6,725.5	35.7	30.5	84.88	-282.2	899.6	976.6	911.1	65.53	14.904		
8,000.0	6,810.8	7,658.9	6,724.7	38.2	33.0	84.89	-282.2	999.6	976.6	906.2	70.44	13.865		
8,100.0	6,809.9	7,758.9	6,724.0	40.7	35.5	84.89	-282.2	1,099.6	976.6	901.2	75.45	12.944		
8,200.0	6,809.1	7,858.9	6,723.2	43.3	38.0	84.90	-282.2	1,199.6	976.6	896.1	80.54	12.126		
8,300.0	6,808.2	7,958.9	6,722.4	45.9	40.6	84.90	-282.2	1,299.6	976.6	890.9	85.69	11.397		

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,807.4	8,058.9	6,721.7	48.5	43.2	84.90	-282.2	1,399.6	976.6	885.7	90.89	10.745	
8,500.0	6,806.6	8,158.9	6,720.9	51.1	45.8	84.91	-282.2	1,499.6	976.6	880.4	96.14	10.158	
8,600.0	6,805.7	8,258.9	6,720.1	53.7	48.5	84.91	-282.2	1,599.6	976.6	875.1	101.43	9.628	
8,700.0	6,804.9	8,358.9	6,719.3	56.4	51.2	84.92	-282.2	1,699.6	976.6	869.8	106.75	9.149	
8,800.0	6,804.1	8,458.9	6,718.6	59.1	53.8	84.92	-282.2	1,799.6	976.6	864.5	112.09	8.712	
8,900.0	6,803.2	8,558.9	6,717.8	61.8	56.5	84.92	-282.2	1,899.6	976.6	859.1	117.46	8.314	
9,000.0	6,802.4	8,658.9	6,717.0	64.4	59.2	84.93	-282.2	1,999.6	976.5	853.7	122.85	7.949	
9,100.0	6,801.5	8,758.9	6,716.3	67.2	62.0	84.93	-282.2	2,099.6	976.5	848.3	128.26	7.614	
9,200.0	6,800.7	8,858.9	6,715.5	69.9	64.7	84.94	-282.2	2,199.6	976.5	842.9	133.68	7.305	
9,300.0	6,799.9	8,958.9	6,714.7	72.6	67.4	84.94	-282.2	2,299.6	976.5	837.4	139.12	7.019	
9,400.0	6,799.0	9,058.9	6,714.0	75.3	70.2	84.94	-282.2	2,399.6	976.5	832.0	144.57	6.755	
9,500.0	6,798.2	9,158.9	6,713.2	78.0	72.9	84.95	-282.2	2,499.6	976.5	826.5	150.03	6.509	
9,600.0	6,797.4	9,258.9	6,712.4	80.8	75.6	84.95	-282.2	2,599.6	976.5	821.0	155.50	6.280	
9,700.0	6,796.5	9,358.9	6,711.7	83.5	78.4	84.96	-282.2	2,699.6	976.5	815.5	160.98	6.066	
9,800.0	6,795.7	9,458.9	6,710.9	86.3	81.2	84.96	-282.2	2,799.6	976.5	810.0	166.47	5.866	
9,900.0	6,794.8	9,558.9	6,710.1	89.0	83.9	84.96	-282.2	2,899.6	976.5	804.5	171.96	5.678	
10,000.0	6,794.0	9,658.9	6,709.4	91.8	86.7	84.97	-282.2	2,999.6	976.5	799.0	177.47	5.502	
10,100.0	6,793.2	9,758.9	6,708.6	94.5	89.4	84.97	-282.2	3,099.6	976.5	793.5	182.97	5.337	
10,200.0	6,792.3	9,858.9	6,707.8	97.3	92.2	84.98	-282.2	3,199.6	976.5	788.0	188.49	5.181	
10,300.0	6,791.5	9,958.9	6,707.1	100.0	95.0	84.98	-282.2	3,299.5	976.5	782.5	194.00	5.033	
10,400.0	6,790.6	10,058.9	6,706.3	102.8	97.8	84.99	-282.2	3,399.5	976.5	776.9	199.53	4.894	
10,500.0	6,789.8	10,158.9	6,705.5	105.6	100.5	84.99	-282.2	3,499.5	976.5	771.4	205.05	4.762	
10,600.0	6,789.0	10,258.9	6,704.8	108.3	103.3	84.99	-282.2	3,599.5	976.4	765.9	210.58	4.637	
10,700.0	6,788.1	10,358.9	6,704.0	111.1	106.1	85.00	-282.2	3,699.5	976.4	760.3	216.12	4.518	
10,800.0	6,787.3	10,458.9	6,703.2	113.9	108.9	85.00	-282.2	3,799.5	976.4	754.8	221.66	4.405	
10,900.0	6,786.5	10,558.9	6,702.5	116.7	111.6	85.01	-282.2	3,899.5	976.4	749.2	227.20	4.298	
11,000.0	6,785.6	10,658.9	6,701.7	119.4	114.4	85.01	-282.2	3,999.5	976.4	743.7	232.74	4.195	
11,100.0	6,784.8	10,758.9	6,700.9	122.2	117.2	85.01	-282.2	4,099.5	976.4	738.1	238.29	4.098	
11,200.0	6,783.9	10,858.9	6,700.2	125.0	120.0	85.02	-282.2	4,199.5	976.4	732.6	243.84	4.004	
11,300.0	6,783.1	10,958.9	6,699.4	127.8	122.8	85.02	-282.2	4,299.5	976.4	727.0	249.39	3.915	
11,400.0	6,782.3	11,058.9	6,698.6	130.6	125.6	85.03	-282.2	4,399.5	976.4	721.5	254.94	3.830	
