PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Schneider 19Q-312**

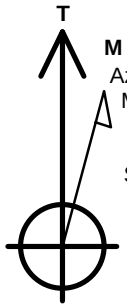
Surface Location: Schneider 19Q-HZ Pad Sec.19-T5N-R64W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4653.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1382010.47	3253857.66	40.378440	-104.588790	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' N/S Hardline (19Q-312)	1.0	63.9	5119.8	Rectangle (Sides: L9207.8 W100.0)
SHL 409'FSL, 1547'FEL, SEC.19	1.0	0.0	0.0	Point
BHL 356'FSL, 2396'FEL, SEC.21	6737.0	63.9	9723.5	Point



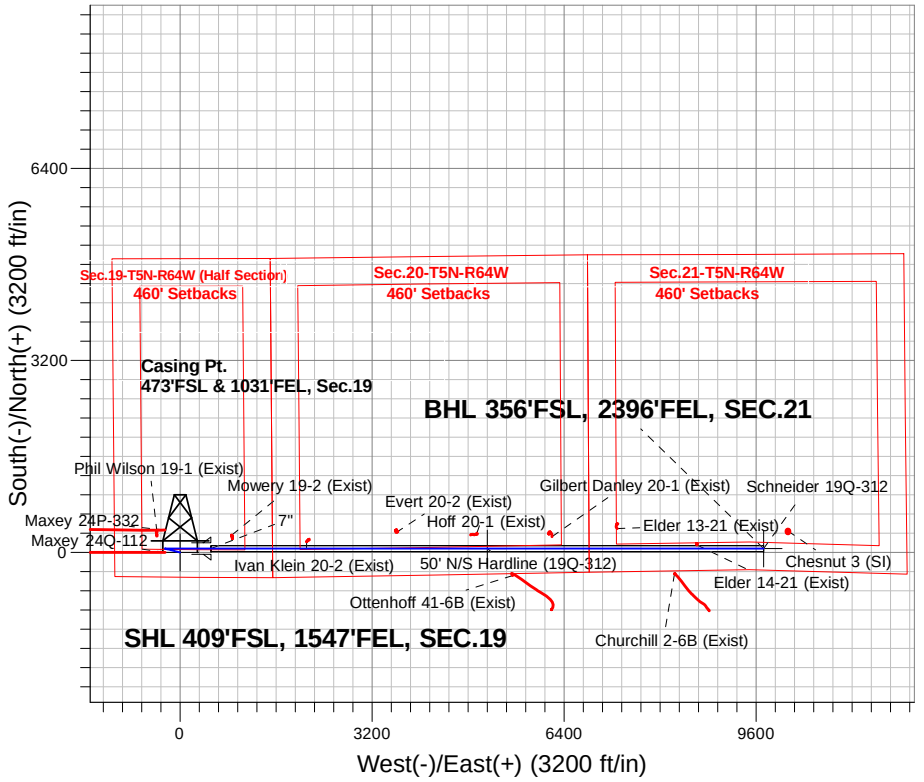
Azimuths to True North
Magnetic North: 8.21°

Magnetic Field
Strength: 52708.1snT
Dip Angle: 66.92°
Date: 7/20/2015
Model: IGRF2010

ANNOTATIONS

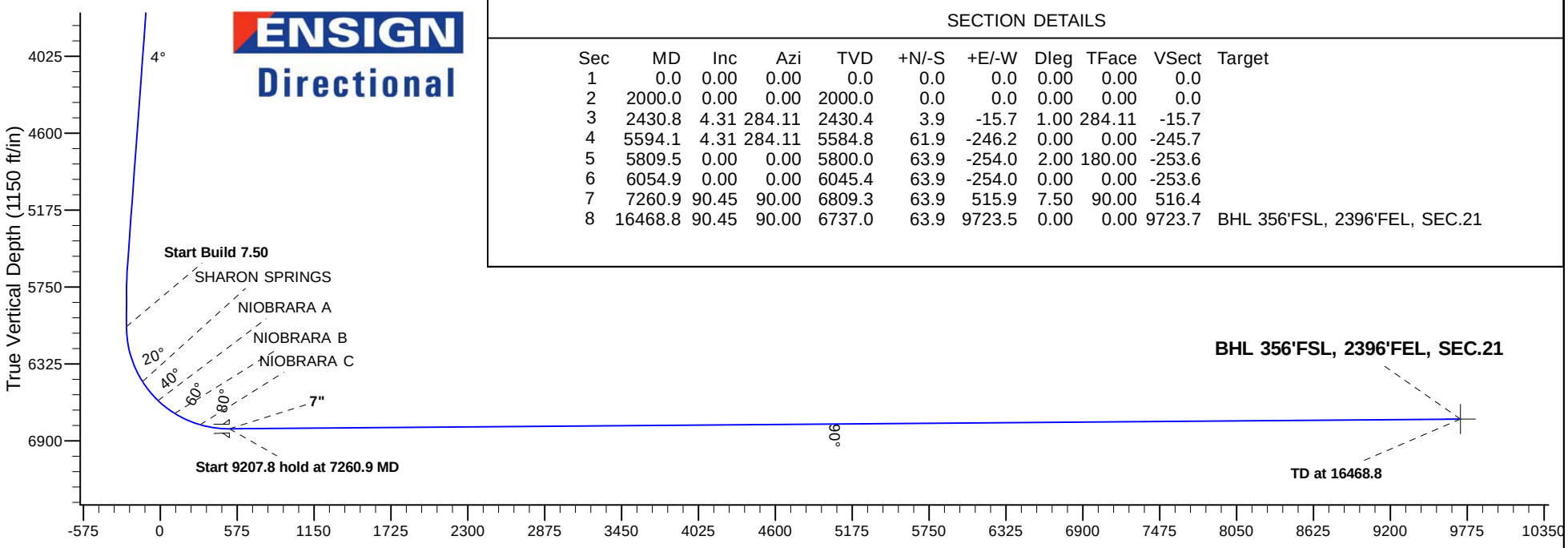
TVD	MD	Annotation
2000.0	2000.0	KOP - Start Build 1.00
6045.4	6054.9	Start Build 7.50
6809.3	7260.9	Start 9207.8 hold at 7260.9 MD
6737.0	16468.8	TD at 16468.8

Schneider 19Q-HZ Pad Sec.19-T5N-R64W
Schneider 19Q-312
Plan #2 (7-20-15)
11:32, July 22 2015



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2430.8	4.31	284.11	2430.4	3.9	-15.7	1.00	284.11	-15.7	
4	5594.1	4.31	284.11	5584.8	61.9	-246.2	0.00	0.00	-245.7	
5	5809.5	0.00	0.00	5800.0	63.9	-254.0	2.00	180.00	-253.6	
6	6054.9	0.00	0.00	6045.4	63.9	-254.0	0.00	0.00	-253.6	
7	7260.9	90.45	90.00	6809.3	63.9	515.9	7.50	90.00	516.4	
8	16468.8	90.45	90.00	6737.0	63.9	9723.5	0.00	0.00	9723.7	BHL 356'FSL, 2396'FEL, SEC.21



ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W
Schneider 19Q-HZ Pad Sec.19-T5N-R64W
Schneider 19Q-312

Wellbore #1

Plan: Plan #2 (7-20-15)

Standard Planning Report

21 July, 2015

PDC ENERGY
Growing E&P Value

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Project:	SEC.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**North Reference:**	True
Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-20-15)		

Project SEC.19-T5N-R64W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

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

Site Position:		**Northing:**	1,382,009.88 usft	**Latitude:**	40.378440
From:	Lat/Long	**Easting:**	3,253,799.16 usft	**Longitude:**	-104.589000
Position Uncertainty:	0.0 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.59 °

Well Schneider 19Q-312

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,382,010.47 usft	**Latitude:**	40.378440
	+E/-W	58.5 ft	**Easting:**	3,253,857.67 usft	**Longitude:**	-104.588790
Position Uncertainty		0.0 ft	**Wellhead Elevation:**		**Ground Level:**	4,653.0 ft

Wellbore Wellbore #1

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

Design Plan #2 (7-20-15)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	89.62

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,430.8	4.31	284.11	2,430.4	3.9	-15.7	1.00	1.00	0.00	284.11	
5,594.1	4.31	284.11	5,584.8	61.9	-246.2	0.00	0.00	0.00	0.00	
5,809.5	0.00	0.00	5,800.0	63.9	-254.0	2.00	-2.00	0.00	180.00	
6,054.9	0.00	0.00	6,045.4	63.9	-254.0	0.00	0.00	0.00	0.00	
7,260.9	90.45	90.00	6,809.3	63.9	515.9	7.50	7.50	0.00	90.00	
16,468.8	90.45	90.00	6,737.0	63.9	9,723.5	0.00	0.00	0.00	0.00	BHL 356'FSL, 2396'FI

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
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Project:	SEC.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**North Reference:**	True
Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-20-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
2,100.0	1.00	284.11	2,100.0	0.2	-0.8	-0.8	1.00	1.00	0.00
2,200.0	2.00	284.11	2,200.0	0.9	-3.4	-3.4	1.00	1.00	0.00
2,300.0	3.00	284.11	2,299.9	1.9	-7.6	-7.6	1.00	1.00	0.00
2,400.0	4.00	284.11	2,399.7	3.4	-13.5	-13.5	1.00	1.00	0.00
2,430.8	4.31	284.11	2,430.4	3.9	-15.7	-15.7	1.00	1.00	0.00
2,500.0	4.31	284.11	2,499.4	5.2	-20.7	-20.7	0.00	0.00	0.00
2,600.0	4.31	284.11	2,599.1	7.0	-28.0	-28.0	0.00	0.00	0.00
2,700.0	4.31	284.11	2,698.8	8.9	-35.3	-35.3	0.00	0.00	0.00
2,800.0	4.31	284.11	2,798.6	10.7	-42.6	-42.5	0.00	0.00	0.00
2,900.0	4.31	284.11	2,898.3	12.5	-49.9	-49.8	0.00	0.00	0.00
3,000.0	4.31	284.11	2,998.0	14.4	-57.2	-57.1	0.00	0.00	0.00
3,100.0	4.31	284.11	3,097.7	16.2	-64.5	-64.3	0.00	0.00	0.00
3,200.0	4.31	284.11	3,197.4	18.0	-71.7	-71.6	0.00	0.00	0.00
3,300.0	4.31	284.11	3,297.1	19.9	-79.0	-78.9	0.00	0.00	0.00
3,400.0	4.31	284.11	3,396.9	21.7	-86.3	-86.2	0.00	0.00	0.00
3,500.0	4.31	284.11	3,496.6	23.5	-93.6	-93.4	0.00	0.00	0.00
3,600.0	4.31	284.11	3,596.3	25.4	-100.9	-100.7	0.00	0.00	0.00
3,700.0	4.31	284.11	3,696.0	27.2	-108.2	-108.0	0.00	0.00	0.00
3,800.0	4.31	284.11	3,795.7	29.0	-115.4	-115.3	0.00	0.00	0.00
3,900.0	4.31	284.11	3,895.4	30.9	-122.7	-122.5	0.00	0.00	0.00
4,000.0	4.31	284.11	3,995.2	32.7	-130.0	-129.8	0.00	0.00	0.00
4,100.0	4.31	284.11	4,094.9	34.5	-137.3	-137.1	0.00	0.00	0.00
4,200.0	4.31	284.11	4,194.6	36.4	-144.6	-144.3	0.00	0.00	0.00
4,300.0	4.31	284.11	4,294.3	38.2	-151.9	-151.6	0.00	0.00	0.00
4,400.0	4.31	284.11	4,394.0	40.0	-159.2	-158.9	0.00	0.00	0.00
4,500.0	4.31	284.11	4,493.7	41.8	-166.4	-166.2	0.00	0.00	0.00
4,600.0	4.31	284.11	4,593.5	43.7	-173.7	-173.4	0.00	0.00	0.00
4,700.0	4.31	284.11	4,693.2	45.5	-181.0	-180.7	0.00	0.00	0.00
4,800.0	4.31	284.11	4,792.9	47.3	-188.3	-188.0	0.00	0.00	0.00
4,900.0	4.31	284.11	4,892.6	49.2	-195.6	-195.3	0.00	0.00	0.00
5,000.0	4.31	284.11	4,992.3	51.0	-202.9	-202.5	0.00	0.00	0.00

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Project:	SEC.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**North Reference:**	True
Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-20-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.0	4.31	284.11	5,092.1	52.8	-210.2	-209.8	0.00	0.00	0.00
5,200.0	4.31	284.11	5,191.8	54.7	-217.4	-217.1	0.00	0.00	0.00
5,300.0	4.31	284.11	5,291.5	56.5	-224.7	-224.3	0.00	0.00	0.00
5,400.0	4.31	284.11	5,391.2	58.3	-232.0	-231.6	0.00	0.00	0.00
5,500.0	4.31	284.11	5,490.9	60.2	-239.3	-238.9	0.00	0.00	0.00
5,594.1	4.31	284.11	5,584.8	61.9	-246.2	-245.7	0.00	0.00	0.00
5,600.0	4.19	284.11	5,590.6	62.0	-246.6	-246.2	2.00	-2.00	0.00
5,700.0	2.19	284.11	5,690.5	63.4	-252.0	-251.5	2.00	-2.00	0.00
5,800.0	0.19	284.11	5,790.5	63.9	-254.0	-253.6	2.00	-2.00	0.00
5,809.5	0.00	0.00	5,800.0	63.9	-254.0	-253.6	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,890.5	63.9	-254.0	-253.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,990.5	63.9	-254.0	-253.6	0.00	0.00	0.00
6,054.9	0.00	0.00	6,045.4	63.9	-254.0	-253.6	0.00	0.00	0.00
Start Build 7.50									
6,100.0	3.38	90.00	6,090.4	63.9	-252.7	-252.2	7.49	7.49	0.00
6,200.0	10.88	90.00	6,189.6	63.9	-240.3	-239.8	7.50	7.50	0.00
6,300.0	18.38	90.00	6,286.3	63.9	-215.0	-214.6	7.50	7.50	0.00
6,400.0	25.88	90.00	6,378.8	63.9	-177.4	-177.0	7.50	7.50	0.00
6,500.0	33.38	90.00	6,465.7	63.9	-128.0	-127.6	7.50	7.50	0.00
6,600.0	40.88	90.00	6,545.4	63.9	-67.7	-67.2	7.50	7.50	0.00
6,700.0	48.38	90.00	6,616.5	63.9	2.5	3.0	7.50	7.50	0.00
6,800.0	55.88	90.00	6,677.8	63.9	81.4	81.8	7.50	7.50	0.00
6,900.0	63.38	90.00	6,728.4	63.9	167.6	168.1	7.50	7.50	0.00
7,000.0	70.88	90.00	6,767.2	63.9	259.7	260.1	7.50	7.50	0.00
7,100.0	78.38	90.00	6,793.7	63.9	356.1	356.5	7.50	7.50	0.00
7,200.0	85.88	90.00	6,807.4	63.9	455.0	455.5	7.50	7.50	0.00
7,260.9	90.45	90.00	6,809.3	63.9	515.9	516.3	7.50	7.50	0.00
Start 9207.8 hold at 7260.9 MD - 7"									
7,300.0	90.45	90.00	6,809.0	63.9	555.0	555.4	0.01	0.01	0.00
7,400.0	90.45	90.00	6,808.2	63.9	655.0	655.4	0.00	0.00	0.00
7,500.0	90.45	90.00	6,807.4	63.9	755.0	755.4	0.00	0.00	0.00
7,600.0	90.45	90.00	6,806.7	63.9	855.0	855.4	0.00	0.00	0.00
7,700.0	90.45	90.00	6,805.9	63.9	955.0	955.4	0.00	0.00	0.00
7,800.0	90.45	90.00	6,805.1	63.9	1,055.0	1,055.4	0.00	0.00	0.00
7,900.0	90.45	90.00	6,804.3	63.9	1,155.0	1,155.4	0.00	0.00	0.00
8,000.0	90.45	90.00	6,803.5	63.9	1,255.0	1,255.4	0.00	0.00	0.00
8,100.0	90.45	90.00	6,802.7	63.9	1,355.0	1,355.4	0.00	0.00	0.00
8,200.0	90.45	90.00	6,801.9	63.9	1,455.0	1,455.4	0.00	0.00	0.00
8,300.0	90.45	90.00	6,801.2	63.9	1,555.0	1,555.4	0.00	0.00	0.00
8,400.0	90.45	90.00	6,800.4	63.9	1,655.0	1,655.3	0.00	0.00	0.00
8,500.0	90.45	90.00	6,799.6	63.9	1,755.0	1,755.3	0.00	0.00	0.00
8,600.0	90.45	90.00	6,798.8	63.9	1,855.0	1,855.3	0.00	0.00	0.00
8,700.0	90.45	90.00	6,798.0	63.9	1,955.0	1,955.3	0.00	0.00	0.00
8,800.0	90.45	90.00	6,797.2	63.9	2,055.0	2,055.3	0.00	0.00	0.00
8,900.0	90.45	90.00	6,796.4	63.9	2,155.0	2,155.3	0.00	0.00	0.00
9,000.0	90.45	90.00	6,795.7	63.9	2,254.9	2,255.3	0.00	0.00	0.00
9,100.0	90.45	90.00	6,794.9	63.9	2,354.9	2,355.3	0.00	0.00	0.00
9,200.0	90.45	90.00	6,794.1	63.9	2,454.9	2,455.3	0.00	0.00	0.00
9,300.0	90.45	90.00	6,793.3	63.9	2,554.9	2,555.3	0.00	0.00	0.00
9,400.0	90.45	90.00	6,792.5	63.9	2,654.9	2,655.3	0.00	0.00	0.00
9,500.0	90.45	90.00	6,791.7	63.9	2,754.9	2,755.3	0.00	0.00	0.00
9,600.0	90.45	90.00	6,790.9	63.9	2,854.9	2,855.3	0.00	0.00	0.00
9,700.0	90.45	90.00	6,790.2	63.9	2,954.9	2,955.3	0.00	0.00	0.00

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Project:	SEC.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**North Reference:**	True
Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-20-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,800.0	90.45	90.00	6,789.4	63.9	3,054.9	3,055.3	0.00	0.00	0.00
9,900.0	90.45	90.00	6,788.6	63.9	3,154.9	3,155.3	0.00	0.00	0.00
10,000.0	90.45	90.00	6,787.8	63.9	3,254.9	3,255.3	0.00	0.00	0.00
10,100.0	90.45	90.00	6,787.0	63.9	3,354.9	3,355.3	0.00	0.00	0.00
10,200.0	90.45	90.00	6,786.2	63.9	3,454.9	3,455.3	0.00	0.00	0.00
10,300.0	90.45	90.00	6,785.4	63.9	3,554.9	3,555.2	0.00	0.00	0.00
10,400.0	90.45	90.00	6,784.7	63.9	3,654.9	3,655.2	0.00	0.00	0.00
10,500.0	90.45	90.00	6,783.9	63.9	3,754.9	3,755.2	0.00	0.00	0.00
10,600.0	90.45	90.00	6,783.1	63.9	3,854.9	3,855.2	0.00	0.00	0.00
10,700.0	90.45	90.00	6,782.3	63.9	3,954.9	3,955.2	0.00	0.00	0.00
10,800.0	90.45	90.00	6,781.5	63.9	4,054.9	4,055.2	0.00	0.00	0.00
10,900.0	90.45	90.00	6,780.7	63.9	4,154.9	4,155.2	0.00	0.00	0.00
11,000.0	90.45	90.00	6,780.0	63.9	4,254.9	4,255.2	0.00	0.00	0.00
11,100.0	90.45	90.00	6,779.2	63.9	4,354.9	4,355.2	0.00	0.00	0.00
11,200.0	90.45	90.00	6,778.4	63.9	4,454.9	4,455.2	0.00	0.00	0.00
11,300.0	90.45	90.00	6,777.6	63.9	4,554.9	4,555.2	0.00	0.00	0.00
11,400.0	90.45	90.00	6,776.8	63.9	4,654.9	4,655.2	0.00	0.00	0.00
11,500.0	90.45	90.00	6,776.0	63.9	4,754.9	4,755.2	0.00	0.00	0.00
11,600.0	90.45	90.00	6,775.2	63.9	4,854.9	4,855.2	0.00	0.00	0.00
11,700.0	90.45	90.00	6,774.5	63.9	4,954.9	4,955.2	0.00	0.00	0.00
11,800.0	90.45	90.00	6,773.7	63.9	5,054.9	5,055.2	0.00	0.00	0.00
11,900.0	90.45	90.00	6,772.9	63.9	5,154.9	5,155.2	0.00	0.00	0.00
12,000.0	90.45	90.00	6,772.1	63.9	5,254.9	5,255.2	0.00	0.00	0.00
12,100.0	90.45	90.00	6,771.3	63.9	5,354.9	5,355.2	0.00	0.00	0.00
12,200.0	90.45	90.00	6,770.5	63.9	5,454.8	5,455.2	0.00	0.00	0.00
12,300.0	90.45	90.00	6,769.7	63.9	5,554.8	5,555.1	0.00	0.00	0.00
12,400.0	90.45	90.00	6,769.0	63.9	5,654.8	5,655.1	0.00	0.00	0.00
12,500.0	90.45	90.00	6,768.2	63.9	5,754.8	5,755.1	0.00	0.00	0.00
12,600.0	90.45	90.00	6,767.4	63.9	5,854.8	5,855.1	0.00	0.00	0.00
12,700.0	90.45	90.00	6,766.6	63.9	5,954.8	5,955.1	0.00	0.00	0.00
12,800.0	90.45	90.00	6,765.8	63.9	6,054.8	6,055.1	0.00	0.00	0.00
12,900.0	90.45	90.00	6,765.0	63.9	6,154.8	6,155.1	0.00	0.00	0.00
13,000.0	90.45	90.00	6,764.2	63.9	6,254.8	6,255.1	0.00	0.00	0.00
13,100.0	90.45	90.00	6,763.5	63.9	6,354.8	6,355.1	0.00	0.00	0.00
13,200.0	90.45	90.00	6,762.7	63.9	6,454.8	6,455.1	0.00	0.00	0.00
13,300.0	90.45	90.00	6,761.9	63.9	6,554.8	6,555.1	0.00	0.00	0.00
13,400.0	90.45	90.00	6,761.1	63.9	6,654.8	6,655.1	0.00	0.00	0.00
13,500.0	90.45	90.00	6,760.3	63.9	6,754.8	6,755.1	0.00	0.00	0.00
13,600.0	90.45	90.00	6,759.5	63.9	6,854.8	6,855.1	0.00	0.00	0.00
13,700.0	90.45	90.00	6,758.7	63.9	6,954.8	6,955.1	0.00	0.00	0.00
13,800.0	90.45	90.00	6,758.0	63.9	7,054.8	7,055.1	0.00	0.00	0.00
13,900.0	90.45	90.00	6,757.2	63.9	7,154.8	7,155.1	0.00	0.00	0.00
14,000.0	90.45	90.00	6,756.4	63.9	7,254.8	7,255.1	0.00	0.00	0.00
14,100.0	90.45	90.00	6,755.6	63.9	7,354.8	7,355.1	0.00	0.00	0.00
14,200.0	90.45	90.00	6,754.8	63.9	7,454.8	7,455.0	0.00	0.00	0.00
14,300.0	90.45	90.00	6,754.0	63.9	7,554.8	7,555.0	0.00	0.00	0.00
14,400.0	90.45	90.00	6,753.2	63.9	7,654.8	7,655.0	0.00	0.00	0.00
14,500.0	90.45	90.00	6,752.5	63.9	7,754.8	7,755.0	0.00	0.00	0.00
14,600.0	90.45	90.00	6,751.7	63.9	7,854.8	7,855.0	0.00	0.00	0.00
14,700.0	90.45	90.00	6,750.9	63.9	7,954.8	7,955.0	0.00	0.00	0.00
14,800.0	90.45	90.00	6,750.1	63.9	8,054.8	8,055.0	0.00	0.00	0.00
14,900.0	90.45	90.00	6,749.3	63.9	8,154.8	8,155.0	0.00	0.00	0.00
15,000.0	90.45	90.00	6,748.5	63.9	8,254.8	8,255.0	0.00	0.00	0.00

