

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Schneider 19P-432**

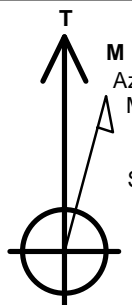
Surface Location: Schneider 19Q-HZ Pad Sec.19-T5N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4652.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1382009.87	3253799.16	40.378440	-104.589000	

RKB - 15' WELL @ 4667.0ft (RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 409'FSL, 1607'FEL, SEC.19	1.0	0.0	0.0	Point
BHL 787'FSL, 500'FEL, SEC.20	6853.0	450.0	6380.1	Point



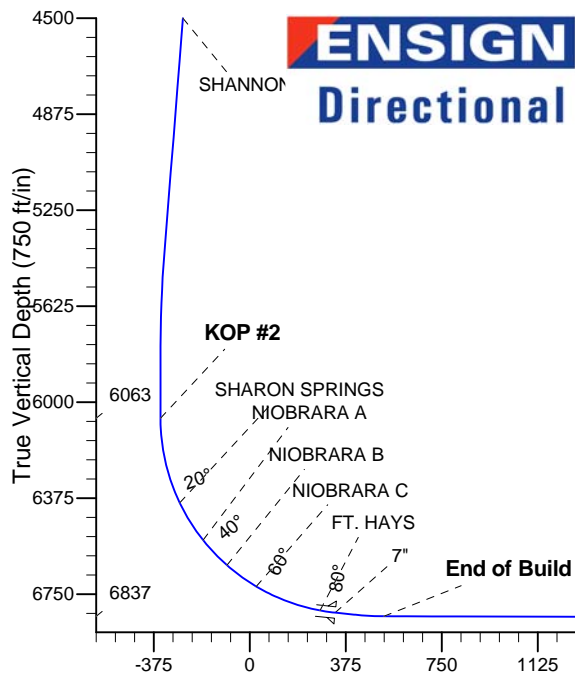
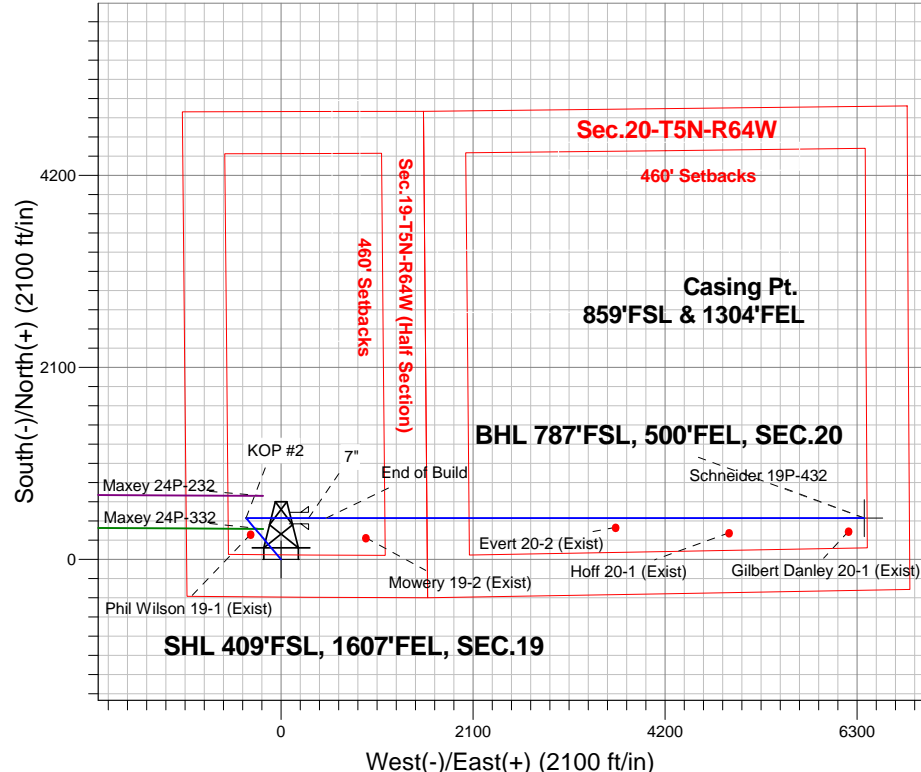
Azimuths to True North  
Magnetic North: 8.41°

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

## ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6062.8	6100.8	KOP #2
6836.6	7411.6	End of Build

Schneider 19Q-HZ Pad Sec.19-T5N-R64W  
Schneider 19P-432  
Plan #1 (2-18-14)  
11:21, February 21 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1380.0	7.60	319.75	1378.9	19.2	-16.3	2.00	319.75	-14.9	
4	5458.1	7.60	319.75	5421.1	430.8	-364.7	0.00	0.00	-333.5	
5	5838.0	0.00	0.00	5800.0	450.0	-381.0	2.00	180.00	-348.4	
6	6100.8	0.00	0.00	6062.8	450.0	-381.0	0.00	0.00	-348.4	
7	7220.8	84.00	90.00	6822.6	450.0	303.1	7.50	90.00	334.0	
8	7294.8	84.00	90.00	6830.3	450.0	376.7	0.00	0.00	407.4	
9	7411.6	89.84	90.00	6836.6	450.0	493.3	5.00	0.00	523.7	
10	13298.5	89.84	90.00	6853.0	450.0	6380.1	0.00	0.00	6395.9	BHL 787'FSL, 500'FEL, SEC.20

Vertical Section at 85.97° (750 ft/in)

BHL 787'FSL, 500'FEL, SEC.20



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

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

**Schneider 19P-432**

**Wellbore #1**

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

## **Standard Planning Report**

**21 February, 2014**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-18-14)		

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

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

Well	Schneider 19P-432					
Well Position	+N-S	0.0 ft	Northing:	1,382,009.87 ft	Latitude:	40.378440
	+E-W	0.0 ft	Easting:	3,253,799.16 ft	Longitude:	-104.589000
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,652.0 ft

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

<b>Design</b>	Plan #1 (2-18-14)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	85.97

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,380.0	7.60	319.75	1,378.9	19.2	-16.3	2.00	2.00	0.00	319.75	
5,458.1	7.60	319.75	5,421.1	430.8	-364.7	0.00	0.00	0.00	0.00	
5,838.0	0.00	0.00	5,800.0	450.0	-381.0	2.00	-2.00	0.00	180.00	
6,100.8	0.00	0.00	6,062.8	450.0	-381.0	0.00	0.00	0.00	0.00	
7,220.8	84.00	90.00	6,822.6	450.0	303.1	7.50	7.50	0.00	90.00	
7,294.8	84.00	90.00	6,830.3	450.0	376.7	0.00	0.00	0.00	0.00	
7,411.6	89.84	90.00	6,836.6	450.0	493.3	5.00	5.00	0.00	0.00	
13,298.5	89.84	90.00	6,853.0	450.0	6,380.1	0.00	0.00	0.00	0.00	BHL 787'FSL, 500°F

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
<b>SHL 409'FSL, 1607'FEL, SEC.19</b>									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
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
<b>KOP #1</b>									
1,100.0	2.00	319.75	1,100.0	1.3	-1.1	-1.0	2.00	2.00	0.00
1,200.0	4.00	319.75	1,199.8	5.3	-4.5	-4.1	2.00	2.00	0.00
1,300.0	6.00	319.75	1,299.5	12.0	-10.1	-9.3	2.00	2.00	0.00
1,380.0	7.60	319.75	1,378.9	19.2	-16.3	-14.9	2.00	2.00	0.00
1,400.0	7.60	319.75	1,398.7	21.2	-18.0	-16.4	0.00	0.00	0.00
1,500.0	7.60	319.75	1,497.8	31.3	-26.5	-24.2	0.00	0.00	0.00
1,600.0	7.60	319.75	1,597.0	41.4	-35.1	-32.1	0.00	0.00	0.00
1,700.0	7.60	319.75	1,696.1	51.5	-43.6	-39.9	0.00	0.00	0.00
1,800.0	7.60	319.75	1,795.2	61.6	-52.2	-47.7	0.00	0.00	0.00
1,900.0	7.60	319.75	1,894.3	71.7	-60.7	-55.5	0.00	0.00	0.00
2,000.0	7.60	319.75	1,993.4	81.8	-69.2	-63.3	0.00	0.00	0.00
2,100.0	7.60	319.75	2,092.6	91.9	-77.8	-71.1	0.00	0.00	0.00
2,200.0	7.60	319.75	2,191.7	102.0	-86.3	-78.9	0.00	0.00	0.00
2,300.0	7.60	319.75	2,290.8	112.1	-94.9	-86.8	0.00	0.00	0.00
2,400.0	7.60	319.75	2,389.9	122.2	-103.4	-94.6	0.00	0.00	0.00
2,500.0	7.60	319.75	2,489.0	132.2	-112.0	-102.4	0.00	0.00	0.00
2,600.0	7.60	319.75	2,588.2	142.3	-120.5	-110.2	0.00	0.00	0.00
2,700.0	7.60	319.75	2,687.3	152.4	-129.1	-118.0	0.00	0.00	0.00
2,800.0	7.60	319.75	2,786.4	162.5	-137.6	-125.8	0.00	0.00	0.00
2,900.0	7.60	319.75	2,885.5	172.6	-146.1	-133.6	0.00	0.00	0.00
3,000.0	7.60	319.75	2,984.7	182.7	-154.7	-141.5	0.00	0.00	0.00
3,100.0	7.60	319.75	3,083.8	192.8	-163.2	-149.3	0.00	0.00	0.00
3,200.0	7.60	319.75	3,182.9	202.9	-171.8	-157.1	0.00	0.00	0.00
3,300.0	7.60	319.75	3,282.0	213.0	-180.3	-164.9	0.00	0.00	0.00
3,400.0	7.60	319.75	3,381.1	223.1	-188.9	-172.7	0.00	0.00	0.00
3,500.0	7.60	319.75	3,480.3	233.2	-197.4	-180.5	0.00	0.00	0.00
3,535.0	7.60	319.75	3,515.0	236.7	-200.4	-183.3	0.00	0.00	0.00
<b>PARKMAN</b>									
3,600.0	7.60	319.75	3,579.4	243.3	-206.0	-188.3	0.00	0.00	0.00
3,700.0	7.60	319.75	3,678.5	253.4	-214.5	-196.2	0.00	0.00	0.00
3,800.0	7.60	319.75	3,777.6	263.5	-223.1	-204.0	0.00	0.00	0.00
3,900.0	7.60	319.75	3,876.8	273.5	-231.6	-211.8	0.00	0.00	0.00
4,000.0	7.60	319.75	3,975.9	283.6	-240.1	-219.6	0.00	0.00	0.00
4,100.0	7.60	319.75	4,075.0	293.7	-248.7	-227.4	0.00	0.00	0.00
4,200.0	7.60	319.75	4,174.1	303.8	-257.2	-235.2	0.00	0.00	0.00
4,300.0	7.60	319.75	4,273.2	313.9	-265.8	-243.0	0.00	0.00	0.00
4,339.1	7.60	319.75	4,312.0	317.9	-269.1	-246.1	0.00	0.00	0.00
<b>SUSSEX</b>									
4,400.0	7.60	319.75	4,372.4	324.0	-274.3	-250.9	0.00	0.00	0.00

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<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	7.60	319.75	4,471.5	334.1	-282.9	-258.7	0.00	0.00	0.00
4,528.8	7.60	319.75	4,500.0	337.0	-285.3	-260.9	0.00	0.00	0.00
<b>SHANNON</b>									
4,600.0	7.60	319.75	4,570.6	344.2	-291.4	-266.5	0.00	0.00	0.00
4,700.0	7.60	319.75	4,669.7	354.3	-300.0	-274.3	0.00	0.00	0.00
4,800.0	7.60	319.75	4,768.8	364.4	-308.5	-282.1	0.00	0.00	0.00
4,900.0	7.60	319.75	4,868.0	374.5	-317.1	-289.9	0.00	0.00	0.00
5,000.0	7.60	319.75	4,967.1	384.6	-325.6	-297.7	0.00	0.00	0.00
5,100.0	7.60	319.75	5,066.2	394.7	-334.1	-305.5	0.00	0.00	0.00
5,200.0	7.60	319.75	5,165.3	404.8	-342.7	-313.4	0.00	0.00	0.00
5,300.0	7.60	319.75	5,264.5	414.8	-351.2	-321.2	0.00	0.00	0.00
5,400.0	7.60	319.75	5,363.6	424.9	-359.8	-329.0	0.00	0.00	0.00
5,458.1	7.60	319.75	5,421.1	430.8	-364.7	-333.5	0.00	0.00	0.00
5,500.0	6.76	319.75	5,462.7	434.8	-368.1	-336.6	2.00	-2.00	0.00
5,600.0	4.76	319.75	5,562.2	442.5	-374.6	-342.6	2.00	-2.00	0.00
5,700.0	2.76	319.75	5,662.0	447.5	-378.9	-346.4	2.00	-2.00	0.00
5,800.0	0.76	319.75	5,762.0	449.8	-380.8	-348.2	2.00	-2.00	0.00
5,838.0	0.00	0.00	5,800.0	450.0	-381.0	-348.4	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,862.0	450.0	-381.0	-348.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,962.0	450.0	-381.0	-348.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,062.0	450.0	-381.0	-348.4	0.00	0.00	0.00
6,100.8	0.00	0.00	6,062.8	450.0	-381.0	-348.4	0.00	0.00	0.00
<b>KOP #2</b>									
6,200.0	7.44	90.00	6,161.7	450.0	-374.6	-342.0	7.50	7.50	0.00
6,300.0	14.94	90.00	6,259.7	450.0	-355.2	-322.6	7.50	7.50	0.00
6,400.0	22.44	90.00	6,354.4	450.0	-323.2	-290.7	7.50	7.50	0.00
6,442.3	25.61	90.00	6,393.0	450.0	-305.9	-273.5	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,500.0	29.94	90.00	6,444.0	450.0	-279.1	-246.7	7.50	7.50	0.00
6,600.0	37.44	90.00	6,527.2	450.0	-223.6	-191.4	7.50	7.50	0.00
6,615.0	38.56	90.00	6,539.0	450.0	-214.4	-182.2	7.50	7.50	0.00
<b>NIORARA A</b>									
6,700.0	44.94	90.00	6,602.4	450.0	-157.8	-125.8	7.50	7.50	0.00
6,750.6	48.73	90.00	6,637.0	450.0	-120.9	-89.0	7.50	7.50	0.00
<b>NIORARA B</b>									
6,800.0	52.44	90.00	6,668.4	450.0	-82.8	-50.9	7.50	7.50	0.00
6,892.1	59.35	90.00	6,720.0	450.0	-6.5	25.1	7.50	7.50	0.00
<b>NIORARA C</b>									
6,900.0	59.94	90.00	6,724.0	450.0	0.2	31.9	7.50	7.50	0.00
7,000.0	67.44	90.00	6,768.3	450.0	89.8	121.3	7.50	7.50	0.00
7,100.0	74.94	90.00	6,800.5	450.0	184.4	215.6	7.50	7.50	0.00
7,161.1	79.52	90.00	6,814.0	450.0	244.0	275.1	7.50	7.50	0.00
<b>FT. HAYS</b>									
7,200.0	82.44	90.00	6,820.1	450.0	282.4	313.4	7.50	7.50	0.00
7,220.8	84.00	90.00	6,822.5	450.0	303.1	334.0	7.50	7.50	0.00
<b>7"</b>									
7,294.8	84.00	90.00	6,830.3	450.0	376.7	407.4	0.00	0.00	0.00
7,300.0	84.26	90.00	6,830.8	450.0	381.8	412.5	5.00	5.00	0.00
7,400.0	89.26	90.00	6,836.5	450.0	481.6	512.1	5.00	5.00	0.00
7,411.6	89.84	90.00	6,836.6	450.0	493.2	523.7	5.00	5.00	0.00
<b>End of Build</b>									
7,500.0	89.84	90.00	6,836.8	450.0	581.6	611.8	0.00	0.00	0.00

