

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Fitzsimmons 9M-203**

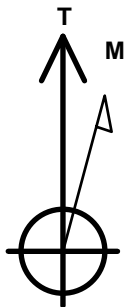
Surface Location: Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4990.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1269716.29	3200408.16	40.071540	-104.783890	
RKB - 13' WELL @ 5003.0ft (RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E & W Hardline (9M-203)	1.0	-2272.7	333.1	Rectangle (Sides: L3957.1 W100.0)
SHL 520'FNL & 2183'FWL	1.0	0.0	0.0	Point
BHL 500'FSL & 2490'FWL	7255.0	-4251.3	333.1	Point



Azimuths to True North
Magnetic North: 8.32°

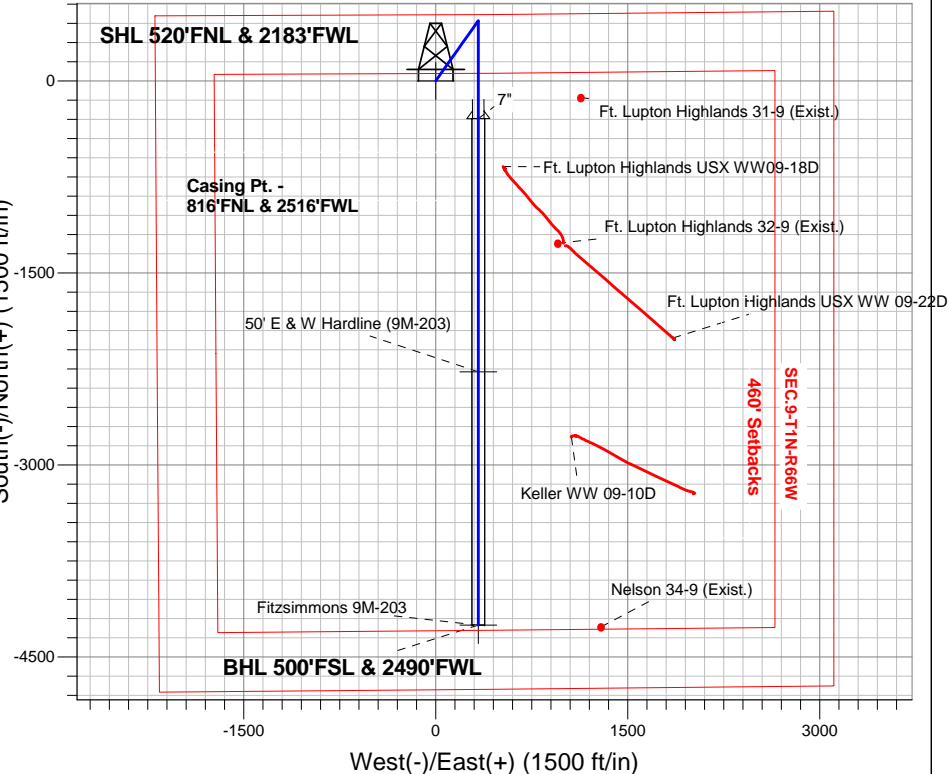
Magnetic Field
Strength: 52546.4snT
Dip Angle: 66.65°
Date: 5/4/2015
Model: IGRF2010

Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
Fitzsimmons 9M-203
Plan #2 (5-01-15)
9:36, May 04 2015

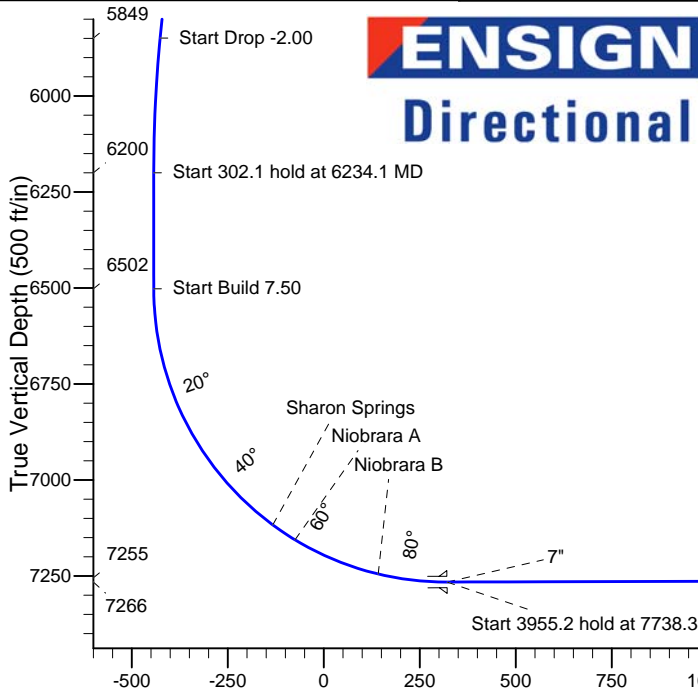
ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.00
5849.4	5882.6	Start Drop -2.00
6200.0	6234.1	Start 302.1 hold at 6234.1 MD
6502.1	6536.2	Start Build 7.50
7266.0	7738.3	Start 3955.2 hold at 7738.3 MD
7255.0	11693.5	TD at 11693.5

South(-)/North(+) (1500 ft/in)



West(-)/East(+) (1500 ft/in)



ENSIGN
Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1702.9	7.03	35.33	1701.1	35.1	24.9	1.00	35.33	-33.1	
4	5882.6	7.03	35.33	5849.4	452.4	320.7	0.00	0.00	-426.0	
5	6234.1	0.00	0.00	6200.0	470.0	333.1	2.00	180.00	-442.5	
6	6536.2	0.00	0.00	6502.1	470.0	333.1	0.00	0.00	-442.5	
7	7738.3	90.16	180.00	7266.0	-296.1	333.1	7.50	180.00	321.2	
8	11693.5	90.16	180.00	7255.0	-4251.3	333.1	0.00	0.00	4264.3	BHL 500'FSL & 2490'FWL

BHL 500'FSL & 2490'FWL

TD at 11693.5

Vertical Section at 175.52° (500 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W

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

Fitzsimmons 9M-203

Wellbore #1

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

Standard Planning Report

04 May, 2015

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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 9M-203					
Well Position	+N/-S	54.6 ft	Northing:	1,269,716.29 ft	Latitude:	40.071540
	+E/-W	70.0 ft	Easting:	3,200,408.16 ft	Longitude:	-104.783890
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	175.52

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,702.9	7.03	35.33	1,701.1	35.1	24.9	1.00	1.00	0.00	35.33	
5,882.6	7.03	35.33	5,849.4	452.4	320.7	0.00	0.00	0.00	0.00	
6,234.1	0.00	0.00	6,200.0	470.0	333.1	2.00	-2.00	0.00	180.00	
6,536.2	0.00	0.00	6,502.1	470.0	333.1	0.00	0.00	0.00	0.00	
7,738.3	90.16	180.00	7,266.0	-296.1	333.1	7.50	7.50	0.00	180.00	
11,693.5	90.16	180.00	7,255.0	-4,251.3	333.1	0.00	0.00	0.00	0.00	BHL 500'FSL & 24°

