PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Stroh 13G-323**

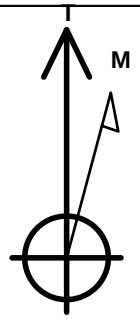
Surface Location: Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4805.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1356827.78	3183197.46	40.311030	-104.843080	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2352'FSL & 1556'FWL, Sec.13	1.0	0.0	0.0	Point
BHL 500'FSL & 487'FWL, Sec.24	7164.0	-7114.9	-1053.4	Point



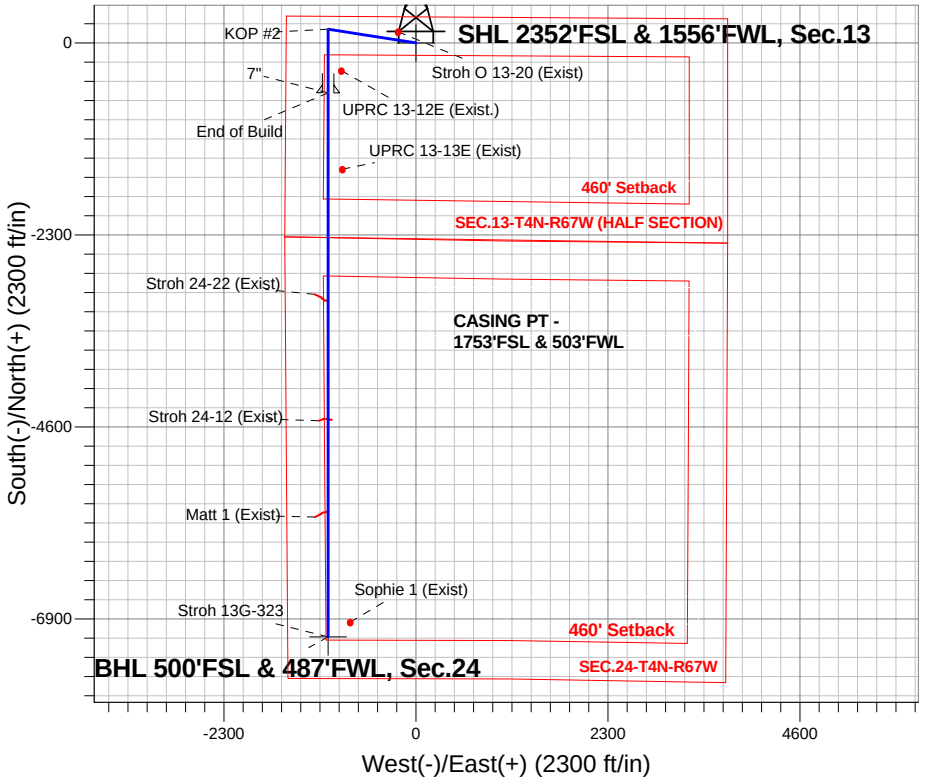
Azimuths to True North
Magnetic North: 8.53°

Magnetic Field
Strength: 52788.2snT
Dip Angle: 66.87°
Date: 3/11/2014
Model: IGRF2010

Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
Stroh 13G-323
Plan #2 (4-9-14)
10:03, April 10 2014

ANNOTATIONS

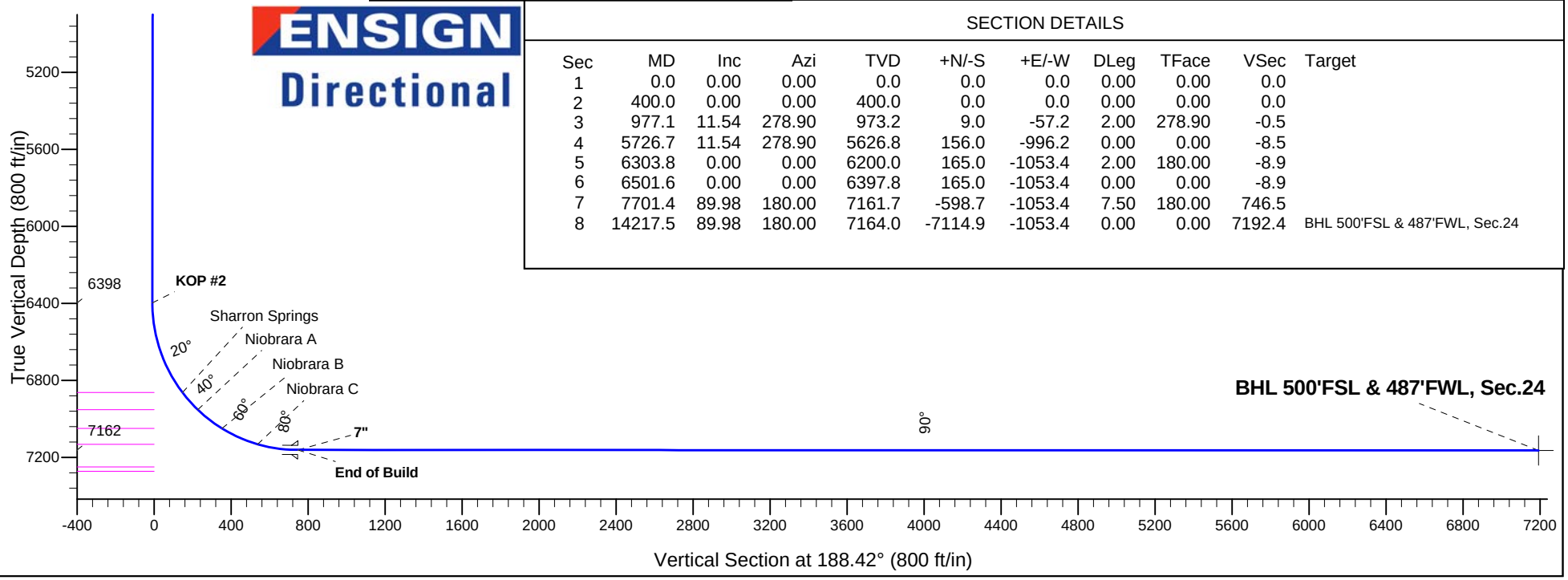
TVD	MD	Annotation
400.0	400.0	KOP #1
6397.8	6501.6	KOP #2
7161.7	7701.4	End of Build



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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	977.1	11.54	278.90	973.2	9.0	-57.2	2.00	278.90	-0.5	
4	5726.7	11.54	278.90	5626.8	156.0	-996.2	0.00	0.00	-8.5	
5	6303.8	0.00	0.00	6200.0	165.0	-1053.4	2.00	180.00	-8.9	
6	6501.6	0.00	0.00	6397.8	165.0	-1053.4	0.00	0.00	-8.9	
7	7701.4	89.98	180.00	7161.7	-598.7	-1053.4	7.50	180.00	746.5	
8	14217.5	89.98	180.00	7164.0	-7114.9	-1053.4	0.00	0.00	7192.4	BHL 500'FSL & 487'FWL, Sec.24



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.13-T4N-R67W
Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
Stroh 13G-323

Wellbore #1

Plan: Plan #2 (4-9-14)

Standard Planning Report

10 April, 2014

Database:	landmark	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-9-14)		

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 13G-323

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,356,827.78 ft	**Latitude:**	40.311030
	+E/-W	30.7 ft	**Easting:**	3,183,197.46 ft	**Longitude:**	-104.843080
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	3/11/2014	8.53	66.87	52,788

Design Plan #2 (4-9-14)

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	188.42

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
977.1	11.54	278.90	973.2	9.0	-57.2	2.00	2.00	0.00	278.90	
5,726.7	11.54	278.90	5,626.8	156.0	-996.2	0.00	0.00	0.00	0.00	
6,303.8	0.00	0.00	6,200.0	165.0	-1,053.4	2.00	-2.00	0.00	180.00	
6,501.6	0.00	0.00	6,397.8	165.0	-1,053.4	0.00	0.00	0.00	0.00	
7,701.4	89.98	180.00	7,161.7	-598.7	-1,053.4	7.50	7.50	0.00	180.00	
14,217.5	89.98	180.00	7,164.0	-7,114.9	-1,053.4	0.00	0.00	0.00	0.00	BHL 500'FSL & 487

Database:	landmark	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-9-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 2352'FSL & 1556'FWL, Sec.13									
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
KOP #1									
500.0	2.00	278.90	500.0	0.3	-1.7	0.0	2.00	2.00	0.00
600.0	4.00	278.90	599.8	1.1	-6.9	-0.1	2.00	2.00	0.00
700.0	6.00	278.90	699.5	2.4	-15.5	-0.1	2.00	2.00	0.00
800.0	8.00	278.90	798.7	4.3	-27.5	-0.2	2.00	2.00	0.00
900.0	10.00	278.90	897.5	6.7	-43.0	-0.4	2.00	2.00	0.00
977.1	11.54	278.90	973.2	9.0	-57.2	-0.5	2.00	2.00	0.00
1,000.0	11.54	278.90	995.6	9.7	-61.8	-0.5	0.00	0.00	0.00
1,100.0	11.54	278.90	1,093.6	12.8	-81.5	-0.7	0.00	0.00	0.00
1,200.0	11.54	278.90	1,191.6	15.9	-101.3	-0.9	0.00	0.00	0.00
1,300.0	11.54	278.90	1,289.6	19.0	-121.1	-1.0	0.00	0.00	0.00
1,400.0	11.54	278.90	1,387.6	22.1	-140.8	-1.2	0.00	0.00	0.00
1,500.0	11.54	278.90	1,485.5	25.2	-160.6	-1.4	0.00	0.00	0.00
1,600.0	11.54	278.90	1,583.5	28.3	-180.4	-1.5	0.00	0.00	0.00
1,700.0	11.54	278.90	1,681.5	31.3	-200.1	-1.7	0.00	0.00	0.00
1,800.0	11.54	278.90	1,779.5	34.4	-219.9	-1.9	0.00	0.00	0.00
1,900.0	11.54	278.90	1,877.4	37.5	-239.7	-2.0	0.00	0.00	0.00
2,000.0	11.54	278.90	1,975.4	40.6	-259.4	-2.2	0.00	0.00	0.00
2,100.0	11.54	278.90	2,073.4	43.7	-279.2	-2.4	0.00	0.00	0.00
2,200.0	11.54	278.90	2,171.4	46.8	-299.0	-2.5	0.00	0.00	0.00
2,300.0	11.54	278.90	2,269.4	49.9	-318.8	-2.7	0.00	0.00	0.00
2,400.0	11.54	278.90	2,367.3	53.0	-338.5	-2.9	0.00	0.00	0.00
2,500.0	11.54	278.90	2,465.3	56.1	-358.3	-3.0	0.00	0.00	0.00
2,600.0	11.54	278.90	2,563.3	59.2	-378.1	-3.2	0.00	0.00	0.00
2,700.0	11.54	278.90	2,661.3	62.3	-397.8	-3.4	0.00	0.00	0.00
2,800.0	11.54	278.90	2,759.2	65.4	-417.6	-3.5	0.00	0.00	0.00
2,900.0	11.54	278.90	2,857.2	68.5	-437.4	-3.7	0.00	0.00	0.00
3,000.0	11.54	278.90	2,955.2	71.6	-457.1	-3.9	0.00	0.00	0.00
3,100.0	11.54	278.90	3,053.2	74.7	-476.9	-4.0	0.00	0.00	0.00
3,200.0	11.54	278.90	3,151.1	77.8	-496.7	-4.2	0.00	0.00	0.00
3,300.0	11.54	278.90	3,249.1	80.9	-516.4	-4.4	0.00	0.00	0.00
3,400.0	11.54	278.90	3,347.1	84.0	-536.2	-4.6	0.00	0.00	0.00
3,500.0	11.54	278.90	3,445.1	87.1	-556.0	-4.7	0.00	0.00	0.00
3,600.0	11.54	278.90	3,543.1	90.2	-575.7	-4.9	0.00	0.00	0.00
3,700.0	11.54	278.90	3,641.0	93.3	-595.5	-5.1	0.00	0.00	0.00
3,800.0	11.54	278.90	3,739.0	96.4	-615.3	-5.2	0.00	0.00	0.00
3,900.0	11.54	278.90	3,837.0	99.5	-635.0	-5.4	0.00	0.00	0.00
4,000.0	11.54	278.90	3,935.0	102.6	-654.8	-5.6	0.00	0.00	0.00
4,100.0	11.54	278.90	4,032.9	105.7	-674.6	-5.7	0.00	0.00	0.00
4,200.0	11.54	278.90	4,130.9	108.8	-694.4	-5.9	0.00	0.00	0.00
4,300.0	11.54	278.90	4,228.9	111.9	-714.1	-6.1	0.00	0.00	0.00
4,400.0	11.54	278.90	4,326.9	115.0	-733.9	-6.2	0.00	0.00	0.00
4,500.0	11.54	278.90	4,424.9	118.0	-753.7	-6.4	0.00	0.00	0.00
4,600.0	11.54	278.90	4,522.8	121.1	-773.4	-6.6	0.00	0.00	0.00
4,700.0	11.54	278.90	4,620.8	124.2	-793.2	-6.7	0.00	0.00	0.00
4,800.0	11.54	278.90	4,718.8	127.3	-813.0	-6.9	0.00	0.00	0.00

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Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**North Reference:**	True
Well:	Stroh 13G-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-9-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,900.0	11.54	278.90	4,816.8	130.4	-832.7	-7.1	0.00	0.00	0.00
5,000.0	11.54	278.90	4,914.7	133.5	-852.5	-7.2	0.00	0.00	0.00
5,100.0	11.54	278.90	5,012.7	136.6	-872.3	-7.4	0.00	0.00	0.00
5,200.0	11.54	278.90	5,110.7	139.7	-892.0	-7.6	0.00	0.00	0.00
5,300.0	11.54	278.90	5,208.7	142.8	-911.8	-7.7	0.00	0.00	0.00
5,400.0	11.54	278.90	5,306.7	145.9	-931.6	-7.9	0.00	0.00	0.00
5,500.0	11.54	278.90	5,404.6	149.0	-951.3	-8.1	0.00	0.00	0.00
5,600.0	11.54	278.90	5,502.6	152.1	-971.1	-8.2	0.00	0.00	0.00
5,700.0	11.54	278.90	5,600.6	155.2	-990.9	-8.4	0.00	0.00	0.00
5,726.7	11.54	278.90	5,626.8	156.0	-996.2	-8.5	0.00	0.00	0.00
5,800.0	10.08	278.90	5,698.7	158.2	-1,009.7	-8.6	2.00	-2.00	0.00
5,900.0	8.08	278.90	5,797.5	160.6	-1,025.3	-8.7	2.00	-2.00	0.00
6,000.0	6.08	278.90	5,896.7	162.5	-1,037.5	-8.8	2.00	-2.00	0.00
6,100.0	4.08	278.90	5,996.3	163.9	-1,046.2	-8.9	2.00	-2.00	0.00
6,200.0	2.08	278.90	6,096.2	164.7	-1,051.5	-8.9	2.00	-2.00	0.00
6,300.0	0.08	278.90	6,196.2	165.0	-1,053.4	-8.9	2.00	-2.00	0.00
6,303.8	0.00	0.00	6,200.0	165.0	-1,053.4	-8.9	2.00	-2.00	0.00
6,400.0	0.00	0.00	6,296.2	165.0	-1,053.4	-8.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,396.2	165.0	-1,053.4	-8.9	0.00	0.00	0.00
6,501.6	0.00	0.00	6,397.8	165.0	-1,053.4	-8.9	0.00	0.00	0.00
KOP #2									
6,600.0	7.38	180.00	6,495.9	158.7	-1,053.4	-2.7	7.50	7.50	0.00
6,700.0	14.88	180.00	6,593.9	139.4	-1,053.4	16.4	7.50	7.50	0.00
6,800.0	22.38	180.00	6,688.6	107.5	-1,053.4	48.0	7.50	7.50	0.00
6,900.0	29.88	180.00	6,778.3	63.5	-1,053.4	91.5	7.50	7.50	0.00
7,000.0	37.38	180.00	6,861.5	8.1	-1,053.4	146.2	7.50	7.50	0.00
7,001.8	37.52	180.00	6,863.0	7.0	-1,053.4	147.3	7.50	7.50	0.00
Sharron Springs									
7,100.0	44.88	180.00	6,936.8	-57.6	-1,053.4	211.3	7.50	7.50	0.00
7,121.7	46.51	180.00	6,952.0	-73.2	-1,053.4	226.6	7.50	7.50	0.00
Niobrara A									
7,200.0	52.38	180.00	7,002.9	-132.6	-1,053.4	285.4	7.50	7.50	0.00
7,283.3	58.62	180.00	7,050.0	-201.2	-1,053.4	353.3	7.50	7.50	0.00
Niobrara B									
7,300.0	59.88	180.00	7,058.6	-215.6	-1,053.4	367.5	7.50	7.50	0.00
7,400.0	67.38	180.00	7,102.9	-305.1	-1,053.4	456.1	7.50	7.50	0.00
7,487.8	73.96	180.00	7,132.0	-387.9	-1,053.4	538.0	7.50	7.50	0.00
Niobrara C									
7,500.0	74.88	180.00	7,135.3	-399.6	-1,053.4	549.6	7.50	7.50	0.00
7,600.0	82.38	180.00	7,155.0	-497.6	-1,053.4	646.5	7.50	7.50	0.00
7,700.0	89.88	180.00	7,161.7	-597.3	-1,053.4	745.2	7.50	7.50	0.00
7,701.4	89.98	180.00	7,161.7	-598.7	-1,053.4	746.5	7.29	7.29	0.00
End of Build - 7"									
7,800.0	89.98	180.00	7,161.8	-697.3	-1,053.4	844.1	0.00	0.00	0.00
7,900.0	89.98	180.00	7,161.8	-797.3	-1,053.4	943.0	0.00	0.00	0.00
8,000.0	89.98	180.00	7,161.8	-897.3	-1,053.4	1,041.9	0.00	0.00	0.00
8,100.0	89.98	180.00	7,161.9	-997.3	-1,053.4	1,140.8	0.00	0.00	0.00
8,200.0	89.98	180.00	7,161.9	-1,097.3	-1,053.4	1,239.8	0.00	0.00	0.00
8,300.0	89.98	180.00	7,161.9	-1,197.3	-1,053.4	1,338.7	0.00	0.00	0.00
8,400.0	89.98	180.00	7,162.0	-1,297.3	-1,053.4	1,437.6	0.00	0.00	0.00
8,500.0	89.98	180.00	7,162.0	-1,397.3	-1,053.4	1,536.5	0.00	0.00	0.00
8,600.0	89.98	180.00	7,162.0	-1,497.3	-1,053.4	1,635.5	0.00	0.00	0.00