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<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	89.84	90.00	6,837.1	450.0	681.6	711.6	0.00	0.00	0.00
7,700.0	89.84	90.00	6,837.4	450.0	781.6	811.4	0.00	0.00	0.00
7,800.0	89.84	90.00	6,837.6	450.0	881.6	911.1	0.00	0.00	0.00
7,900.0	89.84	90.00	6,837.9	450.0	981.6	1,010.9	0.00	0.00	0.00
8,000.0	89.84	90.00	6,838.2	450.0	1,081.6	1,110.6	0.00	0.00	0.00
8,100.0	89.84	90.00	6,838.5	450.0	1,181.6	1,210.4	0.00	0.00	0.00
8,200.0	89.84	90.00	6,838.8	450.0	1,281.6	1,310.1	0.00	0.00	0.00
8,300.0	89.84	90.00	6,839.0	450.0	1,381.6	1,409.9	0.00	0.00	0.00
8,400.0	89.84	90.00	6,839.3	450.0	1,481.6	1,509.6	0.00	0.00	0.00
8,500.0	89.84	90.00	6,839.6	450.0	1,581.6	1,609.4	0.00	0.00	0.00
8,600.0	89.84	90.00	6,839.9	450.0	1,681.6	1,709.1	0.00	0.00	0.00
8,700.0	89.84	90.00	6,840.2	450.0	1,781.6	1,808.9	0.00	0.00	0.00
8,800.0	89.84	90.00	6,840.4	450.0	1,881.6	1,908.6	0.00	0.00	0.00
8,900.0	89.84	90.00	6,840.7	450.0	1,981.6	2,008.4	0.00	0.00	0.00
9,000.0	89.84	90.00	6,841.0	450.0	2,081.6	2,108.1	0.00	0.00	0.00
9,100.0	89.84	90.00	6,841.3	450.0	2,181.6	2,207.9	0.00	0.00	0.00
9,200.0	89.84	90.00	6,841.6	450.0	2,281.6	2,307.6	0.00	0.00	0.00
9,300.0	89.84	90.00	6,841.8	450.0	2,381.6	2,407.4	0.00	0.00	0.00
9,400.0	89.84	90.00	6,842.1	450.0	2,481.6	2,507.1	0.00	0.00	0.00
9,500.0	89.84	90.00	6,842.4	450.0	2,581.6	2,606.9	0.00	0.00	0.00
9,600.0	89.84	90.00	6,842.7	450.0	2,681.6	2,706.6	0.00	0.00	0.00
9,700.0	89.84	90.00	6,843.0	450.0	2,781.6	2,806.4	0.00	0.00	0.00
9,800.0	89.84	90.00	6,843.2	450.0	2,881.6	2,906.1	0.00	0.00	0.00
9,900.0	89.84	90.00	6,843.5	450.0	2,981.6	3,005.9	0.00	0.00	0.00
10,000.0	89.84	90.00	6,843.8	450.0	3,081.6	3,105.6	0.00	0.00	0.00
10,100.0	89.84	90.00	6,844.1	450.0	3,181.6	3,205.4	0.00	0.00	0.00
10,200.0	89.84	90.00	6,844.3	450.0	3,281.6	3,305.1	0.00	0.00	0.00
10,300.0	89.84	90.00	6,844.6	450.0	3,381.6	3,404.9	0.00	0.00	0.00
10,400.0	89.84	90.00	6,844.9	450.0	3,481.6	3,504.6	0.00	0.00	0.00
10,500.0	89.84	90.00	6,845.2	450.0	3,581.6	3,604.4	0.00	0.00	0.00
10,600.0	89.84	90.00	6,845.5	450.0	3,681.6	3,704.2	0.00	0.00	0.00
10,700.0	89.84	90.00	6,845.7	450.0	3,781.6	3,803.9	0.00	0.00	0.00
10,800.0	89.84	90.00	6,846.0	450.0	3,881.6	3,903.7	0.00	0.00	0.00
10,900.0	89.84	90.00	6,846.3	450.0	3,981.6	4,003.4	0.00	0.00	0.00
11,000.0	89.84	90.00	6,846.6	450.0	4,081.6	4,103.2	0.00	0.00	0.00
11,100.0	89.84	90.00	6,846.9	450.0	4,181.6	4,202.9	0.00	0.00	0.00
11,200.0	89.84	90.00	6,847.1	450.0	4,281.6	4,302.7	0.00	0.00	0.00
11,300.0	89.84	90.00	6,847.4	450.0	4,381.6	4,402.4	0.00	0.00	0.00
11,400.0	89.84	90.00	6,847.7	450.0	4,481.6	4,502.2	0.00	0.00	0.00
11,500.0	89.84	90.00	6,848.0	450.0	4,581.6	4,601.9	0.00	0.00	0.00
11,600.0	89.84	90.00	6,848.3	450.0	4,681.6	4,701.7	0.00	0.00	0.00
11,700.0	89.84	90.00	6,848.5	450.0	4,781.6	4,801.4	0.00	0.00	0.00
11,800.0	89.84	90.00	6,848.8	450.0	4,881.6	4,901.2	0.00	0.00	0.00
11,900.0	89.84	90.00	6,849.1	450.0	4,981.6	5,000.9	0.00	0.00	0.00
12,000.0	89.84	90.00	6,849.4	450.0	5,081.6	5,100.7	0.00	0.00	0.00
12,100.0	89.84	90.00	6,849.7	450.0	5,181.6	5,200.4	0.00	0.00	0.00
12,200.0	89.84	90.00	6,849.9	450.0	5,281.6	5,300.2	0.00	0.00	0.00
12,300.0	89.84	90.00	6,850.2	450.0	5,381.6	5,399.9	0.00	0.00	0.00
12,400.0	89.84	90.00	6,850.5	450.0	5,481.6	5,499.7	0.00	0.00	0.00
12,500.0	89.84	90.00	6,850.8	450.0	5,581.6	5,599.4	0.00	0.00	0.00
12,600.0	89.84	90.00	6,851.0	450.0	5,681.6	5,699.2	0.00	0.00	0.00
12,700.0	89.84	90.00	6,851.3	450.0	5,781.6	5,798.9	0.00	0.00	0.00
12,800.0	89.84	90.00	6,851.6	450.0	5,881.6	5,898.7	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	89.84	90.00	6,851.9	450.0	5,981.6	5,998.4	0.00	0.00	0.00
13,000.0	89.84	90.00	6,852.2	450.0	6,081.6	6,098.2	0.00	0.00	0.00
13,100.0	89.84	90.00	6,852.4	450.0	6,181.6	6,197.9	0.00	0.00	0.00
13,200.0	89.84	90.00	6,852.7	450.0	6,281.6	6,297.7	0.00	0.00	0.00
13,298.5	89.84	90.00	6,853.0	450.0	6,380.1	6,395.9	0.00	0.00	0.00

BHL 787°FSL, 500°FEL, SEC.20

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,220.8	6,822.5	7"	7	7-1/2

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,535.0	3,515.0	PARKMAN			
4,339.1	4,312.0	SUSSEX			
4,528.8	4,500.0	SHANNON			
6,442.3	6,393.0	SHARON SPRINGS			
6,615.0	6,539.0	NIOBRARA A			
6,750.6	6,637.0	NIOBRARA B			
6,892.1	6,720.0	NIOBRARA C			
7,161.1	6,814.0	FT. HAYS			

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,100.8	6,062.8	450.0	-381.0	KOP #2
7,411.6	6,836.6	450.0	493.2	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

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

**Schneider 19P-432**

**Wellbore #1**

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

## **Anticollision Report**

**21 February, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

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

Survey Tool Program		Date	2/21/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,298.5	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 24P-232 - Wellbore #1 - Plan #3 (1-22-14)	6,760.8	12,498.6	276.4	113.5	1.696	CC, ES, SF
Maxey 24P-332 - Wellbore #1 - Plan #3 (1-22-14)	6,786.2	12,548.3	200.4	85.8	1.749	CC, ES, SF
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W						
Evert 20-2 (Exist) - Wellbore #1 - Wellbore #1	10,579.3	6,837.4	100.0	-145.2	0.408	Level 1, CC, ES, SF
Gilbert Danley 20-1 (Exist) - Wellbore #1 - Wellbore #1	13,125.8	6,840.5	143.2	-173.1	0.453	Level 1, CC, ES, SF
Hoff 20-1 (Exist) - Wellbore #1 - Wellbore #1	11,819.1	6,854.9	158.1	-122.0	0.564	Level 1, CC, ES, SF
Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1	7,846.1	6,823.8	213.2	42.0	1.245	Level 2, CC, ES, SF
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	4,386.5	4,333.0	76.5	-22.7	0.771	Level 1, CC
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	4,500.0	4,445.5	77.9	-23.7	0.766	Level 1, ES, SF
Schneider 19Q-HZ Pad Sec.19-T5N-R64W						
Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)	200.0	200.0	30.6	30.0	45.451	CC
Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)	13,298.5	13,263.2	302.8	9.1	1.031	Level 2, ES, SF
Schneider 19Q-312 - Wellbore #1 - Plan #1 (2-18-14)	1,000.0	1,001.0	58.5	54.2	13.693	CC, ES
Schneider 19Q-312 - Wellbore #1 - Plan #1 (2-18-14)	13,298.5	13,065.1	401.2	55.4	1.160	Level 2, SF
Schneider 19Q-402 - Wellbore #1 - Plan #1 (2-18-14)	1,000.0	1,001.0	30.6	26.4	7.173	CC, ES
Schneider 19Q-402 - Wellbore #1 - Plan #1 (2-18-14)	13,298.5	13,227.7	711.5	345.4	1.944	SF

Offset Design												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)		
5,900.0	5,862.0	12,319.7	6,726.6	16.9	161.1	0.96	694.6	-376.9	914.9	877.8	37.12	24.650	
6,000.0	5,962.0	12,319.4	6,726.6	17.0	161.1	0.88	694.6	-377.2	819.0	781.8	37.21	22.008	
6,100.0	6,062.0	12,319.0	6,726.6	17.2	161.1	0.81	694.6	-377.5	724.2	686.9	37.31	19.409	
6,200.0	6,161.7	12,325.2	6,726.5	17.3	161.2	-106.45	694.6	-371.4	631.2	460.1	171.10	3.689	
6,300.0	6,259.7	12,344.2	6,726.5	17.4	161.8	-116.51	694.5	-352.4	542.0	380.1	161.91	3.348	
6,400.0	6,354.4	12,375.9	6,726.4	17.3	162.6	-120.89	694.3	-320.6	459.4	302.5	156.92	2.927	
6,500.0	6,444.0	12,419.8	6,726.2	17.3	163.9	-121.12	694.1	-276.8	386.1	228.7	157.41	2.453	
6,600.0	6,527.2	12,474.9	6,726.1	17.2	165.4	-118.01	693.8	-221.7	325.6	162.9	162.74	2.001	
6,700.0	6,602.4	12,498.6	6,726.0	17.1	166.1	-117.67	693.6	-198.0	284.2	120.5	163.64	1.737	
6,760.8	6,643.7	12,498.6	6,726.0	17.1	166.1	-118.19	693.6	-198.0	276.4	113.5	162.97	1.696 CC, ES, SF	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation		Separation Factor
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
6,800.0	6,668.4	12,498.6	6,726.0	17.1	166.1	-117.97	693.6	-198.0	279.7	116.4	163.26	1.713	
6,900.0	6,724.0	12,498.6	6,726.0	17.2	166.1	-115.42	693.6	-198.0	314.7	147.9	166.78	1.887	
7,000.0	6,768.3	12,498.6	6,726.0	17.8	166.1	-109.67	693.6	-198.0	377.9	204.2	173.76	2.175	
7,100.0	6,800.5	12,498.6	6,726.0	19.1	166.1	-100.21	693.6	-198.0	457.1	275.0	182.10	2.510	
7,200.0	6,820.1	12,498.6	6,726.0	20.7	166.1	-86.90	693.6	-198.0	544.1	357.7	186.47	2.918	
7,300.0	6,830.8	12,498.6	6,726.0	22.6	166.1	-83.13	693.6	-198.0	635.0	447.6	187.46	3.387	
7,400.0	6,836.5	12,498.6	6,726.0	24.6	166.1	-70.84	693.6	-198.0	728.0	546.2	181.75	4.005	
7,500.0	6,836.8	12,498.6	6,726.0	26.7	166.1	-69.39	693.6	-198.0	822.2	639.8	182.35	4.509	
7,600.0	6,837.1	12,498.6	6,726.0	29.0	166.1	-69.39	693.6	-198.0	917.6	733.1	184.44	4.975	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24P-332 - 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)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,900.0	5,862.0	12,373.0	6,772.1	16.9	160.6	174.82		333.9	-370.5	934.5	898.3	36.14	25.853	
6,000.0	5,962.0	12,371.8	6,772.1	17.0	160.6	175.41		333.9	-371.7	835.3	799.9	35.43	23.580	
6,100.0	6,062.0	12,370.5	6,772.1	17.2	160.6	176.00		333.9	-372.9	736.4	701.6	34.81	21.156	
6,200.0	6,161.7	12,375.8	6,772.1	17.3	160.7	122.64		333.9	-367.7	638.1	486.9	151.18	4.221	
6,300.0	6,259.7	12,394.0	6,771.9	17.4	161.2	138.40		333.8	-349.4	541.8	418.6	123.17	4.399	
6,400.0	6,354.4	12,424.9	6,771.5	17.3	162.1	144.22		333.6	-318.6	449.5	338.2	111.27	4.039	
6,500.0	6,444.0	12,467.9	6,771.0	17.3	163.3	145.34		333.4	-275.6	363.2	253.5	109.71	3.310	
6,600.0	6,527.2	12,522.3	6,770.3	17.2	164.6	143.18		333.1	-221.1	285.2	169.4	115.84	2.462	
6,700.0	6,602.4	12,548.3	6,770.0	17.1	165.1	143.26		333.0	-195.1	221.7	105.2	116.55	1.902	
6,786.2	6,659.9	12,548.3	6,770.0	17.1	165.1	144.27		333.0	-195.1	200.4	85.8	114.60	1.749	CC, ES, SF
6,800.0	6,668.4	12,548.3	6,770.0	17.1	165.1	144.24		333.0	-195.1	201.0	86.3	114.71	1.752	
6,900.0	6,724.0	12,548.3	6,770.0	17.2	165.1	142.48		333.0	-195.1	236.3	117.3	119.02	1.985	
7,000.0	6,768.3	12,548.3	6,770.0	17.8	165.1	137.26		333.0	-195.1	308.6	177.8	130.77	2.360	
7,100.0	6,800.5	12,548.3	6,770.0	19.1	165.1	126.18		333.0	-195.1	397.4	244.7	152.69	2.603	
7,200.0	6,820.1	12,548.3	6,770.0	20.7	165.1	104.40		333.0	-195.1	492.8	311.9	180.84	2.725	
7,300.0	6,830.8	12,548.3	6,770.0	22.6	165.1	96.88		333.0	-195.1	590.3	403.8	186.53	3.165	
7,400.0	6,836.5	12,548.3	6,770.0	24.6	165.1	70.82		333.0	-195.1	688.6	509.5	179.03	3.846	
7,500.0	6,836.8	12,548.3	6,770.0	26.7	165.1	67.85		333.0	-195.1	787.1	609.4	177.69	4.429	
7,600.0	6,837.1	12,548.3	6,770.0	29.0	165.1	67.85		333.0	-195.1	885.9	706.2	179.78	4.928	
7,700.0	6,837.4	12,548.3	6,770.0	31.3	165.1	67.85		333.0	-195.1	985.0	803.1	181.95	5.414	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Evert 20-2 (Exist) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 7025-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,600.0	6,842.7	6,834.7	6,834.7	81.5	136.7	88.43	350.0	3,660.9	984.4	766.4	218.00	4.515	
9,700.0	6,843.0	6,835.0	6,835.0	84.3	136.7	88.59	350.0	3,660.9	884.9	664.2	220.77	4.008	
9,800.0	6,843.2	6,835.2	6,835.2	87.0	136.7	88.75	350.0	3,660.9	785.7	562.1	223.55	3.514	
9,900.0	6,843.5	6,835.5	6,835.5	89.8	136.7	88.91	350.0	3,660.9	686.6	460.3	226.33	3.034	
10,000.0	6,843.8	6,835.8	6,835.8	92.5	136.7	89.07	350.0	3,660.9	587.8	358.7	229.11	2.566	
10,100.0	6,844.1	6,836.1	6,836.1	95.3	136.7	89.23	350.0	3,660.9	489.6	257.7	231.89	2.111	
10,200.0	6,844.3	6,836.3	6,836.3	98.0	136.7	89.39	350.0	3,660.9	392.2	157.6	234.68	1.671	
10,300.0	6,844.6	6,836.6	6,836.6	100.8	136.7	89.55	350.0	3,660.9	296.6	59.2	237.46	1.249 Level 2	
10,400.0	6,844.9	6,836.9	6,836.9	103.6	136.7	89.71	350.0	3,660.9	205.3	-35.0	240.24	0.854 Level 1	
10,500.0	6,845.2	6,837.2	6,837.2	106.4	136.7	89.87	350.0	3,660.9	127.6	-115.4	243.03	0.525 Level 1	
10,579.3	6,845.4	6,837.4	6,837.4	108.6	136.7	90.00	350.0	3,660.9	100.0	-145.2	245.23	0.408 Level 1, CC, ES, SF	
10,600.0	6,845.5	6,837.5	6,837.5	109.1	136.7	90.03	350.0	3,660.9	102.1	-143.7	245.81	0.415 Level 1	
10,700.0	6,845.7	6,837.7	6,837.7	111.9	136.8	90.19	350.0	3,660.9	156.8	-91.8	248.60	0.631 Level 1	
10,800.0	6,846.0	6,838.0	6,838.0	114.7	136.8	90.35	350.0	3,660.9	242.3	-9.1	251.38	0.964 Level 1	
10,900.0	6,846.3	6,838.3	6,838.3	117.5	136.8	90.51	350.0	3,660.9	335.9	81.8	254.16	1.322 Level 3	
11,000.0	6,846.6	6,838.6	6,838.6	120.2	136.8	90.67	350.0	3,660.9	432.4	175.5	256.95	1.683	
11,100.0	6,846.9	6,838.9	6,838.9	123.0	136.8	90.83	350.0	3,660.9	530.2	270.5	259.73	2.041	
11,200.0	6,847.1	6,839.1	6,839.1	125.8	136.8	90.99	350.0	3,660.9	628.7	366.2	262.51	2.395	
11,300.0	6,847.4	6,839.4	6,839.4	128.6	136.8	91.15	350.0	3,660.9	727.6	462.3	265.29	2.743	
11,400.0	6,847.7	6,839.7	6,839.7	131.4	136.8	91.31	350.0	3,660.9	826.8	558.7	268.07	3.084	
11,500.0	6,848.0	6,840.0	6,840.0	134.2	136.8	91.47	350.0	3,660.9	926.1	655.3	270.84	3.419	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Gilbert Danley 20-1 (Exist) - Wellbore #1 - Wellb													<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 6971-UNKNOWN													<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Reference	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,200.0	6,849.9	6,837.9	6,837.9	153.7	136.8	88.97		306.8	6,207.4	936.8	646.5	290.32	3.227	
12,300.0	6,850.2	6,838.2	6,838.2	156.5	136.8	89.08		306.8	6,207.4	838.1	545.0	293.13	2.859	
12,400.0	6,850.5	6,838.5	6,838.5	159.3	136.8	89.19		306.8	6,207.4	739.8	443.8	295.93	2.500	
12,500.0	6,850.8	6,838.8	6,838.8	162.1	136.8	89.30		306.8	6,207.4	641.9	343.2	298.74	2.149	
12,600.0	6,851.0	6,839.0	6,839.0	164.8	136.8	89.41		306.8	6,207.4	544.9	243.4	301.55	1.807	
12,700.0	6,851.3	6,839.3	6,839.3	167.6	136.8	89.52		306.8	6,207.4	449.2	144.8	304.36	1.476	Level 3
12,800.0	6,851.6	6,839.6	6,839.6	170.4	136.8	89.64		306.8	6,207.4	355.8	48.7	307.17	1.158	Level 2
12,900.0	6,851.9	6,839.9	6,839.9	173.2	136.8	89.75		306.8	6,207.4	267.3	-42.6	309.97	0.862	Level 1
13,000.0	6,852.2	6,840.2	6,840.2	176.0	136.8	89.86		306.8	6,207.4	190.6	-122.2	312.78	0.609	Level 1
13,100.0	6,852.4	6,840.4	6,840.4	178.8	136.8	89.97		306.8	6,207.4	145.5	-170.1	315.58	0.461	Level 1
13,125.8	6,852.5	6,840.5	6,840.5	179.5	136.8	90.00		306.8	6,207.4	143.2	-173.1	316.31	0.453	Level 1, CC, ES, SF
13,200.0	6,852.7	6,840.7	6,840.7	181.6	136.8	90.08		306.8	6,207.4	161.3	-157.1	318.39	0.507	Level 1
13,298.5	6,853.0	6,841.0	6,841.0	184.4	136.8	90.19		306.8	6,207.4	224.4	-96.8	321.15	0.699	Level 1

