

PETROLEUM DEVELOPMENT CORP Weld County CO

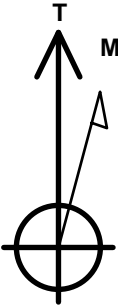
Well Name: **Fitzsimmons 9J-223**

Surface Location: Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4990.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1269661.08	3200338.63	40.071390	-104.784140	
RKB - 13' WELL @ 5003.0ft (RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E & W Hardline (9J-223)	1.0	-2224.4	-456.3	Rectangle (Sides: L3959.1 W100.0)
SHL 576'FNL & 2112'FWL	1.0	0.0	0.0	Point
BHL 500'FSL & 1631'FWL	7260.0	-4203.9	-456.3	Point



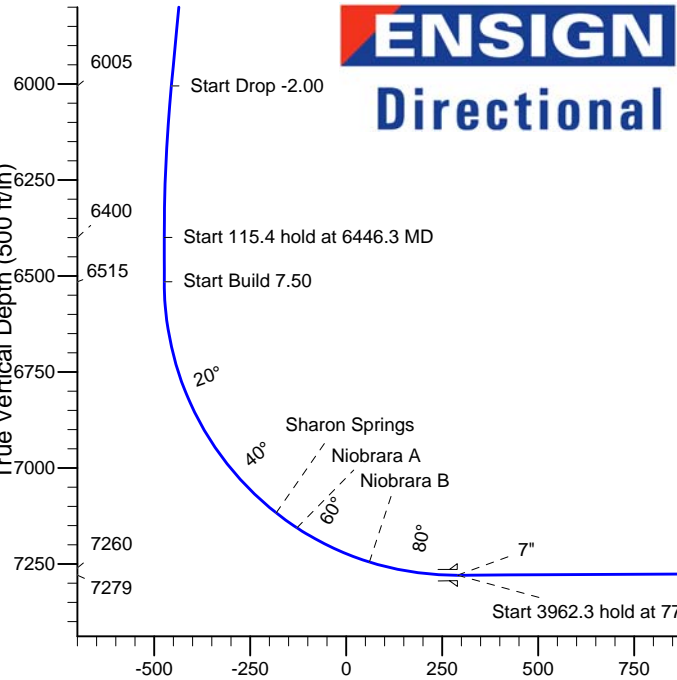
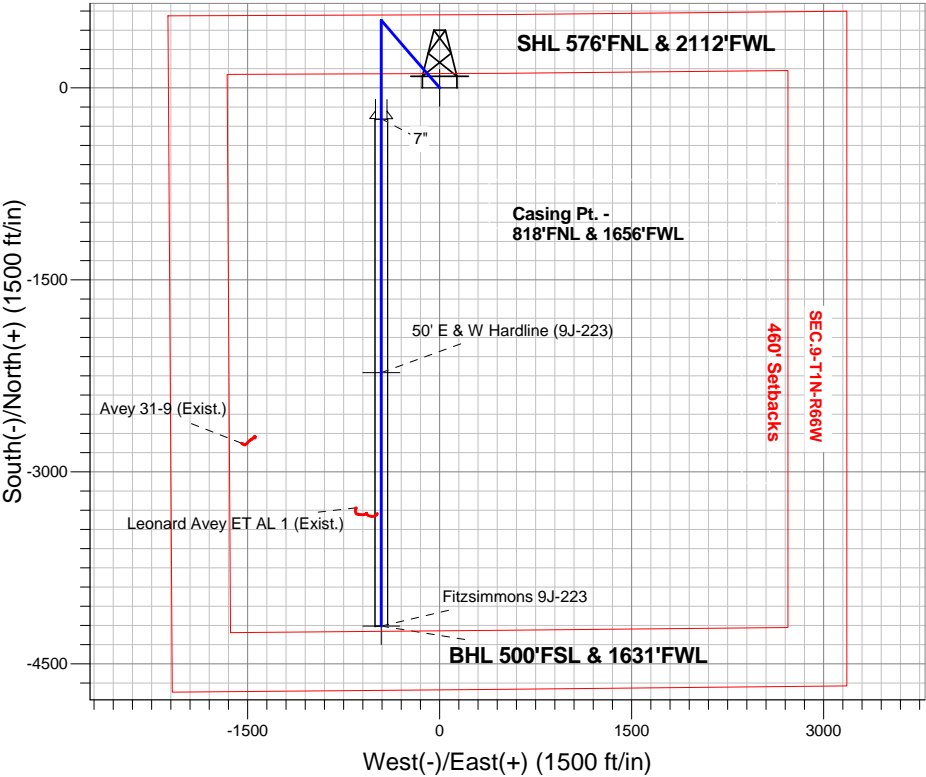
Azimuths to True North
Magnetic North: 8.32°

Magnetic Field
Strength: 52546.3snT
Dip Angle: 66.65°
Date: 5/4/2015
Model: IGRF2010

Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
Fitzsimmons 9J-223
Plan #2 (5-01-15)
8:48, May 04 2015

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.00
6005.2	6050.3	Start Drop -2.00
6400.0	6446.3	Start 115.4 hold at 6446.3 MD
6515.4	6561.7	Start Build 7.50
7279.4	7765.5	Start 3962.3 hold at 7765.5 MD
7260.0	11727.7	TD at 11727.7



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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1592.0	7.92	319.06	1589.5	41.3	-35.8	1.00	319.06	-37.2	
4	6050.3	7.92	319.06	6005.2	505.4	-438.4	0.00	0.00	-455.1	
5	6446.3	0.00	0.00	6400.0	526.0	-456.3	2.00	180.00	-473.7	
6	6561.7	0.00	0.00	6515.4	526.0	-456.3	0.00	0.00	-473.7	
7	7765.5	90.28	180.00	7279.4	-241.7	-456.3	7.50	180.00	289.5	
8	11727.7	90.28	180.00	7260.0	-4203.9	-456.3	0.00	0.00	4228.6	BHL 500'FSL & 1631'FWL

BHL 500'FSL & 1631'FWL

TD at 11727.7

Vertical Section at 186.19° (500 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W

Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W

Fitzsimmons 9J-223

Wellbore #1

Plan: Plan #2 (5-01-15)

Standard Planning Report

04 May, 2015

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9J-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

Project	SEC.9-T1N-R66W, Weld County, CO		
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						Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W											
Site Position:						Northing:			1,269,661.10ft			Latitude:			40.071390		
From:			Lat/Long			Easting:			3,200,338.63ft			Longitude:			-104.784140		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.46 °		

Well	Fitzsimmons 9J-223					
Well Position	+N/-S	0.0 ft	Northing:	1,269,661.08 ft	Latitude:	40.071390
	+E/-W	0.0 ft	Easting:	3,200,338.63 ft	Longitude:	-104.784140
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,990.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/4/2015	8.32	66.65	52,546

Design	Plan #2 (5-01-15)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	186.19

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,592.0	7.92	319.06	1,589.5	41.3	-35.8	1.00	1.00	0.00	319.06	
6,050.3	7.92	319.06	6,005.2	505.4	-438.4	0.00	0.00	0.00	0.00	
6,446.3	0.00	0.00	6,400.0	526.0	-456.3	2.00	-2.00	0.00	180.00	
6,561.7	0.00	0.00	6,515.4	526.0	-456.3	0.00	0.00	0.00	0.00	
7,765.5	90.28	180.00	7,279.4	-241.7	-456.3	7.50	7.50	0.00	180.00	
11,727.7	90.28	180.00	7,260.0	-4,203.9	-456.3	0.00	0.00	0.00	0.00	BHL 500'FSL & 163

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9J-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
50' E & W Hardline (9J-223) - SHL 576'FNL & 2112'FWL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
900.0	1.00	319.06	900.0	0.7	-0.6	-0.6	1.00	1.00	0.00
1,000.0	2.00	319.06	1,000.0	2.6	-2.3	-2.4	1.00	1.00	0.00
1,100.0	3.00	319.06	1,099.9	5.9	-5.1	-5.3	1.00	1.00	0.00
1,200.0	4.00	319.06	1,199.7	10.5	-9.1	-9.5	1.00	1.00	0.00
1,300.0	5.00	319.06	1,299.4	16.5	-14.3	-14.8	1.00	1.00	0.00
1,400.0	6.00	319.06	1,398.9	23.7	-20.6	-21.4	1.00	1.00	0.00
1,500.0	7.00	319.06	1,498.3	32.3	-28.0	-29.1	1.00	1.00	0.00
1,592.0	7.92	319.06	1,589.5	41.3	-35.8	-37.2	1.00	1.00	0.00
1,600.0	7.92	319.06	1,597.4	42.1	-36.5	-37.9	0.00	0.00	0.00
1,700.0	7.92	319.06	1,696.4	52.5	-45.6	-47.3	0.00	0.00	0.00
1,800.0	7.92	319.06	1,795.5	62.9	-54.6	-56.7	0.00	0.00	0.00
1,900.0	7.92	319.06	1,894.5	73.3	-63.6	-66.1	0.00	0.00	0.00
2,000.0	7.92	319.06	1,993.6	83.8	-72.7	-75.4	0.00	0.00	0.00
2,100.0	7.92	319.06	2,092.6	94.2	-81.7	-84.8	0.00	0.00	0.00
2,200.0	7.92	319.06	2,191.7	104.6	-90.7	-94.2	0.00	0.00	0.00
2,300.0	7.92	319.06	2,290.7	115.0	-99.7	-103.5	0.00	0.00	0.00
2,400.0	7.92	319.06	2,389.8	125.4	-108.8	-112.9	0.00	0.00	0.00
2,500.0	7.92	319.06	2,488.8	135.8	-117.8	-122.3	0.00	0.00	0.00
2,600.0	7.92	319.06	2,587.9	146.2	-126.8	-131.7	0.00	0.00	0.00
2,700.0	7.92	319.06	2,686.9	156.6	-135.9	-141.0	0.00	0.00	0.00
2,800.0	7.92	319.06	2,786.0	167.0	-144.9	-150.4	0.00	0.00	0.00
2,900.0	7.92	319.06	2,885.0	177.4	-153.9	-159.8	0.00	0.00	0.00
3,000.0	7.92	319.06	2,984.0	187.8	-162.9	-169.2	0.00	0.00	0.00
3,100.0	7.92	319.06	3,083.1	198.3	-172.0	-178.5	0.00	0.00	0.00
3,200.0	7.92	319.06	3,182.1	208.7	-181.0	-187.9	0.00	0.00	0.00
3,300.0	7.92	319.06	3,281.2	219.1	-190.0	-197.3	0.00	0.00	0.00
3,400.0	7.92	319.06	3,380.2	229.5	-199.1	-206.7	0.00	0.00	0.00
3,500.0	7.92	319.06	3,479.3	239.9	-208.1	-216.0	0.00	0.00	0.00
3,600.0	7.92	319.06	3,578.3	250.3	-217.1	-225.4	0.00	0.00	0.00
3,700.0	7.92	319.06	3,677.4	260.7	-226.1	-234.8	0.00	0.00	0.00
3,800.0	7.92	319.06	3,776.4	271.1	-235.2	-244.2	0.00	0.00	0.00
3,900.0	7.92	319.06	3,875.5	281.5	-244.2	-253.5	0.00	0.00	0.00
4,000.0	7.92	319.06	3,974.5	291.9	-253.2	-262.9	0.00	0.00	0.00
4,100.0	7.92	319.06	4,073.6	302.3	-262.3	-272.3	0.00	0.00	0.00
4,200.0	7.92	319.06	4,172.6	312.8	-271.3	-281.7	0.00	0.00	0.00
4,227.7	7.92	319.06	4,200.0	315.6	-273.8	-284.3	0.00	0.00	0.00
Parkman									
4,300.0	7.92	319.06	4,271.6	323.2	-280.3	-291.0	0.00	0.00	0.00
4,400.0	7.92	319.06	4,370.7	333.6	-289.4	-300.4	0.00	0.00	0.00
4,500.0	7.92	319.06	4,469.7	344.0	-298.4	-309.8	0.00	0.00	0.00

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Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9J-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.0	7.92	319.06	4,568.8	354.4	-307.4	-319.2	0.00	0.00	0.00
4,661.8	7.92	319.06	4,630.0	360.8	-313.0	-324.9	0.00	0.00	0.00
Sussex									
4,700.0	7.92	319.06	4,667.8	364.8	-316.4	-328.5	0.00	0.00	0.00
4,800.0	7.92	319.06	4,766.9	375.2	-325.5	-337.9	0.00	0.00	0.00
4,900.0	7.92	319.06	4,865.9	385.6	-334.5	-347.3	0.00	0.00	0.00
5,000.0	7.92	319.06	4,965.0	396.0	-343.5	-356.7	0.00	0.00	0.00
5,100.0	7.92	319.06	5,064.0	406.4	-352.6	-366.0	0.00	0.00	0.00
5,136.3	7.92	319.06	5,100.0	410.2	-355.8	-369.4	0.00	0.00	0.00
Shannon									
5,200.0	7.92	319.06	5,163.1	416.8	-361.6	-375.4	0.00	0.00	0.00
5,300.0	7.92	319.06	5,262.1	427.3	-370.6	-384.8	0.00	0.00	0.00
5,400.0	7.92	319.06	5,361.2	437.7	-379.6	-394.1	0.00	0.00	0.00
5,500.0	7.92	319.06	5,460.2	448.1	-388.7	-403.5	0.00	0.00	0.00
5,600.0	7.92	319.06	5,559.2	458.5	-397.7	-412.9	0.00	0.00	0.00
5,700.0	7.92	319.06	5,658.3	468.9	-406.7	-422.3	0.00	0.00	0.00
5,800.0	7.92	319.06	5,757.3	479.3	-415.8	-431.6	0.00	0.00	0.00
5,900.0	7.92	319.06	5,856.4	489.7	-424.8	-441.0	0.00	0.00	0.00
6,000.0	7.92	319.06	5,955.4	500.1	-433.8	-450.4	0.00	0.00	0.00
6,050.3	7.92	319.06	6,005.3	505.4	-438.4	-455.1	0.00	0.00	0.00
Start Drop -2.00									
6,100.0	6.93	319.06	6,054.5	510.2	-442.6	-459.5	2.00	-2.00	0.00
6,200.0	4.93	319.06	6,154.0	518.0	-449.3	-466.5	2.00	-2.00	0.00
6,300.0	2.93	319.06	6,253.8	523.2	-453.8	-471.2	2.00	-2.00	0.00
6,400.0	0.93	319.06	6,353.7	525.7	-456.0	-473.4	2.00	-2.00	0.00
6,446.3	0.00	319.06	6,400.0	526.0	-456.3	-473.7	2.00	-2.00	0.00
Start 115.4 hold at 6446.3 MD									
6,500.0	0.00	0.00	6,453.7	526.0	-456.3	-473.7	0.00	0.00	0.00
6,561.7	0.00	0.00	6,515.4	526.0	-456.3	-473.7	0.00	0.00	0.00
Start Build 7.50									
6,600.0	2.87	180.00	6,553.7	525.0	-456.3	-472.7	7.49	7.49	0.00
6,700.0	10.37	180.00	6,652.9	513.5	-456.3	-461.3	7.50	7.50	0.00
6,800.0	17.87	180.00	6,749.8	489.1	-456.3	-437.1	7.50	7.50	0.00
6,900.0	25.37	180.00	6,842.7	452.3	-456.3	-400.5	7.50	7.50	0.00
7,000.0	32.87	180.00	6,930.0	403.7	-456.3	-352.1	7.50	7.50	0.00
7,100.0	40.37	180.00	7,010.2	344.1	-456.3	-292.8	7.50	7.50	0.00
7,200.0	47.87	180.00	7,082.0	274.5	-456.3	-223.7	7.50	7.50	0.00
7,254.4	51.95	180.00	7,117.0	232.9	-456.3	-182.3	7.50	7.50	0.00
Sharon Springs									
7,300.0	55.37	180.00	7,144.0	196.2	-456.3	-145.8	7.50	7.50	0.00
7,321.5	56.98	180.00	7,156.0	178.3	-456.3	-128.0	7.50	7.50	0.00
Niobrara A									
7,400.0	62.87	180.00	7,195.3	110.4	-456.3	-60.5	7.50	7.50	0.00
7,500.0	70.37	180.00	7,235.0	18.7	-456.3	30.6	7.50	7.50	0.00
7,531.7	72.75	180.00	7,245.0	-11.4	-456.3	60.5	7.50	7.50	0.00
Niobrara B									
7,600.0	77.87	180.00	7,262.3	-77.4	-456.3	126.2	7.50	7.50	0.00
7,700.0	85.37	180.00	7,276.9	-176.3	-456.3	224.5	7.50	7.50	0.00
7,765.5	90.28	180.00	7,279.4	-241.7	-456.3	289.5	7.50	7.50	0.00
Start 3962.3 hold at 7765.5 MD - 7"									
7,800.0	90.28	180.00	7,279.2	-276.2	-456.3	323.8	0.00	0.00	0.00