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Project:	SEC.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**North Reference:**	True
Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-20-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,100.0	90.45	90.00	6,747.8	63.9	8,354.8	8,355.0	0.00	0.00	0.00
15,200.0	90.45	90.00	6,747.0	63.9	8,454.8	8,455.0	0.00	0.00	0.00
15,300.0	90.45	90.00	6,746.2	63.9	8,554.8	8,555.0	0.00	0.00	0.00
15,400.0	90.45	90.00	6,745.4	63.9	8,654.7	8,655.0	0.00	0.00	0.00
15,500.0	90.45	90.00	6,744.6	63.9	8,754.7	8,755.0	0.00	0.00	0.00
15,600.0	90.45	90.00	6,743.8	63.9	8,854.7	8,855.0	0.00	0.00	0.00
15,700.0	90.45	90.00	6,743.0	63.9	8,954.7	8,955.0	0.00	0.00	0.00
15,800.0	90.45	90.00	6,742.3	63.9	9,054.7	9,055.0	0.00	0.00	0.00
15,900.0	90.45	90.00	6,741.5	63.9	9,154.7	9,155.0	0.00	0.00	0.00
16,000.0	90.45	90.00	6,740.7	63.9	9,254.7	9,255.0	0.00	0.00	0.00
16,100.0	90.45	90.00	6,739.9	63.9	9,354.7	9,354.9	0.00	0.00	0.00
16,200.0	90.45	90.00	6,739.1	63.9	9,454.7	9,454.9	0.00	0.00	0.00
16,300.0	90.45	90.00	6,738.3	63.9	9,554.7	9,554.9	0.00	0.00	0.00
16,400.0	90.45	90.00	6,737.5	63.9	9,654.7	9,654.9	0.00	0.00	0.00
16,468.8	90.45	90.00	6,737.0	63.9	9,723.5	9,723.7	0.00	0.00	0.00
TD at 16468.8									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 409'FSL, 1547'FEL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,382,010.48	3,253,857.67	40.378440	-104.588790
50' N/S Hardline (19Q-3 - plan misses target center by 5120.2ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W100.0 H9,207.8 D0.0)	0.00	0.00	1.0	63.9	5,119.8	1,382,126.97	3,258,976.32	40.378614	-104.570414
BHL 356'FSL, 2396'FEL - plan hits target center - Point	0.00	0.00	6,737.0	63.9	9,723.5	1,382,174.24	3,263,579.57	40.378610	-104.553890

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,260.9	6,809.3	7"	7	7-1/2

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Project:	SEC.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**North Reference:**	True
Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-20-15)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,518.5	3,515.0	PARKMAN			
4,317.7	4,312.0	SUSSEX			
4,506.3	4,500.0	SHANNON			
6,489.6	6,457.0	SHARON SPRINGS			
6,672.7	6,598.0	NIOBRARA A			
6,829.7	6,694.0	NIOBRARA B			
7,038.9	6,779.0	NIOBRARA C			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 1.00
6,054.9	6,045.4	63.9	-254.0	Start Build 7.50
7,260.9	6,809.3	63.9	515.9	Start 9207.8 hold at 7260.9 MD
16,468.8	6,737.0	63.9	9,723.5	TD at 16468.8

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W
Schneider 19Q-HZ Pad Sec.19-T5N-R64W
Schneider 19Q-312

Wellbore #1
Plan #2 (7-20-15)

Anticollision Report

22 July, 2015

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Reference	Plan #2 (7-20-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0 ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 7/22/2015

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	16,468.8	Plan #2 (7-20-15) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells - Churchill 28J-HZ Sec.28-T5N-R64W						
Churchill 2-6B (Exist) - Wellbore #1 - Wellbore #1	14,988.0	6,789.6	419.9	169.6	1.678	CC
Churchill 2-6B (Exist) - Wellbore #1 - Wellbore #1	15,000.0	6,789.4	420.1	169.5	1.676	ES, SF
Ottenhoff 41-6B (Exist) - Wellbore #1 - Wellbore #1	12,274.7	6,842.0	428.8	255.5	2.475	CC, ES
Ottenhoff 41-6B (Exist) - Wellbore #1 - Wellbore #1	12,300.0	6,842.5	429.6	255.6	2.469	SF
Existing Wells Sec.21-T5N-R64W						
Chesnut 3 (SI) - Wellbore #1 - Wellbore #1	16,469.7	6,698.0	501.8	92.3	1.225	Level 2, CC, ES, SF
Elder 13-21 (Exist) - Wellbore #1 - Wellbore #1	14,031.2	6,500.0	408.4	225.4	2.231	CC, ES, SF
Elder 14-21 (Exist) - Wellbore #1 - Wellbore #1	15,362.8	6,500.0	218.9	124.9	2.329	CC, ES, SF
Maxey 24Q-HZ Pad Sec.24-T5N-R65W						
Maxey 24P-332 - Wellbore #1 - Wellbore #1	6,642.7	12,536.0	431.9	296.5	3.191	CC, ES, SF
Maxey 24Q-112 - Wellbore #1 - Plan #4 (5-29-14)R	6,547.9	12,334.8	198.7	126.1	2.738	CC
Maxey 24Q-112 - Wellbore #1 - Plan #4 (5-29-14)R	6,550.0	12,334.8	198.7	126.1	2.737	ES, SF
Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W						
Evert 20-2 (Exist) - Wellbore #1 - Wellbore #1	10,352.6	6,778.3	269.0	152.5	2.310	CC, ES, SF
Gilbert Danley 20-1 (Exist) - Wellbore #1 - Wellbore #1	12,941.1	6,763.8	208.7	20.0	1.106	Level 2, CC, ES, SF
Hoff 20-1 (Exist) - Wellbore #1 - Wellbore #1	11,691.7	6,773.2	253.3	97.7	1.627	CC
Hoff 20-1 (Exist) - Wellbore #1 - Wellbore #1	11,700.0	6,773.1	253.5	97.6	1.626	ES, SF
Ivan Klein 20-2 (Exist) - Wellbore #1 - Wellbore #1	8,854.9	6,791.4	120.7	43.7	1.569	CC, ES, SF
Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1	7,605.5	6,790.4	226.4	183.6	5.283	CC, ES, SF
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	5,967.6	5,932.0	303.8	278.8	12.158	CC
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	6,000.0	5,963.4	303.8	278.7	12.097	ES
Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore #1	6,100.0	6,062.3	305.1	279.3	11.836	SF
Schneider 19Q-HZ Pad Sec.19-T5N-R64W						
Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)	1,000.0	999.0	58.5	54.2	13.708	CC
Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)	16,469.7	16,614.6	383.5	-161.0	0.704	Level 1, ES, SF
Schneider 19P-332 - Wellbore #1 - Plan #3 (7-20-15)	200.0	199.0	89.2	88.5	132.662	CC
Schneider 19P-332 - Wellbore #1 - Plan #3 (7-20-15)	16,469.7	16,804.1	626.7	69.5	1.125	Level 2, ES, SF
Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)	1,200.0	1,200.0	27.9	22.7	5.389	CC
Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)	16,469.7	16,472.5	355.2	-183.4	0.659	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Churchill 28J-HZ Sec.28-T5N-R64W - Churchill 2-6B (Exist) - Wellbore #1 - Wellbore #

Survey Program: 800-NS-GYRO-MS

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,100.0	6,755.6	6,807.5	6,725.4	209.1	17.0	92.15	-356.1	8,242.5	982.1	756.7	225.34	4.358	
14,200.0	6,754.8	6,805.6	6,723.5	211.9	17.0	91.89	-356.1	8,242.5	892.7	664.6	228.16	3.913	
14,300.0	6,754.0	6,803.7	6,721.5	214.7	17.0	91.62	-356.1	8,242.6	805.9	574.9	230.98	3.489	
14,400.0	6,753.2	6,801.7	6,719.6	217.5	17.0	91.35	-356.1	8,242.6	722.4	488.6	233.80	3.090	
14,500.0	6,752.5	6,799.7	6,717.6	220.3	17.0	91.08	-356.1	8,242.6	643.7	407.1	236.61	2.721	
14,600.0	6,751.7	6,797.7	6,715.6	223.1	17.0	90.81	-356.1	8,242.6	571.6	332.2	239.41	2.388	
14,700.0	6,750.9	6,795.7	6,713.5	225.9	17.0	90.53	-356.1	8,242.7	509.1	266.9	242.22	2.102	
14,800.0	6,750.1	6,793.6	6,711.4	228.7	17.0	90.25	-356.0	8,242.7	460.0	215.0	245.01	1.878	
14,900.0	6,749.3	6,791.5	6,709.3	231.6	17.0	89.96	-356.0	8,242.7	429.0	181.2	247.80	1.731	
14,988.0	6,748.6	6,789.6	6,707.5	234.0	17.0	89.70	-356.0	8,242.7	419.9	169.6	250.26	1.678 CC	
15,000.0	6,748.5	6,789.4	6,707.2	234.4	17.0	89.67	-356.0	8,242.7	420.1	169.5	250.59	1.676 ES, SF	
15,100.0	6,747.8	6,787.2	6,705.0	237.2	17.0	89.37	-356.0	8,242.8	434.6	181.2	253.37	1.715	
15,200.0	6,747.0	6,785.0	6,702.9	240.0	17.0	89.08	-356.0	8,242.8	470.4	214.2	256.14	1.836	
15,300.0	6,746.2	6,782.8	6,700.6	242.8	17.0	88.77	-356.0	8,242.8	523.1	264.2	258.91	2.020	
15,400.0	6,745.4	6,780.6	6,698.4	245.6	17.0	88.46	-356.0	8,242.9	588.2	326.5	261.66	2.248	
15,500.0	6,744.6	6,778.3	6,696.1	248.4	17.0	88.15	-356.0	8,242.9	662.1	397.7	264.41	2.504	
15,600.0	6,743.8	6,775.9	6,693.8	251.2	17.0	87.84	-356.0	8,242.9	742.1	474.9	267.15	2.778	
15,700.0	6,743.0	6,773.6	6,691.4	254.0	17.0	87.52	-355.9	8,243.0	826.5	556.6	269.88	3.062	
15,800.0	6,742.3	6,771.2	6,689.0	256.8	17.0	87.19	-355.9	8,243.0	914.0	641.4	272.60	3.353	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Churchill 28J-HZ Sec.28-T5N-R64W - Ottenhoff 41-6B (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 488-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,400.0	6,776.8	6,827.1	6,724.8	133.6	16.2	85.30	-363.8	5,529.0	974.1	825.6	148.49	6.560	
11,500.0	6,776.0	6,828.7	6,726.4	136.4	16.2	85.52	-363.9	5,529.1	885.4	734.1	151.32	5.851	
11,600.0	6,775.2	6,830.3	6,728.0	139.2	16.2	85.74	-363.9	5,529.1	799.4	645.2	154.16	5.186	
11,700.0	6,774.5	6,832.0	6,729.7	142.0	16.2	85.96	-364.0	5,529.2	717.0	560.0	156.99	4.567	
11,800.0	6,773.7	6,833.7	6,731.4	144.8	16.2	86.18	-364.1	5,529.2	639.7	479.9	159.83	4.002	
11,900.0	6,772.9	6,835.4	6,733.1	147.6	16.2	86.41	-364.2	5,529.2	569.5	406.8	162.66	3.501	
12,000.0	6,772.1	6,837.1	6,734.8	150.4	16.2	86.64	-364.3	5,529.3	509.3	343.8	165.50	3.077	
12,100.0	6,771.3	6,838.9	6,736.6	153.2	16.2	86.88	-364.3	5,529.3	463.1	294.7	168.33	2.751	
12,200.0	6,770.5	6,840.7	6,738.4	156.0	16.2	87.12	-364.4	5,529.4	435.3	264.1	171.17	2.543	
12,274.7	6,769.9	6,842.0	6,739.8	158.0	16.2	87.30	-364.5	5,529.4	428.8	255.5	173.28	2.475	CC, ES
12,300.0	6,769.7	6,842.5	6,740.2	158.7	16.2	87.36	-364.5	5,529.4	429.6	255.6	174.00	2.469	SF
12,400.0	6,769.0	6,844.4	6,742.1	161.5	16.2	87.61	-364.6	5,529.5	446.7	269.9	176.83	2.526	
12,500.0	6,768.2	6,846.2	6,744.0	164.3	16.2	87.86	-364.7	5,529.5	484.4	304.7	179.67	2.696	
12,600.0	6,767.4	6,848.1	6,745.9	167.1	16.2	88.12	-364.8	5,529.6	538.2	355.7	182.50	2.949	
12,700.0	6,766.6	6,850.1	6,747.8	169.9	16.2	88.38	-364.9	5,529.6	603.9	418.6	185.33	3.259	
12,800.0	6,765.8	6,852.1	6,749.8	172.7	16.2	88.64	-365.0	5,529.7	678.0	489.9	188.15	3.603	
12,900.0	6,765.0	6,854.1	6,751.8	175.5	16.2	88.91	-365.1	5,529.8	758.1	567.1	190.98	3.970	
13,000.0	6,764.2	6,856.1	6,753.8	178.3	16.2	89.18	-365.2	5,529.8	842.4	648.6	193.80	4.347	
13,100.0	6,763.5	6,858.2	6,755.9	181.1	16.2	89.46	-365.3	5,529.9	929.9	733.3	196.62	4.729	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.21-T5N-R64W - Chesnut 3 (SI) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7000-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
16,000.0	6,740.7	6,701.7	6,701.7	262.4	134.0	-91.33	359.1	10,130.1	923.9	527.5	396.31	2.331	
16,100.0	6,739.9	6,700.9	6,700.9	265.2	134.0	-91.18	359.1	10,130.1	829.7	430.6	399.12	2.079	
16,200.0	6,739.1	6,700.1	6,700.1	268.0	134.0	-91.03	359.1	10,130.1	737.1	335.2	401.93	1.834	
16,300.0	6,738.3	6,699.3	6,699.3	270.8	134.0	-90.88	359.1	10,130.1	646.7	242.0	404.74	1.598	
16,400.0	6,737.5	6,698.5	6,698.5	273.6	134.0	-90.72	359.1	10,130.1	559.6	152.1	407.54	1.373	Level 3
16,468.8	6,737.0	6,698.0	6,698.0	275.5	134.0	-90.62	359.1	10,130.1	502.5	93.1	409.47	1.227	Level 2
16,469.7	6,737.0	6,698.0	6,698.0	275.6	134.0	-90.62	359.1	10,130.1	501.8	92.3	409.49	1.225	Level 2, CC, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.21-T5N-R64W - Elder 13-21 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,200.0	6,762.7	6,500.0	6,497.8	183.9	12.4	-54.98	398.4	7,284.2	926.2	762.5	163.66	5.659	
13,300.0	6,761.9	6,500.0	6,497.8	186.7	12.4	-54.98	398.4	7,284.2	837.6	671.6	165.99	5.046	
13,400.0	6,761.1	6,500.0	6,497.8	189.5	12.4	-54.98	398.4	7,284.2	751.8	583.5	168.33	4.467	
13,500.0	6,760.3	6,500.0	6,497.8	192.3	12.4	-54.98	398.4	7,284.2	670.1	499.4	170.66	3.926	
13,600.0	6,759.5	6,500.0	6,497.8	195.1	12.4	-54.98	398.4	7,284.2	594.0	421.0	172.99	3.433	
13,700.0	6,758.7	6,500.0	6,497.8	197.9	12.4	-54.98	398.4	7,284.2	525.9	350.5	175.33	2.999	
13,800.0	6,758.0	6,500.0	6,497.8	200.7	12.4	-54.98	398.4	7,284.2	469.3	291.7	177.66	2.642	
13,900.0	6,757.2	6,500.0	6,497.8	203.5	12.4	-54.98	398.4	7,284.2	429.0	249.0	180.00	2.383	
14,000.0	6,756.4	6,500.0	6,497.8	206.3	12.4	-54.98	398.4	7,284.2	409.6	227.3	182.33	2.247	
14,031.2	6,756.1	6,500.0	6,497.8	207.2	12.4	-54.98	398.4	7,284.2	408.4	225.4	183.06	2.231	CC, ES, SF
14,100.0	6,755.6	6,500.0	6,497.8	209.1	12.4	-54.98	398.4	7,284.2	414.2	229.5	184.67	2.243	
14,200.0	6,754.8	6,500.0	6,497.8	211.9	12.4	-54.98	398.4	7,284.2	441.9	254.9	187.01	2.363	
14,300.0	6,754.0	6,500.0	6,497.8	214.7	12.4	-54.98	398.4	7,284.2	488.9	299.6	189.34	2.582	
14,400.0	6,753.2	6,500.0	6,497.8	217.5	12.4	-54.98	398.4	7,284.2	550.3	358.6	191.68	2.871	
14,500.0	6,752.5	6,500.0	6,497.8	220.3	12.4	-54.98	398.4	7,284.2	621.8	427.7	194.01	3.205	
14,600.0	6,751.7	6,500.0	6,497.8	223.1	12.4	-54.98	398.4	7,284.2	700.2	503.9	196.35	3.566	
14,700.0	6,750.9	6,500.0	6,497.8	225.9	12.4	-54.98	398.4	7,284.2	783.6	584.9	198.69	3.944	
14,800.0	6,750.1	6,500.0	6,497.8	228.7	12.4	-54.98	398.4	7,284.2	870.5	669.5	201.02	4.331	
14,900.0	6,749.3	6,500.0	6,497.8	231.6	12.4	-54.98	398.4	7,284.2	960.0	756.6	203.36	4.721	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.21-T5N-R64W - Elder 14-21 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,400.0	6,753.2	6,500.0	6,499.5	217.5	11.9	-15.20	121.2	8,615.9	987.4	903.3	84.11	11.739	
14,500.0	6,752.5	6,500.0	6,499.5	220.3	11.9	-15.20	121.2	8,615.9	890.1	805.0	85.13	10.456	
14,600.0	6,751.7	6,500.0	6,499.5	223.1	11.9	-15.20	121.2	8,615.9	793.6	707.4	86.16	9.211	
14,700.0	6,750.9	6,500.0	6,499.5	225.9	11.9	-15.20	121.2	8,615.9	698.0	610.8	87.18	8.007	
14,800.0	6,750.1	6,500.0	6,499.5	228.7	11.9	-15.20	121.2	8,615.9	603.9	515.7	88.20	6.846	
14,900.0	6,749.3	6,500.0	6,499.5	231.6	11.9	-15.20	121.2	8,615.9	512.0	422.7	89.23	5.738	
15,000.0	6,748.5	6,500.0	6,499.5	234.4	11.9	-15.20	121.2	8,615.9	423.7	333.5	90.25	4.695	
15,100.0	6,747.8	6,500.0	6,499.5	237.2	11.9	-15.20	121.2	8,615.9	342.0	250.7	91.27	3.747	
15,200.0	6,747.0	6,500.0	6,499.5	240.0	11.9	-15.20	121.2	8,615.9	272.8	180.5	92.30	2.955	
15,300.0	6,746.2	6,500.0	6,499.5	242.8	11.9	-15.20	121.2	8,615.9	227.7	134.4	93.32	2.440	
15,362.8	6,745.7	6,500.0	6,499.5	244.5	11.9	-15.20	121.2	8,615.9	218.9	124.9	93.96	2.329	CC, ES, SF
15,400.0	6,745.4	6,500.0	6,499.5	245.6	11.9	-15.20	121.2	8,615.9	222.0	127.7	94.34	2.353	
15,500.0	6,744.6	6,500.0	6,499.5	248.4	11.9	-15.20	121.2	8,615.9	258.3	162.9	95.37	2.709	
15,600.0	6,743.8	6,500.0	6,499.5	251.2	11.9	-15.20	121.2	8,615.9	322.7	226.4	96.39	3.348	
15,700.0	6,743.0	6,500.0	6,499.5	254.0	11.9	-15.20	121.2	8,615.9	402.0	304.6	97.42	4.127	
15,800.0	6,742.3	6,500.0	6,499.5	256.8	11.9	-15.20	121.2	8,615.9	488.9	390.5	98.44	4.967	
15,900.0	6,741.5	6,500.0	6,499.5	259.6	11.9	-15.20	121.2	8,615.9	580.1	480.6	99.46	5.832	
16,000.0	6,740.7	6,500.0	6,499.5	262.4	11.9	-15.20	121.2	8,615.9	673.7	573.2	100.49	6.705	
16,100.0	6,739.9	6,500.0	6,499.5	265.2	11.9	-15.20	121.2	8,615.9	769.0	667.5	101.51	7.576	
16,200.0	6,739.1	6,500.0	6,499.5	268.0	11.9	-15.20	121.2	8,615.9	865.3	762.8	102.53	8.439	
16,300.0	6,738.3	6,500.0	6,499.5	270.8	11.9	-15.20	121.2	8,615.9	962.4	858.9	103.56	9.293	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24P-332 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 122-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,900.0	5,890.5	12,507.8	6,766.6	13.7	164.4	-5.14	374.3	-281.9	946.9	914.4	32.46	29.170	
6,000.0	5,990.5	12,509.8	6,766.6	13.9	164.4	-4.79	374.3	-280.0	853.1	820.9	32.15	26.533	
6,054.9	6,045.4	12,510.8	6,766.6	14.0	164.5	-4.60	374.4	-279.0	802.2	770.2	32.00	25.069	
6,100.0	6,090.4	12,513.0	6,766.7	14.1	164.5	-101.82	374.4	-276.8	760.9	585.1	175.84	4.327	
6,150.0	6,140.2	12,518.5	6,766.8	14.2	164.7	-108.33	374.6	-271.3	715.9	544.4	171.59	4.172	
6,200.0	6,189.6	12,527.3	6,766.9	14.2	164.9	-113.33	374.9	-262.5	672.1	505.1	167.03	4.024	
6,250.0	6,238.3	12,536.0	6,767.1	14.3	165.2	-117.47	375.2	-253.8	629.7	467.3	162.38	3.878	
6,300.0	6,286.3	12,536.0	6,767.1	14.3	165.2	-121.94	375.2	-253.8	589.3	433.1	156.22	3.772	
6,350.0	6,333.2	12,536.0	6,767.1	14.3	165.2	-125.51	375.2	-253.8	551.7	401.0	150.65	3.662	
6,400.0	6,378.8	12,536.0	6,767.1	14.4	165.2	-128.32	375.2	-253.8	517.5	371.7	145.89	3.548	
6,450.0	6,423.1	12,536.0	6,767.1	14.4	165.2	-130.47	375.2	-253.8	487.8	345.8	142.00	3.435	
6,500.0	6,465.7	12,536.0	6,767.1	14.5	165.2	-132.04	375.2	-253.8	463.5	324.4	139.02	3.334	
6,550.0	6,506.5	12,536.0	6,767.1	14.5	165.2	-133.11	375.2	-253.8	445.5	308.6	136.93	3.254	
6,600.0	6,545.4	12,536.0	6,767.1	14.7	165.2	-133.71	375.2	-253.8	434.8	299.1	135.71	3.204	
6,642.7	6,576.9	12,536.0	6,767.1	14.8	165.2	-133.87	375.2	-253.8	431.9	296.5	135.36	3.191	CC, ES, SF
6,650.0	6,582.1	12,536.0	6,767.1	14.8	165.2	-133.86	375.2	-253.8	432.0	296.6	135.36	3.191	
6,700.0	6,616.5	12,536.0	6,767.1	15.1	165.2	-133.58	375.2	-253.8	437.2	301.3	135.88	3.217	
6,750.0	6,648.5	12,536.0	6,767.1	15.4	165.2	-132.85	375.2	-253.8	450.0	312.7	137.31	3.278	
6,800.0	6,677.8	12,536.0	6,767.1	15.7	165.2	-131.64	375.2	-253.8	469.9	330.3	139.67	3.365	
6,850.0	6,704.5	12,536.0	6,767.1	16.2	165.2	-129.90	375.2	-253.8	496.0	352.9	143.04	3.467	
6,900.0	6,728.4	12,536.0	6,767.1	16.7	165.2	-127.57	375.2	-253.8	527.1	379.6	147.44	3.575	
6,950.0	6,749.3	12,536.0	6,767.1	17.3	165.2	-124.55	375.2	-253.8	562.3	409.4	152.90	3.678	
7,000.0	6,767.2	12,536.0	6,767.1	18.0	165.2	-120.73	375.2	-253.8	600.8	441.5	159.35	3.770	
7,050.0	6,782.0	12,536.0	6,767.1	18.8	165.2	-115.98	375.2	-253.8	641.9	475.3	166.56	3.854	
7,100.0	6,793.7	12,536.0	6,767.1	19.6	165.2	-110.18	375.2	-253.8	684.8	510.8	174.03	3.935	
7,150.0	6,802.1	12,536.0	6,767.1	20.5	165.2	-103.26	375.2	-253.8	729.2	548.3	180.85	4.032	
7,200.0	6,807.4	12,536.0	6,767.1	21.5	165.2	-95.27	375.2	-253.8	774.6	588.8	185.76	4.170	
7,250.0	6,809.3	12,536.0	6,767.1	22.5	165.2	-86.45	375.2	-253.8	820.6	633.2	187.34	4.380	
7,260.9	6,809.3	12,536.0	6,767.1	22.7	165.2	-84.45	375.2	-253.8	830.7	643.6	187.14	4.439	
7,300.0	6,809.0	12,536.0	6,767.1	23.5	165.2	-84.45	375.2	-253.8	867.0	679.1	187.94	4.613	
7,400.0	6,808.2	12,536.0	6,767.1	25.7	165.2	-84.45	375.2	-253.8	961.0	770.9	190.09	5.055	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Maxey 24Q-HZ Pad Sec.24-T5N-R65W - Maxey 24Q-112 - Wellbore #1 - Plan #4 (5-29-14)R