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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
SHL 520'FNL & 2183'FWL - 50' E & W Hardline (9M-203)									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
1,100.0	1.00	35.33	1,100.0	0.7	0.5	-0.7	1.00	1.00	0.00
1,200.0	2.00	35.33	1,200.0	2.8	2.0	-2.7	1.00	1.00	0.00
1,300.0	3.00	35.33	1,299.9	6.4	4.5	-6.0	1.00	1.00	0.00
1,400.0	4.00	35.33	1,399.7	11.4	8.1	-10.7	1.00	1.00	0.00
1,500.0	5.00	35.33	1,499.4	17.8	12.6	-16.7	1.00	1.00	0.00
1,600.0	6.00	35.33	1,598.9	25.6	18.1	-24.1	1.00	1.00	0.00
1,700.0	7.00	35.33	1,698.3	34.8	24.7	-32.8	1.00	1.00	0.00
1,702.9	7.03	35.33	1,701.1	35.1	24.9	-33.1	1.00	1.00	0.00
1,800.0	7.03	35.33	1,797.5	44.8	31.8	-42.2	0.00	0.00	0.00
1,900.0	7.03	35.33	1,896.8	54.8	38.8	-51.6	0.00	0.00	0.00
2,000.0	7.03	35.33	1,996.0	64.8	45.9	-61.0	0.00	0.00	0.00
2,100.0	7.03	35.33	2,095.3	74.8	53.0	-70.4	0.00	0.00	0.00
2,200.0	7.03	35.33	2,194.5	84.8	60.1	-79.8	0.00	0.00	0.00
2,300.0	7.03	35.33	2,293.8	94.7	67.2	-89.2	0.00	0.00	0.00
2,400.0	7.03	35.33	2,393.0	104.7	74.2	-98.6	0.00	0.00	0.00
2,500.0	7.03	35.33	2,492.2	114.7	81.3	-108.0	0.00	0.00	0.00
2,600.0	7.03	35.33	2,591.5	124.7	88.4	-117.4	0.00	0.00	0.00
2,700.0	7.03	35.33	2,690.7	134.7	95.5	-126.8	0.00	0.00	0.00
2,800.0	7.03	35.33	2,790.0	144.7	102.5	-136.2	0.00	0.00	0.00
2,900.0	7.03	35.33	2,889.2	154.7	109.6	-145.6	0.00	0.00	0.00
3,000.0	7.03	35.33	2,988.5	164.6	116.7	-155.0	0.00	0.00	0.00
3,100.0	7.03	35.33	3,087.7	174.6	123.8	-164.4	0.00	0.00	0.00
3,200.0	7.03	35.33	3,187.0	184.6	130.8	-173.8	0.00	0.00	0.00
3,300.0	7.03	35.33	3,286.2	194.6	137.9	-183.2	0.00	0.00	0.00
3,400.0	7.03	35.33	3,385.5	204.6	145.0	-192.6	0.00	0.00	0.00
3,500.0	7.03	35.33	3,484.7	214.6	152.1	-202.0	0.00	0.00	0.00
3,600.0	7.03	35.33	3,584.0	224.5	159.1	-211.4	0.00	0.00	0.00
3,700.0	7.03	35.33	3,683.2	234.5	166.2	-220.8	0.00	0.00	0.00
3,800.0	7.03	35.33	3,782.5	244.5	173.3	-230.2	0.00	0.00	0.00
3,900.0	7.03	35.33	3,881.7	254.5	180.4	-239.6	0.00	0.00	0.00
4,000.0	7.03	35.33	3,981.0	264.5	187.4	-249.0	0.00	0.00	0.00
4,100.0	7.03	35.33	4,080.2	274.5	194.5	-258.4	0.00	0.00	0.00
4,200.0	7.03	35.33	4,179.5	284.4	201.6	-267.8	0.00	0.00	0.00
4,220.7	7.03	35.33	4,200.0	286.5	203.1	-269.8	0.00	0.00	0.00
Parkman									
4,300.0	7.03	35.33	4,278.7	294.4	208.7	-277.2	0.00	0.00	0.00
4,400.0	7.03	35.33	4,378.0	304.4	215.7	-286.6	0.00	0.00	0.00
4,500.0	7.03	35.33	4,477.2	314.4	222.8	-296.0	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 9M-203	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	7.03	35.33	4,576.5	324.4	229.9	-305.4	0.00	0.00	0.00
4,653.9	7.03	35.33	4,630.0	329.8	233.7	-310.5	0.00	0.00	0.00
Sussex									
4,700.0	7.03	35.33	4,675.7	334.4	237.0	-314.8	0.00	0.00	0.00
4,800.0	7.03	35.33	4,775.0	344.3	244.0	-324.2	0.00	0.00	0.00
4,900.0	7.03	35.33	4,874.2	354.3	251.1	-333.6	0.00	0.00	0.00
5,000.0	7.03	35.33	4,973.5	364.3	258.2	-343.0	0.00	0.00	0.00
5,100.0	7.03	35.33	5,072.7	374.3	265.3	-352.4	0.00	0.00	0.00
5,127.5	7.03	35.33	5,100.0	377.0	267.2	-355.0	0.00	0.00	0.00
Shannon									
5,200.0	7.03	35.33	5,172.0	384.3	272.4	-361.8	0.00	0.00	0.00
5,300.0	7.03	35.33	5,271.2	394.3	279.4	-371.2	0.00	0.00	0.00
5,400.0	7.03	35.33	5,370.5	404.3	286.5	-380.6	0.00	0.00	0.00
5,500.0	7.03	35.33	5,469.7	414.2	293.6	-390.0	0.00	0.00	0.00
5,600.0	7.03	35.33	5,568.9	424.2	300.7	-399.4	0.00	0.00	0.00
5,700.0	7.03	35.33	5,668.2	434.2	307.7	-408.8	0.00	0.00	0.00
5,800.0	7.03	35.33	5,767.4	444.2	314.8	-418.2	0.00	0.00	0.00
5,882.6	7.03	35.33	5,849.4	452.4	320.7	-426.0	0.00	0.00	0.00
Start Drop -2.00									
5,900.0	6.68	35.33	5,866.7	454.1	321.9	-427.6	2.00	-2.00	0.00
6,000.0	4.68	35.33	5,966.2	462.2	327.6	-435.2	2.00	-2.00	0.00
6,100.0	2.68	35.33	6,066.0	467.4	331.3	-440.1	2.00	-2.00	0.00
6,200.0	0.68	35.33	6,165.9	469.8	333.0	-442.4	2.00	-2.00	0.00
6,234.1	0.00	0.00	6,200.0	470.0	333.1	-442.5	2.00	-2.00	0.00
Start 302.1 hold at 6234.1 MD									
6,300.0	0.00	0.00	6,265.9	470.0	333.1	-442.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,365.9	470.0	333.1	-442.5	0.00	0.00	0.00
6,500.0	0.00	0.00	6,465.9	470.0	333.1	-442.5	0.00	0.00	0.00
6,536.2	0.00	0.00	6,502.1	470.0	333.1	-442.5	0.00	0.00	0.00
Start Build 7.50									
6,600.0	4.79	180.00	6,565.9	467.3	333.1	-439.9	7.50	7.50	0.00
6,700.0	12.29	180.00	6,664.7	452.5	333.1	-425.1	7.50	7.50	0.00
6,800.0	19.79	180.00	6,760.7	424.9	333.1	-397.6	7.50	7.50	0.00
6,900.0	27.29	180.00	6,852.3	385.0	333.1	-357.8	7.50	7.50	0.00
7,000.0	34.79	180.00	6,938.0	333.5	333.1	-306.4	7.50	7.50	0.00
7,100.0	42.29	180.00	7,016.1	271.2	333.1	-244.4	7.50	7.50	0.00
7,200.0	49.79	180.00	7,085.5	199.3	333.1	-172.6	7.50	7.50	0.00
7,250.8	53.60	180.00	7,117.0	159.4	333.1	-132.9	7.50	7.50	0.00
Sharon Springs									
7,300.0	57.29	180.00	7,144.9	118.9	333.1	-92.5	7.50	7.50	0.00
7,321.0	58.86	180.00	7,156.0	101.1	333.1	-74.7	7.50	7.50	0.00
Niobrara A									
7,400.0	64.79	180.00	7,193.3	31.5	333.1	-5.4	7.50	7.50	0.00
7,500.0	72.29	180.00	7,229.8	-61.5	333.1	87.4	7.50	7.50	0.00
7,556.4	76.52	180.00	7,245.0	-115.9	333.1	141.5	7.50	7.50	0.00
Niobrara B									
7,600.0	79.79	180.00	7,253.9	-158.5	333.1	184.0	7.50	7.50	0.00
7,700.0	87.29	180.00	7,265.2	-257.8	333.1	283.0	7.50	7.50	0.00
7,738.3	90.16	180.00	7,266.0	-296.1	333.1	321.2	7.50	7.50	0.00
Start 3955.2 hold at 7738.3 MD - 7"									
7,800.0	90.16	180.00	7,265.9	-357.8	333.1	382.7	0.00	0.00	0.00

