

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Schneider 19Q-402**

Surface Location: Schneider 19Q-HZ Pad Sec.19-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

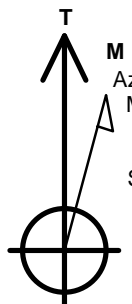
Ground Elevation: 4653.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1382010.18	3253829.80	40.378440	-104.588890	

RKB - 15' WELL @ 4668.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 409'FSL, 1577'FEL, SEC.19	1.0	0.0	0.0	Point
BHL 75'FSL, 500'FEL, SEC.20	6854.0	-261.5	6352.4	Point



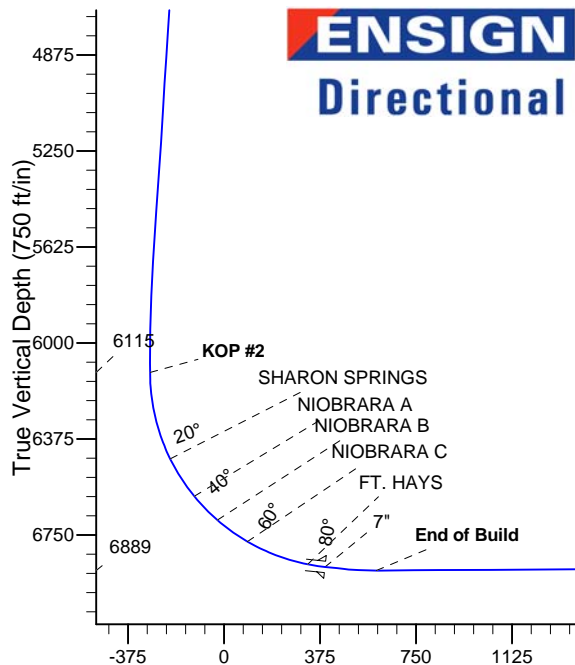
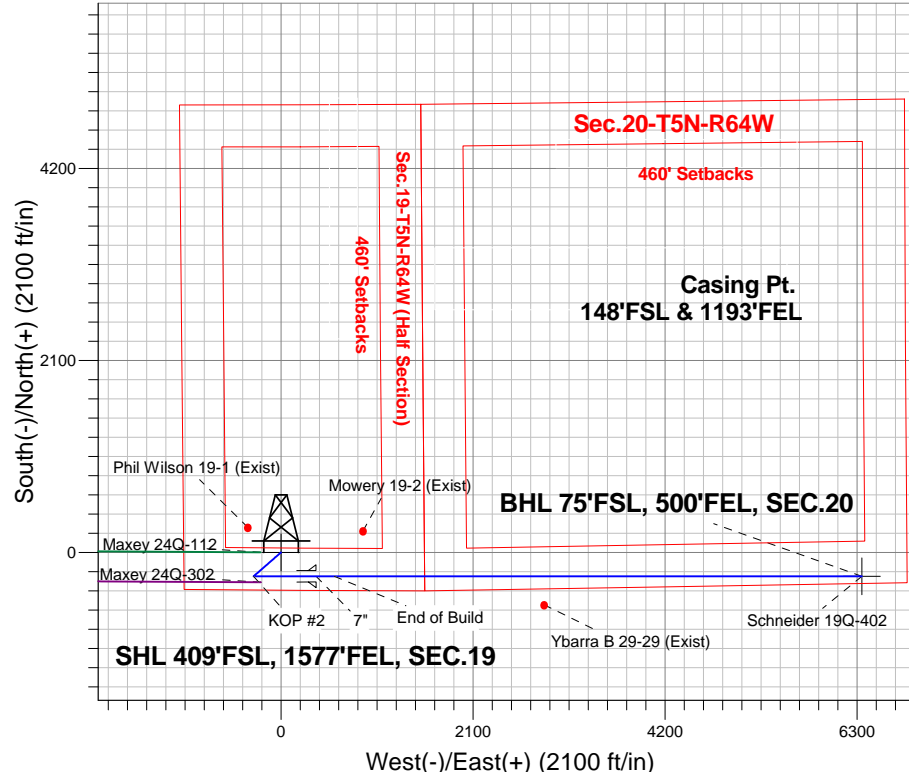
Azimuths to True North
Magnetic North: 8.41°

Magnetic Field
Strength: 52856.9snT
Dip Angle: 66.97°
Date: 2/20/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP #1
6115.4	6132.5	KOP #2
6889.2	7453.5	End of Build

Schneider 19Q-HZ Pad Sec.19-T5N-R64W
Schneider 19Q-402
Plan #1 (2-18-14)
12:07, February 24 2014



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1449.9	5.00	228.92	1449.6	-7.2	-8.2	2.00	228.92	-7.9	
4	5767.1	5.00	228.92	5750.4	-254.3	-291.8	0.00	0.00	-281.1	
5	6017.1	0.00	0.00	6000.0	-261.5	-300.0	2.00	180.00	-289.0	
6	6132.5	0.00	0.00	6115.5	-261.5	-300.0	0.00	0.00	-289.0	
7	7252.5	84.00	90.00	6875.2	-261.5	384.1	7.50	90.00	394.5	
8	7326.5	84.00	90.00	6883.0	-261.5	457.7	0.00	0.00	468.1	
9	7453.5	90.35	90.00	6889.2	-261.5	584.5	5.00	0.00	594.7	
10	13221.6	90.35	90.00	6854.0	-261.5	6352.4	0.00	0.00	6357.8	BHL 75'FSL, 500'FEL, SEC.20

BHL 75'FSL, 500'FEL, SEC.20

Vertical Section at 92.36° (750 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

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

Schneider 19Q-402

Wellbore #1

Plan: Plan #1 (2-18-14)

Standard Planning Report

24 February, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Schneider 19Q-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-18-14)		

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

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

Well	Schneider 19Q-402					
Well Position	+N-S	0.0 ft	Northing:	1,382,010.18 ft	Latitude:	40.378440
	+E-W	30.6 ft	Easting:	3,253,829.80 ft	Longitude:	-104.588890
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,653.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/20/2014	8.41	66.97	52,857

Design	Plan #1 (2-18-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	92.36

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,449.9	5.00	228.92	1,449.6	-7.2	-8.2	2.00	2.00	0.00	228.92	
5,767.1	5.00	228.92	5,750.4	-254.3	-291.8	0.00	0.00	0.00	0.00	
6,017.1	0.00	0.00	6,000.0	-261.5	-300.0	2.00	-2.00	0.00	180.00	
6,132.5	0.00	0.00	6,115.5	-261.5	-300.0	0.00	0.00	0.00	0.00	
7,252.5	84.00	90.00	6,875.2	-261.5	384.1	7.50	7.50	0.00	90.00	
7,326.5	84.00	90.00	6,883.0	-261.5	457.7	0.00	0.00	0.00	0.00	
7,453.5	90.35	90.00	6,889.2	-261.5	584.5	5.00	5.00	0.00	0.00	
13,221.6	90.35	90.00	6,854.0	-261.5	6,352.4	0.00	0.00	0.00	0.00	BHL 75'FSL, 500'FI

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Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-18-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 409'FSL, 1547'FEL, SEC.19 - SHL 409'FSL, 1577'FEL, SEC.19									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,300.0	2.00	228.92	1,300.0	-1.1	-1.3	-1.3	2.00	2.00	0.00
1,400.0	4.00	228.92	1,399.8	-4.6	-5.3	-5.1	2.00	2.00	0.00
1,449.9	5.00	228.92	1,449.6	-7.2	-8.2	-7.9	2.00	2.00	0.00
1,500.0	5.00	228.92	1,499.5	-10.0	-11.5	-11.1	0.00	0.00	0.00
1,600.0	5.00	228.92	1,599.1	-15.8	-18.1	-17.4	0.00	0.00	0.00
1,700.0	5.00	228.92	1,698.7	-21.5	-24.6	-23.7	0.00	0.00	0.00
1,800.0	5.00	228.92	1,798.4	-27.2	-31.2	-30.1	0.00	0.00	0.00
1,900.0	5.00	228.92	1,898.0	-32.9	-37.8	-36.4	0.00	0.00	0.00
2,000.0	5.00	228.92	1,997.6	-38.7	-44.3	-42.7	0.00	0.00	0.00
2,100.0	5.00	228.92	2,097.2	-44.4	-50.9	-49.0	0.00	0.00	0.00
2,200.0	5.00	228.92	2,196.8	-50.1	-57.5	-55.4	0.00	0.00	0.00
2,300.0	5.00	228.92	2,296.4	-55.8	-64.0	-61.7	0.00	0.00	0.00
2,400.0	5.00	228.92	2,396.1	-61.6	-70.6	-68.0	0.00	0.00	0.00
2,500.0	5.00	228.92	2,495.7	-67.3	-77.2	-74.4	0.00	0.00	0.00
2,600.0	5.00	228.92	2,595.3	-73.0	-83.8	-80.7	0.00	0.00	0.00
2,700.0	5.00	228.92	2,694.9	-78.7	-90.3	-87.0	0.00	0.00	0.00
2,800.0	5.00	228.92	2,794.5	-84.5	-96.9	-93.3	0.00	0.00	0.00
2,900.0	5.00	228.92	2,894.2	-90.2	-103.5	-99.7	0.00	0.00	0.00
3,000.0	5.00	228.92	2,993.8	-95.9	-110.0	-106.0	0.00	0.00	0.00
3,100.0	5.00	228.92	3,093.4	-101.6	-116.6	-112.3	0.00	0.00	0.00
3,200.0	5.00	228.92	3,193.0	-107.4	-123.2	-118.6	0.00	0.00	0.00
3,300.0	5.00	228.92	3,292.6	-113.1	-129.7	-125.0	0.00	0.00	0.00
3,400.0	5.00	228.92	3,392.3	-118.8	-136.3	-131.3	0.00	0.00	0.00
3,500.0	5.00	228.92	3,491.9	-124.5	-142.9	-137.6	0.00	0.00	0.00
3,523.2	5.00	228.92	3,515.0	-125.9	-144.4	-139.1	0.00	0.00	0.00
PARKMAN									
3,600.0	5.00	228.92	3,591.5	-130.3	-149.4	-144.0	0.00	0.00	0.00
3,700.0	5.00	228.92	3,691.1	-136.0	-156.0	-150.3	0.00	0.00	0.00
3,800.0	5.00	228.92	3,790.7	-141.7	-162.6	-156.6	0.00	0.00	0.00
3,900.0	5.00	228.92	3,890.4	-147.4	-169.1	-162.9	0.00	0.00	0.00
4,000.0	5.00	228.92	3,990.0	-153.2	-175.7	-169.3	0.00	0.00	0.00
4,100.0	5.00	228.92	4,089.6	-158.9	-182.3	-175.6	0.00	0.00	0.00
4,200.0	5.00	228.92	4,189.2	-164.6	-188.9	-181.9	0.00	0.00	0.00
4,300.0	5.00	228.92	4,288.8	-170.3	-195.4	-188.2	0.00	0.00	0.00
4,323.2	5.00	228.92	4,312.0	-171.7	-196.9	-189.7	0.00	0.00	0.00
SUSSEX									
4,400.0	5.00	228.92	4,388.5	-176.1	-202.0	-194.6	0.00	0.00	0.00

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Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-18-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	5.00	228.92	4,488.1	-181.8	-208.6	-200.9	0.00	0.00	0.00
4,512.0	5.00	228.92	4,500.0	-182.5	-209.3	-201.7	0.00	0.00	0.00
SHANNON									
4,600.0	5.00	228.92	4,587.7	-187.5	-215.1	-207.2	0.00	0.00	0.00
4,700.0	5.00	228.92	4,687.3	-193.2	-221.7	-213.6	0.00	0.00	0.00
4,800.0	5.00	228.92	4,786.9	-199.0	-228.3	-219.9	0.00	0.00	0.00
4,900.0	5.00	228.92	4,886.6	-204.7	-234.8	-226.2	0.00	0.00	0.00
5,000.0	5.00	228.92	4,986.2	-210.4	-241.4	-232.5	0.00	0.00	0.00
5,100.0	5.00	228.92	5,085.8	-216.1	-248.0	-238.9	0.00	0.00	0.00
5,200.0	5.00	228.92	5,185.4	-221.9	-254.5	-245.2	0.00	0.00	0.00
5,300.0	5.00	228.92	5,285.0	-227.6	-261.1	-251.5	0.00	0.00	0.00
5,400.0	5.00	228.92	5,384.7	-233.3	-267.7	-257.9	0.00	0.00	0.00
5,500.0	5.00	228.92	5,484.3	-239.0	-274.2	-264.2	0.00	0.00	0.00
5,600.0	5.00	228.92	5,583.9	-244.8	-280.8	-270.5	0.00	0.00	0.00
5,700.0	5.00	228.92	5,683.5	-250.5	-287.4	-276.8	0.00	0.00	0.00
5,767.1	5.00	228.92	5,750.4	-254.3	-291.8	-281.1	0.00	0.00	0.00
5,800.0	4.34	228.92	5,783.2	-256.1	-293.8	-283.0	2.00	-2.00	0.00
5,900.0	2.34	228.92	5,883.0	-259.9	-298.2	-287.3	2.00	-2.00	0.00
6,000.0	0.34	228.92	5,982.9	-261.5	-300.0	-289.0	2.00	-2.00	0.00
6,017.1	0.00	0.00	6,000.0	-261.5	-300.0	-289.0	2.00	-2.00	0.00
6,100.0	0.00	0.00	6,082.9	-261.5	-300.0	-289.0	0.00	0.00	0.00
6,132.5	0.00	0.00	6,115.4	-261.5	-300.0	-289.0	0.00	0.00	0.00
KOP #2									
6,200.0	5.06	90.00	6,182.9	-261.5	-297.0	-286.0	7.50	7.50	0.00
6,300.0	12.56	90.00	6,281.6	-261.5	-281.7	-270.7	7.50	7.50	0.00
6,400.0	20.06	90.00	6,377.5	-261.5	-253.7	-242.7	7.50	7.50	0.00
6,482.1	26.22	90.00	6,453.0	-261.5	-221.4	-210.5	7.50	7.50	0.00
SHARON SPRINGS									
6,500.0	27.56	90.00	6,468.9	-261.5	-213.3	-202.4	7.50	7.50	0.00
6,600.0	35.06	90.00	6,554.3	-261.5	-161.4	-150.5	7.50	7.50	0.00
6,656.1	39.27	90.00	6,599.0	-261.5	-127.5	-116.7	7.50	7.50	0.00
NIOBRARA A									
6,700.0	42.56	90.00	6,632.2	-261.5	-98.8	-87.9	7.50	7.50	0.00
6,785.8	49.00	90.00	6,692.0	-261.5	-37.3	-26.5	7.50	7.50	0.00
NIOBRARA B									
6,800.0	50.06	90.00	6,701.2	-261.5	-26.5	-15.7	7.50	7.50	0.00
6,900.0	57.56	90.00	6,760.2	-261.5	54.1	64.9	7.50	7.50	0.00
6,930.4	59.84	90.00	6,776.0	-261.5	80.1	90.8	7.50	7.50	0.00
NIOBRARA C									
7,000.0	65.06	90.00	6,808.2	-261.5	141.8	152.4	7.50	7.50	0.00
7,100.0	72.56	90.00	6,844.3	-261.5	235.0	245.5	7.50	7.50	0.00
7,183.8	78.85	90.00	6,865.0	-261.5	316.2	326.7	7.50	7.50	0.00
FT. HAYS									
7,200.0	80.06	90.00	6,868.0	-261.5	332.1	342.5	7.50	7.50	0.00
7,252.5	84.00	90.00	6,875.2	-261.5	384.1	394.5	7.50	7.50	0.00
7"									
7,300.0	84.00	90.00	6,880.2	-261.5	431.3	441.7	0.01	0.01	0.00
7,326.5	84.00	90.00	6,883.0	-261.5	457.7	468.1	0.00	0.00	0.00
7,400.0	87.67	90.00	6,888.3	-261.5	530.9	541.2	5.00	5.00	0.00
7,453.5	90.35	90.00	6,889.2	-261.5	584.4	594.7	5.00	5.00	0.00
End of Build									
7,500.0	90.35	90.00	6,889.0	-261.5	630.9	641.1	0.00	0.00	0.00

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Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-18-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,600.0	90.35	90.00	6,888.3	-261.5	730.9	741.1	0.00	0.00	0.00
7,700.0	90.35	90.00	6,887.7	-261.5	830.9	841.0	0.00	0.00	0.00
7,800.0	90.35	90.00	6,887.1	-261.5	930.9	940.9	0.00	0.00	0.00
7,900.0	90.35	90.00	6,886.5	-261.5	1,030.9	1,040.8	0.00	0.00	0.00
8,000.0	90.35	90.00	6,885.9	-261.5	1,130.9	1,140.7	0.00	0.00	0.00
8,100.0	90.35	90.00	6,885.3	-261.5	1,230.9	1,240.6	0.00	0.00	0.00
8,200.0	90.35	90.00	6,884.7	-261.5	1,330.9	1,340.5	0.00	0.00	0.00
8,300.0	90.35	90.00	6,884.1	-261.5	1,430.9	1,440.5	0.00	0.00	0.00
8,400.0	90.35	90.00	6,883.5	-261.5	1,530.9	1,540.4	0.00	0.00	0.00
8,500.0	90.35	90.00	6,882.8	-261.5	1,630.9	1,640.3	0.00	0.00	0.00
8,600.0	90.35	90.00	6,882.2	-261.5	1,730.9	1,740.2	0.00	0.00	0.00
8,700.0	90.35	90.00	6,881.6	-261.5	1,830.9	1,840.1	0.00	0.00	0.00
8,800.0	90.35	90.00	6,881.0	-261.5	1,930.9	1,940.0	0.00	0.00	0.00
8,900.0	90.35	90.00	6,880.4	-261.5	2,030.9	2,039.9	0.00	0.00	0.00
9,000.0	90.35	90.00	6,879.8	-261.5	2,130.9	2,139.8	0.00	0.00	0.00
9,100.0	90.35	90.00	6,879.2	-261.5	2,230.9	2,239.8	0.00	0.00	0.00
9,200.0	90.35	90.00	6,878.6	-261.5	2,330.9	2,339.7	0.00	0.00	0.00
9,300.0	90.35	90.00	6,878.0	-261.5	2,430.9	2,439.6	0.00	0.00	0.00
9,400.0	90.35	90.00	6,877.3	-261.5	2,530.9	2,539.5	0.00	0.00	0.00
9,500.0	90.35	90.00	6,876.7	-261.5	2,630.9	2,639.4	0.00	0.00	0.00
9,600.0	90.35	90.00	6,876.1	-261.5	2,730.9	2,739.3	0.00	0.00	0.00
9,700.0	90.35	90.00	6,875.5	-261.5	2,830.9	2,839.2	0.00	0.00	0.00
9,800.0	90.35	90.00	6,874.9	-261.5	2,930.9	2,939.2	0.00	0.00	0.00
9,900.0	90.35	90.00	6,874.3	-261.5	3,030.9	3,039.1	0.00	0.00	0.00
10,000.0	90.35	90.00	6,873.7	-261.5	3,130.9	3,139.0	0.00	0.00	0.00
10,100.0	90.35	90.00	6,873.1	-261.5	3,230.9	3,238.9	0.00	0.00	0.00
10,200.0	90.35	90.00	6,872.5	-261.5	3,330.9	3,338.8	0.00	0.00	0.00
10,300.0	90.35	90.00	6,871.8	-261.5	3,430.9	3,438.7	0.00	0.00	0.00
10,400.0	90.35	90.00	6,871.2	-261.5	3,530.9	3,538.6	0.00	0.00	0.00
10,500.0	90.35	90.00	6,870.6	-261.5	3,630.9	3,638.6	0.00	0.00	0.00
10,600.0	90.35	90.00	6,870.0	-261.5	3,730.9	3,738.5	0.00	0.00	0.00
10,700.0	90.35	90.00	6,869.4	-261.5	3,830.9	3,838.4	0.00	0.00	0.00
10,800.0	90.35	90.00	6,868.8	-261.5	3,930.9	3,938.3	0.00	0.00	0.00
10,900.0	90.35	90.00	6,868.2	-261.5	4,030.9	4,038.2	0.00	0.00	0.00
11,000.0	90.35	90.00	6,867.6	-261.5	4,130.9	4,138.1	0.00	0.00	0.00
11,100.0	90.35	90.00	6,867.0	-261.5	4,230.9	4,238.0	0.00	0.00	0.00
11,200.0	90.35	90.00	6,866.3	-261.5	4,330.9	4,337.9	0.00	0.00	0.00
11,300.0	90.35	90.00	6,865.7	-261.5	4,430.9	4,437.9	0.00	0.00	0.00
11,400.0	90.35	90.00	6,865.1	-261.5	4,530.9	4,537.8	0.00	0.00	0.00
11,500.0	90.35	90.00	6,864.5	-261.5	4,630.9	4,637.7	0.00	0.00	0.00
11,600.0	90.35	90.00	6,863.9	-261.5	4,730.9	4,737.6	0.00	0.00	0.00
11,700.0	90.35	90.00	6,863.3	-261.5	4,830.8	4,837.5	0.00	0.00	0.00
11,800.0	90.35	90.00	6,862.7	-261.5	4,930.8	4,937.4	0.00	0.00	0.00
11,900.0	90.35	90.00	6,862.1	-261.5	5,030.8	5,037.3	0.00	0.00	0.00
12,000.0	90.35	90.00	6,861.5	-261.5	5,130.8	5,137.3	0.00	0.00	0.00
12,100.0	90.35	90.00	6,860.9	-261.5	5,230.8	5,237.2	0.00	0.00	0.00
12,200.0	90.35	90.00	6,860.2	-261.5	5,330.8	5,337.1	0.00	0.00	0.00
12,300.0	90.35	90.00	6,859.6	-261.5	5,430.8	5,437.0	0.00	0.00	0.00
12,400.0	90.35	90.00	6,859.0	-261.5	5,530.8	5,536.9	0.00	0.00	0.00
12,500.0	90.35	90.00	6,858.4	-261.5	5,630.8	5,636.8	0.00	0.00	0.00
12,600.0	90.35	90.00	6,857.8	-261.5	5,730.8	5,736.7	0.00	0.00	0.00
12,700.0	90.35	90.00	6,857.2	-261.5	5,830.8	5,836.6	0.00	0.00	0.00
12,800.0	90.35	90.00	6,856.6	-261.5	5,930.8	5,936.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Schneider 19Q-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-18-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,900.0	90.35	90.00	6,856.0	-261.5	6,030.8	6,036.5	0.00	0.00	0.00
13,000.0	90.35	90.00	6,855.4	-261.5	6,130.8	6,136.4	0.00	0.00	0.00
13,100.0	90.35	90.00	6,854.7	-261.5	6,230.8	6,236.3	0.00	0.00	0.00
13,200.0	90.35	90.00	6,854.1	-261.5	6,330.8	6,336.2	0.00	0.00	0.00
13,221.6	90.35	90.00	6,854.0	-261.5	6,352.4	6,357.8	0.00	0.00	0.00

BHL 75'FSL, 500'FEL, SEC.20

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,252.5	6,875.2	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,523.2	3,515.0	PARKMAN			
4,323.2	4,312.0	SUSSEX			
4,512.0	4,500.0	SHANNON			
6,482.1	6,453.0	SHARON SPRINGS			
6,656.1	6,599.0	NIOBRARA A			
6,785.8	6,692.0	NIOBRARA B			
6,930.4	6,776.0	NIOBRARA C			
7,183.8	6,865.0	FT. HAYS			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.0	1,200.0	0.0	0.0	KOP #1
6,132.5	6,115.4	-261.5	-300.0	KOP #2
7,453.5	6,889.2	-261.5	584.4	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

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

Schneider 19Q-402

Wellbore #1

Plan #1 (2-18-14)

Anticollision Report

24 February, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (2-18-14)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	2/24/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,221.6	Plan #1 (2-18-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Maxey 24Q-HZ Pad Sec.24-T5N-R65W						
Maxey 24Q-112 - Wellbore #1 - Plan #3 (1-22-14)	6,615.0	12,335.0	277.0	105.1	1.611	CC, ES, SF
Maxey 24Q-302 - Wellbore #1 - Plan #3 (1-22-14)	6,726.1	12,545.1	205.8	131.9	2.786	CC, ES, SF
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W						
Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1	7,766.2	6,872.3	498.3	328.8	2.940	CC, ES
Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1	7,800.0	6,872.1	499.5	329.2	2.933	SF
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	2,397.9	2,367.0	444.0	391.3	8.433	CC
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	3,800.0	3,763.7	460.5	376.2	5.465	ES
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	6,400.0	6,350.5	545.6	404.0	3.852	SF
Ybarra B 29-29 (Exist) - Wellbore #1 - Wellbore #1	9,747.2	6,893.2	310.3	87.5	1.392	Level 3, CC, ES, SF
Schneider 19Q-HZ Pad Sec.19-T5N-R64W						
Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)	200.0	199.0	61.3	60.6	91.205	CC, ES
Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)	13,221.6	13,263.2	963.7	602.2	2.666	SF
Schneider 19P-432 - Wellbore #1 - Plan #1 (2-18-14)	1,000.0	999.0	30.6	26.4	7.180	CC, ES
Schneider 19P-432 - Wellbore #1 - Plan #1 (2-18-14)	13,221.6	13,298.5	711.5	345.4	1.943	SF
Schneider 19Q-312 - Wellbore #1 - Plan #1 (2-18-14)	1,200.0	1,200.0	27.9	22.7	5.389	CC
Schneider 19Q-312 - Wellbore #1 - Plan #1 (2-18-14)	13,221.6	13,068.0	355.7	16.5	1.049	Level 2, ES, SF