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,700.0	5,690.5	12,334.8	6,600.0	13.3	164.9	-130.43	0.0	-250.7	929.7	768.5	161.21	5.767	
5,809.5	5,800.0	12,334.8	6,600.0	13.5	164.9	177.09	0.0	-250.7	820.5	786.4	34.09	24.072	
5,900.0	5,890.5	12,334.8	6,600.0	13.7	164.9	177.09	0.0	-250.7	730.3	696.1	34.26	21.315	
6,000.0	5,990.5	12,334.8	6,600.0	13.9	164.9	177.09	0.0	-250.7	630.8	596.3	34.48	18.296	
6,054.9	6,045.4	12,334.8	6,600.0	14.0	164.9	177.09	0.0	-250.7	576.2	541.6	34.59	16.655	
6,100.0	6,090.4	12,334.8	6,600.0	14.1	164.9	114.56	0.0	-250.7	531.4	367.3	164.14	3.238	
6,150.0	6,140.2	12,334.8	6,600.0	14.2	164.9	134.13	0.0	-250.7	482.0	349.1	132.95	3.626	
6,200.0	6,189.6	12,334.8	6,600.0	14.2	164.9	144.99	0.0	-250.7	433.3	323.5	109.77	3.947	
6,250.0	6,238.3	12,334.8	6,600.0	14.3	164.9	151.32	0.0	-250.7	385.6	290.6	94.98	4.060	
6,300.0	6,286.3	12,334.8	6,600.0	14.3	164.9	155.25	0.0	-250.7	339.7	254.1	85.59	3.969	
6,350.0	6,333.2	12,334.8	6,600.0	14.3	164.9	157.80	0.0	-250.7	296.7	217.1	79.60	3.727	
6,400.0	6,378.8	12,334.8	6,600.0	14.4	164.9	159.46	0.0	-250.7	258.2	182.3	75.85	3.404	
6,450.0	6,423.1	12,334.8	6,600.0	14.4	164.9	160.51	0.0	-250.7	226.7	153.1	73.67	3.078	
6,500.0	6,465.7	12,334.8	6,600.0	14.5	164.9	161.08	0.0	-250.7	205.8	133.1	72.66	2.832	
6,547.9	6,504.8	12,334.8	6,600.0	14.5	164.9	161.26	0.0	-250.7	198.7	126.1	72.58	2.738	CC
6,550.0	6,506.5	12,334.8	6,600.0	14.5	164.9	161.26	0.0	-250.7	198.7	126.1	72.60	2.737	ES, SF
6,600.0	6,545.4	12,334.8	6,600.0	14.7	164.9	161.05	0.0	-250.7	207.1	133.7	73.40	2.821	
6,650.0	6,582.1	12,334.8	6,600.0	14.8	164.9	160.44	0.0	-250.7	229.1	154.0	75.10	3.050	
6,700.0	6,616.5	12,334.8	6,600.0	15.1	164.9	159.34	0.0	-250.7	261.2	183.4	77.85	3.355	
6,750.0	6,648.5	12,334.8	6,600.0	15.4	164.9	157.62	0.0	-250.7	300.2	218.1	82.03	3.659	
6,800.0	6,677.8	12,334.8	6,600.0	15.7	164.9	154.98	0.0	-250.7	343.5	255.2	88.33	3.889	
6,850.0	6,704.5	12,334.8	6,600.0	16.2	164.9	150.90	0.0	-250.7	389.6	291.6	98.01	3.975	
6,900.0	6,728.4	12,334.8	6,600.0	16.7	164.9	144.29	0.0	-250.7	437.4	324.0	113.38	3.858	
6,950.0	6,749.3	12,334.8	6,600.0	17.3	164.9	132.88	0.0	-250.7	486.2	348.4	137.82	3.528	
7,000.0	6,767.2	12,334.8	6,600.0	18.0	164.9	112.34	0.0	-250.7	535.6	365.3	170.36	3.144	
7,050.0	6,782.0	12,334.8	6,600.0	18.8	164.9	80.93	0.0	-250.7	585.3	403.8	181.46	3.225	
7,100.0	6,793.7	12,334.8	6,600.0	19.6	164.9	52.02	0.0	-250.7	634.9	486.8	148.10	4.287	
7,150.0	6,802.1	12,334.8	6,600.0	20.5	164.9	34.60	0.0	-250.7	684.4	572.3	112.09	6.106	
7,200.0	6,807.4	12,334.8	6,600.0	21.5	164.9	24.80	0.0	-250.7	733.5	644.3	89.20	8.224	
7,250.0	6,809.3	12,334.8	6,600.0	22.5	164.9	18.90	0.0	-250.7	782.2	706.6	75.61	10.345	
7,260.9	6,809.3	12,334.8	6,600.0	22.7	164.9	17.93	0.0	-250.7	792.8	719.3	73.45	10.793	
7,300.0	6,809.0	12,334.8	6,600.0	23.5	164.9	17.93	0.0	-250.7	830.5	756.7	73.80	11.254	
7,400.0	6,808.2	12,334.8	6,600.0	25.7	164.9	17.93	0.0	-250.7	927.7	853.0	74.71	12.417	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Evert 20-2 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,400.0	6,792.5	6,813.1	6,811.5	78.1	12.1	-97.52	332.7	3,606.5	989.2	899.8	89.40	11.065	
9,500.0	6,791.7	6,809.5	6,808.0	80.8	12.1	-96.77	332.7	3,606.6	893.5	801.2	92.27	9.683	
9,600.0	6,790.9	6,805.9	6,804.4	83.6	12.1	-96.02	332.7	3,606.7	798.7	703.6	95.14	8.396	
9,700.0	6,790.2	6,802.3	6,800.8	86.4	12.1	-95.26	332.7	3,606.8	705.5	607.5	98.00	7.199	
9,800.0	6,789.4	6,798.7	6,797.1	89.1	12.0	-94.49	332.7	3,606.9	614.3	513.4	100.86	6.090	
9,900.0	6,788.6	6,794.9	6,793.3	91.9	12.0	-93.68	332.8	3,607.0	526.2	422.5	103.71	5.074	
10,000.0	6,787.8	6,791.1	6,789.6	94.7	12.0	-92.88	332.8	3,607.2	443.3	336.7	106.55	4.160	
10,100.0	6,787.0	6,787.4	6,785.9	97.4	12.0	-92.10	332.8	3,607.3	368.9	259.5	109.37	3.373	
10,200.0	6,786.2	6,783.8	6,782.2	100.2	12.0	-91.32	332.8	3,607.4	309.2	197.0	112.18	2.756	
10,300.0	6,785.4	6,780.2	6,778.6	103.0	12.0	-90.56	332.8	3,607.4	274.0	159.1	114.98	2.383	
10,352.6	6,785.0	6,778.3	6,776.8	104.4	12.0	-90.16	332.8	3,607.5	269.0	152.5	116.44	2.310	CC, ES, SF
10,400.0	6,784.7	6,776.6	6,775.1	105.8	12.0	-89.80	332.8	3,607.5	273.1	155.3	117.76	2.319	
10,500.0	6,783.9	6,773.1	6,771.6	108.5	12.0	-89.06	332.8	3,607.6	306.7	186.1	120.52	2.545	
10,600.0	6,783.1	6,769.7	6,768.1	111.3	12.0	-88.32	332.8	3,607.7	365.4	242.1	123.26	2.964	
10,700.0	6,782.3	6,766.3	6,764.7	114.1	12.0	-87.60	332.8	3,607.8	439.2	313.2	125.99	3.486	
10,800.0	6,781.5	6,762.9	6,761.4	116.9	12.0	-86.88	332.9	3,607.9	521.8	393.1	128.70	4.055	
10,900.0	6,780.7	6,759.6	6,758.1	119.7	12.0	-86.18	332.9	3,608.0	609.6	478.2	131.38	4.640	
11,000.0	6,780.0	6,756.3	6,754.8	122.5	12.0	-85.48	332.9	3,608.1	700.7	566.7	134.05	5.227	
11,100.0	6,779.2	6,753.1	6,751.5	125.2	12.0	-84.80	332.9	3,608.1	793.9	657.2	136.70	5.808	
11,200.0	6,778.4	6,749.9	6,748.3	128.0	11.9	-84.12	332.9	3,608.2	888.6	749.3	139.33	6.378	
11,300.0	6,777.6	6,746.7	6,745.2	130.8	11.9	-83.46	332.9	3,608.3	984.3	842.4	141.94	6.935	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Gilbert Danley 20-1 (Exist) - Wellbore #1 - Wellb

Survey Program: 100-NS-GYRO-MS

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,000.0	6,772.1	6,770.9	6,768.7	150.4	12.3	-94.68	272.0	6,196.0	963.9	801.8	162.10	5.946	
12,100.0	6,771.3	6,770.2	6,768.0	153.2	12.3	-94.48	272.0	6,196.0	866.6	701.6	164.93	5.254	
12,200.0	6,770.5	6,769.4	6,767.3	156.0	12.3	-94.28	272.1	6,196.0	769.9	602.1	167.76	4.589	
12,300.0	6,769.7	6,768.7	6,766.5	158.7	12.3	-94.07	272.1	6,196.0	674.2	503.6	170.59	3.952	
12,400.0	6,769.0	6,768.0	6,765.8	161.5	12.3	-93.87	272.1	6,196.0	579.9	406.5	173.42	3.344	
12,500.0	6,768.2	6,767.2	6,765.0	164.3	12.3	-93.66	272.2	6,196.0	488.0	311.7	176.25	2.769	
12,600.0	6,767.4	6,766.4	6,764.3	167.1	12.3	-93.45	272.2	6,196.0	399.9	220.8	179.08	2.233	
12,700.0	6,766.6	6,765.7	6,763.5	169.9	12.3	-93.24	272.2	6,196.0	318.9	137.0	181.91	1.753	
12,800.0	6,765.8	6,764.9	6,762.7	172.7	12.3	-93.03	272.3	6,196.0	251.9	67.2	184.74	1.364	Level 3
12,900.0	6,765.0	6,764.1	6,762.0	175.5	12.3	-92.81	272.3	6,196.0	212.7	25.1	187.56	1.134	Level 2
12,941.1	6,764.7	6,763.8	6,761.6	176.7	12.3	-92.72	272.3	6,196.0	208.7	20.0	188.72	1.106	Level 2, CC, ES, SF
13,000.0	6,764.2	6,763.3	6,761.2	178.3	12.3	-92.60	272.3	6,196.0	216.9	26.5	190.39	1.139	Level 2
13,100.0	6,763.5	6,762.5	6,760.4	181.1	12.3	-92.38	272.4	6,196.0	262.3	69.1	193.22	1.358	Level 3
13,200.0	6,762.7	6,761.7	6,759.6	183.9	12.3	-92.16	272.4	6,196.0	332.5	136.5	196.04	1.696	
13,300.0	6,761.9	6,760.9	6,758.8	186.7	12.3	-91.94	272.5	6,196.0	415.2	216.3	198.86	2.088	
13,400.0	6,761.1	6,760.1	6,757.9	189.5	12.3	-91.71	272.5	6,196.0	504.1	302.4	201.69	2.500	
13,500.0	6,760.3	6,759.3	6,757.1	192.3	12.3	-91.48	272.5	6,196.0	596.6	392.1	204.51	2.917	
13,600.0	6,759.5	6,758.4	6,756.3	195.1	12.3	-91.26	272.6	6,196.0	691.2	483.8	207.33	3.334	
13,700.0	6,758.7	6,757.6	6,755.4	197.9	12.3	-91.03	272.6	6,196.0	787.1	576.9	210.14	3.745	
13,800.0	6,758.0	6,756.8	6,754.6	200.7	12.3	-90.79	272.7	6,196.0	883.9	670.9	212.95	4.151	
13,900.0	6,757.2	6,755.9	6,753.7	203.5	12.3	-90.56	272.7	6,196.0	981.3	765.6	215.77	4.548	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Hoff 20-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,800.0	6,781.5	6,781.2	6,779.1	116.9	14.0	-89.91	317.3	4,946.5	926.9	796.1	130.89	7.082	
10,900.0	6,780.7	6,780.3	6,778.2	119.7	14.0	-89.71	317.3	4,946.5	831.2	697.5	133.67	6.218	
11,000.0	6,780.0	6,779.4	6,777.3	122.5	14.0	-89.50	317.3	4,946.5	736.6	600.1	136.46	5.398	
11,100.0	6,779.2	6,778.5	6,776.4	125.2	14.0	-89.30	317.2	4,946.5	643.6	504.4	139.24	4.622	
11,200.0	6,778.4	6,777.6	6,775.5	128.0	14.0	-89.09	317.2	4,946.5	553.1	411.1	142.02	3.894	
11,300.0	6,777.6	6,776.7	6,774.6	130.8	14.0	-88.89	317.2	4,946.5	466.5	321.7	144.80	3.221	
11,400.0	6,776.8	6,775.8	6,773.7	133.6	14.0	-88.69	317.2	4,946.5	386.3	238.8	147.58	2.618	
11,500.0	6,776.0	6,774.9	6,772.8	136.4	14.0	-88.48	317.1	4,946.5	317.7	167.3	150.36	2.113	
11,600.0	6,775.2	6,774.0	6,771.9	139.2	14.0	-88.28	317.1	4,946.5	269.4	116.3	153.14	1.759	
11,691.7	6,774.5	6,773.2	6,771.1	141.8	14.0	-88.09	317.1	4,946.5	253.3	97.7	155.68	1.627	CC
11,700.0	6,774.5	6,773.1	6,771.0	142.0	14.0	-88.07	317.1	4,946.5	253.5	97.6	155.91	1.626	ES, SF
11,800.0	6,773.7	6,772.2	6,770.1	144.8	14.0	-87.87	317.0	4,946.5	275.5	116.8	158.68	1.736	
11,900.0	6,772.9	6,771.3	6,769.2	147.6	14.0	-87.67	317.0	4,946.5	328.0	166.5	161.45	2.031	
12,000.0	6,772.1	6,770.4	6,768.3	150.4	14.0	-87.46	317.0	4,946.5	399.0	234.8	164.22	2.430	
12,100.0	6,771.3	6,769.5	6,767.4	153.2	14.0	-87.26	316.9	4,946.5	480.5	313.5	166.99	2.877	
12,200.0	6,770.5	6,768.6	6,766.5	156.0	14.0	-87.05	316.9	4,946.5	567.9	398.2	169.76	3.346	
12,300.0	6,769.7	6,767.7	6,765.6	158.7	14.0	-86.85	316.9	4,946.5	658.9	486.4	172.52	3.820	
12,400.0	6,769.0	6,766.8	6,764.7	161.5	14.0	-86.65	316.9	4,946.5	752.2	577.0	175.28	4.292	
12,500.0	6,768.2	6,765.9	6,763.8	164.3	14.0	-86.44	316.8	4,946.5	847.1	669.0	178.03	4.758	
12,600.0	6,767.4	6,765.0	6,762.9	167.1	14.0	-86.24	316.8	4,946.5	942.9	762.2	180.79	5.216	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Ivan Klein 20-2 (Exist) - Wellbore #1 - Wellbore # — **Offset Site Error:** 0.0 ft

Survey Program: 100-NS-GYRO-MS — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,900.0	6,804.3	6,802.9	6,802.0	37.8	13.8	-95.30	184.6	2,109.8	962.5	911.1	51.34	18.745	
8,000.0	6,803.5	6,801.5	6,800.6	40.3	13.8	-94.66	184.6	2,109.8	863.3	809.4	53.95	16.001	
8,100.0	6,802.7	6,800.2	6,799.3	42.9	13.8	-94.05	184.6	2,109.8	764.5	707.9	56.59	13.508	
8,200.0	6,801.9	6,799.1	6,798.2	45.6	13.8	-93.50	184.6	2,109.8	665.9	606.7	59.25	11.240	
8,300.0	6,801.2	6,797.9	6,797.0	48.2	13.8	-92.95	184.6	2,109.8	567.9	505.9	61.92	9.171	
8,400.0	6,800.4	6,796.7	6,795.9	50.9	13.8	-92.40	184.6	2,109.9	470.6	406.0	64.61	7.284	
8,500.0	6,799.6	6,795.6	6,794.7	53.6	13.8	-91.85	184.6	2,109.9	374.9	307.5	67.31	5.569	
8,600.0	6,798.8	6,794.4	6,793.5	56.3	13.8	-91.29	184.6	2,109.9	282.0	212.0	70.02	4.028	
8,700.0	6,798.0	6,793.2	6,792.3	59.0	13.8	-90.73	184.6	2,109.9	196.4	123.6	72.73	2.700	
8,800.0	6,797.2	6,792.0	6,791.1	61.7	13.8	-90.16	184.6	2,109.9	132.6	57.1	75.45	1.757	
8,854.9	6,796.8	6,791.4	6,790.5	63.2	13.8	-89.85	184.6	2,109.9	120.7	43.7	76.94	1.569	CC, ES, SF
8,900.0	6,796.4	6,790.8	6,789.9	64.4	13.8	-89.60	184.6	2,109.9	128.8	50.7	78.17	1.648	
9,000.0	6,795.7	6,789.6	6,788.7	67.1	13.8	-89.02	184.5	2,109.9	188.7	107.8	80.89	2.333	
9,100.0	6,794.9	6,788.4	6,787.5	69.9	13.8	-88.45	184.5	2,109.9	273.2	189.6	83.61	3.267	
9,200.0	6,794.1	6,787.2	6,786.3	72.6	13.8	-87.87	184.5	2,109.9	365.6	279.2	86.32	4.235	
9,300.0	6,793.3	6,785.9	6,785.1	75.3	13.8	-87.28	184.5	2,109.9	461.1	372.1	89.03	5.179	
9,400.0	6,792.5	6,784.7	6,783.8	78.1	13.8	-86.69	184.5	2,109.9	558.2	466.5	91.73	6.086	
9,500.0	6,791.7	6,783.5	6,782.6	80.8	13.8	-86.10	184.5	2,109.9	656.2	561.8	94.42	6.950	
9,600.0	6,790.9	6,782.2	6,781.3	83.6	13.8	-85.51	184.5	2,109.9	754.7	657.6	97.11	7.772	
9,700.0	6,790.2	6,780.9	6,780.0	86.4	13.8	-84.91	184.5	2,109.9	853.6	753.8	99.78	8.555	
9,800.0	6,789.4	6,779.7	6,778.8	89.1	13.8	-84.31	184.5	2,109.9	952.7	850.2	102.44	9.300	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1