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Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	**North Reference:**	True
Well:	Stroh 13G-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-9-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,700.0	89.98	180.00	7,162.1	-1,597.3	-1,053.4	1,734.4	0.00	0.00	0.00
8,800.0	89.98	180.00	7,162.1	-1,697.3	-1,053.4	1,833.3	0.00	0.00	0.00
8,900.0	89.98	180.00	7,162.1	-1,797.3	-1,053.4	1,932.2	0.00	0.00	0.00
9,000.0	89.98	180.00	7,162.2	-1,897.3	-1,053.4	2,031.1	0.00	0.00	0.00
9,100.0	89.98	180.00	7,162.2	-1,997.3	-1,053.4	2,130.1	0.00	0.00	0.00
9,200.0	89.98	180.00	7,162.2	-2,097.3	-1,053.4	2,229.0	0.00	0.00	0.00
9,300.0	89.98	180.00	7,162.3	-2,197.3	-1,053.4	2,327.9	0.00	0.00	0.00
9,400.0	89.98	180.00	7,162.3	-2,297.3	-1,053.4	2,426.8	0.00	0.00	0.00
9,500.0	89.98	180.00	7,162.4	-2,397.3	-1,053.4	2,525.7	0.00	0.00	0.00
9,600.0	89.98	180.00	7,162.4	-2,497.3	-1,053.4	2,624.7	0.00	0.00	0.00
9,700.0	89.98	180.00	7,162.4	-2,597.3	-1,053.4	2,723.6	0.00	0.00	0.00
9,800.0	89.98	180.00	7,162.5	-2,697.3	-1,053.4	2,822.5	0.00	0.00	0.00
9,900.0	89.98	180.00	7,162.5	-2,797.3	-1,053.4	2,921.4	0.00	0.00	0.00
10,000.0	89.98	180.00	7,162.5	-2,897.3	-1,053.4	3,020.4	0.00	0.00	0.00
10,100.0	89.98	180.00	7,162.6	-2,997.3	-1,053.4	3,119.3	0.00	0.00	0.00
10,200.0	89.98	180.00	7,162.6	-3,097.3	-1,053.4	3,218.2	0.00	0.00	0.00
10,300.0	89.98	180.00	7,162.6	-3,197.3	-1,053.4	3,317.1	0.00	0.00	0.00
10,400.0	89.98	180.00	7,162.7	-3,297.3	-1,053.4	3,416.0	0.00	0.00	0.00
10,500.0	89.98	180.00	7,162.7	-3,397.3	-1,053.4	3,515.0	0.00	0.00	0.00
10,600.0	89.98	180.00	7,162.7	-3,497.3	-1,053.4	3,613.9	0.00	0.00	0.00
10,700.0	89.98	180.00	7,162.8	-3,597.3	-1,053.4	3,712.8	0.00	0.00	0.00
10,800.0	89.98	180.00	7,162.8	-3,697.3	-1,053.4	3,811.7	0.00	0.00	0.00
10,900.0	89.98	180.00	7,162.8	-3,797.3	-1,053.4	3,910.6	0.00	0.00	0.00
11,000.0	89.98	180.00	7,162.9	-3,897.3	-1,053.4	4,009.6	0.00	0.00	0.00
11,100.0	89.98	180.00	7,162.9	-3,997.3	-1,053.4	4,108.5	0.00	0.00	0.00
11,200.0	89.98	180.00	7,162.9	-4,097.3	-1,053.4	4,207.4	0.00	0.00	0.00
11,300.0	89.98	180.00	7,163.0	-4,197.3	-1,053.4	4,306.3	0.00	0.00	0.00
11,400.0	89.98	180.00	7,163.0	-4,297.3	-1,053.4	4,405.3	0.00	0.00	0.00
11,500.0	89.98	180.00	7,163.1	-4,397.3	-1,053.4	4,504.2	0.00	0.00	0.00
11,600.0	89.98	180.00	7,163.1	-4,497.3	-1,053.4	4,603.1	0.00	0.00	0.00
11,700.0	89.98	180.00	7,163.1	-4,597.3	-1,053.4	4,702.0	0.00	0.00	0.00
11,800.0	89.98	180.00	7,163.2	-4,697.3	-1,053.4	4,800.9	0.00	0.00	0.00
11,900.0	89.98	180.00	7,163.2	-4,797.3	-1,053.4	4,899.9	0.00	0.00	0.00
12,000.0	89.98	180.00	7,163.2	-4,897.3	-1,053.4	4,998.8	0.00	0.00	0.00
12,100.0	89.98	180.00	7,163.3	-4,997.3	-1,053.4	5,097.7	0.00	0.00	0.00
12,200.0	89.98	180.00	7,163.3	-5,097.3	-1,053.4	5,196.6	0.00	0.00	0.00
12,300.0	89.98	180.00	7,163.3	-5,197.3	-1,053.4	5,295.6	0.00	0.00	0.00
12,400.0	89.98	180.00	7,163.4	-5,297.3	-1,053.4	5,394.5	0.00	0.00	0.00
12,500.0	89.98	180.00	7,163.4	-5,397.3	-1,053.4	5,493.4	0.00	0.00	0.00
12,600.0	89.98	180.00	7,163.4	-5,497.3	-1,053.4	5,592.3	0.00	0.00	0.00
12,700.0	89.98	180.00	7,163.5	-5,597.3	-1,053.4	5,691.2	0.00	0.00	0.00
12,800.0	89.98	180.00	7,163.5	-5,697.3	-1,053.4	5,790.2	0.00	0.00	0.00
12,900.0	89.98	180.00	7,163.5	-5,797.3	-1,053.4	5,889.1	0.00	0.00	0.00
13,000.0	89.98	180.00	7,163.6	-5,897.3	-1,053.4	5,988.0	0.00	0.00	0.00
13,100.0	89.98	180.00	7,163.6	-5,997.3	-1,053.4	6,086.9	0.00	0.00	0.00
13,200.0	89.98	180.00	7,163.6	-6,097.3	-1,053.4	6,185.8	0.00	0.00	0.00
13,300.0	89.98	180.00	7,163.7	-6,197.3	-1,053.4	6,284.8	0.00	0.00	0.00
13,400.0	89.98	180.00	7,163.7	-6,297.3	-1,053.4	6,383.7	0.00	0.00	0.00
13,500.0	89.98	180.00	7,163.7	-6,397.3	-1,053.4	6,482.6	0.00	0.00	0.00
13,600.0	89.98	180.00	7,163.8	-6,497.3	-1,053.4	6,581.5	0.00	0.00	0.00
13,700.0	89.98	180.00	7,163.8	-6,597.3	-1,053.4	6,680.5	0.00	0.00	0.00
13,800.0	89.98	180.00	7,163.9	-6,697.3	-1,053.4	6,779.4	0.00	0.00	0.00
13,900.0	89.98	180.00	7,163.9	-6,797.3	-1,053.4	6,878.3	0.00	0.00	0.00

Database:	landmark	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-9-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,000.0	89.98	180.00	7,163.9	-6,897.3	-1,053.4	6,977.2	0.00	0.00	0.00
14,100.0	89.98	180.00	7,164.0	-6,997.3	-1,053.4	7,076.1	0.00	0.00	0.00
14,200.0	89.98	180.00	7,164.0	-7,097.3	-1,053.4	7,175.1	0.00	0.00	0.00
14,217.5	89.98	180.00	7,164.0	-7,114.9	-1,053.4	7,192.4	0.00	0.00	0.00
BHL 500'FSL & 487'FWL, Sec.24									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,701.4	7,161.7	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,001.8	6,863.0	Sharron Springs		0.00	
7,121.7	6,952.0	Niobrara A		0.00	
7,283.3	7,050.0	Niobrara B		0.00	
7,487.8	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
400.0	400.0	0.0	0.0	KOP #1
6,501.6	6,397.8	165.0	-1,053.4	KOP #2
7,701.4	7,161.7	-598.7	-1,053.4	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.13-T4N-R67W
Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
Stroh 13G-323

Wellbore #1
Plan #2 (4-9-14)

Anticollision Report

10 April, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (4-9-14)

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** 4/9/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,217.5	Plan #2 (4-9-14) (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						
Matt 1 (Exist) - Wellbore #1 - Wellbore #1	12,775.7	7,068.4	145.2	16.8	1.131	Level 2, CC, ES, SF
Sophie 1 (Exist) - Wellbore #1 - Wellbore #1	14,039.1	7,075.9	263.9	-12.3	0.955	Level 1, CC, ES, SF
Stroh 24-12 (Exist) - Wellbore #1 - Wellbore #1	11,625.1	7,155.9	103.9	-2.6	0.976	Level 1, CC, ES, SF
Stroh 24-22 (Exist) - Wellbore #1 - Wellbore #1	10,119.9	7,159.4	150.4	71.5	1.906	CC, ES, SF
Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1	1,857.6	1,824.9	99.8	57.2	2.346	CC
Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1	1,900.0	1,866.4	100.1	56.6	2.300	ES
Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1	2,000.0	1,964.4	103.8	58.0	2.268	SF
UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1	7,428.3	7,109.4	158.2	-2.3	0.985	Level 1, CC, ES, SF
UPRC 13-13E (Exist) - Wellbore #1 - Wellbore #1	8,614.5	7,178.0	169.3	-8.4	0.953	Level 1, CC, ES, SF
Stroh 13GK-HZ Pad Sec. 13-T4N-R67W						
Stroh 13G-403 - Wellbore #1 - Plan #1 (3-11-14)	166.3	167.3	30.7	30.2	58.413	CC
Stroh 13G-403 - Wellbore #1 - Plan #1 (3-11-14)	200.0	201.0	30.7	30.0	45.352	ES
Stroh 13G-403 - Wellbore #1 - Plan #1 (3-11-14)	14,217.5	14,478.5	422.2	153.2	1.569	SF
Stroh 13K-203 - Wellbore #1 - Plan #1 (3-11-14)	400.0	400.0	58.6	57.0	37.224	CC, ES
Stroh 13K-203 - Wellbore #1 - Plan #1 (3-11-14)	14,217.5	14,171.2	948.3	673.2	3.446	SF
Stroh 13K-423 - Wellbore #1 - Plan #2 (4-9-14)	400.0	400.0	89.2	87.7	56.722	CC, ES
Stroh 13K-423 - Wellbore #1 - Plan #2 (4-9-14)	900.0	897.5	132.4	128.6	34.938	SF
Stroh 13K-443 - Wellbore #1 - Plan #2 (4-9-14)	400.0	400.0	30.7	29.1	19.498	CC, ES
Stroh 13K-443 - Wellbore #1 - Plan #2 (4-9-14)	14,217.5	14,200.0	434.6	170.6	1.646	SF
Stroh 13O-343 - Wellbore #1 - Plan #1 (3-11-14)	400.0	399.0	119.9	118.4	76.329	CC, ES
Stroh 13O-343 - Wellbore #1 - Plan #1 (3-11-14)	1,000.0	994.6	181.9	177.7	42.940	SF

Offset Design Existing Wells - Sec.13-T4N-R67W - Matt 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
11,800.0	7,163.2	7,045.2	7,042.6	93.7	17.7	78.28	-5,672.5	-1,197.4	986.2	877.6	108.62	9.079	
11,900.0	7,163.2	7,047.5	7,045.0	95.5	17.7	79.19	-5,672.6	-1,197.5	887.5	776.7	110.73	8.015	
12,000.0	7,163.2	7,049.9	7,047.4	97.4	17.7	80.12	-5,672.6	-1,197.6	789.0	676.2	112.82	6.994	
12,100.0	7,163.3	7,052.3	7,049.7	99.3	17.7	81.04	-5,672.7	-1,197.7	691.0	576.1	114.89	6.014	
12,200.0	7,163.3	7,054.7	7,052.1	101.1	17.7	81.97	-5,672.7	-1,197.9	593.6	476.7	116.95	5.076	
12,300.0	7,163.3	7,057.1	7,054.5	103.0	17.7	82.90	-5,672.8	-1,198.0	497.3	378.3	119.00	4.179	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Matt 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
12,400.0	7,163.4	7,059.5	7,056.9	104.9	17.7	83.84	-5,672.9	-1,198.1	402.7	281.7	121.02	3.328	
12,500.0	7,163.4	7,061.8	7,059.3	106.8	17.7	84.77	-5,672.9	-1,198.2	311.6	188.6	123.03	2.533	
12,600.0	7,163.4	7,064.2	7,061.6	108.6	17.7	85.71	-5,673.0	-1,198.3	228.0	102.9	125.01	1.823	
12,700.0	7,163.5	7,066.6	7,064.0	110.5	17.7	86.65	-5,673.0	-1,198.4	163.8	36.8	126.97	1.290	Level 3
12,775.7	7,163.5	7,068.4	7,065.8	111.9	17.7	87.36	-5,673.1	-1,198.5	145.2	16.8	128.44	1.131	Level 2, CC, ES, SF
12,800.0	7,163.5	7,069.0	7,066.4	112.4	17.7	87.59	-5,673.1	-1,198.5	147.2	18.3	128.90	1.142	Level 2
12,900.0	7,163.5	7,071.4	7,068.8	114.3	17.7	88.53	-5,673.1	-1,198.6	191.1	60.3	130.81	1.461	Level 3
13,000.0	7,163.6	7,073.7	7,071.1	116.1	17.7	89.47	-5,673.2	-1,198.7	267.1	134.4	132.69	2.013	
13,100.0	7,163.6	7,076.1	7,073.5	118.0	17.7	90.41	-5,673.2	-1,198.8	355.2	220.7	134.54	2.640	
13,200.0	7,163.6	7,078.5	7,075.9	119.9	17.7	91.34	-5,673.3	-1,198.9	448.3	312.0	136.36	3.288	
13,300.0	7,163.7	7,080.9	7,078.3	121.8	17.8	92.27	-5,673.4	-1,199.1	543.9	405.7	138.15	3.937	
13,400.0	7,163.7	7,083.3	7,080.7	123.7	17.8	93.21	-5,673.4	-1,199.2	640.8	500.9	139.90	4.580	
13,500.0	7,163.7	7,085.7	7,083.0	125.5	17.8	94.13	-5,673.5	-1,199.3	738.5	596.8	141.63	5.214	
13,600.0	7,163.8	7,088.0	7,085.4	127.4	17.8	95.06	-5,673.5	-1,199.4	836.7	693.4	143.31	5.838	
13,700.0	7,163.8	7,090.4	7,087.8	129.3	17.8	95.98	-5,673.6	-1,199.5	935.3	790.4	144.97	6.452	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**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: 7310-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,100.0	7,163.6	7,075.6	7,075.6	118.0	141.5	-89.93	-6,936.4	-789.5	975.4	717.1	258.38	3.775	
13,200.0	7,163.6	7,075.6	7,075.6	119.9	141.5	-89.94	-6,936.4	-789.5	879.6	619.3	260.28	3.379	
13,300.0	7,163.7	7,075.7	7,075.7	121.8	141.5	-89.94	-6,936.4	-789.5	784.8	522.6	262.18	2.993	
13,400.0	7,163.7	7,075.7	7,075.7	123.7	141.5	-89.95	-6,936.4	-789.5	691.4	427.3	264.08	2.618	
13,500.0	7,163.7	7,075.7	7,075.7	125.5	141.5	-89.96	-6,936.4	-789.5	600.2	334.2	265.99	2.256	
13,600.0	7,163.8	7,075.8	7,075.8	127.4	141.5	-89.97	-6,936.4	-789.5	512.3	244.4	267.89	1.912	
13,700.0	7,163.8	7,075.8	7,075.8	129.3	141.5	-89.97	-6,936.4	-789.5	429.7	159.9	269.79	1.593	
13,800.0	7,163.9	7,075.9	7,075.9	131.2	141.5	-89.98	-6,936.4	-789.5	356.1	84.4	271.70	1.311	Level 3
13,900.0	7,163.9	7,075.9	7,075.9	133.1	141.5	-89.99	-6,936.4	-789.5	298.3	24.7	273.60	1.090	Level 2
14,000.0	7,163.9	7,075.9	7,075.9	135.0	141.5	-90.00	-6,936.4	-789.5	266.8	-8.7	275.51	0.968	Level 1
14,039.1	7,163.9	7,075.9	7,075.9	135.7	141.5	-90.00	-6,936.4	-789.5	263.9	-12.3	276.25	0.955	Level 1, CC, ES, SF
14,100.0	7,164.0	7,076.0	7,076.0	136.9	141.5	-90.00	-6,936.4	-789.5	270.9	-6.5	277.41	0.976	Level 1
14,200.0	7,164.0	7,076.0	7,076.0	138.8	141.5	-90.01	-6,936.4	-789.5	309.1	29.8	279.32	1.107	Level 2
14,217.5	7,164.0	7,076.0	7,076.0	139.1	141.5	-90.01	-6,936.4	-789.5	318.6	39.0	279.65	1.139	Level 2