11,500.0	6,781.4	11,158.9	6,697.8	133.3	128.4	85.03	-282.2	4,499.5	976.4	715.9	260.49	3.748	
11,600.0	6,780.6	11,258.9	6,697.1	136.1	131.1	85.03	-282.2	4,599.5	976.4	710.3	266.05	3.670	
11,700.0	6,779.8	11,358.9	6,696.3	138.9	133.9	85.04	-282.2	4,699.5	976.4	704.8	271.61	3.595	
11,800.0	6,778.9	11,458.9	6,695.5	141.7	136.7	85.04	-282.2	4,799.5	976.4	699.2	277.17	3.523	
11,900.0	6,778.1	11,558.9	6,694.8	144.5	139.5	85.05	-282.2	4,899.5	976.4	693.6	282.73	3.453	
12,000.0	6,777.2	11,658.9	6,694.0	147.3	142.3	85.05	-282.2	4,999.5	976.4	688.1	288.30	3.387	
12,100.0	6,776.4	11,758.9	6,693.2	150.1	145.1	85.05	-282.2	5,099.5	976.4	682.5	293.86	3.322	
12,200.0	6,775.6	11,858.9	6,692.5	152.8	147.9	85.06	-282.2	5,199.5	976.3	676.9	299.43	3.261	
12,300.0	6,774.7	11,958.9	6,691.7	155.6	150.7	85.06	-282.2	5,299.5	976.3	671.3	305.00	3.201	
12,400.0	6,773.9	12,058.9	6,690.9	158.4	153.5	85.07	-282.2	5,399.5	976.3	665.8	310.57	3.144	
12,500.0	6,773.1	12,158.9	6,690.2	161.2	156.3	85.07	-282.2	5,499.5	976.3	660.2	316.14	3.088	
12,600.0	6,772.2	12,258.9	6,689.4	164.0	159.1	85.07	-282.2	5,599.5	976.3	654.6	321.71	3.035	
12,700.0	6,771.4	12,358.9	6,688.6	166.8	161.9	85.08	-282.2	5,699.5	976.3	649.0	327.28	2.983	
12,800.0	6,770.5	12,458.9	6,687.9	169.6	164.7	85.08	-282.2	5,799.5	976.3	643.5	332.86	2.933	
12,900.0	6,769.7	12,558.9	6,687.1	172.4	167.5	85.09	-282.2	5,899.5	976.3	637.9	338.43	2.885	
13,000.0	6,768.9	12,658.9	6,686.3	175.2	170.3	85.09	-282.2	5,999.5	976.3	632.3	344.01	2.838	
13,100.0	6,768.0	12,758.9	6,685.6	178.0	173.1	85.10	-282.2	6,099.5	976.3	626.7	349.58	2.793	
13,200.0	6,767.2	12,858.9	6,684.8	180.8	175.9	85.10	-282.2	6,199.5	976.3	621.1	355.16	2.749	
13,300.0	6,766.4	12,958.9	6,684.0	183.6	178.7	85.10	-282.2	6,299.5	976.3	615.5	360.74	2.706	
13,400.0	6,765.5	13,058.9	6,683.3	186.4	181.5	85.11	-282.2	6,399.5	976.3	610.0	366.32	2.665	

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.0 ft
Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
13,500.0	6,764.7	13,158.9	6,682.5	189.2	184.3	85.11	-282.2	6,499.5	976.3	604.4	371.90	2.625			
13,600.0	6,763.8	13,258.9	6,681.7	192.0	187.1	85.12	-282.2	6,599.4	976.3	598.8	377.48	2.586			
13,700.0	6,763.0	13,358.9	6,681.0	194.7	189.9	85.12	-282.2	6,699.4	976.3	593.2	383.06	2.549			
13,800.0	6,762.2	13,458.9	6,680.2	197.5	192.7	85.12	-282.2	6,799.4	976.2	587.6	388.64	2.512			
13,900.0	6,761.3	13,558.9	6,679.4	200.3	195.5	85.13	-282.2	6,899.4	976.2	582.0	394.22	2.476			
14,000.0	6,760.5	13,658.9	6,678.6	203.1	198.3	85.13	-282.2	6,999.4	976.2	576.4	399.80	2.442			
14,100.0	6,759.7	13,758.9	6,677.9	205.9	201.1	85.14	-282.2	7,099.4	976.2	570.8	405.39	2.408			
14,200.0	6,758.8	13,858.9	6,677.1	208.7	203.9	85.14	-282.2	7,199.4	976.2	565.2	410.97	2.375			
14,300.0	6,758.0	13,958.9	6,676.3	211.5	206.7	85.14	-282.2	7,299.4	976.2	559.7	416.56	2.344			
14,400.0	6,757.1	14,058.9	6,675.6	214.3	209.5	85.15	-282.2	7,399.4	976.2	554.1	422.14	2.313			
14,500.0	6,756.3	14,158.9	6,674.8	217.1	212.3	85.15	-282.2	7,499.4	976.2	548.5	427.73	2.282			
14,600.0	6,755.5	14,258.9	6,674.0	219.9	215.1	85.16	-282.2	7,599.4	976.2	542.9	433.31	2.253			
14,700.0	6,754.6	14,358.9	6,673.3	222.7	217.9	85.16	-282.2	7,699.4	976.2	537.3	438.90	2.224			
14,800.0	6,753.8	14,458.9	6,672.5	225.5	220.7	85.16	-282.2	7,799.4	976.2	531.7	444.49	2.196			
14,900.0	6,753.0	14,558.9	6,671.7	228.3	223.5	85.17	-282.2	7,899.4	976.2	526.1	450.07	2.169			