Offset Design	Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-112 - Wellbore #1 - Plan #3 (1-22-14)											Offset Site Error:	0.0 ft
Survey Program:	0-MWD											Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		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	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.30	-32.1	-6,054.2	6,054.3				
100.0	100.0	82.0	82.0	0.1	0.1	-90.30	-32.1	-6,054.2	6,054.3	6,054.1	0.20	N/A	
200.0	200.0	182.0	182.0	0.3	0.3	-90.30	-32.1	-6,054.2	6,054.3	6,053.7	0.63	9,551.786	
300.0	300.0	282.0	282.0	0.6	0.5	-90.30	-32.1	-6,054.2	6,054.3	6,053.2	1.08	5,588.390	
400.0	400.0	382.0	382.0	0.8	0.7	-90.30	-32.1	-6,054.2	6,054.3	6,052.8	1.53	3,949.566	
500.0	500.0	482.0	482.0	1.0	1.0	-90.30	-32.1	-6,054.2	6,054.3	6,052.3	1.98	3,053.972	
600.0	600.0	12,335.0	6,600.0	1.2	165.3	-89.63	1.4	-222.9	6,022.1	5,896.3	125.81	47.867	
700.0	700.0	12,335.0	6,600.0	1.5	165.3	-89.63	1.4	-222.9	5,922.2	5,796.2	126.03	46.989	
800.0	800.0	12,335.0	6,600.0	1.7	165.3	-89.63	1.4	-222.9	5,822.3	5,696.0	126.26	46.114	
900.0	900.0	12,335.0	6,600.0	1.9	165.3	-89.63	1.4	-222.9	5,722.3	5,595.9	126.48	45.242	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-112 - Wellbore #1 - Plan #3 (1-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,000.0	1,000.0	12,335.0	6,600.0	2.1	165.3	-89.63		1.4	-222.9	5,622.4	5,495.7	126.71	44.373	
1,100.0	1,100.0	12,335.0	6,600.0	2.4	165.3	-89.63		1.4	-222.9	5,522.5	5,395.6	126.93	43.507	
1,200.0	1,200.0	12,335.0	6,600.0	2.6	165.3	-89.63		1.4	-222.9	5,422.6	5,295.4	127.16	42.644	
1,300.0	1,300.0	12,335.0	6,600.0	2.8	165.3	97.86		1.4	-222.9	5,322.6	5,181.5	141.12	37.718	
1,400.0	1,399.8	12,335.0	6,600.0	3.0	165.3	144.16		1.4	-222.9	5,222.7	5,058.8	163.88	31.870	
1,500.0	1,499.5	12,335.0	6,600.0	3.2	165.3	153.41		1.4	-222.9	5,122.9	4,966.9	155.94	32.851	
1,600.0	1,599.1	12,335.0	6,600.0	3.4	165.3	153.41		1.4	-222.9	5,023.1	4,867.0	156.14	32.170	
1,700.0	1,698.7	12,335.0	6,600.0	3.6	165.3	153.41		1.4	-222.9	4,923.3	4,767.0	156.34	31.490	
1,800.0	1,798.4	12,335.0	6,600.0	3.8	165.3	153.41		1.4	-222.9	4,823.5	4,667.0	156.55	30.811	
1,900.0	1,898.0	12,335.0	6,600.0	4.1	165.3	153.41		1.4	-222.9	4,723.8	4,567.0	156.77	30.133	
2,000.0	1,997.6	12,335.0	6,600.0	4.3	165.3	153.41		1.4	-222.9	4,624.0	4,467.0	156.98	29.456	
2,100.0	2,097.2	12,335.0	6,600.0	4.6	165.3	153.41		1.4	-222.9	4,524.3	4,367.1	157.20	28.780	
2,200.0	2,196.8	12,335.0	6,600.0	4.8	165.3	153.41		1.4	-222.9	4,424.6	4,267.1	157.42	28.107	
2,300.0	2,296.4	12,335.0	6,600.0	5.1	165.3	153.41		1.4	-222.9	4,324.8	4,167.2	157.64	27.434	
2,400.0	2,396.1	12,335.0	6,600.0	5.3	165.3	153.41		1.4	-222.9	4,225.1	4,067.3	157.87	26.764	
2,500.0	2,495.7	12,335.0	6,600.0	5.6	165.3	153.41		1.4	-222.9	4,125.5	3,967.4	158.10	26.095	
2,600.0	2,595.3	12,335.0	6,600.0	5.8	165.3	153.41		1.4	-222.9	4,025.8	3,867.5	158.32	25.428	
2,700.0	2,694.9	12,335.0	6,600.0	6.1	165.3	153.41		1.4	-222.9	3,926.1	3,767.6	158.55	24.762	
2,800.0	2,794.5	12,335.0	6,600.0	6.4	165.3	153.41		1.4	-222.9	3,826.5	3,667.7	158.78	24.099	
2,900.0	2,894.2	12,335.0	6,600.0	6.6	165.3	153.41		1.4	-222.9	3,726.9	3,567.9	159.01	23.438	
3,000.0	2,993.8	12,335.0	6,600.0	6.9	165.3	153.41		1.4	-222.9	3,627.3	3,468.0	159.24	22.778	
3,100.0	3,093.4	12,335.0	6,600.0	7.2	165.3	153.41		1.4	-222.9	3,527.7	3,368.2	159.48	22.120	
3,200.0	3,193.0	12,335.0	6,600.0	7.4	165.3	153.41		1.4	-222.9	3,428.2	3,268.4	159.71	21.465	
3,300.0	3,292.6	12,335.0	6,600.0	7.7	165.3	153.41		1.4	-222.9	3,328.6	3,168.7	159.94	20.811	
3,400.0	3,392.3	12,335.0	6,600.0	8.0	165.3	153.41		1.4	-222.9	3,229.1	3,069.0	160.18	20.160	
3,500.0	3,491.9	12,335.0	6,600.0	8.3	165.3	153.41		1.4	-222.9	3,129.7	2,969.3	160.41	19.510	
3,600.0	3,591.5	12,335.0	6,600.0	8.5	165.3	153.41		1.4	-222.9	3,030.2	2,869.6	160.65	18.863	
3,700.0	3,691.1	12,335.0	6,600.0	8.8	165.3	153.41		1.4	-222.9	2,930.9	2,770.0	160.88	18.217	
3,800.0	3,790.7	12,335.0	6,600.0	9.1	165.3	153.41		1.4	-222.9	2,831.5	2,670.4	161.12	17.574	
3,900.0	3,890.4	12,335.0	6,600.0	9.3	165.3	153.41		1.4	-222.9	2,732.2	2,570.9	161.36	16.933	
4,000.0	3,990.0	12,335.0	6,600.0	9.6	165.3	153.41		1.4	-222.9	2,633.0	2,471.4	161.59	16.294	
4,100.0	4,089.6	12,335.0	6,600.0	9.9	165.3	153.41		1.4	-222.9	2,533.8	2,372.0	161.83	15.657	
4,200.0	4,189.2	12,335.0	6,600.0	10.2	165.3	153.41		1.4	-222.9	2,434.7	2,272.6	162.07	15.023	
4,300.0	4,288.8	12,335.0	6,600.0	10.5	165.3	153.41		1.4	-222.9	2,335.6	2,173.3	162.31	14.390	
4,400.0	4,388.5	12,335.0	6,600.0	10.7	165.3	153.41		1.4	-222.9	2,236.7	2,074.1	162.54	13.760	
4,500.0	4,488.1	12,335.0	6,600.0	11.0	165.3	153.41		1.4	-222.9	2,137.8	1,975.0	162.78	13.133	
4,600.0	4,587.7	12,335.0	6,600.0	11.3	165.3	153.41		1.4	-222.9	2,039.1	1,876.1	163.02	12.508	
4,700.0	4,687.3	12,335.0	6,600.0	11.6	165.3	153.41		1.4	-222.9	1,940.5	1,777.2	163.26	11.886	
4,800.0	4,786.9	12,335.0	6,600.0	11.8	165.3	153.41		1.4	-222.9	1,842.0	1,678.5	163.50	11.266	
4,900.0	4,886.6	12,335.0	6,600.0	12.1	165.3	153.41		1.4	-222.9	1,743.7	1,580.0	163.74	10.649	
5,000.0	4,986.2	12,328.2	6,600.0	12.4	165.1	152.31		1.5	-229.6	1,645.6	1,480.6	164.98	9.975	
5,100.0	5,085.8	12,321.1	6,600.1	12.7	164.9	151.13		1.5	-236.8	1,547.7	1,381.5	166.24	9.310	
5,200.0	5,185.4	12,313.9	6,600.1	13.0	164.7	149.93		1.6	-244.0	1,450.1	1,282.6	167.46	8.659	
5,300.0	5,285.0	12,306.7	6,600.2	13.2	164.5	148.72		1.6	-251.2	1,352.7	1,184.1	168.62	8.022	
5,400.0	5,384.7	12,299.5	6,600.2	13.5	164.3	147.49		1.6	-258.4	1,255.8	1,086.1	169.73	7.399	
5,500.0	5,484.3	12,292.3	6,600.3	13.8	164.1	146.24		1.7	-265.5	1,159.3	988.5	170.78	6.788	
5,600.0	5,583.9	12,285.2	6,600.3	14.1	163.9	144.98		1.7	-272.7	1,063.4	891.7	171.76	6.191	
5,700.0	5,683.5	12,278.0	6,600.4	14.4	163.7	143.70		1.8	-279.9	968.3	795.6	172.67	5.608	
5,800.0	5,783.2	12,270.9	6,600.4	14.6	163.5	141.34		1.8	-286.9	874.2	700.0	174.20	5.018	
5,900.0	5,883.0	12,265.9	6,600.4	14.8	163.4	136.92		1.8	-291.9	780.7	604.4	176.29	4.428	
6,000.0	5,982.9	12,263.5	6,600.5	15.0	163.3	132.90		1.9	-294.3	687.9	510.6	177.33	3.879	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-112 - Wellbore #1 - Plan #3 (1-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,100.0	6,082.9	12,262.8	6,600.5	15.2	163.3	1.08		1.9	-295.0	596.8	567.0	29.83	20.009	
6,200.0	6,182.9	12,265.2	6,600.5	15.3	163.3	-97.38		1.8	-292.7	509.0	332.3	176.68	2.881	
6,300.0	6,281.6	12,279.8	6,600.4	15.4	163.8	-104.82		1.8	-278.0	427.4	254.2	173.25	2.467	
6,400.0	6,377.5	12,307.3	6,600.2	15.4	164.5	-106.85		1.6	-250.6	356.6	184.1	172.44	2.068	
6,500.0	6,468.9	12,335.0	6,600.0	15.4	165.3	-106.42		1.4	-222.9	302.4	128.9	173.50	1.743	
6,600.0	6,554.3	12,335.0	6,600.0	15.4	165.3	-108.30		1.4	-222.9	277.4	105.5	171.90	1.614	
6,615.0	6,566.5	12,335.0	6,600.0	15.4	165.3	-108.33		1.4	-222.9	277.0	105.1	171.88	1.611 CC, ES, SF	
6,700.0	6,632.2	12,335.0	6,600.0	15.4	165.3	-107.29		1.4	-222.9	291.1	118.3	172.86	1.684	
6,800.0	6,701.2	12,335.0	6,600.0	15.5	165.3	-103.33		1.4	-222.9	338.6	162.4	176.12	1.922	
6,900.0	6,760.2	12,335.0	6,600.0	15.9	165.3	-96.21		1.4	-222.9	407.6	227.4	180.18	2.262	
7,000.0	6,808.2	12,335.0	6,600.0	16.8	165.3	-85.94		1.4	-222.9	488.2	306.5	181.68	2.687	
7,100.0	6,844.3	12,335.0	6,600.0	18.1	165.3	-73.34		1.4	-222.9	574.5	398.1	176.35	3.258	
7,200.0	6,868.0	12,335.0	6,600.0	19.7	165.3	-60.23		1.4	-222.9	663.0	500.4	162.67	4.076	
7,300.0	6,880.2	12,335.0	6,600.0	21.6	165.3	-53.81		1.4	-222.9	752.2	598.3	153.94	4.887	
7,400.0	6,888.3	12,335.0	6,600.0	23.6	165.3	-47.67		1.4	-222.9	842.9	698.8	144.05	5.851	
7,500.0	6,889.0	12,335.0	6,600.0	25.8	165.3	-43.59		1.4	-222.9	933.6	796.4	137.16	6.806	
7,600.0	6,888.3	12,335.0	6,600.0	28.1	165.3	-43.59		1.4	-222.9	1,025.7	886.9	138.76	7.392	
7,700.0	6,887.7	12,335.0	6,600.0	30.5	165.3	-43.59		1.4	-222.9	1,119.1	978.7	140.42	7.970	
7,800.0	6,887.1	12,335.0	6,600.0	32.9	165.3	-43.59		1.4	-222.9	1,213.6	1,071.5	142.14	8.538	
7,900.0	6,886.5	12,335.0	6,600.0	35.4	165.3	-43.59		1.4	-222.9	1,308.9	1,165.0	143.91	9.096	
8,000.0	6,885.9	12,335.0	6,600.0	37.9	165.3	-43.59		1.4	-222.9	1,404.9	1,259.2	145.71	9.642	
8,100.0	6,885.3	12,335.0	6,600.0	40.5	165.3	-43.59		1.4	-222.9	1,501.4	1,353.8	147.53	10.177	
8,200.0	6,884.7	12,335.0	6,600.0	43.1	165.3	-43.59		1.4	-222.9	1,598.3	1,448.9	149.38	10.699	
8,300.0	6,884.1	12,335.0	6,600.0	45.7	165.3	-43.59		1.4	-222.9	1,695.6	1,544.3	151.25	11.210	
8,400.0	6,883.5	12,335.0	6,600.0	48.4	165.3	-43.59		1.4	-222.9	1,793.2	1,640.0	153.14	11.710	
8,500.0	6,882.8	12,335.0	6,600.0	51.0	165.3	-43.59		1.4	-222.9	1,891.0	1,736.0	155.04	12.197	
8,600.0	6,882.2	12,335.0	6,600.0	53.7	165.3	-43.59		1.4	-222.9	1,989.0	1,832.1	156.95	12.673	
8,700.0	6,881.6	12,335.0	6,600.0	56.4	165.3	-43.59		1.4	-222.9	2,087.3	1,928.4	158.87	13.139	
8,800.0	6,881.0	12,335.0	6,600.0	59.1	165.3	-43.59		1.4	-222.9	2,185.7	2,024.9	160.79	13.593	
8,900.0	6,880.4	12,335.0	6,600.0	61.8	165.3	-43.59		1.4	-222.9	2,284.2	2,121.5	162.73	14.037	
9,000.0	6,879.8	12,335.0	6,600.0	64.5	165.3	-43.59		1.4	-222.9	2,382.9	2,218.2	164.67	14.470	
9,100.0	6,879.2	12,335.0	6,600.0	67.3	165.3	-43.59		1.4	-222.9	2,481.6	2,315.0	166.62	14.894	
9,200.0	6,878.6	12,335.0	6,600.0	70.0	165.3	-43.59		1.4	-222.9	2,580.5	2,411.9	168.57	15.308	
9,300.0	6,878.0	12,335.0	6,600.0	72.7	165.3	-43.59		1.4	-222.9	2,679.4	2,508.9	170.53	15.712	
9,400.0	6,877.3	12,335.0	6,600.0	75.5	165.3	-43.59		1.4	-222.9	2,778.4	2,605.9	172.49	16.107	
9,500.0	6,876.7	12,335.0	6,600.0	78.2	165.3	-43.59		1.4	-222.9	2,877.5	2,703.1	174.46	16.494	
9,600.0	6,876.1	12,335.0	6,600.0	81.0	165.3	-43.59		1.4	-222.9	2,976.7	2,800.2	176.43	16.872	
9,700.0	6,875.5	12,335.0	6,600.0	83.7	165.3	-43.59		1.4	-222.9	3,075.9	2,897.5	178.40	17.242	
9,800.0	6,874.9	12,335.0	6,600.0	86.5	165.3	-43.59		1.4	-222.9	3,175.1	2,994.8	180.37	17.603	
9,900.0	6,874.3	12,335.0	6,600.0	89.2	165.3	-43.59		1.4	-222.9	3,274.4	3,092.1	182.35	17.957	
10,000.0	6,873.7	12,335.0	6,600.0	92.0	165.3	-43.59		1.4	-222.9	3,373.8	3,189.4	184.33	18.303	
10,100.0	6,873.1	12,335.0	6,600.0	94.8	165.3	-43.59		1.4	-222.9	3,473.1	3,286.8	186.31	18.642	
10,200.0	6,872.5	12,335.0	6,600.0	97.5	165.3	-43.59		1.4	-222.9	3,572.6	3,384.3	188.29	18.974	
10,300.0	6,871.8	12,335.0	6,600.0	100.3	165.3	-43.59		1.4	-222.9	3,672.0	3,481.7	190.28	19.298	
10,400.0	6,871.2	12,335.0	6,600.0	103.1	165.3	-43.59		1.4	-222.9	3,771.5	3,579.2	192.26	19.616	
10,500.0	6,870.6	12,335.0	6,600.0	105.9	165.3	-43.59		1.4	-222.9	3,871.0	3,676.7	194.25	19.928	
10,600.0	6,870.0	12,335.0	6,600.0	108.6	165.3	-43.59		1.4	-222.9	3,970.5	3,774.3	196.24	20.233	
10,700.0	6,869.4	12,335.0	6,600.0	111.4	165.3	-43.59		1.4	-222.9	4,070.1	3,871.8	198.23	20.532	
10,800.0	6,868.8	12,335.0	6,600.0	114.2	165.3	-43.59		1.4	-222.9	4,169.6	3,969.4	200.22	20.826	
10,900.0	6,868.2	12,335.0	6,600.0	117.0	165.3	-43.59		1.4	-222.9	4,269.2	4,067.0	202.21	21.113	
11,000.0	6,867.6	12,335.0	6,600.0	119.8	165.3	-43.59		1.4	-222.9	4,368.8	4,164.6	204.20	21.395	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-112 - Wellbore #1 - Plan #3 (1-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,100.0	6,867.0	12,335.0	6,600.0	122.6	165.3	-43.59	1.4	-222.9	4,468.5	4,262.3	206.19	21.671		
11,200.0	6,866.3	12,335.0	6,600.0	125.3	165.3	-43.59	1.4	-222.9	4,568.1	4,359.9	208.19	21.942		
11,300.0	6,865.7	12,335.0	6,600.0	128.1	165.3	-43.59	1.4	-222.9	4,667.8	4,457.6	210.18	22.208		
11,400.0	6,865.1	12,335.0	6,600.0	130.9	165.3	-43.59	1.4	-222.9	4,767.4	4,555.2	212.18	22.469		
11,500.0	6,864.5	12,335.0	6,600.0	133.7	165.3	-43.59	1.4	-222.9	4,867.1	4,652.9	214.18	22.725		
11,600.0	6,863.9	12,335.0	6,600.0	136.5	165.3	-43.59	1.4	-222.9	4,966.8	4,750.6	216.17	22.976		
11,700.0	6,863.3	12,335.0	6,600.0	139.3	165.3	-43.59	1.4	-222.9	5,066.5	4,848.4	218.17	23.223		
11,800.0	6,862.7	12,335.0	6,600.0	142.1	165.3	-43.59	1.4	-222.9	5,166.2	4,946.1	220.17	23.465		
11,900.0	6,862.1	12,335.0	6,600.0	144.9	165.3	-43.59	1.4	-222.9	5,266.0	5,043.8	222.17	23.703		
12,000.0	6,861.5	12,335.0	6,600.0	147.7	165.3	-43.59	1.4	-222.9	5,365.7	5,141.6	224.17	23.936		
12,100.0	6,860.9	12,335.0	6,600.0	150.4	165.3	-43.59	1.4	-222.9	5,465.5	5,239.3	226.17	24.166		
12,200.0	6,860.2	12,335.0	6,600.0	153.2	165.3	-43.59	1.4	-222.9	5,565.2	5,337.1	228.17	24.391		
12,300.0	6,859.6	12,335.0	6,600.0	156.0	165.3	-43.59	1.4	-222.9	5,665.0	5,434.8	230.17	24.613		
12,400.0	6,859.0	12,335.0	6,600.0	158.8	165.3	-43.59	1.4	-222.9	5,764.8	5,532.6	232.17	24.830		
12,500.0	6,858.4	12,335.0	6,600.0	161.6	165.3	-43.59	1.4	-222.9	5,864.6	5,630.4	234.17	25.044		
12,600.0	6,857.8	12,335.0	6,600.0	164.4	165.3	-43.59	1.4	-222.9	5,964.4	5,728.2	236.17	25.254		
12,700.0	6,857.2	12,335.0	6,600.0	167.2	165.3	-43.59	1.4	-222.9	6,064.2	5,826.0	238.17	25.461		
12,800.0	6,856.6	12,335.0	6,600.0	170.0	165.3	-43.59	1.4	-222.9	6,164.0	5,923.8	240.18	25.664		
12,900.0	6,856.0	12,335.0	6,600.0	172.8	165.3	-43.59	1.4	-222.9	6,263.8	6,021.6	242.18	25.864		
13,000.0	6,855.4	12,335.0	6,600.0	175.6	165.3	-43.59	1.4	-222.9	6,363.6	6,119.4	244.18	26.061		
13,100.0	6,854.7	12,335.0	6,600.0	178.4	165.3	-43.59	1.4	-222.9	6,463.4	6,217.2	246.19	26.254		
13,200.0	6,854.1	12,335.0	6,600.0	181.2	165.3	-43.59	1.4	-222.9	6,563.2	6,315.0	248.19	26.445		
13,221.6	6,854.0	12,335.0	6,600.0	181.8	165.3	-43.59	1.4	-222.9	6,584.8	6,336.2	248.62	26.485		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-302 - Wellbore #1 - Plan #3 (1-22-14)												Offset Site Error: 0.0 ft		
Survey Program: 0-MWD												Offset Well Error: 0.0 ft		
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth	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	0.0	0.0	0.0	0.0	-90.31	-32.1	-6,023.6	6,023.7					
100.0	100.0	82.0	82.0	0.1	0.1	-90.31	-32.1	-6,023.6	6,023.7	6,023.5	0.20	N/A		
200.0	200.0	182.0	182.0	0.3	0.3	-90.31	-32.1	-6,023.6	6,023.7	6,023.0	0.63	9,503.436		
300.0	300.0	282.0	282.0	0.6	0.5	-90.31	-32.1	-6,023.6	6,023.7	6,022.6	1.08	5,560.101		
400.0	400.0	382.0	382.0	0.8	0.7	-90.31	-32.1	-6,023.6	6,023.7	6,022.1	1.53	3,929.573		
500.0	500.0	482.0	482.0	1.0	1.0	-90.31	-32.1	-6,023.6	6,023.7	6,021.7	1.98	3,038.513		
600.0	600.0	582.0	582.0	1.2	1.2	-90.31	-32.1	-6,023.6	6,023.7	6,021.2	2.43	2,476.866		
700.0	700.0	682.0	682.0	1.5	1.4	-90.31	-32.1	-6,023.6	6,023.7	6,020.8	2.88	2,090.459		
800.0	800.0	12,545.1	6,770.0	1.7	165.0	-146.02	-326.4	-220.0	6,000.9	5,840.7	160.21	37.456		
900.0	900.0	12,545.1	6,770.0	1.9	165.0	-146.02	-326.4	-220.0	5,901.1	5,740.7	160.44	36.782		
1,000.0	1,000.0	12,545.1	6,770.0	2.1	165.0	-146.02	-326.4	-220.0	5,801.4	5,640.7	160.66	36.109		
1,100.0	1,100.0	12,545.1	6,770.0	2.4	165.0	-146.02	-326.4	-220.0	5,701.6	5,540.7	160.89	35.439		
1,200.0	1,200.0	12,545.1	6,770.0	2.6	165.0	-146.02	-326.4	-220.0	5,601.9	5,440.7	161.11	34.770		
1,300.0	1,300.0	12,545.1	6,770.0	2.8	165.0	-28.51	-326.4	-220.0	5,502.0	5,343.4	158.59	34.693		
1,400.0	1,399.8	12,545.1	6,770.0	3.0	165.0	-91.91	-326.4	-220.0	5,402.0	5,280.2	121.82	44.345		
1,500.0	1,499.5	12,545.1	6,770.0	3.2	165.0	-133.72	-326.4	-220.0	5,302.1	5,278.9	23.16	228.891		
1,600.0	1,599.1	12,545.1	6,770.0	3.4	165.0	-133.72	-326.4	-220.0	5,202.1	5,178.7	23.37	222.639		
1,700.0	1,698.7	12,545.1	6,770.0	3.6	165.0	-133.72	-326.4	-220.0	5,102.1	5,078.6	23.57	216.422		
1,800.0	1,798.4	12,545.1	6,770.0	3.8	165.0	-133.72	-326.4	-220.0	5,002.2	4,978.4	23.79	210.256		
1,900.0	1,898.0	12,545.1	6,770.0	4.1	165.0	-133.72	-326.4	-220.0	4,902.2	4,878.2	24.01	204.153		
2,000.0	1,997.6	12,545.1	6,770.0	4.3	165.0	-133.72	-326.4	-220.0	4,802.3	4,778.0	24.24	198.125		
2,100.0	2,097.2	12,545.1	6,770.0	4.6	165.0	-133.72	-326.4	-220.0	4,702.3	4,677.8	24.47	192.177		
2,200.0	2,196.8	12,545.1	6,770.0	4.8	165.0	-133.72	-326.4	-220.0	4,602.4	4,577.6	24.70	186.315		
2,300.0	2,296.4	12,545.1	6,770.0	5.1	165.0	-133.72	-326.4	-220.0	4,502.4	4,477.5	24.94	180.541		
2,400.0	2,396.1	12,545.1	6,770.0	5.3	165.0	-133.72	-326.4	-220.0	4,402.4	4,377.3	25.18	174.859		
2,500.0	2,495.7	12,545.1	6,770.0	5.6	165.0	-133.72	-326.4	-220.0	4,302.5	4,277.1	25.42	169.269		
2,600.0	2,595.3	12,545.1	6,770.0	5.8	165.0	-133.72	-326.4	-220.0	4,202.6	4,176.9	25.66	163.772		
2,700.0	2,694.9	12,545.1	6,770.0	6.1	165.0	-133.72	-326.4	-220.0	4,102.6	4,076.7	25.91	158.369		
2,800.0	2,794.5	12,545.1	6,770.0	6.4	165.0	-133.72	-326.4	-220.0	4,002.7	3,976.5	26.15	153.058		
2,900.0	2,894.2	12,545.1	6,770.0	6.6	165.0	-133.72	-326.4	-220.0	3,902.7	3,876.3	26.40	147.839		
3,000.0	2,993.8	12,545.1	6,770.0	6.9	165.0	-133.72	-326.4	-220.0	3,802.8	3,776.2	26.65	142.710		
3,100.0	3,093.4	12,545.1	6,770.0	7.2	165.0	-133.72	-326.4	-220.0	3,702.9	3,676.0	26.90	137.672		
3,200.0	3,193.0	12,545.1	6,770.0	7.4	165.0	-133.72	-326.4	-220.0	3,602.9	3,575.8	27.15	132.721		
3,300.0	3,292.6	12,545.1	6,770.0	7.7	165.0	-133.72	-326.4	-220.0	3,503.0	3,475.6	27.40	127.858		
3,400.0	3,392.3	12,545.1	6,770.0	8.0	165.0	-133.72	-326.4	-220.0	3,403.1	3,375.5	27.65	123.079		
3,500.0	3,491.9	12,545.1	6,770.0	8.3	165.0	-133.72	-326.4	-220.0	3,303.2	3,275.3	27.90	118.385		
3,600.0	3,591.5	12,545.1	6,770.0	8.5	165.0	-133.72	-326.4	-220.0	3,203.3	3,175.1	28.16	113.772		
3,700.0	3,691.1	12,545.1	6,770.0	8.8	165.0	-133.72	-326.4	-220.0	3,103.4	3,075.0	28.41	109.239		
3,800.0	3,790.7	12,545.1	6,770.0	9.1	165.0	-133.72	-326.4	-220.0	3,003.5	2,974.8	28.66	104.785		
3,900.0	3,890.4	12,545.1	6,770.0	9.3	165.0	-133.72	-326.4	-220.0	2,903.6	2,874.7	28.92	100.409		
4,000.0	3,990.0	12,545.1	6,770.0	9.6	165.0	-133.72	-326.4	-220.0	2,803.7	2,774.6	29.17	96.107		
4,100.0	4,089.6	12,545.1	6,770.0	9.9	165.0	-133.72	-326.4	-220.0	2,703.9	2,674.4	29.43	91.879		
4,200.0	4,189.2	12,545.1	6,770.0	10.2	165.0	-133.72	-326.4	-220.0	2,604.0	2,574.3	29.68	87.723		
4,300.0	4,288.8	12,545.1	6,770.0	10.5	165.0	-133.72	-326.4	-220.0	2,504.1	2,474.2	29.94	83.638		
4,400.0	4,388.5	12,545.1	6,770.0	10.7	165.0	-133.72	-326.4	-220.0	2,404.3	2,374.1	30.20	79.621		
4,500.0	4,488.1	12,545.1	6,770.0	11.0	165.0	-133.72	-326.4	-220.0	2,304.5	2,274.0	30.45	75.672		
4,600.0	4,587.7	12,545.1	6,770.0	11.3	165.0	-133.72	-326.4	-220.0	2,204.7	2,174.0	30.71	71.789		
4,700.0	4,687.3	12,545.1	6,770.0	11.6	165.0	-133.72	-326.4	-220.0	2,104.9	2,073.9	30.97	67.971		
4,800.0	4,786.9	12,545.1	6,770.0	11.8	165.0	-133.72	-326.4	-220.0	2,005.1	1,973.9	31.23	64.215		
4,900.0	4,886.6	12,545.1	6,770.0	12.1	165.0	-133.72	-326.4	-220.0	1,905.4	1,873.9	31.48	60.521		
5,000.0	4,986.2	12,544.8	6,770.0	12.4	165.0	-133.71	-326.4	-220.3	1,805.7	1,773.9	31.76	56.860		