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Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9J-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,900.0	90.28	180.00	7,278.7	-376.2	-456.3	423.2	0.00	0.00	0.00
8,000.0	90.28	180.00	7,278.2	-476.2	-456.3	522.7	0.00	0.00	0.00
8,100.0	90.28	180.00	7,277.7	-576.2	-456.3	622.1	0.00	0.00	0.00
8,200.0	90.28	180.00	7,277.2	-676.2	-456.3	721.5	0.00	0.00	0.00
8,300.0	90.28	180.00	7,276.8	-776.2	-456.3	820.9	0.00	0.00	0.00
8,400.0	90.28	180.00	7,276.3	-876.2	-456.3	920.3	0.00	0.00	0.00
8,500.0	90.28	180.00	7,275.8	-976.2	-456.3	1,019.7	0.00	0.00	0.00
8,600.0	90.28	180.00	7,275.3	-1,076.2	-456.3	1,119.1	0.00	0.00	0.00
8,700.0	90.28	180.00	7,274.8	-1,176.2	-456.3	1,218.6	0.00	0.00	0.00
8,800.0	90.28	180.00	7,274.3	-1,276.2	-456.3	1,318.0	0.00	0.00	0.00
8,900.0	90.28	180.00	7,273.8	-1,376.2	-456.3	1,417.4	0.00	0.00	0.00
9,000.0	90.28	180.00	7,273.3	-1,476.2	-456.3	1,516.8	0.00	0.00	0.00
9,100.0	90.28	180.00	7,272.8	-1,576.2	-456.3	1,616.2	0.00	0.00	0.00
9,200.0	90.28	180.00	7,272.4	-1,676.2	-456.3	1,715.6	0.00	0.00	0.00
9,300.0	90.28	180.00	7,271.9	-1,776.2	-456.3	1,815.0	0.00	0.00	0.00
9,400.0	90.28	180.00	7,271.4	-1,876.2	-456.3	1,914.5	0.00	0.00	0.00
9,500.0	90.28	180.00	7,270.9	-1,976.2	-456.3	2,013.9	0.00	0.00	0.00
9,600.0	90.28	180.00	7,270.4	-2,076.2	-456.3	2,113.3	0.00	0.00	0.00
9,700.0	90.28	180.00	7,269.9	-2,176.2	-456.3	2,212.7	0.00	0.00	0.00
9,800.0	90.28	180.00	7,269.4	-2,276.2	-456.3	2,312.1	0.00	0.00	0.00
9,900.0	90.28	180.00	7,268.9	-2,376.2	-456.3	2,411.5	0.00	0.00	0.00
10,000.0	90.28	180.00	7,268.4	-2,476.2	-456.3	2,511.0	0.00	0.00	0.00
10,100.0	90.28	180.00	7,268.0	-2,576.2	-456.3	2,610.4	0.00	0.00	0.00
10,200.0	90.28	180.00	7,267.5	-2,676.2	-456.3	2,709.8	0.00	0.00	0.00
10,300.0	90.28	180.00	7,267.0	-2,776.2	-456.3	2,809.2	0.00	0.00	0.00
10,400.0	90.28	180.00	7,266.5	-2,876.2	-456.3	2,908.6	0.00	0.00	0.00
10,500.0	90.28	180.00	7,266.0	-2,976.2	-456.3	3,008.0	0.00	0.00	0.00
10,600.0	90.28	180.00	7,265.5	-3,076.2	-456.3	3,107.4	0.00	0.00	0.00
10,700.0	90.28	180.00	7,265.0	-3,176.2	-456.3	3,206.9	0.00	0.00	0.00
10,800.0	90.28	180.00	7,264.5	-3,276.2	-456.3	3,306.3	0.00	0.00	0.00
10,900.0	90.28	180.00	7,264.0	-3,376.2	-456.3	3,405.7	0.00	0.00	0.00
11,000.0	90.28	180.00	7,263.6	-3,476.2	-456.3	3,505.1	0.00	0.00	0.00
11,100.0	90.28	180.00	7,263.1	-3,576.2	-456.3	3,604.5	0.00	0.00	0.00
11,200.0	90.28	180.00	7,262.6	-3,676.2	-456.3	3,703.9	0.00	0.00	0.00
11,300.0	90.28	180.00	7,262.1	-3,776.2	-456.3	3,803.3	0.00	0.00	0.00
11,400.0	90.28	180.00	7,261.6	-3,876.2	-456.3	3,902.8	0.00	0.00	0.00
11,500.0	90.28	180.00	7,261.1	-3,976.2	-456.3	4,002.2	0.00	0.00	0.00
11,600.0	90.28	180.00	7,260.6	-4,076.2	-456.3	4,101.6	0.00	0.00	0.00
11,700.0	90.28	180.00	7,260.1	-4,176.2	-456.3	4,201.0	0.00	0.00	0.00
11,727.7	90.28	180.00	7,260.0	-4,203.9	-456.3	4,228.5	0.00	0.00	0.00
TD at 11727.7 - BHL 500'FSL & 1631'FWL									

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9J-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude
	- Shape								Longitude
50' E & W Hardline (9.	- plan misses target center by 2270.7ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)	0.00	0.00	1.0	-2,224.4	-456.3	1,267,433.21	3,199,900.32	40.065284
	- Rectangle (sides W3,959.1 H100.0 D0.0)								-104.785770
SHL 576'FNL & 2112'	- plan hits target center	0.00	0.00	1.0	0.0	0.0	1,269,661.10	3,200,338.63	40.071390
	- Point								-104.784140
BHL 500'FSL & 1631'I	- plan hits target center	0.00	0.00	7,260.0	-4,203.9	-456.3	1,265,453.81	3,199,916.34	40.059850
	- Point								-104.785770

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,765.5	7,279.4	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,227.7	4,200.0	Parkman		0.00		
4,661.8	4,630.0	Sussex		0.00		
5,136.3	5,100.0	Shannon		0.00		
7,254.4	7,117.0	Sharon Springs		0.00		
7,321.5	7,156.0	Niobrara A		0.00		
7,531.7	7,245.0	Niobrara B		0.00		
	7,330.0	Niobrara C		0.00		
	7,473.0	Ft. Hays		0.00		
	7,495.0	Codell		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
800.0	800.0	0.0	0.0	KOP - Start Build 1.00	
6,050.3	6,005.2	41.3	-35.8	Start Drop -2.00	
6,446.3	6,400.0	505.4	-438.4	Start 115.4 hold at 6446.3 MD	
6,561.7	6,515.4	526.0	-456.3	Start Build 7.50	
7,765.5	7,279.4	526.0	-456.3	Start 3962.3 hold at 7765.5 MD	
11,727.7	7,260.0	-241.7	-456.3	TD at 11727.7	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W

Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W

Fitzsimmons 9J-223

Wellbore #1

Plan #2 (5-01-15)