15,000.0	6,752.1	14,658.9	6,671.0	231.1	226.3	85.17	-282.2	7,999.4	976.2	520.5	455.66	2.142			
15,100.0	6,751.3	14,758.9	6,670.2	233.9	229.1	85.18	-282.2	8,099.4	976.2	514.9	461.25	2.116			
15,200.0	6,750.4	14,858.9	6,669.4	236.7	231.9	85.18	-282.2	8,199.4	976.2	509.3	466.84	2.091			
15,300.0	6,749.6	14,958.9	6,668.7	239.5	234.7	85.18	-282.2	8,299.4	976.2	503.7	472.43	2.066			
15,400.0	6,748.8	15,058.9	6,667.9	242.3	237.5	85.19	-282.2	8,399.4	976.1	498.1	478.02	2.042			
15,500.0	6,747.9	15,158.9	6,667.1	245.1	240.3	85.19	-282.2	8,499.4	976.1	492.5	483.61	2.018			
15,600.0	6,747.1	15,258.9	6,666.4	247.9	243.1	85.20	-282.2	8,599.4	976.1	486.9	489.20	1.995			
15,700.0	6,746.2	15,358.9	6,665.6	250.7	245.9	85.20	-282.2	8,699.4	976.1	481.3	494.79	1.973			
15,800.0	6,745.4	15,458.9	6,664.8	253.5	248.7	85.21	-282.2	8,799.4	976.1	475.7	500.38	1.951			
15,900.0	6,744.6	15,558.9	6,664.1	256.3	251.5	85.21	-282.2	8,899.4	976.1	470.1	505.97	1.929			
16,000.0	6,743.7	15,658.9	6,663.3	259.2	254.3	85.21	-282.2	8,999.4	976.1	464.6	511.56	1.908			
16,100.0	6,742.9	15,758.9	6,662.5	262.0	257.1	85.22	-282.2	9,099.4	976.1	459.0	517.15	1.887			
16,200.0	6,742.1	15,858.9	6,661.8	264.8	259.9	85.22	-282.2	9,199.4	976.1	453.4	522.74	1.867			
16,300.0	6,741.2	15,958.9	6,661.0	267.6	262.7	85.23	-282.2	9,299.4	976.1	447.8	528.33	1.847			
16,400.0	6,740.4	16,058.9	6,660.2	270.4	265.5	85.23	-282.2	9,399.4	976.1	442.2	533.93	1.828			
16,500.0	6,739.5	16,158.9	6,659.4	273.2	268.3	85.23	-282.2	9,499.4	976.1	436.6	539.52	1.809			
16,600.0	6,738.7	16,258.9	6,658.7	276.0	271.1	85.24	-282.2	9,599.4	976.1	431.0	545.11	1.791			
16,700.0	6,737.9	16,358.9	6,657.9	278.8	274.0	85.24	-282.2	9,699.4	976.1	425.4	550.71	1.772			
16,804.1	6,737.0	16,462.9	6,657.1	281.7	276.2	85.25	-282.2	9,803.4	976.1	420.2	555.90	1.756 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-312 - Wellbore #1 - Plan #2 (7-20-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical 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)				
0.0	0.0	1.0	1.0	0.0	0.0	89.99	0.0	89.2	89.2	89.2	0.00	N/A			
100.0	100.0	101.0	101.0	0.1	0.1	89.99	0.0	89.2	89.2	88.9	0.23	392.732			
200.0	200.0	201.0	201.0	0.3	0.3	89.99	0.0	89.2	89.2	88.5	0.68	131.780	CC		
300.0	300.0	301.0	301.0	0.6	0.6	123.37	0.0	89.2	89.6	88.5	1.13	79.655			
400.0	400.0	401.0	401.0	0.8	0.8	124.73	0.0	89.2	91.1	89.5	1.58	57.826			
500.0	499.9	500.9	500.9	1.0	1.0	126.90	0.0	89.2	93.7	91.6	2.03	46.144			
600.0	599.7	600.7	600.7	1.3	1.2	129.74	0.0	89.2	97.4	95.0	2.49	39.154			
700.0	699.4	700.4	700.4	1.5	1.5	133.07	0.0	89.2	102.6	99.7	2.95	34.758			
800.0	798.9	799.9	799.9	1.8	1.7	136.68	0.0	89.2	109.4	106.0	3.42	31.977			
900.0	898.3	899.3	899.3	2.1	1.9	140.39	0.0	89.2	117.9	114.0	3.89	30.287			
1,000.0	997.4	998.4	998.4	2.4	2.1	144.04	0.0	89.2	128.3	123.9	4.37	29.375			
1,100.0	1,096.3	1,097.3	1,097.3	2.7	2.4	147.50	0.0	89.2	140.6	135.7	4.84	29.037			
1,134.7	1,130.6	1,131.6	1,131.6	2.8	2.4	148.65	0.0	89.2	145.3	140.3	5.00	29.027			
1,200.0	1,195.0	1,196.0	1,196.0	3.0	2.6	150.69	0.0	89.2	154.5	149.1	5.31	29.082			
1,300.0	1,293.7	1,294.7	1,294.7	3.4	2.8	153.38	0.0	89.2	168.8	163.1	5.78	29.219			
1,400.0	1,392.3	1,393.3	1,393.3	3.7	3.0	155.65	0.0	89.2	183.5	177.3	6.24	29.393			
1,500.0	1,491.0	1,492.0	1,492.0	4.1	3.2	157.58	0.0	89.2	198.5	191.8	6.71	29.583			