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-302 - Wellbore #1 - Plan #3 (1-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,100.0	5,085.8	12,537.0	6,770.1	12.7	164.7	-133.44	-326.4	-228.1	1,706.0	1,673.5	32.48	52.524		
5,200.0	5,185.4	12,529.3	6,770.2	13.0	164.5	-133.13	-326.4	-235.8	1,606.3	1,573.0	33.28	48.262		
5,300.0	5,285.0	12,521.6	6,770.3	13.2	164.3	-132.78	-326.3	-243.5	1,506.6	1,472.4	34.18	44.074		
5,400.0	5,384.7	12,513.8	6,770.4	13.5	164.1	-132.38	-326.3	-251.3	1,406.9	1,371.7	35.20	39.963		
5,500.0	5,484.3	12,506.1	6,770.5	13.8	163.9	-131.91	-326.2	-259.0	1,307.2	1,270.8	36.38	35.935		
5,600.0	5,583.9	12,498.4	6,770.6	14.1	163.7	-131.38	-326.2	-266.7	1,207.5	1,169.8	37.74	31.994		
5,700.0	5,683.5	12,490.6	6,770.7	14.4	163.4	-130.75	-326.2	-274.5	1,107.8	1,068.4	39.35	28.151		
5,800.0	5,783.2	12,483.0	6,770.7	14.6	163.2	-122.84	-326.1	-282.1	1,008.1	949.1	58.98	17.093		
5,900.0	5,883.0	12,477.4	6,770.8	14.8	163.1	-91.52	-326.1	-287.6	908.3	775.3	133.03	6.828		
6,000.0	5,982.9	12,474.5	6,770.8	15.0	163.0	-60.84	-326.1	-290.6	808.5	635.2	173.30	4.666		
6,100.0	6,082.9	12,473.2	6,770.9	15.2	163.0	172.80	-326.1	-291.8	708.9	666.4	42.48	16.687		
6,200.0	6,182.9	12,475.0	6,770.8	15.3	163.0	125.77	-326.1	-290.1	609.5	461.4	148.03	4.117		
6,300.0	6,281.6	12,489.1	6,770.7	15.4	163.4	148.29	-326.1	-276.0	511.2	407.9	103.35	4.946		
6,400.0	6,377.5	12,516.0	6,770.3	15.4	164.1	154.62	-326.3	-249.1	415.9	327.1	88.79	4.684		
6,500.0	6,468.9	12,545.1	6,770.0	15.4	165.0	157.07	-326.4	-220.0	325.7	242.2	83.48	3.901		
6,600.0	6,554.3	12,545.1	6,770.0	15.4	165.0	160.38	-326.4	-220.0	249.5	173.6	75.97	3.285		
6,700.0	6,632.2	12,545.1	6,770.0	15.4	165.0	161.55	-326.4	-220.0	207.9	134.0	73.82	2.816		
6,726.1	6,651.1	12,545.1	6,770.0	15.5	165.0	161.60	-326.4	-220.0	205.8	131.9	73.88	2.786	CC, ES, SF	
6,800.0	6,701.2	12,545.1	6,770.0	15.5	165.0	161.20	-326.4	-220.0	221.8	146.6	75.22	2.949		
6,900.0	6,760.2	12,545.1	6,770.0	15.9	165.0	159.15	-326.4	-220.0	283.1	202.8	80.33	3.525		
7,000.0	6,808.2	12,545.1	6,770.0	16.8	165.0	154.18	-326.4	-220.0	368.2	276.1	92.05	4.000		
7,100.0	6,844.3	12,545.1	6,770.0	18.1	165.0	141.83	-326.4	-220.0	463.1	342.6	120.42	3.845		
7,200.0	6,868.0	12,545.1	6,770.0	19.7	165.0	104.29	-326.4	-220.0	561.6	382.3	179.36	3.131		
7,300.0	6,880.2	12,545.1	6,770.0	21.6	165.0	70.02	-326.4	-220.0	661.0	484.7	176.33	3.749		
7,400.0	6,888.3	12,545.1	6,770.0	23.6	165.0	42.97	-326.4	-220.0	760.4	625.8	134.65	5.647		
7,500.0	6,889.0	12,545.1	6,770.0	25.8	165.0	31.47	-326.4	-220.0	859.4	749.3	110.06	7.808		
7,600.0	6,888.3	12,545.1	6,770.0	28.1	165.0	31.47	-326.4	-220.0	958.4	847.1	111.30	8.612		
7,700.0	6,887.7	12,545.1	6,770.0	30.5	165.0	31.47	-326.4	-220.0	1,057.7	945.1	112.58	9.395		
7,800.0	6,887.1	12,545.1	6,770.0	32.9	165.0	31.47	-326.4	-220.0	1,157.0	1,043.1	113.91	10.157		
7,900.0	6,886.5	12,545.1	6,770.0	35.4	165.0	31.47	-326.4	-220.0	1,256.5	1,141.2	115.28	10.899		
8,000.0	6,885.9	12,545.1	6,770.0	37.9	165.0	31.47	-326.4	-220.0	1,356.1	1,239.4	116.68	11.622		
8,100.0	6,885.3	12,545.1	6,770.0	40.5	165.0	31.47	-326.4	-220.0	1,455.7	1,337.6	118.10	12.326		
8,200.0	6,884.7	12,545.1	6,770.0	43.1	165.0	31.47	-326.4	-220.0	1,555.3	1,435.8	119.54	13.011		
8,300.0	6,884.1	12,545.1	6,770.0	45.7	165.0	31.47	-326.4	-220.0	1,655.0	1,534.0	120.99	13.678		
8,400.0	6,883.5	12,545.1	6,770.0	48.4	165.0	31.47	-326.4	-220.0	1,754.7	1,632.3	122.47	14.328		
8,500.0	6,882.8	12,545.1	6,770.0	51.0	165.0	31.47	-326.4	-220.0	1,854.5	1,730.6	123.95	14.962		
8,600.0	6,882.2	12,545.1	6,770.0	53.7	165.0	31.47	-326.4	-220.0	1,954.3	1,828.9	125.44	15.579		
8,700.0	6,881.6	12,545.1	6,770.0	56.4	165.0	31.47	-326.4	-220.0	2,054.1	1,927.2	126.94	16.181		
8,800.0	6,881.0	12,545.1	6,770.0	59.1	165.0	31.47	-326.4	-220.0	2,153.9	2,025.5	128.46	16.768		
8,900.0	6,880.4	12,545.1	6,770.0	61.8	165.0	31.47	-326.4	-220.0	2,253.8	2,123.8	129.97	17.340		
9,000.0	6,879.8	12,545.1	6,770.0	64.5	165.0	31.47	-326.4	-220.0	2,353.6	2,222.1	131.50	17.899		
9,100.0	6,879.2	12,545.1	6,770.0	67.3	165.0	31.47	-326.4	-220.0	2,453.5	2,320.5	133.02	18.444		
9,200.0	6,878.6	12,545.1	6,770.0	70.0	165.0	31.47	-326.4	-220.0	2,553.4	2,418.8	134.56	18.976		
9,300.0	6,878.0	12,545.1	6,770.0	72.7	165.0	31.47	-326.4	-220.0	2,653.2	2,517.2	136.10	19.496		
9,400.0	6,877.3	12,545.1	6,770.0	75.5	165.0	31.47	-326.4	-220.0	2,753.1	2,615.5	137.64	20.003		
9,500.0	6,876.7	12,545.1	6,770.0	78.2	165.0	31.47	-326.4	-220.0	2,853.0	2,713.9	139.18	20.499		
9,600.0	6,876.1	12,545.1	6,770.0	81.0	165.0	31.47	-326.4	-220.0	2,953.0	2,812.2	140.73	20.983		
9,700.0	6,875.5	12,545.1	6,770.0	83.7	165.0	31.47	-326.4	-220.0	3,052.9	2,910.6	142.28	21.457		
9,800.0	6,874.9	12,545.1	6,770.0	86.5	165.0	31.47	-326.4	-220.0	3,152.8	3,009.0	143.83	21.920		
9,900.0	6,874.3	12,545.1	6,770.0	89.2	165.0	31.47	-326.4	-220.0	3,252.7	3,107.3	145.39	22.373		
10,000.0	6,873.7	12,545.1	6,770.0	92.0	165.0	31.47	-326.4	-220.0	3,352.6	3,205.7	146.94	22.816		

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-302 - Wellbore #1 - Plan #3 (1-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,873.1	12,545.1	6,770.0	94.8	165.0	31.47	31.47	-326.4	-220.0	3,452.6	3,304.1	148.50	23.249	
10,200.0	6,872.5	12,545.1	6,770.0	97.5	165.0	31.47	31.47	-326.4	-220.0	3,552.5	3,402.4	150.06	23.673	
10,300.0	6,871.8	12,545.1	6,770.0	100.3	165.0	31.47	31.47	-326.4	-220.0	3,652.4	3,500.8	151.63	24.089	
10,400.0	6,871.2	12,545.1	6,770.0	103.1	165.0	31.47	31.47	-326.4	-220.0	3,752.4	3,599.2	153.19	24.495	
10,500.0	6,870.6	12,545.1	6,770.0	105.9	165.0	31.47	31.47	-326.4	-220.0	3,852.3	3,697.6	154.75	24.893	
10,600.0	6,870.0	12,545.1	6,770.0	108.6	165.0	31.47	31.47	-326.4	-220.0	3,952.3	3,796.0	156.32	25.283	
10,700.0	6,869.4	12,545.1	6,770.0	111.4	165.0	31.47	31.47	-326.4	-220.0	4,052.2	3,894.4	157.89	25.665	
10,800.0	6,868.8	12,545.1	6,770.0	114.2	165.0	31.47	31.47	-326.4	-220.0	4,152.2	3,992.7	159.46	26.040	
10,900.0	6,868.2	12,545.1	6,770.0	117.0	165.0	31.47	31.47	-326.4	-220.0	4,252.1	4,091.1	161.03	26.407	
11,000.0	6,867.6	12,545.1	6,770.0	119.8	165.0	31.47	31.47	-326.4	-220.0	4,352.1	4,189.5	162.60	26.766	
11,100.0	6,867.0	12,545.1	6,770.0	122.6	165.0	31.47	31.47	-326.4	-220.0	4,452.1	4,287.9	164.17	27.119	
11,200.0	6,866.3	12,545.1	6,770.0	125.3	165.0	31.47	31.47	-326.4	-220.0	4,552.0	4,386.3	165.74	27.465	
11,300.0	6,865.7	12,545.1	6,770.0	128.1	165.0	31.47	31.47	-326.4	-220.0	4,652.0	4,484.7	167.31	27.804	
11,400.0	6,865.1	12,545.1	6,770.0	130.9	165.0	31.47	31.47	-326.4	-220.0	4,752.0	4,583.1	168.89	28.137	
11,500.0	6,864.5	12,545.1	6,770.0	133.7	165.0	31.47	31.47	-326.4	-220.0	4,851.9	4,681.5	170.46	28.464	
11,600.0	6,863.9	12,545.1	6,770.0	136.5	165.0	31.47	31.47	-326.4	-220.0	4,951.9	4,779.9	172.04	28.784	
11,700.0	6,863.3	12,545.1	6,770.0	139.3	165.0	31.47	31.47	-326.4	-220.0	5,051.9	4,878.2	173.61	29.099	
11,800.0	6,862.7	12,545.1	6,770.0	142.1	165.0	31.47	31.47	-326.4	-220.0	5,151.8	4,976.6	175.19	29.408	
11,900.0	6,862.1	12,545.1	6,770.0	144.9	165.0	31.47	31.47	-326.4	-220.0	5,251.8	5,075.0	176.76	29.711	
12,000.0	6,861.5	12,545.1	6,770.0	147.7	165.0	31.47	31.47	-326.4	-220.0	5,351.8	5,173.4	178.34	30.009	
12,100.0	6,860.9	12,545.1	6,770.0	150.4	165.0	31.47	31.47	-326.4	-220.0	5,451.7	5,271.8	179.92	30.301	
12,200.0	6,860.2	12,545.1	6,770.0	153.2	165.0	31.47	31.47	-326.4	-220.0	5,551.7	5,370.2	181.50	30.589	
12,300.0	6,859.6	12,545.1	6,770.0	156.0	165.0	31.47	31.47	-326.4	-220.0	5,651.7	5,468.6	183.07	30.871	
12,400.0	6,859.0	12,545.1	6,770.0	158.8	165.0	31.47	31.47	-326.4	-220.0	5,751.7	5,567.0	184.65	31.148	
12,500.0	6,858.4	12,545.1	6,770.0	161.6	165.0	31.47	31.47	-326.4	-220.0	5,851.7	5,665.4	186.23	31.421	
12,600.0	6,857.8	12,545.1	6,770.0	164.4	165.0	31.47	31.47	-326.4	-220.0	5,951.6	5,763.8	187.81	31.689	
12,700.0	6,857.2	12,545.1	6,770.0	167.2	165.0	31.47	31.47	-326.4	-220.0	6,051.6	5,862.2	189.39	31.953	
12,800.0	6,856.6	12,545.1	6,770.0	170.0	165.0	31.47	31.47	-326.4	-220.0	6,151.6	5,960.6	190.97	32.212	
12,900.0	6,856.0	12,545.1	6,770.0	172.8	165.0	31.47	31.47	-326.4	-220.0	6,251.6	6,059.0	192.55	32.467	
13,000.0	6,855.4	12,545.1	6,770.0	175.6	165.0	31.47	31.47	-326.4	-220.0	6,351.5	6,157.4	194.13	32.717	
13,100.0	6,854.7	12,545.1	6,770.0	178.4	165.0	31.47	31.47	-326.4	-220.0	6,451.5	6,255.8	195.71	32.964	
13,200.0	6,854.1	12,545.1	6,770.0	181.2	165.0	31.47	31.47	-326.4	-220.0	6,551.5	6,354.2	197.30	33.207	
13,221.6	6,854.0	12,545.1	6,770.0	181.8	165.0	31.47	31.47	-326.4	-220.0	6,573.1	6,375.4	197.64	33.258	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft			
Survey Program: 7035-UNKNOWN														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
0.0	0.0	0.0	0.0	0.0	0.0	75.21	236.8	897.1	928.0								
100.0	100.0	85.0	85.0	0.1	1.7	75.21	236.8	897.1	927.9	926.0	1.81	511.895					
200.0	200.0	185.0	185.0	0.3	3.7	75.21	236.8	897.1	927.9	923.8	4.04	229.817					
300.0	300.0	285.0	285.0	0.6	5.7	75.21	236.8	897.1	927.9	921.6	6.26	148.169					
400.0	400.0	385.0	385.0	0.8	7.7	75.21	236.8	897.1	927.9	919.4	8.49	109.328					
500.0	500.0	485.0	485.0	1.0	9.7	75.21	236.8	897.1	927.9	917.1	10.71	86.621					
600.0	600.0	585.0	585.0	1.2	11.7	75.21	236.8	897.1	927.9	914.9	12.94	71.724					
700.0	700.0	685.0	685.0	1.5	13.7	75.21	236.8	897.1	927.9	912.7	15.16	61.199					
800.0	800.0	785.0	785.0	1.7	15.7	75.21	236.8	897.1	927.9	910.5	17.39	53.368					
900.0	900.0	885.0	885.0	1.9	17.7	75.21	236.8	897.1	927.9	908.2	19.61	47.314					
1,000.0	1,000.0	985.0	985.0	2.1	19.7	75.21	236.8	897.1	927.9	906.0	21.84	42.493					
1,100.0	1,100.0	1,085.0	1,085.0	2.4	21.7	75.21	236.8	897.1	927.9	903.8	24.06	38.564					
1,200.0	1,200.0	1,185.0	1,185.0	2.6	23.7	75.21	236.8	897.1	927.9	901.6	26.28	35.300					
1,300.0	1,300.0	1,285.0	1,285.0	2.8	25.7	-153.75	236.8	897.1	929.4	900.9	28.47	32.643					
1,400.0	1,399.8	1,384.8	1,384.8	3.0	27.7	-153.85	236.8	897.1	934.1	903.5	30.61	30.520					
1,500.0	1,499.5	1,484.5	1,484.5	3.2	29.7	-154.04	236.8	897.1	941.6	908.8	32.75	28.751					
1,600.0	1,599.1	1,584.1	1,584.1	3.4	31.7	-154.27	236.8	897.1	949.4	914.5	34.93	27.180					
1,700.0	1,698.7	1,683.7	1,683.7	3.6	33.7	-154.49	236.8	897.1	957.3	920.1	37.12	25.789					
1,800.0	1,798.4	1,783.4	1,783.4	3.8	35.7	-154.72	236.8	897.1	965.1	925.8	39.31	24.551					
1,900.0	1,898.0	1,883.0	1,883.0	4.1	37.7	-154.94	236.8	897.1	973.0	931.5	41.51	23.442					
2,000.0	1,997.6	1,982.6	1,982.6	4.3	39.7	-155.15	236.8	897.1	980.9	937.2	43.71	22.443					
2,100.0	2,097.2	2,082.2	2,082.2	4.6	41.6	-155.36	236.8	897.1	988.9	942.9	45.91	21.538					
2,200.0	2,196.8	2,181.8	2,181.8	4.8	43.6	-155.57	236.8	897.1	996.8	948.7	48.12	20.716					
2,300.0	2,296.4	2,281.4	2,281.4	5.1	45.6	-155.78	236.8	897.1	1,004.7	954.4	50.32	19.965					
2,400.0	2,396.1	2,381.1	2,381.1	5.3	47.6	-155.98	236.8	897.1	1,012.7	960.2	52.53	19.277					
2,500.0	2,495.7	2,480.7	2,480.7	5.6	49.6	-156.18	236.8	897.1	1,020.7	965.9	54.74	18.644					
2,600.0	2,595.3	2,580.3	2,580.3	5.8	51.6	-156.37	236.8	897.1	1,028.6	971.7	56.96	18.060					
2,700.0	2,694.9	2,679.9	2,679.9	6.1	53.6	-156.57	236.8	897.1	1,036.6	977.5	59.17	17.520					
2,800.0	2,794.5	2,779.5	2,779.5	6.4	55.6	-156.76	236.8	897.1	1,044.6	983.3	61.38	17.018					
2,900.0	2,894.2	2,879.2	2,879.2	6.6	57.6	-156.94	236.8	897.1	1,052.7	989.1	63.60	16.552					
3,000.0	2,993.8	2,978.8	2,978.8	6.9	59.6	-157.13	236.8	897.1	1,060.7	994.9	65.81	16.116					
3,100.0	3,093.4	3,078.4	3,078.4	7.2	61.6	-157.31	236.8	897.1	1,068.7	1,000.7	68.03	15.710					
3,200.0	3,193.0	3,178.0	3,178.0	7.4	63.6	-157.49	236.8	897.1	1,076.8	1,006.5	70.25	15.328					
3,300.0	3,292.6	3,277.6	3,277.6	7.7	65.6	-157.66	236.8	897.1	1,084.8	1,012.4	72.46	14.971					
3,400.0	3,392.3	3,377.3	3,377.3	8.0	67.5	-157.84	236.8	897.1	1,092.9	1,018.2	74.68	14.634					
3,500.0	3,491.9	3,476.9	3,476.9	8.3	69.5	-158.01	236.8	897.1	1,101.0	1,024.1	76.90	14.317					
3,600.0	3,591.5	3,576.5	3,576.5	8.5	71.5	-158.18	236.8	897.1	1,109.1	1,030.0	79.12	14.018					
3,700.0	3,691.1	3,676.1	3,676.1	8.8	73.5	-158.34	236.8	897.1	1,117.2	1,035.8	81.34	13.735					
3,800.0	3,790.7	3,775.7	3,775.7	9.1	75.5	-158.51	236.8	897.1	1,125.3	1,041.7	83.55	13.468					
3,900.0	3,890.4	3,875.4	3,875.4	9.3	77.5	-158.67	236.8	897.1	1,133.4	1,047.6	85.77	13.214					
4,000.0	3,990.0	3,975.0	3,975.0	9.6	79.5	-158.83	236.8	897.1	1,141.5	1,053.5	87.99	12.973					
4,100.0	4,089.6	4,074.6	4,074.6	9.9	81.5	-158.98	236.8	897.1	1,149.6	1,059.4	90.21	12.744					
4,200.0	4,189.2	4,174.2	4,174.2	10.2	83.5	-159.14	236.8	897.1	1,157.8	1,065.4	92.43	12.526					
4,300.0	4,288.8	4,273.8	4,273.8	10.5	85.5	-159.29	236.8	897.1	1,165.9	1,071.3	94.65	12.319					
4,400.0	4,388.5	4,373.5	4,373.5	10.7	87.5	-159.44	236.8	897.1	1,174.1	1,077.2	96.87	12.121					
4,500.0	4,488.1	4,473.1	4,473.1	11.0	89.5	-159.59	236.8	897.1	1,182.3	1,083.2	99.09	11.932					
4,600.0	4,587.7	4,572.7	4,572.7	11.3	91.5	-159.74	236.8	897.1	1,190.4	1,089.1	101.31	11.751					
4,700.0	4,687.3	4,672.3	4,672.3	11.6	93.4	-159.88	236.8	897.1	1,198.6	1,095.1	103.53	11.578					
4,800.0	4,786.9	4,771.9	4,771.9	11.8	95.4	-160.02	236.8	897.1	1,206.8	1,101.1	105.75	11.412					
4,900.0	4,886.6	4,871.6	4,871.6	12.1	97.4	-160.16	236.8	897.1	1,215.0	1,107.0	107.97	11.254					
5,000.0	4,986.2	4,971.2	4,971.2	12.4	99.4	-160.30	236.8	897.1	1,223.2	1,113.0	110.19	11.101					