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Hoff 20-1 (Exist) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft			
Survey Program: 7010-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)						
10,900.0	6,846.3	6,852.3	6,852.3	117.5	137.0	89.07	291.9	4,900.7	932.6	678.2	254.39	3.666					
11,000.0	6,846.6	6,852.6	6,852.6	120.2	137.1	89.17	291.9	4,900.7	834.2	577.0	257.18	3.244					
11,100.0	6,846.9	6,852.9	6,852.9	123.0	137.1	89.27	291.9	4,900.7	736.3	476.3	259.98	2.832					
11,200.0	6,847.1	6,853.1	6,853.1	125.8	137.1	89.37	291.9	4,900.7	639.0	376.2	262.78	2.432					
11,300.0	6,847.4	6,853.4	6,853.4	128.6	137.1	89.47	291.9	4,900.7	542.6	277.1	265.57	2.043					
11,400.0	6,847.7	6,853.7	6,853.7	131.4	137.1	89.58	291.9	4,900.7	447.9	179.5	268.37	1.669					
11,500.0	6,848.0	6,854.0	6,854.0	134.2	137.1	89.68	291.9	4,900.7	356.1	84.9	271.17	1.313	Level 3				
11,600.0	6,848.3	6,854.3	6,854.3	136.9	137.1	89.78	291.9	4,900.7	270.2	-3.8	273.96	0.986	Level 1				
11,700.0	6,848.5	6,854.5	6,854.5	139.7	137.1	89.88	291.9	4,900.7	197.9	-78.9	276.76	0.715	Level 1				
11,800.0	6,848.8	6,854.8	6,854.8	142.5	137.1	89.98	291.9	4,900.7	159.2	-120.3	279.56	0.570	Level 1				
11,819.1	6,848.9	6,854.9	6,854.9	143.0	137.1	90.00	291.9	4,900.7	158.1	-122.0	280.09	0.564	Level 1, CC, ES, SF				
11,900.0	6,849.1	6,855.1	6,855.1	145.3	137.1	90.08	291.9	4,900.7	177.6	-104.8	282.36	0.629	Level 1				
12,000.0	6,849.4	6,855.4	6,855.4	148.1	137.1	90.18	291.9	4,900.7	240.2	-44.9	285.15	0.842	Level 1				
12,100.0	6,849.7	6,855.7	6,855.7	150.9	137.1	90.28	291.9	4,900.7	322.3	34.4	287.95	1.119	Level 2				
12,200.0	6,849.9	6,855.9	6,855.9	153.7	137.1	90.39	291.9	4,900.7	412.4	121.7	290.75	1.418	Level 3				
12,300.0	6,850.2	6,856.2	6,856.2	156.5	137.1	90.49	291.9	4,900.7	506.2	212.7	293.54	1.724					
12,400.0	6,850.5	6,856.5	6,856.5	159.3	137.1	90.59	291.9	4,900.7	602.0	305.7	296.34	2.032					
12,500.0	6,850.8	6,856.8	6,856.8	162.1	137.1	90.69	291.9	4,900.7	699.0	399.9	299.14	2.337					
12,600.0	6,851.0	6,857.0	6,857.0	164.8	137.1	90.79	291.9	4,900.7	796.7	494.8	301.93	2.639					
12,700.0	6,851.3	6,857.3	6,857.3	167.6	137.1	90.89	291.9	4,900.7	895.0	590.2	304.72	2.937					
12,800.0	6,851.6	6,857.6	6,857.6	170.4	137.2	90.99	291.9	4,900.7	993.6	686.0	307.52	3.231					