1,600.0	1,589.7	1,590.7	1,590.7	4.5	3.5	159.24	0.0	89.2	213.6	206.4	7.17	29.776			
1,700.0	1,688.4	1,689.4	1,689.4	4.8	3.7	160.67	0.0	89.2	228.9	221.3	7.64	29.967			
1,800.0	1,787.0	1,788.0	1,788.0	5.2	3.9	161.93	0.0	89.2	244.3	236.2	8.10	30.151			
1,900.0	1,885.7	1,886.7	1,886.7	5.6	4.1	163.04	0.0	89.2	259.8	251.2	8.57	30.327			
2,000.0	1,984.4	1,985.4	1,985.4	5.9	4.4	164.03	0.0	89.2	275.4	266.4	9.03	30.493			
2,100.0	2,083.0	2,088.0	2,088.0	6.3	4.6	165.00	0.2	88.5	290.5	281.0	9.49	30.599			
2,200.0	2,181.7	2,191.6	2,191.6	6.7	4.8	166.06	0.8	86.0	304.1	294.2	9.95	30.577			
2,300.0	2,280.4	2,295.6	2,295.5	7.0	5.0	167.19	1.9	81.8	316.3	305.9	10.40	30.413			
2,400.0	2,379.1	2,399.9	2,399.5	7.4	5.2	168.41	3.4	75.6	327.0	316.1	10.86	30.122			
2,500.0	2,477.7	2,500.6	2,500.0	7.8	5.5	169.64	5.2	68.4	336.7	325.4	11.31	29.771			
2,600.0	2,576.4	2,599.9	2,599.1	8.2	5.7	170.79	7.1	61.1	346.5	334.7	11.76	29.450			
2,700.0	2,675.1	2,699.2	2,698.1	8.5	5.9	171.88	8.9	53.9	356.4	344.1	12.22	29.155			
2,800.0	2,773.7	2,798.5	2,797.1	8.9	6.1	172.91	10.7	46.7	366.4	353.7	12.69	28.882			
2,900.0	2,872.4	2,897.8	2,896.1	9.3	6.4	173.88	12.5	39.4	376.5	363.4	13.15	28.629			
3,000.0	2,971.1	2,997.1	2,995.1	9.7	6.6	174.81	14.3	32.2	386.7	373.1	13.62	28.395			
3,100.0	3,069.8	3,096.4	3,094.1	10.0	6.8	175.68	16.2	25.0	397.1	383.0	14.09	28.176			
3,200.0	3,168.4	3,195.7	3,193.1	10.4	7.1	176.51	18.0	17.7	407.5	392.9	14.57	27.971			
3,300.0	3,267.1	3,294.9	3,292.1	10.8	7.3	177.30	19.8	10.5	418.0	402.9	15.05	27.779			
3,400.0	3,365.8	3,394.2	3,391.1	11.2	7.6	178.05	21.6	3.3	428.6	413.0	15.53	27.599			
3,500.0	3,464.5	3,493.5	3,490.1	11.5	7.8	178.77	23.4	-4.0	439.2	423.2	16.01	27.429			
3,600.0	3,563.1	3,592.8	3,589.1	11.9	8.0	179.45	25.3	-11.2	449.9	433.4	16.50	27.269			
3,700.0	3,661.8	3,692.1	3,688.1	12.3	8.3	-179.90	27.1	-18.4	460.7	443.7	16.99	27.118			
3,800.0	3,760.5	3,791.4	3,787.1	12.7	8.5	-179.29	28.9	-25.7	471.5	454.0	17.48	26.975			
3,900.0	3,859.1	3,890.7	3,886.1	13.0	8.8	-178.69	30.7	-32.9	482.4	464.4	17.97	26.839			
4,000.0	3,957.8	3,989.9	3,985.1	13.4	9.0	-178.13	32.5	-40.1	493.3	474.8	18.47	26.710			
4,100.0	4,056.5	4,089.2	4,084.1	13.8	9.3	-177.59	34.3	-47.4	504.3	485.3	18.97	26.588			
4,200.0	4,155.2	4,188.5	4,183.1	14.2	9.5	-177.07	36.2	-54.6	515.3	495.8	19.47	26.471			
4,300.0	4,253.8	4,287.8	4,282.1	14.5	9.8	-176.57	38.0	-61.8	526.3	506.4	19.97	26.360			
4,400.0	4,352.5	4,387.1	4,381.2	14.9	10.0	-176.10	39.8	-69.1	537.4	516.9	20.47	26.254			
4,500.0	4,451.2	4,486.4	4,480.2	15.3	10.3	-175.64	41.6	-76.3	548.5	527.6	20.97	26.153			
4,600.0	4,549.8	4,585.7	4,579.2	15.7	10.5	-175.20	43.4	-83.5	559.7	538.2	21.48	26.057			
4,700.0	4,648.5	4,684.9	4,678.2	16.1	10.8	-174.78	45.3	-90.8	570.9	548.9	21.99	25.964			
4,800.0	4,747.2	4,784.2	4,777.2	16.4	11.0	-174.38	47.1	-98.0	582.1	559.6	22.50	25.875			
4,900.0	4,845.9	4,883.5	4,876.2	16.8	11.3	-173.99	48.9	-105.2	593.3	570.3	23.01	25.790			

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-312 - Wellbore #1 - Plan #2 (7-20-15)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
							+N/-S (ft)	+E/-W (ft)						
5,000.0	4,944.5	4,982.8	4,975.2	17.2	11.6	-173.61	50.7	-112.5	604.6	581.1	23.52	25.709		
5,100.0	5,043.2	5,082.1	5,074.2	17.6	11.8	-173.25	52.5	-119.7	615.9	591.9	24.03	25.631		
