PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Stroh 13K-243**

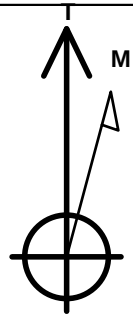
Surface Location: Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4805.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1356827.99	3183228.13	40.311030	-104.842970	

Original Well Elev WELL @ 4820.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2353'FSL & 1586' FWL, Sec.13	1.0	0.0	0.0	Point
BHL 500' FSL & 897' FWL, Sec.24	7048.0	-7114.9	-674.4	Point



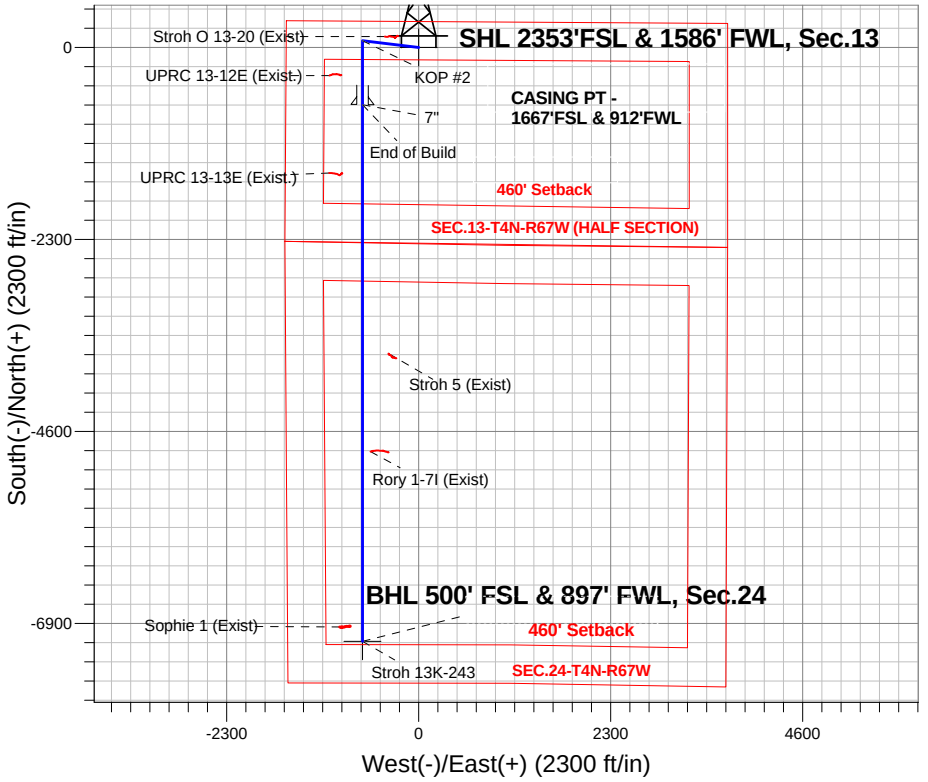
Azimuths to True North
Magnetic North: 8.42°

Magnetic Field
Strength: 52703.2snT
Dip Angle: 66.84°
Date: 12/31/2014
Model: IGRF2010

Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
Stroh 13K-243
Plan #3 (1-28-15)

ANNOTATIONS

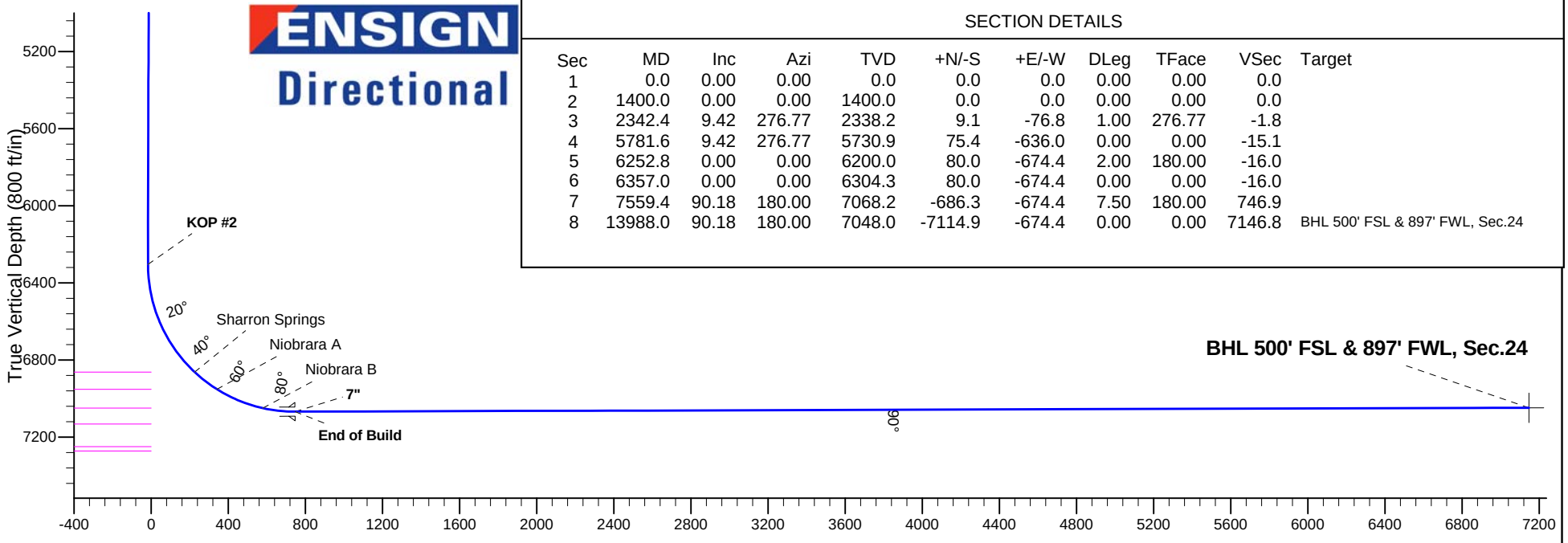
TVD	MD	Annotation
1400.0	1400.0	KOP #1
6304.3	6357.0	KOP #2
7068.2	7559.4	End of Build



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	2342.4	9.42	276.77	2338.2	9.1	-76.8	1.00	276.77	-1.8	
4	5781.6	9.42	276.77	5730.9	75.4	-636.0	0.00	0.00	-15.1	
5	6252.8	0.00	0.00	6200.0	80.0	-674.4	2.00	180.00	-16.0	
6	6357.0	0.00	0.00	6304.3	80.0	-674.4	0.00	0.00	-16.0	
7	7559.4	90.18	180.00	7068.2	-686.3	-674.4	7.50	180.00	746.9	
8	13988.0	90.18	180.00	7048.0	-7114.9	-674.4	0.00	0.00	7146.8	BHL 500' FSL & 897' FWL, Sec.24



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.13-T4N-R67W
Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
Stroh 13K-243

Wellbore #1

Plan: Plan #3 (1-28-15)

Standard Planning Report

30 January, 2015

Database:	landmark	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Project:	SEC.13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**North Reference:**	True
Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (1-28-15)		

Project SEC.13-T4N-R67W, Weld County, Colorado

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 Stroh 13GK-HZ Pad Sec. 13-T4N-R67W

Site Position:		**Northing:**	1,356,827.56 ft	**Latitude:**	40.311030
From:	Lat/Long	**Easting:**	3,183,166.78 ft	**Longitude:**	-104.843190
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.42 °

Well Stroh 13K-243

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,356,827.99 ft	**Latitude:**	40.311030
	+E/-W	61.4 ft	**Easting:**	3,183,228.13 ft	**Longitude:**	-104.842970
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,805.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/31/2014	8.42	66.84	52,703

Design Plan #3 (1-28-15)

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	185.41

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,342.4	9.42	276.77	2,338.2	9.1	-76.8	1.00	1.00	0.00	276.77	
5,781.6	9.42	276.77	5,730.9	75.4	-636.0	0.00	0.00	0.00	0.00	
6,252.8	0.00	0.00	6,200.0	80.0	-674.4	2.00	-2.00	0.00	180.00	
6,357.0	0.00	0.00	6,304.3	80.0	-674.4	0.00	0.00	0.00	0.00	
7,559.4	90.18	180.00	7,068.2	-686.3	-674.4	7.50	7.50	0.00	180.00	
13,988.0	90.18	180.00	7,048.0	-7,114.9	-674.4	0.00	0.00	0.00	0.00	BHL 500' FSL & 89

Database:	landmark	**Local Co-ordinate Reference:**	Well Stroh 13K-243
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Project:	SEC.13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**North Reference:**	True
Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (1-28-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
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
KOP #1									
1,500.0	1.00	276.77	1,500.0	0.1	-0.9	0.0	1.00	1.00	0.00
1,600.0	2.00	276.77	1,600.0	0.4	-3.5	-0.1	1.00	1.00	0.00
1,700.0	3.00	276.77	1,699.9	0.9	-7.8	-0.2	1.00	1.00	0.00
1,800.0	4.00	276.77	1,799.7	1.6	-13.9	-0.3	1.00	1.00	0.00
1,900.0	5.00	276.77	1,899.4	2.6	-21.7	-0.5	1.00	1.00	0.00
2,000.0	6.00	276.77	1,998.9	3.7	-31.2	-0.7	1.00	1.00	0.00
2,100.0	7.00	276.77	2,098.3	5.0	-42.4	-1.0	1.00	1.00	0.00
2,200.0	8.00	276.77	2,197.4	6.6	-55.4	-1.3	1.00	1.00	0.00
2,300.0	9.00	276.77	2,296.3	8.3	-70.0	-1.7	1.00	1.00	0.00
2,342.4	9.42	276.77	2,338.2	9.1	-76.8	-1.8	1.00	1.00	0.00
2,400.0	9.42	276.77	2,395.0	10.2	-86.2	-2.0	0.00	0.00	0.00
2,500.0	9.42	276.77	2,493.6	12.1	-102.4	-2.4	0.00	0.00	0.00
2,600.0	9.42	276.77	2,592.3	14.1	-118.7	-2.8	0.00	0.00	0.00
2,700.0	9.42	276.77	2,690.9	16.0	-134.9	-3.2	0.00	0.00	0.00
2,800.0	9.42	276.77	2,789.6	17.9	-151.2	-3.6	0.00	0.00	0.00
2,900.0	9.42	276.77	2,888.2	19.9	-167.5	-4.0	0.00	0.00	0.00
3,000.0	9.42	276.77	2,986.9	21.8	-183.7	-4.4	0.00	0.00	0.00
3,100.0	9.42	276.77	3,085.5	23.7	-200.0	-4.7	0.00	0.00	0.00
3,200.0	9.42	276.77	3,184.2	25.7	-216.2	-5.1	0.00	0.00	0.00
3,300.0	9.42	276.77	3,282.8	27.6	-232.5	-5.5	0.00	0.00	0.00
3,400.0	9.42	276.77	3,381.5	29.5	-248.8	-5.9	0.00	0.00	0.00
3,500.0	9.42	276.77	3,480.1	31.4	-265.0	-6.3	0.00	0.00	0.00
3,600.0	9.42	276.77	3,578.8	33.4	-281.3	-6.7	0.00	0.00	0.00
3,700.0	9.42	276.77	3,677.4	35.3	-297.5	-7.1	0.00	0.00	0.00
3,800.0	9.42	276.77	3,776.1	37.2	-313.8	-7.4	0.00	0.00	0.00
3,900.0	9.42	276.77	3,874.7	39.2	-330.1	-7.8	0.00	0.00	0.00
4,000.0	9.42	276.77	3,973.4	41.1	-346.3	-8.2	0.00	0.00	0.00
4,100.0	9.42	276.77	4,072.0	43.0	-362.6	-8.6	0.00	0.00	0.00
4,200.0	9.42	276.77	4,170.7	44.9	-378.8	-9.0	0.00	0.00	0.00
4,300.0	9.42	276.77	4,269.3	46.9	-395.1	-9.4	0.00	0.00	0.00
4,400.0	9.42	276.77	4,368.0	48.8	-411.4	-9.8	0.00	0.00	0.00
4,500.0	9.42	276.77	4,466.6	50.7	-427.6	-10.1	0.00	0.00	0.00
4,600.0	9.42	276.77	4,565.3	52.7	-443.9	-10.5	0.00	0.00	0.00
4,700.0	9.42	276.77	4,663.9	54.6	-460.1	-10.9	0.00	0.00	0.00
4,800.0	9.42	276.77	4,762.6	56.5	-476.4	-11.3	0.00	0.00	0.00
4,900.0	9.42	276.77	4,861.2	58.4	-492.7	-11.7	0.00	0.00	0.00
5,000.0	9.42	276.77	4,959.9	60.4	-508.9	-12.1	0.00	0.00	0.00

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Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**North Reference:**	True
Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (1-28-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.0	9.42	276.77	5,058.5	62.3	-525.2	-12.5	0.00	0.00	0.00
5,200.0	9.42	276.77	5,157.2	64.2	-541.4	-12.8	0.00	0.00	0.00
5,300.0	9.42	276.77	5,255.8	66.2	-557.7	-13.2	0.00	0.00	0.00
5,400.0	9.42	276.77	5,354.5	68.1	-574.0	-13.6	0.00	0.00	0.00
5,500.0	9.42	276.77	5,453.1	70.0	-590.2	-14.0	0.00	0.00	0.00
5,600.0	9.42	276.77	5,551.8	71.9	-606.5	-14.4	0.00	0.00	0.00
5,700.0	9.42	276.77	5,650.4	73.9	-622.7	-14.8	0.00	0.00	0.00
5,781.6	9.42	276.77	5,730.9	75.4	-636.0	-15.1	0.00	0.00	0.00
5,800.0	9.06	276.77	5,749.1	75.8	-638.9	-15.2	2.00	-2.00	0.00
5,900.0	7.06	276.77	5,848.1	77.4	-652.9	-15.5	2.00	-2.00	0.00
6,000.0	5.06	276.77	5,947.5	78.7	-663.3	-15.7	2.00	-2.00	0.00
6,100.0	3.06	276.77	6,047.3	79.5	-670.4	-15.9	2.00	-2.00	0.00
6,200.0	1.06	276.77	6,147.2	79.9	-673.9	-16.0	2.00	-2.00	0.00
6,252.8	0.00	0.00	6,200.0	80.0	-674.4	-16.0	2.00	-2.00	0.00
6,300.0	0.00	0.00	6,247.2	80.0	-674.4	-16.0	0.00	0.00	0.00
6,357.0	0.00	0.00	6,304.2	80.0	-674.4	-16.0	0.00	0.00	0.00
KOP #2									
6,400.0	3.22	180.00	6,347.2	78.8	-674.4	-14.8	7.49	7.49	0.00
6,500.0	10.72	180.00	6,446.4	66.7	-674.4	-2.7	7.50	7.50	0.00
6,600.0	18.22	180.00	6,543.1	41.7	-674.4	22.1	7.50	7.50	0.00
6,700.0	25.72	180.00	6,635.8	4.3	-674.4	59.4	7.50	7.50	0.00
6,800.0	33.22	180.00	6,722.8	-44.9	-674.4	108.3	7.50	7.50	0.00
6,900.0	40.72	180.00	6,802.6	-105.0	-674.4	168.1	7.50	7.50	0.00
6,983.8	47.00	180.00	6,863.0	-163.0	-674.4	225.9	7.50	7.50	0.00
Sharron Springs									
7,000.0	48.22	180.00	6,874.0	-175.0	-674.4	237.8	7.50	7.50	0.00
7,100.0	55.72	180.00	6,935.5	-253.7	-674.4	316.2	7.50	7.50	0.00
7,130.2	57.98	180.00	6,952.0	-278.9	-674.4	341.3	7.50	7.50	0.00
Niobrara A									
7,200.0	63.22	180.00	6,986.3	-339.8	-674.4	401.9	7.50	7.50	0.00
7,300.0	70.72	180.00	7,025.4	-431.7	-674.4	493.4	7.50	7.50	0.00
7,390.0	77.47	180.00	7,050.0	-518.2	-674.4	579.5	7.50	7.50	0.00
Niobrara B									
7,400.0	78.22	180.00	7,052.1	-528.0	-674.4	589.3	7.50	7.50	0.00
7,500.0	85.72	180.00	7,066.1	-627.0	-674.4	687.8	7.50	7.50	0.00
7,559.4	90.18	180.00	7,068.2	-686.3	-674.4	746.9	7.50	7.50	0.00
End of Build - 7"									
7,600.0	90.18	180.00	7,068.1	-726.9	-674.4	787.3	0.01	0.01	0.00
7,700.0	90.18	180.00	7,067.8	-826.9	-674.4	886.9	0.00	0.00	0.00
7,800.0	90.18	180.00	7,067.4	-926.9	-674.4	986.4	0.00	0.00	0.00
7,900.0	90.18	180.00	7,067.1	-1,026.9	-674.4	1,086.0	0.00	0.00	0.00
8,000.0	90.18	180.00	7,066.8	-1,126.9	-674.4	1,185.5	0.00	0.00	0.00
8,100.0	90.18	180.00	7,066.5	-1,226.9	-674.4	1,285.1	0.00	0.00	0.00
8,200.0	90.18	180.00	7,066.2	-1,326.9	-674.4	1,384.6	0.00	0.00	0.00
8,300.0	90.18	180.00	7,065.9	-1,426.9	-674.4	1,484.2	0.00	0.00	0.00
8,400.0	90.18	180.00	7,065.6	-1,526.9	-674.4	1,583.7	0.00	0.00	0.00
8,500.0	90.18	180.00	7,065.2	-1,626.9	-674.4	1,683.3	0.00	0.00	0.00
8,600.0	90.18	180.00	7,064.9	-1,726.9	-674.4	1,782.8	0.00	0.00	0.00
8,700.0	90.18	180.00	7,064.6	-1,826.9	-674.4	1,882.4	0.00	0.00	0.00
8,800.0	90.18	180.00	7,064.3	-1,926.9	-674.4	1,981.9	0.00	0.00	0.00
8,900.0	90.18	180.00	7,064.0	-2,026.9	-674.4	2,081.5	0.00	0.00	0.00
9,000.0	90.18	180.00	7,063.7	-2,126.9	-674.4	2,181.0	0.00	0.00	0.00
9,100.0	90.18	180.00	7,063.4	-2,226.9	-674.4	2,280.6	0.00	0.00	0.00