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 7035-UNKNOWN														
Reference				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	
0.0	0.0	0.0	0.0	0.0	0.0	75.68	236.8	927.8	957.6					
100.0	100.0	86.0	86.0	0.1	1.7	75.68	236.8	927.8	957.5	955.7	1.83	522.494		
200.0	200.0	186.0	186.0	0.3	3.7	75.68	236.8	927.8	957.5	953.5	4.06	235.995		
300.0	300.0	286.0	286.0	0.6	5.7	75.68	236.8	927.8	957.5	951.2	6.28	152.419		
400.0	400.0	386.0	386.0	0.8	7.7	75.68	236.8	927.8	957.5	949.0	8.51	112.558		
500.0	500.0	486.0	486.0	1.0	9.7	75.68	236.8	927.8	957.5	946.8	10.73	89.223		
600.0	600.0	586.0	586.0	1.2	11.7	75.68	236.8	927.8	957.5	944.6	12.96	73.903		
700.0	700.0	686.0	686.0	1.5	13.7	75.68	236.8	927.8	957.5	942.3	15.18	63.072		
800.0	800.0	786.0	786.0	1.7	15.7	75.68	236.8	927.8	957.5	940.1	17.41	55.011		
900.0	900.0	886.0	886.0	1.9	17.7	75.68	236.8	927.8	957.5	937.9	19.63	48.776		
1,000.0	1,000.0	986.0	986.0	2.1	19.7	75.68	236.8	927.8	957.5	935.7	21.86	43.811		
1,100.0	1,100.0	1,086.0	1,086.0	2.4	21.7	116.01	236.8	927.8	958.3	934.2	24.07	39.806		
1,200.0	1,199.8	1,185.8	1,185.8	2.6	23.7	116.25	236.8	927.8	960.6	934.3	26.28	36.551		
1,300.0	1,299.5	1,285.5	1,285.5	2.8	25.7	116.65	236.8	927.8	964.5	936.0	28.48	33.864		
1,400.0	1,398.7	1,384.7	1,384.7	3.1	27.7	117.21	236.8	927.8	970.0	939.3	30.68	31.615		
1,500.0	1,497.8	1,483.8	1,483.8	3.3	29.7	117.89	236.8	927.8	976.2	943.2	32.91	29.662		
1,600.0	1,597.0	1,583.0	1,583.0	3.6	31.7	118.57	236.8	927.8	982.5	947.3	35.15	27.953		
1,700.0	1,696.1	1,682.1	1,682.1	3.9	33.6	119.24	236.8	927.8	988.9	951.5	37.39	26.448		
1,800.0	1,795.2	1,781.2	1,781.2	4.2	35.6	119.90	236.8	927.8	995.5	955.8	39.64	25.114		
6,900.0	6,724.0	6,710.0	6,710.0	17.2	134.2	24.65	236.8	927.8	951.7	858.1	93.57	10.171		
7,000.0	6,768.3	6,754.3	6,754.3	17.8	135.1	33.55	236.8	927.8	864.6	766.8	97.83	8.838		
7,100.0	6,800.5	6,786.5	6,786.5	19.1	135.7	47.82	236.8	927.8	773.3	655.5	117.81	6.564		
7,200.0	6,820.1	6,806.1	6,806.1	20.7	136.1	68.28	236.8	927.8	679.7	534.0	145.61	4.668		
7,300.0	6,830.8	6,816.8	6,816.8	22.6	136.3	75.63	236.8	927.8	586.1	432.4	153.69	3.813		
7,400.0	6,836.5	6,822.5	6,822.5	24.6	136.4	88.45	236.8	927.8	494.5	333.6	160.83	3.074		
7,500.0	6,836.8	6,822.8	6,822.8	26.7	136.5	89.74	236.8	927.8	406.5	243.5	163.05	2.493		
7,600.0	6,837.1	6,823.1	6,823.1	29.0	136.5	89.82	236.8	927.8	325.6	160.3	165.30	1.970		
7,700.0	6,837.4	6,823.4	6,823.4	31.3	136.5	89.89	236.8	927.8	258.5	90.8	167.64	1.542		
7,800.0	6,837.6	6,823.6	6,823.6	33.7	136.5	89.97	236.8	927.8	218.1	48.1	170.05	1.283 Level 3		
7,846.1	6,837.8	6,823.8	6,823.8	34.8	136.5	90.00	236.8	927.8	213.2	42.0	171.19	1.245 Level 2, CC, ES, SF		
7,900.0	6,837.9	6,823.9	6,823.9	36.2	136.5	90.04	236.8	927.8	219.9	47.4	172.52	1.275 Level 3		
8,000.0	6,838.2	6,824.2	6,824.2	38.7	136.5	90.12	236.8	927.8	262.9	87.9	175.04	1.502		
8,100.0	6,838.5	6,824.5	6,824.5	41.2	136.5	90.19	236.8	927.8	331.5	153.9	177.59	1.867		
8,200.0	6,838.8	6,824.8	6,824.8	43.8	136.5	90.27	236.8	927.8	413.1	232.9	180.18	2.293		
8,300.0	6,839.0	6,825.0	6,825.0	46.4	136.5	90.34	236.8	927.8	501.4	318.6	182.80	2.743		
8,400.0	6,839.3	6,825.3	6,825.3	49.0	136.5	90.42	236.8	927.8	593.5	408.0	185.43	3.200		
8,500.0	6,839.6	6,825.6	6,825.6	51.7	136.5	90.49	236.8	927.8	687.7	499.6	188.09	3.656		
8,600.0	6,839.9	6,825.9	6,825.9	54.3	136.5	90.57	236.8	927.8	783.4	592.7	190.76	4.107		
8,700.0	6,840.2	6,826.2	6,826.2	57.0	136.5	90.64	236.8	927.8	880.1	686.6	193.44	4.550		
8,800.0	6,840.4	6,826.4	6,826.4	59.7	136.5	90.72	236.8	927.8	977.4	781.3	196.13	4.983		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore												Offset Well Error:	0.0 ft
Survey Program: 7030-UNKNOWN													
Reference				Offset			Semi Major Axis		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-50.51	273.2	-331.5	430.4				
100.0	100.0	74.0	74.0	0.1	1.5	-50.51	273.2	-331.5	429.6	428.0	1.59	269.767	
200.0	200.0	174.0	174.0	0.3	3.5	-50.51	273.2	-331.5	429.6	425.8	3.82	112.546	
300.0	300.0	274.0	274.0	0.6	5.5	-50.51	273.2	-331.5	429.6	423.6	6.04	71.105	
400.0	400.0	374.0	374.0	0.8	7.5	-50.51	273.2	-331.5	429.6	421.4	8.27	51.970	
500.0	500.0	474.0	474.0	1.0	9.5	-50.51	273.2	-331.5	429.6	419.1	10.49	40.949	
600.0	600.0	574.0	574.0	1.2	11.5	-50.51	273.2	-331.5	429.6	416.9	12.72	33.785	
700.0	700.0	674.0	674.0	1.5	13.5	-50.51	273.2	-331.5	429.6	414.7	14.94	28.755	
800.0	800.0	774.0	774.0	1.7	15.5	-50.51	273.2	-331.5	429.6	412.5	17.17	25.028	
900.0	900.0	874.0	874.0	1.9	17.5	-50.51	273.2	-331.5	429.6	410.2	19.39	22.156	
1,000.0	1,000.0	974.0	974.0	2.1	19.5	-50.51	273.2	-331.5	429.6	408.0	21.62	19.876	
1,100.0	1,100.0	1,074.0	1,074.0	2.4	21.5	-10.30	273.2	-331.5	427.9	404.1	23.82	17.962	
1,200.0	1,199.8	1,173.8	1,173.8	2.6	23.5	-10.45	273.2	-331.5	422.8	396.8	25.99	16.264	
1,300.0	1,299.5	1,273.5	1,273.5	2.8	25.5	-10.70	273.2	-331.5	414.2	386.1	28.12	14.729	
1,400.0	1,398.7	1,372.7	1,372.7	3.1	27.5	-11.05	273.2	-331.5	402.3	372.1	30.22	13.310	
1,500.0	1,497.8	1,471.8	1,471.8	3.3	29.4	-11.43	273.2	-331.5	389.3	356.9	32.42	12.010	
1,600.0	1,597.0	1,571.0	1,571.0	3.6	31.4	-11.82	273.2	-331.5	376.4	341.7	34.61	10.874	
1,700.0	1,696.1	1,670.1	1,670.1	3.9	33.4	-12.25	273.2	-331.5	363.4	326.6	36.81	9.873	
1,800.0	1,795.2	1,769.2	1,769.2	4.2	35.4	-12.71	273.2	-331.5	350.5	311.5	39.01	8.985	
1,900.0	1,894.3	1,868.3	1,868.3	4.5	37.4	-13.20	273.2	-331.5	337.6	296.4	41.21	8.192	
2,000.0	1,993.4	1,967.4	1,967.4	4.8	39.3	-13.74	273.2	-331.5	324.7	281.3	43.42	7.479	
2,100.0	2,092.6	2,066.6	2,066.6	5.1	41.3	-14.31	273.2	-331.5	311.9	266.3	45.63	6.836	
2,200.0	2,191.7	2,165.7	2,165.7	5.4	43.3	-14.94	273.2	-331.5	299.1	251.3	47.84	6.253	
2,300.0	2,290.8	2,264.8	2,264.8	5.7	45.3	-15.62	273.2	-331.5	286.3	236.3	50.05	5.721	
2,400.0	2,389.9	2,363.9	2,363.9	6.0	47.3	-16.37	273.2	-331.5	273.6	221.4	52.26	5.235	
2,500.0	2,489.0	2,463.0	2,463.0	6.3	49.3	-17.18	273.2	-331.5	260.9	206.5	54.48	4.790	
2,600.0	2,588.2	2,562.2	2,562.2	6.7	51.2	-18.08	273.2	-331.5	248.3	191.6	56.70	4.379	
2,700.0	2,687.3	2,661.3	2,661.3	7.0	53.2	-19.08	273.2	-331.5	235.8	176.9	58.93	4.001	
2,800.0	2,786.4	2,760.4	2,760.4	7.3	55.2	-20.19	273.2	-331.5	223.3	162.2	61.16	3.651	
2,900.0	2,885.5	2,859.5	2,859.5	7.6	57.2	-21.43	273.2	-331.5	210.9	147.5	63.40	3.327	
3,000.0	2,984.7	2,958.7	2,958.7	7.9	59.2	-22.82	273.2	-331.5	198.7	133.0	65.64	3.027	
3,100.0	3,083.8	3,057.8	3,057.8	8.3	61.2	-24.39	273.2	-331.5	186.5	118.6	67.90	2.747	
3,200.0	3,182.9	3,156.9	3,156.9	8.6	63.1	-26.18	273.2	-331.5	174.6	104.4	70.16	2.488	
3,300.0	3,282.0	3,256.0	3,256.0	8.9	65.1	-28.23	273.2	-331.5	162.8	90.3	72.44	2.247	
3,400.0	3,381.1	3,355.1	3,355.1	9.2	67.1	-30.60	273.2	-331.5	151.2	76.5	74.74	2.023	
3,500.0	3,480.3	3,454.3	3,454.3	9.6	69.1	-33.35	273.2	-331.5	140.0	62.9	77.07	1.816	
3,600.0	3,579.4	3,553.4	3,553.4	9.9	71.1	-36.57	273.2	-331.5	129.1	49.7	79.43	1.625	
3,700.0	3,678.5	3,652.5	3,652.5	10.2	73.1	-40.36	273.2	-331.5	118.7	36.9	81.83	1.451 Level 3	
3,800.0	3,777.6	3,751.6	3,751.6	10.5	75.0	-44.85	273.2	-331.5	108.9	24.7	84.27	1.293 Level 3	
3,900.0	3,876.8	3,850.8	3,850.8	10.9	77.0	-50.17	273.2	-331.5	99.9	13.2	86.77	1.152 Level 2	
4,000.0	3,975.9	3,949.9	3,949.9	11.2	79.0	-56.47	273.2	-331.5	92.0	2.7	89.33	1.030 Level 2	
4,100.0	4,075.0	4,049.0	4,049.0	11.5	81.0	-63.84	273.2	-331.5	85.3	-6.6	91.92	0.929 Level 1	
4,200.0	4,174.1	4,148.1	4,148.1	11.9	83.0	-72.27	273.2	-331.5	80.4	-14.2	94.51	0.850 Level 1	
4,300.0	4,273.2	4,247.2	4,247.2	12.2	84.9	-81.56	273.2	-331.5	77.3	-19.7	97.04	0.797 Level 1	
4,386.5	4,359.0	4,333.0	4,333.0	12.5	86.7	-90.00	273.2	-331.5	76.5	-22.7	99.13	0.771 Level 1, CC	
4,400.0	4,372.4	4,346.4	4,346.4	12.5	86.9	-91.32	273.2	-331.5	76.5	-22.9	99.44	0.769 Level 1	
4,500.0	4,471.5	4,445.5	4,445.5	12.8	88.9	-101.00	273.2	-331.5	77.9	-23.7	101.68	0.766 Level 1, ES, SF	
4,600.0	4,570.6	4,544.6	4,544.6	13.2	90.9	-110.10	273.2	-331.5	81.5	-22.2	103.76	0.786 Level 1	
4,700.0	4,669.7	4,643.7	4,643.7	13.5	92.9	-118.25	273.2	-331.5	87.0	-18.8	105.74	0.823 Level 1	
4,800.0	4,768.8	4,742.8	4,742.8	13.8	94.9	-125.32	273.2	-331.5	94.0	-13.7	107.67	0.873 Level 1	
4,900.0	4,868.0	4,842.0	4,842.0	14.2	96.8	-131.35	273.2	-331.5	102.3	-7.3	109.60	0.933 Level 1	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore													Offset Well Error:	0.0 ft
Survey Program: 7030-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	
5,000.0	4,967.1	4,941.1	4,941.1	14.5	98.8	-136.44	273.2	-331.5	111.5	-0.1	111.55	0.999	Level 1	
5,100.0	5,066.2	5,040.2	5,040.2	14.8	100.8	-140.73	273.2	-331.5	121.4	7.9	113.52	1.070	Level 2	
5,200.0	5,165.3	5,139.3	5,139.3	15.2	102.8	-144.35	273.2	-331.5	132.0	16.5	115.53	1.142	Level 2	
5,300.0	5,264.5	5,238.5	5,238.5	15.5	104.8	-147.43	273.2	-331.5	143.0	25.4	117.56	1.216	Level 2	
5,400.0	5,363.6	5,337.6	5,337.6	15.8	106.8	-150.07	273.2	-331.5	154.3	34.7	119.63	1.290	Level 3	
5,500.0	5,462.7	5,436.7	5,436.7	16.1	108.7	-152.34	273.2	-331.5	165.7	43.8	121.85	1.359	Level 3	
5,600.0	5,562.2	5,536.2	5,536.2	16.4	110.7	-153.95	273.2	-331.5	174.6	50.4	124.23	1.406	Level 3	
5,700.0	5,662.0	5,636.0	5,636.0	16.6	112.7	-154.91	273.2	-331.5	180.5	54.0	126.54	1.427	Level 3	
5,800.0	5,762.0	5,736.0	5,736.0	16.7	114.7	-155.34	273.2	-331.5	183.3	54.6	128.76	1.424	Level 3	
5,900.0	5,862.0	5,836.0	5,836.0	16.9	116.7	164.37	273.2	-331.5	183.6	50.6	132.96	1.381	Level 3	
6,000.0	5,962.0	5,936.0	5,936.0	17.0	118.7	164.37	273.2	-331.5	183.6	48.4	135.13	1.358	Level 3	
6,100.0	6,062.0	6,036.0	6,036.0	17.2	120.7	164.37	273.2	-331.5	183.6	46.2	137.30	1.337	Level 3	
6,200.0	6,161.7	6,135.7	6,135.7	17.3	122.7	76.43	273.2	-331.5	181.9	44.4	137.48	1.323	Level 3	
6,300.0	6,259.7	6,233.7	6,233.7	17.4	124.7	82.64	273.2	-331.5	178.3	38.5	139.83	1.275	Level 3	
6,377.2	6,333.2	6,307.2	6,307.2	17.3	126.1	90.00	273.2	-331.5	176.8	35.0	141.79	1.247	Level 2	
6,400.0	6,354.4	6,328.4	6,328.4	17.3	126.6	92.51	273.2	-331.5	177.0	34.6	142.33	1.243	Level 2	
6,500.0	6,444.0	6,418.0	6,418.0	17.3	128.4	104.43	273.2	-331.5	184.4	40.8	143.58	1.284	Level 3	
6,600.0	6,527.2	6,501.2	6,501.2	17.2	130.0	115.86	273.2	-331.5	207.1	65.5	141.58	1.463	Level 3	
6,700.0	6,602.4	6,576.4	6,576.4	17.1	131.5	124.82	273.2	-331.5	247.8	111.7	136.14	1.820		
6,800.0	6,668.4	6,642.4	6,642.4	17.1	132.8	130.63	273.2	-331.5	305.2	176.1	129.03	2.365		
6,900.0	6,724.0	6,698.0	6,698.0	17.2	134.0	133.24	273.2	-331.5	375.9	253.1	122.83	3.061		
7,000.0	6,768.3	6,742.3	6,742.3	17.8	134.8	132.45	273.2	-331.5	456.9	336.2	120.76	3.784		
7,100.0	6,800.5	6,774.5	6,774.5	19.1	135.5	127.18	273.2	-331.5	545.4	418.6	126.78	4.302		
7,200.0	6,820.1	6,794.1	6,794.1	20.7	135.9	114.57	273.2	-331.5	638.9	495.4	143.44	4.454		
7,300.0	6,830.8	6,804.8	6,804.8	22.6	136.1	111.99	273.2	-331.5	734.9	587.1	147.87	4.970		
7,400.0	6,836.5	6,810.5	6,810.5	24.6	136.2	93.41	273.2	-331.5	832.2	671.7	160.49	5.185		
7,500.0	6,836.8	6,810.8	6,810.8	26.7	136.2	90.83	273.2	-331.5	930.1	767.3	162.82	5.713		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (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
0.0	0.0	0.0	0.0	0.0	0.0	-90.05		0.0	-30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	-90.05		0.0	-30.6	30.6	30.4	0.22	136.352	
200.0	200.0	200.0	200.0	0.3	0.3	-90.05		0.0	-30.6	30.6	30.0	0.67	45.451 CC	
300.0	300.0	299.4	299.4	0.6	0.6	-87.43		1.4	-31.6	31.6	30.5	1.12	28.166	
400.0	400.0	398.5	398.4	0.8	0.8	-80.55		5.7	-34.4	34.9	33.3	1.58	22.101	
500.0	500.0	497.2	496.7	1.0	1.0	-71.79		12.9	-39.1	41.3	39.2	2.04	20.216	
600.0	600.0	595.1	593.9	1.2	1.3	-63.48		22.7	-45.6	51.3	48.8	2.51	20.436	
700.0	700.0	693.1	690.7	1.5	1.6	-56.80		35.1	-53.7	64.8	61.8	2.99	21.679	
800.0	800.0	791.8	788.2	1.7	2.0	-52.28		48.0	-62.1	79.4	76.0	3.47	22.893	
900.0	900.0	890.6	885.8	1.9	2.3	-49.18		61.0	-70.6	94.4	90.4	3.96	23.827	
1,000.0	1,000.0	989.4	983.3	2.1	2.7	-46.93		73.9	-79.1	109.5	105.1	4.46	24.551	
1,100.0	1,100.0	1,088.4	1,081.1	2.4	3.0	-5.02		86.9	-87.6	123.1	118.2	4.82	25.529	
1,200.0	1,199.8	1,187.8	1,179.4	2.6	3.4	-3.79		99.9	-96.1	133.2	127.9	5.28	25.249	
1,300.0	1,299.5	1,287.6	1,277.9	2.8	3.7	-2.82		113.0	-104.6	140.0	134.2	5.73	24.414	
1,400.0	1,398.7	1,387.5	1,376.6	3.1	4.1	-1.98		126.0	-113.2	143.3	137.1	6.19	23.140	