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Stroh 24-12 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,700.0	7,162.8	7,148.7	7,146.5	73.4	17.5	84.71	-4,522.4	-1,157.1	930.9	841.8	89.06	10.453	
10,800.0	7,162.8	7,149.5	7,147.3	75.3	17.5	85.14	-4,522.4	-1,157.1	831.6	740.6	90.94	9.144	
10,900.0	7,162.8	7,150.3	7,148.1	77.1	17.5	85.57	-4,522.4	-1,157.1	732.5	639.7	92.83	7.891	
11,000.0	7,162.9	7,151.1	7,148.8	78.9	17.5	86.00	-4,522.4	-1,157.1	633.6	538.9	94.71	6.690	
11,100.0	7,162.9	7,151.9	7,149.6	80.8	17.5	86.43	-4,522.4	-1,157.2	535.3	438.7	96.60	5.541	
11,200.0	7,162.9	7,152.6	7,150.4	82.6	17.5	86.85	-4,522.4	-1,157.2	437.6	339.1	98.48	4.443	
11,300.0	7,163.0	7,153.4	7,151.2	84.4	17.5	87.27	-4,522.4	-1,157.2	341.3	240.9	100.36	3.400	
11,400.0	7,163.0	7,154.2	7,151.9	86.3	17.5	87.70	-4,522.4	-1,157.2	247.9	145.7	102.24	2.425	
11,500.0	7,163.1	7,154.9	7,152.7	88.1	17.5	88.12	-4,522.4	-1,157.2	162.6	58.5	104.12	1.562	
11,600.0	7,163.1	7,155.7	7,153.4	90.0	17.5	88.53	-4,522.4	-1,157.2	106.9	0.9	106.00	1.008	Level 2
11,625.1	7,163.1	7,155.9	7,153.6	90.4	17.5	88.64	-4,522.4	-1,157.3	103.9	-2.6	106.47	0.976	Level 1, CC, ES, SF
11,700.0	7,163.1	7,156.4	7,154.2	91.8	17.5	88.95	-4,522.4	-1,157.3	128.1	20.2	107.88	1.187	Level 2
11,800.0	7,163.2	7,157.2	7,154.9	93.7	17.5	89.36	-4,522.4	-1,157.3	203.4	93.7	109.75	1.854	
11,900.0	7,163.2	7,157.9	7,155.7	95.5	17.5	89.78	-4,522.4	-1,157.3	293.9	182.3	111.62	2.633	
12,000.0	7,163.2	7,158.7	7,156.4	97.4	17.5	90.19	-4,522.4	-1,157.3	389.0	275.5	113.48	3.428	
12,100.0	7,163.3	7,159.4	7,157.2	99.3	17.5	90.60	-4,522.4	-1,157.3	486.1	370.8	115.34	4.215	
12,200.0	7,163.3	7,160.2	7,157.9	101.1	17.5	91.00	-4,522.4	-1,157.4	584.2	467.0	117.20	4.985	
12,300.0	7,163.3	7,160.9	7,158.7	103.0	17.5	91.41	-4,522.4	-1,157.4	682.8	563.8	119.06	5.735	
12,400.0	7,163.4	7,161.6	7,159.4	104.9	17.5	91.81	-4,522.5	-1,157.4	781.8	660.9	120.90	6.466	
12,500.0	7,163.4	7,162.4	7,160.1	106.8	17.5	92.21	-4,522.5	-1,157.4	881.0	758.3	122.75	7.177	
12,600.0	7,163.4	7,163.1	7,160.8	108.6	17.5	92.61	-4,522.5	-1,157.4	980.4	855.8	124.59	7.869	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Stroh 24-22 (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
9,200.0	7,162.2	7,171.7	7,169.6	47.1	18.1	93.03	-3,017.1	-1,204.1	932.0	870.1	61.94	15.049	
9,300.0	7,162.3	7,170.4	7,168.2	48.8	18.1	92.52	-3,017.1	-1,204.1	833.5	769.8	63.77	13.072	
9,400.0	7,162.3	7,169.1	7,166.9	50.5	18.1	92.01	-3,017.1	-1,204.0	735.4	669.8	65.60	11.210	
9,500.0	7,162.4	7,167.7	7,165.5	52.2	18.1	91.50	-3,017.1	-1,204.0	637.8	570.4	67.45	9.457	
9,600.0	7,162.4	7,166.4	7,164.2	53.9	18.1	90.99	-3,017.1	-1,204.0	541.2	471.9	69.30	7.810	
9,700.0	7,162.4	7,165.0	7,162.8	55.6	18.1	90.48	-3,017.2	-1,203.9	446.0	374.9	71.15	6.269	
9,800.0	7,162.5	7,163.7	7,161.5	57.3	18.1	89.97	-3,017.2	-1,203.9	353.5	280.5	73.00	4.842	
9,900.0	7,162.5	7,162.3	7,160.1	59.1	18.1	89.45	-3,017.2	-1,203.8	266.4	191.6	74.86	3.559	
10,000.0	7,162.5	7,161.0	7,158.8	60.9	18.1	88.94	-3,017.2	-1,203.8	192.4	115.6	76.71	2.508	
10,100.0	7,162.6	7,159.6	7,157.4	62.6	18.0	88.43	-3,017.2	-1,203.8	151.7	73.2	78.57	1.931	
10,119.9	7,162.6	7,159.4	7,157.2	63.0	18.0	88.33	-3,017.2	-1,203.7	150.4	71.5	78.94	1.906	CC, ES, SF
10,200.0	7,162.6	7,158.3	7,156.1	64.4	18.0	87.91	-3,017.2	-1,203.7	170.4	90.0	80.42	2.119	
10,300.0	7,162.6	7,156.9	7,154.7	66.2	18.0	87.40	-3,017.3	-1,203.7	234.6	152.4	82.27	2.852	
10,400.0	7,162.7	7,155.6	7,153.4	68.0	18.0	86.89	-3,017.3	-1,203.6	317.9	233.8	84.12	3.779	
10,500.0	7,162.7	7,154.2	7,152.0	69.8	18.0	86.37	-3,017.3	-1,203.6	408.7	322.8	85.96	4.755	
10,600.0	7,162.7	7,152.9	7,150.7	71.6	18.0	85.86	-3,017.3	-1,203.6	503.1	415.3	87.80	5.729	
10,700.0	7,162.8	7,151.5	7,149.3	73.4	18.0	85.34	-3,017.3	-1,203.5	599.2	509.6	89.64	6.685	
10,800.0	7,162.8	7,150.2	7,148.0	75.3	18.0	84.83	-3,017.4	-1,203.5	696.5	605.0	91.46	7.615	
10,900.0	7,162.8	7,148.8	7,146.6	77.1	18.0	84.32	-3,017.4	-1,203.4	794.4	701.1	93.29	8.516	
11,000.0	7,162.9	7,147.5	7,145.3	78.9	18.0	83.80	-3,017.4	-1,203.4	892.8	797.7	95.10	9.388	
11,100.0	7,162.9	7,146.1	7,143.9	80.8	18.0	83.29	-3,017.4	-1,203.4	991.5	894.6	96.91	10.231	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 7438-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-58.02	134.8	-215.9	254.7				
100.0	100.0	89.0	89.0	0.1	1.8	-58.02	134.8	-215.9	254.5	252.6	1.89	134.466	
200.0	200.0	189.0	189.0	0.3	3.8	-58.02	134.8	-215.9	254.5	250.4	4.12	61.809	
300.0	300.0	289.0	289.0	0.6	5.8	-58.02	134.8	-215.9	254.5	248.1	6.34	40.127	
400.0	400.0	389.0	389.0	0.8	7.8	-58.02	134.8	-215.9	254.5	245.9	8.57	29.706	
500.0	500.0	489.0	489.0	1.0	9.8	23.25	134.8	-215.9	252.9	242.1	10.78	23.467	
600.0	599.8	588.8	588.8	1.2	11.8	23.76	134.8	-215.9	248.1	235.1	12.97	19.133	
700.0	699.5	688.5	688.5	1.5	13.8	24.67	134.8	-215.9	240.1	225.0	15.14	15.860	
800.0	798.7	787.7	787.7	1.7	15.8	26.04	134.8	-215.9	229.1	211.8	17.30	13.245	
900.0	897.5	886.5	886.5	2.0	17.7	27.99	134.8	-215.9	215.1	195.7	19.44	11.067	
1,000.0	995.6	984.6	984.6	2.4	19.7	30.68	134.8	-215.9	198.5	176.9	21.60	9.190	
1,100.0	1,093.6	1,082.6	1,082.6	2.8	21.7	33.89	134.8	-215.9	181.5	157.6	23.87	7.603	
1,200.0	1,191.6	1,180.6	1,180.6	3.2	23.6	37.73	134.8	-215.9	165.1	138.9	26.18	6.307	
1,300.0	1,289.6	1,278.6	1,278.6	3.6	25.6	42.38	134.8	-215.9	149.7	121.1	28.55	5.243	
1,400.0	1,387.6	1,376.6	1,376.6	4.1	27.5	48.04	134.8	-215.9	135.4	104.4	30.98	4.372	
1,500.0	1,485.5	1,474.5	1,474.5	4.5	29.5	54.90	134.8	-215.9	122.8	89.3	33.47	3.668	
1,600.0	1,583.5	1,572.5	1,572.5	4.9	31.5	63.15	134.8	-215.9	112.3	76.3	36.03	3.117	
1,700.0	1,681.5	1,670.5	1,670.5	5.3	33.4	72.79	134.8	-215.9	104.6	66.0	38.61	2.710	
1,800.0	1,779.5	1,768.5	1,768.5	5.8	35.4	83.54	134.8	-215.9	100.4	59.3	41.14	2.441	
1,857.6	1,835.9	1,824.9	1,824.9	6.0	36.5	90.00	134.8	-215.9	99.8	57.2	42.54	2.346 CC	
1,900.0	1,877.4	1,866.4	1,866.4	6.2	37.3	94.76	134.8	-215.9	100.1	56.6	43.53	2.300 ES	
2,000.0	1,975.4	1,964.4	1,964.4	6.7	39.3	105.63	134.8	-215.9	103.8	58.0	45.74	2.268 SF	
2,100.0	2,073.4	2,062.4	2,062.4	7.1	41.2	115.47	134.8	-215.9	110.9	63.1	47.80	2.321	
2,200.0	2,171.4	2,160.4	2,160.4	7.5	43.2	123.93	134.8	-215.9	121.0	71.3	49.77	2.432	
2,300.0	2,269.4	2,258.4	2,258.4	8.0	45.2	131.00	134.8	-215.9	133.4	81.7	51.71	2.579	
2,400.0	2,367.3	2,356.3	2,356.3	8.4	47.1	136.83	134.8	-215.9	147.4	93.8	53.65	2.748	
2,500.0	2,465.3	2,454.3	2,454.3	8.9	49.1	141.61	134.8	-215.9	162.7	107.1	55.62	2.925	
2,600.0	2,563.3	2,552.3	2,552.3	9.3	51.0	145.57	134.8	-215.9	178.9	121.3	57.62	3.106	
2,700.0	2,661.3	2,650.3	2,650.3	9.8	53.0	148.86	134.8	-215.9	195.9	136.2	59.64	3.284	
2,800.0	2,759.2	2,748.2	2,748.2	10.2	55.0	151.63	134.8	-215.9	213.3	151.6	61.69	3.458	
2,900.0	2,857.2	2,846.2	2,846.2	10.7	56.9	153.98	134.8	-215.9	231.2	167.5	63.76	3.626	
3,000.0	2,955.2	2,944.2	2,944.2	11.1	58.9	155.99	134.8	-215.9	249.4	183.6	65.84	3.788	
3,100.0	3,053.2	3,042.2	3,042.2	11.5	60.8	157.73	134.8	-215.9	267.9	199.9	67.94	3.943	
3,200.0	3,151.1	3,140.1	3,140.1	12.0	62.8	159.24	134.8	-215.9	286.5	216.5	70.06	4.090	
3,300.0	3,249.1	3,238.1	3,238.1	12.4	64.8	160.57	134.8	-215.9	305.4	233.2	72.18	4.231	
3,400.0	3,347.1	3,336.1	3,336.1	12.9	66.7	161.74	134.8	-215.9	324.3	250.0	74.31	4.365	
3,500.0	3,445.1	3,434.1	3,434.1	13.3	68.7	162.78	134.8	-215.9	343.4	267.0	76.45	4.493	
3,600.0	3,543.1	3,532.1	3,532.1	13.8	70.6	163.72	134.8	-215.9	362.6	284.0	78.59	4.614	
3,700.0	3,641.0	3,630.0	3,630.0	14.2	72.6	164.56	134.8	-215.9	381.9	301.2	80.74	4.730	
3,800.0	3,739.0	3,728.0	3,728.0	14.7	74.6	165.32	134.8	-215.9	401.3	318.4	82.89	4.841	
3,900.0	3,837.0	3,826.0	3,826.0	15.1	76.5	166.01	134.8	-215.9	420.7	335.6	85.05	4.946	
4,000.0	3,935.0	3,924.0	3,924.0	15.6	78.5	166.64	134.8	-215.9	440.1	352.9	87.20	5.047	
4,100.0	4,032.9	4,021.9	4,021.9	16.0	80.4	167.21	134.8	-215.9	459.6	370.3	89.37	5.143	
4,200.0	4,130.9	4,119.9	4,119.9	16.5	82.4	167.74	134.8	-215.9	479.2	387.7	91.53	5.235	
4,300.0	4,228.9	4,217.9	4,217.9	16.9	84.4	168.23	134.8	-215.9	498.8	405.1	93.70	5.324	
4,400.0	4,326.9	4,315.9	4,315.9	17.4	86.3	168.68	134.8	-215.9	518.4	422.5	95.86	5.408	
4,500.0	4,424.9	4,413.9	4,413.9	17.8	88.3	169.10	134.8	-215.9	538.1	440.0	98.03	5.489	
4,600.0	4,522.8	4,511.8	4,511.8	18.2	90.2	169.49	134.8	-215.9	557.7	457.5	100.20	5.566	
4,700.0	4,620.8	4,609.8	4,609.8	18.7	92.2	169.85	134.8	-215.9	577.4	475.1	102.37	5.640	
4,800.0	4,718.8	4,707.8	4,707.8	19.1	94.2	170.19	134.8	-215.9	597.2	492.6	104.55	5.712	
4,900.0	4,816.8	4,805.8	4,805.8	19.6	96.1	170.50	134.8	-215.9	616.9	510.2	106.72	5.780	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 7438-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,914.7	4,903.7	4,903.7	20.0	98.1	170.80	134.8	-215.9	636.6	527.7	108.89	5.846	
5,100.0	5,012.7	5,001.7	5,001.7	20.5	100.0	171.08	134.8	-215.9	656.4	545.3	111.07	5.910	
5,200.0	5,110.7	5,099.7	5,099.7	20.9	102.0	171.34	134.8	-215.9	676.2	563.0	113.24	5.971	
5,300.0	5,208.7	5,197.7	5,197.7	21.4	104.0	171.59	134.8	-215.9	696.0	580.6	115.42	6.030	
5,400.0	5,306.7	5,295.7	5,295.7	21.8	105.9	171.83	134.8	-215.9	715.8	598.2	117.60	6.087	
5,500.0	5,404.6	5,393.6	5,393.6	22.3	107.9	172.05	134.8	-215.9	735.6	615.8	119.78	6.142	
5,600.0	5,502.6	5,491.6	5,491.6	22.7	109.8	172.26	134.8	-215.9	755.5	633.5	121.95	6.195	
5,700.0	5,600.6	5,589.6	5,589.6	23.2	111.8	172.46	134.8	-215.9	775.3	651.2	124.13	6.246	
5,800.0	5,698.7	5,687.7	5,687.7	23.6	113.8	172.67	134.8	-215.9	794.2	667.4	126.83	6.262	
5,900.0	5,797.5	5,786.5	5,786.5	23.8	115.7	172.85	134.8	-215.9	809.9	680.3	129.60	6.249	
6,000.0	5,896.7	5,885.7	5,885.7	24.1	117.7	172.99	134.8	-215.9	822.1	689.9	132.22	6.218	
6,100.0	5,996.3	5,985.3	5,985.3	24.3	119.7	173.09	134.8	-215.9	830.9	696.2	134.71	6.168	
6,200.0	6,096.2	6,085.2	6,085.2	24.4	121.7	173.14	134.8	-215.9	836.2	699.2	137.04	6.102	
6,300.0	6,196.2	6,185.2	6,185.2	24.6	123.7	173.16	134.8	-215.9	838.1	698.9	139.21	6.020	
6,400.0	6,296.2	6,285.2	6,285.2	24.7	125.7	92.07	134.8	-215.9	838.1	696.7	141.38	5.928	
6,500.0	6,396.2	6,385.2	6,385.2	24.8	127.7	92.07	134.8	-215.9	838.1	694.5	143.55	5.838	
6,600.0	6,495.9	6,484.9	6,484.9	24.9	129.7	-88.38	134.8	-215.9	837.9	692.2	145.71	5.750	
6,700.0	6,593.9	6,582.9	6,582.9	25.0	131.7	-89.70	134.8	-215.9	837.6	689.7	147.85	5.665	
6,717.2	6,610.5	6,599.5	6,599.5	25.0	132.0	-90.00	134.8	-215.9	837.5	689.3	148.21	5.651	
6,800.0	6,688.6	6,677.6	6,677.6	25.0	133.6	-91.73	134.8	-215.9	838.0	688.1	149.93	5.589	
6,900.0	6,778.3	6,767.3	6,767.3	25.1	135.3	-94.22	134.8	-215.9	840.6	688.7	151.85	5.536	
7,000.0	6,861.5	6,850.5	6,850.5	25.1	137.0	-96.85	134.8	-215.9	847.1	693.6	153.45	5.520	
7,100.0	6,936.8	6,925.8	6,925.8	25.2	138.5	-99.25	134.8	-215.9	859.4	704.7	154.62	5.558	
7,200.0	7,002.9	6,991.9	6,991.9	25.3	139.8	-101.03	134.8	-215.9	879.2	723.7	155.45	5.656	
7,300.0	7,058.6	7,047.6	7,047.6	25.5	141.0	-101.86	134.8	-215.9	907.9	751.6	156.28	5.809	
7,400.0	7,102.9	7,091.9	7,091.9	25.8	141.8	-101.42	134.8	-215.9	946.0	788.4	157.59	6.003	
7,500.0	7,135.3	7,124.3	7,124.3	26.1	142.5	-99.45	134.8	-215.9	993.5	833.9	159.64	6.224	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7427-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-110.32	-331.5	-895.2	954.7				
100.0	100.0	96.0	96.0	0.1	1.9	-110.32	-331.5	-895.2	954.6	952.6	2.03	469.673	
200.0	200.0	196.0	196.0	0.3	3.9	-110.32	-331.5	-895.2	954.6	950.4	4.26	224.236	
300.0	300.0	296.0	296.0	0.6	5.9	-110.32	-331.5	-895.2	954.6	948.2	6.48	147.275	
400.0	400.0	396.0	396.0	0.8	7.9	-110.32	-331.5	-895.2	954.6	945.9	8.71	109.643	
500.0	500.0	496.0	496.0	1.0	9.9	-29.29	-331.5	-895.2	953.1	942.2	10.92	87.310	
600.0	599.8	595.8	595.8	1.2	11.9	-29.49	-331.5	-895.2	948.6	935.5	13.11	72.370	
700.0	699.5	695.5	695.5	1.5	13.9	-29.82	-331.5	-895.2	941.0	925.7	15.28	61.569	
800.0	798.7	794.7	794.7	1.7	15.9	-30.30	-331.5	-895.2	930.4	913.0	17.44	53.345	
900.0	897.5	893.5	893.5	2.0	17.9	-30.93	-331.5	-895.2	916.9	897.3	19.58	46.830	
1,000.0	995.6	991.6	991.6	2.4	19.8	-31.68	-331.5	-895.2	900.6	878.9	21.72	41.461	
1,100.0	1,093.6	1,089.6	1,089.6	2.8	21.8	-32.36	-331.5	-895.2	883.5	859.6	23.95	36.894	
1,200.0	1,191.6	1,187.6	1,187.6	3.2	23.8	-33.07	-331.5	-895.2	866.6	840.4	26.19	33.093	
1,300.0	1,289.6	1,285.6	1,285.6	3.6	25.7	-33.80	-331.5	-895.2	849.8	821.4	28.44	29.884	
1,400.0	1,387.6	1,383.6	1,383.6	4.1	27.7	-34.56	-331.5	-895.2	833.2	802.5	30.70	27.140	
1,500.0	1,485.5	1,481.5	1,481.5	4.5	29.6	-35.35	-331.5	-895.2	816.6	783.7	32.97	24.771	
1,600.0	1,583.5	1,579.5	1,579.5	4.9	31.6	-36.17	-331.5	-895.2	800.3	765.0	35.25	22.705	
1,700.0	1,681.5	1,677.5	1,677.5	5.3	33.5	-37.03	-331.5	-895.2	784.1	746.6	37.54	20.889	
1,800.0	1,779.5	1,775.5	1,775.5	5.8	35.5	-37.92	-331.5	-895.2	768.1	728.3	39.84	19.281	
1,900.0	1,877.4	1,873.4	1,873.4	6.2	37.5	-38.85	-331.5	-895.2	752.3	710.2	42.15	17.850	
2,000.0	1,975.4	1,971.4	1,971.4	6.7	39.4	-39.82	-331.5	-895.2	736.7	692.2	44.47	16.568	
2,100.0	2,073.4	2,069.4	2,069.4	7.1	41.4	-40.83	-331.5	-895.2	721.3	674.5	46.80	15.414	
2,200.0	2,171.4	2,167.4	2,167.4	7.5	43.3	-41.88	-331.5	-895.2	706.2	657.0	49.14	14.372	
2,300.0	2,269.4	2,265.4	2,265.4	8.0	45.3	-42.98	-331.5	-895.2	691.3	639.8	51.49	13.425	
2,400.0	2,367.3	2,363.3	2,363.3	8.4	47.3	-44.12	-331.5	-895.2	676.6	622.8	53.85	12.564	
2,500.0	2,465.3	2,461.3	2,461.3	8.9	49.2	-45.31	-331.5	-895.2	662.2	606.0	56.23	11.778	
2,600.0	2,563.3	2,559.3	2,559.3	9.3	51.2	-46.56	-331.5	-895.2	648.2	589.6	58.62	11.058	
2,700.0	2,661.3	2,657.3	2,657.3	9.8	53.1	-47.85	-331.5	-895.2	634.4	573.4	61.02	10.397	
2,800.0	2,759.2	2,755.2	2,755.2	10.2	55.1	-49.21	-331.5	-895.2	621.0	557.6	63.44	9.790	
2,900.0	2,857.2	2,853.2	2,853.2	10.7	57.1	-50.62	-331.5	-895.2	608.0	542.1	65.87	9.231	
3,000.0	2,955.2	2,951.2	2,951.2	11.1	59.0	-52.09	-331.5	-895.2	595.3	527.0	68.31	8.715	
3,100.0	3,053.2	3,049.2	3,049.2	11.5	61.0	-53.62	-331.5	-895.2	583.1	512.3	70.77	8.240	
3,200.0	3,151.1	3,147.1	3,147.1	12.0	62.9	-55.21	-331.5	-895.2	571.3	498.1	73.24	7.801	
3,300.0	3,249.1	3,245.1	3,245.1	12.4	64.9	-56.87	-331.5	-895.2	560.0	484.2	75.72	7.395	
3,400.0	3,347.1	3,343.1	3,343.1	12.9	66.9	-58.59	-331.5	-895.2	549.1	470.9	78.22	7.021	
3,500.0	3,445.1	3,441.1	3,441.1	13.3	68.8	-60.38	-331.5	-895.2	538.8	458.1	80.72	6.675	
3,600.0	3,543.1	3,539.1	3,539.1	13.8	70.8	-62.24	-331.5	-895.2	529.1	445.8	83.24	6.356	
3,700.0	3,641.0	3,637.0	3,637.0	14.2	72.7	-64.16	-331.5	-895.2	519.9	434.1	85.77	6.062	
3,800.0	3,739.0	3,735.0	3,735.0	14.7	74.7	-66.14	-331.5	-895.2	511.3	423.0	88.30	5.791	
3,900.0	3,837.0	3,833.0	3,833.0	15.1	76.7	-68.19	-331.5	-895.2	503.4	412.6	90.84	5.542	
4,000.0	3,935.0	3,931.0	3,931.0	15.6	78.6	-70.30	-331.5	-895.2	496.2	402.8	93.38	5.314	
4,100.0	4,032.9	4,028.9	4,028.9	16.0	80.6	-72.46	-331.5	-895.2	489.7	393.8	95.92	5.105	
4,200.0	4,130.9	4,126.9	4,126.9	16.5	82.5	-74.68	-331.5	-895.2	483.9	385.5	98.46	4.915	
4,300.0	4,228.9	4,224.9	4,224.9	16.9	84.5	-76.94	-331.5	-895.2	478.9	377.9	100.99	4.742	
4,400.0	4,326.9	4,322.9	4,322.9	17.4	86.5	-79.25	-331.5	-895.2	474.7	371.2	103.51	4.586	
4,500.0	4,424.9	4,420.9	4,420.9	17.8	88.4	-81.59	-331.5	-895.2	471.3	365.3	106.02	4.446	
4,600.0	4,522.8	4,518.8	4,518.8	18.2	90.4	-83.96	-331.5	-895.2	468.8	360.2	108.51	4.320	
4,700.0	4,620.8	4,616.8	4,616.8	18.7	92.3	-86.36	-331.5	-895.2	467.0	356.1	110.98	4.208	
4,800.0	4,718.8	4,714.8	4,714.8	19.1	94.3	-88.76	-331.5	-895.2	466.2	352.7	113.42	4.110	
4,851.4	4,769.1	4,765.1	4,765.1	19.4	95.3	-90.00	-331.5	-895.2	466.0	351.4	114.67	4.064	
4,900.0	4,816.8	4,812.8	4,812.8	19.6	96.3	-91.17	-331.5	-895.2	466.1	350.3	115.84	4.024	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7427-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,914.7	4,910.7	4,910.7	20.0	98.2	-93.58	-331.5	-895.2	467.0	348.8	118.24	3.950	
5,100.0	5,012.7	5,008.7	5,008.7	20.5	100.2	-95.97	-331.5	-895.2	468.7	348.1	120.60	3.886	
5,200.0	5,110.7	5,106.7	5,106.7	20.9	102.1	-98.34	-331.5	-895.2	471.2	348.3	122.94	3.833	
5,300.0	5,208.7	5,204.7	5,204.7	21.4	104.1	-100.69	-331.5	-895.2	474.6	349.4	125.24	3.790	
5,400.0	5,306.7	5,302.7	5,302.7	21.8	106.1	-103.00	-331.5	-895.2	478.8	351.3	127.51	3.755	
5,500.0	5,404.6	5,400.6	5,400.6	22.3	108.0	-105.26	-331.5	-895.2	483.8	354.0	129.76	3.728	
5,600.0	5,502.6	5,498.6	5,498.6	22.7	110.0	-107.48	-331.5	-895.2	489.5	357.6	131.97	3.709	
5,700.0	5,600.6	5,596.6	5,596.6	23.2	111.9	-109.65	-331.5	-895.2	496.0	361.9	134.16	3.697	
5,800.0	5,698.7	5,694.7	5,694.7	23.6	113.9	-111.75	-331.5	-895.2	502.9	366.5	136.35	3.688	
5,900.0	5,797.5	5,793.5	5,793.5	23.8	115.9	-113.50	-331.5	-895.2	509.0	370.5	138.49	3.675	
6,000.0	5,896.7	5,892.7	5,892.7	24.1	117.9	-114.84	-331.5	-895.2	514.1	373.4	140.64	3.655	
6,100.0	5,996.3	5,992.3	5,992.3	24.3	119.8	-115.80	-331.5	-895.2	517.9	375.1	142.78	3.627	
6,200.0	6,096.2	6,092.2	6,092.2	24.4	121.8	-116.37	-331.5	-895.2	520.2	375.3	144.90	3.590	
6,300.0	6,196.2	6,192.2	6,192.2	24.6	123.8	-116.57	-331.5	-895.2	521.1	374.1	147.01	3.545	
6,400.0	6,296.2	6,292.2	6,292.2	24.7	125.8	162.33	-331.5	-895.2	521.1	372.0	149.12	3.494	
6,500.0	6,396.2	6,392.2	6,392.2	24.8	127.8	162.33	-331.5	-895.2	521.1	369.8	151.25	3.445	
6,600.0	6,495.9	6,491.9	6,491.9	24.9	129.8	-18.02	-331.5	-895.2	515.1	363.0	152.10	3.386	
6,700.0	6,593.9	6,589.9	6,589.9	25.0	131.8	-19.16	-331.5	-895.2	496.7	346.2	150.51	3.300	
6,800.0	6,688.6	6,684.6	6,684.6	25.0	133.7	-21.29	-331.5	-895.2	466.6	319.9	146.67	3.181	
6,900.0	6,778.3	6,774.3	6,774.3	25.1	135.5	-24.79	-331.5	-895.2	425.5	284.3	141.20	3.013	
7,000.0	6,861.5	6,857.5	6,857.5	25.1	137.2	-30.37	-331.5	-895.2	374.6	239.0	135.62	2.762	
7,100.0	6,936.8	6,932.8	6,932.8	25.2	138.7	-39.18	-331.5	-895.2	316.3	183.0	133.32	2.372	
7,200.0	7,002.9	6,998.9	6,998.9	25.3	140.0	-52.49	-331.5	-895.2	254.1	115.1	139.00	1.828	
7,300.0	7,058.6	7,054.6	7,054.6	25.5	141.1	-69.80	-331.5	-895.2	196.1	44.6	151.51	1.294	Level 3
7,400.0	7,102.9	7,098.9	7,098.9	25.8	142.0	-86.32	-331.5	-895.2	160.3	0.6	159.73	1.004	Level 2
7,428.3	7,113.4	7,109.4	7,109.4	25.9	142.2	-89.99	-331.5	-895.2	158.2	-2.3	160.50	0.985	Level 1, CC, ES, SF
7,500.0	7,135.3	7,131.3	7,131.3	26.1	142.6	-96.41	-331.5	-895.2	172.2	11.5	160.76	1.071	Level 2
7,600.0	7,155.0	7,151.0	7,151.0	26.6	143.0	-97.93	-331.5	-895.2	229.4	67.7	161.64	1.419	Level 3
7,700.0	7,161.7	7,157.7	7,157.7	27.2	143.2	-90.21	-331.5	-895.2	309.3	145.3	163.99	1.886	
7,800.0	7,161.8	7,157.8	7,157.8	28.0	143.2	-90.05	-331.5	-895.2	398.5	233.4	165.13	2.413	
7,900.0	7,161.8	7,157.8	7,157.8	28.9	143.2	-90.06	-331.5	-895.2	491.9	325.5	166.40	2.956	
8,000.0	7,161.8	7,157.8	7,157.8	29.9	143.2	-90.07	-331.5	-895.2	587.5	419.8	167.74	3.502	
8,100.0	7,161.9	7,157.9	7,157.9	31.0	143.2	-90.08	-331.5	-895.2	684.3	515.2	169.16	4.046	
8,200.0	7,161.9	7,157.9	7,157.9	32.2	143.2	-90.10	-331.5	-895.2	782.0	611.3	170.64	4.583	
8,300.0	7,161.9	7,157.9	7,157.9	33.5	143.2	-90.11	-331.5	-895.2	880.1	708.0	172.17	5.112	
8,400.0	7,162.0	7,158.0	7,158.0	34.8	143.2	-90.12	-331.5	-895.2	978.7	804.9	173.74	5.633	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 7461-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,700.0	7,161.7	7,177.7	7,177.7	27.2	143.6	-89.34	-1,511.9	-884.1	930.1	765.7	164.32	5.660	
7,800.0	7,161.8	7,177.8	7,177.8	28.0	143.6	-89.90	-1,511.9	-884.1	831.9	666.4	165.53	5.026	
7,900.0	7,161.8	7,177.8	7,177.8	28.9	143.6	-89.92	-1,511.9	-884.1	734.3	567.5	166.79	4.403	
8,000.0	7,161.8	7,177.8	7,177.8	29.9	143.6	-89.93	-1,511.9	-884.1	637.4	469.3	168.13	3.791	
8,100.0	7,161.9	7,177.9	7,177.9	31.0	143.6	-89.94	-1,511.9	-884.1	541.7	372.1	169.55	3.195	
8,200.0	7,161.9	7,177.9	7,177.9	32.2	143.6	-89.95	-1,511.9	-884.1	447.8	276.7	171.03	2.618	
8,300.0	7,161.9	7,177.9	7,177.9	33.5	143.6	-89.96	-1,511.9	-884.1	357.2	184.6	172.56	2.070	
8,400.0	7,162.0	7,178.0	7,178.0	34.8	143.6	-89.97	-1,511.9	-884.1	273.3	99.1	174.14	1.569	
8,500.0	7,162.0	7,178.0	7,178.0	36.2	143.6	-89.99	-1,511.9	-884.1	204.4	28.6	175.75	1.163	Level 2
8,600.0	7,162.0	7,178.0	7,178.0	37.6	143.6	-90.00	-1,511.9	-884.1	169.9	-7.5	177.39	0.958	Level 1
8,614.5	7,162.0	7,178.0	7,178.0	37.9	143.6	-90.00	-1,511.9	-884.1	169.3	-8.4	177.64	0.953	Level 1, CC, ES, SF
8,700.0	7,162.1	7,178.1	7,178.1	39.1	143.6	-90.01	-1,511.9	-884.1	189.6	10.6	179.07	1.059	Level 2
8,800.0	7,162.1	7,178.1	7,178.1	40.7	143.6	-90.02	-1,511.9	-884.1	251.1	70.3	180.76	1.389	Level 3
8,900.0	7,162.1	7,178.1	7,178.1	42.2	143.6	-90.03	-1,511.9	-884.1	331.9	149.4	182.48	1.819	
9,000.0	7,162.2	7,178.2	7,178.2	43.8	143.6	-90.05	-1,511.9	-884.1	421.0	236.8	184.22	2.285	
9,100.0	7,162.2	7,178.2	7,178.2	45.5	143.6	-90.06	-1,511.9	-884.1	514.1	328.2	185.97	2.765	
9,200.0	7,162.2	7,178.2	7,178.2	47.1	143.6	-90.07	-1,511.9	-884.1	609.4	421.7	187.73	3.246	
9,300.0	7,162.3	7,178.3	7,178.3	48.8	143.6	-90.08	-1,511.9	-884.1	706.1	516.5	189.51	3.726	
9,400.0	7,162.3	7,178.3	7,178.3	50.5	143.6	-90.09	-1,511.9	-884.1	803.5	612.2	191.30	4.200	
9,500.0	7,162.4	7,178.4	7,178.4	52.2	143.6	-90.10	-1,511.9	-884.1	901.5	708.4	193.10	4.669	
9,600.0	7,162.4	7,178.4	7,178.4	53.9	143.6	-90.12	-1,511.9	-884.1	999.9	805.0	194.91	5.130	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-403 - Wellbore #1 - Plan #1 (3-11-14)