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7035-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,085.8	5,070.8	5,070.8	12.7	101.4	-160.44		236.8	897.1	1,231.4	1,119.0	112.40	10.955	
5,200.0	5,185.4	5,170.4	5,170.4	13.0	103.4	-160.57		236.8	897.1	1,239.6	1,125.0	114.62	10.815	
5,300.0	5,285.0	5,270.0	5,270.0	13.2	105.4	-160.71		236.8	897.1	1,247.9	1,131.0	116.84	10.680	
5,400.0	5,384.7	5,369.7	5,369.7	13.5	107.4	-160.84		236.8	897.1	1,256.1	1,137.0	119.06	10.550	
5,500.0	5,484.3	5,469.3	5,469.3	13.8	109.4	-160.97		236.8	897.1	1,264.3	1,143.0	121.28	10.425	
5,600.0	5,583.9	5,568.9	5,568.9	14.1	111.4	-161.09		236.8	897.1	1,272.6	1,149.1	123.50	10.304	
5,700.0	5,683.5	5,668.5	5,668.5	14.4	113.4	-161.22		236.8	897.1	1,280.8	1,155.1	125.72	10.188	
5,800.0	5,783.2	5,768.2	5,768.2	14.6	115.4	-161.36		236.8	897.1	1,288.9	1,160.9	128.03	10.067	
5,900.0	5,883.0	5,868.0	5,868.0	14.8	117.4	-161.48		236.8	897.1	1,294.4	1,164.0	130.42	9.925	
6,000.0	5,982.9	5,967.9	5,967.9	15.0	119.4	-161.52		236.8	897.1	1,296.6	1,164.0	132.67	9.774	
6,100.0	6,082.9	6,067.9	6,067.9	15.2	121.4	-161.52	67.40	236.8	897.1	1,296.7	1,160.4	136.32	9.512	
6,200.0	6,182.9	6,167.9	6,167.9	15.3	123.4	-22.73		236.8	897.1	1,293.9	1,157.4	136.54	9.477	
6,300.0	6,281.6	6,266.6	6,266.6	15.4	125.3	-23.42		236.8	897.1	1,279.8	1,143.6	136.28	9.391	
6,400.0	6,377.5	6,362.5	6,362.5	15.4	127.3	-24.75		236.8	897.1	1,254.0	1,119.9	134.11	9.351	
6,500.0	6,468.9	6,453.9	6,453.9	15.4	129.1	-26.85		236.8	897.1	1,217.1	1,086.8	130.37	9.336	
6,600.0	6,554.3	6,539.3	6,539.3	15.4	130.8	-29.90		236.8	897.1	1,169.9	1,044.1	125.81	9.300	
6,700.0	6,632.2	6,617.2	6,617.2	15.4	132.3	-34.19		236.8	897.1	1,113.6	991.8	121.81	9.142	
6,800.0	6,701.2	6,686.2	6,686.2	15.5	133.7	-40.04		236.8	897.1	1,049.5	929.0	120.50	8.710	
6,900.0	6,760.2	6,745.2	6,745.2	15.9	134.9	-47.78		236.8	897.1	979.2	855.1	124.14	7.888	
7,000.0	6,808.2	6,793.2	6,793.2	16.8	135.9	-57.42		236.8	897.1	904.9	771.7	133.23	6.792	
7,100.0	6,844.3	6,829.3	6,829.3	18.1	136.6	-68.29		236.8	897.1	828.7	684.0	144.71	5.727	
7,200.0	6,868.0	6,853.0	6,853.0	19.7	137.1	-78.92		236.8	897.1	753.4	599.5	153.90	4.895	
7,300.0	6,880.2	6,865.2	6,865.2	21.6	137.3	-84.42		236.8	897.1	682.1	524.0	158.09	4.315	
7,400.0	6,888.3	6,873.3	6,873.3	23.6	137.5	-88.29		236.8	897.1	618.4	457.4	160.99	3.841	
7,500.0	6,889.0	6,874.0	6,874.0	25.8	137.5	-90.19		236.8	897.1	565.0	401.7	163.25	3.461	
7,600.0	6,888.3	6,873.3	6,873.3	28.1	137.5	-90.12		236.8	897.1	525.3	359.8	165.52	3.174	
7,700.0	6,887.7	6,872.7	6,872.7	30.5	137.5	-90.05		236.8	897.1	502.7	334.8	167.87	2.995	
7,766.2	6,887.3	6,872.3	6,872.3	32.1	137.4	-90.00		236.8	897.1	498.3	328.8	169.47	2.940 CC, ES	
7,800.0	6,887.1	6,872.1	6,872.1	32.9	137.4	-89.98		236.8	897.1	499.5	329.2	170.29	2.933 SF	
7,900.0	6,886.5	6,871.5	6,871.5	35.4	137.4	-89.91		236.8	897.1	516.0	343.2	172.77	2.986	
8,000.0	6,885.9	6,870.9	6,870.9	37.9	137.4	-89.84		236.8	897.1	550.4	375.1	175.29	3.140	
8,100.0	6,885.3	6,870.3	6,870.3	40.5	137.4	-89.77		236.8	897.1	599.8	421.9	177.85	3.372	
8,200.0	6,884.7	6,869.7	6,869.7	43.1	137.4	-89.70		236.8	897.1	660.7	480.2	180.44	3.662	
8,300.0	6,884.1	6,869.1	6,869.1	45.7	137.4	-89.63		236.8	897.1	730.2	547.2	183.05	3.989	
8,400.0	6,883.5	6,868.5	6,868.5	48.4	137.4	-89.55		236.8	897.1	806.2	620.5	185.68	4.342	
8,500.0	6,882.8	6,867.8	6,867.8	51.0	137.4	-89.48		236.8	897.1	887.0	698.7	188.33	4.710	
8,600.0	6,882.2	6,867.2	6,867.2	53.7	137.3	-89.41		236.8	897.1	971.3	780.4	190.99	5.086	
8,700.0	6,881.6	6,866.6	6,866.6	56.4	137.3	-89.34		236.8	897.1	1,058.4	864.8	193.67	5.465	
8,800.0	6,881.0	6,866.0	6,866.0	59.1	137.3	-89.27		236.8	897.1	1,147.6	951.3	196.35	5.845	
8,900.0	6,880.4	6,865.4	6,865.4	61.8	137.3	-89.20		236.8	897.1	1,238.5	1,039.4	199.05	6.222	
9,000.0	6,879.8	6,864.8	6,864.8	64.5	137.3	-89.13		236.8	897.1	1,330.6	1,128.9	201.75	6.595	
9,100.0	6,879.2	6,864.2	6,864.2	67.3	137.3	-89.06		236.8	897.1	1,423.8	1,219.4	204.46	6.964	
9,200.0	6,878.6	6,863.6	6,863.6	70.0	137.3	-88.99		236.8	897.1	1,517.9	1,310.7	207.18	7.327	
9,300.0	6,878.0	6,863.0	6,863.0	72.7	137.3	-88.92		236.8	897.1	1,612.7	1,402.8	209.90	7.683	
9,400.0	6,877.3	6,862.3	6,862.3	75.5	137.2	-88.85		236.8	897.1	1,708.1	1,495.4	212.63	8.033	
9,500.0	6,876.7	6,861.7	6,861.7	78.2	137.2	-88.78		236.8	897.1	1,804.0	1,588.6	215.36	8.377	
9,600.0	6,876.1	6,861.1	6,861.1	81.0	137.2	-88.71		236.8	897.1	1,900.3	1,682.2	218.09	8.713	
9,700.0	6,875.5	6,860.5	6,860.5	83.7	137.2	-88.64		236.8	897.1	1,996.9	1,776.1	220.83	9.043	
9,800.0	6,874.9	6,859.9	6,859.9	86.5	137.2	-88.57		236.8	897.1	2,093.9	1,870.4	223.57	9.366	
9,900.0	6,874.3	6,859.3	6,859.3	89.2	137.2	-88.50		236.8	897.1	2,191.2	1,964.9	226.31	9.682	
10,000.0	6,873.7	6,858.7	6,858.7	92.0	137.2	-88.43		236.8	897.1	2,288.7	2,059.6	229.06	9.992	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft			
Survey Program: 7035-UNKNOWN														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis				Distance						Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
10,100.0	6,873.1	6,858.1	6,858.1	94.8	137.2	-88.36	236.8	897.1	2,386.4	2,154.6	231.81	10.295					
10,200.0	6,872.5	6,857.5	6,857.5	97.5	137.1	-88.29	236.8	897.1	2,484.2	2,249.7	234.55	10.591					
10,300.0	6,871.8	6,856.8	6,856.8	100.3	137.1	-88.22	236.8	897.1	2,582.3	2,345.0	237.31	10.882					
10,400.0	6,871.2	6,856.2	6,856.2	103.1	137.1	-88.15	236.8	897.1	2,680.5	2,440.4	240.06	11.166					
10,500.0	6,870.6	6,855.6	6,855.6	105.9	137.1	-88.08	236.8	897.1	2,778.8	2,536.0	242.81	11.444					
10,600.0	6,870.0	6,855.0	6,855.0	108.6	137.1	-88.01	236.8	897.1	2,877.2	2,631.7	245.56	11.717					
10,700.0	6,869.4	6,854.4	6,854.4	111.4	137.1	-87.94	236.8	897.1	2,975.8	2,727.4	248.32	11.984					
10,800.0	6,868.8	6,853.8	6,853.8	114.2	137.1	-87.87	236.8	897.1	3,074.4	2,823.3	251.08	12.245					
10,900.0	6,868.2	6,853.2	6,853.2	117.0	137.1	-87.80	236.8	897.1	3,173.1	2,919.3	253.83	12.501					
11,000.0	6,867.6	6,852.6	6,852.6	119.8	137.1	-87.73	236.8	897.1	3,271.9	3,015.3	256.59	12.751					
11,100.0	6,867.0	6,852.0	6,852.0	122.6	137.0	-87.66	236.8	897.1	3,370.8	3,111.4	259.35	12.997					
11,200.0	6,866.3	6,851.3	6,851.3	125.3	137.0	-87.59	236.8	897.1	3,469.7	3,207.6	262.11	13.238					
11,300.0	6,865.7	6,850.7	6,850.7	128.1	137.0	-87.52	236.8	897.1	3,568.7	3,303.8	264.87	13.474					
11,400.0	6,865.1	6,850.1	6,850.1	130.9	137.0	-87.45	236.8	897.1	3,667.7	3,400.1	267.63	13.705					
11,500.0	6,864.5	6,849.5	6,849.5	133.7	137.0	-87.38	236.8	897.1	3,766.8	3,496.5	270.38	13.931					
11,600.0	6,863.9	6,848.9	6,848.9	136.5	137.0	-87.31	236.8	897.1	3,866.0	3,592.8	273.14	14.154					
11,700.0	6,863.3	6,848.3	6,848.3	139.3	137.0	-87.24	236.8	897.1	3,965.2	3,689.3	275.90	14.372					
11,800.0	6,862.7	6,847.7	6,847.7	142.1	137.0	-87.17	236.8	897.1	4,064.4	3,785.7	278.66	14.585					
11,900.0	6,862.1	6,847.1	6,847.1	144.9	136.9	-87.10	236.8	897.1	4,163.7	3,882.2	281.42	14.795					
12,000.0	6,861.5	6,846.5	6,846.5	147.7	136.9	-87.03	236.8	897.1	4,262.9	3,978.8	284.18	15.001					
12,100.0	6,860.9	6,845.9	6,845.9	150.4	136.9	-86.96	236.8	897.1	4,362.3	4,075.3	286.94	15.203					
12,200.0	6,860.2	6,845.2	6,845.2	153.2	136.9	-86.89	236.8	897.1	4,461.6	4,171.9	289.70	15.401					
12,300.0	6,859.6	6,844.6	6,844.6	156.0	136.9	-86.82	236.8	897.1	4,561.0	4,268.6	292.46	15.595					
12,400.0	6,859.0	6,844.0	6,844.0	158.8	136.9	-86.75	236.8	897.1	4,660.4	4,365.2	295.22	15.786					
12,500.0	6,858.4	6,843.4	6,843.4	161.6	136.9	-86.68	236.8	897.1	4,759.9	4,461.9	297.98	15.974					
12,600.0	6,857.8	6,842.8	6,842.8	164.4	136.9	-86.61	236.8	897.1	4,859.3	4,558.6	300.74	16.158					
12,700.0	6,857.2	6,842.2	6,842.2	167.2	136.8	-86.54	236.8	897.1	4,958.8	4,655.3	303.49	16.339					
12,800.0	6,856.6	6,841.6	6,841.6	170.0	136.8	-86.47	236.8	897.1	5,058.3	4,752.1	306.25	16.517					
12,900.0	6,856.0	6,841.0	6,841.0	172.8	136.8	-86.40	236.8	897.1	5,157.8	4,848.8	309.01	16.692					
13,000.0	6,855.4	6,840.4	6,840.4	175.6	136.8	-86.33	236.8	897.1	5,257.4	4,945.6	311.77	16.863					
13,100.0	6,854.7	6,839.7	6,839.7	178.4	136.8	-86.26	236.8	897.1	5,356.9	5,042.4	314.52	17.032					
13,200.0	6,854.1	6,839.1	6,839.1	181.2	136.8	-86.19	236.8	897.1	5,456.5	5,139.2	317.28	17.198					
13,221.6	6,854.0	6,839.0	6,839.0	181.8	136.8	-86.17	236.8	897.1	5,478.0	5,160.1	317.87	17.233					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore													Offset Site Error:	0.0 ft
Survey Program: 7030-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-52.97	-52.97	273.2	-362.2	454.5				
100.0	100.0	73.0	73.0	0.1	1.5	-52.97	-52.97	273.2	-362.2	453.7	452.1	1.57	288.507	
200.0	200.0	173.0	173.0	0.3	3.5	-52.97	-52.97	273.2	-362.2	453.7	449.9	3.80	119.478	
300.0	300.0	273.0	273.0	0.6	5.5	-52.97	-52.97	273.2	-362.2	453.7	447.7	6.02	75.339	
400.0	400.0	373.0	373.0	0.8	7.5	-52.97	-52.97	273.2	-362.2	453.7	445.5	8.25	55.015	
500.0	500.0	473.0	473.0	1.0	9.5	-52.97	-52.97	273.2	-362.2	453.7	443.2	10.47	43.327	
600.0	600.0	573.0	573.0	1.2	11.5	-52.97	-52.97	273.2	-362.2	453.7	441.0	12.70	35.735	
700.0	700.0	673.0	673.0	1.5	13.5	-52.97	-52.97	273.2	-362.2	453.7	438.8	14.92	30.406	
800.0	800.0	773.0	773.0	1.7	15.5	-52.97	-52.97	273.2	-362.2	453.7	436.6	17.15	26.461	
900.0	900.0	873.0	873.0	1.9	17.5	-52.97	-52.97	273.2	-362.2	453.7	434.3	19.37	23.422	
1,000.0	1,000.0	973.0	973.0	2.1	19.5	-52.97	-52.97	273.2	-362.2	453.7	432.1	21.60	21.009	
1,100.0	1,100.0	1,073.0	1,073.0	2.4	21.5	-52.97	-52.97	273.2	-362.2	453.7	429.9	23.82	19.047	
1,200.0	1,200.0	1,173.0	1,173.0	2.6	23.5	-52.97	-52.97	273.2	-362.2	453.7	427.7	26.04	17.420	
1,300.0	1,300.0	1,273.0	1,273.0	2.8	25.5	78.33	78.33	273.2	-362.2	453.3	425.1	28.24	16.050	
1,400.0	1,399.8	1,372.8	1,372.8	3.0	27.5	79.00	79.00	273.2	-362.2	452.3	421.9	30.42	14.867	
1,500.0	1,499.5	1,472.5	1,472.5	3.2	29.5	80.04	80.04	273.2	-362.2	450.8	418.2	32.61	13.822	
1,600.0	1,599.1	1,572.1	1,572.1	3.4	31.4	81.13	81.13	273.2	-362.2	449.4	414.6	34.82	12.906	
1,700.0	1,698.7	1,671.7	1,671.7	3.6	33.4	82.23	82.23	273.2	-362.2	448.1	411.1	37.03	12.101	
1,800.0	1,798.4	1,771.4	1,771.4	3.8	35.4	83.33	83.33	273.2	-362.2	447.0	407.8	39.25	11.388	
1,900.0	1,898.0	1,871.0	1,871.0	4.1	37.4	84.44	84.44	273.2	-362.2	446.1	404.6	41.48	10.754	
2,000.0	1,997.6	1,970.6	1,970.6	4.3	39.4	85.55	85.55	273.2	-362.2	445.3	401.6	43.72	10.186	
2,100.0	2,097.2	2,070.2	2,070.2	4.6	41.4	86.67	86.67	273.2	-362.2	444.7	398.8	45.96	9.677	
2,200.0	2,196.8	2,169.8	2,169.8	4.8	43.4	87.78	87.78	273.2	-362.2	444.3	396.1	48.20	9.218	
2,300.0	2,296.4	2,269.4	2,269.4	5.1	45.4	88.90	88.90	273.2	-362.2	444.0	393.6	50.45	8.802	
2,397.9	2,394.0	2,367.0	2,367.0	5.3	47.3	90.00	90.00	273.2	-362.2	444.0	391.3	52.65	8.433 CC	
2,400.0	2,396.1	2,369.1	2,369.1	5.3	47.4	90.02	90.02	273.2	-362.2	444.0	391.3	52.70	8.425	
2,500.0	2,495.7	2,468.7	2,468.7	5.6	49.4	91.14	91.14	273.2	-362.2	444.1	389.1	54.95	8.081	
2,600.0	2,595.3	2,568.3	2,568.3	5.8	51.4	92.26	92.26	273.2	-362.2	444.3	387.1	57.20	7.768	
2,700.0	2,694.9	2,667.9	2,667.9	6.1	53.4	93.38	93.38	273.2	-362.2	444.7	385.3	59.46	7.480	
2,800.0	2,794.5	2,767.5	2,767.5	6.4	55.4	94.50	94.50	273.2	-362.2	445.3	383.6	61.71	7.217	
2,900.0	2,894.2	2,867.2	2,867.2	6.6	57.3	95.61	95.61	273.2	-362.2	446.1	382.1	63.97	6.974	
3,000.0	2,993.8	2,966.8	2,966.8	6.9	59.3	96.71	96.71	273.2	-362.2	447.1	380.8	66.22	6.751	
3,100.0	3,093.4	3,066.4	3,066.4	7.2	61.3	97.82	97.82	273.2	-362.2	448.2	379.7	68.48	6.544	
3,200.0	3,193.0	3,166.0	3,166.0	7.4	63.3	98.91	98.91	273.2	-362.2	449.4	378.7	70.74	6.354	
3,300.0	3,292.6	3,265.6	3,265.6	7.7	65.3	100.00	100.00	273.2	-362.2	450.9	377.9	72.99	6.177	
3,400.0	3,392.3	3,365.3	3,365.3	8.0	67.3	101.09	101.09	273.2	-362.2	452.5	377.2	75.25	6.013	
3,500.0	3,491.9	3,464.9	3,464.9	8.3	69.3	102.16	102.16	273.2	-362.2	454.2	376.7	77.50	5.861	
3,600.0	3,591.5	3,564.5	3,564.5	8.5	71.3	103.23	103.23	273.2	-362.2	456.2	376.4	79.76	5.719	
3,700.0	3,691.1	3,664.1	3,664.1	8.8	73.3	104.28	104.28	273.2	-362.2	458.2	376.2	82.01	5.587	
3,800.0	3,790.7	3,763.7	3,763.7	9.1	75.3	105.33	105.33	273.2	-362.2	460.5	376.2	84.26	5.465 ES	
3,900.0	3,890.4	3,863.4	3,863.4	9.3	77.3	106.37	106.37	273.2	-362.2	462.9	376.3	86.51	5.350	
4,000.0	3,990.0	3,963.0	3,963.0	9.6	79.3	107.39	107.39	273.2	-362.2	465.4	376.6	88.76	5.243	
4,100.0	4,089.6	4,062.6	4,062.6	9.9	81.3	108.41	108.41	273.2	-362.2	468.1	377.1	91.01	5.143	
4,200.0	4,189.2	4,162.2	4,162.2	10.2	83.2	109.41	109.41	273.2	-362.2	470.9	377.7	93.26	5.049	
4,300.0	4,288.8	4,261.8	4,261.8	10.5	85.2	110.40	110.40	273.2	-362.2	473.9	378.4	95.51	4.962	
4,400.0	4,388.5	4,361.5	4,361.5	10.7	87.2	111.38	111.38	273.2	-362.2	477.0	379.3	97.75	4.880	
4,500.0	4,488.1	4,461.1	4,461.1	11.0	89.2	112.34	112.34	273.2	-362.2	480.3	380.3	99.99	4.803	
4,600.0	4,587.7	4,560.7	4,560.7	11.3	91.2	113.29	113.29	273.2	-362.2	483.7	381.4	102.24	4.731	
4,700.0	4,687.3	4,660.3	4,660.3	11.6	93.2	114.23	114.23	273.2	-362.2	487.2	382.7	104.48	4.663	
4,800.0	4,786.9	4,759.9	4,759.9	11.8	95.2	115.16	115.16	273.2	-362.2	490.8	384.1	106.71	4.599	
4,900.0	4,886.6	4,859.6	4,859.6	12.1	97.2	116.07	116.07	273.2	-362.2	494.6	385.7	108.95	4.540	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore													Offset Site Error:	0.0 ft
Survey Program: 7030-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,986.2	4,959.2	4,959.2	12.4	99.2	116.97		273.2	-362.2	498.5	387.3	111.19	4.483	
5,100.0	5,085.8	5,058.8	5,058.8	12.7	101.2	117.85		273.2	-362.2	502.5	389.1	113.42	4.431	
5,200.0	5,185.4	5,158.4	5,158.4	13.0	103.2	118.72		273.2	-362.2	506.7	391.0	115.66	4.381	
5,300.0	5,285.0	5,258.0	5,258.0	13.2	105.2	119.57		273.2	-362.2	510.9	393.0	117.89	4.334	
5,400.0	5,384.7	5,357.7	5,357.7	13.5	107.2	120.41		273.2	-362.2	515.3	395.2	120.12	4.290	
5,500.0	5,484.3	5,457.3	5,457.3	13.8	109.1	121.24		273.2	-362.2	519.8	397.4	122.35	4.248	
5,600.0	5,583.9	5,556.9	5,556.9	14.1	111.1	122.05		273.2	-362.2	524.4	399.8	124.58	4.209	
5,700.0	5,683.5	5,656.5	5,656.5	14.4	113.1	122.85		273.2	-362.2	529.0	402.2	126.80	4.172	
5,800.0	5,783.2	5,756.2	5,756.2	14.6	115.1	123.64		273.2	-362.2	533.7	404.7	129.05	4.136	
5,900.0	5,883.0	5,856.0	5,856.0	14.8	117.1	124.21		273.2	-362.2	537.0	405.7	131.30	4.090	
6,000.0	5,982.9	5,955.9	5,955.9	15.0	119.1	124.44		273.2	-362.2	538.3	404.8	133.49	4.033	
6,100.0	6,082.9	6,055.9	6,055.9	15.2	121.1	-6.63		273.2	-362.2	538.3	403.3	135.06	3.986	
6,100.0	6,082.9	6,055.9	6,055.9	15.2	121.1	-6.63		273.2	-362.2	538.3	403.3	135.06	3.986	
6,200.0	6,182.9	6,155.9	6,155.9	15.3	123.1	-96.92		273.2	-362.2	538.7	400.9	137.82	3.909	
6,300.0	6,281.6	6,254.6	6,254.6	15.4	125.1	-98.36		273.2	-362.2	540.8	400.9	139.86	3.866	
6,400.0	6,377.5	6,350.5	6,350.5	15.4	127.0	-100.79		273.2	-362.2	545.6	404.0	141.64	3.852 SF	
6,500.0	6,468.9	6,441.9	6,441.9	15.4	128.8	-103.86		273.2	-362.2	555.1	412.1	142.95	3.883	
6,600.0	6,554.3	6,527.3	6,527.3	15.4	130.5	-107.09		273.2	-362.2	571.2	427.6	143.56	3.979	
6,700.0	6,632.2	6,605.2	6,605.2	15.4	132.1	-109.94		273.2	-362.2	596.1	452.7	143.42	4.156	
6,800.0	6,701.2	6,674.2	6,674.2	15.5	133.5	-111.95		273.2	-362.2	631.4	488.5	142.88	4.419	
6,900.0	6,760.2	6,733.2	6,733.2	15.9	134.7	-112.67		273.2	-362.2	677.7	535.0	142.72	4.748	
7,000.0	6,808.2	6,781.2	6,781.2	16.8	135.6	-111.67		273.2	-362.2	734.8	590.8	143.98	5.104	
7,100.0	6,844.3	6,817.3	6,817.3	18.1	136.3	-108.51		273.2	-362.2	801.6	654.1	147.49	5.435	
7,200.0	6,868.0	6,841.0	6,841.0	19.7	136.8	-102.63		273.2	-362.2	876.3	723.3	153.05	5.726	
7,300.0	6,880.2	6,853.2	6,853.2	21.6	137.1	-98.82		273.2	-362.2	956.8	799.9	156.90	6.098	
7,400.0	6,888.3	6,861.3	6,861.3	23.6	137.2	-93.88		273.2	-362.2	1,041.0	880.5	160.51	6.485	
7,500.0	6,889.0	6,862.0	6,862.0	25.8	137.2	-89.35		273.2	-362.2	1,127.9	964.9	162.99	6.920	
7,600.0	6,888.3	6,861.3	6,861.3	28.1	137.2	-89.28		273.2	-362.2	1,216.9	1,051.6	165.26	7.364	
7,700.0	6,887.7	6,860.7	6,860.7	30.5	137.2	-89.22		273.2	-362.2	1,307.5	1,139.9	167.61	7.801	
7,800.0	6,887.1	6,860.1	6,860.1	32.9	137.2	-89.15		273.2	-362.2	1,399.3	1,229.3	170.03	8.230	
7,900.0	6,886.5	6,859.5	6,859.5	35.4	137.2	-89.09		273.2	-362.2	1,492.2	1,319.7	172.50	8.650	
8,000.0	6,885.9	6,858.9	6,858.9	37.9	137.2	-89.02		273.2	-362.2	1,586.0	1,411.0	175.02	9.062	
8,100.0	6,885.3	6,858.3	6,858.3	40.5	137.2	-88.96		273.2	-362.2	1,680.5	1,502.9	177.57	9.463	
8,200.0	6,884.7	6,857.7	6,857.7	43.1	137.2	-88.89		273.2	-362.2	1,775.5	1,595.4	180.16	9.855	
8,300.0	6,884.1	6,857.1	6,857.1	45.7	137.1	-88.83		273.2	-362.2	1,871.1	1,688.4	182.77	10.238	
8,400.0	6,883.5	6,856.5	6,856.5	48.4	137.1	-88.76		273.2	-362.2	1,967.2	1,781.8	185.40	10.611	
8,500.0	6,882.8	6,855.8	6,855.8	51.0	137.1	-88.70		273.2	-362.2	2,063.6	1,875.5	188.04	10.974	
8,600.0	6,882.2	6,855.2	6,855.2	53.7	137.1	-88.63		273.2	-362.2	2,160.3	1,969.6	190.70	11.328	
8,700.0	6,881.6	6,854.6	6,854.6	56.4	137.1	-88.56		273.2	-362.2	2,257.3	2,064.0	193.37	11.673	
8,800.0	6,881.0	6,854.0	6,854.0	59.1	137.1	-88.50		273.2	-362.2	2,354.6	2,158.6	196.06	12.010	
8,900.0	6,880.4	6,853.4	6,853.4	61.8	137.1	-88.43		273.2	-362.2	2,452.1	2,253.4	198.75	12.338	
9,000.0	6,879.8	6,852.8	6,852.8	64.5	137.1	-88.37		273.2	-362.2	2,549.8	2,348.3	201.45	12.657	
9,100.0	6,879.2	6,852.2	6,852.2	67.3	137.0	-88.30		273.2	-362.2	2,647.6	2,443.5	204.16	12.969	
9,200.0	6,878.6	6,851.6	6,851.6	70.0	137.0	-88.24		273.2	-362.2	2,745.7	2,538.8	206.87	13.272	
9,300.0	6,878.0	6,851.0	6,851.0	72.7	137.0	-88.17		273.2	-362.2	2,843.8	2,634.2	209.59	13.569	
9,400.0	6,877.3	6,850.3	6,850.3	75.5	137.0	-88.11		273.2	-362.2	2,942.1	2,729.8	212.31	13.857	
9,500.0	6,876.7	6,849.7	6,849.7	78.2	137.0	-88.04		273.2	-362.2	3,040.5	2,825.4	215.04	14.139	
9,600.0	6,876.1	6,849.1	6,849.1	81.0	137.0	-87.98		273.2	-362.2	3,139.0	2,921.2	217.77	14.414	
9,700.0	6,875.5	6,848.5	6,848.5	83.7	137.0	-87.91		273.2	-362.2	3,237.5	3,017.0	220.50	14.683	
9,800.0	6,874.9	6,847.9	6,847.9	86.5	137.0	-87.85		273.2	-362.2	3,336.2	3,113.0	223.24	14.945	
9,900.0	6,874.3	6,847.3	6,847.3	89.2	136.9	-87.78		273.2	-362.2	3,434.9	3,209.0	225.98	15.200	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore												Offset Site Error:	0.0 ft
Survey Program: 7030-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,000.0	6,873.7	6,846.7	6,846.7	92.0	136.9	-87.71	273.2	-362.2	3,533.8	3,305.0	228.72	15.450	
10,100.0	6,873.1	6,846.1	6,846.1	94.8	136.9	-87.65	273.2	-362.2	3,632.6	3,401.2	231.46	15.694	
10,200.0	6,872.5	6,845.5	6,845.5	97.5	136.9	-87.58	273.2	-362.2	3,731.6	3,497.4	234.21	15.933	
10,300.0	6,871.8	6,844.8	6,844.8	100.3	136.9	-87.52	273.2	-362.2	3,830.6	3,593.6	236.96	16.166	
10,400.0	6,871.2	6,844.2	6,844.2	103.1	136.9	-87.45	273.2	-362.2	3,929.6	3,689.9	239.70	16.394	
10,500.0	6,870.6	6,843.6	6,843.6	105.9	136.9	-87.39	273.2	-362.2	4,028.7	3,786.3	242.45	16.616	
10,600.0	6,870.0	6,843.0	6,843.0	108.6	136.9	-87.32	273.2	-362.2	4,127.8	3,882.6	245.20	16.834	
10,700.0	6,869.4	6,842.4	6,842.4	111.4	136.8	-87.26	273.2	-362.2	4,227.0	3,979.1	247.96	17.047	
10,800.0	6,868.8	6,841.8	6,841.8	114.2	136.8	-87.19	273.2	-362.2	4,326.2	4,075.5	250.71	17.256	
10,900.0	6,868.2	6,841.2	6,841.2	117.0	136.8	-87.13	273.2	-362.2	4,425.5	4,172.0	253.46	17.460	
11,000.0	6,867.6	6,840.6	6,840.6	119.8	136.8	-87.06	273.2	-362.2	4,524.8	4,268.5	256.22	17.660	
11,100.0	6,867.0	6,840.0	6,840.0	122.6	136.8	-87.00	273.2	-362.2	4,624.1	4,365.1	258.97	17.856	
11,200.0	6,866.3	6,839.3	6,839.3	125.3	136.8	-86.93	273.2	-362.2	4,723.4	4,461.7	261.73	18.047	
11,300.0	6,865.7	6,838.7	6,838.7	128.1	136.8	-86.87	273.2	-362.2	4,822.8	4,558.3	264.48	18.235	
11,400.0	6,865.1	6,838.1	6,838.1	130.9	136.8	-86.80	273.2	-362.2	4,922.2	4,654.9	267.24	18.419	
11,500.0	6,864.5	6,837.5	6,837.5	133.7	136.8	-86.74	273.2	-362.2	5,021.6	4,751.6	269.99	18.599	
11,600.0	6,863.9	6,836.9	6,836.9	136.5	136.7	-86.67	273.2	-362.2	5,121.0	4,848.3	272.75	18.776	
11,700.0	6,863.3	6,836.3	6,836.3	139.3	136.7	-86.60	273.2	-362.2	5,220.5	4,945.0	275.50	18.949	
11,800.0	6,862.7	6,835.7	6,835.7	142.1	136.7	-86.54	273.2	-362.2	5,320.0	5,041.7	278.26	19.119	
11,900.0	6,862.1	6,835.1	6,835.1	144.9	136.7	-86.47	273.2	-362.2	5,419.5	5,138.5	281.02	19.285	
12,000.0	6,861.5	6,834.5	6,834.5	147.7	136.7	-86.41	273.2	-362.2	5,519.0	5,235.2	283.77	19.449	
12,100.0	6,860.9	6,833.9	6,833.9	150.4	136.7	-86.34	273.2	-362.2	5,618.5	5,332.0	286.53	19.609	
12,200.0	6,860.2	6,833.2	6,833.2	153.2	136.7	-86.28	273.2	-362.2	5,718.1	5,428.8	289.28	19.766	
12,300.0	6,859.6	6,832.6	6,832.6	156.0	136.7	-86.21	273.2	-362.2	5,817.7	5,525.6	292.04	19.921	
12,400.0	6,859.0	6,832.0	6,832.0	158.8	136.6	-86.15	273.2	-362.2	5,917.2	5,622.4	294.79	20.072	
12,500.0	6,858.4	6,831.4	6,831.4	161.6	136.6	-86.08	273.2	-362.2	6,016.8	5,719.3	297.55	20.221	
12,600.0	6,857.8	6,830.8	6,830.8	164.4	136.6	-86.02	273.2	-362.2	6,116.4	5,816.1	300.30	20.368	
12,700.0	6,857.2	6,830.2	6,830.2	167.2	136.6	-85.95	273.2	-362.2	6,216.1	5,913.0	303.06	20.511	
12,800.0	6,856.6	6,829.6	6,829.6	170.0	136.6	-85.89	273.2	-362.2	6,315.7	6,009.9	305.81	20.652	
12,900.0	6,856.0	6,829.0	6,829.0	172.8	136.6	-85.82	273.2	-362.2	6,415.3	6,106.8	308.56	20.791	
13,000.0	6,855.4	6,828.4	6,828.4	175.6	136.6	-85.76	273.2	-362.2	6,515.0	6,203.7	311.32	20.927	
13,100.0	6,854.7	6,827.7	6,827.7	178.4	136.6	-85.69	273.2	-362.2	6,614.7	6,300.6	314.07	21.061	
13,200.0	6,854.1	6,827.1	6,827.1	181.2	136.5	-85.63	273.2	-362.2	6,714.3	6,397.5	316.82	21.193	
13,221.6	6,854.0	6,827.0	6,827.0	181.8	136.5	-85.61	273.2	-362.2	6,735.8	6,418.4	317.42	21.221	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Ybarra B 29-29 (Exist) - Wellbore #1 - Wellbore												Offset Well Error:	0.0 ft
Survey Program: 7068-UNKNOWN													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	18.0	18.0	0.0	0.4	101.24	-571.8	2,878.1	2,934.4	2,934.0	0.36	8,146.500	
100.0	100.0	118.0	118.0	0.1	2.4	101.24	-571.8	2,878.1	2,934.4	2,931.9	2.47	1,186.763	
200.0	200.0	218.0	218.0	0.3	4.4	101.24	-571.8	2,878.1	2,934.4	2,929.7	4.70	624.686	
300.0	300.0	318.0	318.0	0.6	6.4	101.24	-571.8	2,878.1	2,934.4	2,927.4	6.92	423.912	
400.0	400.0	418.0	418.0	0.8	8.4	101.24	-571.8	2,878.1	2,934.4	2,925.2	9.15	320.805	
500.0	500.0	518.0	518.0	1.0	10.4	101.24	-571.8	2,878.1	2,934.4	2,923.0	11.37	258.043	
600.0	600.0	618.0	618.0	1.2	12.4	101.24	-571.8	2,878.1	2,934.4	2,920.8	13.60	215.819	
700.0	700.0	718.0	718.0	1.5	14.4	101.24	-571.8	2,878.1	2,934.4	2,918.5	15.82	185.471	
800.0	800.0	818.0	818.0	1.7	16.4	101.24	-571.8	2,878.1	2,934.4	2,916.3	18.05	162.605	
900.0	900.0	918.0	918.0	1.9	18.4	101.24	-571.8	2,878.1	2,934.4	2,914.1	20.27	144.759	
1,000.0	1,000.0	1,018.0	1,018.0	2.1	20.4	101.24	-571.8	2,878.1	2,934.4	2,911.9	22.50	130.443	
1,100.0	1,100.0	1,118.0	1,118.0	2.4	22.4	101.24	-571.8	2,878.1	2,934.4	2,909.6	24.72	118.703	
1,200.0	1,200.0	1,218.0	1,218.0	2.6	24.4	101.24	-571.8	2,878.1	2,934.4	2,907.4	26.94	108.902	
1,300.0	1,300.0	1,318.0	1,318.0	2.8	26.4	-127.70	-571.8	2,878.1	2,935.4	2,906.3	29.14	100.739	
1,400.0	1,399.8	1,417.8	1,417.8	3.0	28.4	-127.73	-571.8	2,878.1	2,938.6	2,907.3	31.30	93.894	
1,500.0	1,499.5	1,517.5	1,517.5	3.2	30.4	-127.82	-571.8	2,878.1	2,943.7	2,910.3	33.46	87.964	
1,600.0	1,599.1	1,617.1	1,617.1	3.4	32.3	-127.95	-571.8	2,878.1	2,949.1	2,913.4	35.66	82.706	
1,700.0	1,698.7	1,716.7	1,716.7	3.6	34.3	-128.08	-571.8	2,878.1	2,954.5	2,916.6	37.86	78.040	
1,800.0	1,798.4	1,816.4	1,816.4	3.8	36.3	-128.22	-571.8	2,878.1	2,959.9	2,919.8	40.07	73.875	
1,900.0	1,898.0	1,916.0	1,916.0	4.1	38.3	-128.35	-571.8	2,878.1	2,965.3	2,923.0	42.28	70.136	
2,000.0	1,997.6	2,015.6	2,015.6	4.3	40.3	-128.48	-571.8	2,878.1	2,970.7	2,926.2	44.50	66.762	
2,100.0	2,097.2	2,115.2	2,115.2	4.6	42.3	-128.61	-571.8	2,878.1	2,976.1	2,929.4	46.72	63.703	
2,200.0	2,196.8	2,214.8	2,214.8	4.8	44.3	-128.74	-571.8	2,878.1	2,981.6	2,932.6	48.94	60.919	
2,300.0	2,296.4	2,314.4	2,314.4	5.1	46.3	-128.87	-571.8	2,878.1	2,987.1	2,935.9	51.17	58.373	
2,400.0	2,396.1	2,414.1	2,414.1	5.3	48.3	-129.00	-571.8	2,878.1	2,992.6	2,939.2	53.40	56.038	
2,500.0	2,495.7	2,513.7	2,513.7	5.6	50.3	-129.13	-571.8	2,878.1	2,998.1	2,942.4	55.63	53.888	
2,600.0	2,595.3	2,613.3	2,613.3	5.8	52.3	-129.26	-571.8	2,878.1	3,003.6	2,945.7	57.87	51.903	
2,700.0	2,694.9	2,712.9	2,712.9	6.1	54.3	-129.39	-571.8	2,878.1	3,009.1	2,949.0	60.10	50.064	
2,800.0	2,794.5	2,812.5	2,812.5	6.4	56.3	-129.51	-571.8	2,878.1	3,014.7	2,952.3	62.34	48.357	
2,900.0	2,894.2	2,912.2	2,912.2	6.6	58.2	-129.64	-571.8	2,878.1	3,020.2	2,955.6	64.58	46.767	
3,000.0	2,993.8	3,011.8	3,011.8	6.9	60.2	-129.77	-571.8	2,878.1	3,025.8	2,959.0	66.82	45.284	
3,100.0	3,093.4	3,111.4	3,111.4	7.2	62.2	-129.89	-571.8	2,878.1	3,031.4	2,962.3	69.06	43.896	
3,200.0	3,193.0	3,211.0	3,211.0	7.4	64.2	-130.02	-571.8	2,878.1	3,037.0	2,965.7	71.30	42.595	
3,300.0	3,292.6	3,310.6	3,310.6	7.7	66.2	-130.15	-571.8	2,878.1	3,042.6	2,969.1	73.54	41.373	
3,400.0	3,392.3	3,410.3	3,410.3	8.0	68.2	-130.27	-571.8	2,878.1	3,048.3	2,972.5	75.78	40.224	
3,500.0	3,491.9	3,509.9	3,509.9	8.3	70.2	-130.39	-571.8	2,878.1	3,053.9	2,975.9	78.02	39.140	
3,600.0	3,591.5	3,609.5	3,609.5	8.5	72.2	-130.52	-571.8	2,878.1	3,059.6	2,979.3	80.27	38.117	
3,700.0	3,691.1	3,709.1	3,709.1	8.8	74.2	-130.64	-571.8	2,878.1	3,065.3	2,982.8	82.51	37.150	
3,800.0	3,790.7	3,808.7	3,808.7	9.1	76.2	-130.77	-571.8	2,878.1	3,071.0	2,986.2	84.75	36.234	
3,900.0	3,890.4	3,908.4	3,908.4	9.3	78.2	-130.89	-571.8	2,878.1	3,076.7	2,989.7	87.00	35.365	
4,000.0	3,990.0	4,008.0	4,008.0	9.6	80.2	-131.01	-571.8	2,878.1	3,082.4	2,993.2	89.24	34.540	
4,100.0	4,089.6	4,107.6	4,107.6	9.9	82.2	-131.13	-571.8	2,878.1	3,088.1	2,996.6	91.49	33.756	
4,200.0	4,189.2	4,207.2	4,207.2	10.2	84.1	-131.25	-571.8	2,878.1	3,093.9	3,000.1	93.73	33.009	
4,300.0	4,288.8	4,306.8	4,306.8	10.5	86.1	-131.37	-571.8	2,878.1	3,099.6	3,003.7	95.97	32.297	
4,400.0	4,388.5	4,406.5	4,406.5	10.7	88.1	-131.49	-571.8	2,878.1	3,105.4	3,007.2	98.22	31.618	
4,500.0	4,488.1	4,506.1	4,506.1	11.0	90.1	-131.61	-571.8	2,878.1	3,111.2	3,010.8	100.46	30.969	
4,600.0	4,587.7	4,605.7	4,605.7	11.3	92.1	-131.73	-571.8	2,878.1	3,117.0	3,014.3	102.71	30.349	
4,700.0	4,687.3	4,705.3	4,705.3	11.6	94.1	-131.85	-571.8	2,878.1	3,122.8	3,017.9	104.95	29.755	
4,800.0	4,786.9	4,804.9	4,804.9	11.8	96.1	-131.97	-571.8	2,878.1	3,128.7	3,021.5	107.20	29.187	
4,900.0	4,886.6	4,904.6	4,904.6	12.1	98.1	-132.09	-571.8	2,878.1	3,134.5	3,025.1	109.44	28.642	
5,000.0	4,986.2	5,004.2	5,004.2	12.4	100.1	-132.21	-571.8	2,878.1	3,140.4	3,028.7	111.68	28.118	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Ybarra B 29-29 (Exist) - Wellbore #1 - Wellbore													Offset Site Error:	0.0 ft
Survey Program: 7068-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,085.8	5,103.8	5,103.8	12.7	102.1	-132.32		-571.8	2,878.1	3,146.3	3,032.3	113.93	27.616	
5,200.0	5,185.4	5,203.4	5,203.4	13.0	104.1	-132.44		-571.8	2,878.1	3,152.1	3,036.0	116.17	27.133	
5,300.0	5,285.0	5,303.0	5,303.0	13.2	106.1	-132.56		-571.8	2,878.1	3,158.0	3,039.6	118.42	26.669	
5,400.0	5,384.7	5,402.7	5,402.7	13.5	108.1	-132.67		-571.8	2,878.1	3,163.9	3,043.3	120.66	26.222	
5,500.0	5,484.3	5,502.3	5,502.3	13.8	110.0	-132.79		-571.8	2,878.1	3,169.9	3,047.0	122.91	25.791	
5,600.0	5,583.9	5,601.9	5,601.9	14.1	112.0	-132.90		-571.8	2,878.1	3,175.8	3,050.7	125.15	25.376	
5,700.0	5,683.5	5,701.5	5,701.5	14.4	114.0	-133.02		-571.8	2,878.1	3,181.8	3,054.4	127.39	24.976	
5,800.0	5,783.2	5,801.2	5,801.2	14.6	116.0	-133.16		-571.8	2,878.1	3,187.6	3,057.9	129.68	24.581	
5,900.0	5,883.0	5,901.0	5,901.0	14.8	118.0	-133.29		-571.8	2,878.1	3,191.6	3,059.6	131.96	24.185	
6,000.0	5,982.9	6,000.9	6,000.9	15.0	120.0	-133.35		-571.8	2,878.1	3,193.2	3,059.0	134.17	23.799	
6,100.0	6,082.9	6,100.9	6,100.9	15.2	122.0	95.58		-571.8	2,878.1	3,193.2	3,057.1	136.18	23.449	
6,200.0	6,182.9	6,200.9	6,200.9	15.3	124.0	5.60		-571.8	2,878.1	3,190.3	3,052.3	137.96	23.125	
6,300.0	6,281.6	6,299.6	6,299.6	15.4	126.0	5.75		-571.8	2,878.1	3,175.0	3,037.8	137.28	23.128	
6,400.0	6,377.5	6,395.5	6,395.5	15.4	127.9	6.02		-571.8	2,878.1	3,147.1	3,012.9	134.16	23.457	
6,500.0	6,468.9	6,486.9	6,486.9	15.4	129.7	6.46		-571.8	2,878.1	3,107.0	2,978.4	128.61	24.158	
6,600.0	6,554.3	6,572.3	6,572.3	15.4	131.4	7.11		-571.8	2,878.1	3,055.3	2,934.6	120.71	25.310	
6,700.0	6,632.2	6,650.2	6,650.2	15.4	133.0	8.06		-571.8	2,878.1	2,993.0	2,882.3	110.70	27.036	
6,800.0	6,701.2	6,719.2	6,719.2	15.5	134.4	9.45		-571.8	2,878.1	2,921.1	2,822.1	99.04	29.496	
6,900.0	6,760.2	6,778.2	6,778.2	15.9	135.6	11.58		-571.8	2,878.1	2,841.0	2,754.3	86.67	32.777	
7,000.0	6,808.2	6,826.2	6,826.2	16.8	136.5	15.05		-571.8	2,878.1	2,753.8	2,677.8	76.01	36.232	
7,100.0	6,844.3	6,862.3	6,862.3	18.1	137.2	21.39		-571.8	2,878.1	2,661.3	2,587.6	73.67	36.126	
7,200.0	6,868.0	6,886.0	6,886.0	19.7	137.7	35.22		-571.8	2,878.1	2,564.9	2,469.5	95.37	26.895	
7,300.0	6,880.2	6,898.2	6,898.2	21.6	138.0	50.50		-571.8	2,878.1	2,466.4	2,341.7	124.68	19.782	
7,400.0	6,888.3	6,906.3	6,906.3	23.6	138.1	72.93		-571.8	2,878.1	2,367.6	2,212.7	154.93	15.281	
7,500.0	6,889.0	6,907.0	6,907.0	25.8	138.1	92.53		-571.8	2,878.1	2,268.5	2,104.8	163.73	13.855	
7,600.0	6,888.3	6,906.3	6,906.3	28.1	138.1	92.42		-571.8	2,878.1	2,169.5	2,003.5	166.00	13.069	
7,700.0	6,887.7	6,905.7	6,905.7	30.5	138.1	92.31		-571.8	2,878.1	2,070.6	1,902.2	168.37	12.298	
7,800.0	6,887.1	6,905.1	6,905.1	32.9	138.1	92.20		-571.8	2,878.1	1,971.8	1,801.0	170.81	11.544	
7,900.0	6,886.5	6,904.5	6,904.5	35.4	138.1	92.08		-571.8	2,878.1	1,873.1	1,699.8	173.30	10.808	
8,000.0	6,885.9	6,903.9	6,903.9	37.9	138.1	91.97		-571.8	2,878.1	1,774.5	1,598.7	175.83	10.092	
8,100.0	6,885.3	6,903.3	6,903.3	40.5	138.1	91.86		-571.8	2,878.1	1,676.2	1,497.8	178.40	9.395	
8,200.0	6,884.7	6,902.7	6,902.7	43.1	138.1	91.74		-571.8	2,878.1	1,578.0	1,397.0	181.00	8.718	
8,300.0	6,884.1	6,902.1	6,902.1	45.7	138.0	91.63		-571.8	2,878.1	1,480.1	1,296.5	183.63	8.060	
8,400.0	6,883.5	6,901.5	6,901.5	48.4	138.0	91.52		-571.8	2,878.1	1,382.5	1,196.2	186.27	7.422	
8,500.0	6,882.8	6,900.8	6,900.8	51.0	138.0	91.41		-571.8	2,878.1	1,285.2	1,096.3	188.93	6.803	
8,600.0	6,882.2	6,900.2	6,900.2	53.7	138.0	91.29		-571.8	2,878.1	1,188.4	996.8	191.61	6.202	
8,700.0	6,881.6	6,899.6	6,899.6	56.4	138.0	91.18		-571.8	2,878.1	1,092.2	897.9	194.29	5.621	
8,800.0	6,881.0	6,899.0	6,899.0	59.1	138.0	91.07		-571.8	2,878.1	996.7	799.8	196.99	5.060	
8,900.0	6,880.4	6,898.4	6,898.4	61.8	138.0	90.96		-571.8	2,878.1	902.3	702.6	199.70	4.518	
9,000.0	6,879.8	6,897.8	6,897.8	64.5	138.0	90.84		-571.8	2,878.1	809.1	606.7	202.41	3.997	
9,100.0	6,879.2	6,897.2	6,897.2	67.3	137.9	90.73		-571.8	2,878.1	717.8	512.6	205.14	3.499	
9,200.0	6,878.6	6,896.6	6,896.6	70.0	137.9	90.62		-571.8	2,878.1	629.1	421.2	207.86	3.026	
9,300.0	6,878.0	6,896.0	6,896.0	72.7	137.9	90.50		-571.8	2,878.1	544.3	333.7	210.59	2.585	
9,400.0	6,877.3	6,895.3	6,895.3	75.5	137.9	90.39		-571.8	2,878.1	465.7	252.4	213.33	2.183	
9,500.0	6,876.7	6,894.7	6,894.7	78.2	137.9	90.28		-571.8	2,878.1	396.8	180.7	216.07	1.836	
9,600.0	6,876.1	6,894.1	6,894.1	81.0	137.9	90.17		-571.8	2,878.1	343.5	124.7	218.81	1.570	
9,700.0	6,875.5	6,893.5	6,893.5	83.7	137.9	90.05		-571.8	2,878.1	313.9	92.3	221.56	1.417 Level 3	
9,747.2	6,875.2	6,893.2	6,893.2	85.0	137.9	90.00		-571.8	2,878.1	310.3	87.5	222.86	1.392 Level 3, CC, ES, SF	
9,800.0	6,874.9	6,892.9	6,892.9	86.5	137.9	89.94		-571.8	2,878.1	314.8	90.5	224.31	1.403 Level 3	
9,900.0	6,874.3	6,892.3	6,892.3	89.2	137.8	89.83		-571.8	2,878.1	345.9	118.8	227.06	1.523	
10,000.0	6,873.7	6,891.7	6,891.7	92.0	137.8	89.71		-571.8	2,878.1	400.2	170.4	229.81	1.742	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Ybarra B 29-29 (Exist) - Wellbore #1 - Wellbore												Offset Well Error:	0.0 ft
Survey Program: 7068-UNKNOWN													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,873.1	6,891.1	6,891.1	94.8	137.8	89.60	-571.8	2,878.1	469.8	237.3	232.57	2.020	
10,200.0	6,872.5	6,890.5	6,890.5	97.5	137.8	89.49	-571.8	2,878.1	548.9	313.6	235.32	2.333	
10,300.0	6,871.8	6,889.8	6,889.8	100.3	137.8	89.38	-571.8	2,878.1	633.9	395.8	238.08	2.663	
10,400.0	6,871.2	6,889.2	6,889.2	103.1	137.8	89.26	-571.8	2,878.1	722.8	481.9	240.84	3.001	
10,500.0	6,870.6	6,888.6	6,888.6	105.9	137.8	89.15	-571.8	2,878.1	814.2	570.6	243.59	3.342	
10,600.0	6,870.0	6,888.0	6,888.0	108.6	137.8	89.04	-571.8	2,878.1	907.5	661.1	246.35	3.684	
10,700.0	6,869.4	6,887.4	6,887.4	111.4	137.7	88.93	-571.8	2,878.1	1,002.0	752.9	249.11	4.022	
10,800.0	6,868.8	6,886.8	6,886.8	114.2	137.7	88.81	-571.8	2,878.1	1,097.5	845.7	251.87	4.358	
10,900.0	6,868.2	6,886.2	6,886.2	117.0	137.7	88.70	-571.8	2,878.1	1,193.8	939.2	254.63	4.688	
11,000.0	6,867.6	6,885.6	6,885.6	119.8	137.7	88.59	-571.8	2,878.1	1,290.6	1,033.2	257.39	5.014	
11,100.0	6,867.0	6,885.0	6,885.0	122.6	137.7	88.47	-571.8	2,878.1	1,387.9	1,127.7	260.15	5.335	
11,200.0	6,866.3	6,884.3	6,884.3	125.3	137.7	88.36	-571.8	2,878.1	1,485.5	1,222.6	262.91	5.650	
11,300.0	6,865.7	6,883.7	6,883.7	128.1	137.7	88.25	-571.8	2,878.1	1,583.4	1,317.8	265.67	5.960	
11,400.0	6,865.1	6,883.1	6,883.1	130.9	137.7	88.14	-571.8	2,878.1	1,681.6	1,413.2	268.43	6.265	
11,500.0	6,864.5	6,882.5	6,882.5	133.7	137.7	88.02	-571.8	2,878.1	1,780.0	1,508.8	271.19	6.564	
11,600.0	6,863.9	6,881.9	6,881.9	136.5	137.6	87.91	-571.8	2,878.1	1,878.5	1,604.6	273.94	6.857	
11,700.0	6,863.3	6,881.3	6,881.3	139.3	137.6	87.80	-571.8	2,878.1	1,977.2	1,700.5	276.70	7.146	
11,800.0	6,862.7	6,880.7	6,880.7	142.1	137.6	87.69	-571.8	2,878.1	2,076.1	1,796.6	279.46	7.429	
11,900.0	6,862.1	6,880.1	6,880.1	144.9	137.6	87.57	-571.8	2,878.1	2,175.0	1,892.8	282.21	7.707	
12,000.0	6,861.5	6,879.5	6,879.5	147.7	137.6	87.46	-571.8	2,878.1	2,274.0	1,989.0	284.97	7.980	
12,100.0	6,860.9	6,878.9	6,878.9	150.4	137.6	87.35	-571.8	2,878.1	2,373.1	2,085.4	287.72	8.248	
12,200.0	6,860.2	6,878.2	6,878.2	153.2	137.6	87.24	-571.8	2,878.1	2,472.3	2,181.8	290.47	8.511	
12,300.0	6,859.6	6,877.6	6,877.6	156.0	137.6	87.12	-571.8	2,878.1	2,571.5	2,278.3	293.22	8.770	
12,400.0	6,859.0	6,877.0	6,877.0	158.8	137.5	87.01	-571.8	2,878.1	2,670.8	2,374.8	295.98	9.024	
12,500.0	6,858.4	6,876.4	6,876.4	161.6	137.5	86.90	-571.8	2,878.1	2,770.2	2,471.4	298.72	9.273	
12,600.0	6,857.8	6,875.8	6,875.8	164.4	137.5	86.79	-571.8	2,878.1	2,869.5	2,568.1	301.47	9.518	
12,700.0	6,857.2	6,875.2	6,875.2	167.2	137.5	86.67	-571.8	2,878.1	2,969.0	2,664.8	304.22	9.759	
12,800.0	6,856.6	6,874.6	6,874.6	170.0	137.5	86.56	-571.8	2,878.1	3,068.4	2,761.5	306.97	9.996	
12,900.0	6,856.0	6,874.0	6,874.0	172.8	137.5	86.45	-571.8	2,878.1	3,167.9	2,858.2	309.71	10.229	
13,000.0	6,855.4	6,873.4	6,873.4	175.6	137.5	86.34	-571.8	2,878.1	3,267.5	2,955.0	312.45	10.458	
13,100.0	6,854.7	6,872.7	6,872.7	178.4	137.5	86.22	-571.8	2,878.1	3,367.0	3,051.8	315.19	10.682	
13,200.0	6,854.1	6,872.1	6,872.1	181.2	137.4	86.11	-571.8	2,878.1	3,466.6	3,148.7	317.93	10.904	
13,221.6	6,854.0	6,872.0	6,872.0	181.8	137.4	86.09	-571.8	2,878.1	3,488.1	3,169.6	318.52	10.951	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)											Offset Site Error:		0.0 ft
Survey Program:		0-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance		Between Centres		Minimum Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-90.02	0.0	-61.3	61.3						
100.0	100.0	99.0	99.0	0.1	0.1	-90.02	0.0	-61.3	61.3	61.1	0.22	274.071			
200.0	200.0	199.0	199.0	0.3	0.3	-90.02	0.0	-61.3	61.3	60.6	0.67	91.205 CC, ES			
300.0	300.0	297.8	297.8	0.6	0.6	-88.73	1.4	-62.2	62.2	61.1	1.12	55.672			
400.0	400.0	396.4	396.2	0.8	0.8	-85.06	5.6	-65.0	65.3	63.7	1.57	41.570			
500.0	500.0	494.5	494.0	1.0	1.0	-79.71	12.6	-69.6	70.9	68.9	2.04	34.739			
600.0	600.0	591.9	590.7	1.2	1.3	-73.59	22.4	-76.0	79.6	77.1	2.54	31.346			
700.0	700.0	689.4	687.1	1.5	1.6	-67.58	34.7	-84.0	91.6	88.6	3.07	29.822			
800.0	800.0	788.2	784.7	1.7	2.0	-62.77	47.6	-92.5	105.0	101.4	3.62	28.966			
900.0	900.0	887.0	882.2	1.9	2.3	-59.06	60.5	-100.9	118.9	114.7	4.18	28.458			
1,000.0	1,000.0	985.8	979.8	2.1	2.6	-56.13	73.4	-109.4	133.2	128.4	4.73	28.153			
1,100.0	1,100.0	1,084.5	1,077.3	2.4	3.0	-53.77	86.4	-117.9	147.7	142.5	5.28	27.970			
1,200.0	1,200.0	1,183.3	1,174.9	2.6	3.4	-51.83	99.3	-126.3	162.5	156.7	5.83	27.863			
1,300.0	1,300.0	1,282.0	1,272.4	2.8	3.7	81.12	112.2	-134.8	177.2	171.4	5.76	30.744			
1,400.0	1,399.8	1,380.5	1,369.7	3.0	4.1	83.71	125.1	-143.3	191.6	185.4	6.18	31.026			
1,500.0	1,499.5	1,478.8	1,466.7	3.2	4.4	86.87	138.0	-151.7	206.3	199.7	6.60	31.270			
1,600.0	1,599.1	1,577.0	1,563.7	3.4	4.8	89.84	150.8	-160.1	221.6	214.6	7.04	31.501			
1,700.0	1,698.7	1,675.2	1,660.7	3.6	5.1	92.43	163.7	-168.5	237.4	229.9	7.49	31.711			
1,800.0	1,798.4	1,773.4	1,757.7	3.8	5.5	94.69	176.6	-176.9	253.6	245.7	7.95	31.901			
1,900.0	1,898.0	1,871.6	1,854.7	4.1	5.9	96.69	189.4	-185.4	270.2	261.8	8.43	32.070			
2,000.0	1,997.6	1,969.8	1,951.7	4.3	6.2	98.45	202.3	-193.8	287.0	278.1	8.91	32.222			
2,100.0	2,097.2	2,068.0	2,048.7	4.6	6.6	100.02	215.1	-202.2	304.1	294.7	9.40	32.358			
2,200.0	2,196.8	2,166.2	2,145.7	4.8	6.9	101.42	228.0	-210.6	321.4	311.5	9.90	32.481			
2,300.0	2,296.4	2,264.4	2,242.7	5.1	7.3	102.67	240.8	-219.0	338.9	328.5	10.40	32.593			
2,400.0	2,396.1	2,362.6	2,339.7	5.3	7.7	103.81	253.7	-227.5	356.5	345.5	10.90	32.694			
2,500.0	2,495.7	2,460.8	2,436.7	5.6	8.0	104.84	266.6	-235.9	374.2	362.8	11.41	32.786			
2,600.0	2,595.3	2,559.0	2,533.7	5.8	8.4	105.77	279.4	-244.3	392.0	380.1	11.93	32.871			
2,700.0	2,694.9	2,657.2	2,630.7	6.1	8.7	106.62	292.3	-252.7	409.9	397.5	12.44	32.949			
2,800.0	2,794.5	2,755.4	2,727.6	6.4	9.1	107.41	305.1	-261.2	427.9	414.9	12.96	33.021			
2,900.0	2,894.2	2,853.6	2,824.6	6.6	9.5	108.13	318.0	-269.6	446.0	432.5	13.48	33.088			
3,000.0	2,993.8	2,951.9	2,921.6	6.9	9.8	108.79	330.8	-278.0	464.1	450.1	14.00	33.150			
3,100.0	3,093.4	3,050.1	3,018.6	7.2	10.2	109.40	343.7	-286.4	482.3	467.8	14.52	33.208			
3,200.0	3,193.0	3,148.3	3,115.6	7.4	10.5	109.97	356.6	-294.8	500.5	485.5	15.05	33.262			
3,300.0	3,292.6	3,246.5	3,212.6	7.7	10.9	110.50	369.4	-303.3	518.8	503.2	15.57	33.313			
3,400.0	3,392.3	3,344.7	3,309.6	8.0	11.3	110.99	382.3	-311.7	537.1	521.0	16.10	33.361			
3,500.0	3,491.9	3,442.9	3,406.6	8.3	11.6	111.45	395.1	-320.1	555.5	538.9	16.63	33.406			
3,600.0	3,591.5	3,541.1	3,503.6	8.5	12.0	111.89	408.0	-328.5	573.9	556.7	17.16	33.449			
3,700.0	3,691.1	3,639.3	3,600.6	8.8	12.4	112.29	420.8	-336.9	592.3	574.6	17.69	33.489			
3,800.0	3,790.7	3,737.5	3,697.6	9.1	12.7	112.67	433.7	-345.4	610.7	592.5	18.22	33.527			
3,900.0	3,890.4	3,835.7	3,794.6	9.3	13.1	113.03	446.6	-353.8	629.2	610.5	18.75	33.563			
4,000.0	3,990.0	3,933.9	3,891.6	9.6	13.4	113.37	459.4	-362.2	647.7	628.4	19.28	33.597			
4,100.0	4,089.6	4,032.1	3,988.6	9.9	13.8	113.68	472.3	-370.6	666.2	646.4	19.81	33.630			
4,200.0	4,189.2	4,130.3	4,085.6	10.2	14.2	113.99	485.1	-379.0	684.7	664.4	20.34	33.661			
4,300.0	4,288.8	4,228.5	4,182.6	10.5	14.5	114.27	498.0	-387.5	703.3	682.4	20.88	33.690			
4,400.0	4,388.5	4,326.7	4,279.6	10.7	14.9	114.54	510.8	-395.9	721.9	700.4	21.41	33.718			
4,500.0	4,488.1	4,424.9	4,376.6	11.0	15.2	114.80	523.7	-404.3	740.4	718.5	21.94	33.745			
4,600.0	4,587.7	4,523.1	4,473.6	11.3	15.6	115.04	536.6	-412.7	759.0	736.5	22.48	33.771			
4,700.0	4,687.3	4,621.3	4,570.6	11.6	16.0	115.28	549.4	-421.1	777.6	754.6	23.01	33.796			
4,800.0	4,786.9	4,719.6	4,667.6	11.8	16.3	115.50	562.3	-429.6	796.2	772.7	23.54	33.819			
4,900.0	4,886.6	4,817.8	4,764.6	12.1	16.7	115.71	575.1	-438.0	814.9	790.8	24.08	33.842			
5,000.0	4,986.2	4,916.0	4,861.6	12.4	17.1	115.91	588.0	-446.4	833.5	808.9	24.61	33.863			