1,500.0	1,497.8	1,487.4	1,475.3	3.3	4.5	-1.20		139.1	-121.8	145.6	139.0	6.67	21.838	
1,600.0	1,597.0	1,587.4	1,574.0	3.6	4.8	-0.44		152.2	-130.3	147.9	140.8	7.14	20.706	
1,700.0	1,696.1	1,687.3	1,672.7	3.9	5.2	0.30		165.3	-138.9	150.3	142.6	7.62	19.713	
1,800.0	1,795.2	1,787.3	1,771.4	4.2	5.6	1.01		178.4	-147.5	152.6	144.5	8.10	18.836	
1,900.0	1,894.3	1,887.3	1,870.2	4.5	5.9	1.71		191.5	-156.1	155.0	146.4	8.58	18.056	
2,000.0	1,993.4	1,987.2	1,968.9	4.8	6.3	2.38		204.5	-164.6	157.4	148.3	9.07	17.357	
2,100.0	2,092.6	2,087.2	2,067.6	5.1	6.7	3.03		217.6	-173.2	159.8	150.3	9.55	16.729	
2,200.0	2,191.7	2,187.1	2,166.3	5.4	7.0	3.66		230.7	-181.8	162.3	152.2	10.04	16.161	
2,300.0	2,290.8	2,287.1	2,265.1	5.7	7.4	4.27		243.8	-190.3	164.7	154.2	10.53	15.645	
2,400.0	2,389.9	2,387.0	2,363.8	6.0	7.8	4.87		256.9	-198.9	167.2	156.2	11.02	15.174	
2,500.0	2,489.0	2,487.0	2,462.5	6.3	8.1	5.45		270.0	-207.5	169.7	158.2	11.51	14.743	
2,600.0	2,588.2	2,586.9	2,561.2	6.7	8.5	6.01		283.1	-216.1	172.2	160.2	12.00	14.347	
2,700.0	2,687.3	2,686.9	2,659.9	7.0	8.9	6.55		296.2	-224.6	174.7	162.2	12.50	13.981	
2,800.0	2,786.4	2,786.8	2,758.7	7.3	9.2	7.08		309.2	-233.2	177.3	164.3	12.99	13.643	
2,900.0	2,885.5	2,886.8	2,857.4	7.6	9.6	7.59		322.3	-241.8	179.9	166.4	13.49	13.329	
3,000.0	2,984.7	2,986.8	2,956.1	7.9	10.0	8.09		335.4	-250.3	182.4	168.4	13.99	13.038	
3,100.0	3,083.8	3,086.7	3,054.8	8.3	10.3	8.58		348.5	-258.9	185.0	170.5	14.49	12.765	
3,200.0	3,182.9	3,186.7	3,153.6	8.6	10.7	9.05		361.6	-267.5	187.6	172.6	15.00	12.511	
3,300.0	3,282.0	3,286.6	3,252.3	8.9	11.1	9.51		374.7	-276.0	190.2	174.7	15.50	12.273	
3,400.0	3,381.1	3,386.6	3,351.0	9.2	11.4	9.96		387.8	-284.6	192.9	176.8	16.01	12.049	
3,500.0	3,480.3	3,486.5	3,449.7	9.6	11.8	10.39		400.8	-293.2	195.5	179.0	16.51	11.839	
3,600.0	3,579.4	3,586.5	3,548.5	9.9	12.2	10.81		413.9	-301.8	198.1	181.1	17.02	11.641	
3,700.0	3,678.5	3,686.4	3,647.2	10.2	12.5	11.23		427.0	-310.3	200.8	183.3	17.53	11.454	
3,800.0	3,777.6	3,786.4	3,745.9	10.5	12.9	11.63		440.1	-318.9	203.5	185.4	18.04	11.277	
3,900.0	3,876.8	3,886.3	3,844.6	10.9	13.3	12.02		453.2	-327.5	206.1	187.6	18.56	11.110	
4,000.0	3,975.9	3,986.3	3,943.3	11.2	13.6	12.40		466.3	-336.0	208.8	189.8	19.07	10.951	
4,100.0	4,075.0	4,086.3	4,042.1	11.5	14.0	12.77		479.4	-344.6	211.5	191.9	19.59	10.800	
4,200.0	4,174.1	4,186.2	4,140.8	11.9	14.4	13.13		492.4	-353.2	214.2	194.1	20.10	10.657	
4,300.0	4,273.2	4,286.2	4,239.5	12.2	14.7	13.48		505.5	-361.8	216.9	196.3	20.62	10.521	
4,400.0	4,372.4	4,386.1	4,338.2	12.5	15.1	13.83		518.6	-370.3	219.7	198.5	21.14	10.391	
4,500.0	4,471.5	4,486.1	4,437.0	12.8	15.5	14.16		531.7	-378.9	222.4	200.7	21.66	10.267	
4,600.0	4,570.6	4,586.0	4,535.7	13.2	15.8	14.49		544.8	-387.5	225.1	202.9	22.18	10.149	
4,700.0	4,669.7	4,686.0	4,634.4	13.5	16.2	14.81		557.9	-396.0	227.9	205.2	22.71	10.036	
4,800.0	4,768.8	4,785.9	4,733.1	13.8	16.6	15.12		571.0	-404.6	230.6	207.4	23.23	9.928	
4,900.0	4,868.0	4,885.9	4,831.8	14.2	16.9	15.43		584.0	-413.2	233.4	209.6	23.76	9.824	
5,000.0	4,967.1	4,985.8	4,930.6	14.5	17.3	15.72		597.1	-421.7	236.1	211.9	24.28	9.725	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	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	5,066.2	5,085.8	5,029.3	14.8	17.7	16.01	610.2	-430.3	238.9	214.1	24.81	9.630		
5,200.0	5,165.3	5,185.8	5,128.0	15.2	18.0	16.30	623.3	-438.9	241.7	216.3	25.34	9.538		
5,300.0	5,264.5	5,285.7	5,226.7	15.5	18.4	16.58	636.4	-447.5	244.5	218.6	25.87	9.450		
5,400.0	5,363.6	5,385.7	5,325.5	15.8	18.8	16.85	649.5	-456.0	247.3	220.9	26.40	9.366		
5,500.0	5,462.7	5,492.5	5,431.1	16.1	19.1	17.16	662.5	-464.6	249.3	222.4	26.91	9.265		
5,600.0	5,562.2	5,601.9	5,539.9	16.4	19.4	17.42	672.6	-471.2	250.6	223.3	27.30	9.178		
5,700.0	5,662.0	5,711.3	5,649.0	16.6	19.6	17.59	679.1	-475.5	251.4	223.7	27.63	9.096		
5,800.0	5,762.0	5,820.7	5,758.4	16.7	19.8	17.67	682.2	-477.5	251.7	223.8	27.91	9.018		
5,900.0	5,862.0	5,924.3	5,862.0	16.9	19.9	-22.57	682.5	-477.6	251.8	215.6	36.20	6.954		
6,000.0	5,962.0	6,031.7	5,969.3	17.0	20.0	-22.09	682.5	-475.3	251.0	214.5	36.47	6.882		
6,100.0	6,062.0	6,143.4	6,079.6	17.2	20.1	-18.45	682.5	-458.6	245.7	209.3	36.44	6.743		
6,200.0	6,161.7	6,250.4	6,181.9	17.3	20.0	-103.36	682.5	-427.6	239.3	209.2	30.06	7.962		
6,300.0	6,259.7	6,353.7	6,275.6	17.4	19.9	-97.92	682.5	-384.4	234.8	204.0	30.81	7.623		
6,400.0	6,354.4	6,453.7	6,360.1	17.3	19.8	-92.31	682.5	-331.0	232.7	201.1	31.58	7.367		
6,440.9	6,391.8	6,493.7	6,391.8	17.3	19.8	-90.00	682.5	-306.5	232.5	200.6	31.89	7.289		
6,500.0	6,444.0	6,550.6	6,434.6	17.3	19.7	-86.69	682.5	-269.0	232.9	200.6	32.32	7.206		
6,600.0	6,527.2	6,644.8	6,498.9	17.2	19.5	-81.25	682.5	-200.3	235.4	202.4	32.98	7.135		
6,700.0	6,602.4	6,736.6	6,553.0	17.1	19.4	-76.15	682.5	-126.1	239.8	206.2	33.59	7.139		
6,800.0	6,668.4	6,826.3	6,596.9	17.1	19.3	-71.48	682.5	-48.0	245.7	211.5	34.20	7.184		
6,900.0	6,724.0	6,914.2	6,630.7	17.2	19.2	-67.32	682.5	33.0	252.6	217.7	34.95	7.228		
7,000.0	6,768.3	7,000.0	6,654.5	17.8	19.6	-63.71	682.5	115.4	260.1	224.1	35.97	7.230		
7,100.0	6,800.5	7,085.3	6,668.9	19.1	21.0	-60.61	682.5	199.5	267.5	230.1	37.40	7.153		
7,200.0	6,820.1	7,169.0	6,673.9	20.7	22.5	-58.04	682.5	283.0	274.6	235.4	39.26	6.995		
7,300.0	6,830.8	7,267.5	6,673.7	22.6	24.5	-56.08	682.5	381.4	280.6	238.9	41.75	6.722		
7,400.0	6,836.5	7,367.2	6,673.4	24.6	26.6	-54.96	682.5	481.2	284.0	239.1	44.83	6.335		
7,500.0	6,836.8	7,467.2	6,673.2	26.7	28.8	-54.86	682.5	581.2	284.3	235.9	48.36	5.879		
7,600.0	6,837.1	7,567.2	6,672.9	29.0	31.1	-54.77	682.5	681.2	284.6	232.6	52.04	5.468		
7,700.0	6,837.4	7,667.2	6,672.7	31.3	33.5	-54.69	682.5	781.2	284.9	229.0	55.87	5.100		
7,800.0	6,837.6	7,767.2	6,672.4	33.7	35.9	-54.60	682.5	881.2	285.2	225.4	59.79	4.770		
7,900.0	6,837.9	7,867.2	6,672.2	36.2	38.4	-54.51	682.5	981.2	285.5	221.7	63.81	4.474		
8,000.0	6,838.2	7,967.2	6,671.9	38.7	40.9	-54.43	682.5	1,081.2	285.8	217.9	67.89	4.210		
8,100.0	6,838.5	8,067.2	6,671.7	41.2	43.5	-54.34	682.5	1,181.2	286.1	214.1	72.03	3.972		
8,200.0	6,838.8	8,167.2	6,671.5	43.8	46.1	-54.26	682.5	1,281.2	286.4	210.2	76.21	3.758		
8,300.0	6,839.0	8,267.2	6,671.2	46.4	48.7	-54.17	682.5	1,381.2	286.7	206.3	80.43	3.565		
8,400.0	6,839.3	8,367.2	6,671.0	49.0	51.3	-54.09	682.5	1,481.2	287.0	202.4	84.68	3.390		
8,500.0	6,839.6	8,467.2	6,670.7	51.7	53.9	-54.00	682.5	1,581.2	287.3	198.4	88.95	3.230		
8,600.0	6,839.9	8,567.2	6,670.5	54.3	56.6	-53.92	682.5	1,681.2	287.7	194.4	93.24	3.085		
8,700.0	6,840.2	8,667.2	6,670.2	57.0	59.3	-53.84	682.5	1,781.2	288.0	190.4	97.55	2.952		
8,800.0	6,840.4	8,767.2	6,670.0	59.7	62.0	-53.75	682.5	1,881.2	288.3	186.4	101.87	2.830		
8,900.0	6,840.7	8,867.2	6,669.7	62.4	64.7	-53.67	682.5	1,981.2	288.6	182.4	106.20	2.717		
9,000.0	6,841.0	8,967.2	6,669.5	65.1	67.4	-53.58	682.5	2,081.2	288.9	178.4	110.53	2.614		
9,100.0	6,841.3	9,067.2	6,669.3	67.8	70.1	-53.50	682.5	2,181.2	289.2	174.3	114.87	2.518		
9,200.0	6,841.6	9,167.2	6,669.0	70.6	72.8	-53.42	682.5	2,281.2	289.5	170.3	119.22	2.428		
9,300.0	6,841.8	9,267.2	6,668.8	73.3	75.5	-53.33	682.5	2,381.2	289.8	166.3	123.56	2.346		
9,400.0	6,842.1	9,367.2	6,668.5	76.0	78.3	-53.25	682.5	2,481.2	290.1	162.2	127.91	2.268		
9,500.0	6,842.4	9,467.2	6,668.3	78.8	81.0	-53.17	682.5	2,581.2	290.5	158.2	132.26	2.196		
9,600.0	6,842.7	9,567.2	6,668.0	81.5	83.8	-53.09	682.5	2,681.2	290.8	154.2	136.61	2.128		
9,700.0	6,843.0	9,667.2	6,667.8	84.3	86.5	-53.00	682.5	2,781.2	291.1	150.1	140.96	2.065		
9,800.0	6,843.2	9,767.2	6,667.5	87.0	89.3	-52.92	682.5	2,881.2	291.4	146.1	145.30	2.005		
9,900.0	6,843.5	9,867.2	6,667.3	89.8	92.0	-52.84	682.5	2,981.2	291.7	142.1	149.64	1.949		
10,000.0	6,843.8	9,967.2	6,667.1	92.5	94.8	-52.76	682.5	3,081.2	292.0	138.0	153.98	1.897		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #1 (2-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,100.0	6,844.1	10,067.2	6,666.8	95.3	97.5	-52.68	682.5	3,181.2	292.3	134.0	158.32	1.847		
10,200.0	6,844.3	10,167.2	6,666.6	98.0	100.3	-52.59	682.5	3,281.2	292.7	130.0	162.65	1.799		
10,300.0	6,844.6	10,267.2	6,666.3	100.8	103.0	-52.51	682.5	3,381.2	293.0	126.0	166.97	1.755		
10,400.0	6,844.9	10,367.2	6,666.1	103.6	105.8	-52.43	682.5	3,481.2	293.3	122.0	171.30	1.712		
10,500.0	6,845.2	10,467.2	6,665.8	106.4	108.6	-52.35	682.5	3,581.2	293.6	118.0	175.61	1.672		
10,600.0	6,845.5	10,567.2	6,665.6	109.1	111.4	-52.27	682.5	3,681.2	293.9	114.0	179.92	1.634		
10,700.0	6,845.7	10,667.2	6,665.3	111.9	114.1	-52.19	682.5	3,781.2	294.3	110.0	184.23	1.597		
10,800.0	6,846.0	10,767.2	6,665.1	114.7	116.9	-52.11	682.5	3,881.2	294.6	106.1	188.53	1.563		
10,900.0	6,846.3	10,867.2	6,664.9	117.5	119.7	-52.03	682.5	3,981.2	294.9	102.1	192.83	1.529		
11,000.0	6,846.6	10,967.2	6,664.6	120.2	122.5	-51.95	682.5	4,081.2	295.2	98.1	197.11	1.498 Level 3		
11,100.0	6,846.9	11,067.2	6,664.4	123.0	125.2	-51.87	682.5	4,181.2	295.5	94.2	201.39	1.468 Level 3		
11,200.0	6,847.1	11,167.2	6,664.1	125.8	128.0	-51.79	682.5	4,281.2	295.9	90.2	205.67	1.439 Level 3		
11,300.0	6,847.4	11,267.2	6,663.9	128.6	130.8	-51.71	682.5	4,381.2	296.2	86.3	209.94	1.411 Level 3		
11,400.0	6,847.7	11,367.2	6,663.6	131.4	133.6	-51.63	682.5	4,481.2	296.5	82.3	214.20	1.384 Level 3		
11,500.0	6,848.0	11,467.2	6,663.4	134.2	136.4	-51.55	682.5	4,581.2	296.8	78.4	218.46	1.359 Level 3		
11,600.0	6,848.3	11,567.2	6,663.1	136.9	139.2	-51.47	682.5	4,681.2	297.2	74.5	222.70	1.334 Level 3		
11,700.0	6,848.5	11,667.2	6,662.9	139.7	141.9	-51.39	682.5	4,781.2	297.5	70.6	226.94	1.311 Level 3		
11,800.0	6,848.8	11,767.2	6,662.7	142.5	144.7	-51.31	682.5	4,881.2	297.8	66.6	231.18	1.288 Level 3		
11,900.0	6,849.1	11,867.2	6,662.4	145.3	147.5	-51.23	682.5	4,981.2	298.2	62.7	235.40	1.267 Level 3		
12,000.0	6,849.4	11,967.2	6,662.2	148.1	150.3	-51.16	682.5	5,081.2	298.5	58.9	239.62	1.246 Level 2		
12,100.0	6,849.7	12,067.2	6,661.9	150.9	153.1	-51.08	682.5	5,181.2	298.8	55.0	243.84	1.225 Level 2		
12,200.0	6,849.9	12,167.2	6,661.7	153.7	155.9	-51.00	682.5	5,281.1	299.1	51.1	248.04	1.206 Level 2		
12,300.0	6,850.2	12,267.2	6,661.4	156.5	158.7	-50.92	682.5	5,381.1	299.5	47.2	252.24	1.187 Level 2		
12,400.0	6,850.5	12,367.2	6,661.2	159.3	161.5	-50.84	682.5	5,481.1	299.8	43.4	256.43	1.169 Level 2		
12,500.0	6,850.8	12,467.2	6,660.9	162.1	164.3	-50.77	682.5	5,581.1	300.1	39.5	260.61	1.152 Level 2		
12,600.0	6,851.0	12,567.2	6,660.7	164.8	167.0	-50.69	682.5	5,681.1	300.5	35.7	264.78	1.135 Level 2		
12,700.0	6,851.3	12,667.2	6,660.5	167.6	169.8	-50.61	682.5	5,781.1	300.8	31.8	268.95	1.118 Level 2		
12,800.0	6,851.6	12,767.2	6,660.2	170.4	172.6	-50.54	682.5	5,881.1	301.1	28.0	273.11	1.103 Level 2		
12,900.0	6,851.9	12,867.2	6,660.0	173.2	175.4	-50.46	682.5	5,981.1	301.5	24.2	277.26	1.087 Level 2		
13,000.0	6,852.2	12,967.2	6,659.7	176.0	178.2	-50.38	682.5	6,081.1	301.8	20.4	281.41	1.072 Level 2		
13,100.0	6,852.4	13,067.2	6,659.5	178.8	181.0	-50.31	682.5	6,181.1	302.1	16.6	285.54	1.058 Level 2		
13,200.0	6,852.7	13,167.2	6,659.2	181.6	183.8	-50.23	682.5	6,281.1	302.5	12.8	289.67	1.044 Level 2		
13,298.5	6,853.0	13,263.2	6,659.0	184.4	186.5	-50.16	682.5	6,377.2	302.8	9.1	293.68	1.031 Level 2, ES, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	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 (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	
0.0	0.0	1.0	1.0	0.0	0.0	90.01	0.0	58.5	58.5	58.5	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	90.01	0.0	58.5	58.5	58.3	0.23	257.730		
200.0	200.0	201.0	201.0	0.3	0.3	90.01	0.0	58.5	58.5	57.8	0.68	86.481		
300.0	300.0	301.0	301.0	0.6	0.6	90.01	0.0	58.5	58.5	57.4	1.13	51.958		
400.0	400.0	401.0	401.0	0.8	0.8	90.01	0.0	58.5	58.5	56.9	1.58	37.134		
500.0	500.0	501.0	501.0	1.0	1.0	90.01	0.0	58.5	58.5	56.5	2.03	28.891		
600.0	600.0	601.0	601.0	1.2	1.2	90.01	0.0	58.5	58.5	56.0	2.47	23.643		
700.0	700.0	701.0	701.0	1.5	1.5	90.01	0.0	58.5	58.5	55.6	2.92	20.008		
800.0	800.0	801.0	801.0	1.7	1.7	90.01	0.0	58.5	58.5	55.1	3.37	17.342		
900.0	900.0	901.0	901.0	1.9	1.9	90.01	0.0	58.5	58.5	54.7	3.82	15.303		
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	90.01	0.0	58.5	58.5	54.2	4.27	13.693 CC, ES		
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	131.52	0.0	58.5	59.7	54.9	4.72	12.643		