Survey Program: 100-NS-GYRO-MS

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	74.76	236.8	869.3	901.1				
100.0	100.0	86.9	86.9	0.1	0.1	74.77	236.7	869.2	900.9	900.6	0.23	3,955.833	
142.9	142.9	127.9	127.9	0.2	0.2	74.78	236.5	869.2	900.8	900.4	0.40	2,235.186	
200.0	200.0	180.9	180.9	0.3	0.3	74.80	236.3	869.4	900.9	900.3	0.65	1,389.078	
300.0	300.0	279.8	279.8	0.6	0.5	74.82	236.1	870.0	901.5	900.4	1.06	847.887	
400.0	400.0	383.3	383.3	0.8	0.7	74.81	236.4	870.4	901.9	900.5	1.46	618.891	
500.0	500.0	486.7	486.7	1.0	0.8	74.80	236.5	870.4	901.9	900.1	1.83	493.665	
566.2	566.2	551.2	551.1	1.2	0.9	74.81	236.3	870.3	901.8	899.7	2.09	432.046	
600.0	600.0	583.7	583.7	1.2	1.0	74.82	236.1	870.4	901.9	899.6	2.22	405.724	
700.0	700.0	679.4	679.4	1.5	1.2	74.85	235.8	870.9	902.2	899.6	2.65	339.935	
800.0	800.0	782.5	782.5	1.7	1.4	74.85	235.9	871.4	902.8	899.7	3.10	291.139	
900.0	900.0	885.2	885.1	1.9	1.6	74.87	235.7	871.6	902.9	899.3	3.54	255.190	
914.3	914.3	899.8	899.8	1.9	1.7	74.87	235.6	871.6	902.9	899.3	3.60	250.771	
1,000.0	1,000.0	981.2	981.2	2.1	1.8	74.91	235.1	871.9	903.0	899.1	3.98	227.074	
1,100.0	1,100.0	1,079.4	1,079.3	2.4	2.1	74.94	234.7	872.6	903.6	899.2	4.44	203.695	
1,200.0	1,200.0	1,184.1	1,184.1	2.6	2.3	74.95	234.7	873.0	904.0	899.1	4.90	184.437	
1,300.0	1,300.0	1,285.6	1,285.6	2.8	2.5	74.97	234.4	873.1	904.0	898.7	5.35	168.985	
1,327.1	1,327.1	1,312.2	1,312.2	2.9	2.6	74.99	234.2	873.1	904.0	898.5	5.47	165.229	
1,400.0	1,400.0	1,381.3	1,381.3	3.0	2.8	75.02	233.7	873.4	904.1	898.3	5.80	155.892	
1,500.0	1,500.0	1,481.7	1,481.7	3.3	3.0	75.05	233.3	874.0	904.6	898.3	6.27	144.257	
1,600.0	1,600.0	1,591.2	1,591.2	3.5	3.2	75.06	233.2	873.9	904.5	897.8	6.68	135.393	
1,700.0	1,700.0	1,692.9	1,692.9	3.7	3.3	75.07	232.9	873.1	903.7	896.7	7.02	128.811	
1,800.0	1,800.0	1,787.9	1,787.9	3.9	3.4	75.07	232.7	872.6	903.1	895.7	7.34	123.100	
1,900.0	1,900.0	1,890.9	1,890.9	4.2	3.5	75.02	233.3	871.9	902.6	895.0	7.64	118.110	
2,000.0	2,000.0	1,993.1	1,993.0	4.4	3.6	74.93	234.4	870.8	901.9	893.9	7.96	113.271	
2,040.0	2,040.0	2,030.6	2,030.5	4.5	3.6	150.79	234.8	870.4	901.7	893.6	8.09	111.468	
2,100.0	2,100.0	2,085.8	2,085.7	4.6	3.7	150.75	235.8	869.9	902.1	893.8	8.28	108.954	
2,200.0	2,200.0	2,183.3	2,183.2	4.8	3.8	150.65	238.3	869.4	904.5	895.9	8.61	105.067	
2,300.0	2,299.9	2,283.8	2,283.7	5.0	4.0	150.56	241.5	868.7	908.5	899.5	8.96	101.440	
2,400.0	2,399.7	2,377.7	2,377.5	5.2	4.1	150.53	244.3	868.3	914.2	904.9	9.31	98.224	
2,430.8	2,430.4	2,407.2	2,407.0	5.3	4.2	150.53	245.3	868.3	916.4	907.0	9.42	97.305	
2,500.0	2,499.4	2,481.7	2,481.4	5.4	4.3	150.55	247.7	868.1	921.4	911.7	9.69	95.063	
2,600.0	2,599.1	2,586.9	2,586.6	5.7	4.5	150.61	250.6	867.4	927.9	917.8	10.09	91.975	
2,700.0	2,698.8	2,684.9	2,684.6	5.9	4.6	150.71	252.4	866.6	934.2	923.8	10.48	89.132	
2,800.0	2,798.6	2,784.9	2,784.6	6.1	4.8	150.81	254.4	866.0	940.7	929.8	10.89	86.396	
2,900.0	2,898.3	2,896.8	2,896.4	6.4	5.0	150.91	256.5	864.7	946.6	935.3	11.32	83.637	
3,000.0	2,998.0	2,994.9	2,994.5	6.6	5.2	151.05	257.4	863.1	951.9	940.2	11.72	81.234	
3,100.0	3,097.7	3,094.7	3,094.3	6.8	5.4	151.20	258.2	861.7	957.3	945.1	12.13	78.939	
3,200.0	3,197.4	3,197.6	3,197.2	7.1	5.6	151.35	259.0	860.0	962.5	949.9	12.55	76.700	
3,300.0	3,297.1	3,282.4	3,281.9	7.3	5.8	151.47	259.8	859.1	968.3	955.4	12.94	74.807	
3,400.0	3,396.9	3,370.1	3,369.7	7.6	6.0	151.58	261.1	859.4	975.6	962.2	13.35	73.073	
3,500.0	3,496.6	3,471.2	3,470.8	7.8	6.2	151.68	263.5	860.2	983.6	969.8	13.79	71.327	
3,600.0	3,596.3	3,575.4	3,574.9	8.1	6.4	151.77	265.7	860.6	991.0	976.8	14.24	69.583	
3,700.0	3,696.0	3,672.9	3,672.4	8.3	6.6	151.88	267.5	860.8	998.4	983.7	14.69	67.984	
6,550.0	6,506.5	6,480.4	6,479.5	14.5	11.8	-16.18	287.2	857.5	982.4	961.2	21.17	46.415	
6,600.0	6,545.4	6,520.1	6,519.2	14.7	11.9	-17.56	287.6	857.9	952.3	931.7	20.52	46.401	
6,650.0	6,582.1	6,557.2	6,556.2	14.8	11.9	-19.23	288.0	858.2	919.8	899.8	19.90	46.209	
6,700.0	6,616.5	6,591.9	6,591.0	15.1	12.0	-21.28	288.3	858.6	885.0	865.7	19.37	45.685	
6,750.0	6,648.5	6,624.3	6,623.3	15.4	12.1	-23.78	288.7	858.9	848.3	829.3	19.01	44.620	
6,800.0	6,677.8	6,654.0	6,653.1	15.7	12.1	-26.86	288.9	859.2	809.7	790.8	18.94	42.763	
6,850.0	6,704.5	6,681.1	6,680.1	16.2	12.2	-30.66	289.2	859.4	769.5	750.2	19.28	39.909	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Mowery 19-2 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,900.0	6,728.4	6,705.4	6,704.4	16.7	12.2	-35.34	289.4	859.7	727.9	707.7	20.19	36.050	
6,950.0	6,749.3	6,726.8	6,725.8	17.3	12.3	-41.06	289.7	859.9	685.2	663.4	21.76	31.492	
7,000.0	6,767.2	6,745.1	6,744.1	18.0	12.3	-47.89	289.8	860.1	641.5	617.6	23.95	26.780	
7,050.0	6,782.0	6,760.4	6,759.4	18.8	12.4	-55.77	290.0	860.2	597.3	570.7	26.59	22.459	
7,100.0	6,793.7	6,772.5	6,771.6	19.6	12.4	-64.37	290.1	860.3	552.7	523.4	29.32	18.855	
7,150.0	6,802.1	6,781.5	6,780.5	20.5	12.4	-73.07	290.2	860.4	508.3	476.6	31.73	16.022	
7,200.0	6,807.4	6,787.2	6,786.2	21.5	12.4	-81.14	290.2	860.5	464.4	430.8	33.58	13.830	
7,250.0	6,809.3	6,789.6	6,788.7	22.5	12.4	-87.98	290.3	860.5	421.5	386.6	34.88	12.084	
7,260.9	6,809.3	6,789.7	6,788.8	22.7	12.4	-89.28	290.3	860.5	412.3	377.2	35.11	11.743	
7,300.0	6,809.0	6,789.8	6,788.8	23.5	12.4	-89.29	290.3	860.5	380.3	344.4	35.92	10.588	
7,400.0	6,808.2	6,790.0	6,789.0	25.7	12.4	-89.34	290.3	860.5	305.8	267.7	38.08	8.031	
7,500.0	6,807.4	6,790.2	6,789.2	27.9	12.4	-89.39	290.3	860.5	249.8	209.5	40.35	6.190	
7,600.0	6,806.7	6,790.4	6,789.4	30.3	12.4	-89.44	290.3	860.5	226.5	183.8	42.72	5.302	
7,605.5	6,806.6	6,790.4	6,789.4	30.4	12.4	-89.44	290.3	860.5	226.4	183.6	42.86	5.283	CC, ES, SF
7,700.0	6,805.9	6,790.6	6,789.6	32.7	12.4	-89.49	290.3	860.5	245.3	200.2	45.16	5.433	
7,800.0	6,805.1	6,790.7	6,789.8	35.2	12.4	-89.53	290.3	860.5	298.5	250.8	47.65	6.264	
7,900.0	6,804.3	6,790.9	6,790.0	37.8	12.4	-89.58	290.3	860.5	371.5	321.3	50.19	7.402	
8,000.0	6,803.5	6,791.1	6,790.1	40.3	12.4	-89.63	290.3	860.5	454.8	402.1	52.76	8.621	
8,100.0	6,802.7	6,791.3	6,790.3	42.9	12.4	-89.68	290.3	860.5	543.8	488.5	55.36	9.824	
8,200.0	6,801.9	6,791.5	6,790.5	45.6	12.4	-89.73	290.3	860.5	636.1	578.1	57.99	10.970	
8,300.0	6,801.2	6,791.7	6,790.7	48.2	12.4	-89.77	290.3	860.5	730.5	669.8	60.64	12.046	
8,400.0	6,800.4	6,791.9	6,790.9	50.9	12.4	-89.82	290.3	860.5	826.1	762.8	63.30	13.050	
8,500.0	6,799.6	6,792.1	6,791.1	53.6	12.4	-89.87	290.3	860.5	922.7	856.7	65.98	13.984	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-54.99	273.2	-390.1	477.0				
100.0	100.0	76.0	76.0	0.1	0.1	-54.98	273.1	-389.8	476.0	475.8	0.21	2,231.003	
193.4	193.4	166.4	166.4	0.3	0.2	-54.97	273.0	-389.4	475.5	475.0	0.55	857.716	
200.0	200.0	172.6	172.6	0.3	0.2	-54.97	272.9	-389.4	475.5	475.0	0.58	822.000	
300.0	300.0	274.9	274.9	0.6	0.4	-54.98	273.0	-389.5	475.6	474.7	0.97	490.863	
400.0	400.0	373.0	373.0	0.8	0.6	-54.95	272.9	-389.1	475.2	473.9	1.36	349.165	
400.3	400.3	373.3	373.3	0.8	0.6	-54.95	272.9	-389.1	475.2	473.9	1.36	348.825	
500.0	500.0	473.4	473.4	1.0	0.7	-54.93	273.1	-389.1	475.3	473.6	1.75	270.904	
600.0	600.0	573.1	573.1	1.2	0.9	-54.86	273.5	-388.6	475.2	473.1	2.15	220.927	
700.0	700.0	674.2	674.2	1.5	1.1	-54.84	273.6	-388.5	475.1	472.6	2.55	186.156	
800.0	800.0	774.3	774.3	1.7	1.3	-54.77	273.9	-387.9	474.8	471.9	2.97	160.128	
849.9	849.9	822.9	822.9	1.8	1.4	-54.77	273.9	-387.8	474.7	471.6	3.17	149.833	
900.0	900.0	870.6	870.6	1.9	1.5	-54.75	274.1	-387.8	474.9	471.5	3.37	140.995	
1,000.0	1,000.0	973.3	973.3	2.1	1.7	-54.66	274.9	-387.8	475.3	471.5	3.79	125.519	
1,059.7	1,059.7	1,032.5	1,032.5	2.3	1.8	-54.62	275.2	-387.5	475.2	471.2	4.03	117.820	
1,100.0	1,100.0	1,070.6	1,070.6	2.4	1.8	-54.60	275.3	-387.5	475.3	471.1	4.20	113.296	
1,200.0	1,200.0	1,170.4	1,170.4	2.6	2.0	-54.55	276.1	-387.8	476.0	471.4	4.61	103.260	
1,300.0	1,300.0	1,270.8	1,270.7	2.8	2.2	-54.45	277.0	-387.7	476.5	471.5	5.03	94.797	
1,400.0	1,400.0	1,373.9	1,373.9	3.0	2.4	-54.44	277.3	-387.8	476.8	471.3	5.45	87.553	
1,500.0	1,500.0	1,473.6	1,473.6	3.3	2.6	-54.39	277.4	-387.4	476.5	470.6	5.84	81.632	
1,529.0	1,529.0	1,502.0	1,502.0	3.3	2.6	-54.39	277.4	-387.4	476.4	470.5	5.95	80.110	
1,600.0	1,600.0	1,570.8	1,570.8	3.5	2.7	-54.40	277.4	-387.5	476.6	470.4	6.21	76.704	
1,700.0	1,700.0	1,669.7	1,669.7	3.7	2.9	-54.37	278.0	-387.9	477.3	470.6	6.63	72.029	
1,800.0	1,800.0	1,774.1	1,774.0	3.9	3.1	-54.30	278.7	-387.9	477.6	470.6	7.06	67.677	
1,873.7	1,873.7	1,846.6	1,846.6	4.1	3.3	-54.27	278.8	-387.6	477.4	470.1	7.36	64.835	
1,900.0	1,900.0	1,871.4	1,871.4	4.2	3.3	-54.26	278.9	-387.6	477.5	470.0	7.47	63.916	
2,000.0	2,000.0	1,974.6	1,974.5	4.4	3.5	-54.23	279.2	-387.7	477.8	469.9	7.89	60.585	
2,100.0	2,100.0	2,074.5	2,074.4	4.6	3.7	21.70	279.0	-387.2	476.5	468.2	8.25	57.746	
2,200.0	2,200.0	2,172.7	2,172.7	4.8	3.8	21.83	279.0	-387.1	473.9	465.3	8.61	55.018	
2,300.0	2,299.9	2,276.0	2,275.9	5.0	4.0	22.14	279.5	-386.6	469.7	460.7	9.01	52.109	
2,400.0	2,399.7	2,374.6	2,374.5	5.2	4.2	22.47	279.2	-385.9	463.4	454.0	9.38	49.387	
2,430.8	2,430.4	2,404.4	2,404.3	5.3	4.2	22.57	279.1	-385.9	461.3	451.8	9.49	48.586	
2,500.0	2,499.4	2,471.7	2,471.6	5.4	4.3	22.82	279.2	-385.8	456.5	446.7	9.76	46.778	
2,600.0	2,599.1	2,573.2	2,573.2	5.7	4.5	23.26	279.6	-385.7	449.6	439.5	10.16	44.270	
2,700.0	2,698.8	2,672.8	2,672.8	5.9	4.7	23.63	279.3	-385.5	442.4	431.9	10.53	42.002	
2,800.0	2,798.6	2,773.1	2,773.0	6.1	4.9	24.04	279.2	-385.2	435.3	424.4	10.92	39.853	
2,900.0	2,898.3	2,871.3	2,871.2	6.4	5.1	24.58	279.9	-384.4	428.2	416.9	11.34	37.752	
3,000.0	2,998.0	2,972.1	2,972.1	6.6	5.3	25.17	280.8	-383.6	421.4	409.6	11.78	35.767	
3,100.0	3,097.7	3,068.7	3,068.7	6.8	5.5	25.69	281.3	-383.2	414.5	402.3	12.20	33.977	
3,200.0	3,197.4	3,165.0	3,164.9	7.1	5.7	26.20	282.3	-383.6	408.8	396.2	12.61	32.426	
3,300.0	3,297.1	3,263.3	3,263.3	7.3	5.8	26.82	284.1	-384.1	403.6	390.6	13.02	30.991	
3,400.0	3,396.9	3,362.9	3,362.8	7.6	6.0	27.50	286.3	-384.5	398.7	385.2	13.45	29.641	
3,500.0	3,496.6	3,464.6	3,464.4	7.8	6.2	28.12	287.9	-385.2	393.7	379.8	13.89	28.351	
3,600.0	3,596.3	3,565.0	3,564.8	8.1	6.5	28.77	289.3	-385.5	388.2	373.9	14.33	27.098	
3,700.0	3,696.0	3,665.5	3,665.3	8.3	6.7	29.40	290.5	-385.9	382.7	368.0	14.77	25.910	
3,800.0	3,795.7	3,765.2	3,765.0	8.6	6.9	30.11	291.8	-385.9	377.1	361.9	15.23	24.764	
3,900.0	3,895.4	3,863.9	3,863.7	8.8	7.1	30.86	293.4	-385.9	371.7	356.1	15.68	23.703	
4,000.0	3,995.2	3,961.3	3,961.1	9.1	7.3	31.52	294.8	-386.6	366.8	350.7	16.13	22.745	
4,100.0	4,094.9	4,058.8	4,058.6	9.3	7.5	32.23	296.8	-387.7	362.8	346.2	16.58	21.883	
4,200.0	4,194.6	4,157.3	4,157.0	9.6	7.8	33.05	299.6	-388.7	359.2	342.2	17.04	21.083	
4,300.0	4,294.3	4,255.9	4,255.6	9.8	8.0	33.94	302.9	-389.7	356.0	338.5	17.51	20.339	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad (Existing) Sec.19-T5N-R64W - Phil Wilson 19-1 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,400.0	4,394.0	4,355.6	4,355.2	10.1	8.2	34.86	306.4	-390.9	353.2	335.2	17.98	19.647	
4,500.0	4,493.7	4,453.8	4,453.3	10.3	8.4	35.75	309.7	-392.1	350.5	332.1	18.45	18.999	
4,600.0	4,593.5	4,553.6	4,553.0	10.6	8.7	36.70	313.7	-393.7	348.5	329.6	18.93	18.412	
4,700.0	4,693.2	4,655.2	4,654.6	10.8	8.9	37.80	317.8	-394.3	346.1	326.6	19.42	17.818	
4,800.0	4,792.9	4,754.5	4,753.8	11.1	9.2	38.84	321.4	-395.0	343.5	323.6	19.91	17.252	
4,900.0	4,892.6	4,854.6	4,853.8	11.3	9.4	39.81	324.9	-396.4	341.3	320.9	20.40	16.729	
5,000.0	4,992.3	4,956.4	4,955.5	11.6	9.6	40.85	328.3	-397.3	338.8	317.8	20.90	16.207	
5,100.0	5,092.1	5,059.1	5,058.2	11.9	9.9	41.97	331.2	-397.5	335.6	314.2	21.41	15.676	
5,200.0	5,191.8	5,164.8	5,164.0	12.1	10.1	43.12	333.1	-397.1	331.4	309.5	21.91	15.124	
5,300.0	5,291.5	5,265.4	5,264.5	12.4	10.3	44.35	333.9	-395.5	325.7	303.4	22.38	14.555	
5,400.0	5,391.2	5,365.3	5,364.3	12.6	10.6	45.64	335.0	-393.8	320.5	297.7	22.85	14.027	
5,500.0	5,490.9	5,466.7	5,465.8	12.9	10.8	47.03	335.8	-391.8	315.0	291.7	23.32	13.512	
5,594.1	5,584.8	5,559.6	5,558.7	13.1	10.9	48.26	336.1	-390.2	309.7	286.0	23.75	13.043	
5,600.0	5,590.6	5,565.3	5,564.4	13.1	10.9	48.33	336.1	-390.1	309.4	285.7	23.77	13.016	
5,700.0	5,690.5	5,665.1	5,664.2	13.3	11.2	49.29	336.6	-388.9	305.7	281.5	24.18	12.641	
5,809.5	5,800.0	5,774.3	5,773.3	13.5	11.4	-25.92	337.3	-386.9	304.0	279.7	24.35	12.487	
5,900.0	5,890.5	5,865.2	5,864.2	13.7	11.6	-25.65	337.9	-385.6	303.9	279.2	24.71	12.301	
5,967.6	5,958.0	5,932.0	5,931.0	13.8	11.7	-25.47	338.1	-384.6	303.8	278.8	24.99	12.158	CC
6,000.0	5,990.5	5,963.4	5,962.4	13.9	11.8	-25.42	338.3	-384.4	303.8	278.7	25.12	12.097	ES
6,054.9	6,045.4	6,017.2	6,016.2	14.0	11.9	-25.41	338.6	-384.5	304.2	278.8	25.35	12.000	
6,100.0	6,090.4	6,062.3	6,061.3	14.1	12.0	-115.55	338.9	-384.6	305.1	279.3	25.78	11.836	SF
6,150.0	6,140.2	6,112.2	6,111.2	14.2	12.1	-116.11	339.4	-384.4	307.4	281.5	25.91	11.863	
6,200.0	6,189.6	6,161.5	6,160.4	14.2	12.2	-117.09	339.8	-384.4	311.3	285.3	26.00	11.970	
6,250.0	6,238.3	6,210.2	6,209.2	14.3	12.3	-118.47	340.0	-384.6	316.9	290.8	26.05	12.166	
6,300.0	6,286.3	6,259.3	6,258.2	14.3	12.4	-120.17	340.3	-384.7	324.3	298.3	26.03	12.459	
6,350.0	6,333.2	6,306.9	6,305.9	14.3	12.5	-122.01	340.5	-384.5	333.8	307.8	25.96	12.858	
6,400.0	6,378.8	6,350.7	6,349.7	14.4	12.6	-123.79	340.8	-384.4	345.7	319.9	25.83	13.384	
6,450.0	6,423.1	6,393.0	6,391.9	14.4	12.7	-125.54	341.2	-384.4	360.5	334.9	25.64	14.059	
6,500.0	6,465.7	6,436.0	6,435.0	14.5	12.8	-127.37	341.7	-384.5	378.2	352.8	25.38	14.901	
6,550.0	6,506.5	6,477.8	6,476.7	14.5	12.9	-129.10	342.0	-384.7	398.7	373.6	25.07	15.905	
6,600.0	6,545.4	6,517.0	6,516.0	14.7	13.0	-130.57	342.1	-384.9	422.0	397.3	24.72	17.074	
6,650.0	6,582.1	6,553.5	6,552.5	14.8	13.0	-131.73	342.2	-385.1	448.3	423.9	24.36	18.401	
6,700.0	6,616.5	6,587.7	6,586.7	15.1	13.1	-132.54	342.3	-385.3	477.5	453.4	24.04	19.858	
6,750.0	6,648.5	6,619.5	6,618.5	15.4	13.2	-132.96	342.4	-385.5	509.4	485.6	23.80	21.402	
6,800.0	6,677.8	6,648.6	6,647.6	15.7	13.2	-132.95	342.5	-385.6	543.9	520.2	23.69	22.960	
6,850.0	6,704.5	6,675.1	6,674.1	16.2	13.3	-132.42	342.6	-385.8	580.7	557.0	23.77	24.435	
6,900.0	6,728.4	6,698.7	6,697.7	16.7	13.3	-131.28	342.6	-385.9	619.8	595.7	24.11	25.709	
6,950.0	6,749.3	6,719.4	6,718.4	17.3	13.3	-129.42	342.7	-386.0	660.8	636.0	24.79	26.658	
7,000.0	6,767.2	6,737.1	6,736.0	18.0	13.4	-126.67	342.7	-386.1	703.5	677.6	25.88	27.183	