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Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**North Reference:**	True
Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (1-28-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,200.0	90.18	180.00	7,063.0	-2,326.9	-674.4	2,380.2	0.00	0.00	0.00
9,300.0	90.18	180.00	7,062.7	-2,426.9	-674.4	2,479.7	0.00	0.00	0.00
9,400.0	90.18	180.00	7,062.4	-2,526.9	-674.4	2,579.3	0.00	0.00	0.00
9,500.0	90.18	180.00	7,062.1	-2,626.9	-674.4	2,678.8	0.00	0.00	0.00
9,600.0	90.18	180.00	7,061.8	-2,726.9	-674.4	2,778.4	0.00	0.00	0.00
9,700.0	90.18	180.00	7,061.5	-2,826.9	-674.4	2,877.9	0.00	0.00	0.00
9,800.0	90.18	180.00	7,061.2	-2,926.9	-674.4	2,977.5	0.00	0.00	0.00
9,900.0	90.18	180.00	7,060.8	-3,026.9	-674.4	3,077.0	0.00	0.00	0.00
10,000.0	90.18	180.00	7,060.5	-3,126.9	-674.4	3,176.6	0.00	0.00	0.00
10,100.0	90.18	180.00	7,060.2	-3,226.9	-674.4	3,276.1	0.00	0.00	0.00
10,200.0	90.18	180.00	7,059.9	-3,326.9	-674.4	3,375.7	0.00	0.00	0.00
10,300.0	90.18	180.00	7,059.6	-3,426.9	-674.4	3,475.2	0.00	0.00	0.00
10,400.0	90.18	180.00	7,059.3	-3,526.9	-674.4	3,574.8	0.00	0.00	0.00
10,500.0	90.18	180.00	7,059.0	-3,626.9	-674.4	3,674.3	0.00	0.00	0.00
10,600.0	90.18	180.00	7,058.6	-3,726.9	-674.4	3,773.9	0.00	0.00	0.00
10,700.0	90.18	180.00	7,058.3	-3,826.9	-674.4	3,873.5	0.00	0.00	0.00
10,800.0	90.18	180.00	7,058.0	-3,926.9	-674.4	3,973.0	0.00	0.00	0.00
10,900.0	90.18	180.00	7,057.7	-4,026.9	-674.4	4,072.6	0.00	0.00	0.00
11,000.0	90.18	180.00	7,057.4	-4,126.9	-674.4	4,172.1	0.00	0.00	0.00
11,100.0	90.18	180.00	7,057.1	-4,226.9	-674.4	4,271.7	0.00	0.00	0.00
11,200.0	90.18	180.00	7,056.8	-4,326.9	-674.4	4,371.2	0.00	0.00	0.00
11,300.0	90.18	180.00	7,056.4	-4,426.9	-674.4	4,470.8	0.00	0.00	0.00
11,400.0	90.18	180.00	7,056.1	-4,526.9	-674.4	4,570.3	0.00	0.00	0.00
11,500.0	90.18	180.00	7,055.8	-4,626.9	-674.4	4,669.9	0.00	0.00	0.00
11,600.0	90.18	180.00	7,055.5	-4,726.9	-674.4	4,769.4	0.00	0.00	0.00
11,700.0	90.18	180.00	7,055.2	-4,826.9	-674.4	4,869.0	0.00	0.00	0.00
11,800.0	90.18	180.00	7,054.9	-4,926.9	-674.4	4,968.5	0.00	0.00	0.00
11,900.0	90.18	180.00	7,054.6	-5,026.9	-674.4	5,068.1	0.00	0.00	0.00
12,000.0	90.18	180.00	7,054.2	-5,126.9	-674.4	5,167.6	0.00	0.00	0.00
12,100.0	90.18	180.00	7,053.9	-5,226.9	-674.4	5,267.2	0.00	0.00	0.00
12,200.0	90.18	180.00	7,053.6	-5,326.9	-674.4	5,366.8	0.00	0.00	0.00
12,300.0	90.18	180.00	7,053.3	-5,426.9	-674.4	5,466.3	0.00	0.00	0.00
12,400.0	90.18	180.00	7,053.0	-5,526.9	-674.4	5,565.9	0.00	0.00	0.00
12,500.0	90.18	180.00	7,052.7	-5,626.9	-674.4	5,665.4	0.00	0.00	0.00
12,600.0	90.18	180.00	7,052.4	-5,726.9	-674.4	5,765.0	0.00	0.00	0.00
12,700.0	90.18	180.00	7,052.0	-5,826.9	-674.4	5,864.5	0.00	0.00	0.00
12,800.0	90.18	180.00	7,051.7	-5,926.9	-674.4	5,964.1	0.00	0.00	0.00
12,900.0	90.18	180.00	7,051.4	-6,026.9	-674.4	6,063.6	0.00	0.00	0.00
13,000.0	90.18	180.00	7,051.1	-6,126.9	-674.4	6,163.2	0.00	0.00	0.00
13,100.0	90.18	180.00	7,050.8	-6,226.9	-674.4	6,262.7	0.00	0.00	0.00
13,200.0	90.18	180.00	7,050.5	-6,326.9	-674.4	6,362.3	0.00	0.00	0.00
13,300.0	90.18	180.00	7,050.2	-6,426.9	-674.4	6,461.8	0.00	0.00	0.00
13,400.0	90.18	180.00	7,049.8	-6,526.9	-674.4	6,561.4	0.00	0.00	0.00
13,500.0	90.18	180.00	7,049.5	-6,626.9	-674.4	6,660.9	0.00	0.00	0.00
13,600.0	90.18	180.00	7,049.2	-6,726.9	-674.4	6,760.5	0.00	0.00	0.00
13,700.0	90.18	180.00	7,048.9	-6,826.9	-674.4	6,860.1	0.00	0.00	0.00
13,800.0	90.18	180.00	7,048.6	-6,926.9	-674.4	6,959.6	0.00	0.00	0.00
13,900.0	90.18	180.00	7,048.3	-7,026.9	-674.4	7,059.2	0.00	0.00	0.00
13,988.0	90.18	180.00	7,048.0	-7,114.9	-674.4	7,146.8	0.00	0.00	0.00

Database:	landmark	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Project:	SEC.13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**North Reference:**	True
Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (1-28-15)		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 2353'FSL & 158(- plan hits target - Point	0.00	0.00	1.0	0.0	0.0	1,356,828.01	3,183,228.13	40.311030	-104.842970
BHL 500' FSL & 897' I - plan hits target - Point	0.00	0.00	7,048.0	-7,114.9	-674.4	1,349,708.64	3,182,606.49	40.291500	-104.845387

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,559.4	7,068.2	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,983.8	6,863.0	Sharron Springs		0.00	
7,130.2	6,952.0	Niobrara A		0.00	
7,390.0	7,050.0	Niobrara B		0.00	
	7,132.0	Niobrara C		0.00	
	7,250.0	Ft Hays		0.00	
	7,272.0	Codell		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,400.0	1,400.0	0.0	0.0	KOP #1
6,357.0	6,304.3	9.1	-76.8	KOP #2
7,559.4	7,068.2	75.4	-636.0	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.13-T4N-R67W
Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
Stroh 13K-243

Wellbore #1
Plan #3 (1-28-15)

Anticollision Report

30 January, 2015

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Reference Plan #3 (1-28-15)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 1/30/2015

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,988.0	Plan #3 (1-28-15) (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 - Sec.13-T4N-R67W						
Rory 1-7I (Exist) - Wellbore #1 - Wellbore #1	11,713.8	6,967.0	105.0	-7.3	0.935	Level 1, CC, ES, SF
Sophie 1 (Exist) - Wellbore #1 - Wellbore #1	13,816.4	6,957.0	265.9	114.8	1.759	CC, ES, SF
Stroh 5 (Exist) - Wellbore #1 - Wellbore #1	10,543.9	7,045.4	312.5	223.7	3.519	CC, ES, SF
Existing Wells Sec.13-T4N-R67W (Grid North)						
Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1	3,654.0	3,620.9	83.3	65.5	4.679	CC, ES
Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1	3,700.0	3,666.4	83.6	65.5	4.625	SF
UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1	7,182.3	6,983.1	382.0	347.8	11.164	CC, ES
UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1	7,200.0	6,991.4	382.3	348.0	11.125	SF
UPRC 13-13E (Exist.) - Wellbore #1 - Wellbore #1	8,377.3	7,071.4	381.4	331.7	7.676	CC, ES
UPRC 13-13E (Exist.) - Wellbore #1 - Wellbore #1	8,400.0	7,071.3	382.1	332.0	7.631	SF
Stroh 13GK-HZ Pad Sec. 13-T4N-R67W						
Stroh 13G-203 - Wellbore #1 - Plan #2 (1-27-15)	166.3	167.3	61.4	60.8	116.826	CC
Stroh 13G-203 - Wellbore #1 - Plan #2 (1-27-15)	200.0	201.0	61.4	60.7	90.704	ES
Stroh 13G-203 - Wellbore #1 - Plan #2 (1-27-15)	13,988.0	14,242.0	820.7	544.8	2.974	SF
Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)	400.0	400.0	30.7	29.1	19.498	CC, ES
Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)	13,988.0	14,201.5	425.8	160.5	1.605	SF
Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)	1,400.0	1,400.0	58.6	52.5	9.651	CC, ES
Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)	13,988.0	14,136.1	845.4	569.7	3.067	SF
Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)	1,400.0	1,400.0	27.9	21.8	4.596	CC, ES
Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)	13,988.0	14,223.8	539.1	264.8	1.966	SF
Stroh 13O-343 - Wellbore #1 - Plan #2 (1-28-15)	1,200.0	1,199.0	89.2	84.1	17.271	CC, ES
Stroh 13O-343 - Wellbore #1 - Plan #2 (1-28-15)	1,500.0	1,494.5	97.2	90.8	15.060	SF