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,085.8	5,014.2	4,958.5	12.7	17.4	116.11	600.8	-454.8	852.2	827.0	25.15	33.884		
5,200.0	5,185.4	5,112.4	5,055.5	13.0	17.8	116.29	613.7	-463.2	870.8	845.1	25.68	33.904		
5,300.0	5,285.0	5,210.6	5,152.5	13.2	18.1	116.47	626.6	-471.7	889.5	863.3	26.22	33.923		
5,400.0	5,384.7	5,308.8	5,249.5	13.5	18.5	116.64	639.4	-480.1	908.2	881.4	26.76	33.942		
5,500.0	5,484.3	5,407.0	5,346.5	13.8	18.9	116.80	652.3	-488.5	926.8	899.6	27.29	33.959		
5,600.0	5,583.9	5,547.1	5,485.3	14.1	19.3	117.09	668.0	-498.8	943.5	915.6	27.88	33.846		
5,700.0	5,683.5	5,691.2	5,628.9	14.4	19.6	117.52	678.2	-505.5	955.5	927.0	28.42	33.619		
5,800.0	5,783.2	5,836.3	5,773.9	14.6	19.8	118.10	682.4	-508.2	962.7	933.7	28.95	33.254		
5,900.0	5,883.0	5,944.4	5,882.0	14.8	19.9	118.49	682.5	-508.3	965.5	936.2	29.38	32.861		
6,000.0	5,982.9	6,070.8	6,008.1	15.0	20.1	119.00	682.5	-502.0	965.7	935.9	29.79	32.417		
6,100.0	6,082.9	6,201.7	6,135.8	15.2	20.1	-10.45	682.5	-474.1	961.4	928.2	33.16	28.990		
6,200.0	6,182.9	6,321.6	6,247.2	15.3	20.0	-98.32	682.5	-429.8	955.5	925.1	30.36	31.468		
6,300.0	6,281.6	6,433.6	6,343.7	15.4	19.8	-96.23	682.5	-373.2	950.5	920.0	30.53	31.137		
6,400.0	6,377.5	6,538.9	6,426.0	15.4	19.7	-94.10	682.5	-307.7	946.8	916.1	30.72	30.823		
6,500.0	6,468.9	6,638.4	6,494.8	15.4	19.5	-91.97	682.5	-235.9	944.6	913.6	31.04	30.434		
6,592.6	6,548.2	6,726.1	6,547.2	15.4	19.4	-90.00	682.5	-165.6	944.0	912.4	31.54	29.930		
6,600.0	6,554.3	6,733.0	6,551.0	15.4	19.4	-89.84	682.5	-159.9	944.0	912.4	31.59	29.887		
6,700.0	6,632.2	6,823.4	6,595.6	15.4	19.3	-87.76	682.5	-81.3	944.8	912.4	32.44	29.122		
6,800.0	6,701.2	6,910.3	6,629.4	15.5	19.2	-85.73	682.5	-1.2	947.0	913.3	33.68	28.118		
6,900.0	6,760.2	6,994.4	6,653.2	15.9	19.5	-83.78	682.5	79.3	950.2	914.9	35.35	26.884		
7,000.0	6,808.2	7,075.9	6,667.8	16.8	20.8	-81.93	682.5	159.5	954.4	916.9	37.46	25.475		
7,100.0	6,844.3	7,155.4	6,673.7	18.1	22.2	-80.21	682.5	238.7	959.1	919.1	39.97	23.993		
7,200.0	6,868.0	7,248.3	6,673.7	19.7	24.1	-78.60	682.5	331.6	963.5	920.4	43.15	22.333		
7,300.0	6,880.2	7,347.5	6,673.5	21.6	26.1	-77.77	682.5	430.8	966.1	919.3	46.84	20.625		
7,400.0	6,888.3	7,447.1	6,673.2	23.6	28.3	-77.23	682.5	530.4	967.9	917.1	50.88	19.025		
7,500.0	6,889.0	7,547.1	6,673.0	25.8	30.6	-77.17	682.5	630.4	968.1	912.9	55.21	17.535		
7,600.0	6,888.3	7,647.1	6,672.7	28.1	33.0	-77.19	682.5	730.4	968.1	908.3	59.73	16.206		
7,700.0	6,887.7	7,747.1	6,672.5	30.5	35.4	-77.21	682.5	830.4	968.0	903.6	64.41	15.028		
7,800.0	6,887.1	7,847.1	6,672.2	32.9	37.9	-77.23	682.5	930.4	967.9	898.7	69.21	13.985		
7,900.0	6,886.5	7,947.1	6,672.0	35.4	40.4	-77.25	682.5	1,030.4	967.8	893.7	74.10	13.060		
8,000.0	6,885.9	8,047.1	6,671.7	37.9	43.0	-77.28	682.5	1,130.4	967.7	888.7	79.08	12.237		
8,100.0	6,885.3	8,147.1	6,671.5	40.5	45.5	-77.30	682.5	1,230.4	967.7	883.5	84.12	11.503		
8,200.0	6,884.7	8,247.1	6,671.3	43.1	48.1	-77.32	682.5	1,330.4	967.6	878.4	89.22	10.845		
8,300.0	6,884.1	8,347.1	6,671.0	45.7	50.8	-77.34	682.5	1,430.4	967.5	873.1	94.36	10.253		
8,400.0	6,883.5	8,447.1	6,670.8	48.4	53.4	-77.36	682.5	1,530.4	967.4	867.9	99.54	9.718		
8,500.0	6,882.8	8,547.1	6,670.5	51.0	56.1	-77.38	682.5	1,630.4	967.3	862.6	104.76	9.234		
8,600.0	6,882.2	8,647.1	6,670.3	53.7	58.7	-77.40	682.5	1,730.4	967.2	857.2	110.00	8.793		
8,700.0	6,881.6	8,747.1	6,670.0	56.4	61.4	-77.42	682.5	1,830.4	967.2	851.9	115.27	8.390		
8,800.0	6,881.0	8,847.1	6,669.8	59.1	64.1	-77.45	682.5	1,930.4	967.1	846.5	120.56	8.021		
8,900.0	6,880.4	8,947.1	6,669.5	61.8	66.8	-77.47	682.5	2,030.4	967.0	841.1	125.87	7.682		
9,000.0	6,879.8	9,047.1	6,669.3	64.5	69.5	-77.49	682.5	2,130.4	966.9	835.7	131.20	7.370		
9,100.0	6,879.2	9,147.1	6,669.1	67.3	72.3	-77.51	682.5	2,230.4	966.9	830.3	136.54	7.081		
9,200.0	6,878.6	9,247.1	6,668.8	70.0	75.0	-77.53	682.5	2,330.4	966.8	824.9	141.89	6.813		
9,300.0	6,878.0	9,347.1	6,668.6	72.7	77.7	-77.55	682.5	2,430.4	966.7	819.4	147.26	6.565		
9,400.0	6,877.3	9,447.1	6,668.3	75.5	80.5	-77.57	682.5	2,530.4	966.6	814.0	152.64	6.333		
9,500.0	6,876.7	9,547.1	6,668.1	78.2	83.2	-77.59	682.5	2,630.4	966.5	808.5	158.02	6.116		
9,600.0	6,876.1	9,647.1	6,667.8	81.0	85.9	-77.61	682.5	2,730.4	966.5	803.0	163.42	5.914		
9,700.0	6,875.5	9,747.1	6,667.6	83.7	88.7	-77.64	682.5	2,830.4	966.4	797.6	168.82	5.724		
9,800.0	6,874.9	9,847.1	6,667.3	86.5	91.4	-77.66	682.5	2,930.4	966.3	792.1	174.24	5.546		
9,900.0	6,874.3	9,947.1	6,667.1	89.2	94.2	-77.68	682.5	3,030.4	966.2	786.6	179.65	5.378		
10,000.0	6,873.7	10,047.1	6,666.9	92.0	97.0	-77.70	682.5	3,130.4	966.1	781.1	185.08	5.220		