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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 9M-203	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	90.16	180.00	7,265.6	-457.8	333.1	482.4	0.00	0.00	0.00
8,000.0	90.16	180.00	7,265.3	-557.8	333.1	582.1	0.00	0.00	0.00
8,100.0	90.16	180.00	7,265.0	-657.8	333.1	681.8	0.00	0.00	0.00
8,200.0	90.16	180.00	7,264.8	-757.8	333.1	781.5	0.00	0.00	0.00
8,300.0	90.16	180.00	7,264.5	-857.8	333.1	881.2	0.00	0.00	0.00
8,400.0	90.16	180.00	7,264.2	-957.8	333.1	980.9	0.00	0.00	0.00
8,500.0	90.16	180.00	7,263.9	-1,057.8	333.1	1,080.6	0.00	0.00	0.00
8,600.0	90.16	180.00	7,263.6	-1,157.8	333.1	1,180.3	0.00	0.00	0.00
8,700.0	90.16	180.00	7,263.4	-1,257.8	333.1	1,280.0	0.00	0.00	0.00
8,800.0	90.16	180.00	7,263.1	-1,357.8	333.1	1,379.7	0.00	0.00	0.00
8,900.0	90.16	180.00	7,262.8	-1,457.8	333.1	1,479.3	0.00	0.00	0.00
9,000.0	90.16	180.00	7,262.5	-1,557.8	333.1	1,579.0	0.00	0.00	0.00
9,100.0	90.16	180.00	7,262.2	-1,657.8	333.1	1,678.7	0.00	0.00	0.00
9,200.0	90.16	180.00	7,262.0	-1,757.8	333.1	1,778.4	0.00	0.00	0.00
9,300.0	90.16	180.00	7,261.7	-1,857.8	333.1	1,878.1	0.00	0.00	0.00
9,400.0	90.16	180.00	7,261.4	-1,957.8	333.1	1,977.8	0.00	0.00	0.00
9,500.0	90.16	180.00	7,261.1	-2,057.8	333.1	2,077.5	0.00	0.00	0.00
9,600.0	90.16	180.00	7,260.8	-2,157.8	333.1	2,177.2	0.00	0.00	0.00
9,700.0	90.16	180.00	7,260.6	-2,257.8	333.1	2,276.9	0.00	0.00	0.00
9,800.0	90.16	180.00	7,260.3	-2,357.8	333.1	2,376.6	0.00	0.00	0.00
9,900.0	90.16	180.00	7,260.0	-2,457.8	333.1	2,476.3	0.00	0.00	0.00
10,000.0	90.16	180.00	7,259.7	-2,557.8	333.1	2,576.0	0.00	0.00	0.00
10,100.0	90.16	180.00	7,259.4	-2,657.8	333.1	2,675.7	0.00	0.00	0.00
10,200.0	90.16	180.00	7,259.2	-2,757.8	333.1	2,775.4	0.00	0.00	0.00
10,300.0	90.16	180.00	7,258.9	-2,857.8	333.1	2,875.1	0.00	0.00	0.00
10,400.0	90.16	180.00	7,258.6	-2,957.8	333.1	2,974.8	0.00	0.00	0.00
10,500.0	90.16	180.00	7,258.3	-3,057.8	333.1	3,074.5	0.00	0.00	0.00
10,600.0	90.16	180.00	7,258.1	-3,157.8	333.1	3,174.1	0.00	0.00	0.00
10,700.0	90.16	180.00	7,257.8	-3,257.8	333.1	3,273.8	0.00	0.00	0.00
10,800.0	90.16	180.00	7,257.5	-3,357.8	333.1	3,373.5	0.00	0.00	0.00
10,900.0	90.16	180.00	7,257.2	-3,457.8	333.1	3,473.2	0.00	0.00	0.00
11,000.0	90.16	180.00	7,256.9	-3,557.8	333.1	3,572.9	0.00	0.00	0.00
11,100.0	90.16	180.00	7,256.7	-3,657.8	333.1	3,672.6	0.00	0.00	0.00
11,200.0	90.16	180.00	7,256.4	-3,757.8	333.1	3,772.3	0.00	0.00	0.00
11,300.0	90.16	180.00	7,256.1	-3,857.8	333.1	3,872.0	0.00	0.00	0.00
11,400.0	90.16	180.00	7,255.8	-3,957.8	333.1	3,971.7	0.00	0.00	0.00
11,500.0	90.16	180.00	7,255.5	-4,057.8	333.1	4,071.4	0.00	0.00	0.00
11,600.0	90.16	180.00	7,255.3	-4,157.8	333.1	4,171.1	0.00	0.00	0.00
11,693.5	90.16	180.00	7,255.0	-4,251.3	333.1	4,264.3	0.00	0.00	0.00
BHL 500'FSL & 2490'FWL									

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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	+N-S	+E-W	Northing	Easting		
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Latitude	Longitude
BHL 500'FSL & 2490'I - plan hits target center - Point	0.00	0.00	7,255.0	-4,251.3	333.1	1,265,468.03	3,200,775.57	40.059870	-104.782700
SHL 520'FNL & 2183' - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,269,716.30	3,200,408.16	40.071540	-104.783890
50' E & W Hardline (9 - plan misses target center by 2297.0ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W3,957.1 H100.0 D0.0)	0.00	0.00	1.0	-2,272.7	333.1	1,267,446.39	3,200,759.58	40.065301	-104.782700