Offset Design Existing Wells - Sec.13-T4N-R67W - Rory 1-7I (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
10,800.0	7,058.0	6,964.0	6,960.2	77.8	18.0	-89.49	-4,840.6	-569.4	919.8	824.8	94.98	9.684	
10,900.0	7,057.7	6,964.4	6,960.6	79.7	18.0	-89.68	-4,840.6	-569.4	820.5	723.6	96.87	8.470	
11,000.0	7,057.4	6,964.7	6,960.9	81.6	18.0	-89.86	-4,840.6	-569.4	721.4	622.7	98.76	7.305	
11,100.0	7,057.1	6,965.0	6,961.2	83.4	18.0	-90.04	-4,840.7	-569.4	622.7	522.0	100.66	6.186	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Rory 1-7I (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
11,200.0	7,056.8	6,965.4	6,961.5	85.3	18.0	-90.22	-4,840.7	-569.4	524.4	421.8	102.55	5.113	
11,300.0	7,056.4	6,965.7	6,961.9	87.2	18.0	-90.39	-4,840.7	-569.4	426.9	322.4	104.44	4.087	
11,400.0	7,056.1	6,966.0	6,962.2	89.0	18.0	-90.57	-4,840.7	-569.4	330.9	224.5	106.34	3.111	
11,500.0	7,055.8	6,966.3	6,962.5	90.9	18.0	-90.74	-4,840.7	-569.4	238.2	129.9	108.23	2.200	
11,600.0	7,055.5	6,966.6	6,962.8	92.8	18.0	-90.91	-4,840.7	-569.4	154.8	44.7	110.13	1.406	Level 3
11,700.0	7,055.2	6,966.9	6,963.1	94.7	18.0	-91.08	-4,840.7	-569.4	105.9	-6.1	112.02	0.945	Level 1
11,713.8	7,055.1	6,967.0	6,963.2	94.9	18.0	-91.10	-4,840.7	-569.4	105.0	-7.3	112.28	0.935	Level 1, CC, ES, SF
11,800.0	7,054.9	6,967.2	6,963.4	96.6	18.0	-91.24	-4,840.7	-569.4	135.9	21.9	113.92	1.193	Level 2
11,900.0	7,054.6	6,967.5	6,963.7	98.4	18.0	-91.41	-4,840.7	-569.5	213.8	98.0	115.81	1.846	
12,000.0	7,054.2	6,967.8	6,964.0	100.3	18.0	-91.57	-4,840.7	-569.5	304.9	187.2	117.71	2.590	
12,100.0	7,053.9	6,968.1	6,964.3	102.2	18.0	-91.73	-4,840.7	-569.5	400.2	280.6	119.60	3.346	
12,200.0	7,053.6	6,968.4	6,964.6	104.1	18.0	-91.89	-4,840.7	-569.5	497.4	375.9	121.50	4.094	
12,300.0	7,053.3	6,968.7	6,964.9	106.0	18.0	-92.04	-4,840.7	-569.5	595.6	472.2	123.39	4.826	
12,400.0	7,053.0	6,969.0	6,965.2	107.9	18.0	-92.20	-4,840.7	-569.5	694.2	568.9	125.29	5.541	
12,500.0	7,052.7	6,969.3	6,965.5	109.8	18.0	-92.35	-4,840.7	-569.5	793.2	666.0	127.18	6.237	
12,600.0	7,052.4	6,969.5	6,965.7	111.7	18.0	-92.50	-4,840.7	-569.5	892.4	763.3	129.07	6.914	
12,700.0	7,052.0	6,969.8	6,966.0	113.5	18.0	-92.65	-4,840.7	-569.5	991.8	860.8	130.97	7.573	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Sophie 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
12,900.0	7,051.4	6,963.7	6,962.1	117.3	16.9	90.33	-6,943.3	-940.4	954.2	820.5	133.68	7.138	
13,000.0	7,051.1	6,963.0	6,961.4	119.2	16.9	90.18	-6,943.3	-940.4	858.6	723.0	135.59	6.333	
13,100.0	7,050.8	6,962.2	6,960.6	121.1	16.9	90.02	-6,943.3	-940.4	764.2	626.7	137.49	5.558	
13,200.0	7,050.5	6,961.5	6,959.9	123.0	16.9	89.86	-6,943.3	-940.4	671.3	531.9	139.40	4.816	
13,300.0	7,050.2	6,960.8	6,959.2	124.9	16.9	89.71	-6,943.3	-940.3	580.9	439.5	141.31	4.111	
13,400.0	7,049.8	6,960.1	6,958.4	126.8	16.9	89.55	-6,943.3	-940.3	494.1	350.9	143.21	3.450	
13,500.0	7,049.5	6,959.3	6,957.7	128.7	16.9	89.39	-6,943.3	-940.3	413.3	268.2	145.12	2.848	
13,600.0	7,049.2	6,958.6	6,957.0	130.6	16.9	89.23	-6,943.3	-940.3	342.9	195.8	147.03	2.332	
13,700.0	7,048.9	6,957.9	6,956.3	132.5	16.9	89.08	-6,943.3	-940.3	290.3	141.4	148.93	1.949	
13,800.0	7,048.6	6,957.1	6,955.5	134.4	16.9	88.92	-6,943.3	-940.3	266.4	115.6	150.83	1.766	
13,816.4	7,048.5	6,957.0	6,955.4	134.7	16.9	88.90	-6,943.3	-940.3	265.9	114.8	151.15	1.759	CC, ES, SF
13,900.0	7,048.3	6,956.4	6,954.8	136.3	16.9	88.76	-6,943.3	-940.3	278.7	126.0	152.74	1.825	
13,988.0	7,048.0	6,955.8	6,954.2	138.0	16.9	88.63	-6,943.3	-940.2	316.5	162.0	154.41	2.049	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Stroh 5 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference 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
9,600.0	7,061.8	7,063.4	7,062.1	55.8	16.6	-93.90	-3,670.5	-362.1	994.1	922.8	71.31	13.941	
9,700.0	7,061.5	7,061.5	7,060.3	57.6	16.6	-93.56	-3,670.6	-362.1	899.8	826.6	73.15	12.300	
9,800.0	7,061.2	7,059.6	7,058.4	59.4	16.6	-93.22	-3,670.6	-362.1	806.8	731.8	75.00	10.757	
9,900.0	7,060.8	7,057.7	7,056.5	61.2	16.6	-92.87	-3,670.6	-362.1	715.6	638.8	76.85	9.312	
10,000.0	7,060.5	7,055.8	7,054.6	63.0	16.5	-92.52	-3,670.7	-362.0	627.2	548.5	78.70	7.969	
10,100.0	7,060.2	7,053.9	7,052.7	64.9	16.5	-92.18	-3,670.7	-362.0	542.8	462.3	80.56	6.738	
10,200.0	7,059.9	7,052.0	7,050.8	66.7	16.5	-91.83	-3,670.7	-362.0	464.6	382.2	82.42	5.638	
10,300.0	7,059.6	7,050.1	7,048.9	68.6	16.5	-91.48	-3,670.7	-362.0	396.4	312.1	84.27	4.704	
10,400.0	7,059.3	7,048.2	7,047.0	70.4	16.5	-91.13	-3,670.8	-362.0	344.0	257.9	86.13	3.994	
10,500.0	7,059.0	7,046.3	7,045.0	72.3	16.5	-90.77	-3,670.8	-361.9	315.6	227.6	87.99	3.586	
10,543.9	7,058.8	7,045.4	7,044.2	73.1	16.5	-90.62	-3,670.8	-361.9	312.5	223.7	88.81	3.519	CC, ES, SF
10,600.0	7,058.6	7,044.4	7,043.1	74.1	16.5	-90.42	-3,670.8	-361.9	317.5	227.6	89.85	3.533	
10,700.0	7,058.3	7,042.4	7,041.2	76.0	16.5	-90.06	-3,670.9	-361.9	349.3	257.6	91.71	3.809	
10,800.0	7,058.0	7,040.5	7,039.2	77.8	16.5	-89.71	-3,670.9	-361.9	404.0	310.4	93.57	4.317	
10,900.0	7,057.7	7,038.5	7,037.3	79.7	16.5	-89.35	-3,670.9	-361.9	473.7	378.3	95.43	4.964	
11,000.0	7,057.4	7,036.6	7,035.3	81.6	16.5	-88.99	-3,671.0	-361.8	552.8	455.5	97.28	5.682	
11,100.0	7,057.1	7,034.6	7,033.4	83.4	16.5	-88.63	-3,671.0	-361.8	637.8	538.6	99.13	6.433	
11,200.0	7,056.8	7,032.6	7,031.4	85.3	16.5	-88.27	-3,671.0	-361.8	726.6	625.6	100.98	7.195	
11,300.0	7,056.4	7,030.7	7,029.4	87.2	16.5	-87.91	-3,671.1	-361.8	818.0	715.1	102.83	7.954	
11,400.0	7,056.1	7,028.7	7,027.4	89.0	16.5	-87.55	-3,671.1	-361.7	911.2	806.5	104.68	8.705	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference 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	-61.33	134.8	-246.5	281.2				
100.0	100.0	89.0	89.0	0.1	0.1	-61.38	134.6	-246.6	281.0	280.7	0.23	1,218.470	
112.3	112.3	101.4	101.4	0.1	0.1	-61.39	134.6	-246.7	281.0	280.7	0.28	1,016.632	
200.0	200.0	188.6	188.6	0.3	0.4	-61.46	134.3	-246.9	281.0	280.3	0.70	403.121	
300.0	300.0	288.8	288.8	0.6	0.6	-61.56	133.9	-247.2	281.1	280.0	1.18	237.969	
400.0	400.0	388.8	388.8	0.8	0.9	-61.73	133.2	-247.7	281.2	279.5	1.67	168.422	
500.0	500.0	488.7	488.7	1.0	1.1	-61.86	132.7	-248.0	281.3	279.1	2.16	130.276	
600.0	600.0	587.3	587.3	1.2	1.3	-61.90	132.6	-248.4	281.6	279.0	2.56	109.816	
700.0	700.0	686.8	686.7	1.5	1.4	-61.80	133.4	-248.8	282.3	279.4	2.90	97.440	
800.0	800.0	787.5	787.5	1.7	1.6	-61.69	134.2	-249.2	283.0	279.8	3.25	86.956	
900.0	900.0	887.3	887.2	1.9	1.7	-61.63	134.7	-249.5	283.6	279.9	3.66	77.517	
1,000.0	1,000.0	986.6	986.6	2.1	2.0	-61.57	135.3	-250.0	284.3	280.2	4.09	69.568	
1,100.0	1,100.0	1,086.2	1,086.2	2.4	2.2	-61.50	136.1	-250.6	285.2	280.7	4.53	62.943	
1,200.0	1,200.0	1,185.0	1,185.0	2.6	2.4	-61.46	136.8	-251.5	286.4	281.4	4.99	57.360	
1,300.0	1,300.0	1,285.3	1,285.3	2.8	2.7	-61.43	137.6	-252.7	287.8	282.3	5.47	52.645	
1,400.0	1,400.0	1,386.4	1,386.4	3.0	2.9	-61.40	138.3	-253.6	288.9	282.9	5.95	48.585	
1,500.0	1,500.0	1,487.2	1,487.1	3.2	3.2	21.90	138.6	-254.3	288.8	282.4	6.42	45.017	
1,600.0	1,600.0	1,587.4	1,587.3	3.5	3.4	22.10	138.9	-254.8	287.0	280.1	6.87	41.745	
1,700.0	1,699.9	1,687.3	1,687.2	3.7	3.7	22.46	139.3	-255.3	283.5	276.2	7.33	38.662	
1,800.0	1,799.7	1,786.3	1,786.2	3.9	3.9	22.90	139.4	-256.0	278.6	270.8	7.79	35.781	
1,900.0	1,899.4	1,885.8	1,885.7	4.1	4.2	23.41	139.2	-257.2	272.3	264.1	8.24	33.057	
2,000.0	1,998.9	1,986.2	1,986.1	4.3	4.4	24.08	138.9	-258.4	264.4	255.7	8.69	30.435	
2,100.0	2,098.3	2,086.2	2,086.1	4.6	4.6	24.88	138.1	-259.5	254.7	245.5	9.12	27.928	
2,200.0	2,197.4	2,185.8	2,185.7	4.8	4.8	25.78	136.6	-260.9	243.2	233.7	9.54	25.504	
2,300.0	2,296.3	2,283.7	2,283.6	5.1	5.1	26.92	135.2	-262.3	230.4	220.4	9.97	23.114	
2,400.0	2,395.0	2,382.9	2,382.8	5.4	5.3	28.24	133.6	-264.3	216.7	206.2	10.43	20.776	
2,500.0	2,493.6	2,482.4	2,482.2	5.7	5.5	29.48	131.0	-266.5	202.7	191.8	10.90	18.594	
2,600.0	2,592.3	2,581.4	2,581.1	6.0	5.7	30.88	128.4	-268.7	188.6	177.2	11.38	16.576	
2,700.0	2,690.9	2,679.6	2,679.2	6.4	5.9	32.44	125.7	-271.0	174.8	162.9	11.87	14.724	
2,800.0	2,789.6	2,779.0	2,778.6	6.7	6.1	34.35	123.3	-273.4	161.3	148.9	12.39	13.024	
2,900.0	2,888.2	2,877.2	2,876.8	7.0	6.4	36.75	121.1	-275.4	148.0	135.1	12.92	11.452	
3,000.0	2,986.9	2,975.6	2,975.1	7.4	6.6	39.75	119.5	-277.6	135.5	122.0	13.49	10.044	
3,100.0	3,085.5	3,074.8	3,074.3	7.7	6.9	43.55	118.4	-279.5	123.6	109.5	14.10	8.769	
3,200.0	3,184.2	3,173.5	3,172.9	8.1	7.1	48.37	117.4	-281.0	112.3	97.6	14.74	7.618	
3,300.0	3,282.8	3,272.8	3,272.3	8.4	7.4	54.38	116.6	-282.3	102.0	86.6	15.42	6.613	
3,400.0	3,381.5	3,371.1	3,370.6	8.8	7.6	61.88	115.7	-283.1	92.8	76.7	16.13	5.752	
3,500.0	3,480.1	3,468.9	3,468.4	9.2	7.8	71.13	116.0	-283.4	86.5	69.7	16.83	5.142	
3,600.0	3,578.8	3,567.5	3,566.9	9.5	8.0	81.44	117.0	-283.9	83.7	66.2	17.48	4.788	
3,654.0	3,632.0	3,620.9	3,620.3	9.7	8.1	86.97	117.5	-284.6	83.3	65.5	17.80	4.679	CC, ES
3,700.0	3,677.4	3,666.4	3,665.8	9.9	8.2	91.57	118.0	-285.3	83.6	65.5	18.07	4.625	SF
3,800.0	3,776.1	3,765.3	3,764.7	10.2	8.4	100.96	119.1	-287.3	86.0	67.4	18.59	4.628	
3,900.0	3,874.7	3,864.3	3,863.7	10.6	8.7	109.34	120.4	-289.8	90.6	71.6	19.03	4.762	
4,000.0	3,973.4	3,963.6	3,962.9	11.0	8.9	116.49	121.8	-292.8	96.8	77.4	19.44	4.982	
4,100.0	4,072.0	4,063.4	4,062.6	11.3	9.2	122.44	123.3	-296.5	104.0	84.2	19.83	5.245	
4,200.0	4,170.7	4,163.4	4,162.6	11.7	9.4	127.28	124.7	-301.2	111.4	91.2	20.23	5.506	
4,300.0	4,269.3	4,263.4	4,262.3	12.1	9.7	131.23	126.1	-306.7	118.8	98.2	20.64	5.755	
4,400.0	4,368.0	4,363.0	4,361.8	12.5	9.9	134.64	127.4	-312.4	126.4	105.4	21.06	6.002	
4,500.0	4,466.6	4,462.7	4,461.3	12.8	10.2	137.77	128.4	-318.1	134.3	112.9	21.48	6.254	
4,600.0	4,565.3	4,562.0	4,560.4	13.2	10.5	140.63	129.1	-323.8	142.5	120.6	21.90	6.506	
4,700.0	4,663.9	4,660.5	4,658.8	13.6	10.7	143.20	129.9	-329.1	151.3	129.0	22.32	6.778	
4,800.0	4,762.6	4,758.7	4,756.9	14.0	11.0	145.52	130.9	-333.6	161.1	138.4	22.75	7.083	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference 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
4,900.0	4,861.2	4,857.5	4,855.6	14.3	11.2	147.65	132.0	-337.6	171.7	148.5	23.18	7.409	
5,000.0	4,959.9	4,956.2	4,954.2	14.7	11.5	149.61	133.0	-341.3	182.7	159.1	23.61	7.739	
5,100.0	5,058.5	5,054.6	5,052.6	15.1	11.8	151.53	133.5	-344.4	194.3	170.3	24.04	8.083	
5,200.0	5,157.2	5,153.5	5,151.4	15.5	12.0	153.14	134.4	-347.4	206.4	181.9	24.49	8.428	
5,300.0	5,255.8	5,252.6	5,250.5	15.8	12.3	154.68	135.0	-350.4	218.5	193.6	24.93	8.764	
5,400.0	5,354.5	5,351.6	5,349.4	16.2	12.5	156.20	135.0	-353.0	230.9	205.5	25.38	9.097	
5,500.0	5,453.1	5,450.0	5,447.8	16.6	12.8	157.57	135.0	-355.6	243.5	217.7	25.84	9.424	
5,600.0	5,551.8	5,548.5	5,546.3	17.0	13.0	158.93	134.5	-357.7	256.6	230.3	26.28	9.763	
5,700.0	5,650.4	5,649.0	5,646.7	17.4	13.3	160.43	132.9	-359.7	269.7	243.0	26.71	10.097	
5,800.0	5,749.1	5,750.2	5,747.9	17.7	13.5	161.94	130.5	-362.4	282.0	254.9	27.14	10.392	
5,900.0	5,848.1	5,850.6	5,848.2	18.0	13.8	163.08	128.6	-365.9	291.7	264.1	27.60	10.569	
6,000.0	5,947.5	5,950.2	5,947.7	18.2	14.0	163.76	127.7	-369.6	298.0	270.0	28.06	10.621	
6,100.0	6,047.3	6,049.3	6,046.7	18.4	14.3	164.15	127.1	-373.1	301.2	272.7	28.50	10.569	
6,200.0	6,147.2	6,148.6	6,146.0	18.6	14.6	164.28	126.9	-376.4	301.4	272.4	28.91	10.423	
6,300.0	6,247.2	6,247.7	6,245.1	18.7	14.8	80.96	126.9	-379.6	298.7	269.3	29.33	10.182	
6,400.0	6,347.2	6,346.5	6,343.8	18.9	15.1	-99.42	126.9	-382.3	296.1	266.3	29.81	9.934	
6,457.8	6,404.8	6,403.6	6,400.9	18.9	15.2	-100.54	127.0	-383.8	295.6	265.5	30.10	9.822	
6,500.0	6,446.4	6,445.9	6,443.2	19.0	15.3	-101.86	127.1	-384.9	295.9	265.5	30.33	9.756	
6,600.0	6,543.1	6,543.1	6,540.4	19.1	15.6	-106.33	127.4	-387.8	299.3	268.5	30.84	9.705	
6,700.0	6,635.8	6,635.0	6,632.2	19.2	15.8	-111.90	127.5	-390.3	309.7	278.5	31.19	9.930	
6,800.0	6,722.8	6,720.7	6,717.9	19.4	16.1	-117.68	127.9	-392.6	330.6	299.4	31.20	10.596	
6,900.0	6,802.6	6,799.7	6,796.8	19.5	16.3	-122.78	128.4	-394.5	364.4	333.6	30.80	11.830	
7,000.0	6,874.0	6,871.7	6,868.8	19.8	16.5	-126.64	128.8	-396.4	411.9	381.7	30.11	13.677	
7,100.0	6,935.5	6,932.5	6,929.6	20.1	16.6	-128.49	129.1	-398.0	472.2	442.7	29.48	16.018	
7,200.0	6,986.3	6,981.2	6,978.3	20.5	16.7	-127.89	129.5	-399.3	544.0	514.5	29.43	18.481	
7,300.0	7,025.4	7,019.7	7,016.8	21.0	16.8	-124.39	129.8	-400.2	624.9	594.4	30.51	20.479	
7,400.0	7,052.1	7,047.2	7,044.3	21.8	16.9	-116.67	129.9	-400.8	712.6	679.5	33.09	21.537	
7,500.0	7,066.1	7,061.6	7,058.6	22.7	17.0	-102.39	130.0	-401.2	804.8	768.3	36.46	22.071	
7,600.0	7,068.1	7,063.3	7,060.4	23.7	17.0	-90.13	130.0	-401.2	899.4	861.4	38.01	23.662	
7,700.0	7,067.8	7,062.6	7,059.7	24.9	17.0	-89.99	130.0	-401.2	995.2	955.8	39.33	25.305	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - UPRC 13-12E (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
0.0	0.0	16.0	16.0	0.0	0.0	-109.70	-331.5	-925.9	983.5	983.5	0.02	N/A	
100.0	100.0	115.5	115.5	0.1	0.2	-109.69	-331.3	-926.0	983.5	983.2	0.28	3,535.324	
200.0	200.0	211.4	211.4	0.3	0.4	-109.68	-331.3	-926.3	983.7	983.0	0.71	1,391.223	
300.0	300.0	310.5	310.5	0.6	0.6	-109.69	-331.6	-926.7	984.3	983.1	1.14	866.359	
400.0	400.0	411.0	411.0	0.8	0.8	-109.70	-332.0	-927.1	984.7	983.2	1.58	622.450	
500.0	500.0	502.5	502.5	1.0	1.0	-109.68	-331.9	-928.0	985.7	983.7	2.03	486.635	
600.0	600.0	601.3	601.2	1.2	1.3	-109.64	-331.8	-929.6	987.1	984.6	2.50	394.113	
700.0	700.0	705.4	705.4	1.5	1.5	-109.62	-331.9	-931.0	988.4	985.4	3.00	329.161	
800.0	800.0	806.5	806.5	1.7	1.8	-109.59	-331.7	-932.1	989.4	985.9	3.49	283.629	
900.0	900.0	900.0	900.0	1.9	2.0	-109.58	-332.1	-933.4	990.9	986.9	3.95	250.938	
1,000.0	1,000.0	999.3	999.2	2.1	2.3	-109.57	-332.5	-935.2	992.7	988.3	4.43	224.156	
1,100.0	1,100.0	1,107.7	1,107.6	2.4	2.6	-109.51	-332.0	-936.8	993.9	989.0	4.92	201.973	
1,200.0	1,200.0	1,202.6	1,202.5	2.6	2.8	-109.49	-332.0	-937.9	995.1	989.7	5.37	185.143	
1,300.0	1,300.0	1,308.0	1,307.9	2.8	3.1	-109.50	-332.5	-939.0	996.1	990.3	5.87	169.736	
1,400.0	1,400.0	1,410.7	1,410.6	3.0	3.3	-109.49	-332.6	-939.6	996.8	990.4	6.36	156.642	
1,500.0	1,500.0	1,509.4	1,509.3	3.2	3.6	-26.26	-332.5	-940.4	996.6	989.8	6.83	145.920	
1,600.0	1,600.0	1,613.2	1,613.1	3.5	3.8	-26.32	-332.3	-940.9	994.7	987.4	7.29	136.419	
1,700.0	1,699.9	1,709.7	1,709.6	3.7	4.1	-26.40	-331.8	-941.5	991.3	983.6	7.73	128.270	
1,800.0	1,799.7	1,811.0	1,810.9	3.9	4.3	-26.54	-331.3	-942.3	986.4	978.2	8.17	120.661	
1,900.0	1,899.4	1,909.0	1,908.9	4.1	4.6	-26.75	-331.2	-943.0	979.9	971.3	8.62	113.641	
2,000.0	1,998.9	2,007.2	2,007.1	4.3	4.8	-26.98	-330.5	-944.0	972.1	963.0	9.07	107.193	
2,100.0	2,098.3	2,105.9	2,105.8	4.6	5.0	-27.24	-329.5	-945.2	962.8	953.3	9.51	101.215	
2,200.0	2,197.4	2,200.0	2,199.9	4.8	5.3	-27.54	-328.4	-946.6	952.3	942.3	9.95	95.664	
2,300.0	2,296.3	2,295.9	2,295.8	5.1	5.5	-27.92	-327.8	-948.4	940.6	930.2	10.41	90.333	
2,400.0	2,395.0	2,400.0	2,399.8	5.4	5.8	-28.37	-327.3	-950.2	927.7	916.8	10.91	85.028	
2,500.0	2,493.6	2,493.3	2,493.1	5.7	6.0	-28.78	-327.0	-951.8	914.7	903.3	11.39	80.307	
2,600.0	2,592.3	2,593.3	2,593.0	6.0	6.3	-29.24	-327.1	-953.7	902.1	890.2	11.90	75.819	
2,700.0	2,690.9	2,700.0	2,699.8	6.4	6.6	-29.70	-326.3	-955.5	889.1	876.7	12.42	71.567	
2,800.0	2,789.6	2,790.9	2,790.6	6.7	6.8	-30.08	-325.1	-957.2	876.1	863.2	12.91	67.871	
2,900.0	2,888.2	2,885.4	2,885.1	7.0	7.0	-30.47	-324.1	-959.7	863.9	850.5	13.42	64.390	
3,000.0	2,986.9	2,988.6	2,988.2	7.4	7.3	-30.94	-323.4	-962.3	851.8	837.8	13.96	61.034	
3,100.0	3,085.5	3,081.9	3,081.6	7.7	7.5	-31.41	-323.3	-964.3	839.7	825.2	14.47	58.023	
3,200.0	3,184.2	3,181.3	3,180.9	8.1	7.8	-31.92	-323.2	-967.0	828.1	813.1	15.01	55.184	
3,300.0	3,282.8	3,284.5	3,284.0	8.4	8.1	-32.41	-322.3	-969.8	816.3	800.7	15.56	52.472	
3,400.0	3,381.5	3,379.2	3,378.7	8.8	8.3	-32.90	-321.7	-972.2	804.4	788.3	16.09	50.001	
3,500.0	3,480.1	3,486.5	3,486.0	9.2	8.6	-33.47	-321.1	-974.9	792.7	776.0	16.65	47.602	
3,600.0	3,578.8	3,583.7	3,583.2	9.5	8.9	-33.97	-319.8	-976.9	780.3	763.1	17.19	45.389	
3,700.0	3,677.4	3,682.3	3,681.8	9.9	9.1	-34.51	-319.0	-979.1	768.2	750.5	17.74	43.298	
3,800.0	3,776.1	3,780.6	3,780.0	10.2	9.4	-35.10	-318.4	-981.1	756.2	737.9	18.30	41.334	
3,900.0	3,874.7	3,876.5	3,875.9	10.6	9.6	-35.78	-319.0	-982.7	744.6	725.8	18.83	39.539	
4,000.0	3,973.4	3,973.2	3,972.6	11.0	9.8	-36.54	-320.3	-984.3	733.5	714.1	19.36	37.892	
4,100.0	4,072.0	4,074.7	4,074.1	11.3	10.0	-37.35	-321.7	-986.1	722.5	702.6	19.91	36.298	
4,200.0	4,170.7	4,172.2	4,171.5	11.7	10.3	-38.11	-322.4	-987.9	711.4	691.0	20.47	34.762	
4,300.0	4,269.3	4,275.5	4,274.8	12.1	10.5	-38.90	-322.6	-990.2	700.5	679.5	21.06	33.268	
4,400.0	4,368.0	4,373.6	4,372.9	12.5	10.8	-39.63	-322.2	-992.0	689.2	667.6	21.64	31.847	
4,500.0	4,466.6	4,474.2	4,473.5	12.8	11.1	-40.45	-322.4	-993.8	678.2	655.9	22.24	30.491	
4,600.0	4,565.3	4,570.6	4,569.8	13.2	11.3	-41.25	-322.3	-995.5	667.1	644.3	22.84	29.213	
4,700.0	4,663.9	4,671.4	4,670.6	13.6	11.6	-42.08	-322.1	-997.8	656.5	633.1	23.45	28.002	
4,800.0	4,762.6	4,769.0	4,768.2	14.0	11.8	-42.83	-321.0	-1,000.2	645.8	621.7	24.05	26.857	
4,900.0	4,861.2	4,863.6	4,862.7	14.3	12.1	-43.56	-320.1	-1,003.1	635.7	611.0	24.64	25.796	
5,000.0	4,959.9	4,961.9	4,961.0	14.7	12.3	-44.42	-320.1	-1,006.2	626.3	601.0	25.26	24.797	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - UPRC 13-12E (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
5,100.0	5,058.5	5,060.6	5,059.7	15.1	12.6	-45.42	-321.0	-1,008.3	616.9	591.1	25.87	23.844	
5,200.0	5,157.2	5,161.1	5,160.1	15.5	12.8	-46.47	-322.0	-1,010.6	607.9	581.3	26.50	22.934	
5,300.0	5,255.8	5,262.3	5,261.3	15.8	13.1	-47.46	-321.9	-1,013.2	598.5	571.4	27.15	22.046	
5,400.0	5,354.5	5,363.2	5,362.2	16.2	13.3	-48.54	-322.1	-1,015.2	589.1	561.3	27.80	21.188	
5,500.0	5,453.1	5,463.5	5,462.4	16.6	13.6	-49.58	-321.6	-1,017.3	579.5	551.0	28.46	20.364	
5,600.0	5,551.8	5,564.8	5,563.7	17.0	13.9	-50.77	-321.6	-1,018.7	569.9	540.8	29.13	19.567	
5,700.0	5,650.4	5,663.6	5,662.5	17.4	14.1	-51.91	-321.0	-1,020.1	560.2	530.4	29.79	18.804	
5,800.0	5,749.1	5,760.4	5,759.3	17.7	14.4	-53.01	-320.4	-1,021.9	551.1	520.6	30.45	18.097	
5,900.0	5,848.1	5,856.6	5,855.5	18.0	14.6	-53.96	-320.9	-1,023.2	544.0	512.9	31.03	17.528	
6,000.0	5,947.5	5,951.5	5,950.4	18.2	14.8	-54.62	-321.3	-1,025.4	539.7	508.2	31.56	17.104	
6,100.0	6,047.3	6,049.7	6,048.6	18.4	15.1	-55.09	-322.7	-1,028.0	538.4	506.4	32.04	16.808	
6,121.5	6,068.8	6,071.9	6,070.7	18.4	15.1	-55.15	-322.9	-1,028.6	538.4	506.3	32.13	16.757	
6,200.0	6,147.2	6,149.4	6,148.1	18.6	15.3	-55.21	-323.4	-1,031.2	539.0	506.5	32.46	16.605	
6,300.0	6,247.2	6,247.9	6,246.6	18.7	15.6	-138.30	-324.3	-1,034.6	541.8	508.9	32.85	16.490	
6,400.0	6,347.2	6,350.0	6,348.6	18.9	15.9	42.02	-325.0	-1,038.4	543.8	510.5	33.25	16.353	
6,500.0	6,446.4	6,449.6	6,448.2	19.0	16.1	43.34	-326.0	-1,041.0	537.4	504.1	33.28	16.146	
6,600.0	6,543.1	6,544.5	6,543.1	19.1	16.3	46.07	-327.4	-1,043.5	522.2	489.3	32.91	15.870	
6,700.0	6,635.8	6,638.1	6,636.6	19.2	16.6	50.47	-328.9	-1,046.2	499.4	467.1	32.32	15.454	
6,800.0	6,722.8	6,727.7	6,726.1	19.4	16.8	56.67	-330.4	-1,048.2	470.5	438.7	31.83	14.781	
6,900.0	6,802.6	6,807.3	6,805.7	19.5	17.0	64.43	-331.2	-1,050.3	438.9	407.1	31.81	13.798	
7,000.0	6,874.0	6,879.7	6,878.1	19.8	17.2	73.39	-331.1	-1,052.7	409.4	377.0	32.43	12.623	
7,100.0	6,935.5	6,940.5	6,938.9	20.1	17.3	81.94	-330.8	-1,054.7	388.3	354.9	33.41	11.622	
7,182.3	6,978.1	6,983.1	6,981.4	20.4	17.4	87.84	-330.8	-1,056.2	382.0	347.8	34.22	11.164	CC, ES
7,200.0	6,986.3	6,991.4	6,989.7	20.5	17.5	88.92	-330.9	-1,056.4	382.3	348.0	34.37	11.125	SF
7,300.0	7,025.4	7,032.4	7,030.8	21.0	17.6	93.46	-331.2	-1,057.7	396.4	361.2	35.21	11.259	
7,400.0	7,052.1	7,061.9	7,060.2	21.8	17.6	94.81	-331.6	-1,058.6	431.6	395.4	36.15	11.939	
7,500.0	7,066.1	7,078.4	7,076.7	22.7	17.7	92.48	-331.8	-1,059.1	484.9	447.5	37.40	12.963	
7,600.0	7,068.1	7,082.5	7,080.8	23.7	17.7	89.33	-331.9	-1,059.2	551.4	512.7	38.78	14.219	
7,700.0	7,067.8	7,084.1	7,082.4	24.9	17.7	89.57	-331.9	-1,059.2	627.0	586.9	40.10	15.635	
7,800.0	7,067.4	7,085.8	7,084.1	26.1	17.7	89.81	-332.0	-1,059.3	708.6	667.1	41.50	17.074	
7,900.0	7,067.1	7,087.5	7,085.8	27.5	17.7	90.07	-332.0	-1,059.3	794.4	751.4	42.96	18.490	
8,000.0	7,066.8	7,089.3	7,087.6	28.9	17.7	90.33	-332.0	-1,059.4	883.2	838.7	44.48	19.854	
8,100.0	7,066.5	7,091.1	7,089.4	30.3	17.7	90.61	-332.1	-1,059.4	974.2	928.1	46.05	21.154	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - UPRC 13-13E (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
7,500.0	7,066.1	7,072.3	7,069.9	22.7	16.7	78.50	-1,504.2	-1,055.6	956.5	920.2	36.29	26.357	
7,600.0	7,068.1	7,074.4	7,072.0	23.7	16.7	88.55	-1,504.1	-1,055.7	865.8	828.0	37.82	22.894	
7,700.0	7,067.8	7,074.0	7,071.6	24.9	16.7	88.49	-1,504.1	-1,055.7	777.3	738.2	39.14	19.858	
7,800.0	7,067.4	7,073.6	7,071.2	26.1	16.7	88.43	-1,504.2	-1,055.7	691.9	651.4	40.55	17.063	
7,900.0	7,067.1	7,073.2	7,070.8	27.5	16.7	88.37	-1,504.2	-1,055.7	611.0	568.9	42.02	14.539	
8,000.0	7,066.8	7,072.8	7,070.4	28.9	16.7	88.31	-1,504.2	-1,055.7	536.5	492.9	43.55	12.319	
8,100.0	7,066.5	7,072.4	7,070.0	30.3	16.7	88.26	-1,504.2	-1,055.6	471.6	426.4	45.13	10.450	
8,200.0	7,066.2	7,072.1	7,069.6	31.8	16.7	88.20	-1,504.2	-1,055.6	420.6	373.9	46.74	8.998	
8,300.0	7,065.9	7,071.7	7,069.3	33.4	16.7	88.14	-1,504.2	-1,055.6	389.2	340.8	48.39	8.042	
8,377.3	7,065.6	7,071.4	7,069.0	34.6	16.7	88.10	-1,504.2	-1,055.6	381.4	331.7	49.69	7.676	CC, ES
8,400.0	7,065.6	7,071.3	7,068.9	35.0	16.7	88.08	-1,504.2	-1,055.6	382.1	332.0	50.07	7.631	SF
8,500.0	7,065.2	7,070.9	7,068.5	36.6	16.7	88.03	-1,504.2	-1,055.6	400.7	348.9	51.77	7.739	
8,600.0	7,064.9	7,070.5	7,068.1	38.3	16.7	87.97	-1,504.2	-1,055.6	441.7	388.2	53.50	8.256	
8,700.0	7,064.6	7,070.2	7,067.8	40.0	16.7	87.92	-1,504.2	-1,055.6	499.6	444.4	55.24	9.045	
8,800.0	7,064.3	7,069.8	7,067.4	41.7	16.7	87.86	-1,504.2	-1,055.6	569.3	512.4	57.00	9.989	
8,900.0	7,064.0	7,069.4	7,067.0	43.4	16.7	87.81	-1,504.2	-1,055.5	647.1	588.3	58.77	11.010	
9,000.0	7,063.7	7,069.1	7,066.7	45.1	16.7	87.75	-1,504.2	-1,055.5	730.2	669.7	60.55	12.059	
9,100.0	7,063.4	7,068.7	7,066.3	46.9	16.7	87.70	-1,504.2	-1,055.5	817.2	754.8	62.35	13.107	
9,200.0	7,063.0	7,068.4	7,066.0	48.6	16.7	87.65	-1,504.2	-1,055.5	906.8	842.7	64.15	14.135	
9,300.0	7,062.7	7,068.0	7,065.6	50.4	16.7	87.59	-1,504.2	-1,055.5	998.4	932.5	65.96	15.136	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-203 - Wellbore #1 - Plan #2 (1-27-15)