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	-30.7	30.7	30.7	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-30.7	30.7	30.5	0.23	135.136	
166.3	166.3	167.3	167.3	0.3	0.3	-90.00	0.0	-30.7	30.7	30.2	0.53	58.413	CC
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-30.7	30.7	30.0	0.68	45.352	ES
300.0	300.0	300.0	300.0	0.6	0.6	-89.48	0.3	-32.4	32.4	31.3	1.12	29.047	
400.0	400.0	398.6	398.4	0.8	0.8	-88.24	1.1	-37.5	37.6	36.0	1.56	24.031	
500.0	500.0	496.9	496.4	1.0	1.0	-5.90	2.6	-45.8	44.4	42.4	2.00	22.237	
600.0	599.8	595.1	593.8	1.2	1.3	-4.95	4.5	-57.5	51.2	48.8	2.43	21.060	
700.0	699.5	693.0	690.6	1.5	1.6	-4.18	7.1	-72.4	57.9	55.1	2.88	20.140	
800.0	798.7	790.7	786.5	1.7	2.0	-3.55	10.1	-90.5	64.6	61.3	3.33	19.375	
900.0	897.5	888.2	881.6	2.0	2.4	-3.00	13.7	-111.8	71.2	67.4	3.80	18.706	
1,000.0	995.6	986.0	976.2	2.4	2.9	-2.52	17.9	-136.2	77.7	73.4	4.30	18.077	
1,100.0	1,093.6	1,085.8	1,072.5	2.8	3.5	-2.10	22.3	-162.1	84.1	79.3	4.81	17.470	
1,200.0	1,191.6	1,185.6	1,168.8	3.2	4.0	-1.74	26.7	-188.0	90.6	85.2	5.34	16.961	
1,300.0	1,289.6	1,285.4	1,265.1	3.6	4.5	-1.43	31.1	-213.9	97.0	91.1	5.87	16.532	
1,400.0	1,387.6	1,385.2	1,361.4	4.1	5.1	-1.16	35.4	-239.8	103.5	97.1	6.40	16.157	
1,500.0	1,485.5	1,485.0	1,457.6	4.5	5.6	-0.92	39.8	-265.6	109.9	103.0	6.94	15.832	
1,600.0	1,583.5	1,584.8	1,553.9	4.9	6.2	-0.70	44.2	-291.5	116.4	108.9	7.48	15.549	
1,700.0	1,681.5	1,684.6	1,650.2	5.3	6.8	-0.51	48.6	-317.4	122.8	114.8	8.03	15.301	
1,800.0	1,779.5	1,784.4	1,746.5	5.8	7.3	-0.34	53.0	-343.3	129.3	120.7	8.57	15.080	
1,900.0	1,877.4	1,884.2	1,842.7	6.2	7.9	-0.19	57.4	-369.2	135.8	126.6	9.12	14.884	
2,000.0	1,975.4	1,983.9	1,939.0	6.7	8.4	-0.04	61.8	-395.0	142.2	132.6	9.67	14.708	
2,100.0	2,073.4	2,083.7	2,035.3	7.1	9.0	0.08	66.2	-420.9	148.7	138.5	10.22	14.550	
2,200.0	2,171.4	2,183.5	2,131.6	7.5	9.6	0.20	70.5	-446.8	155.2	144.4	10.77	14.406	
2,300.0	2,269.4	2,283.3	2,227.8	8.0	10.1	0.31	74.9	-472.7	161.6	150.3	11.32	14.275	
2,400.0	2,367.3	2,383.1	2,324.1	8.4	10.7	0.41	79.3	-498.5	168.1	156.2	11.87	14.156	
2,500.0	2,465.3	2,482.9	2,420.4	8.9	11.2	0.51	83.7	-524.4	174.6	162.1	12.43	14.047	
2,600.0	2,563.3	2,582.7	2,516.7	9.3	11.8	0.59	88.1	-550.3	181.0	168.0	12.98	13.946	
2,700.0	2,661.3	2,682.5	2,612.9	9.8	12.4	0.67	92.5	-576.2	187.5	174.0	13.53	13.854	
2,800.0	2,759.2	2,782.3	2,709.2	10.2	12.9	0.75	96.9	-602.1	194.0	179.9	14.09	13.768	
2,900.0	2,857.2	2,882.1	2,805.5	10.7	13.5	0.82	101.2	-627.9	200.4	185.8	14.64	13.688	
3,000.0	2,955.2	2,981.9	2,901.8	11.1	14.1	0.88	105.6	-653.8	206.9	191.7	15.20	13.614	
3,100.0	3,053.2	3,081.6	2,998.1	11.5	14.6	0.95	110.0	-679.7	213.4	197.6	15.75	13.544	
3,200.0	3,151.1	3,181.4	3,094.3	12.0	15.2	1.00	114.4	-705.6	219.8	203.5	16.31	13.480	
3,300.0	3,249.1	3,281.2	3,190.6	12.4	15.8	1.06	118.8	-731.5	226.3	209.4	16.86	13.419	
3,400.0	3,347.1	3,381.0	3,286.9	12.9	16.3	1.11	123.2	-757.3	232.8	215.4	17.42	13.362	
3,500.0	3,445.1	3,480.8	3,383.2	13.3	16.9	1.16	127.6	-783.2	239.2	221.3	17.98	13.308	
3,600.0	3,543.1	3,580.6	3,479.4	13.8	17.4	1.21	132.0	-809.1	245.7	227.2	18.53	13.258	
3,700.0	3,641.0	3,680.4	3,575.7	14.2	18.0	1.25	136.3	-835.0	252.2	233.1	19.09	13.210	
3,800.0	3,739.0	3,780.2	3,672.0	14.7	18.6	1.29	140.7	-860.8	258.7	239.0	19.65	13.165	
3,900.0	3,837.0	3,880.0	3,768.3	15.1	19.1	1.33	145.1	-886.7	265.1	244.9	20.20	13.122	
4,000.0	3,935.0	3,979.8	3,864.5	15.6	19.7	1.37	149.5	-912.6	271.6	250.8	20.76	13.082	
4,100.0	4,032.9	4,079.5	3,960.8	16.0	20.3	1.41	153.9	-938.5	278.1	256.7	21.32	13.043	
4,200.0	4,130.9	4,179.3	4,057.1	16.5	20.8	1.44	158.3	-964.4	284.5	262.7	21.88	13.007	
4,300.0	4,228.9	4,279.1	4,153.4	16.9	21.4	1.47	162.7	-990.2	291.0	268.6	22.43	12.972	
4,400.0	4,326.9	4,378.9	4,249.6	17.4	22.0	1.50	167.0	-1,016.1	297.5	274.5	22.99	12.939	
4,500.0	4,424.9	4,478.7	4,345.9	17.8	22.5	1.53	171.4	-1,042.0	303.9	280.4	23.55	12.907	
4,600.0	4,522.8	4,578.5	4,442.2	18.2	23.1	1.56	175.8	-1,067.9	310.4	286.3	24.11	12.877	
4,700.0	4,620.8	4,678.3	4,538.5	18.7	23.7	1.59	180.2	-1,093.8	316.9	292.2	24.66	12.848	
4,800.0	4,718.8	4,778.1	4,634.7	19.1	24.2	1.62	184.6	-1,119.6	323.4	298.1	25.22	12.820	
4,900.0	4,816.8	4,877.9	4,731.0	19.6	24.8	1.64	189.0	-1,145.5	329.8	304.0	25.78	12.793	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-403 - Wellbore #1 - Plan #1 (3-11-14)