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,738.3	7,266.0	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,220.7	4,200.0	Parkman		0.00		
4,653.9	4,630.0	Sussex		0.00		
5,127.5	5,100.0	Shannon		0.00		
7,250.8	7,117.0	Sharon Springs		0.00		
7,321.0	7,156.0	Niobrara A		0.00		
7,556.4	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	
1,000.0	1,000.0	0.0	0.0	KOP - Start Build 1.00	
5,882.6	5,849.4	35.1	24.9	Start Drop -2.00	
6,234.1	6,200.0	452.4	320.7	Start 302.1 hold at 6234.1 MD	
6,536.2	6,502.1	470.0	333.1	Start Build 7.50	
7,738.3	7,266.0	470.0	333.1	Start 3955.2 hold at 7738.3 MD	
11,693.5	7,255.0	-296.1	333.1	TD at 11693.5	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W

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

Fitzsimmons 9M-203

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 9M-203
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 9M-203	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	11,693.5	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						
Ft. Lupton Highlands 31-9 (Exist.) - Wellbore #1 - Wellbo						Out of range
Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W						
Fitzsimmons 9J-223 - Wellbore #1 - Plan #2 (5-01-15)	800.0	800.0	88.8	85.4	26.333 CC	
Fitzsimmons 9J-223 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	999.8	89.0	84.8	20.885 ES	
Fitzsimmons 9J-223 - Wellbore #1 - Plan #2 (5-01-15)	1,400.0	1,397.4	107.3	101.2	17.698 SF	
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	1,000.0	1,000.0	117.6	113.4	27.546 CC, ES	
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	1,400.0	1,396.7	135.4	129.3	22.493 SF	
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	59.9	55.7	14.032 CC, ES	
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	11,693.5	11,773.4	583.9	415.3	3.464 SF	
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	28.9	24.6	6.759 CC, ES	
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	11,693.5	11,885.0	367.6	228.7	2.647 SF	
Ft. Lupton Pad Sec.9-T1N-R66W						
Ft. Lupton Highlands 32-9 (Exist.) - Wellbore #1 - Design	8,710.7	7,000.0	687.1	643.4	15.720 CC, ES	
Ft. Lupton Highlands 32-9 (Exist.) - Wellbore #1 - Design	8,900.0	7,000.0	712.7	666.1	15.303 SF	
Ft. Lupton Highlands USX WW 09-22D - Wellbore #1 - F						Out of range
Ft. Lupton Highlands USX WW09-18D - Ft. Lupton Highl	8,120.6	7,365.2	197.1	156.3	4.835 CC, ES, SF	
Keller WW Pad SEC.9-T1N-R66W						
Keller WW 09-10D - Wellbore #1 - Wellbore #1	10,214.2	7,460.9	746.7	671.7	9.963 CC, ES	
Keller WW 09-10D - Wellbore #1 - Wellbore #1	10,400.0	7,461.1	769.5	691.1	9.819 SF	
Nelson Pad SEC.9-T1N-R66W						
Nelson 34-9 (Exist.) - Nelson 34-9 "Existing Well" - Nelso						Out of range

Offset Design Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-223 - Wellbore #1 - Plan #2 (5													
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	0.0	0.0	0.0	0.0	-127.99	-54.6	-70.0	88.8				
100.0	100.0	100.0	100.0	0.1	0.1	-127.99	-54.6	-70.0	88.8	88.6	0.22	394.989	
200.0	200.0	200.0	200.0	0.3	0.3	-127.99	-54.6	-70.0	88.8	88.1	0.67	131.663	