Anticollision Report

04 May, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (5-01-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 800.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 5/4/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,727.7	Plan #2 (5-01-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.9-T1N-R66W						
Avey 31-9 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Leonard Avey ET AL 1 (Exist.) - Wellbore #1 - Wellbore #	10,807.4	7,265.3	196.1	113.5	2.373	CC, ES, SF
Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W						
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	902.4	902.4	28.8	25.0	7.535	CC
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	1,000.0	1,000.0	29.0	24.7	6.795	ES
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	11,727.7	11,852.9	353.5	188.3	2.140	SF
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	800.0	800.0	28.9	25.5	8.561	CC
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	29.2	24.9	6.848	ES
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	11,727.7	11,776.7	287.8	122.1	1.737	SF
Fitzsimmons 9M-203 - Wellbore #1 - Plan #2 (5-01-15)	800.0	800.0	88.8	85.4	26.333	CC
Fitzsimmons 9M-203 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	89.0	84.8	20.890	ES
Fitzsimmons 9M-203 - Wellbore #1 - Plan #2 (5-01-15)	1,400.0	1,393.0	107.1	101.0	17.670	SF
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	800.0	800.0	59.9	56.6	17.773	CC
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	60.2	56.0	14.134	ES
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	11,727.7	11,891.4	620.8	461.2	3.891	SF
Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W						
Fitzsimmons 9E-223 - Wellbore #1 - Plan #2 (5-01-15)	366.0	368.0	685.9	684.4	481.326	CC
Fitzsimmons 9E-223 - Wellbore #1 - Plan #2 (5-01-15)	500.0	497.2	686.2	684.2	341.147	ES
Fitzsimmons 9E-223 - Wellbore #1 - Plan #2 (5-01-15)	2,100.0	2,007.9	798.2	786.3	67.055	SF
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	566.0	568.0	657.0	654.7	282.706	CC
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	700.0	700.0	657.3	654.4	225.336	ES
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	2,900.0	2,832.0	796.3	778.6	45.107	SF
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	166.0	168.0	716.9	716.4	1,363.267	CC
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	300.0	296.3	717.3	716.2	645.516	ES
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	1,500.0	1,400.0	795.0	787.3	103.886	SF
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	766.0	768.0	623.7	620.5	193.509	CC
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	1,300.0	1,296.4	624.9	619.3	111.272	ES
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	4,700.0	4,650.5	799.5	769.4	26.622	SF
Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (5-01-15)	3,583.4	3,592.6	568.6	547.8	27.232	CC
Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (5-01-15)	11,727.7	12,003.2	690.8	535.0	4.433	ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.9-T1N-R66W - Leonard Avey ET AL 1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,268.0	7,269.1	7,264.2	54.6	15.5	91.09	91.09	-3,283.5	-652.4	734.1	664.4	69.61	10.545	
10,200.0	7,267.5	7,268.5	7,263.7	56.4	15.5	90.94	90.94	-3,283.5	-652.4	638.2	566.8	71.44	8.934	
10,300.0	7,267.0	7,268.0	7,263.2	58.2	15.5	90.78	90.78	-3,283.5	-652.4	544.0	470.7	73.28	7.423	
10,400.0	7,266.5	7,267.5	7,262.7	60.0	15.5	90.63	90.63	-3,283.5	-652.4	452.1	377.0	75.12	6.019	
10,500.0	7,266.0	7,267.0	7,262.1	61.9	15.5	90.48	90.48	-3,283.5	-652.4	364.6	287.7	76.96	4.738	
10,600.0	7,265.5	7,266.4	7,261.6	63.7	15.5	90.32	90.32	-3,283.5	-652.4	285.4	206.6	78.81	3.622	
10,700.0	7,265.0	7,265.9	7,261.1	65.6	15.5	90.17	90.17	-3,283.5	-652.4	223.6	142.9	80.67	2.772	
10,800.0	7,264.5	7,265.4	7,260.5	67.4	15.5	90.01	90.01	-3,283.5	-652.4	196.3	113.8	82.52	2.379	
10,807.4	7,264.5	7,265.3	7,260.5	67.5	15.5	90.00	90.00	-3,283.5	-652.4	196.1	113.5	82.66	2.373 CC, ES, SF	
10,900.0	7,264.0	7,264.8	7,260.0	69.2	15.5	89.85	89.85	-3,283.5	-652.4	216.9	132.5	84.39	2.571	
11,000.0	7,263.6	7,264.3	7,259.5	71.1	15.5	89.70	89.70	-3,283.5	-652.4	274.9	188.7	86.25	3.188	
11,100.0	7,263.1	7,263.7	7,258.9	73.0	15.5	89.54	89.54	-3,283.5	-652.4	352.3	264.2	88.11	3.998	
11,200.0	7,262.6	7,263.2	7,258.4	74.8	15.5	89.38	89.38	-3,283.5	-652.4	438.9	348.9	89.98	4.878	
11,300.0	7,262.1	7,262.6	7,257.8	76.7	15.5	89.22	89.22	-3,283.5	-652.4	530.2	438.4	91.85	5.773	
11,400.0	7,261.6	7,262.1	7,257.3	78.5	15.5	89.06	89.06	-3,283.5	-652.4	624.2	530.5	93.72	6.661	
11,500.0	7,261.1	7,261.6	7,256.7	80.4	15.5	88.90	88.90	-3,283.5	-652.4	719.9	624.3	95.59	7.531	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4										Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-129.12	-18.2	-22.4	28.9					
100.0	100.0	100.0	100.0	0.1	0.1	-129.12	-18.2	-22.4	28.9	28.6	0.22	128.402		
200.0	200.0	200.0	200.0	0.3	0.3	-129.12	-18.2	-22.4	28.9	28.2	0.67	42.801		
300.0	300.0	300.0	300.0	0.6	0.6	-129.12	-18.2	-22.4	28.9	27.7	1.12	25.680		
400.0	400.0	400.0	400.0	0.8	0.8	-129.12	-18.2	-22.4	28.9	27.3	1.57	18.343		
500.0	500.0	500.0	500.0	1.0	1.0	-129.12	-18.2	-22.4	28.9	26.8	2.02	14.267		
600.0	600.0	600.0	600.0	1.2	1.2	-129.12	-18.2	-22.4	28.9	26.4	2.47	11.673		
700.0	700.0	700.0	700.0	1.5	1.5	-129.12	-18.2	-22.4	28.9	25.9	2.92	9.877		
800.0	800.0	800.0	800.0	1.7	1.7	-129.12	-18.2	-22.4	28.9	25.5	3.37	8.560		
900.0	900.0	900.0	900.0	1.9	1.9	-89.92	-18.2	-22.4	28.8	25.0	3.82	7.556		
902.4	902.4	902.4	902.4	1.9	1.9	-90.00	-18.2	-22.4	28.8	25.0	3.83	7.535 CC		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-95.10	-18.2	-22.4	29.0	24.7	4.26	6.795 ES		
1,100.0	1,099.9	1,099.8	1,099.8	2.4	2.4	-101.83	-17.7	-23.1	29.7	25.0	4.70	6.311		
1,200.0	1,199.7	1,199.8	1,199.7	2.6	2.6	-107.99	-16.2	-25.2	31.2	26.1	5.15	6.066		
1,300.0	1,299.4	1,299.8	1,299.6	2.8	2.8	-113.31	-13.7	-28.8	33.5	27.9	5.60	5.981		
1,400.0	1,398.9	1,399.8	1,399.5	3.1	3.0	-117.68	-10.2	-33.8	36.5	30.4	6.07	6.004		
1,500.0	1,498.3	1,499.9	1,499.3	3.3	3.2	-121.11	-5.8	-40.3	40.0	33.4	6.55	6.097		
1,592.0	1,589.5	1,592.1	1,591.0	3.6	3.5	-123.54	-0.7	-47.5	43.6	36.6	7.02	6.221		
1,600.0	1,597.4	1,600.0	1,598.9	3.6	3.5	-123.71	-0.3	-48.1	44.0	36.9	7.06	6.232		
1,700.0	1,696.4	1,700.2	1,698.5	3.9	3.7	-124.68	6.2	-57.5	47.9	40.3	7.58	6.311		
1,800.0	1,795.5	1,800.5	1,797.9	4.2	4.0	-123.67	13.7	-68.2	51.1	43.0	8.14	6.284		
1,900.0	1,894.5	1,900.7	1,897.0	4.5	4.3	-121.01	22.2	-80.4	53.9	45.2	8.73	6.175		
2,000.0	1,993.6	2,000.8	1,995.8	4.8	4.6	-116.90	31.6	-93.9	56.3	47.0	9.36	6.021		
2,100.0	2,092.6	2,100.8	2,094.1	5.1	5.0	-111.48	42.0	-108.9	58.8	48.8	10.03	5.865		
2,200.0	2,191.7	2,200.6	2,191.9	5.4	5.3	-104.93	53.4	-125.2	61.7	51.0	10.73	5.754		
2,300.0	2,290.7	2,300.3	2,289.4	5.7	5.7	-98.38	65.2	-142.2	65.4	54.0	11.42	5.726		
2,400.0	2,389.8	2,400.0	2,386.9	6.1	6.1	-92.60	77.0	-159.1	69.9	57.8	12.10	5.772		
2,500.0	2,488.8	2,499.6	2,484.4	6.4	6.5	-87.55	88.8	-176.0	74.9	62.2	12.77	5.871		
2,600.0	2,587.9	2,599.3	2,581.9	6.7	6.9	-83.17	100.6	-192.9	80.5	67.1	13.41	6.006		
2,700.0	2,686.9	2,699.0	2,679.4	7.0	7.3	-79.38	112.3	-209.8	86.5	72.5	14.04	6.164		
2,800.0	2,786.0	2,798.6	2,776.9	7.4	7.7	-76.09	124.1	-226.7	92.9	78.2	14.65	6.337		
2,900.0	2,885.0	2,898.3	2,874.4	7.7	8.1	-73.23	135.9	-243.7	99.4	84.2	15.26	6.518		
3,000.0	2,984.0	2,998.0	2,972.0	8.0	8.5	-70.72	147.7	-260.6	106.3	90.4	15.86	6.702		
3,100.0	3,083.1	3,097.6	3,069.5	8.4	9.0	-68.52	159.5	-277.5	113.2	96.8	16.45	6.885		
3,200.0	3,182.1	3,197.3	3,167.0	8.7	9.4	-66.58	171.3	-294.4	120.4	103.3	17.04	7.066		
3,300.0	3,281.2	3,297.0	3,264.5	9.0	9.8	-64.86	183.1	-311.3	127.6	110.0	17.62	7.243		
3,400.0	3,380.2	3,396.6	3,362.0	9.4	10.3	-63.32	194.8	-328.2	135.0	116.8	18.21	7.415		
3,500.0	3,479.3	3,496.3	3,459.5	9.7	10.7	-61.95	206.6	-345.2	142.4	123.6	18.79	7.582		
3,600.0	3,578.3	3,596.0	3,557.0	10.0	11.1	-60.71	218.4	-362.1	150.0	130.6	19.37	7.743		
3,700.0	3,677.4	3,695.6	3,654.5	10.4	11.6	-59.59	230.2	-379.0	157.5	137.6	19.95	7.898		
3,800.0	3,776.4	3,795.3	3,752.0	10.7	12.0	-58.57	242.0	-395.9	165.2	144.6	20.53	8.047		
3,900.0	3,875.5	3,895.0	3,849.6	11.0	12.4	-57.64	253.8	-412.8	172.9	151.8	21.11	8.190		
4,000.0	3,974.5	3,994.6	3,947.1	11.4	12.9	-56.79	265.5	-429.8	180.6	158.9	21.68	8.328		
4,100.0	4,073.6	4,094.3	4,044.6	11.7	13.3	-56.01	277.3	-446.7	188.3	166.1	22.26	8.460		
4,200.0	4,172.6	4,194.0	4,142.1	12.0	13.8	-55.30	289.1	-463.6	196.1	173.3	22.84	8.587		
4,300.0	4,271.6	4,293.6	4,239.6	12.4	14.2	-54.64	300.9	-480.5	204.0	180.5	23.42	8.709		
4,400.0	4,370.7	4,393.3	4,337.1	12.7	14.7	-54.02	312.7	-497.4	211.8	187.8	24.00	8.826		
4,500.0	4,469.7	4,493.0	4,434.6	13.1	15.1	-53.45	324.5	-514.3	219.7	195.1	24.58	8.938		
4,600.0	4,568.8	4,592.6	4,532.1	13.4	15.5	-52.92	336.3	-531.3	227.6	202.4	25.16	9.046		
4,700.0	4,667.8	4,692.3	4,629.7	13.7	16.0	-52.43	348.0	-548.2	235.5	209.7	25.74	9.150		
4,800.0	4,766.9	4,792.0	4,727.2	14.1	16.4	-51.97	359.8	-565.1	243.4	217.1	26.31	9.249		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4										Offset Site Error:		0.0 ft	
Survey Program:		0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
4,900.0	4,865.9	4,891.6	4,824.7	14.4	16.9	-51.53	371.6	-582.0	251.3	224.4	26.89	9.345			
5,000.0	4,965.0	4,991.3	4,922.2	14.7	17.3	-51.13	383.4	-598.9	259.3	231.8	27.47	9.437			
5,100.0	5,064.0	5,091.0	5,019.7	15.1	17.8	-50.74	395.2	-615.9	267.2	239.2	28.05	9.526			
5,200.0	5,163.1	5,190.6	5,117.2	15.4	18.2	-50.38	407.0	-632.8	275.2	246.6	28.63	9.611			
5,300.0	5,262.1	5,290.3	5,214.7	15.8	18.7	-50.04	418.7	-649.7	283.2	254.0	29.21	9.694			
5,400.0	5,361.2	5,390.0	5,312.2	16.1	19.1	-49.72	430.5	-666.6	291.2	261.4	29.79	9.773			
5,500.0	5,460.2	5,489.7	5,409.7	16.4	19.6	-49.42	442.3	-683.5	299.2	268.8	30.38	9.850			
5,600.0	5,559.2	5,589.3	5,507.3	16.8	20.0	-49.13	454.1	-700.4	307.2	276.3	30.96	9.924			
5,700.0	5,658.3	5,689.0	5,604.8	17.1	20.4	-48.86	465.9	-717.4	315.2	283.7	31.54	9.995			
5,800.0	5,757.3	5,788.7	5,702.3	17.4	20.9	-48.60	477.7	-734.3	323.2	291.1	32.12	10.064			
5,900.0	5,856.4	5,888.3	5,799.8	17.8	21.3	-48.35	489.5	-751.2	331.3	298.6	32.70	10.131			
6,000.0	5,955.4	5,997.9	5,907.4	18.1	21.7	-48.26	501.4	-768.4	338.0	304.7	33.28	10.156			
6,050.3	6,005.2	6,053.6	5,962.3	18.3	21.9	-48.37	506.6	-775.8	340.1	306.5	33.58	10.128			
6,100.0	6,054.5	6,108.7	6,016.9	18.4	22.0	-48.55	511.1	-782.2	341.8	307.9	33.87	10.091			
6,200.0	6,154.0	6,219.6	6,127.0	18.7	22.3	-48.82	518.3	-792.7	344.4	310.0	34.36	10.024			
6,300.0	6,253.8	6,330.6	6,237.7	18.9	22.5	-49.00	523.2	-799.6	346.1	311.4	34.76	9.957			
6,400.0	6,353.7	6,441.6	6,348.6	19.0	22.7	-49.09	525.5	-803.0	347.0	311.9	35.09	9.888			
6,446.3	6,400.0	6,493.0	6,400.0	19.1	22.7	-90.03	525.8	-803.4	347.1	311.9	35.22	9.854			
6,500.0	6,453.7	6,546.7	6,453.7	19.2	22.8	-90.03	525.8	-803.4	347.1	311.7	35.40	9.806			
6,561.7	6,515.4	6,608.4	6,515.4	19.3	22.9	-90.03	525.8	-803.4	347.1	311.5	35.61	9.748			
6,579.7	6,533.4	6,626.4	6,533.4	19.3	22.9	90.00	525.8	-803.4	347.1	311.4	35.66	9.735			
6,600.0	6,553.7	6,646.7	6,553.7	19.3	23.0	90.12	525.8	-803.4	347.1	311.4	35.69	9.724			
6,650.0	6,603.5	6,696.6	6,603.6	19.4	23.0	90.79	525.7	-803.4	347.1	311.4	35.68	9.729			
6,700.0	6,652.9	6,746.8	6,653.7	19.4	23.1	91.63	523.4	-803.4	347.2	311.7	35.58	9.759			
6,750.0	6,701.8	6,797.4	6,704.0	19.4	23.1	92.46	517.8	-803.4	347.4	312.0	35.43	9.805			
6,800.0	6,749.8	6,848.3	6,754.1	19.3	23.1	93.29	508.7	-803.4	347.7	312.4	35.25	9.864			
6,850.0	6,796.9	6,899.5	6,803.8	19.3	23.1	94.10	496.3	-803.4	348.0	313.0	35.02	9.936			
6,900.0	6,842.7	6,951.2	6,852.9	19.2	23.0	94.89	480.4	-803.4	348.4	313.6	34.77	10.019			
6,950.0	6,887.2	7,003.1	6,901.1	19.1	23.0	95.67	461.1	-803.4	348.8	314.3	34.50	10.110			
7,000.0	6,930.0	7,055.4	6,948.3	19.0	22.9	96.42	438.4	-803.4	349.3	315.1	34.22	10.207			
7,050.0	6,971.1	7,108.1	6,994.0	18.9	22.8	97.14	412.4	-803.4	349.8	315.9	33.94	10.307			
7,100.0	7,010.2	7,161.1	7,038.1	18.8	22.7	97.84	383.1	-803.4	350.4	316.7	33.67	10.406			
7,150.0	7,047.3	7,214.4	7,080.4	18.7	22.6	98.49	350.5	-803.4	351.0	317.5	33.42	10.502			
7,200.0	7,082.0	7,268.1	7,120.5	18.6	22.5	99.11	314.9	-803.4	351.6	318.4	33.20	10.590			
7,250.0	7,114.3	7,322.0	7,158.2	18.5	22.3	99.69	276.4	-803.4	352.1	319.1	33.02	10.666			
7,300.0	7,144.0	7,376.2	7,193.3	18.4	22.2	100.22	235.0	-803.4	352.7	319.8	32.88	10.726			
7,350.0	7,171.1	7,430.7	7,225.5	18.3	22.1	100.71	191.1	-803.4	353.3	320.5	32.81	10.766			
7,400.0	7,195.3	7,485.5	7,254.6	18.2	22.0	101.15	144.7	-803.4	353.8	321.0	32.81	10.783			
7,450.0	7,216.6	7,540.4	7,280.4	18.1	21.9	101.53	96.2	-803.4	354.3	321.4	32.88	10.774			
7,500.0	7,235.0	7,595.6	7,302.7	18.0	21.8	101.86	45.8	-803.4	354.7	321.6	33.04	10.736			
7,550.0	7,250.2	7,650.9	7,321.4	17.9	21.7	102.14	-6.2	-803.4	355.0	321.8	33.28	10.668			
7,600.0	7,262.3	7,706.3	7,336.3	17.8	21.6	102.36	-59.6	-803.4	355.3	321.7	33.62	10.570			
7,650.0	7,271.2	7,761.9	7,347.3	17.8	21.6	102.53	-114.1	-803.4	355.6	321.5	34.05	10.443			
7,700.0	7,276.9	7,817.5	7,354.3	18.0	21.6	102.63	-169.3	-803.4	355.7	321.1	34.56	10.293			
7,750.0	7,279.3	7,873.2	7,357.3	18.4	21.7	102.68	-224.8	-803.4	355.8	320.6	35.16	10.120			
7,765.5	7,279.4	7,890.5	7,357.5	18.5	21.7	102.68	-242.1	-803.4	355.8	320.4	35.35	10.063			
7,800.0	7,279.2	7,925.2	7,357.2	18.8	21.8	102.66	-276.8	-803.4	355.8	319.9	35.85	9.924			
7,900.0	7,278.7	8,025.2	7,356.4	19.8	22.2	102.62	-376.8	-803.4	355.7	318.2	37.44	9.499			
8,000.0	7,278.2	8,125.2	7,355.7	20.8	23.0	102.58	-476.8	-803.4	355.6	316.3	39.34	9.041			
8,100.0	7,277.7	8,225.2	7,354.9	22.0	23.9	102.53	-576.8	-803.4	355.6	314.1	41.49	8.571			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design											Offset Site Error:		0.0 ft
Survey Program: 0-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,200.0	7,277.2	8,325.2	7,354.1	23.2	25.0	102.49	-676.8	-803.4	355.5	311.7	43.85	8.107	
8,300.0	7,276.8	8,425.2	7,353.3	24.5	26.1	102.44	-776.8	-803.4	355.4	309.0	46.40	7.660	
8,400.0	7,276.3	8,525.2	7,352.6	25.9	27.4	102.40	-876.8	-803.4	355.4	306.3	49.11	7.236	
8,500.0	7,275.8	8,625.2	7,351.8	27.4	28.8	102.36	-976.8	-803.4	355.3	303.4	51.95	6.840	
8,600.0	7,275.3	8,725.2	7,351.0	28.9	30.2	102.31	-1,076.8	-803.4	355.3	300.4	54.90	6.471	