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	4,914.7	4,977.7	4,827.3	20.0	25.4	1.67	193.4	-1,171.4	336.3	310.0	26.34	12.768	
5,100.0	5,012.7	5,077.4	4,923.6	20.5	25.9	1.69	197.8	-1,197.3	342.8	315.9	26.90	12.744	
5,200.0	5,110.7	5,177.2	5,019.9	20.9	26.5	1.71	202.1	-1,223.2	349.2	321.8	27.46	12.720	
5,300.0	5,208.7	5,277.0	5,116.1	21.4	27.1	1.74	206.5	-1,249.0	355.7	327.7	28.01	12.698	
5,400.0	5,306.7	5,376.8	5,212.4	21.8	27.6	1.76	210.9	-1,274.9	362.2	333.6	28.57	12.676	
5,500.0	5,404.6	5,476.6	5,308.7	22.3	28.2	1.78	215.3	-1,300.8	368.7	339.5	29.13	12.655	
5,600.0	5,502.6	5,576.4	5,405.0	22.7	28.7	1.80	219.7	-1,326.7	375.1	345.4	29.69	12.635	
5,700.0	5,600.6	5,676.2	5,501.2	23.2	29.3	1.82	224.1	-1,352.5	381.6	351.3	30.25	12.615	
5,800.0	5,698.7	5,784.2	5,605.6	23.6	29.9	1.84	228.7	-1,379.9	388.4	357.7	30.77	12.622	
5,900.0	5,797.5	5,899.8	5,718.3	23.8	30.3	1.85	233.0	-1,405.3	395.1	363.9	31.19	12.665	
6,000.0	5,896.7	6,015.7	5,832.2	24.1	30.7	1.86	236.6	-1,426.3	401.1	369.6	31.55	12.716	
6,100.0	5,996.3	6,131.9	5,947.3	24.3	31.0	1.87	239.4	-1,442.7	406.6	374.8	31.83	12.774	
6,200.0	6,096.2	6,248.5	6,063.2	24.4	31.2	1.86	241.4	-1,454.5	411.6	379.5	32.06	12.838	
6,300.0	6,196.2	6,365.2	6,179.7	24.6	31.4	1.86	242.6	-1,461.7	415.9	383.7	32.23	12.906	
6,400.0	6,296.2	6,482.2	6,296.7	24.7	31.5	-79.25	243.0	-1,464.2	418.1	385.5	32.57	12.836	
6,500.0	6,396.2	6,582.7	6,397.2	24.8	31.6	-79.25	243.0	-1,464.2	418.1	385.2	32.91	12.704	
6,600.0	6,495.9	6,682.5	6,496.9	24.9	31.7	101.51	243.0	-1,464.2	419.3	386.2	33.12	12.661	
6,700.0	6,593.9	6,794.8	6,608.9	25.0	31.8	103.15	235.0	-1,464.2	422.0	388.6	33.35	12.654	
6,800.0	6,688.6	6,909.6	6,720.8	25.0	31.8	104.55	210.0	-1,464.2	424.5	391.0	33.53	12.660	
6,900.0	6,778.3	7,026.3	6,829.4	25.1	31.9	105.67	167.6	-1,464.2	426.7	393.0	33.69	12.667	
7,000.0	6,861.5	7,144.5	6,931.5	25.1	31.9	106.49	108.4	-1,464.2	428.4	394.6	33.84	12.661	
7,100.0	6,936.8	7,263.7	7,024.1	25.2	31.9	106.98	33.5	-1,464.2	429.5	395.5	34.05	12.616	
7,200.0	7,002.9	7,383.5	7,104.3	25.3	31.9	107.13	-55.4	-1,464.2	429.9	395.5	34.36	12.511	
7,300.0	7,058.6	7,503.3	7,169.5	25.5	32.0	106.94	-155.7	-1,464.2	429.4	394.5	34.91	12.301	
7,400.0	7,102.9	7,622.4	7,218.1	25.8	32.2	106.42	-264.4	-1,464.2	428.3	392.6	35.75	11.982	
7,500.0	7,135.3	7,740.5	7,249.0	26.1	32.4	105.57	-378.2	-1,464.2	426.5	389.6	36.92	11.552	
7,600.0	7,155.0	7,849.6	7,263.1	26.6	32.8	104.68	-486.3	-1,464.2	424.7	386.3	38.34	11.076	
7,621.5	7,157.5	7,871.1	7,265.3	26.7	32.8	104.65	-507.7	-1,464.2	424.6	386.0	38.63	10.991	
7,700.0	7,161.7	7,957.0	7,271.6	27.2	33.2	104.84	-593.4	-1,464.2	425.0	385.3	39.72	10.699	
7,800.0	7,161.8	8,061.1	7,272.2	28.0	33.8	104.92	-697.5	-1,464.2	425.1	383.2	41.91	10.144	
7,900.0	7,161.8	8,161.1	7,272.0	28.9	34.4	104.89	-797.5	-1,464.2	425.1	380.8	44.30	9.596	
8,000.0	7,161.8	8,261.1	7,271.9	29.9	35.2	104.86	-897.5	-1,464.2	425.0	378.2	46.87	9.069	
8,100.0	7,161.9	8,361.1	7,271.7	31.0	36.0	104.83	-997.5	-1,464.2	425.0	375.4	49.59	8.571	
8,200.0	7,161.9	8,461.1	7,271.5	32.2	37.0	104.81	-1,097.5	-1,464.2	425.0	372.5	52.43	8.105	
8,300.0	7,161.9	8,561.1	7,271.3	33.5	38.0	104.78	-1,197.5	-1,464.2	424.9	369.5	55.38	7.673	
8,400.0	7,162.0	8,661.1	7,271.2	34.8	39.2	104.75	-1,297.5	-1,464.2	424.9	366.4	58.42	7.272	
8,500.0	7,162.0	8,761.1	7,271.0	36.2	40.3	104.72	-1,397.5	-1,464.3	424.8	363.3	61.54	6.903	
8,600.0	7,162.0	8,861.1	7,270.8	37.6	41.6	104.70	-1,497.5	-1,464.3	424.8	360.0	64.73	6.562	
8,700.0	7,162.1	8,961.1	7,270.6	39.1	42.9	104.67	-1,597.5	-1,464.3	424.7	356.7	67.97	6.248	
8,800.0	7,162.1	9,061.1	7,270.5	40.7	44.3	104.64	-1,697.5	-1,464.3	424.7	353.4	71.26	5.959	
8,900.0	7,162.1	9,161.1	7,270.3	42.2	45.7	104.61	-1,797.5	-1,464.3	424.6	350.0	74.60	5.692	
9,000.0	7,162.2	9,261.1	7,270.1	43.8	47.2	104.59	-1,897.5	-1,464.3	424.6	346.6	77.97	5.445	
9,100.0	7,162.2	9,361.1	7,269.9	45.5	48.7	104.56	-1,997.5	-1,464.3	424.5	343.1	81.38	5.216	
9,200.0	7,162.2	9,461.1	7,269.8	47.1	50.2	104.53	-2,097.5	-1,464.3	424.5	339.7	84.82	5.005	
9,300.0	7,162.3	9,561.1	7,269.6	48.8	51.8	104.50	-2,197.5	-1,464.3	424.4	336.1	88.28	4.808	
9,400.0	7,162.3	9,661.1	7,269.4	50.5	53.4	104.48	-2,297.5	-1,464.3	424.4	332.6	91.77	4.625	
9,500.0	7,162.4	9,761.1	7,269.2	52.2	55.0	104.45	-2,397.5	-1,464.3	424.3	329.1	95.27	4.454	
9,600.0	7,162.4	9,861.1	7,269.1	53.9	56.6	104.42	-2,497.5	-1,464.3	424.3	325.5	98.80	4.295	
9,700.0	7,162.4	9,961.1	7,268.9	55.6	58.3	104.39	-2,597.5	-1,464.3	424.2	321.9	102.34	4.145	
9,800.0	7,162.5	10,061.1	7,268.7	57.3	59.9	104.37	-2,697.5	-1,464.3	424.2	318.3	105.89	4.006	
9,900.0	7,162.5	10,161.1	7,268.5	59.1	61.6	104.34	-2,797.5	-1,464.3	424.1	314.7	109.47	3.875	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-403 - Wellbore #1 - Plan #1 (3-11-14)

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	7,162.5	10,261.1	7,268.4	60.9	63.3	104.31	-2,897.5	-1,464.3	424.1	311.1	113.05	3.752	
10,100.0	7,162.6	10,361.1	7,268.2	62.6	65.0	104.28	-2,997.5	-1,464.3	424.1	307.4	116.64	3.636	
10,200.0	7,162.6	10,461.1	7,268.0	64.4	66.8	104.26	-3,097.5	-1,464.4	424.0	303.8	120.25	3.526	
10,300.0	7,162.6	10,561.1	7,267.8	66.2	68.5	104.23	-3,197.5	-1,464.4	424.0	300.1	123.86	3.423	
10,400.0	7,162.7	10,661.1	7,267.7	68.0	70.2	104.20	-3,297.5	-1,464.4	423.9	296.4	127.48	3.325	
10,500.0	7,162.7	10,761.1	7,267.5	69.8	72.0	104.17	-3,397.5	-1,464.4	423.9	292.8	131.12	3.233	
10,600.0	7,162.7	10,861.1	7,267.3	71.6	73.8	104.15	-3,497.5	-1,464.4	423.8	289.1	134.75	3.145	
10,700.0	7,162.8	10,961.1	7,267.1	73.4	75.5	104.12	-3,597.5	-1,464.4	423.8	285.4	138.40	3.062	
10,800.0	7,162.8	11,061.1	7,267.0	75.3	77.3	104.09	-3,697.5	-1,464.4	423.7	281.7	142.05	2.983	
10,900.0	7,162.8	11,161.1	7,266.8	77.1	79.1	104.06	-3,797.5	-1,464.4	423.7	278.0	145.71	2.908	
11,000.0	7,162.9	11,261.1	7,266.6	78.9	80.9	104.03	-3,897.5	-1,464.4	423.6	274.3	149.38	2.836	
11,100.0	7,162.9	11,361.1	7,266.4	80.8	82.7	104.01	-3,997.5	-1,464.4	423.6	270.6	153.05	2.768	
11,200.0	7,162.9	11,461.1	7,266.3	82.6	84.5	103.98	-4,097.5	-1,464.4	423.6	266.8	156.72	2.703	
11,300.0	7,163.0	11,561.1	7,266.1	84.4	86.3	103.95	-4,197.5	-1,464.4	423.5	263.1	160.40	2.640	
11,400.0	7,163.0	11,661.1	7,265.9	86.3	88.1	103.92	-4,297.5	-1,464.4	423.5	259.4	164.08	2.581	
11,500.0	7,163.1	11,761.1	7,265.7	88.1	89.9	103.90	-4,397.5	-1,464.4	423.4	255.6	167.77	2.524	
11,600.0	7,163.1	11,861.1	7,265.6	90.0	91.8	103.87	-4,497.5	-1,464.4	423.4	251.9	171.46	2.469	
11,700.0	7,163.1	11,961.1	7,265.4	91.8	93.6	103.84	-4,597.5	-1,464.4	423.3	248.2	175.16	2.417	
11,800.0	7,163.2	12,061.1	7,265.2	93.7	95.4	103.81	-4,697.5	-1,464.4	423.3	244.4	178.86	2.367	
11,900.0	7,163.2	12,161.1	7,265.0	95.5	97.2	103.79	-4,797.5	-1,464.4	423.2	240.7	182.56	2.318	
12,000.0	7,163.2	12,261.1	7,264.9	97.4	99.1	103.76	-4,897.5	-1,464.5	423.2	236.9	186.27	2.272	
12,100.0	7,163.3	12,361.1	7,264.7	99.3	100.9	103.73	-4,997.5	-1,464.5	423.1	233.2	189.98	2.227	
12,200.0	7,163.3	12,461.1	7,264.5	101.1	102.8	103.70	-5,097.5	-1,464.5	423.1	229.4	193.69	2.184	
12,300.0	7,163.3	12,561.1	7,264.3	103.0	104.6	103.67	-5,197.5	-1,464.5	423.1	225.7	197.41	2.143	
12,400.0	7,163.4	12,661.1	7,264.2	104.9	106.5	103.65	-5,297.5	-1,464.5	423.0	221.9	201.12	2.103	
12,500.0	7,163.4	12,761.1	7,264.0	106.8	108.3	103.62	-5,397.5	-1,464.5	423.0	218.1	204.85	2.065	
12,600.0	7,163.4	12,861.1	7,263.8	108.6	110.2	103.59	-5,497.5	-1,464.5	422.9	214.4	208.57	2.028	
12,700.0	7,163.5	12,961.1	7,263.6	110.5	112.0	103.56	-5,597.5	-1,464.5	422.9	210.6	212.29	1.992	
12,800.0	7,163.5	13,061.1	7,263.5	112.4	113.9	103.54	-5,697.5	-1,464.5	422.8	206.8	216.02	1.957	
12,900.0	7,163.5	13,161.1	7,263.3	114.3	115.7	103.51	-5,797.5	-1,464.5	422.8	203.0	219.75	1.924	
13,000.0	7,163.6	13,261.1	7,263.1	116.1	117.6	103.48	-5,897.5	-1,464.5	422.8	199.3	223.48	1.892	
13,100.0	7,163.6	13,361.1	7,263.0	118.0	119.5	103.45	-5,997.5	-1,464.5	422.7	195.5	227.22	1.860	
13,200.0	7,163.6	13,461.1	7,262.8	119.9	121.3	103.42	-6,097.5	-1,464.5	422.7	191.7	230.95	1.830	
13,300.0	7,163.7	13,561.1	7,262.6	121.8	123.2	103.40	-6,197.5	-1,464.5	422.6	187.9	234.69	1.801	
13,400.0	7,163.7	13,661.1	7,262.4	123.7	125.1	103.37	-6,297.5	-1,464.5	422.6	184.1	238.43	1.772	
13,500.0	7,163.7	13,761.1	7,262.3	125.5	126.9	103.34	-6,397.5	-1,464.5	422.5	180.4	242.18	1.745	
13,600.0	7,163.8	13,861.1	7,262.1	127.4	128.8	103.31	-6,497.5	-1,464.5	422.5	176.6	245.92	1.718	
13,700.0	7,163.8	13,961.1	7,261.9	129.3	130.7	103.29	-6,597.5	-1,464.5	422.5	172.8	249.66	1.692	
13,800.0	7,163.9	14,061.1	7,261.7	131.2	132.5	103.26	-6,697.5	-1,464.6	422.4	169.0	253.41	1.667	
13,900.0	7,163.9	14,161.1	7,261.6	133.1	134.4	103.23	-6,797.5	-1,464.6	422.4	165.2	257.16	1.642	
14,000.0	7,163.9	14,261.1	7,261.4	135.0	136.3	103.20	-6,897.5	-1,464.6	422.3	161.4	260.91	1.619	
14,100.0	7,164.0	14,361.1	7,261.2	136.9	138.2	103.17	-6,997.5	-1,464.6	422.3	157.6	264.66	1.596	
14,200.0	7,164.0	14,461.1	7,261.0	138.8	140.1	103.15	-7,097.5	-1,464.6	422.2	153.8	268.42	1.573	
14,217.5	7,164.0	14,478.5	7,261.0	139.1	140.4	103.14	-7,114.8	-1,464.6	422.2	153.2	269.07	1.569	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-203 - Wellbore #1 - Plan #1 (3-11-14)