5,200.0	5,141.9	5,181.4	5,173.2	17.9	12.1	-172.90	54.3	-126.9	627.2	602.7	24.54	25.556		
5,300.0	5,240.6	5,280.7	5,272.2	18.3	12.3	-172.56	56.2	-134.2	638.6	613.5	25.06	25.483		
5,400.0	5,339.2	5,379.9	5,371.2	18.7	12.6	-172.24	58.0	-141.4	649.9	624.4	25.57	25.414		
5,496.8	5,434.7	5,476.0	5,467.0	19.1	12.8	-171.94	59.7	-148.4	661.0	634.9	26.07	25.349		
5,500.0	5,437.9	5,479.2	5,470.2	19.1	12.8	-171.93	59.8	-148.6	661.3	635.2	26.09	25.346		
5,600.0	5,536.9	5,578.7	5,569.4	19.3	13.1	-171.63	61.6	-155.9	670.9	644.3	26.60	25.225		
5,700.0	5,636.2	5,667.6	5,658.1	19.6	13.3	-171.39	63.0	-161.4	677.7	650.7	26.99	25.112		
5,800.0	5,736.0	5,754.6	5,745.1	19.8	13.4	-171.29	63.8	-164.3	683.0	655.7	27.31	25.005		
5,900.0	5,835.9	5,846.4	5,836.9	19.9	13.6	-171.31	63.9	-164.8	686.5	658.9	27.60	24.873		
5,964.1	5,900.0	5,910.5	5,901.0	20.0	13.7	155.76	63.9	-164.8	687.2	654.2	33.02	20.815		
6,000.0	5,935.9	5,946.4	5,936.9	20.1	13.8	155.76	63.9	-164.8	687.2	654.1	33.14	20.738		
6,100.0	6,035.9	6,046.4	6,036.9	20.2	14.0	155.76	63.9	-164.8	687.2	653.7	33.49	20.521		
6,100.8	6,036.7	6,047.2	6,037.7	20.2	14.0	155.76	63.9	-164.8	687.2	653.7	33.49	20.519		
6,116.6	6,052.5	6,054.9	6,045.4	20.2	14.0	155.76	63.9	-164.8	687.3	653.8	33.53	20.496		
6,150.0	6,085.9	6,085.2	6,075.7	20.3	14.1	65.75	63.9	-164.2	687.3	658.8	28.44	24.163		
6,200.0	6,135.7	6,121.7	6,112.1	20.3	14.1	65.81	63.9	-161.9	687.0	658.5	28.50	24.108		
6,250.0	6,185.2	6,158.3	6,148.4	20.3	14.2	65.93	63.9	-157.9	686.4	657.9	28.53	24.062		
6,300.0	6,234.1	6,200.0	6,189.6	20.3	14.2	66.16	63.9	-151.1	685.4	656.9	28.54	24.014		
6,350.0	6,282.3	6,231.5	6,220.4	20.3	14.2	66.41	63.9	-144.5	684.1	655.6	28.53	23.980		
6,400.0	6,329.4	6,268.2	6,255.9	20.3	14.3	66.76	63.9	-135.3	682.4	653.9	28.51	23.934		
6,450.0	6,375.4	6,300.0	6,286.3	20.3	14.3	67.14	63.9	-125.9	680.5	652.0	28.49	23.886		
6,500.0	6,420.0	6,342.0	6,325.8	20.2	14.3	67.67	63.9	-111.5	678.2	649.7	28.49	23.803		
6,550.0	6,463.0	6,379.1	6,360.0	20.1	14.3	68.24	63.9	-97.1	675.7	647.2	28.51	23.702		
6,600.0	6,504.3	6,416.4	6,393.5	20.1	14.4	68.88	63.9	-80.9	672.9	644.3	28.56	23.564		
6,650.0	6,543.6	6,450.0	6,423.1	20.0	14.4	69.54	63.9	-65.0	669.9	641.3	28.64	23.392		
6,700.0	6,580.8	6,491.6	6,458.7	19.9	14.5	70.37	63.9	-43.4	666.7	637.9	28.81	23.141		
6,750.0	6,615.8	6,529.5	6,490.0	19.9	14.5	71.22	63.9	-22.1	663.4	634.3	29.05	22.836		
6,800.0	6,648.3	6,567.8	6,520.6	19.8	14.6	72.14	63.9	0.9	660.0	630.6	29.38	22.462		
6,850.0	6,678.3	6,606.3	6,550.1	19.7	14.7	73.13	63.9	25.6	656.5	626.6	29.82	22.017		
6,900.0	6,705.6	6,645.1	6,578.6	19.7	14.8	74.18	63.9	52.0	652.9	622.6	30.37	21.499		
6,950.0	6,730.1	6,684.4	6,606.0	19.6	15.0	75.29	63.9	80.1	649.4	618.4	31.06	20.911		
7,000.0	6,751.8	6,724.0	6,632.1	19.5	15.2	76.46	63.9	109.9	646.0	614.2	31.88	20.266		
7,050.0	6,770.4	6,764.1	6,657.0	19.5	15.5	77.69	63.9	141.3	642.7	609.9	32.83	19.577		
7,100.0	6,785.9	6,804.6	6,680.4	19.5	15.8	78.97	63.9	174.4	639.6	605.7	33.92	18.858		
7,150.0	6,798.4	6,845.8	6,702.3	19.9	16.1	80.30	63.9	209.2	636.7	601.6	35.14	18.118		
7,200.0	6,807.6	6,887.4	6,722.6	20.7	16.6	81.67	63.9	245.6	634.1	597.6	36.50	17.372		
7,250.0	6,813.5	6,929.8	6,741.2	21.5	17.1	83.09	63.9	283.7	631.8	593.8	37.98	16.637		
7,300.0	6,816.3	6,972.8	6,757.8	22.5	17.6	84.54	63.9	323.3	629.9	590.3	39.56	15.923		