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
10,100.0	6,873.1	10,147.1	6,666.6	94.8	99.7	-77.72	682.5	3,230.4	966.1	775.6	190.51	5.071	
10,200.0	6,872.5	10,247.0	6,666.4	97.5	102.5	-77.74	682.5	3,330.4	966.0	770.0	195.94	4.930	
10,300.0	6,871.8	10,347.0	6,666.1	100.3	105.3	-77.76	682.5	3,430.4	965.9	764.5	201.38	4.796	
10,400.0	6,871.2	10,447.0	6,665.9	103.1	108.0	-77.78	682.5	3,530.4	965.8	759.0	206.83	4.670	
10,500.0	6,870.6	10,547.0	6,665.6	105.9	110.8	-77.81	682.5	3,630.4	965.8	753.5	212.28	4.549	
10,600.0	6,870.0	10,647.0	6,665.4	108.6	113.6	-77.83	682.5	3,730.4	965.7	747.9	217.73	4.435	
10,700.0	6,869.4	10,747.0	6,665.1	111.4	116.3	-77.85	682.5	3,830.4	965.6	742.4	223.19	4.326	
10,800.0	6,868.8	10,847.0	6,664.9	114.2	119.1	-77.87	682.5	3,930.4	965.5	736.9	228.65	4.223	
10,900.0	6,868.2	10,947.0	6,664.7	117.0	121.9	-77.89	682.5	4,030.4	965.4	731.3	234.12	4.124	
11,000.0	6,867.6	11,047.0	6,664.4	119.8	124.7	-77.91	682.5	4,130.4	965.4	725.8	239.59	4.029	
11,100.0	6,867.0	11,147.0	6,664.2	122.6	127.5	-77.93	682.5	4,230.4	965.3	720.2	245.06	3.939	
11,200.0	6,866.3	11,247.0	6,663.9	125.3	130.2	-77.95	682.5	4,330.4	965.2	714.7	250.53	3.853	
11,300.0	6,865.7	11,347.0	6,663.7	128.1	133.0	-77.98	682.5	4,430.4	965.1	709.1	256.01	3.770	
11,400.0	6,865.1	11,447.0	6,663.4	130.9	135.8	-78.00	682.5	4,530.4	965.1	703.6	261.49	3.691	
11,500.0	6,864.5	11,547.0	6,663.2	133.7	138.6	-78.02	682.5	4,630.4	965.0	698.0	266.97	3.615	
11,600.0	6,863.9	11,647.0	6,662.9	136.5	141.4	-78.04	682.5	4,730.4	964.9	692.4	272.46	3.542	
11,700.0	6,863.3	11,747.0	6,662.7	139.3	144.2	-78.06	682.5	4,830.4	964.8	686.9	277.94	3.471	
11,800.0	6,862.7	11,847.0	6,662.5	142.1	146.9	-78.08	682.5	4,930.4	964.8	681.3	283.43	3.404	
11,900.0	6,862.1	11,947.0	6,662.2	144.9	149.7	-78.10	682.5	5,030.4	964.7	675.8	288.92	3.339	
12,000.0	6,861.5	12,047.0	6,662.0	147.7	152.5	-78.13	682.5	5,130.4	964.6	670.2	294.42	3.276	
12,100.0	6,860.9	12,147.0	6,661.7	150.4	155.3	-78.15	682.5	5,230.4	964.5	664.6	299.91	3.216	
12,200.0	6,860.2	12,247.0	6,661.5	153.2	158.1	-78.17	682.5	5,330.4	964.4	659.0	305.41	3.158	
12,300.0	6,859.6	12,347.0	6,661.2	156.0	160.9	-78.19	682.5	5,430.4	964.4	653.5	310.91	3.102	
12,400.0	6,859.0	12,447.0	6,661.0	158.8	163.7	-78.21	682.5	5,530.4	964.3	647.9	316.41	3.048	
12,500.0	6,858.4	12,547.0	6,660.8	161.6	166.5	-78.23	682.5	5,630.4	964.2	642.3	321.91	2.995	
12,600.0	6,857.8	12,647.0	6,660.5	164.4	169.3	-78.25	682.5	5,730.4	964.1	636.7	327.42	2.945	
12,700.0	6,857.2	12,747.0	6,660.3	167.2	172.1	-78.27	682.5	5,830.4	964.1	631.1	332.93	2.896	
12,800.0	6,856.6	12,847.0	6,660.0	170.0	174.9	-78.30	682.5	5,930.3	964.0	625.6	338.43	2.848	
12,900.0	6,856.0	12,947.0	6,659.8	172.8	177.7	-78.32	682.5	6,030.3	963.9	620.0	343.94	2.803	
13,000.0	6,855.4	13,047.0	6,659.5	175.6	180.4	-78.34	682.5	6,130.3	963.9	614.4	349.45	2.758	
13,100.0	6,854.7	13,147.0	6,659.3	178.4	183.2	-78.36	682.5	6,230.3	963.8	608.8	354.97	2.715	
13,200.0	6,854.1	13,247.0	6,659.0	181.2	186.0	-78.38	682.5	6,330.3	963.7	603.2	360.48	2.673	
13,216.9	6,854.0	13,263.2	6,659.0	181.7	186.5	-78.38	682.5	6,346.6	963.7	602.3	361.39	2.667	
13,221.6	6,854.0	13,263.2	6,659.0	181.8	186.5	-78.38	682.5	6,346.6	963.7	602.2	361.52	2.666 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design		Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-432 - Wellbore #1 - Plan #1 (2-18-14)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	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	0.0	0.0	0.0	0.0	-89.98	0.0	-30.6	30.7					
100.0	100.0	99.0	99.0	0.1	0.1	-89.98	0.0	-30.6	30.6	30.4	0.22	137.035		
200.0	200.0	199.0	199.0	0.3	0.3	-89.98	0.0	-30.6	30.6	30.0	0.67	45.603		
300.0	300.0	299.0	299.0	0.6	0.6	-89.98	0.0	-30.6	30.6	29.5	1.12	27.325		
400.0	400.0	399.0	399.0	0.8	0.8	-89.98	0.0	-30.6	30.6	29.1	1.57	19.507		
500.0	500.0	499.0	499.0	1.0	1.0	-89.98	0.0	-30.6	30.6	28.6	2.02	15.167		
600.0	600.0	599.0	599.0	1.2	1.2	-89.98	0.0	-30.6	30.6	28.2	2.47	12.407		
700.0	700.0	699.0	699.0	1.5	1.5	-89.98	0.0	-30.6	30.6	27.7	2.92	10.497		
800.0	800.0	799.0	799.0	1.7	1.7	-89.98	0.0	-30.6	30.6	27.3	3.37	9.096		
900.0	900.0	899.0	899.0	1.9	1.9	-89.98	0.0	-30.6	30.6	26.8	3.82	8.025		
1,000.0	1,000.0	999.0	999.0	2.1	2.1	-89.98	0.0	-30.6	30.6	26.4	4.27	7.180 CC, ES		
1,100.0	1,100.0	1,098.3	1,098.3	2.4	2.4	-87.66	1.3	-31.7	31.8	27.1	4.71	6.741		
1,200.0	1,200.0	1,197.3	1,197.2	2.6	2.6	-81.57	5.2	-35.0	35.5	30.3	5.16	6.877		
1,300.0	1,300.0	1,295.9	1,295.3	2.8	2.8	59.03	11.7	-40.5	41.4	35.8	5.58	7.424		
1,400.0	1,399.8	1,393.8	1,392.6	3.0	3.0	71.11	20.6	-48.1	50.1	44.1	5.98	8.370		
1,500.0	1,499.5	1,492.6	1,490.5	3.2	3.3	82.49	30.6	-56.5	61.2	54.7	6.41	9.545		
1,600.0	1,599.1	1,591.3	1,588.3	3.4	3.6	90.61	40.5	-65.0	73.9	67.1	6.85	10.796		
1,700.0	1,698.7	1,690.0	1,686.2	3.6	3.9	96.28	50.5	-73.4	87.7	80.4	7.30	12.017		
1,800.0	1,798.4	1,788.8	1,784.1	3.8	4.1	100.38	60.5	-81.8	102.1	94.3	7.76	13.157		
1,900.0	1,898.0	1,887.5	1,881.9	4.1	4.4	103.47	70.4	-90.3	116.9	108.7	8.23	14.200		
2,000.0	1,997.6	1,986.2	1,979.8	4.3	4.7	105.85	80.4	-98.7	132.0	123.2	8.71	15.146		
2,100.0	2,097.2	2,084.9	2,077.6	4.6	5.0	107.75	90.4	-107.1	147.2	138.0	9.20	16.001		
2,200.0	2,196.8	2,183.7	2,175.5	4.8	5.3	109.29	100.3	-115.6	162.5	152.8	9.69	16.775		
2,300.0	2,296.4	2,282.4	2,273.4	5.1	5.6	110.57	110.3	-124.0	178.0	167.8	10.19	17.475		
2,400.0	2,396.1	2,381.1	2,371.2	5.3	6.0	111.64	120.3	-132.5	193.5	182.8	10.69	18.110		
2,500.0	2,495.7	2,479.9	2,469.1	5.6	6.3	112.55	130.2	-140.9	209.1	197.9	11.19	18.687		
2,600.0	2,595.3	2,578.6	2,566.9	5.8	6.6	113.33	140.2	-149.3	224.7	213.0	11.70	19.214		
2,700.0	2,694.9	2,677.3	2,664.8	6.1	6.9	114.02	150.1	-157.8	240.4	228.2	12.20	19.696		
2,800.0	2,794.5	2,776.0	2,762.7	6.4	7.2	114.62	160.1	-166.2	256.1	243.4	12.72	20.137		
2,900.0	2,894.2	2,874.8	2,860.5	6.6	7.5	115.15	170.1	-174.6	271.8	258.6	13.23	20.543		
3,000.0	2,993.8	2,973.5	2,958.4	6.9	7.9	115.62	180.0	-183.1	287.5	273.8	13.74	20.918		
3,100.0	3,093.4	3,072.2	3,056.3	7.2	8.2	116.04	190.0	-191.5	303.3	289.0	14.26	21.264		
3,200.0	3,193.0	3,171.0	3,154.1	7.4	8.5	116.42	200.0	-199.9	319.0	304.3	14.78	21.585		
3,300.0	3,292.6	3,269.7	3,252.0	7.7	8.8	116.77	209.9	-208.4	334.8	319.5	15.30	21.883		
3,400.0	3,392.3	3,368.4	3,349.8	8.0	9.1	117.08	219.9	-216.8	350.6	334.8	15.82	22.161		
3,500.0	3,491.9	3,467.1	3,447.7	8.3	9.5	117.37	229.9	-225.3	366.4	350.1	16.34	22.420		
3,600.0	3,591.5	3,565.9	3,545.6	8.5	9.8	117.64	239.8	-233.7	382.2	365.3	16.87	22.662		
3,700.0	3,691.1	3,664.6	3,643.4	8.8	10.1	117.88	249.8	-242.1	398.0	380.6	17.39	22.889		
3,800.0	3,790.7	3,763.3	3,741.3	9.1	10.4	118.10	259.8	-250.6	413.8	395.9	17.91	23.102		
3,900.0	3,890.4	3,862.1	3,839.1	9.3	10.7	118.31	269.7	-259.0	429.7	411.2	18.44	23.302		
4,000.0	3,990.0	3,960.8	3,937.0	9.6	11.1	118.50	279.7	-267.4	445.5	426.5	18.97	23.490		
4,100.0	4,089.6	4,059.5	4,034.9	9.9	11.4	118.68	289.7	-275.9	461.3	441.8	19.49	23.668		
4,200.0	4,189.2	4,158.2	4,132.7	10.2	11.7	118.85	299.6	-284.3	477.2	457.2	20.02	23.836		
4,300.0	4,288.8	4,257.0	4,230.6	10.5	12.0	119.01	309.6	-292.8	493.0	472.5	20.55	23.995		
4,400.0	4,388.5	4,355.7	4,328.4	10.7	12.4	119.15	319.5	-301.2	508.9	487.8	21.07	24.145		
4,500.0	4,488.1	4,454.4	4,426.3	11.0	12.7	119.29	329.5	-309.6	524.7	503.1	21.60	24.288		
4,600.0	4,587.7	4,553.2	4,524.2	11.3	13.0	119.42	339.5	-318.1	540.6	518.4	22.13	24.424		
4,700.0	4,687.3	4,651.9	4,622.0	11.6	13.3	119.54	349.4	-326.5	556.4	533.8	22.66	24.553		
4,800.0	4,786.9	4,750.6	4,719.9	11.8	13.7	119.66	359.4	-334.9	572.3	549.1	23.19	24.676		
4,900.0	4,886.6	4,849.3	4,817.8	12.1	14.0	119.77	369.4	-343.4	588.1	564.4	23.72	24.793		
5,000.0	4,986.2	4,948.1	4,915.6	12.4	14.3	119.87	379.3	-351.8	604.0	579.8	24.25	24.904		