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 9M-203
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 9M-203	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-223 - 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					
300.0	300.0	300.0	300.0		0.6	0.6	-127.99	-54.6	-70.0	88.8	87.7	1.12	78.998				
400.0	400.0	400.0	400.0		0.8	0.8	-127.99	-54.6	-70.0	88.8	87.2	1.57	56.427				
500.0	500.0	500.0	500.0		1.0	1.0	-127.99	-54.6	-70.0	88.8	86.8	2.02	43.888				
600.0	600.0	600.0	600.0		1.2	1.2	-127.99	-54.6	-70.0	88.8	86.3	2.47	35.908				
700.0	700.0	700.0	700.0		1.5	1.5	-127.99	-54.6	-70.0	88.8	85.9	2.92	30.384				
800.0	800.0	800.0	800.0		1.7	1.7	-127.99	-54.6	-70.0	88.8	85.4	3.37	26.333 CC				
900.0	900.0	899.9	899.9		1.9	1.9	-127.43	-54.0	-70.5	88.8	85.0	3.82	23.267				
1,000.0	1,000.0	999.8	999.7		2.1	2.1	-125.75	-52.0	-72.2	89.0	84.8	4.26	20.885 ES				
1,100.0	1,100.0	1,099.5	1,099.4		2.4	2.4	-158.51	-48.7	-75.1	90.3	85.6	4.71	19.199				
1,200.0	1,200.0	1,199.1	1,198.7		2.6	2.6	-155.40	-44.2	-79.1	93.7	88.6	5.15	18.198				
1,300.0	1,299.9	1,298.4	1,297.7		2.8	2.8	-152.00	-38.3	-84.2	99.3	93.7	5.60	17.734				
1,400.0	1,399.7	1,397.4	1,396.3		3.0	3.1	-148.57	-31.1	-90.4	107.3	101.2	6.06	17.698 SF				
1,500.0	1,499.4	1,496.0	1,494.3		3.3	3.3	-145.29	-22.8	-97.6	117.6	111.0	6.53	18.001				
1,600.0	1,598.9	1,594.2	1,591.7		3.5	3.6	-142.30	-13.1	-106.0	130.2	123.2	7.01	18.568				
1,702.9	1,701.1	1,695.8	1,692.3		3.8	3.9	-139.90	-2.6	-115.2	145.3	137.8	7.53	19.308				
1,800.0	1,797.5	1,791.7	1,787.3		4.0	4.2	-138.33	7.4	-123.8	160.3	152.3	8.02	19.983				
1,900.0	1,896.8	1,890.4	1,885.0		4.3	4.5	-137.00	17.7	-132.7	175.9	167.4	8.55	20.586				
2,000.0	1,996.0	1,989.1	1,982.8		4.6	4.8	-135.88	28.0	-141.6	191.6	182.5	9.08	21.112				
2,100.0	2,095.3	2,087.8	2,080.5		4.9	5.1	-134.93	38.2	-150.5	207.3	197.7	9.61	21.571				
2,200.0	2,194.5	2,186.5	2,178.3		5.1	5.4	-134.12	48.5	-159.5	223.1	212.9	10.15	21.975				
2,300.0	2,293.8	2,285.2	2,276.1		5.4	5.7	-133.41	58.8	-168.4	238.9	228.2	10.70	22.332				
2,400.0	2,393.0	2,383.9	2,373.8		5.7	6.0	-132.79	69.1	-177.3	254.7	243.5	11.25	22.648				
2,500.0	2,492.2	2,482.6	2,471.6		6.0	6.3	-132.25	79.3	-186.2	270.6	258.8	11.80	22.931				
2,600.0	2,591.5	2,581.3	2,569.3		6.3	6.7	-131.76	89.6	-195.1	286.5	274.1	12.36	23.185				
2,700.0	2,690.7	2,680.0	2,667.1		6.6	7.0	-131.32	99.9	-204.0	302.4	289.5	12.92	23.413				
2,800.0	2,790.0	2,778.7	2,764.9		6.9	7.3	-130.93	110.2	-212.9	318.3	304.9	13.48	23.619				
2,900.0	2,889.2	2,877.4	2,862.6		7.2	7.6	-130.58	120.4	-221.8	334.3	320.2	14.04	23.807				
3,000.0	2,988.5	2,976.1	2,960.4		7.5	8.0	-130.26	130.7	-230.8	350.2	335.6	14.61	23.978				
3,100.0	3,087.7	3,074.8	3,058.1		7.8	8.3	-129.96	141.0	-239.7	366.2	351.0	15.17	24.134				
3,200.0	3,187.0	3,173.5	3,155.9		8.1	8.6	-129.69	151.3	-248.6	382.1	366.4	15.74	24.277				
3,300.0	3,286.2	3,272.2	3,253.7		8.4	8.9	-129.45	161.5	-257.5	398.1	381.8	16.31	24.409				
3,400.0	3,385.5	3,370.9	3,351.4		8.7	9.3	-129.22	171.8	-266.4	414.1	397.2	16.88	24.531				
3,500.0	3,484.7	3,469.6	3,449.2		9.0	9.6	-129.01	182.1	-275.3	430.1	412.6	17.45	24.644				
3,600.0	3,584.0	3,568.3	3,546.9		9.4	9.9	-128.81	192.4	-284.2	446.1	428.0	18.02	24.748				
3,700.0	3,683.2	3,667.0	3,644.7		9.7	10.3	-128.63	202.6	-293.1	462.1	443.5	18.60	24.845				
3,800.0	3,782.5	3,765.7	3,742.5		10.0	10.6	-128.46	212.9	-302.0	478.1	458.9	19.17	24.936				
3,900.0	3,881.7	3,864.4	3,840.2		10.3	10.9	-128.30	223.2	-311.0	494.1	474.3	19.75	25.020				
4,000.0	3,981.0	3,963.1	3,938.0		10.6	11.2	-128.15	233.5	-319.9	510.1	489.8	20.32	25.099				
4,100.0	4,080.2	4,061.8	4,035.7		10.9	11.6	-128.01	243.7	-328.8	526.1	505.2	20.90	25.174				
4,200.0	4,179.5	4,160.5	4,133.5		11.2	11.9	-127.87	254.0	-337.7	542.1	520.6	21.48	25.243				
4,300.0	4,278.7	4,259.2	4,231.3		11.5	12.2	-127.75	264.3	-346.6	558.1	536.1	22.05	25.309				
4,400.0	4,378.0	4,357.9	4,329.0		11.8	12.6	-127.63	274.5	-355.5	574.1	551.5	22.63	25.371				
4,500.0	4,477.2	4,456.6	4,426.8		12.2	12.9	-127.52	284.8	-364.4	590.2	566.9	23.21	25.429				
4,600.0	4,576.5	4,555.3	4,524.5		12.5	13.2	-127.42	295.1	-373.3	606.2	582.4	23.79	25.484				
4,700.0	4,675.7	4,654.0	4,622.3		12.8	13.6	-127.32	305.4	-382.3	622.2	597.8	24.37	25.536				
4,800.0	4,775.0	4,752.7	4,720.1		13.1	13.9	-127.22	315.6	-391.2	638.2	613.3	24.94	25.586				
4,900.0	4,874.2	4,851.4	4,817.8		13.4	14.2	-127.13	325.9	-400.1	654.3	628.7	25.52	25.633				
5,000.0	4,973.5	4,950.1	4,915.6		13.7	14.6	-127.04	336.2	-409.0	670.3	644.2	26.10	25.677				
5,100.0	5,072.7	5,048.8	5,013.4		14.0	14.9	-126.96	346.5	-417.9	686.3	659.6	26.68	25.720				
5,200.0	5,172.0	5,147.5	5,111.1		14.3	15.2	-126.88	356.7	-426.8	702.4	675.1	27.27	25.760				
5,300.0	5,271.2	5,246.3	5,208.9		14.7	15.6	-126.81	367.0	-435.7	718.4	690.5	27.85	25.799				