7,050.0	6,782.0	6,751.6	6,750.6	18.8	13.4	-122.78	342.7	-386.2	747.6	720.2	27.44	27.249	
7,100.0	6,793.7	6,763.0	6,762.0	19.6	13.4	-117.46	342.8	-386.2	793.0	763.5	29.46	26.916	
7,150.0	6,802.1	6,771.2	6,770.2	20.5	13.4	-110.36	342.8	-386.3	839.3	807.5	31.83	26.366	
7,200.0	6,807.4	6,776.2	6,775.1	21.5	13.4	-101.20	342.8	-386.3	886.4	852.2	34.20	25.921	
7,250.0	6,809.3	6,777.9	6,776.8	22.5	13.4	-90.06	342.8	-386.3	934.0	898.1	35.90	26.014	
7,260.9	6,809.3	6,777.8	6,776.8	22.7	13.4	-87.41	342.8	-386.3	944.4	908.3	36.11	26.152	
7,300.0	6,809.0	6,777.3	6,776.3	23.5	13.4	-87.30	342.8	-386.3	981.8	944.9	36.91	26.597	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-58.5	58.5				
100.0	100.0	99.0	99.0	0.1	0.1	-90.00	0.0	-58.5	58.5	58.3	0.22	261.613	
200.0	200.0	199.0	199.0	0.3	0.3	-90.00	0.0	-58.5	58.5	57.8	0.67	87.059	
300.0	300.0	299.0	299.0	0.6	0.6	-90.00	0.0	-58.5	58.5	57.4	1.12	52.166	
400.0	400.0	399.0	399.0	0.8	0.8	-90.00	0.0	-58.5	58.5	56.9	1.57	37.240	
500.0	500.0	499.0	499.0	1.0	1.0	-90.00	0.0	-58.5	58.5	56.5	2.02	28.955	
600.0	600.0	599.0	599.0	1.2	1.2	-90.00	0.0	-58.5	58.5	56.0	2.47	23.686	
700.0	700.0	699.0	699.0	1.5	1.5	-90.00	0.0	-58.5	58.5	55.6	2.92	20.039	
800.0	800.0	799.0	799.0	1.7	1.7	-90.00	0.0	-58.5	58.5	55.1	3.37	17.365	
900.0	900.0	899.0	899.0	1.9	1.9	-90.00	0.0	-58.5	58.5	54.7	3.82	15.321	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	-90.00	0.0	-58.5	58.5	54.2	4.27	13.708	CC
1,100.0	1,100.0	1,098.3	1,098.3	2.4	2.4	-89.38	0.6	-59.1	59.1	54.4	4.71	12.532	
1,200.0	1,200.0	1,197.6	1,197.6	2.6	2.6	-87.57	2.6	-60.7	60.8	55.7	5.16	11.793	
1,300.0	1,300.0	1,296.7	1,296.6	2.8	2.8	-84.78	5.8	-63.5	63.9	58.3	5.60	11.398	
1,400.0	1,400.0	1,395.7	1,395.4	3.0	3.0	-81.30	10.3	-67.5	68.3	62.3	6.05	11.295	
1,500.0	1,500.0	1,494.5	1,493.8	3.3	3.2	-77.47	16.1	-72.5	74.4	67.9	6.50	11.445	
1,600.0	1,600.0	1,592.9	1,591.8	3.5	3.5	-73.58	23.2	-78.6	82.2	75.3	6.96	11.814	
1,700.0	1,700.0	1,691.0	1,689.3	3.7	3.7	-69.87	31.4	-85.8	91.9	84.4	7.43	12.367	
1,800.0	1,800.0	1,788.7	1,786.2	3.9	4.0	-66.47	40.9	-94.0	103.3	95.4	7.91	13.069	
1,900.0	1,900.0	1,887.8	1,884.3	4.2	4.3	-63.56	51.2	-102.9	115.9	107.5	8.40	13.791	
2,000.0	2,000.0	1,986.8	1,982.5	4.4	4.6	-61.22	61.4	-111.8	128.6	119.7	8.90	14.446	
2,100.0	2,100.0	2,086.0	2,080.7	4.6	4.9	16.66	71.7	-120.7	140.7	131.5	9.19	15.311	
2,200.0	2,200.0	2,185.3	2,179.1	4.8	5.2	18.53	81.9	-129.6	151.3	141.7	9.62	15.721	
2,300.0	2,299.9	2,284.7	2,277.6	5.0	5.5	20.37	92.2	-138.5	160.4	150.4	10.06	15.946	
2,400.0	2,399.7	2,384.3	2,376.2	5.2	5.8	22.23	102.5	-147.4	168.1	157.6	10.50	16.010	
2,430.8	2,430.4	2,415.0	2,406.6	5.3	5.9	22.82	105.7	-150.2	170.1	159.5	10.63	16.001	
2,500.0	2,499.4	2,483.9	2,474.9	5.4	6.1	24.13	112.8	-156.4	174.7	163.7	10.94	15.964	
2,600.0	2,599.1	2,583.5	2,573.6	5.7	6.4	25.90	123.1	-165.3	181.4	170.0	11.39	15.924	
2,700.0	2,698.8	2,683.2	2,672.3	5.9	6.7	27.55	133.4	-174.2	188.3	176.4	11.85	15.895	
2,800.0	2,798.6	2,782.8	2,771.0	6.1	7.0	29.08	143.7	-183.2	195.3	183.0	12.30	15.876	
2,900.0	2,898.3	2,882.4	2,869.6	6.4	7.4	30.50	154.0	-192.1	202.5	189.7	12.76	15.864	
3,000.0	2,998.0	2,982.0	2,968.3	6.6	7.7	31.82	164.3	-201.0	209.7	196.5	13.23	15.857	
3,100.0	3,097.7	3,081.7	3,067.0	6.8	8.0	33.06	174.6	-210.0	217.1	203.4	13.69	15.854	
3,200.0	3,197.4	3,181.3	3,165.7	7.1	8.3	34.21	184.9	-218.9	224.6	210.4	14.16	15.855	
3,300.0	3,297.1	3,280.9	3,264.4	7.3	8.7	35.29	195.1	-227.8	232.1	217.5	14.64	15.858	
3,400.0	3,396.9	3,380.5	3,363.1	7.6	9.0	36.30	205.4	-236.8	239.7	224.6	15.11	15.863	
3,500.0	3,496.6	3,480.1	3,461.8	7.8	9.3	37.25	215.7	-245.7	247.4	231.8	15.59	15.869	
3,600.0	3,596.3	3,579.8	3,560.4	8.1	9.6	38.14	226.0	-254.6	255.2	239.1	16.07	15.876	
3,700.0	3,696.0	3,679.4	3,659.1	8.3	10.0	38.98	236.3	-263.6	263.0	246.4	16.56	15.884	
3,800.0	3,795.7	3,779.0	3,757.8	8.6	10.3	39.77	246.6	-272.5	270.9	253.8	17.04	15.892	
3,900.0	3,895.4	3,878.6	3,856.5	8.8	10.6	40.51	256.9	-281.4	278.8	261.3	17.53	15.901	
4,000.0	3,995.2	3,978.3	3,955.2	9.1	11.0	41.22	267.2	-290.3	286.8	268.7	18.02	15.909	
4,100.0	4,094.9	4,077.9	4,053.9	9.3	11.3	41.88	277.5	-299.3	294.8	276.2	18.52	15.918	
4,200.0	4,194.6	4,177.5	4,152.6	9.6	11.6	42.52	287.8	-308.2	302.8	283.8	19.01	15.927	
4,300.0	4,294.3	4,277.1	4,251.2	9.8	12.0	43.11	298.1	-317.1	310.9	291.4	19.51	15.935	
4,400.0	4,394.0	4,376.7	4,349.9	10.1	12.3	43.68	308.4	-326.1	319.0	299.0	20.01	15.943	
4,500.0	4,493.7	4,476.4	4,448.6	10.3	12.6	44.22	318.7	-335.0	327.1	306.6	20.51	15.951	
4,600.0	4,593.5	4,576.0	4,547.3	10.6	13.0	44.73	329.0	-343.9	335.3	314.3	21.01	15.959	
4,700.0	4,693.2	4,675.6	4,646.0	10.8	13.3	45.22	339.3	-352.9	343.5	322.0	21.51	15.967	
4,800.0	4,792.9	4,775.2	4,744.7	11.1	13.6	45.69	349.6	-361.8	351.7	329.7	22.02	15.974	
4,900.0	4,892.6	4,874.9	4,843.4	11.3	14.0	46.13	359.9	-370.7	359.9	337.4	22.52	15.982	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,992.3	4,974.5	4,942.0	11.6	14.3	46.56	370.2	-379.7	368.2	345.1	23.03	15.989	
5,100.0	5,092.1	5,074.1	5,040.7	11.9	14.6	46.97	380.5	-388.6	376.4	352.9	23.53	15.995	
5,200.0	5,191.8	5,173.7	5,139.4	12.1	15.0	47.35	390.8	-397.5	384.7	360.7	24.04	16.002	
5,300.0	5,291.5	5,273.3	5,238.1	12.4	15.3	47.73	401.0	-406.5	393.1	368.5	24.55	16.008	
5,400.0	5,391.2	5,373.0	5,336.8	12.6	15.6	48.08	411.3	-415.4	401.4	376.3	25.06	16.014	
5,500.0	5,490.9	5,477.1	5,439.9	12.9	16.0	48.45	422.0	-424.6	409.6	384.0	25.58	16.013	
5,594.1	5,584.8	5,586.3	5,548.5	13.1	16.2	48.92	430.8	-432.3	414.7	388.6	26.04	15.925	
5,600.0	5,590.6	5,593.1	5,555.3	13.1	16.2	48.95	431.2	-432.6	414.9	388.8	26.07	15.917	
5,700.0	5,690.5	5,709.4	5,671.3	13.3	16.5	49.41	436.9	-437.6	417.6	391.1	26.46	15.783	
5,809.5	5,800.0	5,836.9	5,798.8	13.5	16.7	-26.30	439.1	-439.5	418.6	389.2	29.40	14.241	
5,900.0	5,890.5	5,927.6	5,889.5	13.7	16.8	-26.30	439.1	-439.5	418.6	388.9	29.72	14.087	
6,000.0	5,990.5	6,030.6	5,992.5	13.9	17.0	-26.29	439.1	-439.4	418.6	388.5	30.10	13.907	
6,054.9	6,045.4	6,102.8	6,064.5	14.0	17.1	-25.73	439.1	-434.8	417.0	386.8	30.28	13.773	
6,100.0	6,090.4	6,161.3	6,122.3	14.1	17.1	-115.01	439.1	-426.1	414.7	386.7	28.00	14.812	
6,150.0	6,140.2	6,225.3	6,184.7	14.2	17.1	-114.10	439.1	-411.6	411.8	383.7	28.12	14.645	
6,200.0	6,189.6	6,288.4	6,244.7	14.2	17.1	-113.06	439.1	-392.2	408.7	380.5	28.22	14.482	
6,250.0	6,238.3	6,350.5	6,302.0	14.3	17.1	-111.91	439.1	-368.3	405.4	377.1	28.31	14.317	
6,300.0	6,286.3	6,411.5	6,356.2	14.3	17.0	-110.64	439.1	-340.4	402.0	373.6	28.41	14.146	
6,350.0	6,333.2	6,471.4	6,407.2	14.3	17.0	-109.27	439.1	-308.9	398.5	370.0	28.54	13.963	
6,400.0	6,378.8	6,530.2	6,454.6	14.4	16.9	-107.81	439.1	-274.2	395.1	366.4	28.71	13.762	
6,450.0	6,423.1	6,587.9	6,498.4	14.4	16.9	-106.26	439.1	-236.7	391.7	362.8	28.94	13.536	
6,500.0	6,465.7	6,644.4	6,538.4	14.5	16.9	-104.64	439.1	-196.8	388.6	359.3	29.26	13.282	
6,550.0	6,506.5	6,699.8	6,574.8	14.5	16.8	-102.95	439.1	-154.9	385.7	356.0	29.68	12.995	
6,600.0	6,545.4	6,754.2	6,607.4	14.7	16.8	-101.20	439.1	-111.4	383.0	352.8	30.22	12.672	
6,650.0	6,582.1	6,807.6	6,636.2	14.8	16.9	-99.40	439.1	-66.6	380.7	349.8	30.90	12.320	
6,700.0	6,616.5	6,859.9	6,661.5	15.1	17.1	-97.56	439.1	-20.7	378.8	347.1	31.72	11.942	
6,750.0	6,648.5	6,911.3	6,683.1	15.4	17.6	-95.70	439.1	25.8	377.3	344.6	32.67	11.547	
6,800.0	6,677.8	6,961.7	6,701.3	15.7	18.2	-93.82	439.1	72.9	376.2	342.4	33.76	11.143	
6,850.0	6,704.5	7,011.3	6,716.1	16.2	18.9	-91.93	439.1	120.2	375.5	340.5	34.97	10.737	
6,900.0	6,728.4	7,060.1	6,727.6	16.7	19.6	-90.04	439.1	167.6	375.3	339.0	36.30	10.339	
6,901.0	6,728.8	7,061.1	6,727.8	16.7	19.6	-90.00	439.1	168.6	375.3	338.9	36.33	10.330	
6,950.0	6,749.3	7,108.0	6,736.0	17.3	20.4	-88.16	439.1	214.8	375.5	337.7	37.72	9.953	
7,000.0	6,767.2	7,155.3	6,741.3	18.0	21.3	-86.31	439.1	261.8	376.1	336.9	39.23	9.587	
7,050.0	6,782.0	7,201.8	6,743.7	18.8	22.1	-84.49	439.1	308.2	377.1	336.3	40.80	9.243	
7,100.0	6,793.7	7,249.2	6,743.6	19.6	23.1	-82.72	439.1	355.6	378.5	336.0	42.46	8.913	
7,150.0	6,802.1	7,298.4	6,743.2	20.5	24.0	-81.31	439.1	404.8	379.7	335.5	44.22	8.586	
7,200.0	6,807.4	7,348.1	6,742.7	21.5	25.1	-80.40	439.1	454.5	380.6	334.5	46.13	8.251	
7,250.0	6,809.3	7,398.0	6,742.3	22.5	26.2	-80.02	439.1	504.4	381.0	332.9	48.13	7.917	
7,260.9	6,809.3	7,409.0	6,742.2	22.7	26.4	-80.00	439.1	515.3	381.0	332.5	48.59	7.842	
7,300.0	6,809.0	7,448.0	6,741.8	23.5	27.3	-79.99	439.1	554.4	381.1	330.8	50.24	7.585	
7,400.0	6,808.2	7,548.0	6,740.9	25.7	29.6	-79.97	439.1	654.4	381.1	326.5	54.61	6.978	
7,500.0	6,807.4	7,648.0	6,739.9	27.9	31.9	-79.95	439.1	754.4	381.1	321.9	59.18	6.439	
7,600.0	6,806.7	7,748.0	6,739.0	30.3	34.4	-79.93	439.1	854.4	381.1	317.2	63.91	5.964	
7,700.0	6,805.9	7,848.0	6,738.1	32.7	36.9	-79.91	439.1	954.4	381.2	312.4	68.76	5.544	
7,800.0	6,805.1	7,948.0	6,737.2	35.2	39.4	-79.89	439.1	1,054.4	381.2	307.5	73.70	5.172	
7,900.0	6,804.3	8,048.0	6,736.2	37.8	42.0	-79.87	439.1	1,154.4	381.2	302.5	78.72	4.842	
8,000.0	6,803.5	8,148.0	6,735.3	40.3	44.5	-79.85	439.1	1,254.4	381.2	297.4	83.81	4.549	
8,100.0	6,802.7	8,248.0	6,734.4	42.9	47.2	-79.83	439.1	1,354.4	381.3	292.3	88.95	4.286	
8,200.0	6,801.9	8,348.0	6,733.5	45.6	49.8	-79.81	439.1	1,454.3	381.3	287.1	94.13	4.050	
8,300.0	6,801.2	8,448.0	6,732.5	48.2	52.5	-79.79	439.1	1,554.3	381.3	281.9	99.36	3.838	
8,400.0	6,800.4	8,548.0	6,731.6	50.9	55.1	-79.76	439.1	1,654.3	381.3	276.7	104.61	3.645	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,500.0	6,799.6	8,648.0	6,730.7	53.6	57.8	-79.74	439.1	1,754.3	381.4	271.5	109.89	3.470	
8,600.0	6,798.8	8,748.0	6,729.8	56.3	60.5	-79.72	439.1	1,854.3	381.4	266.2	115.19	3.311	
8,700.0	6,798.0	8,848.0	6,728.8	59.0	63.2	-79.70	439.1	1,954.3	381.4	260.9	120.52	3.165	
8,800.0	6,797.2	8,948.0	6,727.9	61.7	65.9	-79.68	439.1	2,054.3	381.4	255.6	125.86	3.031	
8,900.0	6,796.4	9,048.0	6,727.0	64.4	68.6	-79.66	439.1	2,154.3	381.4	250.2	131.21	2.907	
9,000.0	6,795.7	9,148.0	6,726.1	67.1	71.4	-79.64	439.1	2,254.3	381.5	244.9	136.58	2.793	
9,100.0	6,794.9	9,248.0	6,725.1	69.9	74.1	-79.62	439.1	2,354.3	381.5	239.5	141.96	2.687	
9,200.0	6,794.1	9,348.0	6,724.2	72.6	76.8	-79.60	439.1	2,454.3	381.5	234.2	147.35	2.589	
9,300.0	6,793.3	9,448.0	6,723.3	75.3	79.6	-79.58	439.1	2,554.3	381.5	228.8	152.75	2.498	
9,400.0	6,792.5	9,548.0	6,722.4	78.1	82.3	-79.56	439.1	2,654.3	381.6	223.4	158.16	2.413	
9,500.0	6,791.7	9,648.0	6,721.4	80.8	85.1	-79.54	439.1	2,754.3	381.6	218.0	163.57	2.333	
9,600.0	6,790.9	9,748.0	6,720.5	83.6	87.8	-79.52	439.1	2,854.3	381.6	212.6	169.00	2.258	
9,700.0	6,790.2	9,848.0	6,719.6	86.4	90.6	-79.50	439.1	2,954.3	381.6	207.2	174.42	2.188	
9,800.0	6,789.4	9,948.0	6,718.7	89.1	93.4	-79.48	439.1	3,054.3	381.7	201.8	179.85	2.122	
9,900.0	6,788.6	10,048.0	6,717.7	91.9	96.1	-79.46	439.1	3,154.3	381.7	196.4	185.29	2.060	
10,000.0	6,787.8	10,148.0	6,716.8	94.7	98.9	-79.43	439.1	3,254.3	381.7	191.0	190.73	2.001	
10,100.0	6,787.0	10,248.0	6,715.9	97.4	101.7	-79.41	439.1	3,354.3	381.8	185.6	196.18	1.946	
10,200.0	6,786.2	10,348.0	6,715.0	100.2	104.4	-79.39	439.1	3,454.3	381.8	180.2	201.63	1.893	
10,300.0	6,785.4	10,448.0	6,714.0	103.0	107.2	-79.37	439.1	3,554.3	381.8	174.7	207.08	1.844	
10,400.0	6,784.7	10,548.0	6,713.1	105.8	110.0	-79.35	439.1	3,654.3	381.8	169.3	212.53	1.797	
10,500.0	6,783.9	10,648.0	6,712.2	108.5	112.8	-79.33	439.1	3,754.2	381.9	163.9	217.99	1.752	
10,600.0	6,783.1	10,748.0	6,711.3	111.3	115.5	-79.31	439.1	3,854.2	381.9	158.4	223.45	1.709	
10,700.0	6,782.3	10,848.0	6,710.3	114.1	118.3	-79.29	439.1	3,954.2	381.9	153.0	228.91	1.668	
10,800.0	6,781.5	10,948.0	6,709.4	116.9	121.1	-79.27	439.1	4,054.2	381.9	147.6	234.37	1.630	
10,900.0	6,780.7	11,048.0	6,708.5	119.7	123.9	-79.25	439.1	4,154.2	382.0	142.1	239.84	1.593	
11,000.0	6,780.0	11,148.0	6,707.6	122.5	126.7	-79.23	439.1	4,254.2	382.0	136.7	245.30	1.557	
11,100.0	6,779.2	11,248.0	6,706.6	125.2	129.5	-79.21	439.1	4,354.2	382.0	131.2	250.77	1.523	
11,200.0	6,778.4	11,348.0	6,705.7	128.0	132.2	-79.19	439.1	4,454.2	382.0	125.8	256.24	1.491	Level 3
11,300.0	6,777.6	11,448.0	6,704.8	130.8	135.0	-79.17	439.1	4,554.2	382.1	120.3	261.71	1.460	Level 3
11,400.0	6,776.8	11,548.0	6,703.9	133.6	137.8	-79.15	439.1	4,654.2	382.1	114.9	267.18	1.430	Level 3
11,500.0	6,776.0	11,648.0	6,702.9	136.4	140.6	-79.13	439.1	4,754.2	382.1	109.5	272.65	1.401	Level 3
11,600.0	6,775.2	11,748.0	6,702.0	139.2	143.4	-79.11	439.1	4,854.2	382.1	104.0	278.13	1.374	Level 3
11,700.0	6,774.5	11,848.0	6,701.1	142.0	146.2	-79.08	439.1	4,954.2	382.2	98.6	283.60	1.348	Level 3
11,800.0	6,773.7	11,948.0	6,700.2	144.8	149.0	-79.06	439.1	5,054.2	382.2	93.1	289.07	1.322	Level 3
11,900.0	6,772.9	12,048.0	6,699.2	147.6	151.8	-79.04	439.1	5,154.2	382.2	87.7	294.55	1.298	Level 3
12,000.0	6,772.1	12,148.0	6,698.3	150.4	154.6	-79.02	439.1	5,254.2	382.2	82.2	300.02	1.274	Level 3
12,100.0	6,771.3	12,248.0	6,697.4	153.2	157.4	-79.00	439.1	5,354.2	382.3	76.8	305.50	1.251	Level 3
12,200.0	6,770.5	12,348.0	6,696.5	156.0	160.2	-78.98	439.1	5,454.2	382.3	71.3	310.98	1.229	Level 2
12,300.0	6,769.7	12,448.0	6,695.5	158.7	162.9	-78.96	439.1	5,554.2	382.3	65.9	316.45	1.208	Level 2
12,400.0	6,769.0	12,548.0	6,694.6	161.5	165.7	-78.94	439.1	5,654.2	382.3	60.4	321.93	1.188	Level 2
12,500.0	6,768.2	12,648.0	6,693.7	164.3	168.5	-78.92	439.1	5,754.2	382.4	55.0	327.41	1.168	Level 2
12,600.0	6,767.4	12,748.0	6,692.8	167.1	171.3	-78.90	439.1	5,854.2	382.4	49.5	332.88	1.149	Level 2
12,700.0	6,766.6	12,848.0	6,691.8	169.9	174.1	-78.88	439.1	5,954.2	382.4	44.1	338.36	1.130	Level 2
12,800.0	6,765.8	12,948.0	6,690.9	172.7	176.9	-78.86	439.1	6,054.1	382.5	38.6	343.84	1.112	Level 2
12,900.0	6,765.0	13,048.0	6,690.0	175.5	179.7	-78.84	439.1	6,154.1	382.5	33.2	349.31	1.095	Level 2
13,000.0	6,764.2	13,148.0	6,689.1	178.3	182.5	-78.82	439.1	6,254.1	382.5	27.7	354.79	1.078	Level 2
13,100.0	6,763.5	13,248.0	6,688.1	181.1	185.3	-78.80	439.1	6,354.1	382.5	22.3	360.27	1.062	Level 2
13,200.0	6,762.7	13,348.0	6,687.2	183.9	188.1	-78.78	439.1	6,454.1	382.6	16.8	365.74	1.046	Level 2
13,300.0	6,761.9	13,448.0	6,686.3	186.7	190.9	-78.76	439.1	6,554.1	382.6	11.4	371.22	1.031	Level 2
13,400.0	6,761.1	13,548.0	6,685.4	189.5	193.7	-78.74	439.1	6,654.1	382.6	5.9	376.70	1.016	Level 2
13,500.0	6,760.3	13,648.0	6,684.4	192.3	196.5	-78.72	439.1	6,754.1	382.6	0.5	382.17	1.001	Level 2