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-432 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,085.8	5,046.8	5,013.5	12.7	14.7	119.97		389.3	-360.2	619.9	595.1	24.78	25.011	
5,200.0	5,185.4	5,145.5	5,111.3	13.0	15.0	120.07		399.3	-368.7	635.7	610.4	25.32	25.113	
5,300.0	5,285.0	5,244.2	5,209.2	13.2	15.3	120.16		409.2	-377.1	651.6	625.8	25.85	25.210	
5,400.0	5,384.7	5,343.0	5,307.1	13.5	15.6	120.24		419.2	-385.6	667.5	641.1	26.38	25.304	
5,500.0	5,484.3	5,441.7	5,404.9	13.8	16.0	120.32		429.2	-394.0	683.3	656.4	26.91	25.393	
5,600.0	5,583.9	5,562.5	5,524.9	14.1	16.3	120.49		439.9	-403.1	697.9	670.5	27.44	25.435	
5,700.0	5,683.5	5,688.6	5,650.6	14.4	16.5	120.89		447.0	-409.1	708.8	680.8	27.94	25.367	
5,800.0	5,783.2	5,815.3	5,777.3	14.6	16.7	121.51		449.9	-411.6	715.8	687.4	28.43	25.177	
5,900.0	5,883.0	5,920.0	5,882.0	14.8	16.9	121.98		450.0	-411.6	718.9	690.1	28.84	24.925	
6,000.0	5,982.9	6,020.0	5,981.9	15.0	17.1	122.15		450.0	-411.6	720.2	690.9	29.24	24.632	
6,100.0	6,082.9	6,123.3	6,085.2	15.2	17.2	-8.89		450.0	-411.3	720.2	690.0	30.17	23.869	
6,200.0	6,182.9	6,239.4	6,200.6	15.3	17.3	-98.26		450.0	-399.1	719.0	689.1	29.91	24.041	
6,300.0	6,281.6	6,353.6	6,311.0	15.4	17.4	-97.44		450.0	-370.2	717.6	687.6	30.05	23.884	
6,400.0	6,377.5	6,465.8	6,414.0	15.4	17.3	-96.49		450.0	-326.1	716.2	686.1	30.10	23.794	
6,500.0	6,468.9	6,575.7	6,507.7	15.4	17.2	-95.42		450.0	-268.8	714.8	684.6	30.17	23.693	
6,600.0	6,554.3	6,683.2	6,590.4	15.4	17.1	-94.27		450.0	-200.2	713.5	683.1	30.39	23.478	
6,700.0	6,632.2	6,788.4	6,661.2	15.4	17.1	-93.05		450.0	-122.6	712.5	681.6	30.93	23.037	
6,800.0	6,701.2	6,891.2	6,719.5	15.5	17.1	-91.79		450.0	-38.0	711.8	679.9	31.94	22.286	
6,900.0	6,760.2	6,991.8	6,765.1	15.9	17.7	-90.51		450.0	51.6	711.5	678.0	33.54	21.214	
6,939.8	6,780.7	7,031.2	6,779.7	16.2	18.2	-90.00		450.0	88.3	711.5	677.1	34.39	20.686	
7,000.0	6,808.2	7,090.3	6,797.9	16.8	19.0	-89.23		450.0	144.4	711.6	675.8	35.76	19.897	
7,100.0	6,844.3	7,186.9	6,818.3	18.1	20.5	-87.98		450.0	238.7	711.9	673.4	38.56	18.461	
7,200.0	6,868.0	7,284.8	6,829.2	19.7	22.3	-86.96		450.0	336.0	712.5	670.6	41.91	17.002	
7,300.0	6,880.2	7,381.6	6,836.1	21.6	24.2	-86.54		450.0	432.5	712.8	667.1	45.65	15.614	
7,400.0	6,888.3	7,480.1	6,836.8	23.6	26.3	-85.94		450.0	531.1	713.3	663.6	49.72	14.345	
7,500.0	6,889.0	7,580.1	6,837.0	25.8	28.5	-85.91		450.0	631.1	713.3	659.2	54.10	13.186	
7,600.0	6,888.3	7,680.1	6,837.3	28.1	30.8	-85.98		450.0	731.1	713.2	654.6	58.68	12.155	
7,700.0	6,887.7	7,780.1	6,837.6	30.5	33.2	-86.05		450.0	831.1	713.2	649.8	63.43	11.244	
7,800.0	6,887.1	7,880.1	6,837.9	32.9	35.7	-86.12		450.0	931.1	713.1	644.8	68.31	10.440	
7,900.0	6,886.5	7,980.1	6,838.1	35.4	38.2	-86.19		450.0	1,031.1	713.1	639.8	73.30	9.729	
8,000.0	6,885.9	8,080.1	6,838.4	37.9	40.7	-86.26		450.0	1,131.0	713.0	634.6	78.37	9.098	
8,100.0	6,885.3	8,180.1	6,838.7	40.5	43.3	-86.33		450.0	1,231.0	712.9	629.4	83.51	8.538	
8,200.0	6,884.7	8,280.1	6,839.0	43.1	45.9	-86.41		450.0	1,331.0	712.9	624.2	88.71	8.036	
8,300.0	6,884.1	8,380.1	6,839.3	45.7	48.5	-86.48		450.0	1,431.0	712.8	618.9	93.95	7.587	
8,400.0	6,883.5	8,480.1	6,839.5	48.4	51.2	-86.55		450.0	1,531.0	712.8	613.5	99.24	7.182	
8,500.0	6,882.8	8,580.0	6,839.8	51.0	53.8	-86.62		450.0	1,631.0	712.7	608.2	104.56	6.816	
8,600.0	6,882.2	8,680.0	6,840.1	53.7	56.5	-86.69		450.0	1,731.0	712.7	602.8	109.92	6.484	
8,700.0	6,881.6	8,780.0	6,840.4	56.4	59.2	-86.76		450.0	1,831.0	712.6	597.3	115.30	6.181	
8,800.0	6,881.0	8,880.0	6,840.7	59.1	61.9	-86.83		450.0	1,931.0	712.6	591.9	120.70	5.904	
8,900.0	6,880.4	8,980.0	6,840.9	61.8	64.6	-86.91		450.0	2,031.0	712.5	586.4	126.11	5.650	
9,000.0	6,879.8	9,080.0	6,841.2	64.5	67.3	-86.98		450.0	2,131.0	712.5	580.9	131.55	5.416	
9,100.0	6,879.2	9,180.0	6,841.5	67.3	70.0	-87.05		450.0	2,231.0	712.4	575.4	137.00	5.200	
9,200.0	6,878.6	9,280.0	6,841.8	70.0	72.7	-87.12		450.0	2,331.0	712.4	569.9	142.47	5.000	
9,300.0	6,878.0	9,380.0	6,842.1	72.7	75.5	-87.19		450.0	2,431.0	712.3	564.4	147.94	4.815	
9,400.0	6,877.3	9,480.0	6,842.3	75.5	78.2	-87.26		450.0	2,531.0	712.3	558.9	153.43	4.642	
9,500.0	6,876.7	9,580.0	6,842.6	78.2	81.0	-87.34		450.0	2,631.0	712.3	553.3	158.93	4.482	
9,600.0	6,876.1	9,680.0	6,842.9	81.0	83.7	-87.41		450.0	2,731.0	712.2	547.8	164.43	4.331	
9,700.0	6,875.5	9,780.0	6,843.2	83.7	86.5	-87.48		450.0	2,831.0	712.2	542.2	169.95	4.191	
9,800.0	6,874.9	9,880.0	6,843.5	86.5	89.2	-87.55		450.0	2,931.0	712.1	536.7	175.47	4.059	
9,900.0	6,874.3	9,980.0	6,843.7	89.2	92.0	-87.62		450.0	3,031.0	712.1	531.1	181.00	3.934	
10,000.0	6,873.7	10,080.0	6,844.0	92.0	94.7	-87.69		450.0	3,131.0	712.1	525.5	186.53	3.817	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-432 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,873.1	10,180.0	6,844.3	94.8	97.5	-87.76		450.0	3,231.0	712.0	520.0	192.07	3.707	
10,200.0	6,872.5	10,280.0	6,844.6	97.5	100.3	-87.84		450.0	3,331.0	712.0	514.4	197.61	3.603	
10,300.0	6,871.8	10,380.0	6,844.9	100.3	103.0	-87.91		450.0	3,430.9	712.0	508.8	203.16	3.504	
10,400.0	6,871.2	10,480.0	6,845.1	103.1	105.8	-87.98		450.0	3,530.9	711.9	503.2	208.71	3.411	
10,500.0	6,870.6	10,580.0	6,845.4	105.9	108.6	-88.05		450.0	3,630.9	711.9	497.6	214.26	3.323	
10,600.0	6,870.0	10,680.0	6,845.7	108.6	111.3	-88.12		450.0	3,730.9	711.9	492.0	219.82	3.238	
10,700.0	6,869.4	10,780.0	6,846.0	111.4	114.1	-88.19		450.0	3,830.9	711.8	486.5	225.38	3.158	
10,800.0	6,868.8	10,880.0	6,846.2	114.2	116.9	-88.27		450.0	3,930.9	711.8	480.9	230.95	3.082	
10,900.0	6,868.2	10,980.0	6,846.5	117.0	119.7	-88.34		450.0	4,030.9	711.8	475.3	236.52	3.009	
11,000.0	6,867.6	11,079.9	6,846.8	119.8	122.5	-88.41		450.0	4,130.9	711.8	469.7	242.09	2.940	
11,100.0	6,867.0	11,179.9	6,847.1	122.6	125.2	-88.48		450.0	4,230.9	711.7	464.1	247.66	2.874	
11,200.0	6,866.3	11,279.9	6,847.4	125.3	128.0	-88.55		450.0	4,330.9	711.7	458.5	253.23	2.810	
11,300.0	6,865.7	11,379.9	6,847.6	128.1	130.8	-88.62		450.0	4,430.9	711.7	452.9	258.81	2.750	
11,400.0	6,865.1	11,479.9	6,847.9	130.9	133.6	-88.70		450.0	4,530.9	711.7	447.3	264.39	2.692	
11,500.0	6,864.5	11,579.9	6,848.2	133.7	136.4	-88.77		450.0	4,630.9	711.6	441.7	269.97	2.636	
11,600.0	6,863.9	11,679.9	6,848.5	136.5	139.2	-88.84		450.0	4,730.9	711.6	436.1	275.55	2.583	
11,700.0	6,863.3	11,779.9	6,848.8	139.3	142.0	-88.91		450.0	4,830.9	711.6	430.5	281.14	2.531	
11,800.0	6,862.7	11,879.9	6,849.0	142.1	144.7	-88.98		450.0	4,930.9	711.6	424.9	286.72	2.482	
11,900.0	6,862.1	11,979.9	6,849.3	144.9	147.5	-89.05		450.0	5,030.9	711.6	419.3	292.31	2.434	
12,000.0	6,861.5	12,079.9	6,849.6	147.7	150.3	-89.13		450.0	5,130.9	711.6	413.7	297.89	2.389	
12,100.0	6,860.9	12,179.9	6,849.9	150.4	153.1	-89.20		450.0	5,230.9	711.6	408.1	303.48	2.345	
12,200.0	6,860.2	12,279.9	6,850.2	153.2	155.9	-89.27		450.0	5,330.9	711.5	402.5	309.07	2.302	
12,300.0	6,859.6	12,379.9	6,850.4	156.0	158.7	-89.34		450.0	5,430.9	711.5	396.9	314.66	2.261	
12,400.0	6,859.0	12,479.9	6,850.7	158.8	161.5	-89.41		450.0	5,530.9	711.5	391.3	320.25	2.222	
12,500.0	6,858.4	12,579.9	6,851.0	161.6	164.3	-89.48		450.0	5,630.9	711.5	385.7	325.84	2.184	
12,600.0	6,857.8	12,679.9	6,851.3	164.4	167.1	-89.56		450.0	5,730.8	711.5	380.1	331.43	2.147	
12,700.0	6,857.2	12,779.9	6,851.6	167.2	169.9	-89.63		450.0	5,830.8	711.5	374.5	337.02	2.111	
12,800.0	6,856.6	12,879.9	6,851.8	170.0	172.7	-89.70		450.0	5,930.8	711.5	368.9	342.62	2.077	
12,900.0	6,856.0	12,979.9	6,852.1	172.8	175.5	-89.77		450.0	6,030.8	711.5	363.3	348.21	2.043	
13,000.0	6,855.4	13,079.9	6,852.4	175.6	178.3	-89.84		450.0	6,130.8	711.5	357.7	353.80	2.011	
13,100.0	6,854.7	13,179.9	6,852.7	178.4	181.1	-89.91		450.0	6,230.8	711.5	352.1	359.40	1.980	
13,200.0	6,854.1	13,279.9	6,852.9	181.2	183.9	-89.99		450.0	6,330.8	711.5	346.5	364.99	1.949	
13,218.3	6,854.0	13,298.1	6,853.0	181.7	184.4	-90.00		450.0	6,349.1	711.5	345.5	366.01	1.944	
13,221.6	6,854.0	13,298.5	6,853.0	181.8	184.4	-90.00		450.0	6,349.4	711.5	345.4	366.11	1.943 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-312 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	90.00	0.0	27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	90.00	0.0	27.9	27.9	27.6	0.22	123.956	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	90.00	0.0	27.9	27.9	27.2	0.67	41.319	
300.0	300.0	300.0	300.0	0.6	0.6	90.00	90.00	0.0	27.9	27.9	26.7	1.12	24.791	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	90.00	0.0	27.9	27.9	26.3	1.57	17.708	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	90.00	0.0	27.9	27.9	25.8	2.02	13.773	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	90.00	0.0	27.9	27.9	25.4	2.47	11.269	
700.0	700.0	700.0	700.0	1.5	1.5	90.00	90.00	0.0	27.9	27.9	24.9	2.92	9.535	
800.0	800.0	800.0	800.0	1.7	1.7	90.00	90.00	0.0	27.9	27.9	24.5	3.37	8.264	
900.0	900.0	900.0	900.0	1.9	1.9	90.00	90.00	0.0	27.9	27.9	24.0	3.82	7.292	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	90.00	0.0	27.9	27.9	23.6	4.27	6.524	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.00	90.00	0.0	27.9	27.9	23.1	4.72	5.903	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.00	90.00	0.0	27.9	27.9	22.7	5.17	5.389 CC	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-141.16	-141.16	0.0	27.9	29.2	23.6	5.59	5.220	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	-146.74	-146.74	0.0	27.9	33.4	27.4	6.00	5.576	
1,500.0	1,499.5	1,499.5	1,499.5	3.2	3.3	-153.12	-153.12	0.0	27.9	40.6	34.2	6.40	6.343	
1,600.0	1,599.1	1,599.1	1,599.1	3.4	3.5	-157.78	-157.78	0.0	27.9	48.6	41.7	6.82	7.119	
1,700.0	1,698.7	1,698.7	1,698.7	3.6	3.7	-161.10	-161.10	0.0	27.9	56.7	49.5	7.24	7.831	
1,800.0	1,798.4	1,798.4	1,798.4	3.8	3.9	-163.59	-163.59	0.0	27.9	65.0	57.4	7.67	8.479	
1,900.0	1,898.0	1,898.0	1,898.0	4.1	4.2	-165.51	-165.51	0.0	27.9	73.4	65.3	8.10	9.067	
2,000.0	1,997.6	1,997.6	1,997.6	4.3	4.4	-167.04	-167.04	0.0	27.9	81.9	73.4	8.53	9.600	
2,100.0	2,097.2	2,099.4	2,099.4	4.6	4.6	-169.08	-169.08	0.5	26.2	89.2	80.3	8.96	9.959	
2,200.0	2,196.8	2,201.4	2,201.2	4.8	4.8	-172.43	-172.43	1.9	21.0	94.3	84.9	9.38	10.050	
2,300.0	2,296.4	2,301.2	2,300.8	5.1	5.0	-176.31	-176.31	3.8	14.0	98.3	88.5	9.80	10.030	
2,400.0	2,396.1	2,400.9	2,400.2	5.3	5.2	-179.87	-179.87	5.8	7.0	102.8	92.6	10.24	10.043	
2,500.0	2,495.7	2,500.7	2,499.7	5.6	5.5	176.88	176.88	7.7	-0.1	107.6	97.0	10.68	10.082	
2,600.0	2,595.3	2,600.4	2,599.1	5.8	5.7	173.92	173.92	9.6	-7.1	112.8	101.7	11.12	10.140	
2,700.0	2,694.9	2,700.1	2,698.6	6.1	5.9	171.22	171.22	11.6	-14.1	118.2	106.6	11.58	10.211	
2,800.0	2,794.5	2,799.8	2,798.0	6.4	6.2	168.76	168.76	13.5	-21.2	123.9	111.8	12.04	10.291	
2,900.0	2,894.2	2,899.5	2,897.4	6.6	6.4	166.52	166.52	15.5	-28.2	129.7	117.2	12.50	10.377	
3,000.0	2,993.8	2,999.2	2,996.9	6.9	6.6	164.48	164.48	17.4	-35.2	135.8	122.8	12.98	10.466	
3,100.0	3,093.4	3,098.9	3,096.3	7.2	6.9	162.61	162.61	19.3	-42.3	142.0	128.6	13.45	10.557	
3,200.0	3,193.0	3,198.6	3,195.7	7.4	7.1	160.90	160.90	21.3	-49.3	148.4	134.4	13.93	10.648	
3,300.0	3,292.6	3,298.3	3,295.2	7.7	7.3	159.33	159.33	23.2	-56.3	154.8	140.4	14.42	10.739	
3,400.0	3,392.3	3,398.0	3,394.6	8.0	7.6	157.89	157.89	25.2	-63.4	161.4	146.5	14.90	10.829	
3,500.0	3,491.9	3,497.7	3,494.1	8.3	7.8	156.56	156.56	27.1	-70.4	168.1	152.7	15.39	10.917	
3,600.0	3,591.5	3,597.4	3,593.5	8.5	8.1	155.34	155.34	29.0	-77.5	174.8	158.9	15.89	11.003	
3,700.0	3,691.1	3,697.1	3,692.9	8.8	8.3	154.20	154.20	31.0	-84.5	181.6	165.3	16.38	11.087	
3,800.0	3,790.7	3,796.8	3,792.4	9.1	8.6	153.15	153.15	32.9	-91.5	188.5	171.7	16.88	11.168	
3,900.0	3,890.4	3,896.5	3,891.8	9.3	8.8	152.17	152.17	34.9	-98.6	195.5	178.1	17.38	11.247	
4,000.0	3,990.0	3,996.2	3,991.2	9.6	9.1	151.26	151.26	36.8	-105.6	202.5	184.6	17.88	11.323	
4,100.0	4,089.6	4,095.9	4,090.7	9.9	9.3	150.41	150.41	38.7	-112.6	209.5	191.2	18.39	11.397	
4,200.0	4,189.2	4,195.6	4,190.1	10.2	9.6	149.62	149.62	40.7	-119.7	216.6	197.7	18.89	11.468	
4,300.0	4,288.8	4,295.3	4,289.6	10.5	9.8	148.87	148.87	42.6	-126.7	223.8	204.4	19.40	11.537	
4,400.0	4,388.5	4,395.0	4,389.0	10.7	10.1	148.17	148.17	44.6	-133.7	230.9	211.0	19.90	11.603	
4,500.0	4,488.1	4,494.7	4,488.4	11.0	10.3	147.52	147.52	46.5	-140.8	238.1	217.7	20.41	11.667	
4,600.0	4,587.7	4,594.4	4,587.9	11.3	10.6	146.90	146.90	48.4	-147.8	245.4	224.4	20.92	11.729	
4,700.0	4,687.3	4,694.2	4,687.3	11.6	10.8	146.32	146.32	50.4	-154.8	252.6	231.2	21.43	11.788	
4,800.0	4,786.9	4,793.9	4,786.7	11.8	11.1	145.77	145.77	52.3	-161.9	259.9	238.0	21.94	11.846	
4,900.0	4,886.6	4,893.6	4,886.2	12.1	11.3	145.25	145.25	54.3	-168.9	267.2	244.8	22.45	11.901	
5,000.0	4,986.2	4,993.3	4,985.6	12.4	11.6	144.76	144.76	56.2	-175.9	274.5	251.6	22.96	11.955	