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	CC, ES
500.0	500.0	500.0	500.0	1.0	1.0	171.35	0.0	58.6	60.3	58.3	2.02	29.917	
600.0	599.8	599.8	599.8	1.2	1.2	172.02	0.0	58.6	65.5	63.0	2.45	26.676	
700.0	699.5	699.5	699.5	1.5	1.5	172.94	0.0	58.6	74.1	71.2	2.90	25.578	
800.0	798.7	798.7	798.7	1.7	1.7	173.91	0.0	58.6	86.2	82.9	3.34	25.791	
900.0	897.5	897.5	897.5	2.0	1.9	174.81	0.0	58.6	101.8	98.0	3.79	26.859	
1,000.0	995.6	995.6	995.6	2.4	2.1	175.61	0.0	58.6	120.7	116.5	4.24	28.480	
1,100.0	1,093.6	1,093.6	1,093.6	2.8	2.3	176.23	0.0	58.6	140.7	136.0	4.69	29.963	
1,200.0	1,191.6	1,191.6	1,191.6	3.2	2.6	176.70	0.0	58.6	160.6	155.5	5.16	31.156	
1,300.0	1,289.6	1,289.6	1,289.6	3.6	2.8	177.06	0.0	58.6	180.6	175.0	5.62	32.134	
1,400.0	1,387.6	1,387.6	1,387.6	4.1	3.0	177.36	0.0	58.6	200.6	194.5	6.09	32.948	
1,500.0	1,485.5	1,485.5	1,485.5	4.5	3.2	177.60	0.0	58.6	220.6	214.0	6.56	33.636	
1,600.0	1,583.5	1,583.5	1,583.5	4.9	3.4	177.80	0.0	58.6	240.6	233.6	7.03	34.224	
1,700.0	1,681.5	1,686.5	1,686.5	5.3	3.7	177.75	1.1	57.9	259.8	252.3	7.51	34.596	
1,800.0	1,779.5	1,791.3	1,791.1	5.8	3.9	177.10	5.3	55.1	276.8	268.8	7.99	34.639	
1,900.0	1,877.4	1,896.6	1,896.0	6.2	4.2	175.94	12.9	50.2	291.5	283.0	8.48	34.382	
2,000.0	1,975.4	2,002.1	2,000.8	6.7	4.4	174.30	23.6	43.2	304.2	295.2	8.98	33.858	
2,100.0	2,073.4	2,103.8	2,101.3	7.1	4.7	172.39	36.5	34.8	315.3	305.8	9.50	33.174	
2,200.0	2,171.4	2,202.6	2,198.9	7.5	4.9	170.62	49.4	26.4	326.6	316.5	10.04	32.521	
2,300.0	2,269.4	2,301.5	2,296.6	8.0	5.2	168.96	62.2	18.0	338.1	327.5	10.60	31.906	
2,400.0	2,367.3	2,400.4	2,394.3	8.4	5.5	167.42	75.1	9.7	349.9	338.7	11.17	31.327	
2,500.0	2,465.3	2,499.2	2,491.9	8.9	5.8	165.97	88.0	1.3	362.0	350.2	11.76	30.782	
2,600.0	2,563.3	2,598.1	2,589.6	9.3	6.1	164.62	100.8	-7.1	374.2	361.9	12.36	30.272	
2,700.0	2,661.3	2,697.0	2,687.3	9.8	6.4	163.35	113.7	-15.5	386.7	373.7	12.98	29.793	
2,800.0	2,759.2	2,795.8	2,784.9	10.2	6.7	162.16	126.5	-23.8	399.3	385.7	13.61	29.346	
2,900.0	2,857.2	2,894.7	2,882.6	10.7	7.0	161.05	139.4	-32.2	412.1	397.8	14.25	28.927	
3,000.0	2,955.2	2,993.6	2,980.3	11.1	7.4	160.00	152.2	-40.6	425.0	410.1	14.89	28.536	
3,100.0	3,053.2	3,092.4	3,078.0	11.5	7.7	159.02	165.1	-48.9	438.1	422.5	15.55	28.171	
3,200.0	3,151.1	3,191.3	3,175.6	12.0	8.0	158.09	177.9	-57.3	451.3	435.1	16.22	27.830	
3,300.0	3,249.1	3,290.2	3,273.3	12.4	8.4	157.21	190.8	-65.7	464.6	447.7	16.89	27.511	
3,400.0	3,347.1	3,389.0	3,371.0	12.9	8.7	156.39	203.6	-74.1	478.0	460.4	17.56	27.212	
3,500.0	3,445.1	3,487.9	3,468.6	13.3	9.0	155.60	216.5	-82.4	491.5	473.2	18.25	26.933	
3,600.0	3,543.1	3,586.2	3,565.8	13.8	9.4	154.87	229.3	-90.8	505.1	486.1	18.93	26.681	
3,700.0	3,641.0	3,680.2	3,658.9	14.2	9.6	154.40	239.9	-97.7	519.3	499.8	19.51	26.613	
3,800.0	3,739.0	3,774.1	3,752.3	14.7	9.8	154.28	248.0	-103.0	534.5	514.4	20.04	26.666	
3,900.0	3,837.0	3,867.6	3,845.6	15.1	10.0	154.47	253.5	-106.5	550.6	530.0	20.52	26.831	
4,000.0	3,935.0	3,960.7	3,938.6	15.6	10.2	154.95	256.4	-108.5	567.6	546.7	20.94	27.102	
4,100.0	4,032.9	4,055.1	4,032.9	16.0	10.3	155.69	257.0	-108.8	585.7	564.3	21.33	27.455	
4,200.0	4,130.9	4,153.1	4,130.9	16.5	10.5	156.47	257.0	-108.8	604.0	582.3	21.73	27.800	
4,300.0	4,228.9	4,251.0	4,228.9	16.9	10.7	157.20	257.0	-108.8	622.5	600.3	22.13	28.123	
4,400.0	4,326.9	4,349.0	4,326.9	17.4	10.9	157.89	257.0	-108.8	641.0	618.5	22.54	28.435	
4,500.0	4,424.9	4,447.0	4,424.9	17.8	11.1	158.54	257.0	-108.8	659.6	636.7	22.96	28.735	
4,600.0	4,522.8	4,545.0	4,522.8	18.2	11.3	159.16	257.0	-108.8	678.4	655.0	23.37	29.025	
4,700.0	4,620.8	4,642.9	4,620.8	18.7	11.5	159.74	257.0	-108.8	697.1	673.3	23.79	29.303	
4,800.0	4,718.8	4,740.9	4,718.8	19.1	11.6	160.30	257.0	-108.8	716.0	691.8	24.21	29.572	
4,900.0	4,816.8	4,838.9	4,816.8	19.6	11.8	160.82	257.0	-108.8	734.9	710.3	24.64	29.831	
5,000.0	4,914.7	4,936.9	4,914.7	20.0	12.0	161.32	257.0	-108.8	753.9	728.8	25.06	30.080	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-203 - Wellbore #1 - Plan #1 (3-11-14)

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	5,012.7	5,034.9	5,012.7	20.5	12.2	161.79	257.0	-108.8	772.9	747.4	25.49	30.320	
5,200.0	5,110.7	5,132.8	5,110.7	20.9	12.4	162.24	257.0	-108.8	792.0	766.0	25.92	30.551	
5,300.0	5,208.7	5,230.8	5,208.7	21.4	12.6	162.68	257.0	-108.8	811.1	784.7	26.36	30.775	
5,400.0	5,306.7	5,328.8	5,306.7	21.8	12.8	163.09	257.0	-108.8	830.2	803.4	26.79	30.990	
5,500.0	5,404.6	5,426.8	5,404.6	22.3	13.0	163.48	257.0	-108.8	849.4	822.2	27.23	31.197	
5,600.0	5,502.6	5,524.7	5,502.6	22.7	13.2	163.85	257.0	-108.8	868.7	841.0	27.67	31.397	
5,700.0	5,600.6	5,622.7	5,600.6	23.2	13.4	164.21	257.0	-108.8	887.9	859.8	28.11	31.590	
5,800.0	5,698.7	5,720.9	5,698.7	23.6	13.6	164.61	257.0	-108.8	906.3	877.8	28.57	31.726	
5,900.0	5,797.5	5,819.6	5,797.5	23.8	13.8	164.95	257.0	-108.8	921.6	892.6	28.99	31.790	
6,000.0	5,896.7	5,918.9	5,896.7	24.1	14.0	165.21	257.0	-108.8	933.5	904.1	29.38	31.772	
6,100.0	5,996.3	6,018.5	5,996.3	24.3	14.2	165.39	257.0	-108.8	942.0	912.3	29.74	31.675	
6,200.0	6,096.2	6,118.3	6,096.2	24.4	14.4	165.50	257.0	-108.8	947.2	917.2	30.07	31.502	
6,300.0	6,196.2	6,218.3	6,196.2	24.6	14.6	165.53	257.0	-108.8	949.1	918.7	30.37	31.250	
6,400.0	6,296.2	6,318.3	6,296.2	24.7	14.8	84.44	257.0	-108.8	949.1	918.3	30.74	30.871	
6,500.0	6,396.2	6,422.3	6,400.2	24.8	15.0	84.48	256.3	-108.8	949.0	917.9	31.11	30.504	
6,600.0	6,495.9	6,536.2	6,513.1	24.9	15.1	-95.15	242.2	-108.8	948.4	917.1	31.35	30.255	
6,700.0	6,593.9	6,648.6	6,620.9	25.0	15.2	-94.61	211.0	-108.8	947.7	916.3	31.43	30.153	
6,800.0	6,688.6	6,758.9	6,720.8	25.0	15.2	-93.93	164.3	-108.8	946.8	915.4	31.43	30.124	
6,900.0	6,778.3	6,866.9	6,810.4	25.1	15.2	-93.12	104.4	-108.8	946.0	914.6	31.45	30.076	
7,000.0	6,861.5	6,972.3	6,888.3	25.1	15.2	-92.20	33.5	-108.8	945.3	913.7	31.60	29.913	
7,100.0	6,936.8	7,075.0	6,953.4	25.2	15.3	-91.21	-45.9	-108.8	944.8	912.8	31.96	29.557	
7,200.0	7,002.9	7,175.1	7,005.2	25.3	15.6	-90.16	-131.4	-108.8	944.6	912.0	32.61	28.968	
7,214.6	7,011.7	7,189.5	7,011.7	25.4	15.7	-90.00	-144.3	-108.8	944.6	911.8	32.74	28.855	
7,300.0	7,058.6	7,272.5	7,043.8	25.5	16.1	-89.07	-220.8	-108.8	944.7	911.2	33.56	28.153	
7,400.0	7,102.9	7,367.5	7,069.4	25.8	16.8	-87.96	-312.1	-108.8	945.2	910.4	34.80	27.163	
7,500.0	7,135.3	7,460.1	7,082.5	26.1	17.7	-86.85	-403.7	-108.8	946.1	909.8	36.29	26.072	
7,600.0	7,155.0	7,553.9	7,084.6	26.6	18.6	-85.78	-497.6	-108.8	947.2	909.2	38.02	24.915	
7,700.0	7,161.7	7,653.6	7,084.6	27.2	19.8	-85.33	-597.3	-108.8	947.7	907.7	40.05	23.662	
7,800.0	7,161.8	7,753.6	7,084.5	28.0	21.0	-85.32	-697.3	-108.8	947.7	905.3	42.45	22.329	
7,900.0	7,161.8	7,853.6	7,084.4	28.9	22.4	-85.32	-797.3	-108.8	947.7	902.7	45.04	21.044	
8,000.0	7,161.8	7,953.6	7,084.3	29.9	23.8	-85.31	-897.3	-108.8	947.8	900.0	47.80	19.829	
8,100.0	7,161.9	8,053.6	7,084.3	31.0	25.3	-85.30	-997.3	-108.8	947.8	897.1	50.69	18.696	
8,200.0	7,161.9	8,153.6	7,084.2	32.2	26.8	-85.30	-1,097.3	-108.8	947.8	894.1	53.71	17.647	
8,300.0	7,161.9	8,253.6	7,084.1	33.5	28.4	-85.29	-1,197.3	-108.8	947.8	891.0	56.82	16.681	
8,400.0	7,162.0	8,353.6	7,084.1	34.8	30.0	-85.29	-1,297.3	-108.8	947.8	887.8	60.01	15.793	
8,500.0	7,162.0	8,453.6	7,084.0	36.2	31.7	-85.28	-1,397.3	-108.8	947.8	884.5	63.28	14.978	
8,600.0	7,162.0	8,553.6	7,083.9	37.6	33.4	-85.27	-1,497.3	-108.8	947.8	881.2	66.60	14.230	
8,700.0	7,162.1	8,653.6	7,083.9	39.1	35.1	-85.27	-1,597.3	-108.8	947.8	877.8	69.98	13.544	
8,800.0	7,162.1	8,753.6	7,083.8	40.7	36.8	-85.26	-1,697.3	-108.8	947.8	874.4	73.40	12.913	
8,900.0	7,162.1	8,853.6	7,083.7	42.2	38.6	-85.25	-1,797.3	-108.8	947.8	871.0	76.86	12.332	
9,000.0	7,162.2	8,953.6	7,083.6	43.8	40.3	-85.25	-1,897.3	-108.8	947.8	867.5	80.35	11.796	
9,100.0	7,162.2	9,053.6	7,083.6	45.5	42.1	-85.24	-1,997.3	-108.8	947.9	864.0	83.88	11.301	
9,200.0	7,162.2	9,153.6	7,083.5	47.1	43.9	-85.23	-2,097.3	-108.8	947.9	860.4	87.42	10.842	
9,300.0	7,162.3	9,253.6	7,083.4	48.8	45.7	-85.23	-2,197.3	-108.8	947.9	856.9	90.99	10.417	
9,400.0	7,162.3	9,353.6	7,083.4	50.5	47.5	-85.22	-2,297.3	-108.8	947.9	853.3	94.58	10.022	
9,500.0	7,162.4	9,453.6	7,083.3	52.2	49.3	-85.22	-2,397.3	-108.8	947.9	849.7	98.19	9.653	
9,600.0	7,162.4	9,553.6	7,083.2	53.9	51.2	-85.21	-2,497.3	-108.8	947.9	846.1	101.82	9.310	
9,700.0	7,162.4	9,653.6	7,083.2	55.6	53.0	-85.20	-2,597.3	-108.8	947.9	842.5	105.45	8.989	
9,800.0	7,162.5	9,753.6	7,083.1	57.3	54.8	-85.20	-2,697.3	-108.8	947.9	838.8	109.11	8.688	
9,900.0	7,162.5	9,853.6	7,083.0	59.1	56.7	-85.19	-2,797.3	-108.8	947.9	835.2	112.77	8.406	
10,000.0	7,162.5	9,953.6	7,082.9	60.9	58.5	-85.18	-2,897.3	-108.8	947.9	831.5	116.44	8.141	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-203 - Wellbore #1 - Plan #1 (3-11-14)

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	7,162.6	10,053.6	7,082.9	62.6	60.4	-85.18	-2,997.3	-108.8	947.9	827.8	120.12	7.891	
10,200.0	7,162.6	10,153.6	7,082.8	64.4	62.2	-85.17	-3,097.3	-108.8	947.9	824.1	123.82	7.656	
10,300.0	7,162.6	10,253.6	7,082.7	66.2	64.1	-85.17	-3,197.3	-108.8	948.0	820.4	127.52	7.434	
10,400.0	7,162.7	10,353.6	7,082.7	68.0	66.0	-85.16	-3,297.3	-108.8	948.0	816.7	131.22	7.224	
10,500.0	7,162.7	10,453.6	7,082.6	69.8	67.8	-85.15	-3,397.3	-108.8	948.0	813.0	134.94	7.025	
10,600.0	7,162.7	10,553.6	7,082.5	71.6	69.7	-85.15	-3,497.3	-108.8	948.0	809.3	138.66	6.837	
10,700.0	7,162.8	10,653.6	7,082.5	73.4	71.6	-85.14	-3,597.3	-108.8	948.0	805.6	142.38	6.658	
10,800.0	7,162.8	10,753.6	7,082.4	75.3	73.4	-85.13	-3,697.3	-108.8	948.0	801.9	146.11	6.488	
10,900.0	7,162.8	10,853.6	7,082.3	77.1	75.3	-85.13	-3,797.3	-108.8	948.0	798.2	149.85	6.326	
11,000.0	7,162.9	10,953.6	7,082.2	78.9	77.2	-85.12	-3,897.3	-108.8	948.0	794.4	153.59	6.173	
11,100.0	7,162.9	11,053.6	7,082.2	80.8	79.1	-85.11	-3,997.3	-108.8	948.0	790.7	157.33	6.026	
11,200.0	7,162.9	11,153.6	7,082.1	82.6	81.0	-85.11	-4,097.3	-108.8	948.0	787.0	161.08	5.886	
11,300.0	7,163.0	11,253.6	7,082.0	84.4	82.9	-85.10	-4,197.3	-108.8	948.0	783.2	164.83	5.752	
11,400.0	7,163.0	11,353.6	7,082.0	86.3	84.7	-85.10	-4,297.3	-108.8	948.1	779.5	168.59	5.624	
11,500.0	7,163.1	11,453.6	7,081.9	88.1	86.6	-85.09	-4,397.3	-108.8	948.1	775.7	172.34	5.501	
11,600.0	7,163.1	11,553.6	7,081.8	90.0	88.5	-85.08	-4,497.3	-108.8	948.1	772.0	176.10	5.384	
11,700.0	7,163.1	11,653.6	7,081.8	91.8	90.4	-85.08	-4,597.3	-108.8	948.1	768.2	179.87	5.271	
11,800.0	7,163.2	11,753.6	7,081.7	93.7	92.3	-85.07	-4,697.3	-108.8	948.1	764.5	183.63	5.163	
11,900.0	7,163.2	11,853.6	7,081.6	95.5	94.2	-85.06	-4,797.3	-108.8	948.1	760.7	187.40	5.059	
12,000.0	7,163.2	11,953.6	7,081.5	97.4	96.1	-85.06	-4,897.3	-108.8	948.1	756.9	191.17	4.959	
12,100.0	7,163.3	12,053.6	7,081.5	99.3	98.0	-85.05	-4,997.3	-108.8	948.1	753.2	194.94	4.864	
12,200.0	7,163.3	12,153.6	7,081.4	101.1	99.9	-85.05	-5,097.3	-108.8	948.1	749.4	198.72	4.771	
12,300.0	7,163.3	12,253.6	7,081.3	103.0	101.8	-85.04	-5,197.3	-108.8	948.1	745.6	202.50	4.682	
12,400.0	7,163.4	12,353.6	7,081.3	104.9	103.7	-85.03	-5,297.3	-108.8	948.1	741.9	206.27	4.597	
12,500.0	7,163.4	12,453.6	7,081.2	106.8	105.6	-85.03	-5,397.3	-108.8	948.2	738.1	210.05	4.514	
12,600.0	7,163.4	12,553.6	7,081.1	108.6	107.5	-85.02	-5,497.3	-108.8	948.2	734.3	213.83	4.434	
12,700.0	7,163.5	12,653.6	7,081.1	110.5	109.4	-85.01	-5,597.3	-108.8	948.2	730.6	217.62	4.357	
12,800.0	7,163.5	12,753.6	7,081.0	112.4	111.3	-85.01	-5,697.3	-108.8	948.2	726.8	221.40	4.283	
12,900.0	7,163.5	12,853.6	7,080.9	114.3	113.2	-85.00	-5,797.3	-108.8	948.2	723.0	225.19	4.211	
13,000.0	7,163.6	12,953.6	7,080.9	116.1	115.1	-84.99	-5,897.3	-108.8	948.2	719.2	228.97	4.141	
13,100.0	7,163.6	13,053.6	7,080.8	118.0	117.0	-84.99	-5,997.3	-108.8	948.2	715.4	232.76	4.074	
13,200.0	7,163.6	13,153.6	7,080.7	119.9	118.9	-84.98	-6,097.3	-108.8	948.2	711.7	236.55	4.008	
13,300.0	7,163.7	13,253.6	7,080.6	121.8	120.8	-84.98	-6,197.3	-108.8	948.2	707.9	240.34	3.945	
13,400.0	7,163.7	13,353.6	7,080.6	123.7	122.7	-84.97	-6,297.3	-108.8	948.2	704.1	244.13	3.884	
13,500.0	7,163.7	13,453.6	7,080.5	125.5	124.6	-84.96	-6,397.3	-108.8	948.2	700.3	247.93	3.825	
13,600.0	7,163.8	13,553.6	7,080.4	127.4	126.5	-84.96	-6,497.3	-108.8	948.3	696.5	251.72	3.767	
13,700.0	7,163.8	13,653.6	7,080.4	129.3	128.4	-84.95	-6,597.3	-108.8	948.3	692.8	255.51	3.711	
13,800.0	7,163.9	13,753.6	7,080.3	131.2	130.3	-84.94	-6,697.3	-108.8	948.3	689.0	259.31	3.657	
13,900.0	7,163.9	13,853.6	7,080.2	133.1	132.2	-84.94	-6,797.3	-108.8	948.3	685.2	263.10	3.604	
14,000.0	7,163.9	13,953.6	7,080.2	135.0	134.1	-84.93	-6,897.3	-108.8	948.3	681.4	266.90	3.553	
14,100.0	7,164.0	14,053.6	7,080.1	136.9	136.0	-84.93	-6,997.3	-108.8	948.3	677.6	270.70	3.503	
14,200.0	7,164.0	14,153.6	7,080.0	138.8	137.9	-84.92	-7,097.3	-108.8	948.3	673.8	274.50	3.455	
14,217.5	7,164.0	14,171.2	7,080.0	139.1	138.3	-84.92	-7,114.8	-108.8	948.3	673.2	275.16	3.446	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-423 - Wellbore #1 - Plan #2 (4-9-14)