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	1.0	1.0	0.0	0.0	-90.00	0.0	-61.4	61.4	61.4	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-61.4	61.4	61.1	0.23	270.272	
166.3	166.3	167.3	167.3	0.3	0.3	-90.00	0.0	-61.4	61.4	60.8	0.53	116.826	CC
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-61.4	61.4	60.7	0.68	90.704	ES
300.0	300.0	300.0	300.0	0.6	0.6	-89.85	0.2	-62.2	62.2	61.1	1.11	55.807	
400.0	400.0	398.8	398.8	0.8	0.8	-89.42	0.7	-64.7	64.8	63.2	1.55	41.677	
500.0	500.0	497.6	497.5	1.0	1.0	-88.78	1.5	-68.9	69.0	67.0	2.00	34.453	
600.0	600.0	596.2	595.9	1.2	1.2	-88.01	2.6	-74.8	75.0	72.6	2.46	30.445	
700.0	700.0	694.6	693.9	1.5	1.5	-87.18	4.0	-82.3	82.7	79.8	2.94	28.166	
800.0	800.0	792.6	791.6	1.7	1.7	-86.36	5.8	-91.4	92.1	88.7	3.42	26.906	
900.0	900.0	890.3	888.7	1.9	2.0	-85.59	7.9	-102.1	103.2	99.3	3.93	26.286	
1,000.0	1,000.0	987.7	985.2	2.1	2.3	-84.88	10.3	-114.4	116.0	111.5	4.45	26.082	
1,100.0	1,100.0	1,084.5	1,081.0	2.4	2.6	-84.24	12.9	-128.3	130.4	125.5	4.99	26.155	
1,200.0	1,200.0	1,180.9	1,176.1	2.6	3.0	-83.68	15.9	-143.6	146.6	141.0	5.55	26.415	
1,300.0	1,300.0	1,276.7	1,270.4	2.8	3.3	-83.19	19.1	-160.4	164.4	158.3	6.13	26.802	
1,400.0	1,400.0	1,371.9	1,363.7	3.0	3.7	-82.77	22.7	-178.6	183.9	177.1	6.74	27.272	
1,500.0	1,500.0	1,466.6	1,456.3	3.2	4.1	0.84	26.5	-198.3	204.1	197.5	6.55	31.173	
1,600.0	1,600.0	1,562.3	1,549.5	3.5	4.6	1.18	30.6	-219.5	224.1	217.1	7.00	32.042	
1,700.0	1,699.9	1,660.5	1,645.1	3.7	5.0	1.48	34.9	-241.7	242.8	235.4	7.45	32.588	
1,800.0	1,799.7	1,759.1	1,741.0	3.9	5.5	1.74	39.2	-263.9	259.8	251.9	7.91	32.833	
1,900.0	1,899.4	1,857.9	1,837.2	4.1	6.0	1.99	43.5	-286.2	275.1	266.7	8.38	32.826	
2,000.0	1,998.9	1,957.0	1,933.6	4.3	6.4	2.23	47.8	-308.6	288.6	279.7	8.85	32.610	
2,100.0	2,098.3	2,056.3	2,030.3	4.6	6.9	2.45	52.1	-331.0	300.4	291.1	9.32	32.218	
2,200.0	2,197.4	2,155.7	2,127.1	4.8	7.4	2.68	56.5	-353.4	310.5	300.7	9.80	31.675	
2,300.0	2,296.3	2,255.4	2,224.1	5.1	7.9	2.91	60.8	-375.9	318.8	308.6	10.28	31.005	
2,400.0	2,395.0	2,355.1	2,321.1	5.4	8.4	3.14	65.2	-398.4	325.7	315.0	10.77	30.233	
2,500.0	2,493.6	2,454.9	2,418.2	5.7	8.9	3.36	69.5	-420.9	332.5	321.2	11.27	29.492	
2,600.0	2,592.3	2,554.7	2,515.3	6.0	9.4	3.58	73.9	-443.4	339.3	327.5	11.78	28.807	
2,700.0	2,690.9	2,654.4	2,612.4	6.4	9.9	3.79	78.2	-465.9	346.0	333.7	12.28	28.172	
2,800.0	2,789.6	2,754.2	2,709.5	6.7	10.4	3.99	82.6	-488.4	352.8	340.0	12.79	27.582	
2,900.0	2,888.2	2,853.9	2,806.6	7.0	10.9	4.18	86.9	-510.9	359.6	346.3	13.30	27.033	
3,000.0	2,986.9	2,953.7	2,903.7	7.4	11.4	4.36	91.3	-533.4	366.4	352.5	13.81	26.521	
3,100.0	3,085.5	3,053.5	3,000.8	7.7	11.9	4.54	95.6	-555.9	373.1	358.8	14.33	26.042	
3,200.0	3,184.2	3,153.2	3,097.9	8.1	12.3	4.71	100.0	-578.4	379.9	365.1	14.84	25.594	
3,300.0	3,282.8	3,253.0	3,195.0	8.4	12.8	4.88	104.3	-601.0	386.7	371.3	15.36	25.174	
3,400.0	3,381.5	3,352.8	3,292.1	8.8	13.3	5.04	108.7	-623.5	393.5	377.6	15.88	24.779	
3,500.0	3,480.1	3,452.5	3,389.2	9.2	13.8	5.19	113.0	-646.0	400.3	383.9	16.40	24.407	
3,600.0	3,578.8	3,552.3	3,486.3	9.5	14.3	5.34	117.4	-668.5	407.1	390.2	16.92	24.056	
3,700.0	3,677.4	3,652.1	3,583.4	9.9	14.8	5.49	121.7	-691.0	413.9	396.4	17.45	23.725	
3,800.0	3,776.1	3,751.8	3,680.4	10.2	15.3	5.63	126.1	-713.5	420.7	402.7	17.97	23.412	
3,900.0	3,874.7	3,851.6	3,777.5	10.6	15.8	5.76	130.4	-736.0	427.5	409.0	18.49	23.116	
4,000.0	3,973.4	3,951.3	3,874.6	11.0	16.3	5.90	134.8	-758.5	434.3	415.3	19.02	22.834	
4,100.0	4,072.0	4,051.1	3,971.7	11.3	16.8	6.02	139.1	-781.0	441.1	421.6	19.55	22.567	
4,200.0	4,170.7	4,150.9	4,068.8	11.7	17.3	6.15	143.5	-803.5	447.9	427.9	20.07	22.313	
4,300.0	4,269.3	4,250.6	4,165.9	12.1	17.8	6.27	147.9	-826.0	454.7	434.1	20.60	22.071	
4,400.0	4,368.0	4,350.4	4,263.0	12.5	18.3	6.38	152.2	-848.5	461.6	440.4	21.13	21.841	
4,500.0	4,466.6	4,450.2	4,360.1	12.8	18.8	6.50	156.6	-871.0	468.4	446.7	21.66	21.621	
4,600.0	4,565.3	4,549.9	4,457.2	13.2	19.3	6.60	160.9	-893.5	475.2	453.0	22.19	21.412	
4,700.0	4,663.9	4,649.7	4,554.3	13.6	19.8	6.71	165.3	-916.0	482.0	459.3	22.73	21.211	
4,800.0	4,762.6	4,749.4	4,651.4	14.0	20.3	6.81	169.6	-938.6	488.8	465.6	23.26	21.019	
4,900.0	4,861.2	4,849.2	4,748.5	14.3	20.8	6.92	174.0	-961.1	495.7	471.9	23.79	20.835	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-203 - Wellbore #1 - Plan #2 (1-27-15)

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	4,959.9	4,949.0	4,845.6	14.7	21.3	7.01	178.3	-983.6	502.5	478.2	24.32	20.659	
5,100.0	5,058.5	5,048.7	4,942.7	15.1	21.8	7.11	182.7	-1,006.1	509.3	484.5	24.86	20.490	
5,200.0	5,157.2	5,148.5	5,039.8	15.5	22.3	7.20	187.0	-1,028.6	516.2	490.8	25.39	20.328	
5,300.0	5,255.8	5,248.3	5,136.9	15.8	22.8	7.29	191.4	-1,051.1	523.0	497.1	25.93	20.172	
5,400.0	5,354.5	5,348.0	5,233.9	16.2	23.3	7.38	195.7	-1,073.6	529.8	503.4	26.46	20.022	
5,500.0	5,453.1	5,447.8	5,331.0	16.6	23.8	7.47	200.1	-1,096.1	536.6	509.6	27.00	19.877	
5,600.0	5,551.8	5,547.5	5,428.1	17.0	24.3	7.55	204.4	-1,118.6	543.5	515.9	27.53	19.738	
5,700.0	5,650.4	5,647.3	5,525.2	17.4	24.8	7.63	208.8	-1,141.1	550.3	522.2	28.07	19.604	
5,800.0	5,749.1	5,747.1	5,622.3	17.7	25.3	7.71	213.1	-1,163.6	557.2	528.6	28.60	19.481	
5,900.0	5,848.1	5,846.6	5,719.2	18.0	25.8	7.78	217.5	-1,186.1	566.4	537.3	29.06	19.488	
6,000.0	5,947.5	5,945.8	5,815.8	18.2	26.3	7.81	221.8	-1,208.5	579.0	549.6	29.48	19.638	
6,100.0	6,047.3	6,044.5	5,911.8	18.4	26.8	7.81	226.1	-1,230.7	595.1	565.2	29.86	19.928	
6,200.0	6,147.2	6,142.6	6,007.3	18.6	27.3	7.77	230.4	-1,252.9	614.6	584.4	30.19	20.353	
6,300.0	6,247.2	6,240.0	6,102.1	18.7	27.8	-75.56	234.6	-1,274.8	637.0	606.5	30.57	20.841	
6,400.0	6,347.2	6,337.3	6,196.7	18.9	28.3	103.67	238.9	-1,296.8	660.2	629.3	30.91	21.360	
6,500.0	6,446.4	6,438.8	6,295.6	19.0	28.8	102.66	242.9	-1,319.7	685.9	654.8	31.17	22.009	
6,600.0	6,543.1	6,565.4	6,418.4	19.1	29.3	102.01	234.0	-1,348.2	711.9	680.4	31.48	22.615	
6,700.0	6,635.8	6,696.7	6,542.5	19.2	29.7	101.11	202.9	-1,377.0	736.2	704.4	31.81	23.140	
6,800.0	6,722.8	6,832.3	6,663.3	19.4	30.1	99.98	148.4	-1,405.0	758.2	725.9	32.21	23.535	
6,900.0	6,802.6	6,971.0	6,775.1	19.5	30.5	98.62	70.9	-1,431.0	777.3	744.5	32.75	23.738	
7,000.0	6,874.0	7,111.5	6,872.6	19.8	30.9	97.06	-27.4	-1,453.7	793.1	759.6	33.48	23.689	
7,100.0	6,935.5	7,252.0	6,950.9	20.1	31.3	95.35	-142.3	-1,471.9	805.4	770.8	34.54	23.320	
7,200.0	6,986.3	7,390.7	7,006.9	20.5	31.7	93.51	-268.4	-1,485.0	814.0	778.0	35.97	22.629	
7,300.0	7,025.4	7,526.0	7,039.2	21.0	32.1	91.60	-399.3	-1,492.6	818.9	781.1	37.82	21.652	
7,400.0	7,052.1	7,655.1	7,048.7	21.8	32.7	89.70	-528.0	-1,494.9	820.5	780.4	40.06	20.481	
7,500.0	7,066.1	7,754.1	7,048.4	22.7	33.2	88.70	-626.9	-1,494.9	820.7	778.4	42.31	19.398	
7,600.0	7,068.1	7,854.0	7,048.1	23.7	33.8	88.53	-726.8	-1,494.9	820.7	776.0	44.71	18.355	
7,700.0	7,067.8	7,954.0	7,047.7	24.9	34.6	88.53	-826.8	-1,494.9	820.7	773.5	47.26	17.364	
7,800.0	7,067.4	8,054.0	7,047.4	26.1	35.4	88.53	-926.8	-1,494.9	820.7	770.7	49.98	16.421	
7,900.0	7,067.1	8,154.0	7,047.1	27.5	36.3	88.53	-1,026.8	-1,494.9	820.7	767.9	52.83	15.534	
8,000.0	7,066.8	8,254.0	7,046.8	28.9	37.3	88.53	-1,126.8	-1,494.9	820.7	764.9	55.81	14.707	
8,100.0	7,066.5	8,354.0	7,046.5	30.3	38.4	88.53	-1,226.8	-1,494.9	820.7	761.8	58.88	13.939	
8,200.0	7,066.2	8,454.0	7,046.2	31.8	39.6	88.53	-1,326.8	-1,494.9	820.7	758.7	62.04	13.230	
8,300.0	7,065.9	8,554.0	7,045.9	33.4	40.8	88.53	-1,426.8	-1,494.9	820.7	755.5	65.27	12.575	
8,400.0	7,065.6	8,654.0	7,045.5	35.0	42.1	88.53	-1,526.8	-1,494.9	820.7	752.2	68.56	11.971	
8,500.0	7,065.2	8,754.0	7,045.2	36.6	43.4	88.53	-1,626.8	-1,494.9	820.7	748.8	71.91	11.414	
8,600.0	7,064.9	8,854.0	7,044.9	38.3	44.8	88.53	-1,726.8	-1,494.9	820.7	745.4	75.30	10.900	
8,700.0	7,064.6	8,954.0	7,044.6	40.0	46.2	88.53	-1,826.8	-1,494.9	820.7	742.0	78.73	10.424	
8,800.0	7,064.3	9,054.0	7,044.3	41.7	47.7	88.53	-1,926.8	-1,494.9	820.7	738.5	82.20	9.984	
8,900.0	7,064.0	9,154.0	7,044.0	43.4	49.2	88.53	-2,026.8	-1,494.9	820.7	735.0	85.70	9.576	
9,000.0	7,063.7	9,254.0	7,043.7	45.1	50.7	88.53	-2,126.8	-1,494.9	820.7	731.5	89.23	9.198	
9,100.0	7,063.4	9,354.0	7,043.3	46.9	52.3	88.53	-2,226.8	-1,494.9	820.7	727.9	92.79	8.845	
9,200.0	7,063.0	9,454.0	7,043.0	48.6	53.9	88.53	-2,326.8	-1,494.9	820.7	724.4	96.36	8.517	
9,300.0	7,062.7	9,554.0	7,042.7	50.4	55.5	88.53	-2,426.8	-1,494.9	820.7	720.8	99.96	8.211	
9,400.0	7,062.4	9,654.0	7,042.4	52.2	57.1	88.53	-2,526.8	-1,494.9	820.7	717.2	103.57	7.924	
9,500.0	7,062.1	9,754.0	7,042.1	54.0	58.7	88.53	-2,626.8	-1,494.9	820.7	713.5	107.20	7.656	
9,600.0	7,061.8	9,854.0	7,041.8	55.8	60.4	88.53	-2,726.8	-1,494.9	820.7	709.9	110.84	7.405	
9,700.0	7,061.5	9,954.0	7,041.5	57.6	62.1	88.53	-2,826.8	-1,494.9	820.7	706.2	114.49	7.168	
9,800.0	7,061.2	10,054.0	7,041.1	59.4	63.8	88.53	-2,926.8	-1,494.9	820.7	702.6	118.16	6.946	
9,900.0	7,060.8	10,154.0	7,040.8	61.2	65.5	88.53	-3,026.8	-1,494.9	820.7	698.9	121.84	6.736	
10,000.0	7,060.5	10,254.0	7,040.5	63.0	67.2	88.53	-3,126.8	-1,494.9	820.7	695.2	125.52	6.538	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-203 - Wellbore #1 - Plan #2 (1-27-15)