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 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-312 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,085.8	5,093.0	5,085.0	12.7	11.9	144.29		58.1	-183.0	281.9	258.4	23.48	12.007	
5,200.0	5,185.4	5,192.7	5,184.5	13.0	12.1	143.85		60.1	-190.0	289.2	265.2	23.99	12.056	
5,300.0	5,285.0	5,292.4	5,283.9	13.2	12.4	143.43		62.0	-197.1	296.6	272.1	24.50	12.105	
5,400.0	5,384.7	5,392.1	5,383.4	13.5	12.6	143.03		64.0	-204.1	304.0	279.0	25.02	12.151	
5,500.0	5,484.3	5,491.8	5,482.8	13.8	12.9	142.65		65.9	-211.1	311.4	285.9	25.53	12.196	
5,600.0	5,583.9	5,591.5	5,582.2	14.1	13.1	142.29		67.8	-218.2	318.8	292.8	26.05	12.240	
5,700.0	5,683.5	5,692.0	5,682.5	14.4	13.4	142.20		69.4	-223.8	326.1	299.6	26.52	12.297	
5,800.0	5,783.2	5,792.5	5,783.0	14.6	13.5	142.73		70.0	-226.1	333.1	306.1	26.93	12.366	
5,900.0	5,883.0	5,892.4	5,883.0	14.8	13.7	143.37		70.0	-226.1	337.7	310.4	27.30	12.369	
6,000.0	5,982.9	5,992.4	5,982.9	15.0	13.9	143.63		70.0	-226.1	339.6	311.9	27.68	12.271	
6,100.0	6,082.9	6,089.1	6,079.6	15.2	14.1	12.69		70.0	-225.4	339.8	312.0	27.84	12.207	
6,200.0	6,182.9	6,179.5	6,169.5	15.3	14.2	-76.12		70.0	-216.0	341.6	313.3	28.27	12.080	
6,300.0	6,281.6	6,269.2	6,256.9	15.4	14.3	-75.00		70.0	-196.2	343.3	314.9	28.38	12.094	
6,400.0	6,377.5	6,358.4	6,341.0	15.4	14.4	-74.12		70.0	-166.6	344.7	316.3	28.42	12.131	
6,500.0	6,468.9	6,447.1	6,420.6	15.4	14.4	-73.47		70.0	-127.6	345.8	317.4	28.43	12.164	
6,600.0	6,554.3	6,535.5	6,494.9	15.4	14.6	-73.07		70.0	-79.8	346.6	318.0	28.53	12.149	
6,700.0	6,632.2	6,623.7	6,563.1	15.4	14.8	-72.91		70.0	-23.8	346.8	318.0	28.83	12.032	
6,800.0	6,701.2	6,712.0	6,624.4	15.5	15.2	-73.00		70.0	39.6	346.7	317.2	29.48	11.760	
6,900.0	6,760.2	6,800.0	6,677.8	15.9	15.8	-73.33		70.0	109.5	346.1	315.5	30.62	11.303	
7,000.0	6,808.2	6,888.9	6,723.3	16.8	16.6	-73.92		70.0	185.9	345.1	312.7	32.38	10.656	
7,100.0	6,844.3	6,978.0	6,759.6	18.1	17.8	-74.74		70.0	267.1	343.7	308.9	34.78	9.882	
7,200.0	6,868.0	7,067.5	6,786.3	19.7	19.1	-75.79		70.0	352.5	342.0	304.3	37.78	9.053	
7,300.0	6,880.2	7,157.8	6,803.0	21.6	20.7	-76.79		70.0	441.1	340.5	299.3	41.26	8.253	
7,322.5	6,882.4	7,178.2	6,805.3	22.1	21.1	-76.85		70.0	461.4	340.5	298.4	42.10	8.088	
7,400.0	6,888.3	7,250.0	6,809.1	23.6	22.5	-76.57		70.0	533.1	340.9	295.9	44.95	7.584	
7,500.0	6,889.0	7,346.6	6,807.9	25.8	24.5	-76.26		70.0	629.8	341.3	292.3	48.97	6.970	
7,600.0	6,888.3	7,446.6	6,806.5	28.1	26.7	-76.13		70.0	729.7	341.5	288.2	53.30	6.407	
7,700.0	6,887.7	7,546.6	6,805.0	30.5	29.1	-75.99		70.0	829.7	341.7	283.9	57.82	5.910	
7,800.0	6,887.1	7,646.6	6,803.6	32.9	31.4	-75.85		70.0	929.7	341.9	279.4	62.48	5.472	
7,900.0	6,886.5	7,746.6	6,802.1	35.4	33.9	-75.72		70.0	1,029.7	342.1	274.9	67.25	5.087	
8,000.0	6,885.9	7,846.6	6,800.7	37.9	36.4	-75.58		70.0	1,129.7	342.3	270.2	72.11	4.747	
8,100.0	6,885.3	7,946.6	6,799.2	40.5	39.0	-75.44		70.0	1,229.7	342.5	265.5	77.04	4.446	
8,200.0	6,884.7	8,046.6	6,797.8	43.1	41.6	-75.31		70.0	1,329.7	342.7	260.7	82.02	4.179	
8,300.0	6,884.1	8,146.6	6,796.3	45.7	44.2	-75.17		70.0	1,429.6	342.9	255.9	87.05	3.940	
8,400.0	6,883.5	8,246.6	6,794.9	48.4	46.8	-75.04		70.0	1,529.6	343.2	251.0	92.11	3.725	
8,500.0	6,882.8	8,346.6	6,793.4	51.0	49.4	-74.90		70.0	1,629.6	343.4	246.2	97.21	3.532	
8,600.0	6,882.2	8,446.6	6,792.0	53.7	52.1	-74.77		70.0	1,729.6	343.6	241.3	102.32	3.358	
8,700.0	6,881.6	8,546.6	6,790.5	56.4	54.8	-74.63		70.0	1,829.6	343.8	236.4	107.46	3.200	
8,800.0	6,881.0	8,646.6	6,789.1	59.1	57.5	-74.50		70.0	1,929.6	344.0	231.4	112.61	3.055	
8,900.0	6,880.4	8,746.6	6,787.6	61.8	60.2	-74.37		70.0	2,029.6	344.3	226.5	117.78	2.923	
9,000.0	6,879.8	8,846.6	6,786.2	64.5	62.9	-74.23		70.0	2,129.5	344.5	221.5	122.95	2.802	
9,100.0	6,879.2	8,946.6	6,784.7	67.3	65.6	-74.10		70.0	2,229.5	344.7	216.6	128.13	2.690	
9,200.0	6,878.6	9,046.6	6,783.3	70.0	68.4	-73.96		70.0	2,329.5	344.9	211.6	133.32	2.587	
9,300.0	6,878.0	9,146.6	6,781.8	72.7	71.1	-73.83		70.0	2,429.5	345.2	206.7	138.51	2.492	
9,400.0	6,877.3	9,246.6	6,780.4	75.5	73.8	-73.70		70.0	2,529.5	345.4	201.7	143.71	2.404	
9,500.0	6,876.7	9,346.6	6,778.9	78.2	76.6	-73.56		70.0	2,629.5	345.7	196.7	148.91	2.321	
9,600.0	6,876.1	9,446.6	6,777.5	81.0	79.3	-73.43		70.0	2,729.5	345.9	191.8	154.10	2.245	
9,700.0	6,875.5	9,546.6	6,776.0	83.7	82.1	-73.30		70.0	2,829.4	346.1	186.8	159.30	2.173	
9,800.0	6,874.9	9,646.6	6,774.6	86.5	84.9	-73.16		70.0	2,929.4	346.4	181.9	164.50	2.106	
9,900.0	6,874.3	9,746.6	6,773.1	89.2	87.6	-73.03		70.0	3,029.4	346.6	176.9	169.70	2.043	
10,000.0	6,873.7	9,846.6	6,771.7	92.0	90.4	-72.90		70.0	3,129.4	346.9	172.0	174.89	1.983	

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

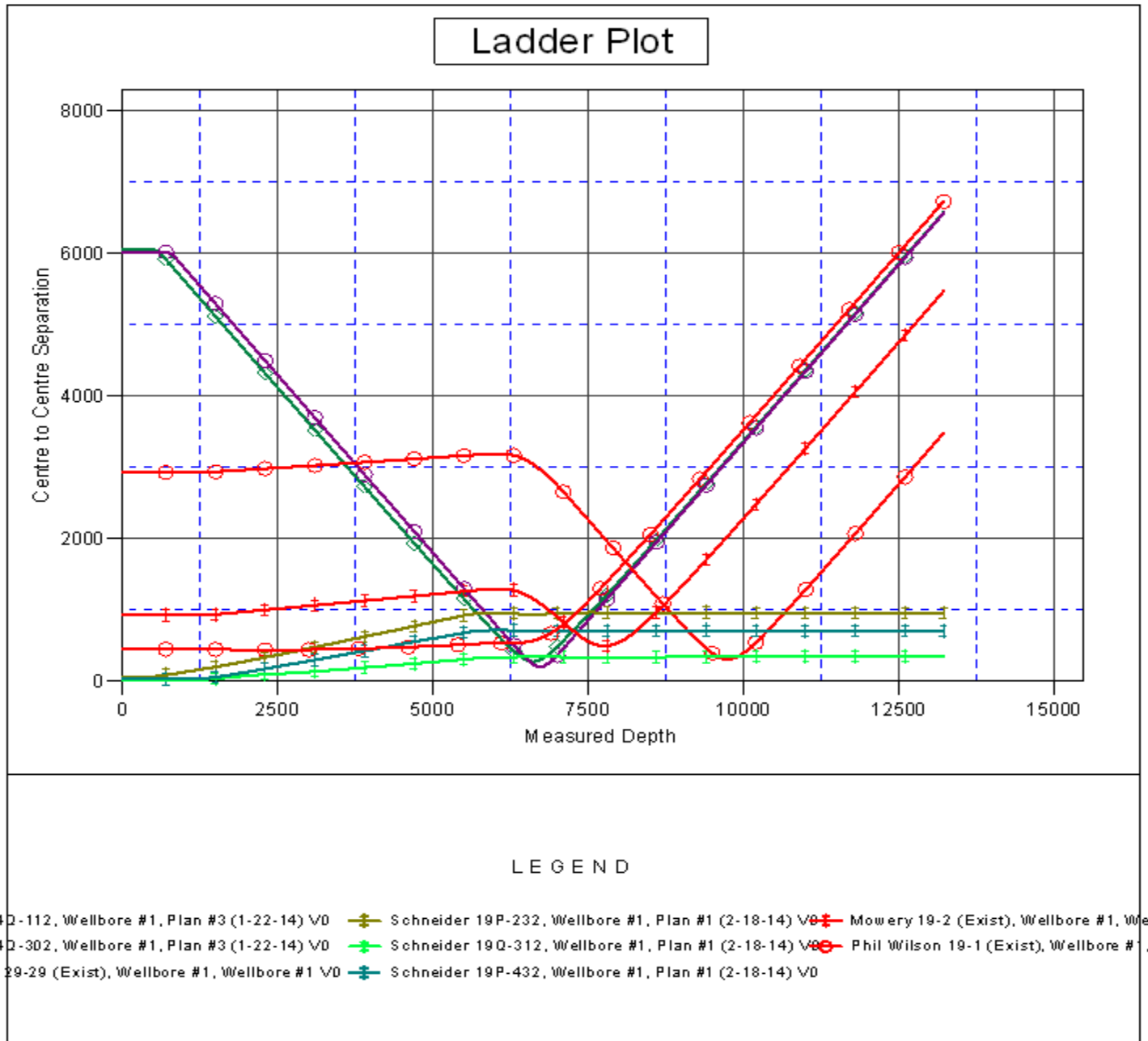
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-312 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,873.1	9,946.5	6,770.2	94.8	93.1	-72.77		70.0	3,229.4	347.1	167.0	180.08	1.927	
10,200.0	6,872.5	10,046.5	6,768.8	97.5	95.9	-72.63		70.0	3,329.4	347.4	162.1	185.27	1.875	
10,300.0	6,871.8	10,146.5	6,767.3	100.3	98.7	-72.50		70.0	3,429.4	347.6	157.1	190.46	1.825	
10,400.0	6,871.2	10,246.5	6,765.9	103.1	101.5	-72.37		70.0	3,529.3	347.9	152.2	195.64	1.778	
10,500.0	6,870.6	10,346.5	6,764.4	105.9	104.2	-72.24		70.0	3,629.3	348.1	147.3	200.81	1.734	
10,600.0	6,870.0	10,446.5	6,763.0	108.6	107.0	-72.11		70.0	3,729.3	348.4	142.4	205.99	1.691	
10,700.0	6,869.4	10,546.5	6,761.6	111.4	109.8	-71.98		70.0	3,829.3	348.6	137.5	211.15	1.651	
10,800.0	6,868.8	10,646.5	6,760.1	114.2	112.6	-71.85		70.0	3,929.3	348.9	132.6	216.31	1.613	
10,900.0	6,868.2	10,746.5	6,758.7	117.0	115.3	-71.72		70.0	4,029.3	349.1	127.7	221.47	1.577	
11,000.0	6,867.6	10,846.5	6,757.2	119.8	118.1	-71.59		70.0	4,129.3	349.4	122.8	226.62	1.542	
11,100.0	6,867.0	10,946.5	6,755.8	122.6	120.9	-71.46		70.0	4,229.2	349.7	117.9	231.76	1.509	
11,200.0	6,866.3	11,046.5	6,754.3	125.3	123.7	-71.33		70.0	4,329.2	349.9	113.0	236.90	1.477 Level 3	
11,300.0	6,865.7	11,146.5	6,752.9	128.1	126.5	-71.20		70.0	4,429.2	350.2	108.2	242.03	1.447 Level 3	
11,400.0	6,865.1	11,246.5	6,751.4	130.9	129.3	-71.07		70.0	4,529.2	350.5	103.3	247.16	1.418 Level 3	
11,500.0	6,864.5	11,346.5	6,750.0	133.7	132.1	-70.94		70.0	4,629.2	350.8	98.5	252.28	1.390 Level 3	
11,600.0	6,863.9	11,446.5	6,748.5	136.5	134.8	-70.81		70.0	4,729.2	351.0	93.6	257.39	1.364 Level 3	
11,700.0	6,863.3	11,546.5	6,747.1	139.3	137.6	-70.68		70.0	4,829.2	351.3	88.8	262.49	1.338 Level 3	
11,800.0	6,862.7	11,646.5	6,745.6	142.1	140.4	-70.55		70.0	4,929.2	351.6	84.0	267.59	1.314 Level 3	
11,900.0	6,862.1	11,746.5	6,744.2	144.9	143.2	-70.42		70.0	5,029.1	351.9	79.2	272.68	1.290 Level 3	
12,000.0	6,861.5	11,846.5	6,742.7	147.7	146.0	-70.29		70.0	5,129.1	352.1	74.4	277.76	1.268 Level 3	
12,100.0	6,860.9	11,946.5	6,741.3	150.4	148.8	-70.16		70.0	5,229.1	352.4	69.6	282.84	1.246 Level 2	
12,200.0	6,860.2	12,046.5	6,739.8	153.2	151.6	-70.04		70.0	5,329.1	352.7	64.8	287.91	1.225 Level 2	
12,300.0	6,859.6	12,146.5	6,738.4	156.0	154.4	-69.91		70.0	5,429.1	353.0	60.0	292.97	1.205 Level 2	
12,400.0	6,859.0	12,246.5	6,736.9	158.8	157.2	-69.78		70.0	5,529.1	353.3	55.3	298.02	1.185 Level 2	
12,500.0	6,858.4	12,346.5	6,735.5	161.6	160.0	-69.65		70.0	5,629.1	353.6	50.5	303.06	1.167 Level 2	
12,600.0	6,857.8	12,446.5	6,734.0	164.4	162.8	-69.53		70.0	5,729.0	353.9	45.8	308.10	1.149 Level 2	
12,700.0	6,857.2	12,546.5	6,732.6	167.2	165.6	-69.40		70.0	5,829.0	354.2	41.0	313.12	1.131 Level 2	
12,800.0	6,856.6	12,646.4	6,731.1	170.0	168.4	-69.27		70.0	5,929.0	354.5	36.3	318.14	1.114 Level 2	
12,900.0	6,856.0	12,746.4	6,729.7	172.8	171.2	-69.15		70.0	6,029.0	354.8	31.6	323.15	1.098 Level 2	
13,000.0	6,855.4	12,846.4	6,728.2	175.6	174.0	-69.02		70.0	6,129.0	355.1	26.9	328.16	1.082 Level 2	
13,100.0	6,854.7	12,946.4	6,726.8	178.4	176.7	-68.89		70.0	6,229.0	355.4	22.2	333.15	1.067 Level 2	
13,200.0	6,854.1	13,046.4	6,725.3	181.2	179.5	-68.77		70.0	6,329.0	355.7	17.5	338.14	1.052 Level 2	
13,221.6	6,854.0	13,068.0	6,725.0	181.8	180.1	-68.74		70.0	6,350.5	355.7	16.5	339.21	1.049 Level 2, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4668.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Schneider 19Q-402
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schneider 19Q-402
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4668.0ft (RKB - 15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4668.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Schneider 19Q-402	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-18-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4668.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Schneider 19Q-402

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°