7,323.0	6,816.4	6,992.9	6,764.8	22.9	17.9	85.22	63.9	342.1	629.1	588.8	40.32	15.605		
7,400.0	6,815.8	7,062.3	6,785.2	24.4	19.0	87.12	63.9	408.5	627.5	584.5	43.01	14.588		
7,500.0	6,814.9	7,157.5	6,803.1	26.5	20.7	88.83	63.9	501.9	626.8	579.9	46.85	13.379		
7,600.0	6,814.1	7,256.1	6,809.3	28.7	22.6	89.47	63.9	600.3	626.7	575.7	50.98	12.293		
7,644.1	6,813.7	7,300.2	6,809.0	29.7	23.5	89.48	63.9	644.4	626.7	573.8	52.89	11.850		
7,700.0	6,813.3	7,356.1	6,808.6	31.0	24.7	89.48	63.9	700.2	626.7	571.3	55.36	11.319		
7,800.0	6,812.4	7,456.1	6,807.8	33.3	26.9	89.48	63.9	800.2	626.7	566.7	59.94	10.454		
7,900.0	6,811.6	7,556.1	6,807.0	35.7	29.3	89.49	63.9	900.2	626.7	562.0	64.69	9.687		
8,000.0	6,810.8	7,656.1	6,806.2	38.2	31.7	89.49	63.9	1,000.2	626.7	557.1	69.57	9.007		
8,100.0	6,809.9	7,756.1	6,805.4	40.7	34.1	89.50	63.9	1,100.2	626.7	552.1	74.56	8.405		
8,200.0	6,809.1	7,856.1	6,804.6	43.3	36.7	89.50	63.9	1,200.2	626.7	547.0	79.63	7.869		

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-312 - Wellbore #1 - Plan #2 (7-20-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	6,808.2	7,956.1	6,803.9	45.9	39.2	89.51	63.9	1,300.2	626.7	541.9	84.77	7.392	
8,400.0	6,807.4	8,056.1	6,803.1	48.5	41.8	89.51	63.9	1,400.2	626.7	536.7	89.97	6.965	
8,500.0	6,806.6	8,156.1	6,802.3	51.1	44.4	89.52	63.9	1,500.2	626.7	531.4	95.22	6.581	
8,600.0	6,805.7	8,256.1	6,801.5	53.7	47.1	89.52	63.9	1,600.2	626.7	526.2	100.51	6.235	
8,700.0	6,804.9	8,356.1	6,800.7	56.4	49.7	89.53	63.9	1,700.2	626.7	520.8	105.83	5.921	
8,800.0	6,804.1	8,456.1	6,799.9	59.1	52.4	89.53	63.9	1,800.2	626.7	515.5	111.18	5.636	
8,900.0	6,803.2	8,556.1	6,799.1	61.8	55.1	89.54	63.9	1,900.2	626.7	510.1	116.56	5.376	
9,000.0	6,802.4	8,656.1	6,798.4	64.4	57.8	89.54	63.9	2,000.2	626.7	504.7	121.96	5.138	
9,100.0	6,801.5	8,756.1	6,797.6	67.2	60.5	89.55	63.9	2,100.2	626.7	499.3	127.38	4.920	
9,200.0	6,800.7	8,856.1	6,796.8	69.9	63.2	89.55	63.9	2,200.2	626.7	493.8	132.81	4.718	
9,300.0	6,799.9	8,956.1	6,796.0	72.6	65.9	89.56	63.9	2,300.2	626.7	488.4	138.26	4.532	
9,400.0	6,799.0	9,056.1	6,795.2	75.3	68.7	89.56	63.9	2,400.2	626.7	482.9	143.73	4.360	
9,500.0	6,798.2	9,156.1	6,794.4	78.0	71.4	89.57	63.9	2,500.2	626.7	477.5	149.20	4.200	
9,600.0	6,797.4	9,256.1	6,793.6	80.8	74.1	89.57	63.9	2,600.2	626.7	472.0	154.69	4.051	
9,700.0	6,796.5	9,356.1	6,792.9	83.5	76.9	89.57	63.9	2,700.2	626.7	466.5	160.18	3.912	
9,800.0	6,795.7	9,456.1	6,792.1	86.3	79.6	89.58	63.9	2,800.2	626.7	461.0	165.68	3.782	
9,900.0	6,794.8	9,556.1	6,791.3	89.0	82.4	89.58	63.9	2,900.2	626.7	455.5	171.19	3.661	
10,000.0	6,794.0	9,656.1	6,790.5	91.8	85.1	89.59	63.9	3,000.2	626.7	449.9	176.71	3.546	
10,100.0	6,793.2	9,756.1	6,789.7	94.5	87.9	89.59	63.9	3,100.2	626.7	444.4	182.23	3.439	
10,200.0	6,792.3	9,856.1	6,788.9	97.3	90.7	89.60	63.9	3,200.2	626.7	438.9	187.76	3.337	
10,300.0	6,791.5	9,956.1	6,788.1	100.0	93.4	89.60	63.9	3,300.2	626.6	433.4	193.30	3.242	
10,400.0	6,790.6	10,056.1	6,787.4	102.8	96.2	89.61	63.9	3,400.2	626.6	427.8	198.83	3.152	
10,500.0	6,789.8	10,156.1	6,786.6	105.6	99.0	89.61	63.9	3,500.2	626.6	422.3	204.38	3.066	
10,600.0	6,789.0	10,256.1	6,785.8	108.3	101.8	89.62	63.9	3,600.2	626.6	416.7	209.93	2.985	
10,700.0	6,788.1	10,356.1	6,785.0	111.1	104.5	89.62	63.9	3,700.2	626.6	411.2	215.48	2.908	