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
10,100.0	7,060.2	10,354.0	7,040.2	64.9	68.9	88.53	-3,226.8	-1,494.9	820.7	691.5	129.22	6.352	
10,200.0	7,059.9	10,454.0	7,039.9	66.7	70.7	88.53	-3,326.8	-1,494.9	820.7	687.8	132.92	6.175	
10,300.0	7,059.6	10,554.0	7,039.6	68.6	72.4	88.53	-3,426.8	-1,494.9	820.7	684.1	136.63	6.007	
10,400.0	7,059.3	10,654.0	7,039.3	70.4	74.2	88.53	-3,526.8	-1,494.9	820.7	680.4	140.35	5.848	
10,500.0	7,059.0	10,754.0	7,038.9	72.3	75.9	88.53	-3,626.8	-1,494.9	820.7	676.7	144.07	5.697	
10,600.0	7,058.6	10,854.0	7,038.6	74.1	77.7	88.53	-3,726.8	-1,494.9	820.7	672.9	147.80	5.553	
10,700.0	7,058.3	10,954.0	7,038.3	76.0	79.5	88.53	-3,826.8	-1,494.9	820.7	669.2	151.54	5.416	
10,800.0	7,058.0	11,054.0	7,038.0	77.8	81.3	88.53	-3,926.8	-1,494.9	820.7	665.4	155.28	5.286	
10,900.0	7,057.7	11,154.0	7,037.7	79.7	83.1	88.53	-4,026.8	-1,494.9	820.7	661.7	159.02	5.161	
11,000.0	7,057.4	11,254.0	7,037.4	81.6	84.9	88.53	-4,126.8	-1,494.9	820.7	658.0	162.77	5.042	
11,100.0	7,057.1	11,354.0	7,037.1	83.4	86.7	88.53	-4,226.8	-1,494.9	820.7	654.2	166.53	4.929	
11,200.0	7,056.8	11,454.0	7,036.8	85.3	88.5	88.53	-4,326.8	-1,494.9	820.7	650.4	170.28	4.820	
11,300.0	7,056.4	11,554.0	7,036.4	87.2	90.3	88.53	-4,426.8	-1,494.9	820.7	646.7	174.04	4.716	
11,400.0	7,056.1	11,654.0	7,036.1	89.0	92.1	88.53	-4,526.8	-1,494.9	820.7	642.9	177.81	4.616	
11,500.0	7,055.8	11,754.0	7,035.8	90.9	93.9	88.53	-4,626.8	-1,494.9	820.7	639.2	181.57	4.520	
11,600.0	7,055.5	11,854.0	7,035.5	92.8	95.8	88.53	-4,726.8	-1,494.9	820.7	635.4	185.34	4.428	
11,700.0	7,055.2	11,954.0	7,035.2	94.7	97.6	88.53	-4,826.8	-1,494.9	820.7	631.6	189.12	4.340	
11,800.0	7,054.9	12,054.0	7,034.9	96.6	99.4	88.53	-4,926.8	-1,494.9	820.7	627.8	192.89	4.255	
11,900.0	7,054.6	12,154.0	7,034.6	98.4	101.3	88.53	-5,026.8	-1,494.9	820.7	624.1	196.67	4.173	
12,000.0	7,054.2	12,254.0	7,034.2	100.3	103.1	88.53	-5,126.8	-1,494.9	820.7	620.3	200.45	4.094	
12,100.0	7,053.9	12,354.0	7,033.9	102.2	105.0	88.53	-5,226.8	-1,494.9	820.7	616.5	204.23	4.019	
12,200.0	7,053.6	12,454.0	7,033.6	104.1	106.8	88.53	-5,326.8	-1,494.9	820.7	612.7	208.01	3.946	
12,300.0	7,053.3	12,554.0	7,033.3	106.0	108.6	88.53	-5,426.8	-1,494.9	820.7	608.9	211.80	3.875	
12,400.0	7,053.0	12,654.0	7,033.0	107.9	110.5	88.53	-5,526.8	-1,494.9	820.7	605.1	215.59	3.807	
12,500.0	7,052.7	12,754.0	7,032.7	109.8	112.3	88.53	-5,626.8	-1,494.9	820.7	601.3	219.38	3.741	
12,600.0	7,052.4	12,854.0	7,032.4	111.7	114.2	88.53	-5,726.8	-1,494.9	820.7	597.6	223.17	3.678	
12,700.0	7,052.0	12,954.0	7,032.0	113.5	116.1	88.53	-5,826.8	-1,494.9	820.7	593.8	226.96	3.616	
12,800.0	7,051.7	13,054.0	7,031.7	115.4	117.9	88.53	-5,926.8	-1,494.9	820.7	590.0	230.76	3.557	
12,900.0	7,051.4	13,154.0	7,031.4	117.3	119.8	88.53	-6,026.8	-1,494.9	820.7	586.2	234.55	3.499	
13,000.0	7,051.1	13,254.0	7,031.1	119.2	121.6	88.53	-6,126.8	-1,494.9	820.7	582.4	238.35	3.443	
13,100.0	7,050.8	13,354.0	7,030.8	121.1	123.5	88.53	-6,226.8	-1,494.9	820.7	578.6	242.15	3.389	
13,200.0	7,050.5	13,454.0	7,030.5	123.0	125.4	88.53	-6,326.8	-1,494.9	820.7	574.8	245.95	3.337	
13,300.0	7,050.2	13,554.0	7,030.2	124.9	127.2	88.53	-6,426.8	-1,494.9	820.7	571.0	249.75	3.286	
13,400.0	7,049.8	13,654.0	7,029.8	126.8	129.1	88.53	-6,526.8	-1,494.9	820.7	567.2	253.55	3.237	
13,500.0	7,049.5	13,754.0	7,029.5	128.7	131.0	88.53	-6,626.8	-1,494.9	820.7	563.4	257.35	3.189	
13,600.0	7,049.2	13,854.0	7,029.2	130.6	132.8	88.53	-6,726.8	-1,494.9	820.7	559.6	261.16	3.143	
13,700.0	7,048.9	13,954.0	7,028.9	132.5	134.7	88.53	-6,826.8	-1,494.9	820.7	555.8	264.96	3.098	
13,800.0	7,048.6	14,054.0	7,028.6	134.4	136.6	88.53	-6,926.8	-1,494.9	820.7	552.0	268.77	3.054	
13,900.0	7,048.3	14,154.0	7,028.3	136.3	138.5	88.53	-7,026.8	-1,494.9	820.7	548.2	272.57	3.011	
13,988.0	7,048.0	14,242.0	7,028.0	138.0	140.1	88.53	-7,114.8	-1,494.9	820.7	544.8	275.92	2.974 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)

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	-89.98	0.0	-30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-30.7	30.7	30.5	0.22	136.487	
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-30.7	30.7	30.0	0.67	45.496	
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-30.7	30.7	29.6	1.12	27.297	
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-30.7	30.7	29.1	1.57	19.498	CC, ES
500.0	500.0	499.5	499.5	1.0	1.0	-89.71	0.2	-31.5	31.5	29.5	2.01	15.676	
600.0	600.0	598.9	598.8	1.2	1.2	-88.97	0.6	-34.1	34.1	31.7	2.45	13.937	
700.0	700.0	698.2	698.0	1.5	1.4	-87.95	1.4	-38.3	38.4	35.5	2.89	13.279	
800.0	800.0	797.3	796.9	1.7	1.7	-86.86	2.4	-44.2	44.4	41.1	3.34	13.275	
900.0	900.0	896.1	895.5	1.9	1.9	-85.83	3.8	-51.8	52.1	48.3	3.81	13.684	
1,000.0	1,000.0	994.7	993.6	2.1	2.2	-84.92	5.4	-61.0	61.6	57.3	4.29	14.361	
1,100.0	1,100.0	1,092.9	1,091.2	2.4	2.4	-84.16	7.4	-71.9	72.8	68.0	4.78	15.211	
1,200.0	1,200.0	1,190.7	1,188.2	2.6	2.7	-83.52	9.6	-84.3	85.7	80.4	5.30	16.169	
1,300.0	1,300.0	1,288.1	1,284.5	2.8	3.0	-83.00	12.1	-98.3	100.2	94.4	5.83	17.191	
1,400.0	1,400.0	1,385.3	1,380.4	3.0	3.4	-82.57	14.8	-113.8	116.5	110.1	6.38	18.241	
1,500.0	1,500.0	1,484.0	1,477.8	3.2	3.7	1.00	17.8	-130.2	132.4	125.9	6.48	20.424	
1,600.0	1,600.0	1,583.0	1,575.3	3.5	4.1	1.29	20.7	-146.6	146.6	139.7	6.92	21.187	
1,700.0	1,699.9	1,682.2	1,673.1	3.7	4.4	1.54	23.6	-163.0	159.1	151.7	7.36	21.611	
1,800.0	1,799.7	1,781.6	1,771.1	3.9	4.8	1.77	26.5	-179.4	169.8	162.0	7.81	21.752	
1,900.0	1,899.4	1,881.2	1,869.3	4.1	5.2	1.99	29.5	-195.9	178.9	170.6	8.26	21.660	
2,000.0	1,998.9	1,980.9	1,967.6	4.3	5.5	2.21	32.4	-212.4	186.1	177.4	8.71	21.371	
2,100.0	2,098.3	2,080.8	2,066.1	4.6	5.9	2.44	35.4	-228.9	191.7	182.5	9.16	20.915	
2,200.0	2,197.4	2,180.7	2,164.6	4.8	6.3	2.68	38.3	-245.4	195.5	185.9	9.62	20.317	
2,300.0	2,296.3	2,280.7	2,263.1	5.1	6.7	2.93	41.3	-262.0	197.6	187.5	10.08	19.596	
2,400.0	2,395.0	2,380.7	2,361.7	5.4	7.1	3.21	44.2	-278.5	198.2	187.6	10.55	18.781	
2,500.0	2,493.6	2,480.7	2,460.2	5.7	7.5	3.48	47.2	-295.1	198.6	187.6	11.03	18.006	
2,600.0	2,592.3	2,580.7	2,558.8	6.0	7.8	3.76	50.1	-311.6	199.1	187.6	11.51	17.292	
2,700.0	2,690.9	2,680.7	2,657.4	6.4	8.2	4.03	53.1	-328.2	199.6	187.6	12.00	16.632	
2,800.0	2,789.6	2,780.7	2,756.0	6.7	8.6	4.30	56.0	-344.7	200.1	187.6	12.49	16.020	
2,900.0	2,888.2	2,880.6	2,854.5	7.0	9.0	4.57	59.0	-361.2	200.5	187.6	12.98	15.452	
3,000.0	2,986.9	2,980.6	2,953.1	7.4	9.4	4.84	61.9	-377.8	201.0	187.6	13.47	14.923	
3,100.0	3,085.5	3,080.6	3,051.7	7.7	9.8	5.11	64.9	-394.3	201.5	187.6	13.97	14.430	
3,200.0	3,184.2	3,180.6	3,150.3	8.1	10.2	5.38	67.8	-410.9	202.0	187.6	14.46	13.968	
3,300.0	3,282.8	3,280.6	3,248.8	8.4	10.6	5.64	70.8	-427.4	202.5	187.6	14.96	13.536	
3,400.0	3,381.5	3,380.6	3,347.4	8.8	10.9	5.91	73.7	-444.0	203.0	187.6	15.46	13.131	
3,500.0	3,480.1	3,480.6	3,446.0	9.2	11.3	6.17	76.7	-460.5	203.5	187.6	15.96	12.750	
3,600.0	3,578.8	3,580.6	3,544.5	9.5	11.7	6.43	79.6	-477.1	204.1	187.6	16.47	12.391	
3,700.0	3,677.4	3,680.6	3,643.1	9.9	12.1	6.69	82.6	-493.6	204.6	187.6	16.97	12.052	
3,800.0	3,776.1	3,780.6	3,741.7	10.2	12.5	6.95	85.5	-510.1	205.1	187.6	17.48	11.733	
3,900.0	3,874.7	3,880.6	3,840.3	10.6	12.9	7.21	88.5	-526.7	205.6	187.6	17.99	11.430	
4,000.0	3,973.4	3,980.6	3,938.8	11.0	13.3	7.47	91.4	-543.2	206.2	187.7	18.50	11.144	
4,100.0	4,072.0	4,080.6	4,037.4	11.3	13.7	7.72	94.4	-559.8	206.7	187.7	19.01	10.872	
4,200.0	4,170.7	4,180.6	4,136.0	11.7	14.1	7.97	97.3	-576.3	207.2	187.7	19.52	10.614	
4,300.0	4,269.3	4,280.6	4,234.5	12.1	14.5	8.23	100.3	-592.9	207.8	187.7	20.04	10.368	
4,400.0	4,368.0	4,380.6	4,333.1	12.5	14.8	8.48	103.2	-609.4	208.3	187.8	20.56	10.134	
4,500.0	4,466.6	4,480.6	4,431.7	12.8	15.2	8.73	106.2	-625.9	208.9	187.8	21.07	9.911	
4,600.0	4,565.3	4,580.6	4,530.3	13.2	15.6	8.98	109.1	-642.5	209.4	187.8	21.59	9.699	
4,700.0	4,663.9	4,680.5	4,628.8	13.6	16.0	9.22	112.1	-659.0	210.0	187.9	22.11	9.496	
4,800.0	4,762.6	4,780.5	4,727.4	14.0	16.4	9.47	115.0	-675.6	210.5	187.9	22.64	9.301	
4,900.0	4,861.2	4,880.5	4,826.0	14.3	16.8	9.71	118.0	-692.1	211.1	188.0	23.16	9.115	
5,000.0	4,959.9	4,980.5	4,924.6	14.7	17.2	9.96	120.9	-708.7	211.7	188.0	23.69	8.937	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)

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
5,100.0	5,058.5	5,080.5	5,023.1	15.1	17.6	10.20	123.9	-725.2	212.3	188.0	24.21	8.767	
5,200.0	5,157.2	5,180.5	5,121.7	15.5	18.0	10.44	126.8	-741.7	212.8	188.1	24.74	8.603	
5,300.0	5,255.8	5,280.5	5,220.3	15.8	18.4	10.68	129.8	-758.3	213.4	188.2	25.27	8.446	
5,400.0	5,354.5	5,380.5	5,318.8	16.2	18.8	10.91	132.7	-774.8	214.0	188.2	25.80	8.294	
5,500.0	5,453.1	5,480.5	5,417.4	16.6	19.2	11.15	135.7	-791.4	214.6	188.3	26.33	8.149	
5,600.0	5,551.8	5,580.5	5,516.0	17.0	19.5	11.39	138.6	-807.9	215.2	188.3	26.87	8.009	
5,700.0	5,650.4	5,680.5	5,614.6	17.4	19.9	11.62	141.6	-824.5	215.8	188.4	27.40	7.874	
5,800.0	5,749.1	5,780.5	5,713.1	17.7	20.3	11.85	144.5	-841.0	216.4	188.5	27.94	7.747	
5,900.0	5,848.1	5,880.4	5,811.7	18.0	20.7	11.96	147.5	-857.5	219.4	191.0	28.41	7.721	
6,000.0	5,947.5	5,980.2	5,910.0	18.2	21.1	11.90	150.4	-874.1	225.7	196.9	28.84	7.828	
6,100.0	6,047.3	6,079.7	6,008.1	18.4	21.5	11.68	153.3	-890.5	235.5	206.3	29.21	8.062	
6,200.0	6,147.2	6,178.9	6,105.8	18.6	21.9	11.34	156.3	-906.9	248.7	219.1	29.53	8.420	
6,300.0	6,247.2	6,277.5	6,203.1	18.7	22.3	-72.35	159.2	-923.2	264.8	235.0	29.87	8.865	
6,400.0	6,347.2	6,376.0	6,300.2	18.9	22.7	106.89	162.1	-939.5	281.9	251.7	30.20	9.333	
6,500.0	6,446.4	6,475.0	6,397.7	19.0	23.1	107.26	164.9	-955.9	302.1	271.6	30.50	9.906	
6,600.0	6,543.1	6,587.7	6,508.7	19.1	23.4	108.40	158.2	-974.5	323.8	293.0	30.81	10.507	
6,700.0	6,635.8	6,704.3	6,621.0	19.2	23.7	109.08	133.9	-993.4	344.6	313.5	31.08	11.087	
6,800.0	6,722.8	6,824.6	6,731.7	19.4	24.1	109.35	91.0	-1,011.9	364.0	332.6	31.35	11.609	
6,900.0	6,802.6	6,948.3	6,837.2	19.5	24.4	109.26	29.1	-1,029.7	381.3	349.6	31.69	12.033	
7,000.0	6,874.0	7,075.1	6,933.6	19.8	24.7	108.86	-51.3	-1,045.8	396.0	363.8	32.17	12.310	
7,100.0	6,935.5	7,204.0	7,016.9	20.1	25.0	108.16	-148.6	-1,059.8	407.7	374.8	32.90	12.392	
7,200.0	6,986.3	7,334.3	7,083.4	20.5	25.5	107.20	-259.8	-1,071.0	416.0	382.1	33.95	12.255	
7,300.0	7,025.4	7,464.6	7,130.4	21.0	26.1	105.99	-381.0	-1,078.8	420.9	385.5	35.38	11.898	
7,400.0	7,052.1	7,594.0	7,156.3	21.8	26.8	104.56	-507.5	-1,083.2	422.3	385.1	37.21	11.351	
7,500.0	7,066.1	7,713.6	7,161.7	22.7	27.6	103.11	-626.9	-1,084.1	420.7	381.4	39.31	10.703	
7,574.4	7,069.5	7,787.9	7,161.7	23.4	28.2	102.69	-701.2	-1,084.1	419.9	379.0	40.89	10.269	
7,600.0	7,068.1	7,813.6	7,161.7	23.7	28.5	102.88	-726.9	-1,084.1	420.3	378.9	41.38	10.156	
7,700.0	7,067.8	7,913.6	7,161.8	24.9	29.4	102.93	-826.9	-1,084.1	420.3	376.5	43.88	9.580	
7,800.0	7,067.4	8,013.6	7,161.8	26.1	30.4	102.97	-926.9	-1,084.1	420.4	373.9	46.54	9.033	
7,900.0	7,067.1	8,113.6	7,161.8	27.5	31.6	103.02	-1,026.9	-1,084.1	420.5	371.1	49.34	8.521	
8,000.0	7,066.8	8,213.6	7,161.9	28.9	32.8	103.07	-1,126.9	-1,084.1	420.6	368.3	52.27	8.047	
8,100.0	7,066.5	8,313.6	7,161.9	30.3	34.1	103.11	-1,226.9	-1,084.1	420.6	365.4	55.29	7.609	
8,200.0	7,066.2	8,413.6	7,162.0	31.8	35.4	103.16	-1,326.9	-1,084.1	420.7	362.3	58.39	7.206	
8,300.0	7,065.9	8,513.6	7,162.0	33.4	36.8	103.20	-1,426.9	-1,084.1	420.8	359.2	61.56	6.836	
8,400.0	7,065.6	8,613.6	7,162.0	35.0	38.3	103.25	-1,526.9	-1,084.1	420.9	356.1	64.79	6.496	
8,500.0	7,065.2	8,713.6	7,162.1	36.6	39.7	103.30	-1,626.9	-1,084.1	421.0	352.9	68.08	6.184	
8,600.0	7,064.9	8,813.6	7,162.1	38.3	41.3	103.34	-1,726.9	-1,084.1	421.0	349.6	71.40	5.897	
8,700.0	7,064.6	8,913.6	7,162.1	40.0	42.8	103.39	-1,826.9	-1,084.1	421.1	346.4	74.77	5.632	
8,800.0	7,064.3	9,013.6	7,162.2	41.7	44.4	103.44	-1,926.9	-1,084.1	421.2	343.0	78.17	5.389	
8,900.0	7,064.0	9,113.6	7,162.2	43.4	46.0	103.48	-2,026.9	-1,084.1	421.3	339.7	81.59	5.163	
9,000.0	7,063.7	9,213.6	7,162.2	45.1	47.7	103.53	-2,126.9	-1,084.1	421.4	336.3	85.04	4.955	
9,100.0	7,063.4	9,313.6	7,162.3	46.9	49.3	103.57	-2,226.9	-1,084.1	421.4	332.9	88.52	4.761	
9,200.0	7,063.0	9,413.6	7,162.3	48.6	51.0	103.62	-2,326.9	-1,084.1	421.5	329.5	92.01	4.582	
9,300.0	7,062.7	9,513.6	7,162.3	50.4	52.7	103.67	-2,426.9	-1,084.1	421.6	326.1	95.52	4.414	
9,400.0	7,062.4	9,613.6	7,162.4	52.2	54.4	103.71	-2,526.9	-1,084.1	421.7	322.7	99.04	4.258	
9,500.0	7,062.1	9,713.6	7,162.4	54.0	56.1	103.76	-2,626.9	-1,084.1	421.8	319.2	102.58	4.112	
9,600.0	7,061.8	9,813.6	7,162.4	55.8	57.9	103.80	-2,726.9	-1,084.1	421.9	315.7	106.12	3.975	
9,700.0	7,061.5	9,913.6	7,162.5	57.6	59.6	103.85	-2,826.9	-1,084.1	421.9	312.3	109.68	3.847	
9,800.0	7,061.2	10,013.6	7,162.5	59.4	61.4	103.90	-2,926.9	-1,084.1	422.0	308.8	113.25	3.726	
9,900.0	7,060.8	10,113.6	7,162.5	61.2	63.2	103.94	-3,026.9	-1,084.1	422.1	305.3	116.83	3.613	
10,000.0	7,060.5	10,213.6	7,162.6	63.0	64.9	103.99	-3,126.9	-1,084.1	422.2	301.8	120.41	3.506	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)