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	89.2	89.2				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	89.2	89.2	89.0	0.22	397.054	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	89.2	89.2	88.6	0.67	132.351	
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	89.2	89.2	88.1	1.12	79.411	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	89.2	89.2	87.7	1.57	56.722	CC, ES
500.0	500.0	500.0	500.0	1.0	1.0	171.26	0.0	89.2	91.0	89.0	2.02	45.140	
600.0	599.8	599.8	599.8	1.2	1.2	171.72	0.0	89.2	96.1	93.7	2.45	39.175	
700.0	699.5	699.5	699.5	1.5	1.5	172.38	0.0	89.2	104.8	101.9	2.90	36.162	
800.0	798.7	798.7	798.7	1.7	1.7	173.15	0.0	89.2	116.9	113.5	3.34	34.959	
900.0	897.5	897.5	897.5	2.0	1.9	173.92	0.0	89.2	132.4	128.6	3.79	34.938	SF
1,000.0	995.6	995.6	995.6	2.4	2.1	174.66	0.0	89.2	151.3	147.1	4.24	35.697	
1,100.0	1,093.6	1,093.6	1,093.6	2.8	2.3	175.28	0.0	89.2	171.2	166.6	4.70	36.471	
1,200.0	1,191.6	1,191.6	1,191.6	3.2	2.6	175.77	0.0	89.2	191.2	186.0	5.16	37.077	
1,300.0	1,289.6	1,289.6	1,289.6	3.6	2.8	176.17	0.0	89.2	211.2	205.5	5.62	37.562	
1,400.0	1,387.6	1,387.6	1,387.6	4.1	3.0	176.50	0.0	89.2	231.1	225.0	6.09	37.956	
1,500.0	1,485.5	1,485.5	1,485.5	4.5	3.2	176.78	0.0	89.2	251.1	244.6	6.56	38.283	
1,600.0	1,583.5	1,583.5	1,583.5	4.9	3.4	177.02	0.0	89.2	271.1	264.1	7.03	38.558	
1,700.0	1,681.5	1,681.5	1,681.5	5.3	3.7	177.22	0.0	89.2	291.1	283.6	7.50	38.791	
1,800.0	1,779.5	1,779.5	1,779.5	5.8	3.9	177.40	0.0	89.2	311.1	303.1	7.98	38.992	
1,900.0	1,877.4	1,877.4	1,877.4	6.2	4.1	177.56	0.0	89.2	331.1	322.6	8.45	39.166	
2,000.0	1,975.4	1,975.4	1,975.4	6.7	4.3	177.70	0.0	89.2	351.0	342.1	8.93	39.318	
2,100.0	2,073.4	2,070.8	2,070.8	7.1	4.5	177.69	0.8	89.6	371.3	361.9	9.40	39.508	
2,200.0	2,171.4	2,164.8	2,164.8	7.5	4.8	177.25	4.4	91.1	392.5	382.6	9.87	39.780	
2,300.0	2,269.4	2,258.2	2,257.9	8.0	5.0	176.44	10.7	93.8	414.6	404.3	10.33	40.118	
2,400.0	2,367.3	2,350.8	2,349.9	8.4	5.2	175.33	19.7	97.7	437.8	427.0	10.81	40.507	
2,500.0	2,465.3	2,444.4	2,442.6	8.9	5.4	173.99	31.4	102.7	462.2	450.9	11.30	40.911	
2,600.0	2,563.3	2,540.7	2,538.0	9.3	5.6	172.69	43.8	108.1	487.0	475.2	11.81	41.253	
2,700.0	2,661.3	2,637.0	2,633.3	9.8	5.9	171.51	56.3	113.4	512.1	499.7	12.32	41.553	
2,800.0	2,759.2	2,733.3	2,728.6	10.2	6.1	170.44	68.8	118.8	537.3	524.4	12.85	41.808	
2,900.0	2,857.2	2,829.6	2,824.0	10.7	6.4	169.46	81.3	124.2	562.6	549.3	13.39	42.034	
3,000.0	2,955.2	2,925.9	2,919.3	11.1	6.7	168.57	93.8	129.5	588.2	574.2	13.93	42.232	
3,100.0	3,053.2	3,022.2	3,014.6	11.5	6.9	167.75	106.2	134.9	613.8	599.3	14.47	42.406	
3,200.0	3,151.1	3,118.5	3,110.0	12.0	7.2	167.00	118.7	140.2	639.5	624.5	15.03	42.560	
3,300.0	3,249.1	3,214.8	3,205.3	12.4	7.5	166.31	131.2	145.6	665.4	649.8	15.58	42.697	
3,400.0	3,347.1	3,311.1	3,300.7	12.9	7.8	165.66	143.7	151.0	691.3	675.2	16.14	42.820	
3,500.0	3,445.1	3,407.4	3,396.0	13.3	8.1	165.07	156.2	156.3	717.3	700.6	16.71	42.931	
3,600.0	3,543.1	3,503.7	3,491.3	13.8	8.4	164.51	168.6	161.7	743.4	726.1	17.28	43.031	
3,700.0	3,641.0	3,600.0	3,586.7	14.2	8.7	164.00	181.1	167.0	769.5	751.7	17.85	43.122	
3,800.0	3,739.0	3,696.3	3,682.0	14.7	9.0	163.51	193.6	172.4	795.7	777.3	18.42	43.204	
3,900.0	3,837.0	3,792.6	3,777.3	15.1	9.3	163.06	206.1	177.8	821.9	802.9	18.99	43.279	
4,000.0	3,935.0	3,888.9	3,872.7	15.6	9.6	162.63	218.6	183.1	848.2	828.6	19.57	43.349	
4,100.0	4,032.9	3,985.2	3,968.0	16.0	9.9	162.23	231.0	188.5	874.5	854.4	20.14	43.413	
4,200.0	4,130.9	4,095.1	4,077.0	16.5	10.2	161.87	244.2	194.1	900.4	879.6	20.73	43.429	
4,300.0	4,228.9	4,212.0	4,193.4	16.9	10.4	161.75	254.1	198.4	924.2	903.0	21.26	43.464	
4,400.0	4,326.9	4,330.1	4,311.3	17.4	10.7	161.89	259.7	200.8	946.0	924.2	21.76	43.476	
4,500.0	4,424.9	4,443.6	4,424.9	17.8	10.9	162.25	261.0	201.3	965.6	943.4	22.22	43.467	
4,600.0	4,522.8	4,541.6	4,522.8	18.2	11.0	162.60	261.0	201.3	984.8	962.1	22.66	43.455	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-443 - Wellbore #1 - Plan #2 (4-9-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	30.7	30.7	30.5	0.22	136.487	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	30.7	30.7	30.0	0.67	45.496	
300.0	300.0	300.0	300.0	0.6	0.6	90.01	0.0	30.7	30.7	29.6	1.12	27.297	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	30.7	30.7	29.1	1.57	19.498	CC, ES
500.0	500.0	500.0	500.0	1.0	1.0	171.58	0.0	30.7	32.4	30.4	2.02	16.079	
600.0	599.8	599.8	599.8	1.2	1.2	172.73	0.0	30.7	37.6	35.1	2.45	15.315	
700.0	699.5	699.5	699.5	1.5	1.5	174.08	0.0	30.7	46.2	43.3	2.90	15.961	
800.0	798.7	798.7	798.7	1.7	1.7	175.29	0.0	30.7	58.4	55.0	3.34	17.465	
900.0	897.5	897.5	897.5	2.0	1.9	176.27	0.0	30.7	74.0	70.2	3.79	19.523	
1,000.0	995.6	995.6	995.6	2.4	2.1	177.01	0.0	30.7	92.9	88.7	4.24	21.930	
1,100.0	1,093.6	1,093.6	1,093.6	2.8	2.3	177.54	0.0	30.7	112.9	108.2	4.69	24.055	
1,200.0	1,191.6	1,191.6	1,191.6	3.2	2.6	177.91	0.0	30.7	132.9	127.8	5.16	25.781	
1,300.0	1,289.6	1,289.6	1,289.6	3.6	2.8	178.19	0.0	30.7	152.9	147.3	5.62	27.206	
1,400.0	1,387.6	1,387.6	1,387.6	4.1	3.0	178.40	0.0	30.7	172.9	166.8	6.09	28.401	
1,500.0	1,485.5	1,491.7	1,491.7	4.5	3.2	178.58	0.2	29.2	191.6	185.0	6.56	29.214	
1,600.0	1,583.5	1,597.9	1,597.8	4.9	3.5	178.74	0.8	23.9	206.6	199.6	7.02	29.439	
1,700.0	1,681.5	1,705.2	1,704.7	5.3	3.7	178.91	1.9	14.5	217.9	210.4	7.49	29.103	
1,800.0	1,779.5	1,813.3	1,811.9	5.8	3.9	179.08	3.5	1.1	225.5	217.6	7.97	28.299	
1,900.0	1,877.4	1,921.9	1,919.0	6.2	4.2	179.26	5.6	-16.4	229.4	220.9	8.46	27.107	
2,000.0	1,975.4	2,030.6	2,025.5	6.7	4.6	179.46	8.1	-38.0	229.4	220.4	8.96	25.596	
2,100.0	2,073.4	2,132.0	2,124.3	7.1	4.9	179.67	10.8	-60.5	227.0	217.5	9.46	24.001	
2,200.0	2,171.4	2,231.9	2,221.7	7.5	5.3	179.88	13.5	-82.8	224.5	214.5	9.95	22.560	
2,300.0	2,269.4	2,331.9	2,319.1	8.0	5.7	-179.91	16.1	-105.1	222.0	211.6	10.45	21.243	
2,400.0	2,367.3	2,431.9	2,416.6	8.4	6.1	-179.69	18.7	-127.3	219.5	208.6	10.96	20.037	
2,500.0	2,465.3	2,531.8	2,514.0	8.9	6.5	-179.46	21.4	-149.6	217.1	205.6	11.47	18.932	
2,600.0	2,563.3	2,631.8	2,611.4	9.3	6.9	-179.23	24.0	-171.9	214.6	202.6	11.98	17.915	
2,700.0	2,661.3	2,731.8	2,708.8	9.8	7.4	-179.00	26.7	-194.2	212.1	199.6	12.50	16.977	
2,800.0	2,759.2	2,831.7	2,806.2	10.2	7.8	-178.76	29.3	-216.5	209.7	196.7	13.02	16.110	
2,900.0	2,857.2	2,931.7	2,903.6	10.7	8.3	-178.51	32.0	-238.7	207.2	193.7	13.54	15.307	
3,000.0	2,955.2	3,031.7	3,001.1	11.1	8.7	-178.26	34.6	-261.0	204.8	190.7	14.06	14.560	
3,100.0	3,053.2	3,131.6	3,098.5	11.5	9.2	-178.00	37.2	-283.3	202.3	187.7	14.59	13.866	
3,200.0	3,151.1	3,231.6	3,195.9	12.0	9.6	-177.74	39.9	-305.6	199.9	184.8	15.12	13.217	
3,300.0	3,249.1	3,331.6	3,293.3	12.4	10.1	-177.47	42.5	-327.9	197.4	181.8	15.66	12.611	
3,400.0	3,347.1	3,431.5	3,390.7	12.9	10.6	-177.19	45.2	-350.1	195.0	178.8	16.19	12.043	
3,500.0	3,445.1	3,531.5	3,488.1	13.3	11.0	-176.91	47.8	-372.4	192.6	175.8	16.73	11.510	
3,600.0	3,543.1	3,631.5	3,585.5	13.8	11.5	-176.61	50.5	-394.7	190.2	172.9	17.27	11.008	
3,700.0	3,641.0	3,731.4	3,683.0	14.2	12.0	-176.31	53.1	-417.0	187.7	169.9	17.82	10.536	
3,800.0	3,739.0	3,831.4	3,780.4	14.7	12.4	-176.01	55.7	-439.3	185.3	167.0	18.37	10.090	
3,900.0	3,837.0	3,931.3	3,877.8	15.1	12.9	-175.69	58.4	-461.5	182.9	164.0	18.92	9.669	
4,000.0	3,935.0	4,031.3	3,975.2	15.6	13.4	-175.37	61.0	-483.8	180.5	161.0	19.47	9.271	
4,100.0	4,032.9	4,131.3	4,072.6	16.0	13.9	-175.03	63.7	-506.1	178.1	158.1	20.03	8.893	
4,200.0	4,130.9	4,231.2	4,170.0	16.5	14.3	-174.69	66.3	-528.4	175.7	155.1	20.59	8.535	
4,300.0	4,228.9	4,331.2	4,267.5	16.9	14.8	-174.34	69.0	-550.7	173.3	152.2	21.15	8.195	
4,400.0	4,326.9	4,430.7	4,364.4	17.4	15.3	-173.98	71.6	-572.8	171.0	149.3	21.72	7.873	
4,464.6	4,390.2	4,491.8	4,424.1	17.6	15.5	-173.80	73.1	-585.6	170.3	148.2	22.06	7.720	
4,500.0	4,424.9	4,525.2	4,456.8	17.8	15.7	-173.72	73.9	-592.1	170.5	148.3	22.23	7.668	
4,600.0	4,522.8	4,619.5	4,549.8	18.2	15.9	-173.61	75.8	-608.4	173.3	150.6	22.72	7.628	
4,700.0	4,620.8	4,713.6	4,642.9	18.7	16.2	-173.66	77.4	-621.5	179.3	156.1	23.18	7.736	
4,800.0	4,718.8	4,807.2	4,736.0	19.1	16.4	-173.84	78.6	-631.6	188.6	165.0	23.62	7.984	
4,900.0	4,816.8	4,900.0	4,828.5	19.6	16.6	-174.12	79.4	-638.6	201.1	177.0	24.04	8.362	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-443 - Wellbore #1 - Plan #2 (4-9-14)

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	4,914.7	4,992.3	4,920.7	20.0	16.8	-174.48	79.9	-642.6	216.7	192.3	24.45	8.863	
5,100.0	5,012.7	5,084.4	5,012.7	20.5	16.9	-174.88	80.0	-643.7	235.5	210.6	24.85	9.474	
5,200.0	5,110.7	5,182.3	5,110.7	20.9	17.0	-175.28	80.0	-643.7	255.4	230.1	25.28	10.104	
5,300.0	5,208.7	5,280.3	5,208.7	21.4	17.2	-175.62	80.0	-643.7	275.3	249.6	25.71	10.710	
5,400.0	5,306.7	5,378.3	5,306.7	21.8	17.3	-175.92	80.0	-643.7	295.3	269.2	26.14	11.295	
5,500.0	5,404.6	5,476.3	5,404.6	22.3	17.4	-176.18	80.0	-643.7	315.3	288.7	26.58	11.859	
5,600.0	5,502.6	5,574.2	5,502.6	22.7	17.6	-176.41	80.0	-643.7	335.2	308.2	27.03	12.404	
5,700.0	5,600.6	5,672.2	5,600.6	23.2	17.7	-176.61	80.0	-643.7	355.2	327.7	27.47	12.929	
5,800.0	5,698.7	5,770.4	5,698.7	23.6	17.9	-176.80	80.0	-643.7	374.3	346.4	27.92	13.407	
5,900.0	5,797.5	5,869.1	5,797.5	23.8	18.0	-176.94	80.0	-643.7	390.0	361.7	28.30	13.781	
6,000.0	5,896.7	5,968.4	5,896.7	24.1	18.2	-177.05	80.0	-643.7	402.3	373.7	28.66	14.040	
6,100.0	5,996.3	6,068.0	5,996.3	24.3	18.3	-177.12	80.0	-643.7	411.2	382.2	28.97	14.191	
6,200.0	6,096.2	6,167.8	6,096.2	24.4	18.5	-177.17	80.0	-643.7	416.5	387.3	29.25	14.238	
6,300.0	6,196.2	6,267.8	6,196.2	24.6	18.7	-177.18	80.0	-643.7	418.4	388.9	29.50	14.181	
6,400.0	6,296.2	6,367.8	6,296.2	24.7	18.8	101.72	80.0	-643.7	418.4	388.5	29.87	14.005	
6,500.0	6,396.2	6,467.8	6,396.2	24.8	19.0	101.72	80.0	-643.7	418.4	388.1	30.26	13.829	
6,600.0	6,495.9	6,567.5	6,495.9	24.9	19.1	-79.22	80.0	-643.7	417.2	386.7	30.49	13.682	
6,700.0	6,593.9	6,658.2	6,586.4	25.0	19.3	-81.08	74.8	-643.7	414.8	384.1	30.68	13.518	
6,800.0	6,688.6	6,750.0	6,676.7	25.0	19.4	-83.10	58.7	-643.7	412.7	381.8	30.93	13.344	
6,900.0	6,778.3	6,843.7	6,766.2	25.1	19.5	-85.26	31.2	-643.7	411.1	379.9	31.24	13.158	
7,000.0	6,861.5	6,939.1	6,853.2	25.1	19.6	-87.53	-7.8	-643.7	410.1	378.4	31.64	12.960	
7,100.0	6,936.8	7,036.4	6,936.3	25.2	19.7	-89.86	-58.4	-643.7	409.7	377.5	32.14	12.747	
7,105.8	6,940.9	7,042.1	6,940.9	25.2	19.7	-90.00	-61.7	-643.7	409.7	377.5	32.18	12.732	
7,200.0	7,002.9	7,136.0	7,013.8	25.3	19.9	-92.23	-120.7	-643.7	410.0	377.2	32.79	12.504	
7,300.0	7,058.6	7,237.8	7,084.1	25.5	20.1	-94.57	-194.3	-643.7	411.0	377.4	33.65	12.214	
7,400.0	7,102.9	7,342.1	7,145.3	25.8	20.4	-96.85	-278.6	-643.7	412.7	377.9	34.81	11.856	
7,500.0	7,135.3	7,448.9	7,195.4	26.1	20.9	-99.03	-372.8	-643.7	414.9	378.6	36.34	11.417	
7,600.0	7,155.0	7,558.3	7,232.7	26.6	21.5	-101.04	-475.6	-643.7	417.6	379.2	38.32	10.895	
7,700.0	7,161.7	7,670.2	7,255.2	27.2	22.4	-102.86	-585.1	-643.7	420.4	379.6	40.77	10.312	
7,800.0	7,161.8	7,772.9	7,266.2	28.0	23.3	-104.30	-687.2	-643.7	422.9	379.8	43.05	9.824	
7,900.0	7,161.8	7,882.5	7,271.5	28.9	24.5	-104.99	-796.7	-643.7	424.1	378.5	45.61	9.298	
8,000.0	7,161.8	7,982.5	7,272.1	29.9	25.7	-105.06	-896.7	-643.7	424.3	376.0	48.26	8.792	
8,100.0	7,161.9	8,082.5	7,272.7	31.0	27.1	-105.14	-996.7	-643.7	424.4	373.4	51.03	8.317	
8,200.0	7,161.9	8,182.5	7,273.3	32.2	28.4	-105.21	-1,096.7	-643.7	424.6	370.6	53.92	7.874	
8,300.0	7,161.9	8,282.5	7,273.9	33.5	29.9	-105.28	-1,196.7	-643.7	424.7	367.8	56.90	7.464	
8,400.0	7,162.0	8,382.5	7,274.5	34.8	31.4	-105.36	-1,296.6	-643.7	424.8	364.9	59.96	7.086	
8,500.0	7,162.0	8,482.5	7,275.1	36.2	32.9	-105.43	-1,396.6	-643.7	425.0	361.9	63.09	6.737	
8,600.0	7,162.0	8,582.5	7,275.7	37.6	34.5	-105.50	-1,496.6	-643.7	425.1	358.9	66.28	6.415	
8,700.0	7,162.1	8,682.5	7,276.3	39.1	36.1	-105.57	-1,596.6	-643.7	425.3	355.8	69.51	6.118	
8,800.0	7,162.1	8,782.5	7,276.8	40.7	37.7	-105.65	-1,696.6	-643.7	425.4	352.6	72.79	5.844	
8,900.0	7,162.1	8,882.5	7,277.4	42.2	39.4	-105.72	-1,796.6	-643.7	425.6	349.5	76.11	5.592	
9,000.0	7,162.2	8,982.5	7,278.0	43.8	41.1	-105.79	-1,896.6	-643.7	425.7	346.3	79.46	5.358	
9,100.0	7,162.2	9,082.5	7,278.6	45.5	42.8	-105.86	-1,996.6	-643.7	425.9	343.1	82.84	5.141	
9,200.0	7,162.2	9,182.5	7,279.2	47.1	44.5	-105.94	-2,096.6	-643.7	426.1	339.8	86.24	4.940	
9,300.0	7,162.3	9,282.5	7,279.8	48.8	46.3	-106.01	-2,196.6	-643.7	426.2	336.5	89.66	4.753	
9,400.0	7,162.3	9,382.5	7,280.4	50.5	48.0	-106.08	-2,296.6	-643.7	426.4	333.3	93.11	4.579	
9,500.0	7,162.4	9,482.5	7,281.0	52.2	49.8	-106.15	-2,396.6	-643.7	426.5	329.9	96.56	4.417	
9,600.0	7,162.4	9,582.5	7,281.6	53.9	51.6	-106.22	-2,496.6	-643.7	426.7	326.6	100.04	4.265	
9,700.0	7,162.4	9,682.5	7,282.2	55.6	53.4	-106.30	-2,596.6	-643.7	426.8	323.3	103.52	4.123	
9,800.0	7,162.5	9,782.5	7,282.8	57.3	55.2	-106.37	-2,696.6	-643.7	427.0	320.0	107.02	3.990	
9,900.0	7,162.5	9,882.5	7,283.4	59.1	57.0	-106.44	-2,796.6	-643.7	427.1	316.6	110.52	3.865	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-443 - Wellbore #1 - Plan #2 (4-9-14)