8,700.0	7,274.8	8,825.2	7,350.3	30.5	31.7	102.27	-1,176.8	-803.4	355.2	297.3	57.95	6.129	
8,800.0	7,274.3	8,925.2	7,349.5	32.0	33.2	102.22	-1,276.8	-803.4	355.1	294.1	61.08	5.814	
8,900.0	7,273.8	9,025.2	7,348.7	33.7	34.8	102.18	-1,376.8	-803.4	355.1	290.8	64.28	5.524	
9,000.0	7,273.3	9,125.2	7,348.0	35.3	36.4	102.14	-1,476.8	-803.4	355.0	287.5	67.54	5.257	
9,100.0	7,272.8	9,225.2	7,347.2	37.0	38.0	102.09	-1,576.8	-803.4	355.0	284.1	70.85	5.010	
9,200.0	7,272.4	9,325.2	7,346.4	38.7	39.6	102.05	-1,676.8	-803.4	354.9	280.7	74.20	4.783	
9,300.0	7,271.9	9,425.2	7,345.7	40.4	41.3	102.00	-1,776.8	-803.4	354.9	277.3	77.59	4.573	
9,400.0	7,271.4	9,525.2	7,344.9	42.1	43.0	101.96	-1,876.8	-803.4	354.8	273.8	81.02	4.379	
9,500.0	7,270.9	9,625.2	7,344.1	43.9	44.7	101.92	-1,976.7	-803.4	354.7	270.3	84.48	4.199	
9,600.0	7,270.4	9,725.2	7,343.4	45.6	46.4	101.87	-2,076.7	-803.4	354.7	266.7	87.96	4.032	
9,700.0	7,269.9	9,825.2	7,342.6	47.4	48.1	101.83	-2,176.7	-803.4	354.6	263.2	91.47	3.877	
9,800.0	7,269.4	9,925.2	7,341.8	49.2	49.9	101.78	-2,276.7	-803.4	354.6	259.6	95.00	3.732	
9,900.0	7,268.9	10,025.2	7,341.1	51.0	51.6	101.74	-2,376.7	-803.4	354.5	256.0	98.55	3.597	
10,000.0	7,268.4	10,125.2	7,340.3	52.8	53.4	101.70	-2,476.7	-803.4	354.5	252.3	102.12	3.471	
10,100.0	7,268.0	10,225.2	7,339.5	54.6	55.2	101.65	-2,576.7	-803.4	354.4	248.7	105.70	3.353	
10,200.0	7,267.5	10,325.2	7,338.8	56.4	57.0	101.61	-2,676.7	-803.4	354.3	245.0	109.30	3.242	
10,300.0	7,267.0	10,425.2	7,338.0	58.2	58.8	101.56	-2,776.7	-803.4	354.3	241.4	112.91	3.138	
10,400.0	7,266.5	10,525.2	7,337.2	60.0	60.6	101.52	-2,876.7	-803.4	354.2	237.7	116.53	3.040	
10,500.0	7,266.0	10,625.2	7,336.5	61.9	62.4	101.47	-2,976.7	-803.4	354.2	234.0	120.16	2.947	
10,600.0	7,265.5	10,725.2	7,335.7	63.7	64.2	101.43	-3,076.7	-803.4	354.1	230.3	123.81	2.860	
10,700.0	7,265.0	10,825.2	7,334.9	65.6	66.0	101.39	-3,176.7	-803.4	354.1	226.6	127.46	2.778	
10,800.0	7,264.5	10,925.2	7,334.1	67.4	67.8	101.34	-3,276.7	-803.4	354.0	222.9	131.12	2.700	
10,900.0	7,264.0	11,025.2	7,333.4	69.2	69.7	101.30	-3,376.7	-803.4	354.0	219.2	134.79	2.626	
11,000.0	7,263.6	11,125.2	7,332.6	71.1	71.5	101.25	-3,476.7	-803.4	353.9	215.4	138.46	2.556	
11,100.0	7,263.1	11,225.2	7,331.8	73.0	73.3	101.21	-3,576.7	-803.4	353.8	211.7	142.14	2.489	
11,200.0	7,262.6	11,325.2	7,331.1	74.8	75.2	101.16	-3,676.7	-803.4	353.8	208.0	145.83	2.426	
11,300.0	7,262.1	11,425.2	7,330.3	76.7	77.0	101.12	-3,776.7	-803.4	353.7	204.2	149.53	2.366	
11,400.0	7,261.6	11,525.2	7,329.5	78.5	78.9	101.08	-3,876.7	-803.4	353.7	200.5	153.23	2.308	
11,500.0	7,261.1	11,625.2	7,328.8	80.4	80.7	101.03	-3,976.7	-803.4	353.6	196.7	156.93	2.253	
11,600.0	7,260.6	11,725.2	7,328.0	82.3	82.6	100.99	-4,076.7	-803.4	353.6	192.9	160.64	2.201	
11,700.0	7,260.1	11,825.2	7,327.2	84.1	84.4	100.94	-4,176.7	-803.4	353.5	189.3	164.26	2.152	
11,727.7	7,260.0	11,852.9	7,327.0	84.7	84.8	100.93	-4,204.4	-803.4	353.5	188.3	165.19	2.140 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	50.87	18.2	22.4	28.9					
100.0	100.0	100.0	100.0	0.1	0.1	50.87	18.2	22.4	28.9	28.6	0.22	128.413		
200.0	200.0	200.0	200.0	0.3	0.3	50.87	18.2	22.4	28.9	28.2	0.67	42.804		
300.0	300.0	300.0	300.0	0.6	0.6	50.87	18.2	22.4	28.9	27.7	1.12	25.683		
400.0	400.0	400.0	400.0	0.8	0.8	50.87	18.2	22.4	28.9	27.3	1.57	18.345		
500.0	500.0	500.0	500.0	1.0	1.0	50.87	18.2	22.4	28.9	26.8	2.02	14.268		
600.0	600.0	600.0	600.0	1.2	1.2	50.87	18.2	22.4	28.9	26.4	2.47	11.674		
700.0	700.0	700.0	700.0	1.5	1.5	50.87	18.2	22.4	28.9	25.9	2.92	9.878		
800.0	800.0	800.0	800.0	1.7	1.7	50.87	18.2	22.4	28.9	25.5	3.37	8.561 CC		
900.0	900.0	900.0	900.0	1.9	1.9	93.54	18.2	22.4	28.9	25.1	3.82	7.571		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	98.67	18.2	22.4	29.2	24.9	4.26	6.848 ES		
1,100.0	1,099.9	1,099.9	1,099.9	2.4	2.4	106.88	18.2	22.4	30.2	25.4	4.71	6.404		
1,200.0	1,199.7	1,199.7	1,199.7	2.6	2.6	117.21	18.2	22.4	32.5	27.3	5.16	6.295		
1,300.0	1,299.4	1,299.6	1,299.6	2.8	2.8	126.84	19.0	22.1	36.5	30.8	5.60	6.505		
1,400.0	1,398.9	1,399.5	1,399.5	3.1	3.0	133.95	21.4	21.1	41.8	35.7	6.05	6.900		
1,500.0	1,498.3	1,499.6	1,499.5	3.3	3.3	138.94	25.5	19.5	48.0	41.5	6.50	7.385		
1,592.0	1,589.5	1,591.8	1,591.5	3.6	3.5	142.10	30.7	17.5	54.4	47.5	6.92	7.861		
1,600.0	1,597.4	1,599.8	1,599.5	3.6	3.5	142.32	31.2	17.3	55.0	48.0	6.96	7.901		
1,700.0	1,696.4	1,700.1	1,699.5	3.9	3.7	144.05	38.5	14.4	61.7	54.3	7.43	8.303		
1,800.0	1,795.5	1,800.6	1,799.5	4.2	4.0	144.22	47.5	10.9	67.4	59.5	7.91	8.519		
1,900.0	1,894.5	1,901.2	1,899.4	4.5	4.2	143.21	58.1	6.8	72.2	63.8	8.42	8.574		
2,000.0	1,993.6	2,001.4	1,998.9	4.8	4.5	141.37	70.1	2.1	76.1	67.2	8.94	8.512		
2,100.0	2,092.6	2,101.3	2,097.9	5.1	4.7	139.59	82.2	-2.7	80.0	70.6	9.48	8.439		
2,200.0	2,191.7	2,201.2	2,196.9	5.4	5.0	137.98	94.4	-7.5	84.0	74.0	10.04	8.371		
2,300.0	2,290.7	2,301.1	2,296.0	5.7	5.3	136.52	106.5	-12.2	88.1	77.5	10.60	8.307		
2,400.0	2,389.8	2,401.0	2,395.0	6.1	5.6	135.18	118.7	-17.0	92.2	81.0	11.18	8.246		
2,500.0	2,488.8	2,500.9	2,494.0	6.4	5.9	133.96	130.8	-21.7	96.3	84.6	11.76	8.189		
2,600.0	2,587.9	2,600.8	2,593.1	6.7	6.2	132.84	142.9	-26.5	100.5	88.2	12.36	8.136		
2,700.0	2,686.9	2,700.7	2,692.1	7.0	6.5	131.81	155.1	-31.3	104.7	91.8	12.95	8.086		
2,800.0	2,786.0	2,800.6	2,791.2	7.4	6.8	130.86	167.2	-36.0	109.0	95.4	13.56	8.039		
2,900.0	2,885.0	2,900.5	2,890.2	7.7	7.1	129.98	179.3	-40.8	113.3	99.1	14.17	7.995		
3,000.0	2,984.0	3,000.4	2,989.2	8.0	7.4	129.17	191.5	-45.5	117.6	102.8	14.78	7.954		
3,100.0	3,083.1	3,100.3	3,088.3	8.4	7.7	128.41	203.6	-50.3	121.9	106.5	15.40	7.916		
3,200.0	3,182.1	3,200.2	3,187.3	8.7	8.0	127.71	215.8	-55.0	126.3	110.2	16.02	7.880		
3,300.0	3,281.2	3,300.0	3,286.4	9.0	8.3	127.05	227.9	-59.8	130.6	114.0	16.65	7.846		
3,400.0	3,380.2	3,399.9	3,385.4	9.4	8.6	126.43	240.0	-64.6	135.0	117.7	17.28	7.815		
3,500.0	3,479.3	3,499.8	3,484.4	9.7	9.0	125.86	252.2	-69.3	139.4	121.5	17.91	7.785		
3,600.0	3,578.3	3,599.7	3,583.5	10.0	9.3	125.32	264.3	-74.1	143.8	125.3	18.54	7.758		
3,700.0	3,677.4	3,699.6	3,682.5	10.4	9.6	124.81	276.5	-78.8	148.2	129.1	19.17	7.731		
3,800.0	3,776.4	3,799.5	3,781.6	10.7	9.9	124.33	288.6	-83.6	152.7	132.9	19.81	7.707		
3,900.0	3,875.5	3,899.4	3,880.6	11.0	10.2	123.88	300.7	-88.4	157.1	136.7	20.45	7.684		
4,000.0	3,974.5	3,999.3	3,979.6	11.4	10.5	123.45	312.9	-93.1	161.6	140.5	21.09	7.662		
4,100.0	4,073.6	4,099.2	4,078.7	11.7	10.9	123.05	325.0	-97.9	166.0	144.3	21.73	7.641		
4,200.0	4,172.6	4,199.1	4,177.7	12.0	11.2	122.66	337.1	-102.6	170.5	148.1	22.37	7.622		
4,300.0	4,271.6	4,299.0	4,276.8	12.4	11.5	122.30	349.3	-107.4	175.0	152.0	23.01	7.603		
4,400.0	4,370.7	4,398.9	4,375.8	12.7	11.8	121.95	361.4	-112.1	179.5	155.8	23.66	7.586		
4,500.0	4,469.7	4,498.8	4,474.8	13.1	12.1	121.63	373.6	-116.9	183.9	159.6	24.30	7.569		
4,600.0	4,568.8	4,598.7	4,573.9	13.4	12.5	121.31	385.7	-121.7	188.4	163.5	24.95	7.553		
4,700.0	4,667.8	4,698.6	4,672.9	13.7	12.8	121.01	397.8	-126.4	192.9	167.3	25.60	7.538		
4,800.0	4,766.9	4,798.5	4,772.0	14.1	13.1	120.73	410.0	-131.2	197.4	171.2	26.24	7.524		
4,900.0	4,865.9	4,898.3	4,871.0	14.4	13.4	120.46	422.1	-135.9	202.0	175.1	26.89	7.510		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,965.0	4,998.2	4,970.0	14.7	13.7	120.20	434.2	-140.7	206.5	178.9	27.54	7.497		
5,100.0	5,064.0	5,098.1	5,069.1	15.1	14.1	119.95	446.4	-145.4	211.0	182.8	28.19	7.485		
5,200.0	5,163.1	5,198.0	5,168.1	15.4	14.4	119.71	458.5	-150.2	215.5	186.7	28.84	7.473		
5,300.0	5,262.1	5,297.9	5,267.1	15.8	14.7	119.48	470.7	-155.0	220.0	190.5	29.49	7.462		
5,400.0	5,361.2	5,397.8	5,366.2	16.1	15.0	119.26	482.8	-159.7	224.6	194.4	30.14	7.451		
5,500.0	5,460.2	5,497.7	5,465.2	16.4	15.4	119.05	494.9	-164.5	229.1	198.3	30.79	7.441		
5,600.0	5,559.2	5,597.1	5,563.8	16.8	15.7	118.91	506.8	-169.1	233.7	202.2	31.42	7.437		
5,700.0	5,658.3	5,695.6	5,661.8	17.1	15.9	119.43	516.0	-172.7	238.7	206.8	31.93	7.477		
5,800.0	5,757.3	5,793.7	5,759.7	17.4	16.1	120.70	522.0	-175.1	244.4	212.1	32.34	7.558		
5,900.0	5,856.4	5,891.3	5,857.2	17.8	16.2	122.65	524.9	-176.2	251.0	218.4	32.66	7.686		
6,000.0	5,955.4	5,989.5	5,955.4	18.1	16.4	125.11	525.2	-176.3	258.7	225.8	32.91	7.860		
6,050.3	6,005.2	6,039.3	6,005.2	18.3	16.5	126.34	525.2	-176.3	262.8	229.7	33.04	7.953		
6,100.0	6,054.5	6,088.6	6,054.5	18.4	16.6	127.51	525.2	-176.3	266.6	233.5	33.16	8.042		
6,200.0	6,154.0	6,188.1	6,154.0	18.7	16.7	129.32	525.2	-176.3	273.1	239.7	33.38	8.180		
6,300.0	6,253.8	6,287.8	6,253.8	18.9	16.9	130.48	525.2	-176.3	277.5	243.8	33.64	8.249		
6,400.0	6,353.7	6,387.8	6,353.7	19.0	17.1	131.04	525.2	-176.3	279.7	245.8	33.92	8.246		
6,446.3	6,400.0	6,434.1	6,400.0	19.1	17.2	90.16	525.2	-176.3	279.9	245.9	34.06	8.219		
6,500.0	6,453.7	6,487.8	6,453.7	19.2	17.3	90.16	525.2	-176.3	279.9	245.7	34.24	8.175		
6,561.7	6,515.4	6,549.5	6,515.4	19.3	17.4	90.16	525.2	-176.3	279.9	245.5	34.46	8.122		
6,596.4	6,550.1	6,584.1	6,550.1	19.3	17.5	-90.00	525.2	-176.3	279.9	245.3	34.59	8.092		
6,600.0	6,553.7	6,587.8	6,553.7	19.3	17.5	-90.04	525.2	-176.3	279.9	245.3	34.61	8.088		
6,650.0	6,603.5	6,637.7	6,603.6	19.4	17.5	-90.81	524.9	-176.3	279.9	245.1	34.81	8.042		
6,700.0	6,652.9	6,687.9	6,653.7	19.4	17.6	-91.68	521.7	-176.3	280.0	245.1	34.96	8.011		
6,750.0	6,701.8	6,738.4	6,703.8	19.4	17.6	-92.55	515.3	-176.3	280.2	245.2	35.05	7.995		
6,800.0	6,749.8	6,789.2	6,753.6	19.3	17.6	-93.41	505.5	-176.3	280.4	245.3	35.08	7.994		
6,850.0	6,796.9	6,840.3	6,803.0	19.3	17.6	-94.26	492.3	-176.3	280.7	245.6	35.06	8.007		
6,900.0	6,842.7	6,891.7	6,851.6	19.2	17.5	-95.08	475.7	-176.3	281.0	246.0	34.98	8.033		
6,950.0	6,887.2	6,943.3	6,899.3	19.1	17.5	-95.89	455.8	-176.3	281.4	246.6	34.86	8.072		
7,000.0	6,930.0	6,995.3	6,945.7	19.0	17.4	-96.67	432.5	-176.3	281.8	247.1	34.70	8.122		
7,050.0	6,971.1	7,047.5	6,990.7	18.9	17.3	-97.42	406.1	-176.3	282.3	247.8	34.51	8.180		
7,100.0	7,010.2	7,100.0	7,034.0	18.8	17.2	-98.14	376.4	-176.3	282.8	248.5	34.30	8.245		
7,150.0	7,047.3	7,152.8	7,075.4	18.7	17.1	-98.82	343.7	-176.3	283.3	249.2	34.08	8.313		
7,200.0	7,082.0	7,205.8	7,114.6	18.6	17.0	-99.46	308.0	-176.3	283.8	249.9	33.86	8.381		
7,250.0	7,114.3	7,259.1	7,151.4	18.5	16.9	-100.06	269.5	-176.3	284.3	250.6	33.67	8.444		
7,300.0	7,144.0	7,312.6	7,185.6	18.4	16.9	-100.61	228.3	-176.3	284.8	251.3	33.51	8.498		
7,350.0	7,171.1	7,366.3	7,216.9	18.3	16.8	-101.12	184.7	-176.3	285.3	251.9	33.41	8.538		
7,400.0	7,195.3	7,420.3	7,245.2	18.2	16.8	-101.57	138.8	-176.3	285.7	252.4	33.38	8.560		
7,450.0	7,216.6	7,474.4	7,270.2	18.1	16.8	-101.97	90.8	-176.3	286.1	252.7	33.43	8.559		
7,500.0	7,235.0	7,528.6	7,291.9	18.0	16.8	-102.32	41.1	-176.3	286.5	252.9	33.58	8.533		
7,550.0	7,250.2	7,583.0	7,310.0	17.9	16.9	-102.61	-10.2	-176.3	286.8	253.0	33.83	8.478		
7,600.0	7,262.3	7,637.5	7,324.4	17.8	17.1	-102.84	-62.7	-176.3	287.1	252.9	34.20	8.395		
7,650.0	7,271.2	7,692.1	7,335.1	17.8	17.4	-103.01	-116.2	-176.3	287.3	252.6	34.68	8.284		
7,700.0	7,276.9	7,746.7	7,341.9	18.0	17.7	-103.13	-170.4	-176.3	287.4	252.2	35.28	8.148		
7,750.0	7,279.3	7,801.4	7,344.8	18.4	18.1	-103.18	-225.0	-176.3	287.5	251.5	35.98	7.990		
7,765.5	7,279.4	7,818.3	7,345.0	18.5	18.2	-103.19	-242.0	-176.3	287.5	251.3	36.22	7.937		
7,800.0	7,279.2	7,852.9	7,344.8	18.8	18.5	-103.19	-276.5	-176.3	287.5	250.7	36.76	7.821		
7,900.0	7,278.7	7,952.9	7,344.4	19.8	19.4	-103.20	-376.5	-176.3	287.5	249.0	38.49	7.469		
8,000.0	7,278.2	8,052.9	7,343.9	20.8	20.5	-103.21	-476.5	-176.3	287.5	247.0	40.49	7.101		
8,100.0	7,277.7	8,152.9	7,343.4	22.0	21.6	-103.21	-576.5	-176.3	287.5	244.8	42.72	6.730		
8,200.0	7,277.2	8,252.9	7,343.0	23.2	22.9	-103.22	-676.5	-176.3	287.5	242.4	45.15	6.368		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design											Offset Site Error:		0.0 ft
Survey Program: 0-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	7,276.8	8,352.9	7,342.5	24.5	24.2	-103.23	-776.5	-176.3	287.5	239.8	47.76	6.021	
8,400.0	7,276.3	8,452.9	7,342.1	25.9	25.7	-103.23	-876.5	-176.4	287.6	237.0	50.50	5.694	
8,500.0	7,275.8	8,552.9	7,341.6	27.4	27.1	-103.24	-976.5	-176.4	287.6	234.2	53.37	5.388	
8,600.0	7,275.3	8,652.9	7,341.2	28.9	28.7	-103.25	-1,076.5	-176.4	287.6	231.2	56.34	5.104	
8,700.0	7,274.8	8,752.9	7,340.7	30.5	30.2	-103.25	-1,176.5	-176.4	287.6	228.2	59.40	4.841	
8,800.0	7,274.3	8,852.9	7,340.3	32.0	31.8	-103.26	-1,276.5	-176.4	287.6	225.1	62.53	4.599	
8,900.0	7,273.8	8,952.9	7,339.8	33.7	33.5	-103.27	-1,376.5	-176.4	287.6	221.9	65.73	4.375	
9,000.0	7,273.3	9,052.9	7,339.4	35.3	35.2	-103.27	-1,476.5	-176.4	287.6	218.6	68.98	4.169	
9,100.0	7,272.8	9,152.9	7,338.9	37.0	36.8	-103.28	-1,576.5	-176.4	287.6	215.3	72.28	3.979	
9,200.0	7,272.4	9,252.9	7,338.5	38.7	38.6	-103.29	-1,676.5	-176.4	287.6	212.0	75.62	3.803	
9,300.0	7,271.9	9,352.9	7,338.0	40.4	40.3	-103.29	-1,776.5	-176.4	287.6	208.6	79.00	3.641	
9,400.0	7,271.4	9,452.9	7,337.5	42.1	42.0	-103.30	-1,876.5	-176.4	287.6	205.2	82.40	3.491	
9,500.0	7,270.9	9,552.9	7,337.1	43.9	43.8	-103.31	-1,976.5	-176.4	287.6	201.8	85.84	3.351	
9,600.0	7,270.4	9,652.9	7,336.6	45.6	45.6	-103.31	-2,076.5	-176.4	287.6	198.4	89.30	3.221	
9,700.0	7,269.9	9,752.9	7,336.2	47.4	47.4	-103.32	-2,176.5	-176.4	287.7	194.9	92.78	3.100	
9,800.0	7,269.4	9,852.9	7,335.7	49.2	49.2	-103.33	-2,276.5	-176.4	287.7	191.4	96.28	2.988	
9,900.0	7,268.9	9,952.9	7,335.3	51.0	51.0	-103.33	-2,376.5	-176.4	287.7	187.9	99.80	2.883	
10,000.0	7,268.4	10,052.9	7,334.8	52.8	52.8	-103.34	-2,476.5	-176.4	287.7	184.3	103.33	2.784	
10,100.0	7,268.0	10,152.9	7,334.4	54.6	54.6	-103.35	-2,576.5	-176.4	287.7	180.8	106.88	2.692	
10,200.0	7,267.5	10,252.9	7,333.9	56.4	56.4	-103.35	-2,676.5	-176.4	287.7	177.3	110.44	2.605	
10,300.0	7,267.0	10,352.9	7,333.5	58.2	58.2	-103.36	-2,776.5	-176.4	287.7	173.7	114.01	2.523	
10,400.0	7,266.5	10,452.9	7,333.0	60.0	60.1	-103.37	-2,876.5	-176.4	287.7	170.1	117.59	2.447	
10,500.0	7,266.0	10,552.9	7,332.6	61.9	61.9	-103.37	-2,976.5	-176.4	287.7	166.5	121.18	2.374	
10,600.0	7,265.5	10,652.9	7,332.1	63.7	63.8	-103.38	-3,076.5	-176.4	287.7	162.9	124.78	2.306	
10,700.0	7,265.0	10,752.9	7,331.6	65.6	65.6	-103.39	-3,176.5	-176.4	287.7	159.3	128.39	2.241	
10,800.0	7,264.5	10,852.9	7,331.2	67.4	67.5	-103.39	-3,276.5	-176.4	287.7	155.7	132.01	2.180	
10,900.0	7,264.0	10,952.9	7,330.7	69.2	69.3	-103.40	-3,376.5	-176.4	287.8	152.1	135.63	2.122	