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
10,100.0	7,060.2	10,313.6	7,162.6	64.9	66.7	104.03	-3,226.9	-1,084.1	422.3	298.3	124.00	3.405	
10,200.0	7,059.9	10,413.6	7,162.7	66.7	68.5	104.08	-3,326.9	-1,084.1	422.4	294.8	127.60	3.310	
10,300.0	7,059.6	10,513.6	7,162.7	68.6	70.3	104.13	-3,426.9	-1,084.1	422.5	291.2	131.20	3.220	
10,400.0	7,059.3	10,613.6	7,162.7	70.4	72.1	104.17	-3,526.9	-1,084.1	422.5	287.7	134.81	3.134	
10,500.0	7,059.0	10,713.6	7,162.8	72.3	73.9	104.22	-3,626.9	-1,084.1	422.6	284.2	138.42	3.053	
10,600.0	7,058.6	10,813.6	7,162.8	74.1	75.8	104.26	-3,726.9	-1,084.1	422.7	280.7	142.04	2.976	
10,700.0	7,058.3	10,913.6	7,162.8	76.0	77.6	104.31	-3,826.9	-1,084.1	422.8	277.1	145.66	2.903	
10,800.0	7,058.0	11,013.6	7,162.9	77.8	79.4	104.36	-3,926.9	-1,084.1	422.9	273.6	149.28	2.833	
10,900.0	7,057.7	11,113.6	7,162.9	79.7	81.2	104.40	-4,026.9	-1,084.1	423.0	270.1	152.91	2.766	
11,000.0	7,057.4	11,213.6	7,162.9	81.6	83.1	104.45	-4,126.9	-1,084.1	423.1	266.5	156.53	2.703	
11,100.0	7,057.1	11,313.6	7,163.0	83.4	84.9	104.49	-4,226.9	-1,084.1	423.1	263.0	160.16	2.642	
11,200.0	7,056.8	11,413.6	7,163.0	85.3	86.7	104.54	-4,326.9	-1,084.1	423.2	259.4	163.80	2.584	
11,300.0	7,056.4	11,513.6	7,163.0	87.2	88.6	104.58	-4,426.9	-1,084.1	423.3	255.9	167.43	2.528	
11,400.0	7,056.1	11,613.6	7,163.1	89.0	90.4	104.63	-4,526.8	-1,084.1	423.4	252.3	171.07	2.475	
11,500.0	7,055.8	11,713.6	7,163.1	90.9	92.3	104.68	-4,626.8	-1,084.1	423.5	248.8	174.70	2.424	
11,600.0	7,055.5	11,813.6	7,163.1	92.8	94.1	104.72	-4,726.8	-1,084.1	423.6	245.2	178.34	2.375	
11,700.0	7,055.2	11,913.6	7,163.2	94.7	96.0	104.77	-4,826.8	-1,084.1	423.7	241.7	181.98	2.328	
11,800.0	7,054.9	12,013.6	7,163.2	96.6	97.9	104.81	-4,926.8	-1,084.1	423.8	238.1	185.62	2.283	
11,900.0	7,054.6	12,113.6	7,163.2	98.4	99.7	104.86	-5,026.8	-1,084.1	423.8	234.6	189.26	2.239	
12,000.0	7,054.2	12,213.6	7,163.3	100.3	101.6	104.90	-5,126.8	-1,084.1	423.9	231.0	192.90	2.198	
12,100.0	7,053.9	12,313.6	7,163.3	102.2	103.4	104.95	-5,226.8	-1,084.1	424.0	227.5	196.55	2.157	
12,200.0	7,053.6	12,413.6	7,163.4	104.1	105.3	104.99	-5,326.8	-1,084.1	424.1	223.9	200.19	2.119	
12,300.0	7,053.3	12,513.6	7,163.4	106.0	107.2	105.04	-5,426.8	-1,084.1	424.2	220.4	203.83	2.081	
12,400.0	7,053.0	12,613.6	7,163.4	107.9	109.1	105.09	-5,526.8	-1,084.1	424.3	216.8	207.47	2.045	
12,500.0	7,052.7	12,713.6	7,163.5	109.8	110.9	105.13	-5,626.8	-1,084.1	424.4	213.3	211.12	2.010	
12,600.0	7,052.4	12,813.6	7,163.5	111.7	112.8	105.18	-5,726.8	-1,084.1	424.5	209.7	214.76	1.977	
12,700.0	7,052.0	12,913.6	7,163.5	113.5	114.7	105.22	-5,826.8	-1,084.1	424.6	206.2	218.40	1.944	
12,800.0	7,051.7	13,013.6	7,163.6	115.4	116.6	105.27	-5,926.8	-1,084.1	424.7	202.6	222.05	1.913	
12,900.0	7,051.4	13,113.5	7,163.6	117.3	118.4	105.31	-6,026.8	-1,084.1	424.8	199.1	225.69	1.882	
13,000.0	7,051.1	13,213.5	7,163.6	119.2	120.3	105.36	-6,126.8	-1,084.1	424.9	195.5	229.33	1.853	
13,100.0	7,050.8	13,313.5	7,163.7	121.1	122.2	105.40	-6,226.8	-1,084.1	424.9	192.0	232.98	1.824	
13,200.0	7,050.5	13,413.5	7,163.7	123.0	124.1	105.45	-6,326.8	-1,084.1	425.0	188.4	236.62	1.796	
13,300.0	7,050.2	13,513.5	7,163.7	124.9	126.0	105.49	-6,426.8	-1,084.1	425.1	184.9	240.26	1.769	
13,400.0	7,049.8	13,613.5	7,163.8	126.8	127.8	105.54	-6,526.8	-1,084.1	425.2	181.3	243.90	1.743	
13,500.0	7,049.5	13,713.5	7,163.8	128.7	129.7	105.59	-6,626.8	-1,084.1	425.3	177.8	247.54	1.718	
13,600.0	7,049.2	13,813.5	7,163.8	130.6	131.6	105.63	-6,726.8	-1,084.1	425.4	174.2	251.18	1.694	
13,700.0	7,048.9	13,913.5	7,163.9	132.5	133.5	105.68	-6,826.8	-1,084.1	425.5	170.7	254.82	1.670	
13,800.0	7,048.6	14,013.5	7,163.9	134.4	135.4	105.72	-6,926.8	-1,084.1	425.6	167.1	258.46	1.647	
13,900.0	7,048.3	14,113.5	7,163.9	136.3	137.3	105.77	-7,026.8	-1,084.1	425.7	163.6	262.10	1.624	
13,988.0	7,048.0	14,201.5	7,164.0	138.0	139.0	105.81	-7,114.8	-1,084.1	425.8	160.5	265.30	1.605	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)

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	58.6	58.6				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	58.6	58.6	58.3	0.22	260.567	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	58.6	58.6	57.9	0.67	86.856	
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	58.6	58.6	57.4	1.12	52.113	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	58.6	58.6	57.0	1.57	37.224	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	58.6	58.6	56.5	2.02	28.952	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	58.6	58.6	56.1	2.47	23.688	
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	58.6	58.6	55.6	2.92	20.044	
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	58.6	58.6	55.2	3.37	17.371	
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	58.6	58.6	54.7	3.82	15.327	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	58.6	58.6	54.3	4.27	13.714	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.00	0.0	58.6	58.6	53.8	4.72	12.408	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.00	0.0	58.6	58.6	53.4	5.17	11.329	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.00	0.0	58.6	58.6	52.9	5.62	10.423	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.00	0.0	58.6	58.6	52.5	6.07	9.651	CC, ES
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	173.33	0.0	58.6	59.4	52.9	6.51	9.137	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	173.61	0.0	58.6	62.0	55.1	6.93	8.952	
1,700.0	1,699.9	1,699.9	1,699.9	3.7	3.7	174.02	0.0	58.6	66.4	59.0	7.35	9.024	
1,800.0	1,799.7	1,799.7	1,799.7	3.9	3.9	174.52	0.0	58.6	72.4	64.7	7.78	9.311	
1,900.0	1,899.4	1,899.4	1,899.4	4.1	4.2	175.05	0.0	58.6	80.3	72.1	8.21	9.781	
2,000.0	1,998.9	1,998.9	1,998.9	4.3	4.4	175.57	0.0	58.6	89.8	81.2	8.63	10.406	
2,100.0	2,098.3	2,097.6	2,097.6	4.6	4.6	175.61	0.8	58.9	101.4	92.3	9.05	11.202	
2,200.0	2,197.4	2,196.0	2,196.0	4.8	4.8	174.91	3.1	59.9	115.3	105.9	9.47	12.176	
2,300.0	2,296.3	2,293.8	2,293.7	5.1	5.0	173.74	6.9	61.5	131.6	121.7	9.89	13.309	
2,400.0	2,395.0	2,391.1	2,390.8	5.4	5.3	172.32	12.3	63.8	150.1	139.7	10.32	14.539	
2,500.0	2,493.6	2,488.0	2,487.4	5.7	5.5	170.71	19.1	66.8	169.4	158.7	10.77	15.737	
2,600.0	2,592.3	2,584.4	2,583.4	6.0	5.7	168.98	27.4	70.3	189.7	178.5	11.22	16.907	
2,700.0	2,690.9	2,680.4	2,678.8	6.4	5.9	167.20	37.1	74.5	210.8	199.2	11.68	18.052	
2,800.0	2,789.6	2,775.8	2,773.4	6.7	6.2	165.40	48.2	79.3	233.0	220.8	12.15	19.178	
2,900.0	2,888.2	2,870.6	2,867.3	7.0	6.4	163.61	60.7	84.6	256.2	243.6	12.63	20.286	
3,000.0	2,986.9	2,964.9	2,960.4	7.4	6.7	161.85	74.5	90.6	280.5	267.4	13.12	21.381	
3,100.0	3,085.5	3,061.4	3,055.5	7.7	6.9	160.22	89.3	96.9	305.5	291.9	13.63	22.416	
3,200.0	3,184.2	3,157.9	3,150.6	8.1	7.2	158.84	104.1	103.3	330.7	316.6	14.14	23.382	
3,300.0	3,282.8	3,254.4	3,245.8	8.4	7.5	157.64	118.9	109.6	356.0	341.4	14.66	24.279	
3,400.0	3,381.5	3,350.9	3,340.9	8.8	7.8	156.61	133.7	116.0	381.5	366.3	15.19	25.114	
3,500.0	3,480.1	3,447.4	3,436.0	9.2	8.1	155.71	148.5	122.3	407.1	391.3	15.72	25.891	
3,600.0	3,578.8	3,543.9	3,531.2	9.5	8.4	154.91	163.3	128.7	432.7	416.4	16.26	26.616	
3,700.0	3,677.4	3,640.3	3,626.3	9.9	8.7	154.20	178.1	135.1	458.4	441.6	16.80	27.291	
3,800.0	3,776.1	3,736.8	3,721.4	10.2	9.0	153.57	192.9	141.4	484.2	466.8	17.34	27.923	
3,900.0	3,874.7	3,833.3	3,816.6	10.6	9.3	153.00	207.7	147.8	510.0	492.1	17.89	28.514	
4,000.0	3,973.4	3,929.8	3,911.7	11.0	9.7	152.49	222.5	154.1	535.9	517.4	18.44	29.068	
4,100.0	4,072.0	4,039.9	4,020.5	11.3	10.0	152.09	237.8	160.7	560.7	541.8	18.98	29.548	
4,200.0	4,170.7	4,153.1	4,133.0	11.7	10.3	152.04	249.5	165.7	583.0	563.5	19.49	29.917	
4,300.0	4,269.3	4,267.5	4,247.1	12.1	10.5	152.30	257.3	169.1	602.5	582.5	19.98	30.163	
4,400.0	4,368.0	4,382.9	4,362.4	12.5	10.7	152.87	260.8	170.6	619.4	598.9	20.44	30.297	
4,500.0	4,466.6	4,487.1	4,466.6	12.8	10.9	153.56	261.0	170.7	634.2	613.3	20.89	30.362	
4,600.0	4,565.3	4,585.8	4,565.3	13.2	11.1	154.20	261.0	170.7	648.9	627.6	21.34	30.404	
4,700.0	4,663.9	4,684.4	4,663.9	13.6	11.3	154.82	261.0	170.7	663.7	641.9	21.80	30.445	
4,800.0	4,762.6	4,783.1	4,762.6	14.0	11.5	155.40	261.0	170.7	678.6	656.4	22.26	30.488	
4,900.0	4,861.2	4,881.7	4,861.2	14.3	11.7	155.97	261.0	170.7	693.6	670.8	22.72	30.532	
5,000.0	4,959.9	4,980.4	4,959.9	14.7	11.9	156.50	261.0	170.7	708.6	685.4	23.17	30.578	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)

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
5,100.0	5,058.5	5,079.0	5,058.5	15.1	12.1	157.02	261.0	170.7	723.7	700.0	23.63	30.625	
5,200.0	5,157.2	5,177.7	5,157.2	15.5	12.3	157.51	261.0	170.7	738.8	714.7	24.09	30.673	
5,300.0	5,255.8	5,276.3	5,255.8	15.8	12.5	157.99	261.0	170.7	754.0	729.4	24.54	30.721	
5,400.0	5,354.5	5,375.0	5,354.5	16.2	12.7	158.45	261.0	170.7	769.2	744.2	25.00	30.769	
5,500.0	5,453.1	5,473.6	5,453.1	16.6	12.9	158.88	261.0	170.7	784.5	759.0	25.46	30.817	
5,600.0	5,551.8	5,572.3	5,551.8	17.0	13.1	159.31	261.0	170.7	799.8	773.9	25.91	30.866	
5,700.0	5,650.4	5,670.9	5,650.4	17.4	13.3	159.71	261.0	170.7	815.2	788.8	26.37	30.914	
5,800.0	5,749.1	5,769.6	5,749.1	17.7	13.5	160.12	261.0	170.7	830.5	803.7	26.84	30.948	
5,900.0	5,848.1	5,868.6	5,848.1	18.0	13.7	160.53	261.0	170.7	843.7	816.4	27.31	30.895	
6,000.0	5,947.5	5,968.0	5,947.5	18.2	13.9	160.83	261.0	170.7	853.7	825.9	27.75	30.760	
6,100.0	6,047.3	6,067.8	6,047.3	18.4	14.1	161.03	261.0	170.7	860.4	832.2	28.17	30.545	
6,200.0	6,147.2	6,167.7	6,147.2	18.6	14.3	161.13	261.0	170.7	863.8	835.2	28.55	30.255	
6,300.0	6,247.2	6,267.7	6,247.2	18.7	14.5	77.91	261.0	170.7	864.2	835.3	28.93	29.875	
6,400.0	6,347.2	6,381.2	6,360.6	18.9	14.7	-102.06	258.9	170.7	864.1	834.8	29.33	29.464	
6,500.0	6,446.4	6,511.7	6,489.3	19.0	14.8	-101.79	238.1	170.7	863.4	833.8	29.57	29.192	
6,600.0	6,543.1	6,640.6	6,611.2	19.1	14.9	-101.26	196.4	170.7	861.8	832.1	29.68	29.032	
6,700.0	6,635.8	6,767.0	6,722.2	19.2	14.9	-100.48	136.2	170.7	859.6	829.9	29.76	28.884	
6,800.0	6,722.8	6,890.3	6,819.4	19.4	14.9	-99.49	60.7	170.7	857.1	827.2	29.94	28.632	
6,900.0	6,802.6	7,009.8	6,900.9	19.5	15.0	-98.32	-26.5	170.7	854.4	824.0	30.34	28.163	
7,000.0	6,874.0	7,125.5	6,966.0	19.8	15.4	-97.01	-122.1	170.7	851.7	820.6	31.07	27.416	
7,100.0	6,935.5	7,237.2	7,014.4	20.1	16.0	-95.59	-222.6	170.7	849.3	817.1	32.17	26.397	
7,200.0	6,986.3	7,345.0	7,046.7	20.5	16.8	-94.09	-325.3	170.7	847.4	813.7	33.66	25.173	
7,300.0	7,025.4	7,449.1	7,064.0	21.0	17.8	-92.56	-427.9	170.7	846.0	810.5	35.48	23.845	
7,400.0	7,052.1	7,549.4	7,067.5	21.8	18.8	-91.02	-528.1	170.7	845.2	807.7	37.55	22.509	
7,500.0	7,066.1	7,648.3	7,066.9	22.7	20.0	-90.06	-627.0	170.7	845.1	805.2	39.84	21.213	
7,519.3	7,067.4	7,667.5	7,066.8	22.9	20.3	-89.96	-646.2	170.7	845.1	804.8	40.31	20.964	
7,600.0	7,068.1	7,748.2	7,066.3	23.7	21.3	-89.88	-726.9	170.7	845.1	802.7	42.34	19.958	
7,700.0	7,067.8	7,848.2	7,065.6	24.9	22.7	-89.85	-826.9	170.7	845.1	800.0	45.04	18.763	
7,800.0	7,067.4	7,948.2	7,065.0	26.1	24.1	-89.83	-926.9	170.7	845.1	797.2	47.89	17.645	
7,900.0	7,067.1	8,048.2	7,064.3	27.5	25.6	-89.81	-1,026.9	170.7	845.1	794.2	50.88	16.611	
8,000.0	7,066.8	8,148.2	7,063.7	28.9	27.2	-89.79	-1,126.9	170.7	845.1	791.1	53.97	15.659	
8,100.0	7,066.5	8,248.2	7,063.0	30.3	28.8	-89.76	-1,226.9	170.7	845.1	787.9	57.15	14.787	
8,200.0	7,066.2	8,348.2	7,062.4	31.8	30.4	-89.74	-1,326.9	170.7	845.1	784.7	60.41	13.990	
8,300.0	7,065.9	8,448.2	7,061.7	33.4	32.1	-89.72	-1,426.9	170.7	845.1	781.3	63.73	13.260	
8,400.0	7,065.6	8,548.2	7,061.1	35.0	33.8	-89.70	-1,526.9	170.7	845.1	778.0	67.11	12.593	
8,500.0	7,065.2	8,648.2	7,060.4	36.6	35.5	-89.67	-1,626.9	170.7	845.1	774.5	70.53	11.981	
8,600.0	7,064.9	8,748.2	7,059.8	38.3	37.3	-89.65	-1,726.9	170.7	845.1	771.1	74.00	11.420	
8,700.0	7,064.6	8,848.2	7,059.1	40.0	39.0	-89.63	-1,826.9	170.7	845.1	767.6	77.50	10.904	
8,800.0	7,064.3	8,948.2	7,058.5	41.7	40.8	-89.61	-1,926.9	170.7	845.1	764.1	81.03	10.429	
8,900.0	7,064.0	9,048.2	7,057.9	43.4	42.6	-89.58	-2,026.9	170.7	845.1	760.5	84.59	9.990	
9,000.0	7,063.7	9,148.2	7,057.2	45.1	44.4	-89.56	-2,126.9	170.7	845.1	756.9	88.17	9.585	
9,100.0	7,063.4	9,248.2	7,056.6	46.9	46.2	-89.54	-2,226.9	170.7	845.1	753.3	91.77	9.208	
9,200.0	7,063.0	9,348.2	7,055.9	48.6	48.0	-89.52	-2,326.9	170.7	845.1	749.7	95.39	8.859	
9,300.0	7,062.7	9,448.2	7,055.3	50.4	49.8	-89.49	-2,426.8	170.7	845.1	746.1	99.03	8.534	
9,400.0	7,062.4	9,548.2	7,054.6	52.2	51.6	-89.47	-2,526.8	170.7	845.1	742.4	102.68	8.230	
9,500.0	7,062.1	9,648.2	7,054.0	54.0	53.5	-89.45	-2,626.8	170.7	845.1	738.8	106.35	7.947	
9,600.0	7,061.8	9,748.2	7,053.3	55.8	55.3	-89.43	-2,726.8	170.7	845.1	735.1	110.03	7.681	
9,700.0	7,061.5	9,848.2	7,052.7	57.6	57.2	-89.40	-2,826.8	170.7	845.1	731.4	113.71	7.432	
9,800.0	7,061.2	9,948.2	7,052.0	59.4	59.0	-89.38	-2,926.8	170.7	845.1	727.7	117.41	7.198	
9,900.0	7,060.8	10,048.2	7,051.4	61.2	60.9	-89.36	-3,026.8	170.7	845.1	724.0	121.12	6.978	
10,000.0	7,060.5	10,148.2	7,050.8	63.0	62.7	-89.34	-3,126.8	170.7	845.1	720.3	124.83	6.770	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)