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	135.02	0.0	58.5	63.2	58.1	5.16	12.259		
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	140.00	0.0	58.5	69.7	64.1	5.60	12.446		
1,400.0	1,398.7	1,399.7	1,399.7	3.1	3.0	145.53	0.0	58.5	79.4	73.3	6.04	13.143		
1,500.0	1,497.8	1,498.8	1,498.8	3.3	3.3	150.26	0.0	58.5	90.6	84.1	6.49	13.967		
1,600.0	1,597.0	1,598.0	1,598.0	3.6	3.5	153.93	0.0	58.5	102.3	95.4	6.94	14.748		
1,700.0	1,696.1	1,697.1	1,697.1	3.9	3.7	156.84	0.0	58.5	114.4	107.0	7.39	15.475		
1,800.0	1,795.2	1,796.2	1,796.2	4.2	3.9	159.19	0.0	58.5	126.7	118.8	7.84	16.147		
1,900.0	1,894.3	1,895.3	1,895.3	4.5	4.1	161.12	0.0	58.5	139.1	130.8	8.30	16.764		
2,000.0	1,993.4	1,994.4	1,994.4	4.8	4.4	162.74	0.0	58.5	151.7	142.9	8.75	17.330		
2,100.0	2,092.6	2,098.9	2,098.9	5.1	4.6	164.37	0.4	56.9	162.8	153.6	9.21	17.685		
2,200.0	2,191.7	2,204.2	2,204.1	5.4	4.8	166.23	1.9	51.5	170.7	161.0	9.65	17.679		
2,300.0	2,290.8	2,304.2	2,303.8	5.7	5.0	168.09	3.9	44.4	176.8	166.7	10.10	17.513		
2,400.0	2,389.9	2,403.9	2,403.2	6.0	5.3	169.82	5.8	37.4	183.1	172.5	10.54	17.370		
2,500.0	2,489.0	2,503.5	2,502.6	6.3	5.5	171.43	7.7	30.4	189.5	178.5	10.99	17.247		
2,600.0	2,588.2	2,603.2	2,601.9	6.7	5.7	172.93	9.7	23.3	196.1	184.7	11.44	17.140		
2,700.0	2,687.3	2,702.8	2,701.3	7.0	5.9	174.34	11.6	16.3	202.8	190.9	11.90	17.047		
2,800.0	2,786.4	2,802.5	2,800.7	7.3	6.2	175.65	13.6	9.3	209.6	197.3	12.36	16.965		
2,900.0	2,885.5	2,902.1	2,900.1	7.6	6.4	176.89	15.5	2.3	216.5	203.7	12.82	16.893		
3,000.0	2,984.7	3,001.8	2,999.5	7.9	6.6	178.04	17.4	-4.8	223.6	210.3	13.28	16.829		
3,100.0	3,083.8	3,101.5	3,098.9	8.3	6.9	179.13	19.4	-11.8	230.7	216.9	13.75	16.771		
3,200.0	3,182.9	3,201.1	3,198.3	8.6	7.1	-179.85	21.3	-18.8	237.8	223.6	14.22	16.720		
3,300.0	3,282.0	3,300.8	3,297.7	8.9	7.4	-178.89	23.3	-25.9	245.1	230.4	14.70	16.673		
3,400.0	3,381.1	3,400.4	3,397.0	9.2	7.6	-177.99	25.2	-32.9	252.4	237.2	15.18	16.630		
3,500.0	3,480.3	3,500.1	3,496.4	9.6	7.8	-177.14	27.1	-39.9	259.8	244.1	15.66	16.591		
3,600.0	3,579.4	3,599.7	3,595.8	9.9	8.1	-176.33	29.1	-47.0	267.2	251.1	16.14	16.556		
3,700.0	3,678.5	3,699.4	3,695.2	10.2	8.3	-175.57	31.0	-54.0	274.7	258.0	16.62	16.523		
3,800.0	3,777.6	3,799.0	3,794.6	10.5	8.6	-174.84	33.0	-61.0	282.2	265.1	17.11	16.493		
3,900.0	3,876.8	3,898.7	3,894.0	10.9	8.8	-174.16	34.9	-68.1	289.8	272.2	17.60	16.464		
4,000.0	3,975.9	3,998.4	3,993.4	11.2	9.1	-173.51	36.8	-75.1	297.4	279.3	18.09	16.438		
4,100.0	4,075.0	4,098.0	4,092.8	11.5	9.3	-172.89	38.8	-82.1	305.0	286.4	18.58	16.414		
4,200.0	4,174.1	4,197.7	4,192.1	11.9	9.6	-172.31	40.7	-89.2	312.7	293.6	19.08	16.391		
4,300.0	4,273.2	4,297.3	4,291.5	12.2	9.8	-171.75	42.7	-96.2	320.4	300.8	19.57	16.369		
4,400.0	4,372.4	4,397.0	4,390.9	12.5	10.1	-171.21	44.6	-103.2	328.1	308.0	20.07	16.349		
4,500.0	4,471.5	4,496.6	4,490.3	12.8	10.3	-170.71	46.5	-110.3	335.9	315.3	20.57	16.330		
4,600.0	4,570.6	4,596.3	4,589.7	13.2	10.6	-170.22	48.5	-117.3	343.7	322.6	21.07	16.312		
4,700.0	4,669.7	4,695.9	4,689.1	13.5	10.8	-169.76	50.4	-124.3	351.5	329.9	21.57	16.295		
4,800.0	4,768.8	4,795.6	4,788.5	13.8	11.1	-169.31	52.3	-131.4	359.3	337.2	22.07	16.279		
4,900.0	4,868.0	4,895.3	4,887.9	14.2	11.4	-168.89	54.3	-138.4	367.1	344.6	22.58	16.263		
5,000.0	4,967.1	4,994.9	4,987.2	14.5	11.6	-168.48	56.2	-145.4	375.0	351.9	23.08	16.249		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	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	5,066.2	5,094.6	5,086.6	14.8	11.9	-168.09		58.2	-152.4	382.9	359.3	23.59	16.235	
5,200.0	5,165.3	5,194.2	5,186.0	15.2	12.1	-167.72		60.1	-159.5	390.8	366.7	24.09	16.222	
5,300.0	5,264.5	5,293.9	5,285.4	15.5	12.4	-167.36		62.0	-166.5	398.7	374.1	24.60	16.209	
5,400.0	5,363.6	5,393.5	5,384.8	15.8	12.6	-167.01		64.0	-173.5	406.7	381.6	25.11	16.197	
5,500.0	5,462.7	5,493.2	5,484.2	16.1	12.9	-166.68		65.9	-180.6	414.3	388.7	25.62	16.172	
5,600.0	5,562.2	5,593.0	5,583.8	16.4	13.1	-166.28		67.9	-187.6	419.2	393.1	26.09	16.067	
5,700.0	5,662.0	5,684.6	5,675.2	16.6	13.3	-165.94		69.3	-192.9	421.6	395.1	26.48	15.923	
5,800.0	5,762.0	5,775.7	5,766.3	16.7	13.5	-165.78		70.0	-195.3	422.7	395.9	26.79	15.779	
5,900.0	5,862.0	5,872.4	5,863.0	16.9	13.7	-153.98		70.0	-195.5	422.8	393.1	29.77	14.202	
6,000.0	5,962.0	5,972.4	5,963.0	17.0	13.9	-153.98		70.0	-195.5	422.8	392.7	30.15	14.026	
6,059.5	6,021.4	6,031.9	6,022.4	17.1	14.0	-153.98		70.0	-195.5	422.8	392.5	30.37	13.922	
6,100.0	6,062.0	6,069.0	6,059.5	17.2	14.1	-153.96		70.0	-195.4	422.9	392.4	30.52	13.858	
6,200.0	6,161.7	6,150.0	6,140.3	17.3	14.2	-63.87		70.0	-189.6	423.2	395.1	28.12	15.052	
6,300.0	6,259.7	6,229.8	6,218.8	17.4	14.3	-64.11		70.0	-175.5	422.4	394.2	28.18	14.987	
6,400.0	6,354.4	6,310.4	6,296.2	17.3	14.3	-64.68		70.0	-153.1	420.5	392.3	28.20	14.912	
6,500.0	6,444.0	6,391.4	6,371.2	17.3	14.4	-65.57		70.0	-122.5	417.6	389.3	28.22	14.798	
6,600.0	6,527.2	6,473.0	6,442.9	17.2	14.5	-66.80		70.0	-83.8	413.8	385.4	28.34	14.600	
6,700.0	6,602.4	6,555.3	6,510.7	17.1	14.6	-68.35		70.0	-37.3	409.3	380.6	28.69	14.267	
6,800.0	6,668.4	6,638.5	6,573.8	17.1	14.8	-70.24		70.0	16.9	404.3	374.9	29.40	13.751	
6,900.0	6,724.0	6,722.8	6,631.4	17.2	15.2	-72.44		70.0	78.5	399.1	368.5	30.61	13.037	
7,000.0	6,768.3	6,808.5	6,682.5	17.8	15.8	-74.96		70.0	147.2	393.9	361.5	32.41	12.154	
7,100.0	6,800.5	6,895.7	6,726.4	19.1	16.7	-77.76		70.0	222.6	389.2	354.4	34.84	11.171	
7,200.0	6,820.1	6,984.8	6,762.0	20.7	17.8	-80.81		70.0	304.2	385.1	347.3	37.86	10.172	
7,300.0	6,830.8	7,076.7	6,788.5	22.6	19.3	-83.38		70.0	392.1	382.6	341.2	41.35	9.253	
7,400.0	6,836.5	7,171.3	6,804.6	24.6	21.0	-85.05		70.0	485.2	381.4	336.3	45.15	8.448	
7,486.3	6,837.2	7,254.1	6,809.2	26.4	22.6	-85.63		70.0	567.9	381.1	332.4	48.64	7.835	
7,500.0	6,836.8	7,267.4	6,809.1	26.7	22.9	-85.67		70.0	581.2	381.1	331.9	49.20	7.745	
7,600.0	6,837.1	7,367.4	6,807.6	29.0	25.0	-85.41		70.0	681.2	381.2	327.7	53.53	7.121	
7,700.0	6,837.4	7,467.4	6,806.2	31.3	27.2	-85.15		70.0	781.2	381.3	323.3	58.06	6.568	
7,800.0	6,837.6	7,567.4	6,804.7	33.7	29.5	-84.90		70.0	881.1	381.5	318.7	62.75	6.079	
7,900.0	6,837.9	7,667.4	6,803.3	36.2	32.0	-84.64		70.0	981.1	381.6	314.1	67.57	5.648	
8,000.0	6,838.2	7,767.4	6,801.8	38.7	34.4	-84.38		70.0	1,081.1	381.8	309.3	72.50	5.266	
8,100.0	6,838.5	7,867.4	6,800.4	41.2	36.9	-84.12		70.0	1,181.1	382.0	304.5	77.51	4.928	
8,200.0	6,838.8	7,967.3	6,798.9	43.8	39.5	-83.86		70.0	1,281.0	382.2	299.6	82.58	4.628	
8,300.0	6,839.0	8,067.3	6,797.5	46.4	42.1	-83.61		70.0	1,381.0	382.3	294.6	87.70	4.359	
8,400.0	6,839.3	8,167.3	6,796.0	49.0	44.7	-83.35		70.0	1,481.0	382.5	289.7	92.87	4.119	
8,500.0	6,839.6	8,267.3	6,794.6	51.7	47.3	-83.09		70.0	1,581.0	382.7	284.7	98.07	3.903	
8,600.0	6,839.9	8,367.3	6,793.1	54.3	50.0	-82.84		70.0	1,680.9	383.0	279.7	103.30	3.707	
8,700.0	6,840.2	8,467.3	6,791.7	57.0	52.7	-82.58		70.0	1,780.9	383.2	274.6	108.54	3.530	
8,800.0	6,840.4	8,567.2	6,790.2	59.7	55.4	-82.32		70.0	1,880.9	383.4	269.6	113.81	3.369	
8,900.0	6,840.7	8,667.2	6,788.8	62.4	58.1	-82.07		70.0	1,980.9	383.6	264.5	119.09	3.221	
9,000.0	6,841.0	8,767.2	6,787.3	65.1	60.8	-81.81		70.0	2,080.8	383.9	259.5	124.38	3.086	
9,100.0	6,841.3	8,867.2	6,785.9	67.8	63.5	-81.56		70.0	2,180.8	384.1	254.4	129.68	2.962	
9,200.0	6,841.6	8,967.2	6,784.4	70.6	66.2	-81.30		70.0	2,280.8	384.4	249.4	134.98	2.848	
9,300.0	6,841.8	9,067.2	6,783.0	73.3	68.9	-81.05		70.0	2,380.8	384.7	244.4	140.29	2.742	
9,400.0	6,842.1	9,167.2	6,781.5	76.0	71.7	-80.79		70.0	2,480.7	384.9	239.3	145.60	2.644	
9,500.0	6,842.4	9,267.1	6,780.1	78.8	74.4	-80.54		70.0	2,580.7	385.2	234.3	150.91	2.553	
9,600.0	6,842.7	9,367.1	6,778.6	81.5	77.2	-80.29		70.0	2,680.7	385.5	229.3	156.22	2.468	
9,700.0	6,843.0	9,467.1	6,777.2	84.3	79.9	-80.03		70.0	2,780.7	385.8	224.3	161.52	2.388	
9,800.0	6,843.2	9,567.1	6,775.7	87.0	82.7	-79.78		70.0	2,880.6	386.1	219.3	166.83	2.314	
9,900.0	6,843.5	9,667.1	6,774.3	89.8	85.4	-79.53		70.0	2,980.6	386.4	214.3	172.13	2.245	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	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	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	
10,000.0	6,843.8	9,767.1	6,772.8	92.5	88.2	79.28	70.0	3,080.6	386.7	209.3	177.42	2.180		
10,100.0	6,844.1	9,867.1	6,771.4	95.3	90.9	79.03	70.0	3,180.6	387.0	204.3	182.71	2.118		
10,200.0	6,844.3	9,967.0	6,769.9	98.0	93.7	78.78	70.0	3,280.5	387.4	199.4	187.99	2.061		
10,300.0	6,844.6	10,067.0	6,768.5	100.8	96.5	78.53	70.0	3,380.5	387.7	194.5	193.26	2.006		
10,400.0	6,844.9	10,167.0	6,767.0	103.6	99.3	78.28	70.0	3,480.5	388.1	189.5	198.53	1.955		
10,500.0	6,845.2	10,267.0	6,765.6	106.4	102.0	78.03	70.0	3,580.4	388.4	184.6	203.79	1.906		
10,600.0	6,845.5	10,367.0	6,764.2	109.1	104.8	77.78	70.0	3,680.4	388.8	179.7	209.04	1.860		
10,700.0	6,845.7	10,467.0	6,762.7	111.9	107.6	77.53	70.0	3,780.4	389.1	174.9	214.28	1.816		
10,800.0	6,846.0	10,566.9	6,761.3	114.7	110.4	77.28	70.0	3,880.4	389.5	170.0	219.51	1.775		
10,900.0	6,846.3	10,666.9	6,759.8	117.5	113.1	77.03	70.0	3,980.3	389.9	165.2	224.72	1.735		
11,000.0	6,846.6	10,766.9	6,758.4	120.2	115.9	76.79	70.0	4,080.3	390.3	160.4	229.93	1.697		
11,100.0	6,846.9	10,866.9	6,756.9	123.0	118.7	76.54	70.0	4,180.3	390.7	155.6	235.13	1.662		
11,200.0	6,847.1	10,966.9	6,755.5	125.8	121.5	76.29	70.0	4,280.3	391.1	150.8	240.31	1.627		
11,300.0	6,847.4	11,066.9	6,754.0	128.6	124.3	76.05	70.0	4,380.2	391.5	146.0	245.49	1.595		
11,400.0	6,847.7	11,166.9	6,752.6	131.4	127.1	75.80	70.0	4,480.2	391.9	141.3	250.65	1.564		
11,500.0	6,848.0	11,266.8	6,751.1	134.2	129.8	75.56	70.0	4,580.2	392.4	136.6	255.79	1.534		
11,600.0	6,848.3	11,366.8	6,749.7	136.9	132.6	75.31	70.0	4,680.2	392.8	131.9	260.93	1.505		
11,700.0	6,848.5	11,466.8	6,748.2	139.7	135.4	75.07	70.0	4,780.1	393.2	127.2	266.05	1.478 Level 3		
11,800.0	6,848.8	11,566.8	6,746.8	142.5	138.2	74.83	70.0	4,880.1	393.7	122.5	271.16	1.452 Level 3		
11,900.0	6,849.1	11,666.8	6,745.3	145.3	141.0	74.58	70.0	4,980.1	394.1	117.9	276.25	1.427 Level 3		
12,000.0	6,849.4	11,766.8	6,743.9	148.1	143.8	74.34	70.0	5,080.1	394.6	113.3	281.33	1.403 Level 3		
12,100.0	6,849.7	11,866.8	6,742.4	150.9	146.6	74.10	70.0	5,180.0	395.1	108.7	286.40	1.379 Level 3		
12,200.0	6,849.9	11,966.7	6,741.0	153.7	149.4	73.86	70.0	5,280.0	395.6	104.1	291.45	1.357 Level 3		
12,300.0	6,850.2	12,066.7	6,739.5	156.5	152.2	73.62	70.0	5,380.0	396.0	99.6	296.48	1.336 Level 3		
12,400.0	6,850.5	12,166.7	6,738.1	159.3	155.0	73.38	70.0	5,480.0	396.5	95.0	301.50	1.315 Level 3		
12,500.0	6,850.8	12,266.7	6,736.6	162.1	157.7	73.14	70.0	5,579.9	397.0	90.5	306.51	1.295 Level 3		
12,600.0	6,851.0	12,366.7	6,735.2	164.8	160.5	72.90	70.0	5,679.9	397.5	86.0	311.50	1.276 Level 3		
12,700.0	6,851.3	12,466.7	6,733.7	167.6	163.3	72.67	70.0	5,779.9	398.0	81.6	316.47	1.258 Level 3		
12,800.0	6,851.6	12,566.6	6,732.3	170.4	166.1	72.43	70.0	5,879.9	398.6	77.1	321.43	1.240 Level 2		
12,900.0	6,851.9	12,666.6	6,730.8	173.2	168.9	72.19	70.0	5,979.8	399.1	72.7	326.37	1.223 Level 2		
13,000.0	6,852.2	12,766.6	6,729.4	176.0	171.7	71.96	70.0	6,079.8	399.6	68.3	331.29	1.206 Level 2		
13,100.0	6,852.4	12,866.6	6,727.9	178.8	174.5	71.72	70.0	6,179.8	400.2	64.0	336.20	1.190 Level 2		
13,200.0	6,852.7	12,966.6	6,726.5	181.6	177.3	71.49	70.0	6,279.8	400.7	59.6	341.09	1.175 Level 2		
13,298.5	6,853.0	13,065.1	6,725.1	184.4	180.1	71.26	70.0	6,378.2	401.2	55.4	345.89	1.160 Level 2, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-402 - 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
0.0	0.0	1.0	1.0	0.0	0.0	90.02	90.02	0.0	30.6	30.6	30.6	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	90.02	90.02	0.0	30.6	30.6	30.4	0.23	135.002	
200.0	200.0	201.0	201.0	0.3	0.3	90.02	90.02	0.0	30.6	30.6	30.0	0.68	45.300	
300.0	300.0	301.0	301.0	0.6	0.6	90.02	90.02	0.0	30.6	30.6	29.5	1.13	27.216	
400.0	400.0	401.0	401.0	0.8	0.8	90.02	90.02	0.0	30.6	30.6	29.1	1.58	19.451	
500.0	500.0	501.0	501.0	1.0	1.0	90.02	90.02	0.0	30.6	30.6	28.6	2.03	15.133	
600.0	600.0	601.0	601.0	1.2	1.2	90.02	90.02	0.0	30.6	30.6	28.2	2.47	12.384	
700.0	700.0	701.0	701.0	1.5	1.5	90.02	90.02	0.0	30.6	30.6	27.7	2.92	10.481	
800.0	800.0	801.0	801.0	1.7	1.7	90.02	90.02	0.0	30.6	30.6	27.3	3.37	9.084	