11,000.0	7,263.6	11,052.9	7,330.3	71.1	71.2	-103.41	-3,476.5	-176.4	287.8	148.5	139.25	2.066	
11,100.0	7,263.1	11,152.9	7,329.8	73.0	73.0	-103.42	-3,576.5	-176.4	287.8	144.9	142.89	2.014	
11,200.0	7,262.6	11,252.9	7,329.4	74.8	74.9	-103.42	-3,676.5	-176.4	287.8	141.2	146.53	1.964	
11,300.0	7,262.1	11,352.9	7,328.9	76.7	76.8	-103.43	-3,776.5	-176.4	287.8	137.6	150.17	1.916	
11,400.0	7,261.6	11,452.9	7,328.5	78.5	78.6	-103.44	-3,876.5	-176.4	287.8	134.0	153.82	1.871	
11,500.0	7,261.1	11,552.9	7,328.0	80.4	80.5	-103.44	-3,976.5	-176.4	287.8	130.3	157.47	1.828	
11,600.0	7,260.6	11,652.9	7,327.6	82.3	82.4	-103.45	-4,076.5	-176.4	287.8	126.7	161.12	1.786	
11,700.0	7,260.1	11,752.9	7,327.1	84.1	84.3	-103.46	-4,176.5	-176.4	287.8	123.0	164.78	1.747	
11,711.3	7,260.1	11,764.2	7,327.1	84.4	84.5	-103.46	-4,187.8	-176.4	287.8	122.6	165.20	1.742	
11,727.7	7,260.0	11,776.7	7,327.0	84.7	84.7	-103.46	-4,200.3	-176.4	287.8	122.1	165.73	1.737 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design												Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9M-203 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	52.01	54.6	70.0	88.8							
100.0	100.0	100.0	100.0	0.1	0.1	52.01	54.6	70.0	88.8	88.6	0.22	394.989				
200.0	200.0	200.0	200.0	0.3	0.3	52.01	54.6	70.0	88.8	88.1	0.67	131.663				
300.0	300.0	300.0	300.0	0.6	0.6	52.01	54.6	70.0	88.8	87.7	1.12	78.998				
400.0	400.0	400.0	400.0	0.8	0.8	52.01	54.6	70.0	88.8	87.2	1.57	56.427				
500.0	500.0	500.0	500.0	1.0	1.0	52.01	54.6	70.0	88.8	86.8	2.02	43.888				
600.0	600.0	600.0	600.0	1.2	1.2	52.01	54.6	70.0	88.8	86.3	2.47	35.908				
700.0	700.0	700.0	700.0	1.5	1.5	52.01	54.6	70.0	88.8	85.9	2.92	30.384				
800.0	800.0	800.0	800.0	1.7	1.7	52.01	54.6	70.0	88.8	85.4	3.37	26.333	CC			
900.0	900.0	900.0	900.0	1.9	1.9	93.51	54.6	70.0	88.8	85.0	3.82	23.268				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	95.19	54.6	70.0	89.0	84.8	4.26	20.890	ES			
1,100.0	1,099.9	1,098.4	1,098.4	2.4	2.4	97.72	55.3	70.5	90.3	85.6	4.70	19.206				
1,200.0	1,199.7	1,196.8	1,196.8	2.6	2.6	100.76	57.4	71.9	93.7	88.5	5.15	18.200				
1,300.0	1,299.4	1,295.0	1,294.9	2.8	2.8	104.07	60.9	74.3	99.2	93.6	5.60	17.724				
1,400.0	1,398.9	1,393.0	1,392.7	3.1	3.0	107.41	65.7	77.7	107.1	101.0	6.06	17.670	SF			
1,500.0	1,498.3	1,490.6	1,490.0	3.3	3.2	110.57	71.8	82.1	117.2	110.7	6.53	17.954				
1,592.0	1,589.5	1,580.2	1,579.2	3.6	3.5	113.23	78.6	86.9	128.7	121.7	6.98	18.447				
1,600.0	1,597.4	1,588.0	1,586.9	3.6	3.5	113.45	79.3	87.3	129.8	122.7	7.01	18.499				
1,700.0	1,696.4	1,685.0	1,683.3	3.9	3.7	115.74	88.1	93.6	144.2	136.7	7.51	19.190				
1,800.0	1,795.5	1,783.3	1,780.9	4.2	4.0	117.37	97.9	100.5	159.6	151.6	8.03	19.892				
1,900.0	1,894.5	1,882.0	1,878.9	4.5	4.2	118.70	107.8	107.5	175.2	166.7	8.55	20.505				
2,000.0	1,993.6	1,980.7	1,976.8	4.8	4.5	119.82	117.7	114.5	190.9	181.8	9.07	21.037				
2,100.0	2,092.6	2,079.4	2,074.8	5.1	4.8	120.76	127.6	121.4	206.6	197.0	9.61	21.503				
2,200.0	2,191.7	2,178.1	2,172.7	5.4	5.1	121.58	137.5	128.4	222.4	212.3	10.15	21.912				
2,300.0	2,290.7	2,276.8	2,270.7	5.7	5.4	122.28	147.4	135.4	238.2	227.5	10.70	22.273				
2,400.0	2,389.8	2,375.5	2,368.6	6.1	5.6	122.90	157.3	142.4	254.1	242.8	11.24	22.594				
2,500.0	2,488.8	2,474.2	2,466.6	6.4	5.9	123.44	167.2	149.4	269.9	258.1	11.80	22.880				
2,600.0	2,587.9	2,572.9	2,564.5	6.7	6.2	123.93	177.1	156.4	285.8	273.5	12.35	23.137				
2,700.0	2,686.9	2,671.6	2,662.5	7.0	6.5	124.36	187.0	163.4	301.7	288.8	12.91	23.368				
2,800.0	2,786.0	2,770.3	2,760.5	7.4	6.8	124.75	196.9	170.4	317.7	304.2	13.47	23.576				
2,900.0	2,885.0	2,869.0	2,858.4	7.7	7.1	125.10	206.8	177.3	333.6	319.6	14.04	23.766				
3,000.0	2,984.0	2,967.7	2,956.4	8.0	7.4	125.42	216.7	184.3	349.6	335.0	14.60	23.938				
3,100.0	3,083.1	3,066.4	3,054.3	8.4	7.7	125.72	226.5	191.3	365.5	350.3	15.17	24.096				
3,200.0	3,182.1	3,165.1	3,152.3	8.7	8.0	125.98	236.4	198.3	381.5	365.7	15.74	24.240				
3,300.0	3,281.2	3,263.8	3,250.2	9.0	8.3	126.23	246.3	205.3	397.5	381.2	16.31	24.373				
3,400.0	3,380.2	3,362.5	3,348.2	9.4	8.6	126.46	256.2	212.3	413.4	396.6	16.88	24.496				
3,500.0	3,479.3	3,461.2	3,446.1	9.7	8.9	126.67	266.1	219.3	429.4	412.0	17.45	24.610				
3,600.0	3,578.3	3,559.9	3,544.1	10.0	9.2	126.86	276.0	226.2	445.4	427.4	18.02	24.715				
3,700.0	3,677.4	3,658.6	3,642.1	10.4	9.5	127.05	285.9	233.2	461.4	442.8	18.60	24.813				
3,800.0	3,776.4	3,757.3	3,740.0	10.7	9.9	127.22	295.8	240.2	477.4	458.2	19.17	24.904				
3,900.0	3,875.5	3,856.0	3,838.0	11.0	10.2	127.37	305.7	247.2	493.4	473.7	19.75	24.989				
4,000.0	3,974.5	3,954.7	3,935.9	11.4	10.5	127.52	315.6	254.2	509.4	489.1	20.32	25.068				
4,100.0	4,073.6	4,053.4	4,033.9	11.7	10.8	127.66	325.5	261.2	525.4	504.5	20.90	25.143				
4,200.0	4,172.6	4,152.1	4,131.8	12.0	11.1	127.79	335.4	268.2	541.5	520.0	21.48	25.213				
4,300.0	4,271.6	4,250.8	4,229.8	12.4	11.4	127.92	345.3	275.1	557.5	535.4	22.05	25.279				
4,400.0	4,370.7	4,349.5	4,327.7	12.7	11.7	128.03	355.2	282.1	573.5	550.9	22.63	25.341				
4,500.0	4,469.7	4,448.2	4,425.7	13.1	12.0	128.14	365.1	289.1	589.5	566.3	23.21	25.400				
4,600.0	4,568.8	4,546.9	4,523.7	13.4	12.3	128.25	375.0	296.1	605.5	581.8	23.79	25.455				
4,700.0	4,667.8	4,645.6	4,621.6	13.7	12.6	128.35	384.9	303.1	621.6	597.2	24.37	25.507				
4,800.0	4,766.9	4,744.3	4,719.6	14.1	12.9	128.44	394.8	310.1	637.6	612.7	24.95	25.557				
4,900.0	4,865.9	4,843.0	4,817.5	14.4	13.2	128.53	404.7	317.1	653.6	628.1	25.53	25.604				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design										Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9M-203 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,000.0	4,965.0	4,941.7	4,915.5	14.7	13.5	128.62	414.6	324.0	669.7	643.6	26.11	25.649				
5,100.0	5,064.0	5,040.4	5,013.4	15.1	13.9	128.70	424.5	331.0	685.7	659.0	26.69	25.691				
5,200.0	5,163.1	5,139.1	5,111.4	15.4	14.2	128.78	434.4	338.0	701.7	674.5	27.27	25.732				
5,300.0	5,262.1	5,237.8	5,209.3	15.8	14.5	128.85	444.3	345.0	717.8	689.9	27.85	25.770				
5,400.0	5,361.2	5,336.5	5,307.3	16.1	14.8	128.92	454.2	352.0	733.8	705.4	28.43	25.807				
5,500.0	5,460.2	5,435.2	5,405.3	16.4	15.1	128.99	464.1	359.0	749.8	720.8	29.02	25.842				
5,600.0	5,559.2	5,533.9	5,503.2	16.8	15.4	129.06	474.0	366.0	765.9	736.3	29.60	25.876				
5,700.0	5,658.3	5,632.6	5,601.2	17.1	15.7	129.12	483.9	372.9	781.9	751.7	30.18	25.908				
5,800.0	5,757.3	5,731.3	5,699.1	17.4	16.0	129.18	493.8	379.9	798.0	767.2	30.76	25.939				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design										Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	52.56	36.4	47.6	59.9							
100.0	100.0	100.0	100.0	0.1	0.1	52.56	36.4	47.6	59.9	59.7	0.22	266.602				
200.0	200.0	200.0	200.0	0.3	0.3	52.56	36.4	47.6	59.9	59.2	0.67	88.867				
300.0	300.0	300.0	300.0	0.6	0.6	52.56	36.4	47.6	59.9	58.8	1.12	53.320				
400.0	400.0	400.0	400.0	0.8	0.8	52.56	36.4	47.6	59.9	58.3	1.57	38.086				
500.0	500.0	500.0	500.0	1.0	1.0	52.56	36.4	47.6	59.9	57.9	2.02	29.622				
600.0	600.0	600.0	600.0	1.2	1.2	52.56	36.4	47.6	59.9	57.5	2.47	24.237				
700.0	700.0	700.0	700.0	1.5	1.5	52.56	36.4	47.6	59.9	57.0	2.92	20.508				
800.0	800.0	800.0	800.0	1.7	1.7	52.56	36.4	47.6	59.9	56.6	3.37	17.773 CC				
900.0	900.0	900.0	900.0	1.9	1.9	94.33	36.4	47.6	60.0	56.2	3.82	15.712				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	96.81	36.4	47.6	60.2	56.0	4.26	14.134 ES				
1,100.0	1,099.9	1,099.9	1,099.9	2.4	2.4	100.88	36.4	47.6	60.9	56.2	4.71	12.936				
1,200.0	1,199.7	1,199.7	1,199.7	2.6	2.6	106.37	36.4	47.6	62.4	57.2	5.16	12.086				
1,300.0	1,299.4	1,299.4	1,299.4	2.8	2.8	112.98	36.4	47.6	65.0	59.4	5.61	11.581				
1,400.0	1,398.9	1,398.9	1,398.9	3.1	3.0	120.23	36.4	47.6	69.3	63.3	6.07	11.421				
1,500.0	1,498.3	1,498.3	1,498.3	3.3	3.3	127.57	36.4	47.6	75.7	69.2	6.53	11.595				
1,592.0	1,589.5	1,589.5	1,589.5	3.6	3.5	134.00	36.4	47.6	83.5	76.6	6.95	12.027				
1,600.0	1,597.4	1,597.4	1,597.4	3.6	3.5	134.53	36.4	47.6	84.3	77.3	6.98	12.074				
1,700.0	1,696.4	1,696.4	1,696.4	3.9	3.7	140.48	36.4	47.6	94.5	87.1	7.44	12.706				
1,800.0	1,795.5	1,795.5	1,795.5	4.2	3.9	145.23	36.4	47.6	105.6	97.7	7.89	13.370				
1,900.0	1,894.5	1,894.9	1,894.9	4.5	4.1	148.69	37.2	47.7	117.0	108.7	8.35	14.014				
2,000.0	1,993.6	1,994.5	1,994.5	4.8	4.4	150.78	39.7	48.1	128.5	119.7	8.81	14.583				
2,100.0	2,092.6	2,094.3	2,094.2	5.1	4.6	151.84	43.9	48.7	139.7	130.5	9.28	15.059				
2,200.0	2,191.7	2,194.3	2,194.0	5.4	4.8	152.08	49.8	49.6	150.6	140.8	9.75	15.441				
2,300.0	2,290.7	2,294.3	2,293.7	5.7	5.0	151.69	57.5	50.7	161.1	150.8	10.24	15.734				
2,400.0	2,389.8	2,394.4	2,393.3	6.1	5.3	150.77	66.9	52.1	171.2	160.5	10.73	15.949				
2,500.0	2,488.8	2,494.3	2,492.6	6.4	5.5	149.42	78.0	53.7	181.1	169.8	11.25	16.098				
2,600.0	2,587.9	2,593.7	2,591.3	6.7	5.8	148.05	89.5	55.5	190.9	179.2	11.77	16.218				
2,700.0	2,686.9	2,693.1	2,690.1	7.0	6.0	146.82	101.0	57.2	200.9	188.6	12.31	16.324				
2,800.0	2,786.0	2,792.5	2,788.8	7.4	6.3	145.71	112.6	58.9	210.9	198.1	12.85	16.418				
2,900.0	2,885.0	2,892.0	2,887.5	7.7	6.5	144.70	124.1	60.6	221.1	207.7	13.40	16.502				
3,000.0	2,984.0	2,991.4	2,986.2	8.0	6.8	143.77	135.6	62.3	231.2	217.3	13.95	16.577				
3,100.0	3,083.1	3,090.8	3,085.0	8.4	7.1	142.93	147.2	64.0	241.5	227.0	14.51	16.644				
3,200.0	3,182.1	3,190.2	3,183.7	8.7	7.3	142.15	158.7	65.7	251.8	236.7	15.07	16.704				
3,300.0	3,281.2	3,289.6	3,282.4	9.0	7.6	141.43	170.2	67.5	262.1	246.4	15.64	16.758				
3,400.0	3,380.2	3,389.0	3,381.2	9.4	7.9	140.77	181.8	69.2	272.4	256.2	16.21	16.807				
3,500.0	3,479.3	3,488.4	3,479.9	9.7	8.2	140.16	193.3	70.9	282.8	266.0	16.78	16.851				
3,600.0	3,578.3	3,587.9	3,578.6	10.0	8.4	139.59	204.9	72.6	293.3	275.9	17.36	16.891				
3,700.0	3,677.4	3,687.3	3,677.3	10.4	8.7	139.06	216.4	74.3	303.7	285.8	17.94	16.927				
3,800.0	3,776.4	3,786.7	3,776.1	10.7	9.0	138.56	227.9	76.0	314.2	295.7	18.52	16.961				
3,900.0	3,875.5	3,886.1	3,874.8	11.0	9.3	138.10	239.5	77.7	324.7	305.6	19.11	16.991				
4,000.0	3,974.5	3,985.5	3,973.5	11.4	9.6	137.67	251.0	79.4	335.2	315.5	19.69	17.019				
4,100.0	4,073.6	4,084.9	4,072.2	11.7	9.9	137.26	262.5	81.2	345.7	325.4	20.28	17.045				
4,200.0	4,172.6	4,184.3	4,171.0	12.0	10.2	136.87	274.1	82.9	356.3	335.4	20.87	17.069				
4,300.0	4,271.6	4,283.8	4,269.7	12.4	10.5	136.51	285.6	84.6	366.8	345.4	21.46	17.091				
4,400.0	4,370.7	4,383.2	4,368.4	12.7	10.7	136.17	297.1	86.3	377.4	355.4	22.06	17.112				
4,500.0	4,469.7	4,482.6	4,467.2	13.1	11.0	135.85	308.7	88.0	388.0	365.4	22.65	17.131				
4,600.0	4,568.8	4,582.0	4,565.9	13.4	11.3	135.54	320.2	89.7	398.6	375.4	23.24	17.149				
4,700.0	4,667.8	4,681.4	4,664.6	13.7	11.6	135.25	331.7	91.4	409.2	385.4	23.84	17.165				
4,800.0	4,766.9	4,780.8	4,763.3	14.1	11.9	134.98	343.3	93.2	419.9	395.4	24.44	17.181				
4,900.0	4,865.9	4,880.2	4,862.1	14.4	12.2	134.72	354.8	94.9	430.5	405.5	25.03	17.196				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design										Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,000.0	4,965.0	4,979.7	4,960.8	14.7	12.5	134.47	366.4	96.6	441.1	415.5	25.63	17.209				
5,100.0	5,064.0	5,079.1	5,059.5	15.1	12.8	134.23	377.9	98.3	451.8	425.5	26.23	17.222				
5,200.0	5,163.1	5,178.5	5,158.3	15.4	13.1	134.00	389.4	100.0	462.4	435.6	26.83	17.234				
5,300.0	5,262.1	5,277.9	5,257.0	15.8	13.4	133.79	401.0	101.7	473.1	445.7	27.43	17.246				
5,400.0	5,361.2	5,377.3	5,355.7	16.1	13.7	133.58	412.5	103.4	483.8	455.7	28.03	17.257				
5,500.0	5,460.2	5,476.7	5,454.4	16.4	14.0	133.38	424.0	105.1	494.4	465.8	28.64	17.267				
5,600.0	5,559.2	5,576.1	5,553.2	16.8	14.3	133.20	435.6	106.9	505.1	475.9	29.24	17.277				
5,700.0	5,658.3	5,675.6	5,651.9	17.1	14.6	133.01	447.1	108.6	515.8	486.0	29.84	17.286				
5,800.0	5,757.3	5,775.0	5,750.6	17.4	14.9	132.84	458.6	110.3	526.5	496.1	30.44	17.295				
5,900.0	5,856.4	5,874.4	5,849.4	17.8	15.2	132.67	470.2	112.0	537.2	506.1	31.05	17.303				
6,000.0	5,955.4	5,973.8	5,948.1	18.1	15.5	132.51	481.7	113.7	547.9	516.2	31.65	17.311				
6,050.3	6,005.2	6,023.8	5,997.7	18.3	15.6	132.43	487.5	114.6	553.3	521.3	31.95	17.315				
6,100.0	6,054.5	6,073.2	6,046.8	18.4	15.8	132.40	493.3	115.4	558.3	526.1	32.25	17.311				
6,200.0	6,154.0	6,172.8	6,145.7	18.7	16.1	132.11	504.8	117.1	566.7	533.9	32.81	17.272				
6,300.0	6,253.8	6,274.6	6,247.0	18.9	16.3	131.65	515.4	118.7	572.6	539.3	33.29	17.202				
6,400.0	6,353.7	6,377.3	6,349.4	19.0	16.5	131.24	522.6	119.8	575.8	542.1	33.69	17.092				
6,446.3	6,400.0	6,425.0	6,397.0	19.1	16.6	90.13	524.7	120.1	576.4	542.5	33.85	17.025				
6,500.0	6,453.7	6,480.3	6,452.3	19.2	16.7	89.99	526.1	120.3	576.6	542.5	34.04	16.936				
6,561.7	6,515.4	6,543.4	6,515.4	19.3	16.8	89.95	526.5	120.4	576.6	542.4	34.26	16.832				
6,600.0	6,553.7	6,581.7	6,553.7	19.3	16.9	-90.15	526.5	120.4	576.6	542.3	34.38	16.772				
6,650.0	6,603.5	6,631.5	6,603.5	19.4	17.0	-90.55	526.5	120.4	576.7	542.1	34.54	16.698				
6,700.0	6,652.9	6,680.9	6,652.9	19.4	17.1	-91.27	526.5	120.4	576.8	542.1	34.68	16.631				
6,750.0	6,701.8	6,729.8	6,701.8	19.4	17.2	-92.27	526.5	120.4	577.1	542.3	34.81	16.577				
6,800.0	6,749.8	6,780.3	6,752.3	19.3	17.2	-93.44	524.7	120.4	577.7	542.8	34.90	16.555				
6,850.0	6,796.9	6,831.6	6,803.3	19.3	17.3	-94.59	519.5	120.4	578.6	543.7	34.92	16.569				
6,900.0	6,842.7	6,883.9	6,854.8	19.2	17.3	-95.74	510.8	120.4	579.7	544.8	34.89	16.616				
6,950.0	6,887.2	6,937.0	6,906.4	19.1	17.3	-96.87	498.2	120.4	581.0	546.2	34.80	16.695				
7,000.0	6,930.0	6,991.2	6,958.0	19.0	17.2	-97.97	481.8	120.4	582.6	547.9	34.67	16.805				
7,050.0	6,971.1	7,046.3	7,009.2	18.9	17.2	-99.05	461.3	120.4	584.3	549.8	34.49	16.942				
7,100.0	7,010.2	7,102.4	7,059.6	18.8	17.1	-100.09	436.8	120.4	586.1	551.9	34.27	17.103				
7,150.0	7,047.3	7,159.5	7,109.0	18.7	17.0	-101.09	408.1	120.4	588.1	554.1	34.03	17.281				
7,200.0	7,082.0	7,217.7	7,156.9	18.6	16.9	-102.05	375.1	120.4	590.1	556.3	33.78	17.469				
7,250.0	7,114.3	7,276.9	7,203.0	18.5	16.8	-102.95	337.9	120.4	592.2	558.7	33.54	17.658				
7,300.0	7,144.0	7,337.1	7,246.7	18.4	16.7	-103.79	296.6	120.4	594.3	560.9	33.32	17.837				
7,350.0	7,171.1	7,398.3	7,287.7	18.3	16.7	-104.57	251.2	120.4	596.3	563.1	33.14	17.993				
7,400.0	7,195.3	7,460.4	7,325.4	18.2	16.7	-105.28	201.9	120.4	598.2	565.1	33.03	18.110				