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
10,100.0	7,060.2	10,248.2	7,050.1	64.9	64.6	-89.31	-3,226.8	170.7	845.1	716.6	128.55	6.574	
10,200.0	7,059.9	10,348.2	7,049.5	66.7	66.5	-89.29	-3,326.8	170.7	845.1	712.9	132.28	6.389	
10,300.0	7,059.6	10,448.2	7,048.8	68.6	68.3	-89.27	-3,426.8	170.7	845.1	709.1	136.01	6.214	
10,400.0	7,059.3	10,548.2	7,048.2	70.4	70.2	-89.25	-3,526.8	170.7	845.1	705.4	139.75	6.048	
10,500.0	7,059.0	10,648.2	7,047.5	72.3	72.1	-89.22	-3,626.8	170.7	845.1	701.6	143.49	5.890	
10,600.0	7,058.6	10,748.2	7,046.9	74.1	74.0	-89.20	-3,726.8	170.7	845.1	697.9	147.24	5.740	
10,700.0	7,058.3	10,848.2	7,046.2	76.0	75.8	-89.18	-3,826.8	170.7	845.2	694.2	151.00	5.597	
10,800.0	7,058.0	10,948.2	7,045.6	77.8	77.7	-89.16	-3,926.8	170.7	845.2	690.4	154.75	5.461	
10,900.0	7,057.7	11,048.2	7,044.9	79.7	79.6	-89.13	-4,026.8	170.7	845.2	686.6	158.52	5.332	
11,000.0	7,057.4	11,148.2	7,044.3	81.6	81.5	-89.11	-4,126.8	170.7	845.2	682.9	162.28	5.208	
11,100.0	7,057.1	11,248.2	7,043.7	83.4	83.4	-89.09	-4,226.8	170.7	845.2	679.1	166.05	5.090	
11,200.0	7,056.8	11,348.2	7,043.0	85.3	85.3	-89.07	-4,326.8	170.7	845.2	675.4	169.82	4.977	
11,300.0	7,056.4	11,448.2	7,042.4	87.2	87.1	-89.05	-4,426.8	170.7	845.2	671.6	173.59	4.869	
11,400.0	7,056.1	11,548.2	7,041.7	89.0	89.0	-89.02	-4,526.8	170.7	845.2	667.8	177.37	4.765	
11,500.0	7,055.8	11,648.2	7,041.1	90.9	90.9	-89.00	-4,626.8	170.7	845.2	664.0	181.15	4.666	
11,600.0	7,055.5	11,748.2	7,040.4	92.8	92.8	-88.98	-4,726.8	170.7	845.2	660.3	184.93	4.570	
11,700.0	7,055.2	11,848.2	7,039.8	94.7	94.7	-88.96	-4,826.8	170.7	845.2	656.5	188.71	4.479	
11,800.0	7,054.9	11,948.2	7,039.1	96.6	96.6	-88.93	-4,926.8	170.7	845.2	652.7	192.50	4.391	
11,900.0	7,054.6	12,048.2	7,038.5	98.4	98.5	-88.91	-5,026.8	170.7	845.2	648.9	196.29	4.306	
12,000.0	7,054.2	12,148.2	7,037.8	100.3	100.4	-88.89	-5,126.8	170.7	845.2	645.1	200.08	4.225	
12,100.0	7,053.9	12,248.2	7,037.2	102.2	102.3	-88.87	-5,226.8	170.7	845.2	641.4	203.87	4.146	
12,200.0	7,053.6	12,348.2	7,036.5	104.1	104.2	-88.84	-5,326.8	170.7	845.2	637.6	207.66	4.070	
12,300.0	7,053.3	12,448.2	7,035.9	106.0	106.1	-88.82	-5,426.8	170.7	845.2	633.8	211.45	3.997	
12,400.0	7,053.0	12,548.2	7,035.3	107.9	108.0	-88.80	-5,526.8	170.7	845.3	630.0	215.25	3.927	
12,500.0	7,052.7	12,648.2	7,034.6	109.8	109.9	-88.78	-5,626.8	170.7	845.3	626.2	219.05	3.859	
12,600.0	7,052.4	12,748.2	7,034.0	111.7	111.8	-88.75	-5,726.8	170.7	845.3	622.4	222.85	3.793	
12,700.0	7,052.0	12,848.2	7,033.3	113.5	113.7	-88.73	-5,826.8	170.7	845.3	618.6	226.64	3.730	
12,800.0	7,051.7	12,948.2	7,032.7	115.4	115.6	-88.71	-5,926.8	170.7	845.3	614.8	230.44	3.668	
12,900.0	7,051.4	13,048.2	7,032.0	117.3	117.5	-88.69	-6,026.8	170.7	845.3	611.0	234.25	3.609	
13,000.0	7,051.1	13,148.2	7,031.4	119.2	119.4	-88.66	-6,126.8	170.7	845.3	607.2	238.05	3.551	
13,100.0	7,050.8	13,248.2	7,030.7	121.1	121.3	-88.64	-6,226.7	170.7	845.3	603.5	241.85	3.495	
13,200.0	7,050.5	13,348.2	7,030.1	123.0	123.2	-88.62	-6,326.7	170.7	845.3	599.7	245.66	3.441	
13,300.0	7,050.2	13,448.2	7,029.4	124.9	125.1	-88.60	-6,426.7	170.7	845.3	595.9	249.46	3.389	
13,400.0	7,049.8	13,548.2	7,028.8	126.8	127.0	-88.57	-6,526.7	170.7	845.3	592.1	253.27	3.338	
13,500.0	7,049.5	13,648.2	7,028.2	128.7	128.9	-88.55	-6,626.7	170.7	845.3	588.3	257.08	3.288	
13,600.0	7,049.2	13,748.2	7,027.5	130.6	130.8	-88.53	-6,726.7	170.7	845.3	584.5	260.88	3.240	
13,700.0	7,048.9	13,848.2	7,026.9	132.5	132.7	-88.51	-6,826.7	170.7	845.4	580.7	264.69	3.194	
13,800.0	7,048.6	13,948.2	7,026.2	134.4	134.7	-88.48	-6,926.7	170.7	845.4	576.9	268.50	3.148	
13,900.0	7,048.3	14,048.2	7,025.6	136.3	136.6	-88.46	-7,026.7	170.7	845.4	573.1	272.31	3.104	
13,988.0	7,048.0	14,136.1	7,025.0	138.0	138.2	-88.44	-7,114.7	170.7	845.4	569.7	275.66	3.067	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)

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	89.99	0.0	27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	89.99	0.0	27.9	27.9	27.7	0.22	124.079	
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	27.9	27.9	27.2	0.67	41.360	
300.0	300.0	300.0	300.0	0.6	0.6	89.99	0.0	27.9	27.9	26.8	1.12	24.816	
400.0	400.0	400.0	400.0	0.8	0.8	89.99	0.0	27.9	27.9	26.3	1.57	17.726	
500.0	500.0	500.0	500.0	1.0	1.0	89.99	0.0	27.9	27.9	25.9	2.02	13.787	
600.0	600.0	600.0	600.0	1.2	1.2	89.99	0.0	27.9	27.9	25.4	2.47	11.280	
700.0	700.0	700.0	700.0	1.5	1.5	89.99	0.0	27.9	27.9	25.0	2.92	9.545	
800.0	800.0	800.0	800.0	1.7	1.7	89.99	0.0	27.9	27.9	24.5	3.37	8.272	
900.0	900.0	900.0	900.0	1.9	1.9	89.99	0.0	27.9	27.9	24.1	3.82	7.299	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.99	0.0	27.9	27.9	23.6	4.27	6.530	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	89.99	0.0	27.9	27.9	23.2	4.72	5.909	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	89.99	0.0	27.9	27.9	22.7	5.17	5.395	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	89.99	0.0	27.9	27.9	22.3	5.62	4.963	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	89.99	0.0	27.9	27.9	21.8	6.07	4.596	CC, ES
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	173.43	0.0	27.9	28.8	22.3	6.51	4.421	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	173.98	0.0	27.9	31.4	24.4	6.93	4.525	
1,700.0	1,699.9	1,700.2	1,700.2	3.7	3.7	173.53	0.7	27.4	35.2	27.9	7.35	4.789	
1,800.0	1,799.7	1,800.4	1,800.4	3.9	3.9	171.36	2.9	26.0	39.9	32.1	7.77	5.128	
1,900.0	1,899.4	1,900.6	1,900.5	4.1	4.2	168.11	6.6	23.6	45.4	37.2	8.20	5.543	
2,000.0	1,998.9	2,000.7	2,000.4	4.3	4.4	164.31	11.7	20.2	52.1	43.4	8.62	6.037	
2,100.0	2,098.3	2,100.7	2,100.1	4.6	4.6	160.34	18.3	16.0	59.9	50.8	9.06	6.611	
2,200.0	2,197.4	2,200.6	2,199.5	4.8	4.8	156.46	26.4	10.7	69.0	59.5	9.51	7.260	
2,300.0	2,296.3	2,300.2	2,298.5	5.1	5.1	152.83	35.8	4.6	79.6	69.6	9.98	7.975	
2,400.0	2,395.0	2,399.7	2,397.1	5.4	5.3	149.45	46.7	-2.5	91.3	80.8	10.48	8.711	
2,500.0	2,493.6	2,499.0	2,495.4	5.7	5.6	145.95	59.0	-10.5	103.2	92.1	11.02	9.364	
2,600.0	2,592.3	2,598.2	2,593.2	6.0	5.9	142.34	72.7	-19.4	115.2	103.7	11.59	9.944	
2,700.0	2,690.9	2,697.1	2,690.5	6.4	6.2	138.65	87.8	-29.3	127.7	115.5	12.20	10.470	
2,800.0	2,789.6	2,796.0	2,787.4	6.7	6.5	135.21	103.7	-39.6	140.7	127.9	12.84	10.961	
2,900.0	2,888.2	2,894.8	2,884.4	7.0	6.9	132.35	119.6	-50.0	154.1	140.6	13.49	11.424	
3,000.0	2,986.9	2,993.6	2,981.4	7.4	7.2	129.95	135.5	-60.3	167.9	153.7	14.16	11.856	
3,100.0	3,085.5	3,092.5	3,078.4	7.7	7.6	127.92	151.4	-70.7	181.8	167.0	14.83	12.257	
3,200.0	3,184.2	3,191.3	3,175.4	8.1	7.9	126.18	167.3	-81.1	196.0	180.5	15.52	12.629	
3,300.0	3,282.8	3,290.1	3,272.4	8.4	8.3	124.67	183.2	-91.4	210.3	194.1	16.21	12.974	
3,400.0	3,381.5	3,388.9	3,369.4	8.8	8.6	123.36	199.1	-101.8	224.8	207.8	16.91	13.294	
3,500.0	3,480.1	3,488.2	3,466.8	9.2	9.0	122.21	215.1	-112.2	239.3	221.7	17.60	13.595	
3,600.0	3,578.8	3,589.9	3,567.0	9.5	9.3	121.68	229.4	-121.5	253.2	235.0	18.21	13.900	
3,700.0	3,677.4	3,691.9	3,668.1	9.9	9.6	121.96	240.8	-129.0	266.0	247.2	18.79	14.154	
3,800.0	3,776.1	3,793.9	3,769.6	10.2	9.8	122.93	249.2	-134.4	277.8	258.4	19.34	14.366	
3,900.0	3,874.7	3,895.8	3,871.3	10.6	10.0	124.51	254.6	-137.9	288.7	268.8	19.84	14.553	
4,000.0	3,973.4	3,997.3	3,972.7	11.0	10.2	126.64	256.9	-139.4	299.0	278.7	20.29	14.735	
4,100.0	4,072.0	4,096.6	4,072.0	11.3	10.4	129.05	257.0	-139.5	309.1	288.4	20.71	14.927	
4,200.0	4,170.7	4,195.2	4,170.7	11.7	10.5	131.31	257.0	-139.5	319.8	298.6	21.14	15.129	
4,300.0	4,269.3	4,293.9	4,269.3	12.1	10.7	133.42	257.0	-139.5	330.9	309.3	21.56	15.348	
4,400.0	4,368.0	4,392.5	4,368.0	12.5	10.9	135.40	257.0	-139.5	342.4	320.5	21.98	15.583	
4,500.0	4,466.6	4,491.2	4,466.6	12.8	11.1	137.25	257.0	-139.5	354.4	332.0	22.39	15.828	
4,600.0	4,565.3	4,589.8	4,565.3	13.2	11.3	138.97	257.0	-139.5	366.6	343.8	22.80	16.082	
4,700.0	4,663.9	4,688.5	4,663.9	13.6	11.5	140.59	257.0	-139.5	379.2	356.0	23.20	16.342	
4,800.0	4,762.6	4,787.1	4,762.6	14.0	11.7	142.10	257.0	-139.5	392.0	368.4	23.61	16.605	
4,900.0	4,861.2	4,885.8	4,861.2	14.3	11.9	143.52	257.0	-139.5	405.2	381.1	24.02	16.869	
5,000.0	4,959.9	4,984.4	4,959.9	14.7	12.1	144.84	257.0	-139.5	418.5	394.1	24.42	17.135	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)

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
5,100.0	5,058.5	5,083.1	5,058.5	15.1	12.3	146.09	257.0	-139.5	432.0	407.2	24.83	17.399	
5,200.0	5,157.2	5,181.7	5,157.2	15.5	12.5	147.26	257.0	-139.5	445.8	420.5	25.24	17.662	
5,300.0	5,255.8	5,280.4	5,255.8	15.8	12.7	148.36	257.0	-139.5	459.7	434.0	25.65	17.922	
5,400.0	5,354.5	5,379.0	5,354.5	16.2	12.8	149.39	257.0	-139.5	473.8	447.7	26.06	18.179	
5,500.0	5,453.1	5,477.7	5,453.1	16.6	13.0	150.37	257.0	-139.5	488.0	461.5	26.47	18.433	
5,600.0	5,551.8	5,576.3	5,551.8	17.0	13.2	151.29	257.0	-139.5	502.3	475.4	26.89	18.682	
5,700.0	5,650.4	5,675.0	5,650.4	17.4	13.4	152.16	257.0	-139.5	516.8	489.5	27.30	18.928	
5,800.0	5,749.1	5,773.6	5,749.1	17.7	13.6	153.00	257.0	-139.5	531.3	503.6	27.73	19.163	
5,900.0	5,848.1	5,872.7	5,848.1	18.0	13.8	153.78	257.0	-139.5	543.9	515.7	28.14	19.327	
6,000.0	5,947.5	5,972.1	5,947.5	18.2	14.1	154.35	257.0	-139.5	553.4	524.8	28.54	19.391	
6,100.0	6,047.3	6,071.8	6,047.3	18.4	14.3	154.72	257.0	-139.5	559.7	530.8	28.91	19.360	
6,200.0	6,147.2	6,171.8	6,147.2	18.6	14.5	154.90	257.0	-139.5	563.0	533.7	29.27	19.236	
6,300.0	6,247.2	6,271.8	6,247.2	18.7	14.7	71.69	257.0	-139.5	563.4	533.8	29.63	19.015	
6,336.1	6,283.3	6,307.9	6,283.3	18.8	14.7	-108.34	257.0	-139.5	563.5	533.8	29.78	18.924	
6,400.0	6,347.2	6,371.7	6,347.2	18.9	14.9	-108.40	257.0	-139.5	563.8	533.8	30.04	18.769	
6,500.0	6,446.4	6,481.0	6,456.4	19.0	15.1	-109.36	256.0	-139.5	567.5	537.1	30.41	18.661	
6,600.0	6,543.1	6,617.7	6,591.4	19.1	15.2	-110.45	235.8	-139.5	571.1	540.5	30.58	18.677	
6,700.0	6,635.8	6,757.0	6,722.5	19.2	15.3	-110.90	189.3	-139.5	572.6	542.1	30.50	18.776	
6,800.0	6,722.8	6,896.7	6,842.5	19.4	15.3	-110.68	118.1	-139.5	571.8	541.5	30.33	18.852	
6,900.0	6,802.6	7,034.6	6,945.0	19.5	15.3	-109.78	26.3	-139.5	568.9	538.6	30.32	18.764	
7,000.0	6,874.0	7,168.5	7,026.1	19.8	15.4	-108.29	-80.0	-139.5	564.2	533.5	30.71	18.374	
7,100.0	6,935.5	7,297.1	7,084.1	20.1	16.0	-106.26	-194.6	-139.5	558.3	526.6	31.64	17.645	
7,200.0	6,986.3	7,419.6	7,119.4	20.5	16.9	-103.81	-311.8	-139.5	551.9	518.7	33.19	16.630	
7,300.0	7,025.4	7,535.7	7,134.0	21.0	17.9	-101.02	-426.8	-139.5	545.9	510.6	35.24	15.492	
7,400.0	7,052.1	7,637.2	7,134.5	21.8	19.0	-98.57	-528.3	-139.5	541.2	503.7	37.50	14.433	
7,500.0	7,066.1	7,736.1	7,134.2	22.7	20.1	-97.24	-627.2	-139.5	539.2	499.3	39.92	13.507	
7,584.4	7,069.6	7,820.4	7,134.0	23.5	21.2	-96.86	-711.5	-139.5	538.8	496.7	42.08	12.802	
7,600.0	7,068.1	7,836.0	7,134.0	23.7	21.4	-97.02	-727.1	-139.5	538.9	496.5	42.49	12.684	
7,700.0	7,067.8	7,936.0	7,133.7	24.9	22.8	-97.02	-827.1	-139.5	539.0	493.8	45.17	11.932	
7,800.0	7,067.4	8,036.0	7,133.4	26.1	24.2	-97.03	-927.1	-139.5	539.0	491.0	48.00	11.229	
7,900.0	7,067.1	8,136.0	7,133.1	27.5	25.7	-97.03	-1,027.1	-139.5	539.0	488.0	50.96	10.576	
8,000.0	7,066.8	8,236.0	7,132.8	28.9	27.3	-97.03	-1,127.1	-139.5	539.0	484.9	54.02	9.976	
8,100.0	7,066.5	8,336.0	7,132.5	30.3	28.9	-97.03	-1,227.1	-139.5	539.0	481.8	57.18	9.425	
8,200.0	7,066.2	8,436.0	7,132.2	31.8	30.5	-97.03	-1,327.1	-139.5	539.0	478.5	60.41	8.921	
8,300.0	7,065.9	8,536.0	7,131.9	33.4	32.2	-97.03	-1,427.1	-139.5	539.0	475.3	63.71	8.459	
8,400.0	7,065.6	8,636.0	7,131.6	35.0	33.9	-97.04	-1,527.1	-139.5	539.0	471.9	67.06	8.037	
8,500.0	7,065.2	8,736.0	7,131.3	36.6	35.6	-97.04	-1,627.1	-139.5	539.0	468.5	70.46	7.649	
8,600.0	7,064.9	8,836.0	7,131.0	38.3	37.3	-97.04	-1,727.1	-139.5	539.0	465.1	73.90	7.293	
8,700.0	7,064.6	8,936.0	7,130.7	40.0	39.1	-97.04	-1,827.1	-139.5	539.0	461.6	77.38	6.966	
8,800.0	7,064.3	9,036.0	7,130.4	41.7	40.8	-97.04	-1,927.1	-139.5	539.0	458.1	80.88	6.664	
8,900.0	7,064.0	9,136.0	7,130.1	43.4	42.6	-97.05	-2,027.1	-139.5	539.0	454.6	84.41	6.385	
9,000.0	7,063.7	9,236.0	7,129.8	45.1	44.4	-97.05	-2,127.1	-139.5	539.0	451.0	87.97	6.127	
9,100.0	7,063.4	9,336.0	7,129.5	46.9	46.2	-97.05	-2,227.1	-139.5	539.0	447.4	91.55	5.888	
9,200.0	7,063.0	9,436.0	7,129.2	48.6	48.0	-97.05	-2,327.1	-139.5	539.0	443.8	95.14	5.665	
9,300.0	7,062.7	9,536.0	7,128.9	50.4	49.9	-97.05	-2,427.1	-139.5	539.0	440.2	98.75	5.458	
9,400.0	7,062.4	9,636.0	7,128.6	52.2	51.7	-97.05	-2,527.1	-139.5	539.0	436.6	102.38	5.265	
9,500.0	7,062.1	9,736.0	7,128.3	54.0	53.5	-97.06	-2,627.1	-139.5	539.0	433.0	106.02	5.084	
9,600.0	7,061.8	9,836.0	7,128.0	55.8	55.4	-97.06	-2,727.1	-139.5	539.0	429.3	109.67	4.915	
9,700.0	7,061.5	9,936.0	7,127.7	57.6	57.2	-97.06	-2,827.1	-139.5	539.0	425.7	113.33	4.756	
9,800.0	7,061.2	10,036.0	7,127.4	59.4	59.0	-97.06	-2,927.1	-139.5	539.0	422.0	117.00	4.607	
9,900.0	7,060.8	10,136.0	7,127.1	61.2	60.9	-97.06	-3,027.1	-139.5	539.0	418.3	120.68	4.466	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)