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 9M-203
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 9M-203	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	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)				
5,400.0	5,370.5	5,345.0	5,306.6	15.0	15.9	-126.74	377.3	-444.6	734.4	706.0	28.43	25.835			
5,500.0	5,469.7	5,443.7	5,404.4	15.3	16.2	-126.67	387.6	-453.6	750.5	721.4	29.01	25.870			
5,600.0	5,568.9	5,542.4	5,502.2	15.6	16.6	-126.60	397.8	-462.5	766.5	736.9	29.59	25.904			
5,700.0	5,668.2	5,641.1	5,599.9	15.9	16.9	-126.54	408.1	-471.4	782.5	752.4	30.17	25.936			
5,800.0	5,767.4	5,739.8	5,697.7	16.2	17.2	-126.48	418.4	-480.3	798.6	767.8	30.75	25.967			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-128.27	-72.9	-92.4	117.6							
100.0	100.0	100.0	100.0	0.1	0.1	-128.27	-72.9	-92.4	117.6	117.4	0.22	523.371				
200.0	200.0	200.0	200.0	0.3	0.3	-128.27	-72.9	-92.4	117.6	117.0	0.67	174.457				
300.0	300.0	300.0	300.0	0.6	0.6	-128.27	-72.9	-92.4	117.6	116.5	1.12	104.674				
400.0	400.0	400.0	400.0	0.8	0.8	-128.27	-72.9	-92.4	117.6	116.1	1.57	74.767				
500.0	500.0	500.0	500.0	1.0	1.0	-128.27	-72.9	-92.4	117.6	115.6	2.02	58.152				
600.0	600.0	600.0	600.0	1.2	1.2	-128.27	-72.9	-92.4	117.6	115.2	2.47	47.579				
700.0	700.0	700.0	700.0	1.5	1.5	-128.27	-72.9	-92.4	117.6	114.7	2.92	40.259				
800.0	800.0	800.0	800.0	1.7	1.7	-128.27	-72.9	-92.4	117.6	114.3	3.37	34.891				
900.0	900.0	900.0	900.0	1.9	1.9	-128.27	-72.9	-92.4	117.6	113.8	3.82	30.787				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-128.27	-72.9	-92.4	117.6	113.4	4.27	27.546 CC, ES				
1,100.0	1,100.0	1,099.4	1,099.4	2.4	2.4	-163.31	-72.4	-93.1	118.7	114.0	4.71	25.207				
1,200.0	1,200.0	1,198.7	1,198.7	2.6	2.6	-162.49	-70.9	-95.2	122.0	116.9	5.14	23.724				
1,300.0	1,299.9	1,297.8	1,297.7	2.8	2.8	-161.22	-68.4	-98.7	127.5	122.0	5.58	22.862				
1,400.0	1,399.7	1,396.7	1,396.3	3.0	3.0	-159.62	-65.0	-103.6	135.4	129.3	6.02	22.493 SF				
1,500.0	1,499.4	1,495.2	1,494.5	3.3	3.2	-157.81	-60.6	-109.9	145.5	139.1	6.46	22.520				
1,600.0	1,598.9	1,593.2	1,592.1	3.5	3.5	-155.92	-55.3	-117.5	158.1	151.2	6.91	22.868				
1,702.9	1,701.1	1,693.5	1,691.8	3.8	3.7	-153.98	-48.9	-126.8	173.6	166.2	7.39	23.495				
1,800.0	1,797.5	1,787.7	1,785.2	4.0	4.0	-152.19	-42.0	-136.7	189.9	182.1	7.86	24.169				
1,900.0	1,896.8	1,884.3	1,880.8	4.3	4.3	-150.25	-33.9	-148.2	207.7	199.3	8.35	24.862				
2,000.0	1,996.0	1,980.3	1,975.5	4.6	4.6	-148.27	-25.0	-161.0	226.5	217.7	8.86	25.557				
2,100.0	2,095.3	2,075.8	2,069.5	4.9	4.9	-146.28	-15.3	-175.0	246.5	237.1	9.39	26.259				
2,200.0	2,194.5	2,170.7	2,162.6	5.1	5.2	-144.31	-4.7	-190.2	267.7	257.7	9.92	26.972				
2,300.0	2,293.8	2,267.1	2,256.9	5.4	5.6	-142.42	6.6	-206.5	289.8	279.3	10.48	27.663				
2,400.0	2,393.0	2,364.2	2,351.9	5.7	5.9	-140.77	18.1	-223.0	312.3	301.2	11.04	28.293				
2,500.0	2,492.2	2,461.3	2,446.9	6.0	6.3	-139.35	29.6	-239.4	334.9	323.3	11.60	28.867				
2,600.0	2,591.5	2,558.4	2,541.9	6.3	6.7	-138.10	41.1	-255.9	357.8	345.6	12.17	29.393				
2,700.0	2,690.7	2,655.5	2,636.8	6.6	7.1	-137.01	52.6	-272.4	380.7	368.0	12.75	29.874				
2,800.0	2,790.0	2,752.5	2,731.8	6.9	7.5	-136.04	64.0	-288.9	403.8	390.5	13.32	30.316				
2,900.0	2,889.2	2,849.6	2,826.8	7.2	7.9	-135.17	75.5	-305.4	427.0	413.1	13.90	30.723				
3,000.0	2,988.5	2,946.7	2,921.8	7.5	8.3	-134.40	87.0	-321.8	450.3	435.8	14.48	31.099				
3,100.0	3,087.7	3,043.8	3,016.8	7.8	8.7	-133.70	98.5	-338.3	473.7	458.6	15.06	31.446				
3,200.0	3,187.0	3,140.9	3,111.8	8.1	9.2	-133.06	109.9	-354.8	497.1	481.4	15.65	31.768				
3,300.0	3,286.2	3,237.9	3,206.7	8.4	9.6	-132.48	121.4	-371.3	520.5	504.3	16.23	32.068				
3,400.0	3,385.5	3,335.0	3,301.7	8.7	10.0	-131.96	132.9	-387.8	544.0	527.2	16.82	32.346				
3,500.0	3,484.7	3,432.1	3,396.7	9.0	10.4	-131.47	144.4	-404.2	567.6	550.2	17.41	32.606				
3,600.0	3,584.0	3,529.2	3,491.7	9.4	10.8	-131.03	155.9	-420.7	591.2	573.2	18.00	32.849				
3,700.0	3,683.2	3,626.3	3,586.7	9.7	11.3	-130.62	167.3	-437.2	614.8	596.2	18.59	33.076				
3,800.0	3,782.5	3,723.3	3,681.6	10.0	11.7	-130.23	178.8	-453.7	638.4	619.2	19.18	33.289				
3,900.0	3,881.7	3,820.4	3,776.6	10.3	12.1	-129.88	190.3	-470.2	662.1	642.3	19.77	33.490				
4,000.0	3,981.0	3,917.5	3,871.6	10.6	12.5	-129.55	201.8	-486.6	685.8	665.4	20.36	33.678				
4,100.0	4,080.2	4,014.6	3,966.6	10.9	13.0	-129.24	213.3	-503.1	709.5	688.5	20.96	33.856				
4,200.0	4,179.5	4,111.7	4,061.6	11.2	13.4	-128.96	224.7	-519.6	733.2	711.6	21.55	34.024				
4,300.0	4,278.7	4,208.7	4,156.5	11.5	13.8	-128.69	236.2	-536.1	756.9	734.8	22.14	34.183				