900.0	900.0	901.0	901.0	1.9	1.9	90.02	90.02	0.0	30.6	30.6	26.8	3.82	8.016	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	90.02	90.02	0.0	30.6	30.6	26.4	4.27	7.173 CC, ES	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	132.65	132.65	0.0	30.6	31.8	27.1	4.72	6.741	
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	138.81	138.81	0.0	30.6	35.6	30.4	5.16	6.893	
1,300.0	1,299.5	1,301.2	1,301.2	2.8	2.8	148.62	148.62	-1.2	29.3	41.6	36.0	5.57	7.463	
1,400.0	1,398.7	1,401.0	1,400.8	3.1	3.0	161.00	161.00	-4.6	25.3	50.5	44.5	5.96	8.459	
1,500.0	1,497.8	1,500.0	1,499.5	3.3	3.2	172.36	172.36	-10.0	19.1	61.6	55.2	6.38	9.650	
1,600.0	1,597.0	1,598.7	1,597.8	3.6	3.4	-179.63	-179.63	-15.7	12.7	74.4	67.6	6.82	10.905	
1,700.0	1,696.1	1,697.4	1,696.2	3.9	3.6	-174.04	-174.04	-21.3	6.2	88.2	81.0	7.28	12.124	
1,800.0	1,795.2	1,796.2	1,794.5	4.2	3.8	-169.98	-169.98	-27.0	-0.3	102.7	94.9	7.74	13.258	
1,900.0	1,894.3	1,894.9	1,892.9	4.5	4.1	-166.92	-166.92	-32.6	-6.8	117.5	109.2	8.22	14.294	
2,000.0	1,993.4	1,993.6	1,991.2	4.8	4.3	-164.56	-164.56	-38.3	-13.3	132.5	123.8	8.70	15.234	
2,100.0	2,092.6	2,092.3	2,089.6	5.1	4.5	-162.68	-162.68	-43.9	-19.8	147.7	138.6	9.19	16.083	
2,200.0	2,191.7	2,191.1	2,187.9	5.4	4.8	-161.15	-161.15	-49.6	-26.2	163.1	153.4	9.68	16.850	
2,300.0	2,290.8	2,289.8	2,286.3	5.7	5.0	-159.88	-159.88	-55.3	-32.7	178.6	168.4	10.18	17.545	
2,400.0	2,389.9	2,388.5	2,384.6	6.0	5.3	-158.82	-158.82	-60.9	-39.2	194.1	183.4	10.68	18.175	
2,500.0	2,489.0	2,487.3	2,483.0	6.3	5.5	-157.91	-157.91	-66.6	-45.7	209.7	198.5	11.18	18.748	
2,600.0	2,588.2	2,586.0	2,581.3	6.7	5.8	-157.13	-157.13	-72.2	-52.2	225.3	213.6	11.69	19.271	
2,700.0	2,687.3	2,684.7	2,679.7	7.0	6.1	-156.45	-156.45	-77.9	-58.7	241.0	228.8	12.20	19.748	
2,800.0	2,786.4	2,783.4	2,778.1	7.3	6.3	-155.85	-155.85	-83.5	-65.2	256.7	243.9	12.71	20.186	
2,900.0	2,885.5	2,882.2	2,876.4	7.6	6.6	-155.32	-155.32	-89.2	-71.6	272.4	259.1	13.23	20.589	
3,000.0	2,984.7	2,980.9	2,974.8	7.9	6.8	-154.85	-154.85	-94.8	-78.1	288.1	274.4	13.74	20.961	
3,100.0	3,083.8	3,079.6	3,073.1	8.3	7.1	-154.43	-154.43	-100.5	-84.6	303.9	289.6	14.26	21.305	
3,200.0	3,182.9	3,178.4	3,171.5	8.6	7.4	-154.05	-154.05	-106.1	-91.1	319.6	304.8	14.78	21.623	
3,300.0	3,282.0	3,277.1	3,269.8	8.9	7.6	-153.71	-153.71	-111.8	-97.6	335.4	320.1	15.30	21.919	
3,400.0	3,381.1	3,375.8	3,368.2	9.2	7.9	-153.39	-153.39	-117.4	-104.1	351.2	335.4	15.82	22.194	
3,500.0	3,480.3	3,474.5	3,466.5	9.6	8.2	-153.11	-153.11	-123.1	-110.6	367.0	350.6	16.35	22.451	
3,600.0	3,579.4	3,573.3	3,564.9	9.9	8.5	-152.85	-152.85	-128.7	-117.0	382.8	365.9	16.87	22.692	
3,700.0	3,678.5	3,672.0	3,663.2	10.2	8.7	-152.60	-152.60	-134.4	-123.5	398.6	381.2	17.39	22.917	
3,800.0	3,777.6	3,770.7	3,761.6	10.5	9.0	-152.38	-152.38	-140.0	-130.0	414.4	396.5	17.92	23.128	
3,900.0	3,876.8	3,869.5	3,859.9	10.9	9.3	-152.17	-152.17	-145.7	-136.5	430.3	411.8	18.44	23.327	
4,000.0	3,975.9	3,968.2	3,958.3	11.2	9.5	-151.98	-151.98	-151.3	-143.0	446.1	427.1	18.97	23.514	
4,100.0	4,075.0	4,066.9	4,056.6	11.5	9.8	-151.80	-151.80	-157.0	-149.5	461.9	442.4	19.50	23.690	
4,200.0	4,174.1	4,165.6	4,155.0	11.9	10.1	-151.63	-151.63	-162.6	-155.9	477.8	457.7	20.03	23.857	
4,300.0	4,273.2	4,264.4	4,253.3	12.2	10.4	-151.48	-151.48	-168.3	-162.4	493.6	473.1	20.55	24.015	
4,400.0	4,372.4	4,363.1	4,351.7	12.5	10.6	-151.33	-151.33	-174.0	-168.9	509.5	488.4	21.08	24.164	
4,500.0	4,471.5	4,461.8	4,450.0	12.8	10.9	-151.19	-151.19	-179.6	-175.4	525.3	503.7	21.61	24.306	
4,600.0	4,570.6	4,560.5	4,548.4	13.2	11.2	-151.06	-151.06	-185.3	-181.9	541.2	519.0	22.14	24.441	
4,700.0	4,669.7	4,659.3	4,646.8	13.5	11.4	-150.94	-150.94	-190.9	-188.4	557.0	534.3	22.67	24.569	
4,800.0	4,768.8	4,758.0	4,745.1	13.8	11.7	-150.83	-150.83	-196.6	-194.9	572.9	549.7	23.20	24.691	
4,900.0	4,868.0	4,856.7	4,843.5	14.2	12.0	-150.72	-150.72	-202.2	-201.3	588.7	565.0	23.73	24.807	
5,000.0	4,967.1	4,955.5	4,941.8	14.5	12.3	-150.61	-150.61	-207.9	-207.8	604.6	580.3	24.26	24.918	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-402 - 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 (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,066.2	5,054.2	5,040.2	14.8	12.5	-150.51	-213.5	-214.3	620.5	595.7	24.79	25.024		
5,200.0	5,165.3	5,152.9	5,138.5	15.2	12.8	-150.42	-219.2	-220.8	636.3	611.0	25.33	25.125		
5,300.0	5,264.5	5,251.6	5,236.9	15.5	13.1	-150.33	-224.8	-227.3	652.2	626.3	25.86	25.222		
5,400.0	5,363.6	5,350.4	5,335.2	15.8	13.4	-150.25	-230.5	-233.8	668.1	641.7	26.39	25.314		
5,500.0	5,462.7	5,449.1	5,433.6	16.1	13.7	-150.22	-236.1	-240.3	683.7	656.7	26.93	25.389		
5,600.0	5,562.2	5,548.2	5,532.3	16.4	13.9	-150.14	-241.8	-246.8	696.8	669.4	27.42	25.411		
5,700.0	5,662.0	5,647.6	5,631.3	16.6	14.2	-149.90	-247.5	-253.3	706.9	679.0	27.89	25.350		
5,800.0	5,762.0	5,747.2	5,730.5	16.7	14.5	-149.49	-253.2	-259.8	714.1	685.8	28.32	25.211		
5,900.0	5,862.0	5,859.0	5,842.0	16.9	14.7	170.79	-258.6	-266.1	718.2	688.8	29.35	24.474		
6,000.0	5,962.0	5,974.3	5,957.2	17.0	14.9	171.06	-261.3	-269.1	720.1	690.3	29.72	24.225		
6,100.0	6,062.0	6,080.0	6,063.0	17.2	15.1	171.08	-261.5	-269.4	720.2	690.1	30.10	23.930		
6,200.0	6,161.7	6,175.1	6,158.0	17.3	15.3	81.55	-261.5	-268.6	719.4	689.5	29.84	24.110		
6,300.0	6,259.7	6,263.0	6,245.4	17.4	15.4	82.30	-261.5	-259.7	718.0	688.0	30.00	23.933		
6,400.0	6,354.4	6,350.0	6,330.4	17.3	15.4	83.16	-261.5	-241.1	716.6	686.6	30.08	23.825		
6,500.0	6,444.0	6,441.6	6,416.9	17.3	15.4	84.15	-261.5	-211.2	715.3	685.2	30.12	23.747		
6,600.0	6,527.2	6,532.7	6,498.8	17.2	15.4	85.23	-261.5	-171.4	714.0	683.8	30.21	23.634		
6,700.0	6,602.4	6,625.3	6,576.6	17.1	15.4	86.39	-261.5	-121.3	712.9	682.5	30.47	23.399		
6,800.0	6,668.4	6,719.4	6,648.8	17.1	15.5	87.62	-261.5	-61.0	712.1	681.1	31.04	22.943		
6,900.0	6,724.0	6,815.4	6,714.3	17.2	15.6	88.90	-261.5	9.0	711.6	679.6	32.07	22.189		
6,983.8	6,761.9	6,897.3	6,762.9	17.7	15.9	90.00	-261.5	74.9	711.5	678.1	33.40	21.301		
7,000.0	6,768.3	6,913.3	6,771.5	17.8	16.0	90.21	-261.5	88.4	711.5	677.8	33.69	21.118		
7,100.0	6,800.5	7,013.4	6,819.1	19.1	16.9	91.53	-261.5	176.4	711.8	675.8	35.97	19.787		
7,200.0	6,820.1	7,115.7	6,855.3	20.7	18.2	92.84	-261.5	272.0	712.4	673.5	38.90	18.316		
7,300.0	6,830.8	7,220.8	6,879.0	22.6	20.0	93.83	-261.5	374.3	713.1	670.7	42.40	16.819		
7,400.0	6,836.5	7,323.2	6,890.7	24.6	21.9	94.29	-261.5	476.0	713.5	667.2	46.29	15.415		
7,500.0	6,836.8	7,427.6	6,898.0	26.7	24.1	94.83	-261.5	580.2	714.0	663.5	50.52	14.133		
7,600.0	6,837.1	7,529.6	6,897.8	29.0	26.3	94.80	-261.5	682.1	714.0	659.0	54.98	12.986		
7,700.0	6,837.4	7,629.6	6,897.0	31.3	28.6	94.71	-261.5	782.1	713.9	654.3	59.60	11.979		
7,800.0	6,837.6	7,729.6	6,896.2	33.7	31.0	94.63	-261.5	882.1	713.8	649.4	64.37	11.089		
7,900.0	6,837.9	7,829.6	6,895.5	36.2	33.4	94.54	-261.5	982.1	713.7	644.5	69.27	10.303		
8,000.0	6,838.2	7,929.6	6,894.7	38.7	35.9	94.46	-261.5	1,082.1	713.7	639.4	74.27	9.608		
8,100.0	6,838.5	8,029.5	6,893.9	41.2	38.5	94.38	-261.5	1,182.0	713.6	634.2	79.36	8.992		
8,200.0	6,838.8	8,129.5	6,893.2	43.8	41.0	94.29	-261.5	1,282.0	713.5	629.0	84.51	8.443		
8,300.0	6,839.0	8,229.5	6,892.4	46.4	43.6	94.21	-261.5	1,382.0	713.4	623.7	89.72	7.952		
8,400.0	6,839.3	8,329.5	6,891.6	49.0	46.3	94.13	-261.5	1,482.0	713.3	618.4	94.97	7.511		
8,500.0	6,839.6	8,429.5	6,890.9	51.7	48.9	94.04	-261.5	1,582.0	713.3	613.0	100.26	7.114		
8,600.0	6,839.9	8,529.5	6,890.1	54.3	51.6	93.96	-261.5	1,682.0	713.2	607.6	105.59	6.754		
8,700.0	6,840.2	8,629.5	6,889.3	57.0	54.3	93.87	-261.5	1,782.0	713.1	602.2	110.95	6.427		
8,800.0	6,840.4	8,729.5	6,888.6	59.7	57.0	93.79	-261.5	1,882.0	713.0	596.7	116.33	6.130		
8,900.0	6,840.7	8,829.5	6,887.8	62.4	59.7	93.71	-261.5	1,982.0	713.0	591.2	121.73	5.857		
9,000.0	6,841.0	8,929.5	6,887.0	65.1	62.4	93.62	-261.5	2,082.0	712.9	585.8	127.16	5.607		
9,100.0	6,841.3	9,029.5	6,886.3	67.8	65.1	93.54	-261.5	2,182.0	712.8	580.3	132.60	5.376		
9,200.0	6,841.6	9,129.5	6,885.5	70.6	67.8	93.45	-261.5	2,282.0	712.8	574.7	138.05	5.163		
9,300.0	6,841.8	9,229.5	6,884.7	73.3	70.5	93.37	-261.5	2,381.9	712.7	569.2	143.52	4.966		
9,400.0	6,842.1	9,329.5	6,884.0	76.0	73.3	93.29	-261.5	2,481.9	712.7	563.7	149.00	4.783		
9,500.0	6,842.4	9,429.5	6,883.2	78.8	76.0	93.20	-261.5	2,581.9	712.6	558.1	154.49	4.613		
9,600.0	6,842.7	9,529.5	6,882.4	81.5	78.8	93.12	-261.5	2,681.9	712.5	552.6	159.99	4.454		
9,700.0	6,843.0	9,629.5	6,881.7	84.3	81.5	93.03	-261.5	2,781.9	712.5	547.0	165.49	4.305		
9,800.0	6,843.2	9,729.5	6,880.9	87.0	84.3	92.95	-261.5	2,881.9	712.4	541.4	171.01	4.166		
9,900.0	6,843.5	9,829.4	6,880.1	89.8	87.0	92.87	-261.5	2,981.9	712.4	535.8	176.53	4.035		
10,000.0	6,843.8	9,929.4	6,879.4	92.5	89.8	92.78	-261.5	3,081.9	712.3	530.3	182.06	3.913		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-402 - 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	6,844.1	10,029.4	6,878.6	95.3	92.6	92.70	92.70	-261.5	3,181.9	712.3	524.7	187.60	3.797	
10,200.0	6,844.3	10,129.4	6,877.8	98.0	95.3	92.61	92.61	-261.5	3,281.9	712.2	519.1	193.14	3.688	
10,300.0	6,844.6	10,229.4	6,877.0	100.8	98.1	92.53	92.53	-261.5	3,381.9	712.2	513.5	198.68	3.584	
10,400.0	6,844.9	10,329.4	6,876.3	103.6	100.9	92.44	92.44	-261.5	3,481.9	712.1	507.9	204.23	3.487	
10,500.0	6,845.2	10,429.4	6,875.5	106.4	103.7	92.36	92.36	-261.5	3,581.8	712.1	502.3	209.79	3.394	
10,600.0	6,845.5	10,529.4	6,874.7	109.1	106.4	92.28	92.28	-261.5	3,681.8	712.0	496.7	215.35	3.307	
10,700.0	6,845.7	10,629.4	6,874.0	111.9	109.2	92.19	92.19	-261.5	3,781.8	712.0	491.1	220.91	3.223	
10,800.0	6,846.0	10,729.4	6,873.2	114.7	112.0	92.11	92.11	-261.5	3,881.8	712.0	485.5	226.47	3.144	
10,900.0	6,846.3	10,829.4	6,872.4	117.5	114.8	92.02	92.02	-261.5	3,981.8	711.9	479.9	232.04	3.068	
11,000.0	6,846.6	10,929.4	6,871.7	120.2	117.6	91.94	91.94	-261.5	4,081.8	711.9	474.3	237.61	2.996	
11,100.0	6,846.9	11,029.4	6,870.9	123.0	120.3	91.86	91.86	-261.5	4,181.8	711.9	468.7	243.18	2.927	
11,200.0	6,847.1	11,129.4	6,870.1	125.8	123.1	91.77	91.77	-261.5	4,281.8	711.8	463.1	248.76	2.862	
11,300.0	6,847.4	11,229.4	6,869.4	128.6	125.9	91.69	91.69	-261.5	4,381.8	711.8	457.5	254.33	2.799	
11,400.0	6,847.7	11,329.4	6,868.6	131.4	128.7	91.60	91.60	-261.5	4,481.8	711.8	451.8	259.91	2.738	
11,500.0	6,848.0	11,429.4	6,867.8	134.2	131.5	91.52	91.52	-261.5	4,581.8	711.7	446.2	265.49	2.681	
11,600.0	6,848.3	11,529.4	6,867.1	136.9	134.3	91.43	91.43	-261.5	4,681.8	711.7	440.6	271.08	2.625	
11,700.0	6,848.5	11,629.3	6,866.3	139.7	137.1	91.35	91.35	-261.5	4,781.7	711.7	435.0	276.66	2.572	
11,800.0	6,848.8	11,729.3	6,865.5	142.5	139.8	91.27	91.27	-261.5	4,881.7	711.7	429.4	282.25	2.521	
11,900.0	6,849.1	11,829.3	6,864.8	145.3	142.6	91.18	91.18	-261.5	4,981.7	711.6	423.8	287.83	2.472	
12,000.0	6,849.4	11,929.3	6,864.0	148.1	145.4	91.10	91.10	-261.5	5,081.7	711.6	418.2	293.42	2.425	
12,100.0	6,849.7	12,029.3	6,863.2	150.9	148.2	91.01	91.01	-261.5	5,181.7	711.6	412.6	299.01	2.380	
12,200.0	6,849.9	12,129.3	6,862.5	153.7	151.0	90.93	90.93	-261.5	5,281.7	711.6	407.0	304.60	2.336	
12,300.0	6,850.2	12,229.3	6,861.7	156.5	153.8	90.84	90.84	-261.5	5,381.7	711.6	401.4	310.19	2.294	
12,400.0	6,850.5	12,329.3	6,860.9	159.3	156.6	90.76	90.76	-261.5	5,481.7	711.5	395.8	315.78	2.253	
12,500.0	6,850.8	12,429.3	6,860.2	162.1	159.4	90.68	90.68	-261.5	5,581.7	711.5	390.2	321.37	2.214	
12,600.0	6,851.0	12,529.3	6,859.4	164.8	162.2	90.59	90.59	-261.5	5,681.7	711.5	384.6	326.96	2.176	
12,700.0	6,851.3	12,629.3	6,858.6	167.6	165.0	90.51	90.51	-261.5	5,781.7	711.5	379.0	332.56	2.140	
12,800.0	6,851.6	12,729.3	6,857.9	170.4	167.8	90.42	90.42	-261.5	5,881.6	711.5	373.4	338.15	2.104	
12,900.0	6,851.9	12,829.3	6,857.1	173.2	170.6	90.34	90.34	-261.5	5,981.6	711.5	367.8	343.74	2.070	
13,000.0	6,852.2	12,929.3	6,856.3	176.0	173.4	90.25	90.25	-261.5	6,081.6	711.5	362.2	349.33	2.037	
13,100.0	6,852.4	13,029.3	6,855.5	178.8	176.2	90.17	90.17	-261.5	6,181.6	711.5	356.6	354.93	2.005	
13,200.0	6,852.7	13,129.3	6,854.8	181.6	179.0	90.08	90.08	-261.5	6,281.6	711.5	351.0	360.52	1.973	
13,298.5	6,853.0	13,227.7	6,854.0	184.4	181.7	90.00	90.00	-261.5	6,380.1	711.5	345.4	366.03	1.944 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