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-232 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,600.0	6,759.5	13,748.0	6,683.5	195.1	199.3	-78.69	439.1	6,854.1	382.7	-5.0	387.65	0.987	Level 1
13,700.0	6,758.7	13,848.0	6,682.6	197.9	202.1	-78.67	439.1	6,954.1	382.7	-10.4	393.12	0.973	Level 1
13,800.0	6,758.0	13,948.0	6,681.7	200.7	204.9	-78.65	439.1	7,054.1	382.7	-15.9	398.60	0.960	Level 1
13,900.0	6,757.2	14,048.0	6,680.7	203.5	207.7	-78.63	439.1	7,154.1	382.8	-21.3	404.08	0.947	Level 1
14,000.0	6,756.4	14,148.0	6,679.8	206.3	210.5	-78.61	439.1	7,254.1	382.8	-26.8	409.55	0.935	Level 1
14,100.0	6,755.6	14,248.0	6,678.9	209.1	213.3	-78.59	439.1	7,354.1	382.8	-32.2	415.02	0.922	Level 1
14,200.0	6,754.8	14,348.0	6,678.0	211.9	216.1	-78.57	439.1	7,454.1	382.8	-37.7	420.50	0.910	Level 1
14,300.0	6,754.0	14,448.0	6,677.0	214.7	218.9	-78.55	439.1	7,554.1	382.9	-43.1	425.97	0.899	Level 1
14,400.0	6,753.2	14,548.0	6,676.1	217.5	221.7	-78.53	439.1	7,654.1	382.9	-48.6	431.45	0.887	Level 1
14,500.0	6,752.5	14,648.0	6,675.2	220.3	224.5	-78.51	439.1	7,754.1	382.9	-54.0	436.92	0.876	Level 1
14,600.0	6,751.7	14,748.0	6,674.3	223.1	227.3	-78.49	439.1	7,854.1	382.9	-59.4	442.39	0.866	Level 1
14,700.0	6,750.9	14,848.0	6,673.3	225.9	230.1	-78.47	439.1	7,954.1	383.0	-64.9	447.87	0.855	Level 1
14,800.0	6,750.1	14,948.0	6,672.4	228.7	232.9	-78.45	439.1	8,054.1	383.0	-70.3	453.34	0.845	Level 1
14,900.0	6,749.3	15,048.0	6,671.5	231.6	235.7	-78.43	439.1	8,154.1	383.0	-75.8	458.81	0.835	Level 1
15,000.0	6,748.5	15,148.0	6,670.6	234.4	238.5	-78.41	439.1	8,254.1	383.1	-81.2	464.28	0.825	Level 1
15,100.0	6,747.8	15,248.0	6,669.6	237.2	241.3	-78.39	439.1	8,354.0	383.1	-86.7	469.75	0.816	Level 1
15,200.0	6,747.0	15,348.0	6,668.7	240.0	244.1	-78.37	439.1	8,454.0	383.1	-92.1	475.22	0.806	Level 1
15,300.0	6,746.2	15,448.0	6,667.8	242.8	246.9	-78.35	439.1	8,554.0	383.1	-97.5	480.69	0.797	Level 1
15,400.0	6,745.4	15,548.0	6,666.9	245.6	249.7	-78.33	439.1	8,654.0	383.2	-103.0	486.16	0.788	Level 1
15,500.0	6,744.6	15,648.0	6,665.9	248.4	252.5	-78.31	439.1	8,754.0	383.2	-108.4	491.63	0.779	Level 1
15,600.0	6,743.8	15,748.0	6,665.0	251.2	255.3	-78.29	439.1	8,854.0	383.2	-113.9	497.09	0.771	Level 1
15,700.0	6,743.0	15,848.0	6,664.1	254.0	258.1	-78.26	439.1	8,954.0	383.3	-119.3	502.56	0.763	Level 1
15,800.0	6,742.3	15,948.0	6,663.2	256.8	260.9	-78.24	439.1	9,054.0	383.3	-124.7	508.03	0.754	Level 1
15,900.0	6,741.5	16,048.0	6,662.2	259.6	263.7	-78.22	439.1	9,154.0	383.3	-130.2	513.49	0.746	Level 1
16,000.0	6,740.7	16,148.0	6,661.3	262.4	266.6	-78.20	439.1	9,254.0	383.3	-135.6	518.96	0.739	Level 1
16,100.0	6,739.9	16,248.0	6,660.4	265.2	269.4	-78.18	439.1	9,354.0	383.4	-141.1	524.43	0.731	Level 1
16,200.0	6,739.1	16,348.0	6,659.5	268.0	272.2	-78.16	439.1	9,454.0	383.4	-146.5	529.89	0.724	Level 1
16,300.0	6,738.3	16,448.0	6,658.5	270.8	275.0	-78.14	439.1	9,554.0	383.4	-151.9	535.35	0.716	Level 1
16,400.0	6,737.5	16,548.0	6,657.6	273.6	277.8	-78.12	439.1	9,654.0	383.5	-157.4	540.82	0.709	Level 1
16,437.7	6,737.2	16,585.7	6,657.3	274.7	278.8	-78.11	439.1	9,691.7	383.5	-159.4	542.87	0.706	Level 1
16,468.8	6,737.0	16,614.6	6,657.0	275.5	279.6	-78.11	439.1	9,720.6	383.5	-161.0	544.51	0.704	Level 1
16,469.7	6,737.0	16,614.6	6,657.0	275.6	279.6	-78.11	439.1	9,720.6	383.5	-161.0	544.53	0.704	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-332 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.01	0.0	-89.2	89.2				
100.0	100.0	99.0	99.0	0.1	0.1	-90.01	0.0	-89.2	89.2	88.9	0.22	398.649	
200.0	200.0	199.0	199.0	0.3	0.3	-90.01	0.0	-89.2	89.2	88.5	0.67	132.662	CC
300.0	300.0	298.2	298.2	0.6	0.6	-89.56	0.7	-89.6	89.6	88.5	1.12	80.115	
400.0	400.0	397.3	397.2	0.8	0.8	-88.22	2.8	-91.0	91.1	89.5	1.57	58.102	
500.0	500.0	496.2	496.1	1.0	1.0	-86.07	6.4	-93.3	93.6	91.6	2.02	46.365	
600.0	600.0	595.0	594.7	1.2	1.2	-83.26	11.4	-96.6	97.3	94.8	2.47	39.361	
700.0	700.0	693.6	693.0	1.5	1.5	-79.97	17.8	-100.7	102.4	99.5	2.93	34.949	
800.0	800.0	791.9	790.8	1.7	1.7	-76.38	25.6	-105.8	109.1	105.7	3.40	32.118	
900.0	900.0	889.8	888.1	1.9	2.0	-72.70	34.8	-111.7	117.5	113.6	3.87	30.324	
1,000.0	1,000.0	987.3	984.8	2.1	2.3	-69.07	45.3	-118.5	127.7	123.3	4.37	29.240	
1,100.0	1,100.0	1,084.4	1,080.9	2.4	2.6	-65.63	57.2	-126.2	139.7	134.8	4.88	28.655	
1,200.0	1,200.0	1,182.0	1,177.2	2.6	3.0	-62.44	70.3	-134.7	153.5	148.1	5.41	28.387	
1,300.0	1,300.0	1,280.7	1,274.6	2.8	3.3	-59.71	83.7	-143.4	167.8	161.9	5.95	28.197	
1,400.0	1,400.0	1,379.4	1,372.0	3.0	3.7	-57.42	97.2	-152.1	182.5	176.0	6.51	28.047	
1,500.0	1,500.0	1,478.0	1,469.3	3.3	4.0	-55.47	110.7	-160.8	197.4	190.4	7.07	27.927	
1,600.0	1,600.0	1,576.7	1,566.7	3.5	4.4	-53.79	124.1	-169.5	212.5	204.9	7.64	27.829	
1,700.0	1,700.0	1,675.4	1,664.1	3.7	4.7	-52.34	137.6	-178.2	227.8	219.6	8.21	27.749	
1,800.0	1,800.0	1,774.0	1,761.4	3.9	5.1	-51.07	151.0	-186.9	243.2	234.4	8.79	27.683	
1,900.0	1,900.0	1,872.7	1,858.8	4.2	5.5	-49.95	164.5	-195.6	258.7	249.4	9.36	27.629	
2,000.0	2,000.0	1,971.4	1,956.1	4.4	5.8	-48.95	177.9	-204.3	274.3	264.4	9.94	27.584	
2,100.0	2,100.0	2,070.2	2,053.6	4.6	6.2	27.83	191.4	-213.1	289.2	279.7	9.47	30.548	
2,200.0	2,200.0	2,169.1	2,151.2	4.8	6.6	28.80	204.9	-221.8	302.7	292.7	9.92	30.522	
2,300.0	2,299.9	2,268.2	2,249.0	5.0	6.9	29.84	218.4	-230.5	314.7	304.3	10.37	30.361	
2,400.0	2,399.7	2,367.4	2,346.9	5.2	7.3	30.96	231.9	-239.3	325.4	314.5	10.82	30.084	
2,430.8	2,430.4	2,398.0	2,377.1	5.3	7.4	31.33	236.1	-242.0	328.4	317.4	10.95	29.977	
2,500.0	2,499.4	2,466.7	2,444.9	5.4	7.7	32.17	245.4	-248.1	335.0	323.8	11.27	29.736	
2,600.0	2,599.1	2,566.0	2,542.8	5.7	8.0	33.33	259.0	-256.8	344.8	333.1	11.72	29.412	
2,700.0	2,698.8	2,665.3	2,640.8	5.9	8.4	34.43	272.5	-265.6	354.7	342.5	12.18	29.115	
2,800.0	2,798.6	2,764.6	2,738.8	6.1	8.8	35.47	286.1	-274.3	364.7	352.0	12.64	28.841	
2,900.0	2,898.3	2,863.8	2,836.7	6.4	9.2	36.45	299.6	-283.1	374.8	361.7	13.11	28.588	
3,000.0	2,998.0	2,963.1	2,934.7	6.6	9.5	37.38	313.1	-291.9	385.0	371.4	13.58	28.353	
3,100.0	3,097.7	3,062.4	3,032.7	6.8	9.9	38.27	326.7	-300.6	395.3	381.3	14.05	28.135	
3,200.0	3,197.4	3,161.7	3,130.6	7.1	10.3	39.10	340.2	-309.4	405.7	391.2	14.53	27.930	
3,300.0	3,297.1	3,261.0	3,228.6	7.3	10.6	39.90	353.7	-318.2	416.2	401.2	15.00	27.739	
3,400.0	3,396.9	3,360.3	3,326.6	7.6	11.0	40.66	367.3	-326.9	426.8	411.3	15.48	27.559	
3,500.0	3,496.6	3,459.6	3,424.5	7.8	11.4	41.38	380.8	-335.7	437.4	421.4	15.97	27.390	
3,600.0	3,596.3	3,558.8	3,522.5	8.1	11.8	42.06	394.4	-344.4	448.1	431.6	16.45	27.231	
3,700.0	3,696.0	3,658.1	3,620.5	8.3	12.1	42.72	407.9	-353.2	458.8	441.9	16.94	27.081	
3,800.0	3,795.7	3,757.4	3,718.5	8.6	12.5	43.34	421.4	-362.0	469.7	452.2	17.43	26.938	
3,900.0	3,895.4	3,856.7	3,816.4	8.8	12.9	43.94	435.0	-370.7	480.5	462.6	17.93	26.804	
4,000.0	3,995.2	3,956.0	3,914.4	9.1	13.3	44.51	448.5	-379.5	491.4	473.0	18.42	26.676	
4,100.0	4,094.9	4,055.3	4,012.4	9.3	13.6	45.05	462.0	-388.3	502.4	483.5	18.92	26.554	
4,200.0	4,194.6	4,154.6	4,110.3	9.6	14.0	45.57	475.6	-397.0	513.4	494.0	19.42	26.438	
4,300.0	4,294.3	4,253.8	4,208.3	9.8	14.4	46.07	489.1	-405.8	524.4	504.5	19.92	26.328	
4,400.0	4,394.0	4,353.1	4,306.3	10.1	14.7	46.55	502.7	-414.5	535.5	515.1	20.42	26.223	
4,500.0	4,493.7	4,452.4	4,404.2	10.3	15.1	47.01	516.2	-423.3	546.6	525.7	20.93	26.123	
4,600.0	4,593.5	4,551.7	4,502.2	10.6	15.5	47.45	529.7	-432.1	557.8	536.4	21.43	26.027	
4,700.0	4,693.2	4,651.0	4,600.2	10.8	15.9	47.88	543.3	-440.8	569.0	547.0	21.94	25.935	
4,800.0	4,792.9	4,750.3	4,698.1	11.1	16.2	48.29	556.8	-449.6	580.2	557.7	22.45	25.847	
4,900.0	4,892.6	4,849.6	4,796.1	11.3	16.6	48.68	570.3	-458.4	591.4	568.5	22.96	25.763	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-332 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,992.3	4,948.9	4,894.1	11.6	17.0	49.06	583.9	-467.1	602.7	579.2	23.47	25.682	
5,100.0	5,092.1	5,048.1	4,992.0	11.9	17.4	49.42	597.4	-475.9	614.0	590.0	23.98	25.605	
5,200.0	5,191.8	5,147.4	5,090.0	12.1	17.7	49.77	610.9	-484.7	625.3	600.8	24.49	25.530	
5,300.0	5,291.5	5,246.7	5,188.0	12.4	18.1	50.11	624.5	-493.4	636.6	611.6	25.01	25.459	
5,400.0	5,391.2	5,346.0	5,285.9	12.6	18.5	50.44	638.0	-502.2	648.0	622.5	25.52	25.390	
5,500.0	5,490.9	5,445.3	5,383.9	12.9	18.9	50.75	651.6	-510.9	659.4	633.3	26.04	25.324	
5,594.1	5,584.8	5,551.4	5,488.7	13.1	19.2	51.08	665.6	-520.0	669.7	643.2	26.53	25.247	
5,600.0	5,590.6	5,559.0	5,496.2	13.1	19.2	51.12	666.5	-520.6	670.3	643.7	26.55	25.241	
5,700.0	5,690.5	5,688.8	5,625.1	13.3	19.6	51.53	679.4	-529.0	678.5	651.6	26.97	25.156	
5,809.5	5,800.0	5,831.8	5,767.7	13.5	19.8	-24.20	687.9	-534.5	684.9	652.3	32.62	20.995	
5,900.0	5,890.5	5,950.3	5,886.2	13.7	20.0	-24.24	690.5	-536.1	687.2	654.2	32.98	20.839	
6,000.0	5,990.5	6,053.6	5,989.5	13.9	20.1	-24.24	690.5	-536.2	687.2	653.9	33.33	20.621	
6,054.9	6,045.4	6,108.5	6,044.4	14.0	20.2	-24.24	690.5	-536.2	687.2	653.7	33.52	20.502	
6,100.0	6,090.4	6,175.2	6,111.0	14.1	20.3	-114.23	690.5	-533.9	687.2	658.7	28.49	24.121	
6,150.0	6,140.2	6,254.3	6,189.4	14.2	20.3	-114.06	690.5	-523.8	686.5	657.9	28.59	24.007	
6,200.0	6,189.6	6,332.8	6,265.8	14.2	20.3	-113.72	690.5	-505.8	684.9	656.3	28.67	23.893	
6,250.0	6,238.3	6,410.2	6,338.9	14.3	20.3	-113.21	690.5	-480.4	682.7	654.0	28.72	23.770	
6,300.0	6,286.3	6,486.3	6,408.0	14.3	20.2	-112.55	690.5	-448.4	679.9	651.1	28.78	23.626	
6,350.0	6,333.2	6,560.8	6,472.1	14.3	20.1	-111.74	690.5	-410.6	676.5	647.6	28.85	23.443	
6,400.0	6,378.8	6,633.5	6,530.8	14.4	20.0	-110.81	690.5	-367.9	672.6	643.6	28.99	23.204	
6,450.0	6,423.1	6,704.1	6,583.8	14.4	19.9	-109.76	690.5	-321.2	668.4	639.2	29.19	22.894	
6,500.0	6,465.7	6,772.7	6,630.8	14.5	19.8	-108.62	690.5	-271.4	664.0	634.4	29.52	22.489	
6,550.0	6,506.5	6,839.1	6,672.0	14.5	19.7	-107.39	690.5	-219.3	659.4	629.4	29.98	21.995	
6,600.0	6,545.4	6,903.4	6,707.4	14.7	19.7	-106.09	690.5	-165.6	654.9	624.3	30.59	21.407	
6,650.0	6,582.1	6,965.6	6,737.2	14.8	19.6	-104.72	690.5	-111.0	650.4	619.0	31.38	20.727	
6,700.0	6,616.5	7,025.9	6,761.8	15.1	19.5	-103.31	690.5	-56.0	646.2	613.8	32.33	19.985	
6,750.0	6,648.5	7,084.2	6,781.4	15.4	19.5	-101.85	690.5	-1.1	642.2	608.7	33.45	19.199	
6,800.0	6,677.8	7,140.7	6,796.3	15.7	19.8	-100.36	690.5	53.4	638.5	603.8	34.72	18.390	
6,850.0	6,704.5	7,195.5	6,806.9	16.2	20.6	-98.85	690.5	107.2	635.3	599.2	36.12	17.587	
6,900.0	6,728.4	7,248.7	6,813.4	16.7	21.5	-97.31	690.5	160.0	632.6	594.9	37.66	16.795	
6,950.0	6,749.3	7,300.4	6,816.3	17.3	22.5	-95.76	690.5	211.6	630.3	591.0	39.31	16.035	
7,000.0	6,767.2	7,349.0	6,816.2	18.0	23.4	-94.30	690.5	260.1	628.6	587.6	41.01	15.328	
7,050.0	6,782.0	7,396.6	6,815.8	18.8	24.3	-93.06	690.5	307.7	627.6	584.8	42.77	14.675	
7,100.0	6,793.7	7,445.1	6,815.4	19.6	25.3	-92.03	690.5	356.3	627.1	582.4	44.65	14.044	
7,150.0	6,802.1	7,494.3	6,815.0	20.5	26.3	-91.25	690.5	405.4	626.8	580.2	46.59	13.453	
7,200.0	6,807.4	7,544.0	6,814.6	21.5	27.4	-90.75	690.5	455.1	626.7	578.1	48.64	12.885	
7,250.0	6,809.3	7,593.9	6,814.2	22.5	28.5	-90.53	690.5	505.1	626.7	576.0	50.72	12.356	
7,260.9	6,809.3	7,604.9	6,814.1	22.7	28.8	-90.53	690.5	516.0	626.7	575.5	51.18	12.244	
7,300.0	6,809.0	7,643.9	6,813.7	23.5	29.7	-90.52	690.5	555.0	626.7	573.8	52.88	11.852	
7,400.0	6,808.2	7,743.9	6,812.9	25.7	32.0	-90.52	690.5	655.0	626.7	569.3	57.35	10.928	
7,500.0	6,807.4	7,843.9	6,812.1	27.9	34.4	-90.51	690.5	755.0	626.7	564.7	62.01	10.106	
7,600.0	6,806.7	7,943.9	6,811.2	30.3	36.8	-90.51	690.5	855.0	626.7	559.8	66.82	9.379	
7,700.0	6,805.9	8,043.9	6,810.4	32.7	39.3	-90.50	690.5	955.0	626.7	554.9	71.75	8.734	
7,800.0	6,805.1	8,143.9	6,809.6	35.2	41.9	-90.50	690.5	1,055.0	626.7	549.9	76.78	8.162	
7,900.0	6,804.3	8,243.9	6,808.7	37.8	44.4	-90.50	690.5	1,155.0	626.7	544.8	81.88	7.653	
8,000.0	6,803.5	8,343.9	6,807.9	40.3	47.0	-90.49	690.5	1,255.0	626.7	539.6	87.05	7.199	
8,100.0	6,802.7	8,443.9	6,807.0	42.9	49.6	-90.49	690.5	1,355.0	626.7	534.4	92.27	6.791	
8,200.0	6,801.9	8,543.9	6,806.2	45.6	52.3	-90.48	690.5	1,455.0	626.7	529.1	97.54	6.425	
8,300.0	6,801.2	8,643.9	6,805.4	48.2	54.9	-90.48	690.5	1,555.0	626.7	523.8	102.84	6.093	
8,400.0	6,800.4	8,743.9	6,804.5	50.9	57.6	-90.47	690.5	1,655.0	626.7	518.5	108.18	5.793	
8,500.0	6,799.6	8,843.9	6,803.7	53.6	60.2	-90.47	690.5	1,755.0	626.7	513.1	113.54	5.519	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-332 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,600.0	6,798.8	8,943.9	6,802.8	56.3	62.9	-90.46	690.5	1,855.0	626.7	507.7	118.93	5.269	
8,700.0	6,798.0	9,043.9	6,802.0	59.0	65.6	-90.46	690.5	1,955.0	626.7	502.3	124.34	5.040	
8,800.0	6,797.2	9,143.9	6,801.2	61.7	68.3	-90.45	690.5	2,055.0	626.7	496.9	129.76	4.829	
8,900.0	6,796.4	9,243.9	6,800.3	64.4	71.1	-90.45	690.5	2,155.0	626.7	491.5	135.21	4.635	
9,000.0	6,795.7	9,343.9	6,799.5	67.1	73.8	-90.44	690.5	2,255.0	626.7	486.0	140.66	4.455	
9,100.0	6,794.9	9,443.9	6,798.7	69.9	76.5	-90.44	690.5	2,355.0	626.7	480.5	146.13	4.288	
9,200.0	6,794.1	9,543.9	6,797.8	72.6	79.2	-90.43	690.5	2,455.0	626.7	475.0	151.61	4.133	
9,300.0	6,793.3	9,643.9	6,797.0	75.3	82.0	-90.43	690.5	2,555.0	626.7	469.6	157.10	3.989	
9,400.0	6,792.5	9,743.9	6,796.1	78.1	84.7	-90.42	690.5	2,655.0	626.7	464.1	162.59	3.854	
9,500.0	6,791.7	9,843.9	6,795.3	80.8	87.5	-90.42	690.5	2,755.0	626.7	458.6	168.10	3.728	
9,600.0	6,790.9	9,943.9	6,794.5	83.6	90.2	-90.41	690.5	2,855.0	626.7	453.0	173.61	3.609	
9,700.0	6,790.2	10,043.9	6,793.6	86.4	93.0	-90.41	690.5	2,955.0	626.7	447.5	179.13	3.498	
9,800.0	6,789.4	10,143.9	6,792.8	89.1	95.7	-90.40	690.5	3,055.0	626.7	442.0	184.66	3.394	
9,900.0	6,788.6	10,243.9	6,792.0	91.9	98.5	-90.40	690.5	3,155.0	626.7	436.5	190.19	3.295	
10,000.0	6,787.8	10,343.9	6,791.1	94.7	101.3	-90.39	690.5	3,255.0	626.6	430.9	195.73	3.202	
10,100.0	6,787.0	10,443.9	6,790.3	97.4	104.0	-90.39	690.5	3,355.0	626.6	425.4	201.27	3.114	
10,200.0	6,786.2	10,543.9	6,789.4	100.2	106.8	-90.38	690.5	3,454.9	626.6	419.8	206.81	3.030	
10,300.0	6,785.4	10,643.9	6,788.6	103.0	109.6	-90.38	690.5	3,554.9	626.6	414.3	212.36	2.951	
10,400.0	6,784.7	10,743.9	6,787.8	105.8	112.3	-90.38	690.5	3,654.9	626.6	408.7	217.91	2.876	
10,500.0	6,783.9	10,843.9	6,786.9	108.5	115.1	-90.37	690.5	3,754.9	626.6	403.2	223.47	2.804	
10,600.0	6,783.1	10,943.9	6,786.1	111.3	117.9	-90.37	690.5	3,854.9	626.6	397.6	229.03	2.736	
10,700.0	6,782.3	11,043.9	6,785.3	114.1	120.7	-90.36	690.5	3,954.9	626.6	392.1	234.59	2.671	
10,800.0	6,781.5	11,143.9	6,784.4	116.9	123.4	-90.36	690.5	4,054.9	626.6	386.5	240.16	2.609	
10,900.0	6,780.7	11,243.9	6,783.6	119.7	126.2	-90.35	690.5	4,154.9	626.6	380.9	245.72	2.550	
11,000.0	6,780.0	11,343.9	6,782.7	122.5	129.0	-90.35	690.5	4,254.9	626.6	375.3	251.29	2.494	
11,100.0	6,779.2	11,443.9	6,781.9	125.2	131.8	-90.34	690.5	4,354.9	626.6	369.8	256.86	2.440	
11,200.0	6,778.4	11,543.9	6,781.1	128.0	134.6	-90.34	690.5	4,454.9	626.6	364.2	262.44	2.388	
11,300.0	6,777.6	11,643.9	6,780.2	130.8	137.3	-90.33	690.5	4,554.9	626.6	358.6	268.01	2.338	
11,400.0	6,776.8	11,743.9	6,779.4	133.6	140.1	-90.33	690.5	4,654.9	626.6	353.0	273.59	2.290	
11,500.0	6,776.0	11,843.9	6,778.6	136.4	142.9	-90.32	690.5	4,754.9	626.6	347.5	279.17	2.245	
11,600.0	6,775.2	11,943.9	6,777.7	139.2	145.7	-90.32	690.5	4,854.9	626.6	341.9	284.75	2.201	
11,700.0	6,774.5	12,043.9	6,776.9	142.0	148.5	-90.31	690.5	4,954.9	626.6	336.3	290.33	2.158	
11,800.0	6,773.7	12,143.9	6,776.0	144.8	151.3	-90.31	690.5	5,054.9	626.6	330.7	295.92	2.118	
11,900.0	6,772.9	12,243.9	6,775.2	147.6	154.1	-90.30	690.5	5,154.9	626.6	325.1	301.50	2.078	
12,000.0	6,772.1	12,343.9	6,774.4	150.4	156.9	-90.30	690.5	5,254.9	626.6	319.5	307.09	2.041	
12,100.0	6,771.3	12,443.9	6,773.5	153.2	159.6	-90.29	690.5	5,354.9	626.6	314.0	312.67	2.004	
12,200.0	6,770.5	12,543.9	6,772.7	156.0	162.4	-90.29	690.5	5,454.9	626.6	308.4	318.26	1.969	
12,300.0	6,769.7	12,643.9	6,771.9	158.7	165.2	-90.28	690.5	5,554.9	626.6	302.8	323.85	1.935	
12,400.0	6,769.0	12,743.9	6,771.0	161.5	168.0	-90.28	690.5	5,654.9	626.6	297.2	329.44	1.902	
12,500.0	6,768.2	12,843.9	6,770.2	164.3	170.8	-90.27	690.5	5,754.9	626.6	291.6	335.03	1.870	
12,600.0	6,767.4	12,943.9	6,769.3	167.1	173.6	-90.27	690.5	5,854.9	626.6	286.0	340.63	1.840	
12,700.0	6,766.6	13,043.9	6,768.5	169.9	176.4	-90.27	690.5	5,954.9	626.6	280.4	346.22	1.810	
12,800.0	6,765.8	13,143.9	6,767.7	172.7	179.2	-90.26	690.5	6,054.9	626.6	274.8	351.81	1.781	
12,900.0	6,765.0	13,243.9	6,766.8	175.5	182.0	-90.26	690.5	6,154.9	626.6	269.2	357.41	1.753	
13,000.0	6,764.2	13,343.9	6,766.0	178.3	184.8	-90.25	690.5	6,254.8	626.6	263.6	363.00	1.726	
13,100.0	6,763.5	13,443.9	6,765.1	181.1	187.6	-90.25	690.5	6,354.8	626.6	258.0	368.60	1.700	
13,200.0	6,762.7	13,543.9	6,764.3	183.9	190.4	-90.24	690.5	6,454.8	626.6	252.4	374.20	1.675	
13,300.0	6,761.9	13,643.9	6,763.5	186.7	193.2	-90.24	690.5	6,554.8	626.6	246.8	379.79	1.650	
13,400.0	6,761.1	13,743.9	6,762.6	189.5	196.0	-90.23	690.5	6,654.8	626.6	241.2	385.39	1.626	
13,500.0	6,760.3	13,843.9	6,761.8	192.3	198.8	-90.23	690.5	6,754.8	626.6	235.6	390.99	1.603	