10,800.0	6,787.3	10,456.1	6,784.2	113.9	107.3	89.63	63.9	3,800.2	626.6	405.6	221.03	2.835	
10,900.0	6,786.5	10,556.1	6,783.4	116.7	110.1	89.63	63.9	3,900.2	626.6	400.1	226.59	2.766	
11,000.0	6,785.6	10,656.1	6,782.7	119.4	112.9	89.64	63.9	4,000.1	626.6	394.5	232.15	2.699	
11,100.0	6,784.8	10,756.1	6,781.9	122.2	115.7	89.64	63.9	4,100.1	626.6	388.9	237.71	2.636	
11,200.0	6,783.9	10,856.1	6,781.1	125.0	118.4	89.65	63.9	4,200.1	626.6	383.4	243.28	2.576	
11,300.0	6,783.1	10,956.1	6,780.3	127.8	121.2	89.65	63.9	4,300.1	626.6	377.8	248.85	2.518	
11,400.0	6,782.3	11,056.1	6,779.5	130.6	124.0	89.66	63.9	4,400.1	626.6	372.2	254.42	2.463	
11,500.0	6,781.4	11,156.1	6,778.7	133.3	126.8	89.66	63.9	4,500.1	626.6	366.7	259.99	2.410	
11,600.0	6,780.6	11,256.1	6,777.9	136.1	129.6	89.67	63.9	4,600.1	626.6	361.1	265.57	2.360	
11,700.0	6,779.8	11,356.1	6,777.2	138.9	132.4	89.67	63.9	4,700.1	626.6	355.5	271.14	2.311	
11,800.0	6,778.9	11,456.1	6,776.4	141.7	135.2	89.68	63.9	4,800.1	626.6	349.9	276.72	2.265	
11,900.0	6,778.1	11,556.1	6,775.6	144.5	138.0	89.68	63.9	4,900.1	626.6	344.3	282.30	2.220	
12,000.0	6,777.2	11,656.1	6,774.8	147.3	140.8	89.68	63.9	5,000.1	626.6	338.8	287.88	2.177	
12,100.0	6,776.4	11,756.1	6,774.0	150.1	143.5	89.69	63.9	5,100.1	626.6	333.2	293.46	2.135	
12,200.0	6,775.6	11,856.1	6,773.2	152.8	146.3	89.69	63.9	5,200.1	626.6	327.6	299.05	2.095	
12,300.0	6,774.7	11,956.1	6,772.4	155.6	149.1	89.70	63.9	5,300.1	626.6	322.0	304.63	2.057	
12,400.0	6,773.9	12,056.1	6,771.7	158.4	151.9	89.70	63.9	5,400.1	626.6	316.4	310.22	2.020	
12,500.0	6,773.1	12,156.1	6,770.9	161.2	154.7	89.71	63.9	5,500.1	626.6	310.8	315.81	1.984	
12,600.0	6,772.2	12,256.1	6,770.1	164.0	157.5	89.71	63.9	5,600.1	626.6	305.2	321.40	1.950	
12,700.0	6,771.4	12,356.1	6,769.3	166.8	160.3	89.72	63.9	5,700.1	626.6	299.6	326.99	1.916	
12,800.0	6,770.5	12,456.1	6,768.5	169.6	163.1	89.72	63.9	5,800.1	626.6	294.1	332.58	1.884	
12,900.0	6,769.7	12,556.1	6,767.7	172.4	165.9	89.73	63.9	5,900.1	626.6	288.5	338.17	1.853	
13,000.0	6,768.9	12,656.1	6,766.9	175.2	168.7	89.73	63.9	6,000.1	626.6	282.9	343.76	1.823	
13,100.0	6,768.0	12,756.1	6,766.2	178.0	171.5	89.74	63.9	6,100.1	626.6	277.3	349.36	1.794	
13,200.0	6,767.2	12,856.1	6,765.4	180.8	174.3	89.74	63.9	6,200.1	626.6	271.7	354.95	1.765	
13,300.0	6,766.4	12,956.1	6,764.6	183.6	177.1	89.75	63.9	6,300.1	626.6	266.1	360.55	1.738	

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-312 - Wellbore #1 - Plan #2 (7-20-15)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	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)			
13,400.0	6,765.5	13,056.1	6,763.8	186.4	179.9	89.75	63.9	6,400.1	626.6	260.5	366.14	1.711		
13,500.0	6,764.7	13,156.1	6,763.0	189.2	182.7	89.76	63.9	6,500.1	626.6	254.9	371.74	1.686		
13,600.0	6,763.8	13,256.1	6,762.2	192.0	185.5	89.76	63.9	6,600.1	626.6	249.3	377.34	1.661		
13,700.0	6,763.0	13,356.1	6,761.4	194.7	188.3	89.77	63.9	6,700.1	626.6	243.7	382.94	1.636		
13,800.0	6,762.2	13,456.1	6,760.7	197.5	191.1	89.77	63.9	6,800.1	626.6	238.1	388.53	1.613		
13,900.0	6,761.3	13,556.1	6,759.9	200.3	193.9	89.78	63.9	6,900.1	626.6	232.5	394.13	1.590		
14,000.0	6,760.5	13,656.1	6,759.1	203.1	196.7	89.78	63.9	7,000.1	626.6	226.9	399.73	1.568		
14,100.0	6,759.7	13,756.1	6,758.3	205.9	199.5	89.79	63.9	7,100.1	626.6	221.3	405.33	1.546		