4,400.0	4,378.0	4,305.8	4,251.5	11.8	14.3	-128.43	247.7	-552.5	780.7	758.0	22.74	34.334				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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		
0.0	0.0	0.0	0.0	0.0	0.0	-127.44	-36.4	-47.6	59.9					
100.0	100.0	100.0	100.0	0.1	0.1	-127.44	-36.4	-47.6	59.9	59.7	0.22	266.613		
200.0	200.0	200.0	200.0	0.3	0.3	-127.44	-36.4	-47.6	59.9	59.3	0.67	88.871		
300.0	300.0	300.0	300.0	0.6	0.6	-127.44	-36.4	-47.6	59.9	58.8	1.12	53.323		
400.0	400.0	400.0	400.0	0.8	0.8	-127.44	-36.4	-47.6	59.9	58.4	1.57	38.088		
500.0	500.0	500.0	500.0	1.0	1.0	-127.44	-36.4	-47.6	59.9	57.9	2.02	29.624		
600.0	600.0	600.0	600.0	1.2	1.2	-127.44	-36.4	-47.6	59.9	57.5	2.47	24.238		
700.0	700.0	700.0	700.0	1.5	1.5	-127.44	-36.4	-47.6	59.9	57.0	2.92	20.509		
800.0	800.0	800.0	800.0	1.7	1.7	-127.44	-36.4	-47.6	59.9	56.6	3.37	17.774		
900.0	900.0	900.0	900.0	1.9	1.9	-127.44	-36.4	-47.6	59.9	56.1	3.82	15.683		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-127.44	-36.4	-47.6	59.9	55.7	4.27	14.032	CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-163.01	-36.4	-47.6	60.8	56.0	4.72	12.881		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-163.70	-36.4	-47.6	63.3	58.1	5.16	12.259		
1,300.0	1,299.9	1,300.2	1,300.2	2.8	2.8	-164.02	-35.6	-47.9	67.2	61.6	5.60	11.993		
1,400.0	1,399.7	1,400.4	1,400.4	3.0	3.0	-163.35	-33.2	-48.9	72.3	66.3	6.04	11.961		
1,500.0	1,499.4	1,500.6	1,500.4	3.3	3.3	-161.91	-29.1	-50.5	78.6	72.1	6.49	12.116		
1,600.0	1,598.9	1,600.6	1,600.3	3.5	3.5	-159.93	-23.4	-52.7	86.1	79.2	6.93	12.428		
1,702.9	1,701.1	1,703.4	1,702.7	3.8	3.7	-157.56	-15.9	-55.6	95.3	87.9	7.40	12.887		
1,800.0	1,797.5	1,800.2	1,799.1	4.0	4.0	-155.01	-7.2	-59.0	104.7	96.8	7.86	13.320		
1,900.0	1,896.8	1,899.8	1,898.1	4.3	4.2	-151.98	3.3	-63.2	114.3	105.9	8.35	13.689		
2,000.0	1,996.0	1,999.2	1,996.6	4.6	4.5	-148.72	15.2	-67.8	124.1	115.2	8.86	14.011		
2,100.0	2,095.3	2,098.5	2,095.0	4.9	4.7	-145.86	27.2	-72.5	134.2	124.9	9.38	14.312		
2,200.0	2,194.5	2,197.7	2,193.5	5.1	5.0	-143.40	39.3	-77.3	144.7	134.8	9.91	14.595		
2,300.0	2,293.8	2,297.0	2,291.9	5.4	5.3	-141.28	51.4	-82.0	155.3	144.9	10.46	14.857		
2,400.0	2,393.0	2,396.3	2,390.3	5.7	5.6	-139.43	63.4	-86.7	166.2	155.2	11.01	15.100		
2,500.0	2,492.2	2,495.6	2,488.8	6.0	5.9	-137.81	75.5	-91.5	177.2	165.6	11.56	15.324		
2,600.0	2,591.5	2,594.8	2,587.2	6.3	6.2	-136.38	87.6	-96.2	188.3	176.2	12.13	15.530		
2,700.0	2,690.7	2,694.1	2,685.6	6.6	6.5	-135.11	99.6	-100.9	199.5	186.8	12.69	15.721		
2,800.0	2,790.0	2,793.4	2,784.0	6.9	6.8	-133.97	111.7	-105.6	210.8	197.6	13.26	15.897		
2,900.0	2,889.2	2,892.7	2,882.5	7.2	7.1	-132.95	123.7	-110.4	222.2	208.4	13.84	16.060		
3,000.0	2,988.5	2,991.9	2,980.9	7.5	7.4	-132.03	135.8	-115.1	233.7	219.3	14.42	16.211		
3,100.0	3,087.7	3,091.2	3,079.3	7.8	7.7	-131.20	147.9	-119.8	245.2	230.2	15.00	16.351		
3,200.0	3,187.0	3,190.5	3,177.7	8.1	8.0	-130.44	159.9	-124.6	256.7	241.2	15.58	16.481		
3,300.0	3,286.2	3,289.8	3,276.2	8.4	8.3	-129.74	172.0	-129.3	268.3	252.2	16.16	16.603		
3,400.0	3,385.5	3,389.0	3,374.6	8.7	8.6	-129.11	184.1	-134.0	280.0	263.2	16.75	16.716		
3,500.0	3,484.7	3,488.3	3,473.0	9.0	8.9	-128.52	196.1	-138.7	291.6	274.3	17.34	16.822		
3,600.0	3,584.0	3,587.6	3,571.4	9.4	9.2	-127.98	208.2	-143.5	303.3	285.4	17.92	16.921		
3,700.0	3,683.2	3,686.9	3,669.9	9.7	9.5	-127.48	220.3	-148.2	315.0	296.5	18.51	17.015		
3,800.0	3,782.5	3,786.1	3,768.3	10.0	9.9	-127.01	232.3	-152.9	326.7	307.6	19.11	17.102		
3,900.0	3,881.7	3,885.4	3,866.7	10.3	10.2	-126.58	244.4	-157.7	338.5	318.8	19.70	17.185		
4,000.0	3,981.0	3,984.7	3,965.2	10.6	10.5	-126.18	256.4	-162.4	350.3	330.0	20.29	17.263		
4,100.0	4,080.2	4,084.0	4,063.6	10.9	10.8	-125.80	268.5	-167.1	362.1	341.2	20.88	17.336		
4,200.0	4,179.5	4,183.2	4,162.0	11.2	11.1	-125.45	280.6	-171.8	373.9	352.4	21.48	17.406		
4,300.0	4,278.7	4,282.5	4,260.4	11.5	11.4	-125.12	292.6	-176.6	385.7	363.6	22.07	17.471		
4,400.0	4,378.0	4,381.8	4,358.9	11.8	11.8	-124.80	304.7	-181.3	397.5	374.8	22.67	17.534		
4,500.0	4,477.2	4,481.1	4,457.3	12.2	12.1	-124.51	316.8	-186.0	409.3	386.1	23.27	17.593		
4,600.0	4,576.5	4,580.3	4,555.7	12.5	12.4	-124.23	328.8	-190.8	421.2	397.3	23.86	17.649		
4,700.0	4,675.7	4,679.6	4,654.1	12.8	12.7	-123.97	340.9	-195.5	433.0	408.6	24.46	17.703		
4,800.0	4,775.0	4,778.9	4,752.6	13.1	13.0	-123.72	352.9	-200.2	444.9	419.8	25.06	17.754		
4,900.0	4,874.2	4,878.2	4,851.0	13.4	13.4	-123.49	365.0	-204.9	456.8	431.1	25.66	17.803		
5,000.0	4,973.5	4,977.5	4,949.4	13.7	13.7	-123.26	377.1	-209.7	468.7	442.4	26.26	17.849		