13,600.0	6,759.5	13,943.9	6,761.0	195.1	201.6	-90.22	690.5	6,854.8	626.6	230.0	396.59	1.580	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19P-332 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,700.0	6,758.7	14,043.9	6,760.1	197.9	204.4	-90.22	690.5	6,954.8	626.6	224.4	402.19	1.558	
13,800.0	6,758.0	14,143.9	6,759.3	200.7	207.2	-90.21	690.5	7,054.8	626.6	218.8	407.79	1.537	
13,900.0	6,757.2	14,243.9	6,758.4	203.5	210.0	-90.21	690.5	7,154.8	626.6	213.2	413.39	1.516	
14,000.0	6,756.4	14,343.9	6,757.6	206.3	212.8	-90.20	690.5	7,254.8	626.6	207.6	418.99	1.496	Level 3
14,100.0	6,755.6	14,443.9	6,756.8	209.1	215.6	-90.20	690.5	7,354.8	626.6	202.0	424.60	1.476	Level 3
14,200.0	6,754.8	14,543.9	6,755.9	211.9	218.4	-90.19	690.5	7,454.8	626.6	196.4	430.20	1.457	Level 3
14,300.0	6,754.0	14,643.9	6,755.1	214.7	221.2	-90.19	690.5	7,554.8	626.6	190.8	435.80	1.438	Level 3
14,400.0	6,753.2	14,743.9	6,754.3	217.5	224.0	-90.18	690.5	7,654.8	626.6	185.2	441.41	1.420	Level 3
14,500.0	6,752.5	14,843.9	6,753.4	220.3	226.8	-90.18	690.5	7,754.8	626.6	179.6	447.01	1.402	Level 3
14,600.0	6,751.7	14,943.9	6,752.6	223.1	229.6	-90.17	690.5	7,854.8	626.6	174.0	452.61	1.384	Level 3
14,700.0	6,750.9	15,043.9	6,751.7	225.9	232.4	-90.17	690.5	7,954.8	626.6	168.4	458.22	1.368	Level 3
14,800.0	6,750.1	15,143.9	6,750.9	228.7	235.2	-90.16	690.5	8,054.8	626.6	162.8	463.82	1.351	Level 3
14,900.0	6,749.3	15,243.9	6,750.1	231.6	238.0	-90.16	690.5	8,154.8	626.6	157.2	469.43	1.335	Level 3
15,000.0	6,748.5	15,343.9	6,749.2	234.4	240.8	-90.16	690.5	8,254.8	626.6	151.6	475.03	1.319	Level 3
15,100.0	6,747.8	15,443.9	6,748.4	237.2	243.6	-90.15	690.5	8,354.8	626.6	146.0	480.64	1.304	Level 3
15,200.0	6,747.0	15,543.9	6,747.6	240.0	246.4	-90.15	690.5	8,454.8	626.6	140.4	486.25	1.289	Level 3
15,300.0	6,746.2	15,643.9	6,746.7	242.8	249.2	-90.14	690.5	8,554.8	626.6	134.8	491.85	1.274	Level 3
15,400.0	6,745.4	15,743.9	6,745.9	245.6	252.0	-90.14	690.5	8,654.8	626.6	129.2	497.46	1.260	Level 3
15,500.0	6,744.6	15,843.9	6,745.0	248.4	254.8	-90.13	690.5	8,754.8	626.6	123.6	503.07	1.246	Level 2
15,600.0	6,743.8	15,943.9	6,744.2	251.2	257.6	-90.13	690.5	8,854.8	626.6	117.9	508.67	1.232	Level 2
15,700.0	6,743.0	16,043.9	6,743.4	254.0	260.4	-90.12	690.5	8,954.8	626.6	112.3	514.28	1.218	Level 2
15,800.0	6,742.3	16,143.9	6,742.5	256.8	263.2	-90.12	690.5	9,054.8	626.6	106.7	519.89	1.205	Level 2
15,900.0	6,741.5	16,243.9	6,741.7	259.6	266.0	-90.11	690.5	9,154.7	626.6	101.1	525.50	1.192	Level 2
16,000.0	6,740.7	16,343.9	6,740.9	262.4	268.8	-90.11	690.5	9,254.7	626.6	95.5	531.11	1.180	Level 2
16,100.0	6,739.9	16,443.9	6,740.0	265.2	271.6	-90.10	690.5	9,354.7	626.6	89.9	536.71	1.168	Level 2
16,200.0	6,739.1	16,543.9	6,739.2	268.0	274.4	-90.10	690.5	9,454.7	626.6	84.3	542.32	1.155	Level 2
16,300.0	6,738.3	16,643.9	6,738.3	270.8	277.2	-90.09	690.5	9,554.7	626.6	78.7	547.93	1.144	Level 2
16,400.0	6,737.5	16,743.9	6,737.5	273.6	280.0	-90.09	690.5	9,654.7	626.6	73.1	553.54	1.132	Level 2
16,447.6	6,737.2	16,791.5	6,737.1	274.9	281.3	-90.09	690.5	9,702.4	626.6	70.4	556.21	1.127	Level 2
16,468.8	6,737.0	16,804.1	6,737.0	275.5	281.7	-90.09	690.5	9,714.9	626.7	69.5	557.16	1.125	Level 2
16,469.7	6,737.0	16,804.1	6,737.0	275.6	281.7	-90.09	690.5	9,714.9	626.7	69.5	557.17	1.125	Level 2, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.01	0.0	-27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.01	0.0	-27.9	27.9	27.6	0.22	123.956	
200.0	200.0	200.0	200.0	0.3	0.3	-90.01	0.0	-27.9	27.9	27.2	0.67	41.319	
300.0	300.0	300.0	300.0	0.6	0.6	-90.01	0.0	-27.9	27.9	26.7	1.12	24.791	
400.0	400.0	400.0	400.0	0.8	0.8	-90.01	0.0	-27.9	27.9	26.3	1.57	17.708	
500.0	500.0	500.0	500.0	1.0	1.0	-90.01	0.0	-27.9	27.9	25.8	2.02	13.773	
600.0	600.0	600.0	600.0	1.2	1.2	-90.01	0.0	-27.9	27.9	25.4	2.47	11.269	
700.0	700.0	700.0	700.0	1.5	1.5	-90.01	0.0	-27.9	27.9	24.9	2.92	9.535	
800.0	800.0	800.0	800.0	1.7	1.7	-90.01	0.0	-27.9	27.9	24.5	3.37	8.264	
900.0	900.0	900.0	900.0	1.9	1.9	-90.01	0.0	-27.9	27.9	24.0	3.82	7.292	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.01	0.0	-27.9	27.9	23.6	4.27	6.524	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.01	0.0	-27.9	27.9	23.1	4.72	5.903	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.01	0.0	-27.9	27.9	22.7	5.17	5.389	CC
1,300.0	1,300.0	1,299.6	1,299.6	2.8	2.8	-91.20	-0.6	-28.5	28.5	22.9	5.59	5.094	
1,400.0	1,400.0	1,399.2	1,399.2	3.0	3.0	-94.47	-2.4	-30.4	30.5	24.5	6.00	5.080	
1,500.0	1,500.0	1,498.7	1,498.5	3.3	3.2	-99.04	-5.3	-33.5	34.0	27.6	6.42	5.297	
1,600.0	1,600.0	1,597.9	1,597.6	3.5	3.4	-104.02	-9.5	-37.9	39.2	32.3	6.84	5.727	
1,700.0	1,700.0	1,697.0	1,696.4	3.7	3.6	-108.73	-14.8	-43.6	46.1	38.9	7.27	6.345	
1,800.0	1,800.0	1,795.9	1,794.8	3.9	3.8	-112.82	-21.2	-50.4	54.9	47.2	7.72	7.118	
1,900.0	1,900.0	1,895.4	1,893.8	4.2	4.0	-115.94	-28.1	-57.7	64.5	56.3	8.17	7.888	
2,000.0	2,000.0	1,994.9	1,992.8	4.4	4.3	-118.26	-34.9	-65.0	74.1	65.5	8.64	8.584	
2,100.0	2,100.0	2,094.4	2,091.8	4.6	4.5	-44.51	-41.8	-72.3	83.3	74.3	8.96	9.296	
2,200.0	2,200.0	2,194.0	2,190.9	4.8	4.8	-47.00	-48.7	-79.6	91.4	82.0	9.38	9.744	
2,300.0	2,299.9	2,293.6	2,290.0	5.0	5.0	-49.86	-55.6	-86.9	98.5	88.7	9.80	10.050	
2,400.0	2,399.7	2,393.3	2,389.1	5.2	5.3	-53.07	-62.5	-94.2	104.7	94.5	10.22	10.243	
2,430.8	2,430.4	2,423.9	2,419.7	5.3	5.4	-54.14	-64.6	-96.5	106.5	96.1	10.35	10.284	
2,500.0	2,499.4	2,492.9	2,488.3	5.4	5.5	-56.51	-69.3	-101.6	110.5	99.9	10.66	10.372	
2,600.0	2,599.1	2,592.5	2,587.4	5.7	5.8	-59.65	-76.2	-108.9	116.6	105.5	11.10	10.511	
2,700.0	2,698.8	2,692.1	2,686.5	5.9	6.1	-62.47	-83.1	-116.2	123.1	111.5	11.55	10.660	
2,800.0	2,798.6	2,791.7	2,785.6	6.1	6.4	-65.00	-90.0	-123.5	129.8	117.8	12.00	10.815	
2,900.0	2,898.3	2,891.4	2,884.7	6.4	6.6	-67.28	-96.8	-130.8	136.7	124.3	12.47	10.970	
3,000.0	2,998.0	2,991.0	2,983.8	6.6	6.9	-69.34	-103.7	-138.1	143.9	131.0	12.93	11.125	
3,100.0	3,097.7	3,090.6	3,082.9	6.8	7.2	-71.20	-110.6	-145.4	151.2	137.8	13.41	11.277	
3,200.0	3,197.4	3,190.2	3,182.0	7.1	7.5	-72.89	-117.5	-152.7	158.6	144.8	13.88	11.426	
3,300.0	3,297.1	3,289.8	3,281.1	7.3	7.8	-74.42	-124.4	-160.1	166.2	151.8	14.37	11.569	
3,400.0	3,396.9	3,389.4	3,380.3	7.6	8.0	-75.82	-131.2	-167.4	173.9	159.0	14.85	11.708	
3,500.0	3,496.6	3,489.1	3,479.4	7.8	8.3	-77.11	-138.1	-174.7	181.7	166.3	15.34	11.841	
3,600.0	3,596.3	3,588.7	3,578.5	8.1	8.6	-78.28	-145.0	-182.0	189.5	173.7	15.84	11.969	
3,700.0	3,696.0	3,688.3	3,677.6	8.3	8.9	-79.37	-151.9	-189.3	197.5	181.1	16.33	12.092	
3,800.0	3,795.7	3,787.9	3,776.7	8.6	9.2	-80.37	-158.8	-196.6	205.5	188.6	16.83	12.209	
3,900.0	3,895.4	3,887.5	3,875.8	8.8	9.5	-81.29	-165.6	-203.9	213.5	196.2	17.33	12.322	
4,000.0	3,995.2	3,987.2	3,974.9	9.1	9.8	-82.15	-172.5	-211.3	221.6	203.8	17.83	12.429	
4,100.0	4,094.9	4,086.8	4,074.0	9.3	10.1	-82.94	-179.4	-218.6	229.8	211.5	18.34	12.532	
4,200.0	4,194.6	4,186.4	4,173.1	9.6	10.3	-83.68	-186.3	-225.9	238.0	219.1	18.84	12.630	
4,300.0	4,294.3	4,286.0	4,272.3	9.8	10.6	-84.38	-193.2	-233.2	246.2	226.9	19.35	12.724	
4,400.0	4,394.0	4,385.6	4,371.4	10.1	10.9	-85.02	-200.0	-240.5	254.5	234.6	19.86	12.814	
4,500.0	4,493.7	4,485.2	4,470.5	10.3	11.2	-85.63	-206.9	-247.8	262.8	242.4	20.37	12.900	
4,600.0	4,593.5	4,584.9	4,569.6	10.6	11.5	-86.20	-213.8	-255.1	271.1	250.2	20.88	12.983	
4,700.0	4,693.2	4,684.5	4,668.7	10.8	11.8	-86.73	-220.7	-262.4	279.4	258.0	21.39	13.061	
4,800.0	4,792.9	4,784.1	4,767.8	11.1	12.1	-87.24	-227.6	-269.8	287.8	265.9	21.91	13.137	
4,900.0	4,892.6	4,883.7	4,866.9	11.3	12.4	-87.71	-234.4	-277.1	296.2	273.8	22.42	13.210	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,992.3	4,983.3	4,966.0	11.6	12.7	-88.16	-241.3	-284.4	304.6	281.7	22.94	13.280	
5,100.0	5,092.1	5,082.9	5,065.1	11.9	13.0	-88.59	-248.2	-291.7	313.0	289.6	23.46	13.346	
5,200.0	5,191.8	5,182.6	5,164.3	12.1	13.3	-88.99	-255.1	-299.0	321.5	297.5	23.97	13.411	
5,300.0	5,291.5	5,282.2	5,263.4	12.4	13.6	-89.37	-262.0	-306.3	329.9	305.5	24.49	13.473	
5,400.0	5,391.2	5,381.8	5,362.5	12.6	13.9	-89.74	-268.8	-313.6	338.4	313.4	25.01	13.532	
5,500.0	5,490.9	5,487.1	5,467.3	12.9	14.1	-90.15	-275.7	-321.0	346.5	321.0	25.53	13.572	
5,594.1	5,584.8	5,591.7	5,571.7	13.1	14.3	-90.85	-280.2	-325.8	351.5	325.5	26.00	13.519	
5,600.0	5,590.6	5,598.2	5,578.2	13.1	14.4	-90.91	-280.4	-326.0	351.7	325.7	26.03	13.513	
5,700.0	5,690.5	5,709.5	5,689.4	13.3	14.5	-91.72	-282.2	-327.8	353.8	327.3	26.45	13.374	
5,809.5	5,800.0	5,820.1	5,800.0	13.5	14.7	-167.95	-282.2	-327.9	353.9	327.1	26.79	13.207	
5,900.0	5,890.5	5,910.5	5,890.5	13.7	14.9	-167.95	-282.2	-327.9	353.9	326.7	27.13	13.045	
6,000.0	5,990.5	6,013.3	5,993.2	13.9	15.0	-168.04	-282.2	-327.3	353.8	326.3	27.51	12.859	
6,054.9	6,045.4	6,073.7	6,053.5	14.0	15.1	-168.78	-282.2	-322.7	352.9	325.2	27.70	12.743	
6,100.0	6,090.4	6,122.7	6,101.9	14.1	15.2	100.36	-282.2	-315.4	351.9	323.9	27.96	12.585	
6,150.0	6,140.2	6,176.6	6,154.5	14.2	15.2	99.37	-282.2	-303.8	350.8	322.7	28.09	12.488	
6,200.0	6,189.6	6,230.0	6,205.7	14.2	15.2	98.33	-282.2	-288.7	349.8	321.6	28.20	12.405	
6,250.0	6,238.3	6,282.9	6,255.3	14.3	15.2	97.25	-282.2	-270.3	348.9	320.6	28.29	12.333	
6,300.0	6,286.3	6,335.2	6,302.9	14.3	15.2	96.14	-282.2	-248.8	348.1	319.7	28.38	12.268	
6,350.0	6,333.2	6,387.0	6,348.6	14.3	15.2	95.01	-282.2	-224.2	347.4	319.0	28.46	12.206	
6,400.0	6,378.8	6,438.4	6,392.1	14.4	15.2	93.86	-282.2	-196.9	346.9	318.3	28.57	12.141	
6,450.0	6,423.1	6,489.2	6,433.2	14.4	15.2	92.70	-282.2	-167.1	346.5	317.8	28.71	12.067	
6,500.0	6,465.7	6,539.5	6,471.9	14.5	15.2	91.52	-282.2	-134.9	346.2	317.3	28.90	11.979	
6,550.0	6,506.5	6,589.4	6,508.0	14.5	15.2	90.35	-282.2	-100.6	346.1	316.9	29.16	11.869	
6,564.9	6,518.3	6,604.1	6,518.3	14.6	15.2	90.00	-282.2	-90.0	346.1	316.8	29.25	11.831	
6,600.0	6,545.4	6,638.8	6,541.6	14.7	15.3	89.18	-282.2	-64.4	346.1	316.6	29.50	11.734	
6,650.0	6,582.1	6,687.7	6,572.4	14.8	15.3	88.02	-282.2	-26.4	346.3	316.4	29.94	11.567	
6,700.0	6,616.5	6,736.2	6,600.6	15.1	15.5	86.87	-282.2	13.1	346.6	316.1	30.49	11.368	
6,750.0	6,648.5	6,784.3	6,625.9	15.4	15.9	85.74	-282.2	54.0	347.1	315.9	31.17	11.135	
6,800.0	6,677.8	6,832.0	6,648.5	15.7	16.3	84.64	-282.2	96.0	347.6	315.7	31.98	10.871	
6,850.0	6,704.5	6,879.4	6,668.2	16.2	16.9	83.56	-282.2	139.0	348.3	315.4	32.92	10.580	
6,900.0	6,728.4	6,926.3	6,685.1	16.7	17.5	82.52	-282.2	182.8	349.1	315.1	34.00	10.266	
6,950.0	6,749.3	6,973.0	6,699.2	17.3	18.2	81.52	-282.2	227.3	350.0	314.8	35.22	9.938	
7,000.0	6,767.2	7,019.3	6,710.5	18.0	18.9	80.55	-282.2	272.2	350.9	314.4	36.55	9.601	
7,050.0	6,782.0	7,065.3	6,719.1	18.8	19.7	79.63	-282.2	317.4	351.9	313.9	38.00	9.261	
7,100.0	6,793.7	7,111.0	6,724.8	19.6	20.6	78.76	-282.2	362.7	352.9	313.4	39.55	8.925	
7,150.0	6,802.1	7,156.4	6,727.8	20.5	21.5	77.93	-282.2	408.1	354.0	312.8	41.18	8.596	
7,200.0	6,807.4	7,202.8	6,728.2	21.5	22.4	77.16	-282.2	454.4	355.0	312.1	42.91	8.274	
7,250.0	6,809.3	7,252.8	6,727.8	22.5	23.5	76.75	-282.2	504.4	355.5	310.7	44.85	7.928	
7,260.9	6,809.3	7,263.7	6,727.8	22.7	23.7	76.74	-282.2	515.3	355.6	310.3	45.29	7.851	
7,300.0	6,809.0	7,302.8	6,727.5	23.5	24.5	76.74	-282.2	554.4	355.6	308.7	46.88	7.584	
7,400.0	6,808.2	7,402.8	6,726.7	25.7	26.8	76.74	-282.2	654.4	355.6	304.4	51.18	6.947	
7,500.0	6,807.4	7,502.8	6,725.9	27.9	29.1	76.75	-282.2	754.4	355.6	299.9	55.69	6.385	
7,600.0	6,806.7	7,602.8	6,725.2	30.3	31.6	76.75	-282.2	854.4	355.6	295.2	60.35	5.891	
7,700.0	6,805.9	7,702.8	6,724.4	32.7	34.0	76.75	-282.2	954.4	355.5	290.4	65.15	5.458	
7,800.0	6,805.1	7,802.8	6,723.6	35.2	36.6	76.75	-282.2	1,054.4	355.5	285.5	70.04	5.076	
7,900.0	6,804.3	7,902.8	6,722.9	37.8	39.1	76.76	-282.2	1,154.4	355.5	280.5	75.02	4.739	
8,000.0	6,803.5	8,002.8	6,722.1	40.3	41.7	76.76	-282.2	1,254.4	355.5	275.5	80.06	4.441	
8,100.0	6,802.7	8,102.8	6,721.3	42.9	44.4	76.76	-282.2	1,354.3	355.5	270.4	85.15	4.175	
8,200.0	6,801.9	8,202.8	6,720.5	45.6	47.0	76.76	-282.2	1,454.3	355.5	265.2	90.29	3.937	
8,300.0	6,801.2	8,302.8	6,719.8	48.2	49.7	76.77	-282.2	1,554.3	355.5	260.1	95.47	3.724	
8,400.0	6,800.4	8,402.8	6,719.0	50.9	52.3	76.77	-282.2	1,654.3	355.5	254.8	100.68	3.531	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,500.0	6,799.6	8,502.8	6,718.2	53.6	55.0	76.77	-282.2	1,754.3	355.5	249.6	105.92	3.356	
8,600.0	6,798.8	8,602.8	6,717.5	56.3	57.7	76.78	-282.2	1,854.3	355.5	244.3	111.18	3.198	
8,700.0	6,798.0	8,702.8	6,716.7	59.0	60.4	76.78	-282.2	1,954.3	355.5	239.0	116.46	3.053	
8,800.0	6,797.2	8,802.8	6,715.9	61.7	63.2	76.78	-282.2	2,054.3	355.5	233.7	121.76	2.920	
8,900.0	6,796.4	8,902.8	6,715.2	64.4	65.9	76.78	-282.2	2,154.3	355.5	228.4	127.07	2.798	
9,000.0	6,795.7	9,002.8	6,714.4	67.1	68.6	76.79	-282.2	2,254.3	355.5	223.1	132.40	2.685	
9,100.0	6,794.9	9,102.8	6,713.6	69.9	71.4	76.79	-282.2	2,354.3	355.5	217.8	137.74	2.581	
9,200.0	6,794.1	9,202.8	6,712.9	72.6	74.1	76.79	-282.2	2,454.3	355.5	212.4	143.09	2.484	
9,300.0	6,793.3	9,302.8	6,712.1	75.3	76.9	76.80	-282.2	2,554.3	355.5	207.0	148.45	2.395	
9,400.0	6,792.5	9,402.8	6,711.3	78.1	79.6	76.80	-282.2	2,654.3	355.5	201.7	153.82	2.311	
9,500.0	6,791.7	9,502.8	6,710.6	80.8	82.4	76.80	-282.2	2,754.3	355.5	196.3	159.20	2.233	
9,600.0	6,790.9	9,602.8	6,709.8	83.6	85.1	76.80	-282.2	2,854.3	355.5	190.9	164.58	2.160	
9,700.0	6,790.2	9,702.8	6,709.0	86.4	87.9	76.81	-282.2	2,954.3	355.5	185.5	169.97	2.091	
9,800.0	6,789.4	9,802.8	6,708.3	89.1	90.7	76.81	-282.2	3,054.3	355.5	180.1	175.36	2.027	
9,900.0	6,788.6	9,902.8	6,707.5	91.9	93.4	76.81	-282.2	3,154.3	355.5	174.7	180.76	1.966	
10,000.0	6,787.8	10,002.8	6,706.7	94.7	96.2	76.81	-282.2	3,254.3	355.5	169.3	186.17	1.909	
10,100.0	6,787.0	10,102.8	6,706.0	97.4	99.0	76.82	-282.2	3,354.3	355.5	163.9	191.58	1.855	
10,200.0	6,786.2	10,202.8	6,705.2	100.2	101.7	76.82	-282.2	3,454.3	355.4	158.5	196.99	1.804	
10,300.0	6,785.4	10,302.8	6,704.4	103.0	104.5	76.82	-282.2	3,554.3	355.4	153.0	202.41	1.756	
10,400.0	6,784.7	10,402.8	6,703.7	105.8	107.3	76.83	-282.2	3,654.3	355.4	147.6	207.83	1.710	
10,500.0	6,783.9	10,502.8	6,702.9	108.5	110.1	76.83	-282.2	3,754.3	355.4	142.2	213.26	1.667	
10,600.0	6,783.1	10,602.8	6,702.1	111.3	112.9	76.83	-282.2	3,854.3	355.4	136.8	218.68	1.625	
10,700.0	6,782.3	10,702.8	6,701.3	114.1	115.7	76.83	-282.2	3,954.3	355.4	131.3	224.11	1.586	
10,800.0	6,781.5	10,802.8	6,700.6	116.9	118.4	76.84	-282.2	4,054.3	355.4	125.9	229.54	1.548	
10,900.0	6,780.7	10,902.8	6,699.8	119.7	121.2	76.84	-282.2	4,154.3	355.4	120.4	234.98	1.513	
11,000.0	6,780.0	11,002.8	6,699.0	122.5	124.0	76.84	-282.2	4,254.3	355.4	115.0	240.42	1.478	Level 3
11,100.0	6,779.2	11,102.8	6,698.3	125.2	126.8	76.84	-282.2	4,354.3	355.4	109.6	245.85	1.446	Level 3
11,200.0	6,778.4	11,202.8	6,697.5	128.0	129.6	76.85	-282.2	4,454.3	355.4	104.1	251.30	1.414	Level 3
11,300.0	6,777.6	11,302.8	6,696.7	130.8	132.4	76.85	-282.2	4,554.3	355.4	98.7	256.74	1.384	Level 3
11,400.0	6,776.8	11,402.8	6,696.0	133.6	135.2	76.85	-282.2	4,654.3	355.4	93.2	262.18	1.356	Level 3
11,500.0	6,776.0	11,502.8	6,695.2	136.4	138.0	76.86	-282.2	4,754.2	355.4	87.8	267.63	1.328	Level 3
11,600.0	6,775.2	11,602.8	6,694.4	139.2	140.7	76.86	-282.2	4,854.2	355.4	82.3	273.08	1.301	Level 3
11,700.0	6,774.5	11,702.8	6,693.7	142.0	143.5	76.86	-282.2	4,954.2	355.4	76.9	278.53	1.276	Level 3
11,800.0	6,773.7	11,802.8	6,692.9	144.8	146.3	76.86	-282.2	5,054.2	355.4	71.4	283.98	1.251	Level 3
11,900.0	6,772.9	11,902.8	6,692.1	147.6	149.1	76.87	-282.2	5,154.2	355.4	66.0	289.43	1.228	Level 2
12,000.0	6,772.1	12,002.8	6,691.4	150.4	151.9	76.87	-282.2	5,254.2	355.4	60.5	294.88	1.205	Level 2
12,100.0	6,771.3	12,102.8	6,690.6	153.2	154.7	76.87	-282.2	5,354.2	355.4	55.0	300.34	1.183	Level 2
12,200.0	6,770.5	12,202.8	6,689.8	156.0	157.5	76.87	-282.2	5,454.2	355.4	49.6	305.79	1.162	Level 2
12,300.0	6,769.7	12,302.8	6,689.1	158.7	160.3	76.88	-282.2	5,554.2	355.4	44.1	311.25	1.142	Level 2
12,400.0	6,769.0	12,402.8	6,688.3	161.5	163.1	76.88	-282.2	5,654.2	355.4	38.7	316.71	1.122	Level 2
12,500.0	6,768.2	12,502.8	6,687.5	164.3	165.9	76.88	-282.2	5,754.2	355.4	33.2	322.17	1.103	Level 2
12,600.0	6,767.4	12,602.8	6,686.8	167.1	168.7	76.89	-282.2	5,854.2	355.4	27.7	327.62	1.085	Level 2
12,700.0	6,766.6	12,702.8	6,686.0	169.9	171.5	76.89	-282.2	5,954.2	355.4	22.3	333.09	1.067	Level 2
12,800.0	6,765.8	12,802.8	6,685.2	172.7	174.3	76.89	-282.2	6,054.2	355.3	16.8	338.55	1.050	Level 2
12,900.0	6,765.0	12,902.8	6,684.5	175.5	177.1	76.89	-282.2	6,154.2	355.3	11.3	344.01	1.033	Level 2
13,000.0	6,764.2	13,002.8	6,683.7	178.3	179.9	76.90	-282.2	6,254.2	355.3	5.9	349.47	1.017	Level 2
13,100.0	6,763.5	13,102.8	6,682.9	181.1	182.7	76.90	-282.2	6,354.2	355.3	0.4	354.94	1.001	Level 2
13,200.0	6,762.7	13,202.8	6,682.2	183.9	185.5	76.90	-282.2	6,454.2	355.3	-5.1	360.40	0.986	Level 1
13,300.0	6,761.9	13,302.8	6,681.4	186.7	188.3	76.90	-282.2	6,554.2	355.3	-10.5	365.86	0.971	Level 1
13,400.0	6,761.1	13,402.8	6,680.6	189.5	191.1	76.91	-282.2	6,654.2	355.3	-16.0	371.33	0.957	Level 1
13,500.0	6,760.3	13,502.8	6,679.8	192.3	193.9	76.91	-282.2	6,754.2	355.3	-21.5	376.80	0.943	Level 1