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

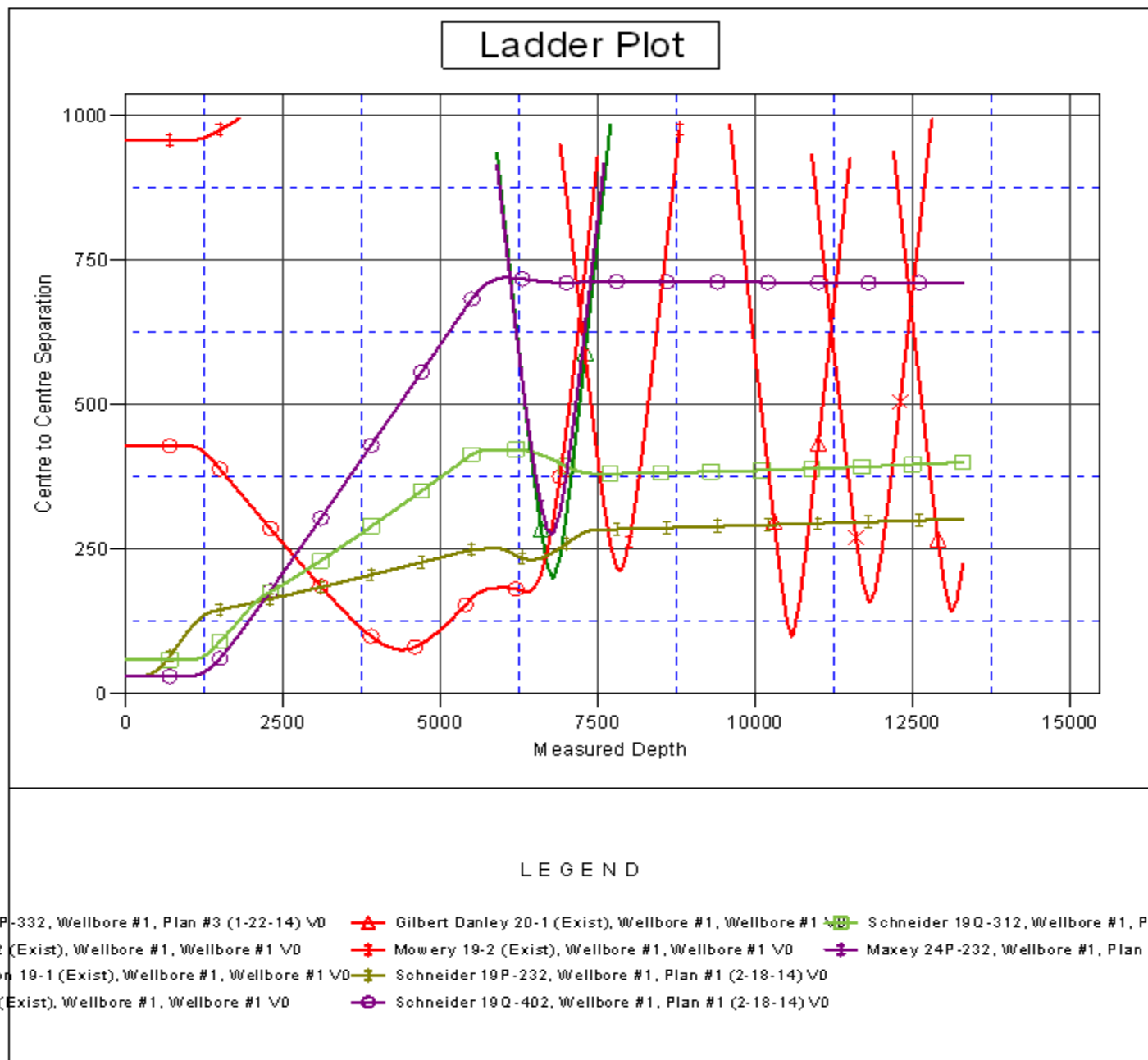
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Schneider 19P-432

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Schneider 19P-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Reference Site:</b>	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4667.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Schneider 19P-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (2-18-14)	<b>Offset TVD Reference:</b>	Offset Datum

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

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Schneider 19P-432

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°