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	7,162.5	9,982.5	7,284.0	60.9	58.8	-106.51	-2,896.6	-643.7	427.3	313.3	114.04	3.747	
10,100.0	7,162.6	10,082.5	7,284.6	62.6	60.6	-106.58	-2,996.6	-643.7	427.5	309.9	117.56	3.636	
10,200.0	7,162.6	10,182.5	7,285.2	64.4	62.4	-106.65	-3,096.6	-643.7	427.6	306.5	121.09	3.531	
10,300.0	7,162.6	10,282.5	7,285.7	66.2	64.3	-106.73	-3,196.6	-643.7	427.8	303.2	124.62	3.433	
10,400.0	7,162.7	10,382.5	7,286.3	68.0	66.1	-106.80	-3,296.6	-643.7	427.9	299.8	128.16	3.339	
10,500.0	7,162.7	10,482.5	7,286.9	69.8	68.0	-106.87	-3,396.6	-643.7	428.1	296.4	131.71	3.250	
10,600.0	7,162.7	10,582.5	7,287.5	71.6	69.8	-106.94	-3,496.6	-643.7	428.3	293.0	135.25	3.166	
10,700.0	7,162.8	10,682.5	7,288.1	73.4	71.6	-107.01	-3,596.6	-643.7	428.4	289.6	138.81	3.086	
10,800.0	7,162.8	10,782.5	7,288.7	75.3	73.5	-107.08	-3,696.6	-643.7	428.6	286.2	142.36	3.011	
10,900.0	7,162.8	10,882.5	7,289.3	77.1	75.4	-107.16	-3,796.6	-643.7	428.8	282.8	145.92	2.938	
11,000.0	7,162.9	10,982.5	7,289.9	78.9	77.2	-107.23	-3,896.6	-643.7	428.9	279.4	149.48	2.869	
11,100.0	7,162.9	11,082.5	7,290.5	80.8	79.1	-107.30	-3,996.6	-643.7	429.1	276.0	153.04	2.804	
11,200.0	7,162.9	11,182.5	7,291.1	82.6	80.9	-107.37	-4,096.6	-643.7	429.3	272.6	156.60	2.741	
11,300.0	7,163.0	11,282.5	7,291.7	84.4	82.8	-107.44	-4,196.6	-643.7	429.4	269.2	160.17	2.681	
11,400.0	7,163.0	11,382.5	7,292.3	86.3	84.7	-107.51	-4,296.5	-643.7	429.6	265.9	163.73	2.624	
11,500.0	7,163.1	11,482.5	7,292.9	88.1	86.6	-107.58	-4,396.5	-643.7	429.8	262.5	167.30	2.569	
11,600.0	7,163.1	11,582.5	7,293.5	90.0	88.4	-107.65	-4,496.5	-643.7	429.9	259.1	170.87	2.516	
11,700.0	7,163.1	11,682.5	7,294.1	91.8	90.3	-107.72	-4,596.5	-643.7	430.1	255.7	174.43	2.466	
11,800.0	7,163.2	11,782.5	7,294.6	93.7	92.2	-107.79	-4,696.5	-643.7	430.3	252.3	178.00	2.417	
11,900.0	7,163.2	11,882.5	7,295.2	95.5	94.1	-107.87	-4,796.5	-643.7	430.4	248.9	181.57	2.371	
12,000.0	7,163.2	11,982.5	7,295.8	97.4	95.9	-107.94	-4,896.5	-643.7	430.6	245.5	185.14	2.326	
12,100.0	7,163.3	12,082.5	7,296.4	99.3	97.8	-108.01	-4,996.5	-643.7	430.8	242.1	188.70	2.283	
12,200.0	7,163.3	12,182.5	7,297.0	101.1	99.7	-108.08	-5,096.5	-643.7	431.0	238.7	192.27	2.241	
12,300.0	7,163.3	12,282.5	7,297.6	103.0	101.6	-108.15	-5,196.5	-643.7	431.1	235.3	195.84	2.201	
12,400.0	7,163.4	12,382.5	7,298.2	104.9	103.5	-108.22	-5,296.5	-643.7	431.3	231.9	199.40	2.163	
12,500.0	7,163.4	12,482.5	7,298.8	106.8	105.4	-108.29	-5,396.5	-643.7	431.5	228.5	202.96	2.126	
12,600.0	7,163.4	12,582.5	7,299.4	108.6	107.3	-108.36	-5,496.5	-643.7	431.7	225.1	206.53	2.090	
12,700.0	7,163.5	12,682.5	7,300.0	110.5	109.1	-108.43	-5,596.5	-643.7	431.8	221.7	210.09	2.055	
12,800.0	7,163.5	12,782.5	7,300.6	112.4	111.0	-108.50	-5,696.5	-643.7	432.0	218.4	213.65	2.022	
12,900.0	7,163.5	12,882.5	7,301.2	114.3	112.9	-108.57	-5,796.5	-643.7	432.2	215.0	217.21	1.990	
13,000.0	7,163.6	12,982.5	7,301.8	116.1	114.8	-108.64	-5,896.5	-643.7	432.4	211.6	220.77	1.958	
13,100.0	7,163.6	13,082.5	7,302.4	118.0	116.7	-108.71	-5,996.5	-643.7	432.5	208.2	224.32	1.928	
13,200.0	7,163.6	13,182.5	7,303.0	119.9	118.6	-108.78	-6,096.5	-643.7	432.7	204.8	227.88	1.899	
13,300.0	7,163.7	13,282.5	7,303.6	121.8	120.5	-108.85	-6,196.5	-643.7	432.9	201.5	231.43	1.871	
13,400.0	7,163.7	13,382.5	7,304.1	123.7	122.4	-108.92	-6,296.5	-643.7	433.1	198.1	234.99	1.843	
13,500.0	7,163.7	13,482.5	7,304.7	125.5	124.3	-108.99	-6,396.5	-643.7	433.3	194.7	238.54	1.816	
13,600.0	7,163.8	13,582.5	7,305.3	127.4	126.2	-109.06	-6,496.5	-643.7	433.4	191.4	242.08	1.790	
13,700.0	7,163.8	13,682.5	7,305.9	129.3	128.1	-109.13	-6,596.5	-643.7	433.6	188.0	245.63	1.765	
13,800.0	7,163.9	13,782.5	7,306.5	131.2	130.0	-109.20	-6,696.5	-643.7	433.8	184.6	249.18	1.741	
13,900.0	7,163.9	13,882.5	7,307.1	133.1	131.9	-109.27	-6,796.5	-643.7	434.0	181.3	252.72	1.717	
14,000.0	7,163.9	13,982.4	7,307.7	135.0	133.8	-109.34	-6,896.5	-643.7	434.2	177.9	256.26	1.694	
14,100.0	7,164.0	14,082.4	7,308.3	136.9	135.7	-109.41	-6,996.5	-643.7	434.4	174.6	259.80	1.672	
14,200.0	7,164.0	14,182.4	7,308.9	138.8	137.6	-109.48	-7,096.5	-643.7	434.5	171.2	263.34	1.650	
14,217.5	7,164.0	14,200.0	7,309.0	139.1	137.9	-109.49	-7,114.0	-643.7	434.6	170.6	263.96	1.646	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13O-343 - Wellbore #1 - Plan #1 (3-11-14)

Offset Site Error: 0.0 ft

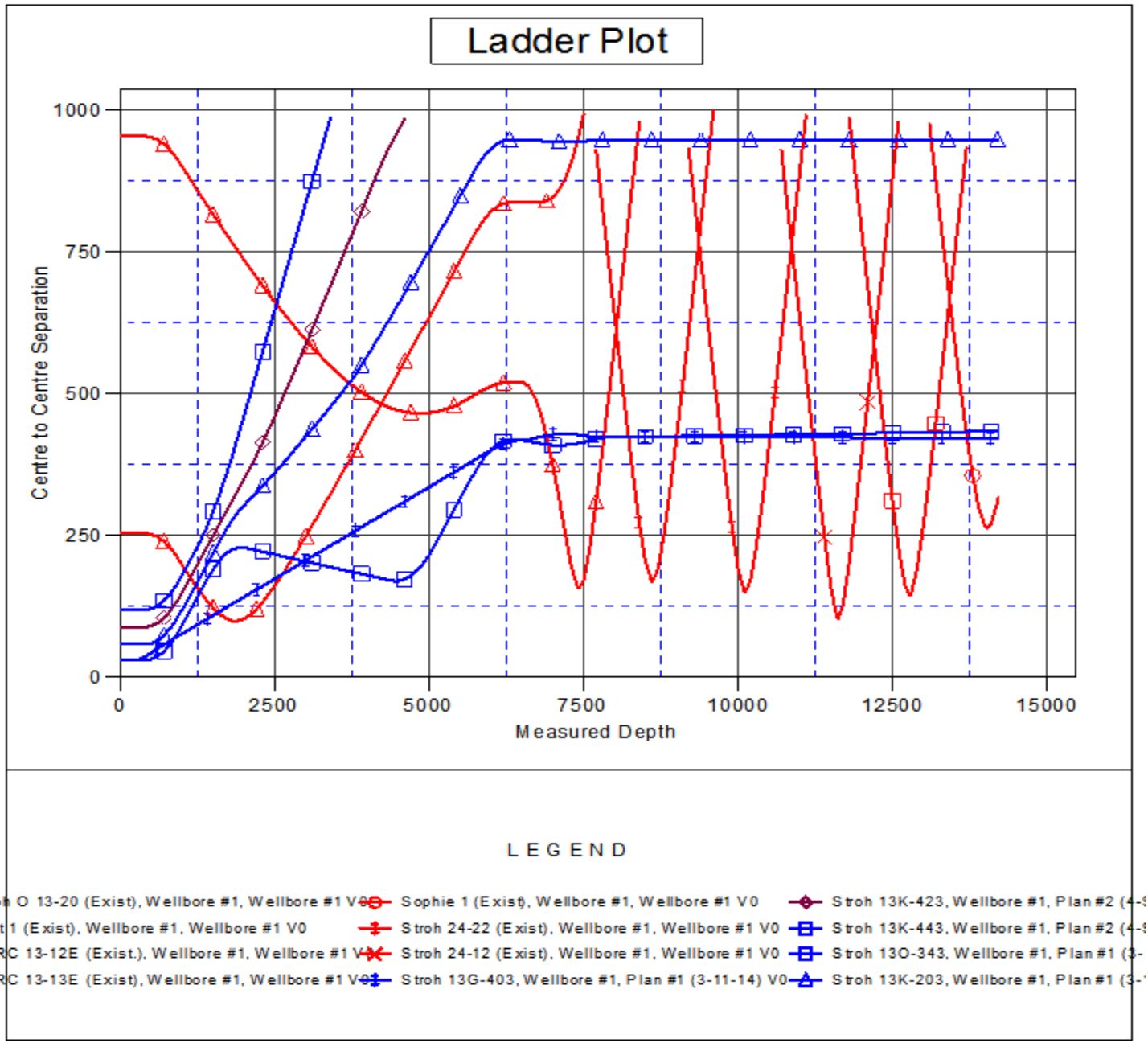
Survey Program: 0-MWD

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	119.9	119.9				
100.0	100.0	99.0	99.0	0.1	0.1	90.00	0.0	119.9	119.9	119.7	0.22	536.218	
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	119.9	119.9	119.2	0.67	178.442	
300.0	300.0	299.0	299.0	0.6	0.6	90.00	0.0	119.9	119.9	118.8	1.12	106.922	
400.0	400.0	399.0	399.0	0.8	0.8	90.00	0.0	119.9	119.9	118.4	1.57	76.329	CC, ES
500.0	500.0	499.0	499.0	1.0	1.0	171.22	0.0	119.9	121.6	119.6	2.01	60.430	
600.0	599.8	598.8	598.8	1.2	1.2	171.57	0.0	119.9	126.8	124.4	2.45	51.721	
700.0	699.5	698.5	698.5	1.5	1.5	172.08	0.0	119.9	135.4	132.6	2.90	46.783	
800.0	798.7	797.7	797.7	1.7	1.7	172.70	0.0	119.9	147.5	144.2	3.34	44.159	
900.0	897.5	896.5	896.5	2.0	1.9	173.36	0.0	119.9	163.1	159.3	3.79	43.047	
1,000.0	995.6	994.6	994.6	2.4	2.1	174.03	0.0	119.9	181.9	177.7	4.24	42.940	SF
1,100.0	1,093.6	1,092.6	1,092.6	2.8	2.3	174.62	0.0	119.9	201.9	197.2	4.69	43.004	
1,200.0	1,191.6	1,190.6	1,190.6	3.2	2.6	175.10	0.0	119.9	221.8	216.6	5.16	43.021	
1,300.0	1,289.6	1,282.4	1,282.4	3.6	2.8	175.35	0.5	121.0	242.9	237.3	5.60	43.340	
1,400.0	1,387.6	1,372.4	1,372.2	4.1	3.0	175.27	2.0	124.7	266.7	260.6	6.05	44.071	
1,500.0	1,485.5	1,461.0	1,460.7	4.5	3.2	174.95	4.6	130.9	293.2	286.7	6.50	45.113	
1,600.0	1,583.5	1,548.2	1,547.4	4.9	3.4	174.47	8.1	139.4	322.4	315.4	6.95	46.396	
1,700.0	1,681.5	1,633.9	1,632.2	5.3	3.6	173.87	12.6	150.2	354.1	346.7	7.40	47.865	
1,800.0	1,779.5	1,717.8	1,715.0	5.8	3.8	173.21	17.9	163.0	388.5	380.6	7.85	49.477	
1,900.0	1,877.4	1,803.6	1,799.2	6.2	4.1	172.49	24.3	178.3	425.2	416.9	8.32	51.120	
2,000.0	1,975.4	1,896.2	1,889.9	6.7	4.4	171.80	31.4	195.3	462.6	453.8	8.79	52.619	
2,100.0	2,073.4	1,988.8	1,980.7	7.1	4.7	171.21	38.4	212.3	500.0	490.7	9.27	53.936	
2,200.0	2,171.4	2,081.5	2,071.5	7.5	5.0	170.71	45.5	229.3	537.5	527.7	9.76	55.090	
2,300.0	2,269.4	2,174.1	2,162.3	8.0	5.4	170.27	52.6	246.3	574.9	564.7	10.24	56.130	
2,400.0	2,367.3	2,266.7	2,253.0	8.4	5.7	169.89	59.7	263.3	612.4	601.7	10.73	57.055	
2,500.0	2,465.3	2,359.4	2,343.8	8.9	6.1	169.54	66.7	280.3	650.0	638.7	11.23	57.885	
2,600.0	2,563.3	2,452.0	2,434.6	9.3	6.4	169.24	73.8	297.3	687.5	675.8	11.73	58.633	
2,700.0	2,661.3	2,544.6	2,525.4	9.8	6.8	168.97	80.9	314.3	725.1	712.8	12.22	59.311	
2,800.0	2,759.2	2,637.2	2,616.2	10.2	7.2	168.72	88.0	331.3	762.6	749.9	12.73	59.927	
2,900.0	2,857.2	2,729.9	2,706.9	10.7	7.6	168.50	95.1	348.4	800.2	787.0	13.23	60.489	
3,000.0	2,955.2	2,822.5	2,797.7	11.1	7.9	168.30	102.1	365.4	837.8	824.1	13.73	61.003	
3,100.0	3,053.2	2,915.1	2,888.5	11.5	8.3	168.11	109.2	382.4	875.4	861.2	14.24	61.475	
3,200.0	3,151.1	3,007.7	2,979.3	12.0	8.7	167.94	116.3	399.4	913.0	898.3	14.75	61.910	
3,300.0	3,249.1	3,100.4	3,070.0	12.4	9.1	167.79	123.4	416.4	950.6	935.4	15.26	62.312	
3,400.0	3,347.1	3,193.0	3,160.8	12.9	9.5	167.64	130.4	433.4	988.2	972.5	15.77	62.683	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
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 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4820.0ft (Original Well Elev) Coordinates are relative to: Stroh 13G-323
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°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Stroh 13G-323
Project:	SEC.13-T4N-R67W	**TVD Reference:**	WELL @ 4820.0ft (Original Well Elev)
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Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Stroh 13G-323	**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 #2 (4-9-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4820.0ft (Original Well Elev) Coordinates are relative to: Stroh 13G-323
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
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