7,450.0	7,216.6	7,523.3	7,359.5	18.1	16.7	-105.91	149.0	120.4	599.9	566.9	33.01	18.175				
7,500.0	7,235.0	7,587.1	7,389.4	18.0	16.8	-106.45	92.7	120.4	601.5	568.4	33.09	18.178				
7,550.0	7,250.2	7,651.5	7,414.7	17.9	16.9	-106.91	33.5	120.4	602.9	569.6	33.29	18.108				
7,600.0	7,262.3	7,716.5	7,435.2	17.8	17.1	-107.28	-28.2	120.4	604.0	570.4	33.64	17.955				
7,650.0	7,271.2	7,781.9	7,450.4	17.8	17.4	-107.55	-91.8	120.4	604.8	570.7	34.12	17.724				
7,700.0	7,276.9	7,847.7	7,460.1	18.0	17.8	-107.72	-156.8	120.4	605.4	570.6	34.75	17.421				
7,750.0	7,279.3	7,913.6	7,464.2	18.4	18.3	-107.79	-222.6	120.4	605.6	570.1	35.52	17.051				
7,765.5	7,279.4	7,931.5	7,464.4	18.5	18.4	-107.79	-240.5	120.4	605.6	569.8	35.76	16.933				
7,800.0	7,279.2	7,966.0	7,464.7	18.8	18.7	-107.83	-275.0	120.4	605.7	569.4	36.29	16.692				
7,900.0	7,278.7	8,066.0	7,465.3	19.8	19.6	-107.93	-375.0	120.4	606.1	568.1	37.99	15.955				
8,000.0	7,278.2	8,166.0	7,465.9	20.8	20.7	-108.03	-475.0	120.4	606.4	566.5	39.94	15.182				
8,100.0	7,277.7	8,266.0	7,466.6	22.0	21.8	-108.13	-575.0	120.4	606.8	564.6	42.13	14.403				
8,200.0	7,277.2	8,366.0	7,467.2	23.2	23.1	-108.24	-675.0	120.4	607.1	562.6	44.50	13.643				
8,300.0	7,276.8	8,466.0	7,467.9	24.5	24.4	-108.34	-775.0	120.4	607.5	560.4	47.04	12.914				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design										Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,400.0	7,276.3	8,566.0	7,468.5	25.9	25.9	-108.44	-875.0	120.4	607.8	558.1	49.71	12.227			
8,500.0	7,275.8	8,666.0	7,469.2	27.4	27.3	-108.54	-974.9	120.4	608.2	555.7	52.50	11.584			
8,600.0	7,275.3	8,766.0	7,469.8	28.9	28.9	-108.64	-1,074.9	120.4	608.6	553.2	55.39	10.987			
8,700.0	7,274.8	8,866.0	7,470.5	30.5	30.5	-108.74	-1,174.9	120.4	608.9	550.6	58.36	10.435			
8,800.0	7,274.3	8,966.0	7,471.1	32.0	32.1	-108.84	-1,274.9	120.4	609.3	547.9	61.39	9.924			
8,900.0	7,273.8	9,065.9	7,471.8	33.7	33.7	-108.94	-1,374.9	120.4	609.7	545.2	64.49	9.454			
9,000.0	7,273.3	9,165.9	7,472.4	35.3	35.4	-109.05	-1,474.9	120.4	610.0	542.4	67.63	9.020			
9,100.0	7,272.8	9,265.9	7,473.0	37.0	37.1	-109.15	-1,574.9	120.4	610.4	539.6	70.82	8.619			
9,200.0	7,272.4	9,365.9	7,473.7	38.7	38.8	-109.25	-1,674.9	120.4	610.8	536.7	74.05	8.248			
9,300.0	7,271.9	9,465.9	7,474.3	40.4	40.5	-109.35	-1,774.9	120.4	611.1	533.8	77.30	7.906			
9,400.0	7,271.4	9,565.9	7,475.0	42.1	42.3	-109.45	-1,874.9	120.4	611.5	530.9	80.59	7.588			
9,500.0	7,270.9	9,665.9	7,475.6	43.9	44.0	-109.55	-1,974.9	120.4	611.9	528.0	83.89	7.294			
9,600.0	7,270.4	9,765.9	7,476.3	45.6	45.8	-109.65	-2,074.9	120.4	612.3	525.1	87.22	7.020			
9,700.0	7,269.9	9,865.9	7,476.9	47.4	47.6	-109.75	-2,174.8	120.4	612.7	522.1	90.57	6.765			
9,800.0	7,269.4	9,965.9	7,477.6	49.2	49.4	-109.85	-2,274.8	120.4	613.0	519.1	93.93	6.527			
9,900.0	7,268.9	10,065.9	7,478.2	51.0	51.2	-109.95	-2,374.8	120.4	613.4	516.1	97.30	6.305			
10,000.0	7,268.4	10,165.9	7,478.9	52.8	53.0	-110.05	-2,474.8	120.4	613.8	513.1	100.69	6.096			
10,100.0	7,268.0	10,265.9	7,479.5	54.6	54.8	-110.15	-2,574.8	120.4	614.2	510.1	104.08	5.901			
10,200.0	7,267.5	10,365.9	7,480.1	56.4	56.7	-110.25	-2,674.8	120.4	614.6	507.1	107.48	5.718			
10,300.0	7,267.0	10,465.9	7,480.8	58.2	58.5	-110.34	-2,774.8	120.4	615.0	504.1	110.89	5.546			
10,400.0	7,266.5	10,565.9	7,481.4	60.0	60.3	-110.44	-2,874.8	120.4	615.4	501.1	114.31	5.384			
10,500.0	7,266.0	10,665.8	7,482.1	61.9	62.2	-110.54	-2,974.8	120.4	615.8	498.1	117.73	5.230			
10,600.0	7,265.5	10,765.8	7,482.7	63.7	64.0	-110.64	-3,074.8	120.4	616.2	495.0	121.16	5.086			
10,700.0	7,265.0	10,865.8	7,483.4	65.6	65.9	-110.74	-3,174.8	120.4	616.6	492.0	124.59	4.949			
10,800.0	7,264.5	10,965.8	7,484.0	67.4	67.7	-110.84	-3,274.8	120.4	617.0	489.0	128.02	4.819			
10,900.0	7,264.0	11,065.8	7,484.7	69.2	69.6	-110.94	-3,374.7	120.4	617.4	485.9	131.46	4.697			
11,000.0	7,263.6	11,165.8	7,485.3	71.1	71.4	-111.03	-3,474.7	120.4	617.8	482.9	134.90	4.580			
11,100.0	7,263.1	11,265.8	7,486.0	73.0	73.3	-111.13	-3,574.7	120.4	618.2	479.9	138.33	4.469			
11,200.0	7,262.6	11,365.8	7,486.6	74.8	75.2	-111.23	-3,674.7	120.4	618.6	476.8	141.78	4.363			
11,300.0	7,262.1	11,465.8	7,487.3	76.7	77.0	-111.33	-3,774.7	120.4	619.0	473.8	145.22	4.263			
11,400.0	7,261.6	11,565.8	7,487.9	78.5	78.9	-111.43	-3,874.7	120.4	619.4	470.8	148.66	4.167			
11,500.0	7,261.1	11,665.8	7,488.5	80.4	80.8	-111.52	-3,974.7	120.4	619.9	467.8	152.10	4.075			
11,600.0	7,260.6	11,765.8	7,489.2	82.3	82.6	-111.62	-4,074.7	120.4	620.3	464.7	155.54	3.988			
11,700.0	7,260.1	11,865.8	7,489.8	84.1	84.3	-111.72	-4,174.7	120.4	620.7	462.0	158.74	3.910			
11,727.7	7,260.0	11,891.4	7,490.0	84.7	84.7	-111.74	-4,200.3	120.4	620.8	461.2	159.57	3.891 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-223 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	2.0	2.0	0.0	0.0	-128.42	-426.2	-537.4	685.9					
100.0	100.0	102.0	102.0	0.1	0.1	-128.42	-426.2	-537.4	685.9	685.6	0.23	2,991.641		
200.0	200.0	202.0	202.0	0.3	0.3	-128.42	-426.2	-537.4	685.9	685.2	0.68	1,010.422		
300.0	300.0	302.0	302.0	0.6	0.6	-128.42	-426.2	-537.4	685.9	684.7	1.13	607.863		
366.0	366.0	368.0	368.0	0.7	0.7	-128.42	-426.2	-537.4	685.9	684.4	1.42	481.326 CC		
400.0	400.0	400.0	400.0	0.8	0.8	-128.42	-426.2	-537.4	685.9	684.3	1.57	435.927		
500.0	500.0	497.2	497.1	1.0	1.0	-128.32	-425.5	-538.4	686.2	684.2	2.01	341.147 ES		
600.0	600.0	592.3	592.2	1.2	1.2	-128.03	-423.4	-541.3	687.3	684.8	2.45	281.045		
700.0	700.0	687.2	686.9	1.5	1.4	-127.56	-419.9	-546.1	689.1	686.2	2.88	238.938		
800.0	800.0	781.7	781.1	1.7	1.7	-126.90	-415.1	-552.9	691.7	688.4	3.33	207.867		
900.0	900.0	875.9	874.6	1.9	1.9	-85.17	-409.0	-561.5	695.1	691.3	3.81	182.415		
1,000.0	1,000.0	969.7	967.6	2.1	2.2	-84.33	-401.6	-571.9	699.3	695.0	4.30	162.733		
1,100.0	1,099.9	1,063.2	1,059.8	2.4	2.5	-83.45	-392.9	-584.1	704.3	699.5	4.81	146.398		
1,200.0	1,199.7	1,156.3	1,151.4	2.6	2.8	-82.54	-382.9	-598.1	710.0	704.7	5.36	132.589		
1,300.0	1,299.4	1,249.0	1,242.0	2.8	3.2	-81.60	-371.6	-613.8	716.7	710.7	5.94	120.749		
1,400.0	1,398.9	1,341.3	1,331.8	3.1	3.6	-80.63	-359.2	-631.3	724.1	717.6	6.55	110.491		
1,500.0	1,498.3	1,433.2	1,420.6	3.3	4.0	-79.64	-345.5	-650.4	732.4	725.2	7.21	101.534		
1,592.0	1,589.5	1,517.4	1,501.5	3.6	4.5	-78.71	-331.9	-669.4	740.9	733.0	7.86	94.266		
1,600.0	1,597.4	1,524.6	1,508.4	3.6	4.5	-78.64	-330.7	-671.1	741.6	733.7	7.92	93.664		
1,700.0	1,696.4	1,615.4	1,595.0	3.9	5.0	-77.65	-314.8	-693.4	751.9	743.3	8.66	86.835		
1,800.0	1,795.5	1,713.1	1,687.8	4.2	5.6	-76.52	-297.0	-718.4	763.1	753.6	9.46	80.637		
1,900.0	1,894.5	1,811.4	1,781.0	4.5	6.2	-75.43	-279.0	-743.6	774.5	764.2	10.28	75.376		
2,000.0	1,993.6	1,909.6	1,874.3	4.8	6.9	-74.36	-261.1	-768.7	786.2	775.1	11.09	70.896		
2,100.0	2,092.6	2,007.9	1,967.5	5.1	7.5	-73.33	-243.1	-793.9	798.2	786.3	11.90	67.055 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning		
				Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	2.0	2.0	0.0	0.0	-128.39	-408.0	-515.0	657.0						
100.0	100.0	102.0	102.0	0.1	0.1	-128.39	-408.0	-515.0	657.0	656.8	0.23	2,865.788			
200.0	200.0	202.0	202.0	0.3	0.3	-128.39	-408.0	-515.0	657.0	656.3	0.68	967.915			
300.0	300.0	302.0	302.0	0.6	0.6	-128.39	-408.0	-515.0	657.0	655.9	1.13	582.292			
400.0	400.0	402.0	402.0	0.8	0.8	-128.39	-408.0	-515.0	657.0	655.4	1.58	416.397			
500.0	500.0	502.0	502.0	1.0	1.0	-128.39	-408.0	-515.0	657.0	655.0	2.03	324.069			
566.0	566.0	568.0	568.0	1.2	1.2	-128.39	-408.0	-515.0	657.0	654.7	2.32	282.706 CC			
600.0	600.0	601.9	601.9	1.2	1.2	-128.39	-408.0	-515.0	657.0	654.5	2.48	265.282			
700.0	700.0	700.0	700.0	1.5	1.5	-128.28	-407.2	-516.0	657.3	654.4	2.92	225.336 ES			
800.0	800.0	794.5	794.4	1.7	1.7	-127.97	-404.9	-518.8	658.2	654.8	3.35	196.565			
900.0	900.0	890.5	890.3	1.9	1.9	-86.57	-401.1	-523.6	659.6	655.8	3.79	174.134			
1,000.0	1,000.0	986.4	985.7	2.1	2.1	-86.05	-395.7	-530.2	661.5	657.3	4.24	156.159			
1,100.0	1,099.9	1,082.0	1,080.7	2.4	2.4	-85.48	-388.9	-538.6	664.0	659.3	4.70	141.166			
1,200.0	1,199.7	1,177.4	1,175.2	2.6	2.6	-84.85	-380.6	-548.8	667.1	661.9	5.20	128.358			
1,300.0	1,299.4	1,272.6	1,269.1	2.8	2.9	-84.17	-370.9	-560.9	670.7	665.0	5.72	117.209			
1,400.0	1,398.9	1,367.4	1,362.3	3.1	3.3	-83.43	-359.7	-574.7	675.0	668.7	6.29	107.375			
1,500.0	1,498.3	1,462.0	1,454.7	3.3	3.6	-82.65	-347.1	-590.3	679.8	672.9	6.89	98.625			
1,592.0	1,589.5	1,548.7	1,539.0	3.6	4.0	-81.90	-334.3	-606.1	684.9	677.4	7.49	91.388			
1,600.0	1,597.4	1,556.2	1,546.2	3.6	4.0	-81.84	-333.1	-607.5	685.3	677.8	7.55	90.796			
1,700.0	1,696.4	1,649.9	1,636.8	3.9	4.5	-80.96	-317.8	-626.5	691.7	683.4	8.25	83.850			
1,800.0	1,795.5	1,745.3	1,728.3	4.2	5.0	-79.92	-301.0	-647.3	699.0	690.0	8.99	77.747			
1,900.0	1,894.5	1,844.1	1,822.9	4.5	5.5	-78.83	-283.2	-669.3	706.7	696.9	9.77	72.321			
2,000.0	1,993.6	1,942.9	1,917.6	4.8	6.0	-77.76	-265.4	-691.3	714.6	704.1	10.56	67.669			
2,100.0	2,092.6	2,041.7	2,012.3	5.1	6.6	-76.72	-247.7	-713.2	722.8	711.5	11.35	63.658			
2,200.0	2,191.7	2,140.5	2,107.0	5.4	7.1	-75.70	-229.9	-735.2	731.3	719.1	12.15	60.180			
2,300.0	2,290.7	2,239.3	2,201.6	5.7	7.7	-74.71	-212.2	-757.1	739.9	727.0	12.95	57.149			
2,400.0	2,389.8	2,338.1	2,296.3	6.1	8.3	-73.73	-194.4	-779.1	748.8	735.1	13.74	54.492			
2,500.0	2,488.8	2,436.8	2,391.0	6.4	8.8	-72.78	-176.7	-801.0	757.9	743.4	14.53	52.151			
2,600.0	2,587.9	2,535.6	2,485.6	6.7	9.4	-71.85	-158.9	-823.0	767.2	751.9	15.32	50.078			
2,700.0	2,686.9	2,634.4	2,580.3	7.0	10.0	-70.95	-141.2	-844.9	776.7	760.6	16.10	48.233			
2,800.0	2,786.0	2,733.2	2,675.0	7.4	10.6	-70.06	-123.4	-866.9	786.4	769.5	16.88	46.586			
2,900.0	2,885.0	2,832.0	2,769.6	7.7	11.1	-69.20	-105.6	-888.9	796.3	778.6	17.65	45.107 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (Offset Well Error:	0.0 ft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	2.0	2.0	0.0	0.0	-128.31	-444.4	-562.6	716.9						
100.0	100.0	102.0	102.0	0.1	0.1	-128.31	-444.4	-562.6	716.9	716.7	0.23	3,127.132			
166.0	166.0	168.0	168.0	0.3	0.3	-128.31	-444.4	-562.6	716.9	716.4	0.53	1,363.267 CC			
200.0	200.0	200.0	200.0	0.3	0.3	-128.31	-444.4	-562.6	716.9	716.3	0.67	1,063.229			
300.0	300.0	296.3	296.2	0.6	0.5	-128.22	-443.8	-563.6	717.3	716.2	1.11	645.516 ES			
400.0	400.0	390.5	390.4	0.8	0.8	-127.95	-441.8	-566.5	718.5	717.0	1.55	464.406			
500.0	500.0	484.5	484.2	1.0	1.0	-127.51	-438.6	-571.4	720.6	718.6	1.99	362.391			
600.0	600.0	578.2	577.6	1.2	1.2	-126.90	-434.2	-578.2	723.5	721.1	2.43	297.138			
700.0	700.0	671.4	670.2	1.5	1.5	-126.14	-428.5	-586.9	727.4	724.5	2.89	251.942			
800.0	800.0	764.1	762.0	1.7	1.8	-125.22	-421.7	-597.3	732.3	728.9	3.35	218.908			
900.0	900.0	856.2	852.9	1.9	2.1	-83.22	-413.6	-609.6	738.2	734.3	3.95	187.083			
1,000.0	1,000.0	947.8	943.1	2.1	2.4	-82.14	-404.5	-623.6	745.2	740.7	4.49	166.122			
1,100.0	1,099.9	1,039.0	1,032.3	2.4	2.8	-81.04	-394.2	-639.3	753.1	748.0	5.05	149.027			
1,200.0	1,199.7	1,129.8	1,120.6	2.6	3.2	-79.93	-382.8	-656.8	762.0	756.4	5.65	134.839			
1,300.0	1,299.4	1,220.0	1,207.9	2.8	3.7	-78.82	-370.3	-675.8	772.0	765.7	6.28	122.895			
1,400.0	1,398.9	1,309.7	1,294.1	3.1	4.1	-77.69	-356.8	-696.5	783.0	776.0	6.95	112.721			
1,500.0	1,498.3	1,400.0	1,380.4	3.3	4.7	-76.56	-342.1	-719.0	795.0	787.3	7.65	103.886 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	2.0	2.0	0.0	0.0	-128.25	-386.1	-489.8	623.7					
100.0	100.0	102.0	102.0	0.1	0.1	-128.25	-386.1	-489.8	623.7	623.5	0.23	2,720.451		
200.0	200.0	202.0	202.0	0.3	0.3	-128.25	-386.1	-489.8	623.7	623.0	0.68	918.828		
300.0	300.0	302.0	302.0	0.6	0.6	-128.25	-386.1	-489.8	623.7	622.6	1.13	552.761		
400.0	400.0	402.0	402.0	0.8	0.8	-128.25	-386.1	-489.8	623.7	622.1	1.58	395.279		
500.0	500.0	502.0	502.0	1.0	1.0	-128.25	-386.1	-489.8	623.7	621.7	2.03	307.634		
600.0	600.0	602.0	602.0	1.2	1.2	-128.25	-386.1	-489.8	623.7	621.2	2.48	251.802		
700.0	700.0	702.0	702.0	1.5	1.5	-128.25	-386.1	-489.8	623.7	620.8	2.93	213.123		
766.0	766.0	768.0	768.0	1.6	1.6	-128.25	-386.1	-489.8	623.7	620.5	3.22	193.509	CC	
800.0	800.0	802.0	802.0	1.7	1.7	-128.25	-386.1	-489.8	623.7	620.3	3.38	184.752		
900.0	900.0	900.9	900.9	1.9	1.9	-87.31	-385.5	-490.4	623.7	619.9	3.82	163.473		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-87.31	-383.6	-492.2	623.9	619.6	4.25	146.728		
1,100.0	1,099.9	1,098.6	1,098.5	2.4	2.3	-87.31	-380.6	-495.2	624.1	619.4	4.69	132.962		
1,200.0	1,199.7	1,197.5	1,197.2	2.6	2.6	-87.31	-376.3	-499.4	624.5	619.3	5.15	121.320		
1,300.0	1,299.4	1,296.4	1,295.8	2.8	2.8	-87.32	-370.7	-504.8	624.9	619.3	5.62	111.272	ES	
1,400.0	1,398.9	1,395.3	1,394.2	3.1	3.1	-87.32	-364.0	-511.3	625.5	619.3	6.11	102.437		
1,500.0	1,498.3	1,494.2	1,492.5	3.3	3.3	-87.33	-356.0	-519.1	626.1	619.5	6.62	94.550		
1,592.0	1,589.5	1,585.2	1,582.7	3.6	3.6	-87.33	-347.6	-527.2	626.7	619.6	7.13	87.963		
1,600.0	1,597.4	1,593.1	1,590.5	3.6	3.6	-87.33	-346.8	-528.0	626.8	619.6	7.17	87.426		
1,700.0	1,696.4	1,691.9	1,688.3	3.9	3.9	-87.26	-336.5	-538.1	627.7	619.9	7.75	81.007		
1,800.0	1,795.5	1,790.8	1,785.8	4.2	4.2	-87.03	-324.9	-549.3	628.7	620.4	8.36	75.252		
1,900.0	1,894.5	1,889.5	1,882.9	4.5	4.5	-86.65	-312.1	-561.8	630.0	621.0	8.99	70.082		
2,000.0	1,993.6	1,988.0	1,979.5	4.8	4.9	-86.12	-298.1	-575.3	631.5	621.8	9.65	65.430		
2,100.0	2,092.6	2,086.3	2,075.5	5.1	5.3	-85.44	-283.0	-590.0	633.3	622.9	10.34	61.240		
2,200.0	2,191.7	2,184.3	2,170.8	5.4	5.7	-84.62	-266.8	-605.8	635.4	624.3	11.06	57.464		
2,300.0	2,290.7	2,281.9	2,265.4	5.7	6.1	-83.66	-249.5	-622.6	638.0	626.2	11.80	54.065		
2,400.0	2,389.8	2,379.2	2,359.2	6.1	6.6	-82.57	-231.1	-640.5	641.0	628.4	12.57	51.008		
2,500.0	2,488.8	2,476.2	2,452.4	6.4	7.1	-81.35	-211.6	-659.5	644.6	631.3	13.35	48.270		
2,600.0	2,587.9	2,575.0	2,547.1	6.7	7.6	-80.06	-191.3	-679.2	648.7	634.6	14.17	45.794		
2,700.0	2,686.9	2,673.9	2,641.8	7.0	8.1	-78.79	-171.0	-698.9	653.1	638.2	14.98	43.601		
2,800.0	2,786.0	2,772.7	2,736.5	7.4	8.7	-77.54	-150.6	-718.7	657.9	642.1	15.79	41.655		
2,900.0	2,885.0	2,871.5	2,831.1	7.7	9.2	-76.30	-130.3	-738.4	663.0	646.3	16.61	39.922		
3,000.0	2,984.0	2,970.4	2,925.8	8.0	9.8	-75.09	-110.0	-758.2	668.3	650.9	17.41	38.377		
3,100.0	3,083.1	3,069.2	3,020.5	8.4	10.3	-73.89	-89.7	-777.9	674.0	655.8	18.22	36.994		
3,200.0	3,182.1	3,168.0	3,115.2	8.7	10.9	-72.71	-69.4	-797.7	680.0	660.9	19.02	35.754		