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Schneider 19Q-HZ Pad Sec.19-T5N-R64W - Schneider 19Q-202 - Wellbore #1 - Plan #3 (7-20-15)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

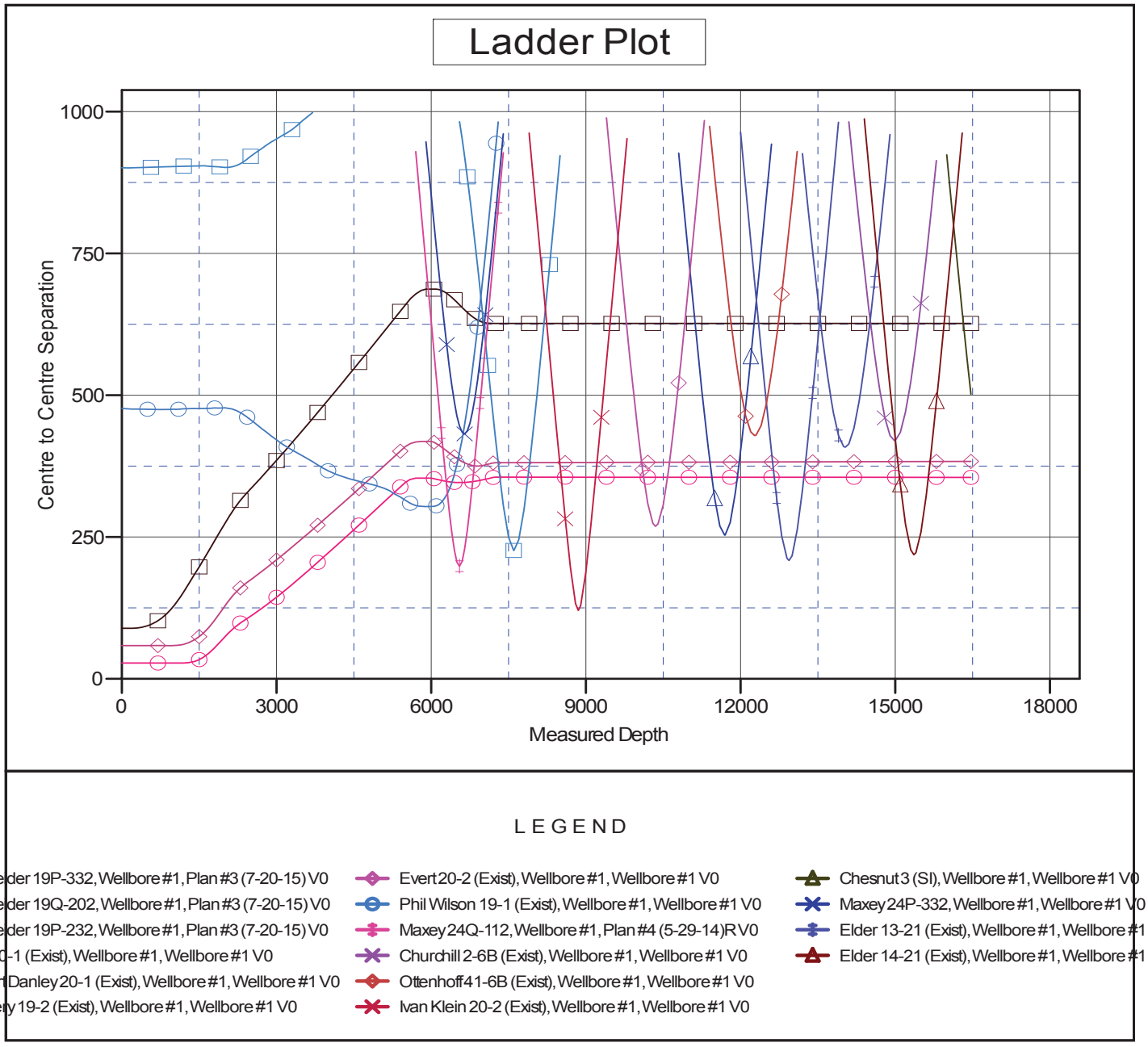
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,600.0	6,759.5	13,602.8	6,679.1	195.1	196.7	76.91	-282.2	6,854.2	355.3	-26.9	382.26	0.930	Level 1
13,700.0	6,758.7	13,702.8	6,678.3	197.9	199.5	76.92	-282.2	6,954.2	355.3	-32.4	387.73	0.916	Level 1
13,800.0	6,758.0	13,802.8	6,677.5	200.7	202.3	76.92	-282.2	7,054.2	355.3	-37.9	393.20	0.904	Level 1
13,900.0	6,757.2	13,902.8	6,676.8	203.5	205.1	76.92	-282.2	7,154.2	355.3	-43.4	398.67	0.891	Level 1
14,000.0	6,756.4	14,002.8	6,676.0	206.3	207.9	76.92	-282.2	7,254.2	355.3	-48.8	404.14	0.879	Level 1
14,100.0	6,755.6	14,102.8	6,675.2	209.1	210.7	76.93	-282.2	7,354.2	355.3	-54.3	409.61	0.867	Level 1
14,200.0	6,754.8	14,202.8	6,674.5	211.9	213.5	76.93	-282.2	7,454.2	355.3	-59.8	415.08	0.856	Level 1
14,300.0	6,754.0	14,302.8	6,673.7	214.7	216.3	76.93	-282.2	7,554.2	355.3	-65.3	420.55	0.845	Level 1
14,400.0	6,753.2	14,402.8	6,672.9	217.5	219.1	76.94	-282.2	7,654.2	355.3	-70.7	426.02	0.834	Level 1
14,500.0	6,752.5	14,502.8	6,672.2	220.3	221.9	76.94	-282.2	7,754.2	355.3	-76.2	431.49	0.823	Level 1
14,600.0	6,751.7	14,602.8	6,671.4	223.1	224.7	76.94	-282.2	7,854.2	355.3	-81.7	436.97	0.813	Level 1
14,700.0	6,750.9	14,702.8	6,670.6	225.9	227.5	76.94	-282.2	7,954.2	355.3	-87.2	442.44	0.803	Level 1
14,800.0	6,750.1	14,802.8	6,669.9	228.7	230.3	76.95	-282.2	8,054.2	355.3	-92.6	447.91	0.793	Level 1
14,900.0	6,749.3	14,902.8	6,669.1	231.6	233.1	76.95	-282.2	8,154.1	355.3	-98.1	453.39	0.784	Level 1
15,000.0	6,748.5	15,002.8	6,668.3	234.4	235.9	76.95	-282.2	8,254.1	355.3	-103.6	458.86	0.774	Level 1
15,100.0	6,747.8	15,102.8	6,667.6	237.2	238.7	76.95	-282.2	8,354.1	355.3	-109.1	464.33	0.765	Level 1
15,200.0	6,747.0	15,202.8	6,666.8	240.0	241.5	76.96	-282.2	8,454.1	355.3	-114.6	469.81	0.756	Level 1
15,300.0	6,746.2	15,302.8	6,666.0	242.8	244.3	76.96	-282.2	8,554.1	355.3	-120.0	475.28	0.747	Level 1
15,400.0	6,745.4	15,402.8	6,665.3	245.6	247.1	76.96	-282.2	8,654.1	355.2	-125.5	480.76	0.739	Level 1
15,500.0	6,744.6	15,502.8	6,664.5	248.4	249.9	76.97	-282.2	8,754.1	355.2	-131.0	486.24	0.731	Level 1
15,600.0	6,743.8	15,602.8	6,663.7	251.2	252.7	76.97	-282.2	8,854.1	355.2	-136.5	491.71	0.722	Level 1
15,700.0	6,743.0	15,702.8	6,663.0	254.0	255.6	76.97	-282.2	8,954.1	355.2	-142.0	497.19	0.714	Level 1
15,800.0	6,742.3	15,802.8	6,662.2	256.8	258.4	76.97	-282.2	9,054.1	355.2	-147.4	502.67	0.707	Level 1
15,900.0	6,741.5	15,902.8	6,661.4	259.6	261.2	76.98	-282.2	9,154.1	355.2	-152.9	508.14	0.699	Level 1
16,000.0	6,740.7	16,002.8	6,660.6	262.4	264.0	76.98	-282.2	9,254.1	355.2	-158.4	513.62	0.692	Level 1
16,100.0	6,739.9	16,102.8	6,659.9	265.2	266.8	76.98	-282.2	9,354.1	355.2	-163.9	519.10	0.684	Level 1
16,200.0	6,739.1	16,202.8	6,659.1	268.0	269.6	76.98	-282.2	9,454.1	355.2	-169.4	524.58	0.677	Level 1
16,300.0	6,738.3	16,302.8	6,658.3	270.8	272.4	76.99	-282.2	9,554.1	355.2	-174.8	530.06	0.670	Level 1
16,400.0	6,737.5	16,402.8	6,657.6	273.6	275.2	76.99	-282.2	9,654.1	355.2	-180.3	535.51	0.663	Level 1
16,468.8	6,737.0	16,471.5	6,657.0	275.5	276.4	76.99	-282.2	9,722.9	355.2	-183.4	538.61	0.659	Level 1
16,469.7	6,737.0	16,472.5	6,657.0	275.6	276.4	76.99	-282.2	9,723.8	355.2	-183.4	538.64	0.659	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

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

Coordinates are relative to: Schneider 19Q-312
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Schneider 19Q-312
Project:	SEC.19-T5N-R64W	**TVD Reference:**	WELL @ 4668.0ft (RKB -15')
Reference Site:	Schneider 19Q-HZ Pad Sec.19-T5N-R64W	**MD Reference:**	WELL @ 4668.0ft (RKB -15')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Schneider 19Q-312	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-20-15)	**Offset TVD Reference:**	Offset Datum

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

Coordinates are relative to: Schneider 19Q-312
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°