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
10,000.0	7,060.5	10,236.0	7,126.8	63.0	62.8	-97.07	-3,127.1	-139.5	539.0	414.6	124.37	4.334	
10,100.0	7,060.2	10,336.0	7,126.5	64.9	64.6	-97.07	-3,227.1	-139.5	539.0	410.9	128.07	4.209	
10,200.0	7,059.9	10,436.0	7,126.2	66.7	66.5	-97.07	-3,327.1	-139.5	539.0	407.2	131.77	4.091	
10,300.0	7,059.6	10,536.0	7,125.9	68.6	68.4	-97.07	-3,427.1	-139.5	539.0	403.5	135.48	3.979	
10,400.0	7,059.3	10,636.0	7,125.6	70.4	70.2	-97.07	-3,527.1	-139.5	539.0	399.8	139.19	3.872	
10,500.0	7,059.0	10,736.0	7,125.3	72.3	72.1	-97.08	-3,627.1	-139.5	539.0	396.1	142.91	3.772	
10,600.0	7,058.6	10,836.0	7,125.1	74.1	74.0	-97.08	-3,727.1	-139.5	539.0	392.4	146.63	3.676	
10,700.0	7,058.3	10,936.0	7,124.8	76.0	75.8	-97.08	-3,827.1	-139.5	539.0	388.7	150.36	3.585	
10,800.0	7,058.0	11,036.0	7,124.5	77.8	77.7	-97.08	-3,927.1	-139.5	539.0	384.9	154.09	3.498	
10,900.0	7,057.7	11,136.0	7,124.2	79.7	79.6	-97.08	-4,027.1	-139.5	539.0	381.2	157.83	3.415	
11,000.0	7,057.4	11,236.0	7,123.9	81.6	81.5	-97.08	-4,127.1	-139.5	539.0	377.5	161.57	3.336	
11,100.0	7,057.1	11,336.0	7,123.6	83.4	83.4	-97.09	-4,227.1	-139.5	539.0	373.7	165.31	3.261	
11,200.0	7,056.8	11,436.0	7,123.3	85.3	85.3	-97.09	-4,327.1	-139.5	539.0	370.0	169.06	3.188	
11,300.0	7,056.4	11,536.0	7,123.0	87.2	87.2	-97.09	-4,427.1	-139.5	539.0	366.2	172.81	3.119	
11,400.0	7,056.1	11,636.0	7,122.7	89.0	89.0	-97.09	-4,527.1	-139.5	539.0	362.5	176.56	3.053	
11,500.0	7,055.8	11,736.0	7,122.4	90.9	90.9	-97.09	-4,627.1	-139.5	539.0	358.7	180.32	2.989	
11,600.0	7,055.5	11,836.0	7,122.1	92.8	92.8	-97.10	-4,727.1	-139.5	539.0	355.0	184.07	2.928	
11,700.0	7,055.2	11,936.0	7,121.8	94.7	94.7	-97.10	-4,827.1	-139.5	539.0	351.2	187.83	2.870	
11,800.0	7,054.9	12,036.0	7,121.5	96.6	96.6	-97.10	-4,927.1	-139.5	539.0	347.4	191.59	2.813	
11,900.0	7,054.6	12,136.0	7,121.2	98.4	98.5	-97.10	-5,027.1	-139.5	539.0	343.7	195.36	2.759	
12,000.0	7,054.2	12,236.0	7,120.9	100.3	100.4	-97.10	-5,127.1	-139.5	539.0	339.9	199.12	2.707	
12,100.0	7,053.9	12,336.0	7,120.6	102.2	102.3	-97.10	-5,227.1	-139.5	539.0	336.2	202.89	2.657	
12,200.0	7,053.6	12,436.0	7,120.3	104.1	104.2	-97.11	-5,327.1	-139.5	539.0	332.4	206.66	2.608	
12,300.0	7,053.3	12,536.0	7,120.0	106.0	106.1	-97.11	-5,427.1	-139.5	539.1	328.6	210.43	2.562	
12,400.0	7,053.0	12,636.0	7,119.7	107.9	108.0	-97.11	-5,527.1	-139.5	539.1	324.9	214.20	2.517	
12,500.0	7,052.7	12,736.0	7,119.4	109.8	109.9	-97.11	-5,627.1	-139.5	539.1	321.1	217.97	2.473	
12,600.0	7,052.4	12,836.0	7,119.1	111.7	111.8	-97.11	-5,727.1	-139.5	539.1	317.3	221.75	2.431	
12,700.0	7,052.0	12,936.0	7,118.8	113.5	113.7	-97.12	-5,827.1	-139.5	539.1	313.5	225.52	2.390	
12,800.0	7,051.7	13,036.0	7,118.5	115.4	115.6	-97.12	-5,927.1	-139.5	539.1	309.8	229.30	2.351	
12,900.0	7,051.4	13,136.0	7,118.2	117.3	117.5	-97.12	-6,027.1	-139.5	539.1	306.0	233.08	2.313	
13,000.0	7,051.1	13,236.0	7,117.9	119.2	119.4	-97.12	-6,127.1	-139.5	539.1	302.2	236.86	2.276	
13,100.0	7,050.8	13,336.0	7,117.6	121.1	121.3	-97.12	-6,227.1	-139.5	539.1	298.4	240.64	2.240	
13,200.0	7,050.5	13,436.0	7,117.3	123.0	123.2	-97.12	-6,327.1	-139.5	539.1	294.7	244.42	2.206	
13,300.0	7,050.2	13,536.0	7,117.0	124.9	125.1	-97.13	-6,427.1	-139.5	539.1	290.9	248.20	2.172	
13,400.0	7,049.8	13,636.0	7,116.7	126.8	127.0	-97.13	-6,527.1	-139.5	539.1	287.1	251.98	2.139	
13,500.0	7,049.5	13,736.0	7,116.4	128.7	128.9	-97.13	-6,627.1	-139.5	539.1	283.3	255.77	2.108	
13,600.0	7,049.2	13,836.0	7,116.2	130.6	130.8	-97.13	-6,727.1	-139.5	539.1	279.5	259.55	2.077	
13,700.0	7,048.9	13,936.0	7,115.9	132.5	132.7	-97.13	-6,827.1	-139.5	539.1	275.7	263.34	2.047	
13,800.0	7,048.6	14,036.0	7,115.6	134.4	134.6	-97.14	-6,927.1	-139.5	539.1	272.0	267.12	2.018	
13,900.0	7,048.3	14,136.0	7,115.3	136.3	136.5	-97.14	-7,027.1	-139.5	539.1	268.2	270.91	1.990	
13,950.2	7,048.1	14,186.2	7,115.1	137.3	137.5	-97.14	-7,077.3	-139.5	539.1	266.3	272.81	1.976	
13,988.0	7,048.0	14,223.8	7,115.0	138.0	138.2	-97.14	-7,114.9	-139.5	539.1	264.8	274.24	1.966	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13O-343 - Wellbore #1 - Plan #2 (1-28-15)

Offset Site Error: 0.0 ft

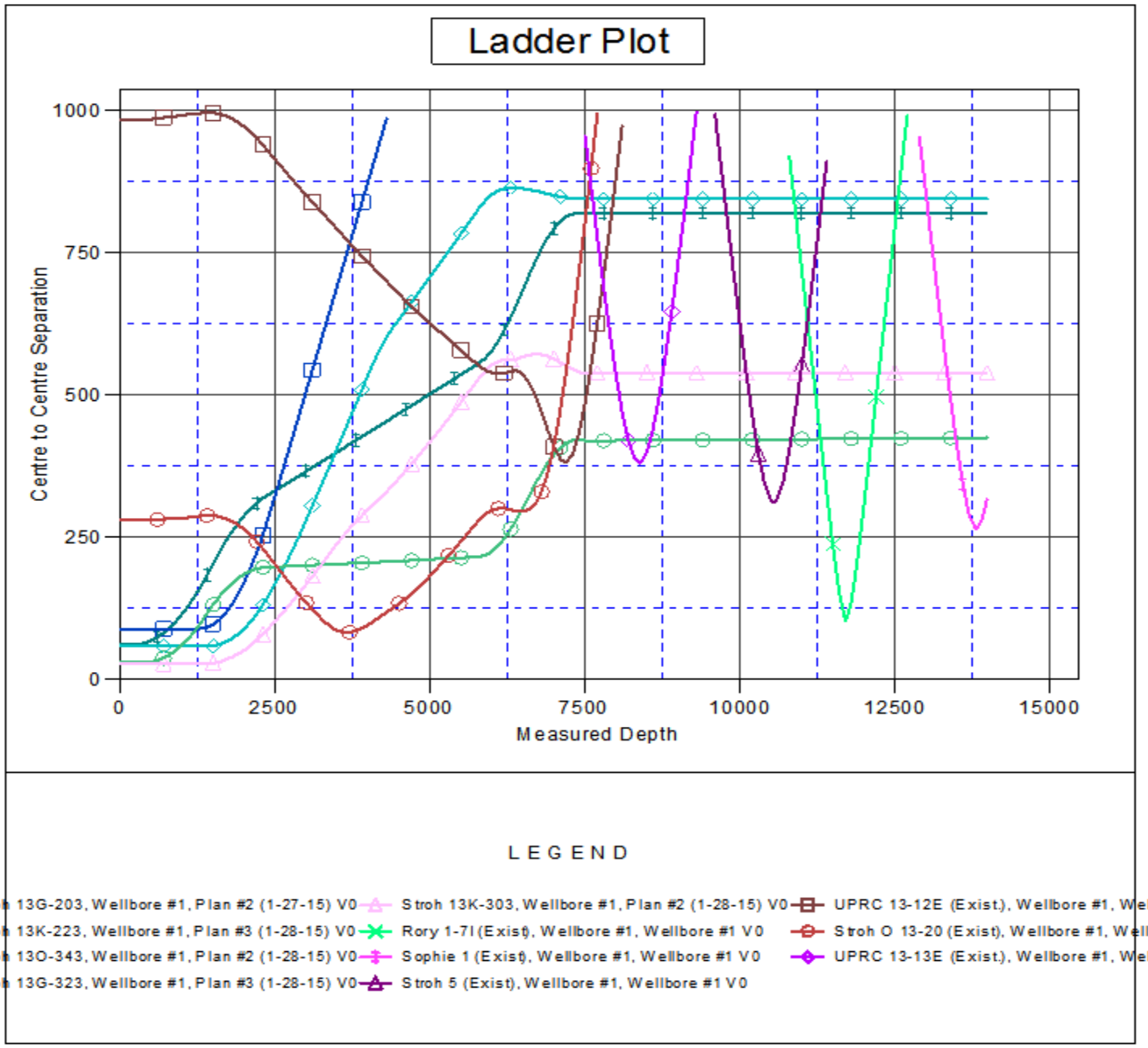
Survey Program: 0-MWD

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	89.99	0.0	89.2	89.2				
100.0	100.0	99.0	99.0	0.1	0.1	89.99	0.0	89.2	89.2	89.0	0.22	399.046	
200.0	200.0	199.0	199.0	0.3	0.3	89.99	0.0	89.2	89.2	88.6	0.67	132.794	
300.0	300.0	299.0	299.0	0.6	0.6	89.99	0.0	89.2	89.2	88.1	1.12	79.570	
400.0	400.0	399.0	399.0	0.8	0.8	89.99	0.0	89.2	89.2	87.7	1.57	56.803	
500.0	500.0	499.0	499.0	1.0	1.0	89.99	0.0	89.2	89.2	87.2	2.02	44.166	
600.0	600.0	599.0	599.0	1.2	1.2	89.99	0.0	89.2	89.2	86.8	2.47	36.129	
700.0	700.0	699.0	699.0	1.5	1.5	89.99	0.0	89.2	89.2	86.3	2.92	30.566	
800.0	800.0	799.0	799.0	1.7	1.7	89.99	0.0	89.2	89.2	85.9	3.37	26.488	
900.0	900.0	899.0	899.0	1.9	1.9	89.99	0.0	89.2	89.2	85.4	3.82	23.370	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	89.99	0.0	89.2	89.2	85.0	4.27	20.909	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	89.99	0.0	89.2	89.2	84.5	4.72	18.916	
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	89.99	0.0	89.2	89.2	84.1	5.17	17.271	CC, ES
1,300.0	1,300.0	1,297.6	1,297.6	2.8	2.8	89.79	0.3	90.0	90.0	84.4	5.61	16.059	
1,400.0	1,400.0	1,396.1	1,396.1	3.0	3.0	89.19	1.3	92.3	92.4	86.4	6.04	15.302	
1,500.0	1,500.0	1,494.5	1,494.3	3.2	3.2	171.57	2.9	96.2	97.2	90.8	6.46	15.060	SF
1,600.0	1,600.0	1,592.5	1,592.2	3.5	3.4	170.62	5.2	101.7	105.4	98.6	6.87	15.352	
1,700.0	1,699.9	1,690.0	1,689.4	3.7	3.7	169.67	8.1	108.6	117.0	109.7	7.28	16.064	
1,800.0	1,799.7	1,786.9	1,785.9	3.9	3.9	168.80	11.5	117.0	131.8	124.1	7.70	17.129	
1,900.0	1,899.4	1,883.0	1,881.4	4.1	4.1	168.04	15.6	126.8	150.0	141.9	8.11	18.488	
2,000.0	1,998.9	1,978.1	1,975.7	4.3	4.4	167.40	20.3	137.9	171.4	162.8	8.53	20.097	
2,100.0	2,098.3	2,072.1	2,068.7	4.6	4.6	166.86	25.5	150.4	196.0	187.0	8.94	21.915	
2,200.0	2,197.4	2,164.9	2,160.4	4.8	4.9	166.41	31.1	164.1	223.7	214.4	9.36	23.911	
2,300.0	2,296.3	2,256.3	2,250.4	5.1	5.2	166.04	37.3	178.9	254.6	244.8	9.77	26.052	
2,400.0	2,395.0	2,346.4	2,338.8	5.4	5.5	165.76	43.9	194.8	288.3	278.1	10.20	28.266	
2,500.0	2,493.6	2,435.4	2,425.8	5.7	5.8	165.51	51.0	211.7	323.5	312.9	10.64	30.413	
2,600.0	2,592.3	2,525.2	2,513.4	6.0	6.2	165.24	58.6	230.0	360.0	349.0	11.08	32.484	
2,700.0	2,690.9	2,618.1	2,604.0	6.4	6.5	165.00	66.6	249.2	396.9	385.4	11.54	34.402	
2,800.0	2,789.6	2,711.1	2,694.6	6.7	6.9	164.81	74.6	268.4	433.8	421.8	12.00	36.160	
2,900.0	2,888.2	2,804.0	2,785.2	7.0	7.3	164.64	82.6	287.7	470.6	458.2	12.46	37.776	
3,000.0	2,986.9	2,897.0	2,875.8	7.4	7.7	164.50	90.6	306.9	507.5	494.5	12.92	39.264	
3,100.0	3,085.5	2,989.9	2,966.4	7.7	8.1	164.37	98.6	326.1	544.3	530.9	13.39	40.638	
3,200.0	3,184.2	3,082.9	3,057.0	8.1	8.5	164.27	106.6	345.3	581.2	567.3	13.87	41.909	
3,300.0	3,282.8	3,175.8	3,147.6	8.4	8.9	164.17	114.6	364.5	618.1	603.7	14.34	43.088	
3,400.0	3,381.5	3,268.8	3,238.2	8.8	9.3	164.09	122.5	383.7	654.9	640.1	14.82	44.183	
3,500.0	3,480.1	3,361.7	3,328.7	9.2	9.8	164.01	130.5	402.9	691.8	676.5	15.30	45.203	
3,600.0	3,578.8	3,454.7	3,419.3	9.5	10.2	163.95	138.5	422.1	728.7	712.9	15.79	46.155	
3,700.0	3,677.4	3,547.6	3,509.9	9.9	10.6	163.89	146.5	441.3	765.5	749.3	16.27	47.045	
3,800.0	3,776.1	3,640.6	3,600.5	10.2	11.0	163.83	154.5	460.6	802.4	785.6	16.76	47.878	
3,900.0	3,874.7	3,733.5	3,691.1	10.6	11.4	163.78	162.5	479.8	839.3	822.0	17.25	48.659	
4,000.0	3,973.4	3,826.5	3,781.7	11.0	11.9	163.73	170.5	499.0	876.1	858.4	17.74	49.393	
4,100.0	4,072.0	3,919.4	3,872.3	11.3	12.3	163.69	178.5	518.2	913.0	894.8	18.23	50.084	
4,200.0	4,170.7	4,012.4	3,962.9	11.7	12.7	163.65	186.5	537.4	949.9	931.2	18.72	50.734	
4,300.0	4,269.3	4,105.4	4,053.5	12.1	13.2	163.62	194.5	556.6	986.8	967.5	19.22	51.349	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4820.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinates are relative to: Stroh 13K-243
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.42°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13K-243
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**MD Reference:**	WELL @ 4820.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13K-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #3 (1-28-15)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4820.0ft (Original Well Elev) Coordinates are relative to: Stroh 13K-243
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.42°