3,300.0	3,281.2	3,266.9	3,209.9	9.0	11.5	-71.56	-49.1	-817.4	686.2	666.4	19.81	34.641		
3,400.0	3,380.2	3,365.7	3,304.6	9.4	12.0	-70.42	-28.8	-837.2	692.7	672.1	20.59	33.638		
3,500.0	3,479.3	3,464.5	3,399.3	9.7	12.6	-69.31	-8.5	-856.9	699.5	678.2	21.37	32.733		
3,600.0	3,578.3	3,563.4	3,494.0	10.0	13.2	-68.22	11.9	-876.6	706.6	684.5	22.14	31.915		
3,700.0	3,677.4	3,662.2	3,588.6	10.4	13.7	-67.15	32.2	-896.4	713.9	691.0	22.90	31.174		
3,800.0	3,776.4	3,761.0	3,683.3	10.7	14.3	-66.10	52.5	-916.1	721.5	697.8	23.65	30.503		
3,900.0	3,875.5	3,859.9	3,778.0	11.0	14.9	-65.07	72.8	-935.9	729.3	704.9	24.40	29.894		
4,000.0	3,974.5	3,958.7	3,872.7	11.4	15.5	-64.07	93.1	-955.6	737.3	712.2	25.13	29.340		
4,100.0	4,073.6	4,057.5	3,967.4	11.7	16.0	-63.08	113.4	-975.4	745.6	719.7	25.86	28.836		
4,200.0	4,172.6	4,156.4	4,062.1	12.0	16.6	-62.12	133.7	-995.1	754.1	727.5	26.57	28.377		
4,300.0	4,271.6	4,255.2	4,156.8	12.4	17.2	-61.18	154.0	-1,014.9	762.8	735.5	27.28	27.959		
4,400.0	4,370.7	4,354.0	4,251.4	12.7	17.8	-60.26	174.4	-1,034.6	771.7	743.7	27.98	27.578		
4,500.0	4,469.7	4,452.9	4,346.1	13.1	18.4	-59.36	194.7	-1,054.3	780.7	752.1	28.67	27.230		
4,600.0	4,568.8	4,551.7	4,440.8	13.4	18.9	-58.48	215.0	-1,074.1	790.0	760.7	29.36	26.912		
4,700.0	4,667.8	4,650.5	4,535.5	13.7	19.5	-57.62	235.3	-1,093.8	799.5	769.4	30.03	26.622	SF	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft	
Survey Program:		0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	2.0	2.0	0.0	0.0	-128.21	-367.9	-467.4	594.8						
100.0	100.0	102.0	102.0	0.1	0.1	-128.21	-367.9	-467.4	594.8	594.6	0.23	2,594.570			
200.0	200.0	202.0	202.0	0.3	0.3	-128.21	-367.9	-467.4	594.8	594.2	0.68	876.312			
300.0	300.0	302.0	302.0	0.6	0.6	-128.21	-367.9	-467.4	594.8	593.7	1.13	527.183			
400.0	400.0	402.0	402.0	0.8	0.8	-128.21	-367.9	-467.4	594.8	593.3	1.58	376.989			
500.0	500.0	502.0	502.0	1.0	1.0	-128.21	-367.9	-467.4	594.8	592.8	2.03	293.399			
600.0	600.0	602.0	602.0	1.2	1.2	-128.21	-367.9	-467.4	594.8	592.4	2.48	240.151			
700.0	700.0	702.0	702.0	1.5	1.5	-128.21	-367.9	-467.4	594.8	591.9	2.93	203.261			
800.0	800.0	802.0	802.0	1.7	1.7	-128.21	-367.9	-467.4	594.8	591.5	3.38	176.196			
900.0	900.0	902.0	902.0	1.9	1.9	-87.35	-367.9	-467.4	594.8	591.0	3.82	155.619			
1,000.0	1,000.0	1,002.0	1,002.0	2.1	2.1	-87.61	-367.9	-467.4	594.7	590.4	4.27	139.387			
1,100.0	1,099.9	1,101.9	1,101.9	2.4	2.4	-88.03	-367.9	-467.4	594.5	589.8	4.71	126.120			
1,200.0	1,199.7	1,201.7	1,201.7	2.6	2.6	-88.62	-367.9	-467.4	594.3	589.2	5.17	115.035			
1,300.0	1,299.4	1,302.2	1,302.2	2.8	2.8	-89.29	-367.2	-467.9	594.1	588.5	5.63	105.605			
1,400.0	1,398.9	1,402.8	1,402.8	3.1	3.0	-89.97	-365.0	-469.5	593.8	587.7	6.09	97.436			
1,500.0	1,498.3	1,503.5	1,503.4	3.3	3.3	-90.65	-361.4	-472.1	593.5	586.9	6.58	90.201			
1,592.0	1,589.5	1,596.4	1,596.0	3.6	3.5	-91.27	-356.8	-475.4	593.1	586.1	7.04	84.197			
1,600.0	1,597.4	1,604.4	1,604.1	3.6	3.5	-91.33	-356.4	-475.7	593.1	586.0	7.09	83.702			
1,700.0	1,696.4	1,705.4	1,704.8	3.9	3.7	-91.91	-349.9	-480.4	592.5	584.9	7.61	77.854			
1,800.0	1,795.5	1,806.6	1,805.5	4.2	4.0	-92.32	-341.9	-486.2	591.8	583.7	8.15	72.589			
1,900.0	1,894.5	1,908.0	1,906.2	4.5	4.2	-92.55	-332.5	-493.0	590.9	582.2	8.71	67.817			
2,000.0	1,993.6	2,009.4	2,006.7	4.8	4.5	-92.62	-321.7	-500.8	589.8	580.5	9.29	63.464			
2,100.0	2,092.6	2,110.7	2,106.9	5.1	4.8	-92.52	-309.4	-509.7	588.4	578.5	9.89	59.472			
2,200.0	2,191.7	2,212.0	2,206.8	5.4	5.1	-92.24	-295.7	-519.6	586.8	576.3	10.52	55.795			
2,300.0	2,290.7	2,313.2	2,306.2	5.7	5.4	-91.78	-280.6	-530.5	585.0	573.8	11.16	52.395			
2,400.0	2,389.8	2,414.1	2,405.0	6.1	5.8	-91.15	-264.1	-542.4	583.0	571.2	11.84	49.247			
2,500.0	2,488.8	2,514.8	2,503.3	6.4	6.2	-90.35	-246.2	-555.4	581.0	568.4	12.54	46.329			
2,600.0	2,587.9	2,615.2	2,600.8	6.7	6.6	-89.37	-227.0	-569.2	578.9	565.6	13.27	43.630			
2,700.0	2,686.9	2,714.6	2,697.2	7.0	7.0	-88.30	-207.2	-583.5	576.9	562.9	14.02	41.163			
2,800.0	2,786.0	2,814.0	2,793.6	7.4	7.4	-87.22	-187.5	-597.8	575.2	560.4	14.77	38.930			
2,900.0	2,885.0	2,913.3	2,889.9	7.7	7.9	-86.14	-167.8	-612.0	573.6	558.1	15.54	36.908			
3,000.0	2,984.0	3,012.7	2,986.3	8.0	8.3	-85.05	-148.0	-626.3	572.3	555.9	16.32	35.074			
3,100.0	3,083.1	3,112.1	3,082.6	8.4	8.8	-83.96	-128.3	-640.5	571.1	554.0	17.10	33.409			
3,200.0	3,182.1	3,211.5	3,179.0	8.7	9.2	-82.86	-108.5	-654.8	570.2	552.3	17.88	31.895			
3,300.0	3,281.2	3,310.9	3,275.4	9.0	9.7	-81.76	-88.8	-669.1	569.5	550.8	18.66	30.517			
3,400.0	3,380.2	3,410.3	3,371.7	9.4	10.2	-80.66	-69.1	-683.3	569.0	549.5	19.45	29.261			
3,500.0	3,479.3	3,509.7	3,468.1	9.7	10.7	-79.55	-49.3	-697.6	568.7	548.5	20.23	28.113			
3,583.4	3,561.9	3,592.6	3,548.4	10.0	11.1	-78.63	-32.9	-709.5	568.6	547.8	20.88	27.232 CC			
3,600.0	3,578.3	3,609.1	3,564.4	10.0	11.1	-78.45	-29.6	-711.9	568.6	547.6	21.01	27.063			
3,700.0	3,677.4	3,708.5	3,660.8	10.4	11.6	-77.34	-9.8	-726.1	568.8	547.0	21.79	26.102			
3,800.0	3,776.4	3,807.9	3,757.2	10.7	12.1	-76.24	9.9	-740.4	569.1	546.6	22.57	25.221			
3,900.0	3,875.5	3,907.2	3,853.5	11.0	12.6	-75.14	29.6	-754.6	569.7	546.4	23.34	24.412			
4,000.0	3,974.5	4,006.6	3,949.9	11.4	13.1	-74.04	49.4	-768.9	570.5	546.4	24.10	23.669			
4,100.0	4,073.6	4,106.0	4,046.2	11.7	13.6	-72.94	69.1	-783.2	571.5	546.6	24.86	22.986			
4,200.0	4,172.6	4,205.4	4,142.6	12.0	14.1	-71.85	88.9	-797.4	572.7	547.1	25.62	22.357			
4,300.0	4,271.6	4,304.8	4,239.0	12.4	14.6	-70.77	108.6	-811.7	574.1	547.7	26.36	21.777			
4,400.0	4,370.7	4,404.2	4,335.3	12.7	15.1	-69.68	128.3	-826.0	575.7	548.6	27.10	21.243			
4,500.0	4,469.7	4,503.6	4,431.7	13.1	15.6	-68.61	148.1	-840.2	577.6	549.7	27.83	20.751			
4,600.0	4,568.8	4,603.0	4,528.0	13.4	16.1	-67.54	167.8	-854.5	579.6	551.0	28.56	20.296			
4,700.0	4,667.8	4,702.4	4,624.4	13.7	16.6	-66.48	187.6	-868.7	581.8	552.6	29.27	19.877			
4,800.0	4,766.9	4,801.8	4,720.8	14.1	17.1	-65.43	207.3	-883.0	584.3	554.3	29.98	19.490			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,865.9	4,901.1	4,817.1	14.4	17.6	-64.39	227.0	-897.3	586.9	556.2	30.67	19.133		
5,000.0	4,965.0	5,000.5	4,913.5	14.7	18.1	-63.36	246.8	-911.5	589.7	558.4	31.36	18.804		
5,100.0	5,064.0	5,099.9	5,009.8	15.1	18.6	-62.33	266.5	-925.8	592.7	560.7	32.04	18.500		
5,200.0	5,163.1	5,199.3	5,106.2	15.4	19.1	-61.32	286.3	-940.1	595.9	563.2	32.71	18.219		
5,300.0	5,262.1	5,298.7	5,202.6	15.8	19.6	-60.32	306.0	-954.3	599.3	566.0	33.37	17.961		
5,400.0	5,361.2	5,398.1	5,298.9	16.1	20.1	-59.33	325.7	-968.6	602.9	568.9	34.02	17.722		
5,500.0	5,460.2	5,497.5	5,395.3	16.4	20.6	-58.35	345.5	-982.8	606.7	572.0	34.66	17.503		
5,600.0	5,559.2	5,596.9	5,491.6	16.8	21.1	-57.39	365.2	-997.1	610.6	575.3	35.29	17.300		
5,700.0	5,658.3	5,696.3	5,588.0	17.1	21.6	-56.43	385.0	-1,011.4	614.7	578.8	35.92	17.115		
5,800.0	5,757.3	5,795.7	5,684.4	17.4	22.1	-55.49	404.7	-1,025.6	619.0	582.4	36.53	16.944		
5,900.0	5,856.4	5,895.0	5,780.7	17.8	22.6	-54.56	424.4	-1,039.9	623.4	586.3	37.14	16.787		
6,000.0	5,955.4	5,994.4	5,877.1	18.1	23.1	-53.65	444.2	-1,054.2	628.0	590.3	37.73	16.644		
6,050.3	6,005.2	6,048.2	5,929.2	18.3	23.4	-53.18	454.7	-1,061.8	630.3	592.3	38.02	16.576		
6,100.0	6,054.5	6,104.2	5,983.8	18.4	23.6	-52.76	464.9	-1,069.1	632.4	594.1	38.30	16.512		
6,200.0	6,154.0	6,217.3	6,094.7	18.7	24.0	-51.97	482.9	-1,082.1	636.7	598.0	38.72	16.445		
6,300.0	6,253.8	6,330.8	6,206.8	18.9	24.3	-51.24	497.3	-1,092.5	641.1	602.0	39.06	16.412		
6,400.0	6,353.7	6,444.8	6,320.0	19.0	24.6	-50.59	508.2	-1,100.4	645.6	606.2	39.34	16.411		
6,446.3	6,400.0	6,497.8	6,372.8	19.1	24.7	-91.24	512.0	-1,103.1	647.7	608.2	39.45	16.419		
6,500.0	6,453.7	6,559.3	6,434.1	19.2	24.8	-90.94	515.4	-1,105.6	649.8	610.2	39.58	16.417		
6,561.7	6,515.4	6,630.2	6,505.0	19.3	24.9	-90.70	518.0	-1,107.5	651.4	611.6	39.75	16.385		
6,600.0	6,553.7	6,674.2	6,549.0	19.3	25.0	89.43	518.9	-1,108.1	651.9	612.1	39.84	16.363		
6,650.0	6,603.5	6,730.7	6,605.5	19.4	25.1	89.86	519.3	-1,108.4	652.1	612.3	39.87	16.358		
6,663.2	6,616.6	6,743.8	6,618.6	19.4	25.1	90.00	519.3	-1,108.4	652.1	612.3	39.86	16.362		
6,700.0	6,652.9	6,780.2	6,654.9	19.4	25.1	90.50	519.3	-1,108.4	652.2	612.4	39.81	16.383		
6,750.0	6,701.8	6,829.0	6,703.8	19.4	25.2	91.39	519.3	-1,108.4	652.3	612.7	39.67	16.443		
6,800.0	6,749.8	6,878.4	6,753.2	19.3	25.2	92.49	518.5	-1,108.4	652.8	613.3	39.46	16.543		
6,850.0	6,796.9	6,929.0	6,803.6	19.3	25.2	93.60	514.6	-1,108.4	653.5	614.3	39.20	16.673		
6,900.0	6,842.7	6,980.6	6,854.6	19.2	25.2	94.71	507.2	-1,108.4	654.5	615.6	38.89	16.831		
6,950.0	6,887.2	7,033.2	6,906.0	19.1	25.2	95.81	496.1	-1,108.4	655.7	617.2	38.54	17.015		
7,000.0	6,930.0	7,086.8	6,957.5	19.0	25.1	96.89	481.1	-1,108.4	657.2	619.1	38.16	17.223		
7,050.0	6,971.1	7,141.5	7,008.8	18.9	25.0	97.95	462.2	-1,108.4	658.9	621.1	37.75	17.452		
7,100.0	7,010.2	7,197.3	7,059.6	18.8	24.8	98.99	439.2	-1,108.4	660.7	623.4	37.33	17.699		
7,150.0	7,047.3	7,254.2	7,109.6	18.7	24.6	99.99	411.9	-1,108.4	662.7	625.8	36.90	17.960		
7,200.0	7,082.0	7,312.3	7,158.4	18.6	24.4	100.95	380.4	-1,108.4	664.8	628.4	36.47	18.230		
7,250.0	7,114.3	7,371.6	7,205.5	18.5	24.2	101.87	344.4	-1,108.4	667.0	631.0	36.05	18.501		
7,300.0	7,144.0	7,432.1	7,250.6	18.4	23.9	102.73	304.1	-1,108.4	669.2	633.6	35.66	18.766		
7,350.0	7,171.1	7,493.7	7,293.0	18.3	23.7	103.54	259.5	-1,108.4	671.4	636.1	35.31	19.015		
7,400.0	7,195.3	7,556.4	7,332.5	18.2	23.4	104.28	210.8	-1,108.4	673.5	638.5	35.01	19.240		
7,450.0	7,216.6	7,620.2	7,368.3	18.1	23.1	104.96	158.1	-1,108.4	675.5	640.7	34.77	19.428		
7,500.0	7,235.0	7,684.9	7,400.1	18.0	22.8	105.55	101.7	-1,108.4	677.3	642.7	34.61	19.569		
7,550.0	7,250.2	7,750.6	7,427.3	17.9	22.5	106.06	41.9	-1,108.4	678.9	644.4	34.54	19.654		
7,600.0	7,262.3	7,817.0	7,449.5	17.8	22.2	106.48	-20.6	-1,108.4	680.3	645.7	34.58	19.670		
7,650.0	7,271.2	7,884.0	7,466.3	17.8	21.9	106.81	-85.5	-1,108.4	681.4	646.6	34.73	19.617		
7,700.0	7,276.9	7,951.5	7,477.4	18.0	21.6	107.04	-152.0	-1,108.4	682.1	647.1	34.99	19.493		
7,750.0	7,279.3	8,019.3	7,482.7	18.4	21.4	107.17	-219.6	-1,108.4	682.6	647.2	35.38	19.293		
7,765.5	7,279.4	8,040.3	7,483.1	18.5	21.3	107.19	-240.6	-1,108.4	682.6	647.1	35.52	19.220		
7,800.0	7,279.2	8,075.6	7,483.1	18.8	21.2	107.20	-275.9	-1,108.4	682.7	646.9	35.82	19.060		
7,900.0	7,278.7	8,175.6	7,483.3	19.8	20.9	107.26	-375.9	-1,108.4	682.9	646.0	36.91	18.501		
8,000.0	7,278.2	8,275.6	7,483.5	20.8	20.7	107.31	-475.8	-1,108.4	683.1	644.8	38.31	17.831		
8,100.0	7,277.7	8,375.5	7,483.7	22.0	21.2	107.36	-575.8	-1,108.4	683.3	643.3	39.99	17.086		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,200.0	7,277.2	8,475.5	7,483.8	23.2	22.1	107.42	-675.8	-1,108.4	683.5	641.6	41.93	16.302		
8,300.0	7,276.8	8,575.5	7,484.0	24.5	23.2	107.47	-775.8	-1,108.4	683.7	639.6	44.08	15.511		
8,400.0	7,276.3	8,675.5	7,484.2	25.9	24.3	107.52	-875.8	-1,108.4	683.9	637.5	46.42	14.733		
8,500.0	7,275.8	8,775.5	7,484.4	27.4	25.6	107.58	-975.8	-1,108.4	684.1	635.2	48.92	13.983		
8,600.0	7,275.3	8,875.5	7,484.5	28.9	26.9	107.63	-1,075.8	-1,108.4	684.3	632.7	51.56	13.271		
8,700.0	7,274.8	8,975.5	7,484.7	30.5	28.2	107.68	-1,175.8	-1,108.4	684.5	630.2	54.32	12.600		
8,800.0	7,274.3	9,075.5	7,484.9	32.0	29.6	107.74	-1,275.8	-1,108.4	684.7	627.5	57.18	11.973		
8,900.0	7,273.8	9,175.5	7,485.1	33.7	31.1	107.79	-1,375.8	-1,108.4	684.9	624.8	60.13	11.390		
9,000.0	7,273.3	9,275.5	7,485.2	35.3	32.6	107.84	-1,475.8	-1,108.4	685.1	621.9	63.15	10.848		
9,100.0	7,272.8	9,375.5	7,485.4	37.0	34.2	107.89	-1,575.8	-1,108.4	685.3	619.1	66.24	10.346		
9,200.0	7,272.4	9,475.5	7,485.6	38.7	35.8	107.95	-1,675.8	-1,108.4	685.5	616.1	69.38	9.881		
9,300.0	7,271.9	9,575.5	7,485.7	40.4	37.4	108.00	-1,775.8	-1,108.4	685.7	613.1	72.56	9.449		
9,400.0	7,271.4	9,675.5	7,485.9	42.1	39.0	108.05	-1,875.8	-1,108.4	685.9	610.1	75.79	9.050		
9,500.0	7,270.9	9,775.5	7,486.1	43.9	40.6	108.10	-1,975.8	-1,108.4	686.1	607.1	79.06	8.679		
9,600.0	7,270.4	9,875.5	7,486.3	45.6	42.3	108.16	-2,075.8	-1,108.4	686.3	604.0	82.35	8.334		
9,700.0	7,269.9	9,975.5	7,486.4	47.4	44.0	108.21	-2,175.8	-1,108.4	686.5	600.8	85.67	8.013		
9,800.0	7,269.4	10,075.5	7,486.6	49.2	45.7	108.26	-2,275.8	-1,108.4	686.7	597.7	89.02	7.714		
9,900.0	7,268.9	10,175.5	7,486.8	51.0	47.5	108.31	-2,375.8	-1,108.4	686.9	594.5	92.39	7.435		
10,000.0	7,268.4	10,275.5	7,487.0	52.8	49.2	108.37	-2,475.8	-1,108.4	687.1	591.4	95.78	7.174		
10,100.0	7,268.0	10,375.5	7,487.1	54.6	50.9	108.42	-2,575.8	-1,108.4	687.4	588.2	99.18	6.930		
10,200.0	7,267.5	10,475.5	7,487.3	56.4	52.7	108.47	-2,675.8	-1,108.4	687.6	585.0	102.60	6.702		
10,300.0	7,267.0	10,575.5	7,487.5	58.2	54.5	108.52	-2,775.8	-1,108.4	687.8	581.7	106.03	6.487		
10,400.0	7,266.5	10,675.5	7,487.7	60.0	56.3	108.58	-2,875.8	-1,108.4	688.0	578.5	109.47	6.285		
10,500.0	7,266.0	10,775.5	7,487.8	61.9	58.0	108.63	-2,975.8	-1,108.4	688.2	575.3	112.92	6.094		
10,600.0	7,265.5	10,875.5	7,488.0	63.7	59.8	108.68	-3,075.8	-1,108.4	688.4	572.0	116.39	5.915		
10,700.0	7,265.0	10,975.5	7,488.2	65.6	61.6	108.73	-3,175.8	-1,108.4	688.6	568.8	119.86	5.745		
10,800.0	7,264.5	11,075.5	7,488.4	67.4	63.4	108.79	-3,275.8	-1,108.4	688.8	565.5	123.33	5.585		
10,900.0	7,264.0	11,175.5	7,488.5	69.2	65.3	108.84	-3,375.8	-1,108.4	689.1	562.2	126.82	5.433		
11,000.0	7,263.6	11,275.5	7,488.7	71.1	67.1	108.89	-3,475.8	-1,108.4	689.3	559.0	130.31	5.289		
11,100.0	7,263.1	11,375.5	7,488.9	73.0	68.9	108.94	-3,575.8	-1,108.4	689.5	555.7	133.81	5.153		
11,200.0	7,262.6	11,475.5	7,489.1	74.8	70.7	108.99	-3,675.8	-1,108.4	689.7	552.4	137.31	5.023		
11,300.0	7,262.1	11,575.5	7,489.2	76.7	72.6	109.05	-3,775.8	-1,108.4	689.9	549.1	140.81	4.900		
11,400.0	7,261.6	11,675.5	7,489.4	78.5	74.4	109.10	-3,875.8	-1,108.4	690.1	545.8	144.32	4.782		
11,500.0	7,261.1	11,775.5	7,489.6	80.4	76.2	109.15	-3,975.8	-1,108.4	690.3	542.5	147.83	4.670		
11,600.0	7,260.6	11,875.5	7,489.8	82.3	78.1	109.20	-4,075.8	-1,108.4	690.6	539.2	151.34	4.563		
11,700.0	7,260.1	11,975.5	7,489.9	84.1	79.9	109.25	-4,175.8	-1,108.4	690.8	535.9	154.86	4.461		
11,727.7	7,260.0	12,003.2	7,490.0	84.7	80.5	109.27	-4,203.5	-1,108.4	690.8	535.0	155.84	4.433 ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
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Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5003.0ft (RKB - 13')