14,200.0	6,758.8	13,856.1	6,757.5	208.7	202.3	89.79	63.9	7,200.0	626.6	215.7	410.93	1.525		
14,300.0	6,758.0	13,956.1	6,756.7	211.5	205.1	89.79	63.9	7,300.0	626.6	210.1	416.54	1.504		
14,400.0	6,757.1	14,056.1	6,755.9	214.3	207.9	89.80	63.9	7,400.0	626.6	204.5	422.14	1.484	Level 3	
14,500.0	6,756.3	14,156.1	6,755.2	217.1	210.7	89.80	63.9	7,500.0	626.6	198.9	427.74	1.465	Level 3	
14,600.0	6,755.5	14,256.1	6,754.4	219.9	213.5	89.81	63.9	7,600.0	626.6	193.3	433.34	1.446	Level 3	
14,700.0	6,754.6	14,356.1	6,753.6	222.7	216.3	89.81	63.9	7,700.0	626.6	187.7	438.95	1.428	Level 3	
14,800.0	6,753.8	14,456.1	6,752.8	225.5	219.1	89.82	63.9	7,800.0	626.6	182.1	444.55	1.410	Level 3	
14,900.0	6,753.0	14,556.1	6,752.0	228.3	221.9	89.82	63.9	7,900.0	626.6	176.5	450.15	1.392	Level 3	
15,000.0	6,752.1	14,656.1	6,751.2	231.1	224.7	89.83	63.9	8,000.0	626.6	170.9	455.76	1.375	Level 3	
15,100.0	6,751.3	14,756.1	6,750.5	233.9	227.5	89.83	63.9	8,100.0	626.6	165.3	461.36	1.358	Level 3	
15,200.0	6,750.4	14,856.1	6,749.7	236.7	230.3	89.84	63.9	8,200.0	626.6	159.7	466.97	1.342	Level 3	
15,300.0	6,749.6	14,956.1	6,748.9	239.5	233.1	89.84	63.9	8,300.0	626.6	154.0	472.57	1.326	Level 3	
15,400.0	6,748.8	15,056.1	6,748.1	242.3	235.9	89.85	63.9	8,400.0	626.6	148.4	478.18	1.310	Level 3	
15,500.0	6,747.9	15,156.1	6,747.3	245.1	238.7	89.85	63.9	8,500.0	626.6	142.8	483.78	1.295	Level 3	
15,600.0	6,747.1	15,256.1	6,746.5	247.9	241.5	89.86	63.9	8,600.0	626.6	137.2	489.39	1.280	Level 3	
15,700.0	6,746.2	15,356.1	6,745.7	250.7	244.3	89.86	63.9	8,700.0	626.6	131.6	495.00	1.266	Level 3	
15,800.0	6,745.4	15,456.1	6,745.0	253.5	247.1	89.87	63.9	8,800.0	626.6	126.0	500.60	1.252	Level 3	
15,900.0	6,744.6	15,556.1	6,744.2	256.3	249.9	89.87	63.9	8,900.0	626.6	120.4	506.21	1.238	Level 2	
16,000.0	6,743.7	15,656.1	6,743.4	259.2	252.7	89.88	63.9	9,000.0	626.6	114.8	511.82	1.224	Level 2	
16,100.0	6,742.9	15,756.1	6,742.6	262.0	255.6	89.88	63.9	9,100.0	626.6	109.2	517.43	1.211	Level 2	
16,200.0	6,742.1	15,856.1	6,741.8	264.8	258.4	89.89	63.9	9,200.0	626.6	103.6	523.03	1.198	Level 2	
16,300.0	6,741.2	15,956.1	6,741.0	267.6	261.2	89.89	63.9	9,300.0	626.6	98.0	528.64	1.185	Level 2	
16,400.0	6,740.4	16,056.1	6,740.2	270.4	264.0	89.90	63.9	9,400.0	626.6	92.4	534.25	1.173	Level 2	
16,500.0	6,739.5	16,156.1	6,739.5	273.2	266.8	89.90	63.9	9,500.0	626.6	86.8	539.86	1.161	Level 2	
16,600.0	6,738.7	16,256.1	6,738.7	276.0	269.6	89.90	63.9	9,600.0	626.6	81.1	545.47	1.149	Level 2	
16,700.0	6,737.9	16,356.1	6,737.9	278.8	272.4	89.91	63.9	9,700.0	626.6	75.5	551.08	1.137	Level 2	
16,804.1	6,737.0	16,460.2	6,737.1	281.7	275.3	89.91	63.9	9,804.0	626.6	69.7	556.92	1.125	Level 2, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4667.0ft (RKB - 15')

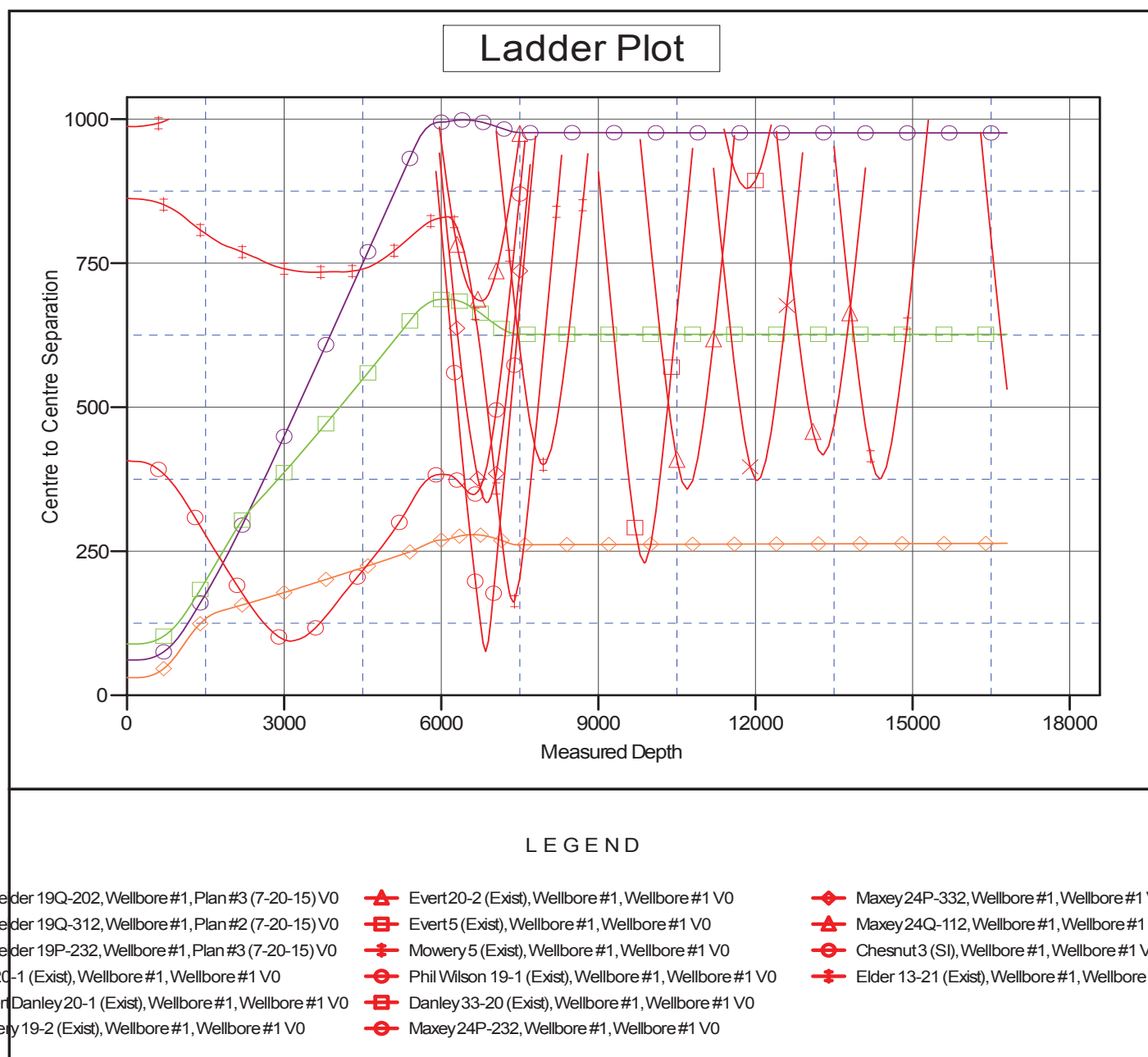
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Schneider 19P-332

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 Schneider 19P-332
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4667.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4667.0ft (RKB - 15')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Schneider 19P-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-20-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4667.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Schneider 19P-332

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°