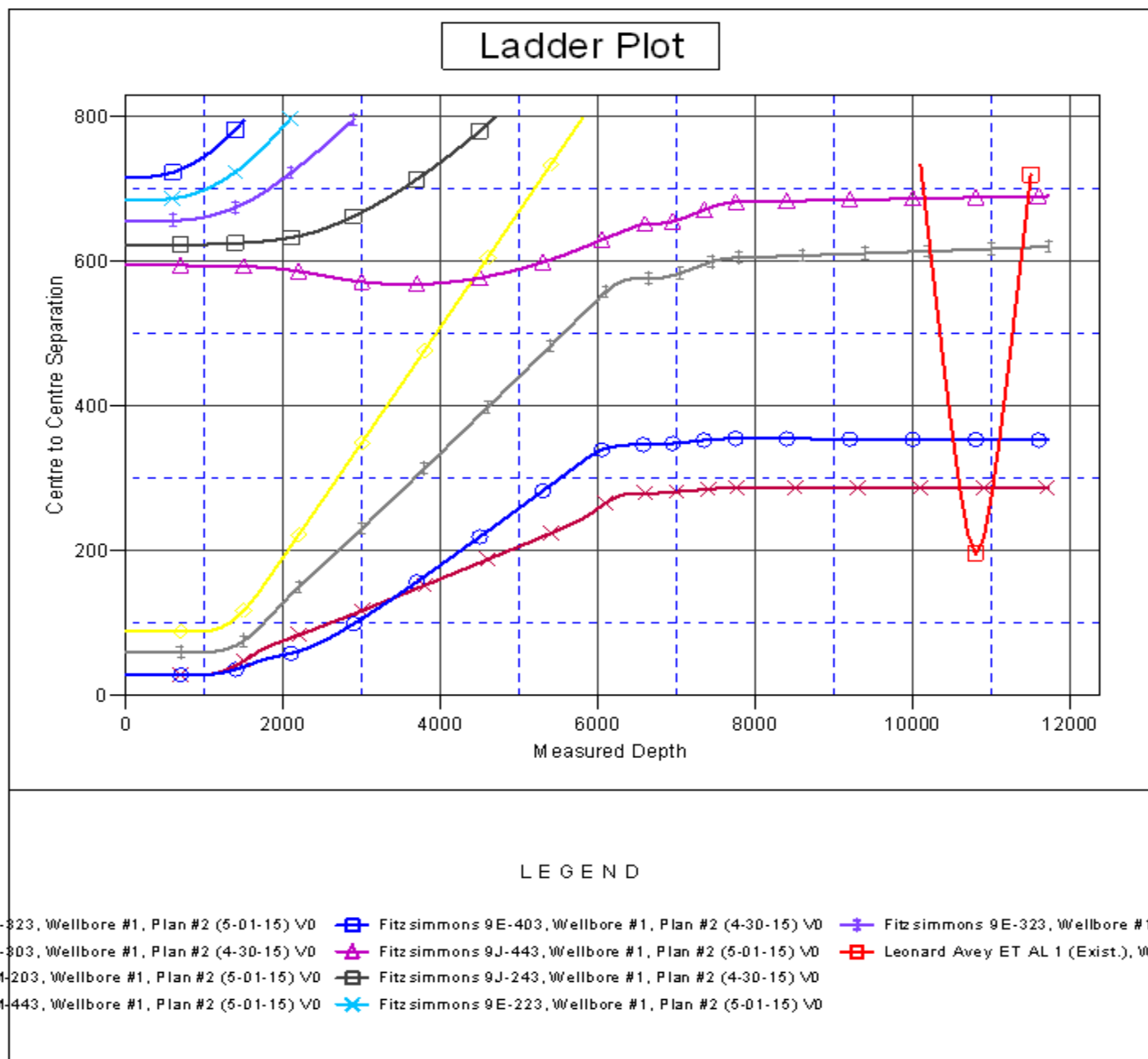
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Fitzsimmons 9J-223

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.46°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9J-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5003.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5003.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9J-223	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 (5-01-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5003.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Fitzsimmons 9J-223
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.46°