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 9M-203
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 9M-203	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		
5,100.0	5,072.7	5,076.7	5,047.8	14.0	14.0	-123.05	389.1	-214.4	480.5	453.7	26.86	17.894		
5,200.0	5,172.0	5,176.0	5,146.3	14.3	14.3	-122.85	401.2	-219.1	492.4	465.0	27.46	17.936		
5,300.0	5,271.2	5,275.3	5,244.7	14.7	14.6	-122.66	413.3	-223.9	504.3	476.3	28.05	17.977		
5,400.0	5,370.5	5,374.6	5,343.1	15.0	15.0	-122.47	425.3	-228.6	516.2	487.6	28.65	18.016		
5,500.0	5,469.7	5,473.8	5,441.5	15.3	15.3	-122.30	437.4	-233.3	528.2	498.9	29.26	18.053		
5,600.0	5,568.9	5,574.3	5,541.1	15.6	15.6	-122.13	449.6	-238.1	540.1	510.2	29.85	18.090		
5,700.0	5,668.2	5,682.1	5,648.4	15.9	15.9	-122.20	460.3	-242.3	551.0	520.6	30.40	18.125		
5,800.0	5,767.4	5,790.1	5,756.1	16.2	16.1	-122.66	467.2	-245.0	560.4	529.5	30.91	18.132		
5,882.6	5,849.4	5,879.2	5,845.2	16.5	16.2	-123.30	470.1	-246.1	567.1	535.8	31.29	18.121		
5,900.0	5,866.7	5,898.0	5,863.9	16.5	16.3	-123.48	470.4	-246.2	568.3	537.0	31.37	18.115		
6,000.0	5,966.2	6,000.3	5,966.2	16.8	16.4	-124.40	470.6	-246.3	574.0	542.2	31.77	18.068		
6,100.0	6,066.0	6,100.1	6,066.0	17.0	16.6	-124.99	470.6	-246.3	577.6	545.5	32.15	17.968		
6,200.0	6,165.9	6,200.0	6,165.9	17.1	16.8	-125.25	470.6	-246.3	579.3	546.8	32.50	17.827		
6,234.1	6,200.0	6,234.1	6,200.0	17.2	16.8	-89.94	470.6	-246.3	579.4	546.8	32.61	17.769		
6,300.0	6,265.9	6,300.0	6,265.9	17.3	16.9	-89.94	470.6	-246.3	579.4	546.6	32.84	17.645		
6,400.0	6,365.9	6,400.0	6,365.9	17.5	17.1	-89.94	470.6	-246.3	579.4	546.2	33.20	17.451		
6,500.0	6,465.9	6,500.0	6,465.9	17.6	17.3	-89.94	470.6	-246.3	579.4	545.9	33.57	17.260		
6,536.2	6,502.1	6,536.2	6,502.1	17.7	17.4	-89.94	470.6	-246.3	579.4	545.7	33.70	17.192		
6,550.0	6,515.9	6,550.0	6,515.9	17.7	17.4	90.07	470.6	-246.3	579.4	545.7	33.75	17.167		
6,600.0	6,565.9	6,599.9	6,565.9	17.8	17.5	90.32	470.6	-246.3	579.4	545.5	33.90	17.090		
6,650.0	6,615.5	6,650.0	6,615.9	17.8	17.6	90.81	469.8	-246.3	579.5	545.5	34.02	17.032		
6,700.0	6,664.7	6,700.4	6,666.2	17.8	17.6	91.32	465.8	-246.3	579.6	545.5	34.08	17.007		
6,750.0	6,713.2	6,751.2	6,716.4	17.8	17.6	91.82	458.5	-246.3	579.7	545.6	34.08	17.008		
6,800.0	6,760.7	6,802.4	6,766.4	17.8	17.6	92.31	447.7	-246.3	579.9	545.9	34.04	17.034		
6,850.0	6,807.2	6,853.9	6,816.0	17.7	17.6	92.80	433.5	-246.3	580.1	546.2	33.96	17.083		
6,900.0	6,852.3	6,905.8	6,864.7	17.7	17.5	93.28	415.9	-246.3	580.4	546.5	33.84	17.151		
6,950.0	6,896.0	6,958.0	6,912.5	17.6	17.5	93.74	394.9	-246.3	580.7	547.0	33.69	17.235		
7,000.0	6,938.0	7,010.6	6,959.0	17.5	17.4	94.19	370.5	-246.3	581.0	547.5	33.52	17.331		
7,050.0	6,978.1	7,063.5	7,004.1	17.4	17.3	94.62	342.7	-246.3	581.3	548.0	33.34	17.435		
7,100.0	7,016.1	7,116.7	7,047.4	17.3	17.2	95.03	311.7	-246.3	581.7	548.5	33.17	17.539		
7,150.0	7,052.0	7,170.3	7,088.6	17.2	17.1	95.42	277.6	-246.3	582.0	549.0	33.00	17.637		
7,200.0	7,085.5	7,224.2	7,127.6	17.1	17.0	95.78	240.4	-246.3	582.4	549.5	32.87	17.721		
7,250.0	7,116.5	7,278.3	7,164.0	17.1	16.9	96.12	200.3	-246.3	582.8	550.0	32.77	17.783		
7,300.0	7,144.9	7,332.8	7,197.7	17.0	16.8	96.43	157.5	-246.3	583.1	550.4	32.73	17.816		
7,350.0	7,170.5	7,387.5	7,228.4	16.9	16.8	96.71	112.2	-246.3	583.4	550.7	32.76	17.812		
7,400.0	7,193.3	7,442.4	7,255.9	16.8	16.8	96.96	64.7	-246.3	583.7	550.9	32.86	17.764		
7,450.0	7,213.1	7,497.6	7,279.9	16.8	16.8	97.18	15.1	-246.3	584.0	551.0	33.06	17.667		
7,500.0	7,229.8	7,552.9	7,300.4	16.7	16.8	97.37	-36.3	-246.3	584.2	550.9	33.35	17.517		
7,550.0	7,243.5	7,608.4	7,317.2	17.0	17.0	97.52	-89.2	-246.3	584.4	550.7	33.75	17.315		
7,600.0	7,253.9	7,664.0	7,330.1	17.3	17.2	97.63	-143.2	-246.3	584.6	550.3	34.26	17.064		
7,650.0	7,261.2	7,719.7	7,339.0	17.6	17.5	97.71	-198.2	-246.3	584.7	549.8	34.87	16.769		
7,700.0	7,265.2	7,775.4	7,343.9	18.0	17.9	97.75	-253.7	-246.3	584.8	549.2	35.57	16.437		
7,738.3	7,266.0	7,818.1	7,345.0	18.4	18.2	97.76	-296.4	-246.3	584.8	548.6	36.18	16.165		
7,800.0	7,265.9	7,879.9	7,344.7	18.9	18.7	97.75	-358.1	-246.3	584.8	547.6	37.20	15.718		
7,900.0	7,265.6	7,979.9	7,344.2	19.9	19.7	97.73	-458.1	-246.3	584.7	545.6	39.10	14.957		
8,000.0	7,265.3	8,079.9	7,343.8	21.1	20.8	97.71	-558.1	-246.3	584.7	543.5	41.25	14.175		
8,100.0	7,265.0	8,179.9	7,343.3	22.3	22.0	97.69	-658.1	-246.3	584.7	541.1	43.63	13.401		
8,200.0	7,264.8	8,279.9	7,342.9	23.6	23.2	97.68	-758.1	-246.3	584.7	538.5	46.20	12.654		
8,300.0	7,264.5	8,379.9	7,342.4	25.0	24.6	97.66	-858.1	-246.3	584.6	535.7	48.94	11.947		
8,400.0	7,264.2	8,479.9	7,342.0	26.4	26.0	97.64	-958.1	-246.3	584.6	532.8	51.80	11.285		

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 9M-203
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 9M-203	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	
8,500.0	7,263.9	8,579.9	7,341.5	27.9	27.5	97.63	-1,058.1	-246.3	584.6	529.8	54.79	10.670		
8,600.0	7,263.6	8,679.9	7,341.1	29.5	29.1	97.61	-1,158.1	-246.3	584.6	526.7	57.87	10.102		
8,700.0	7,263.4	8,779.9	7,340.6	31.1	30.7	97.59	-1,258.1	-246.3	584.5	523.5	61.03	9.579		
8,800.0	7,263.1	8,879.9	7,340.1	32.7	32.3	97.58	-1,358.1	-246.3	584.5	520.3	64.26	9.096		
8,900.0	7,262.8	8,979.9	7,339.7	34.4	33.9	97.56	-1,458.1	-246.3	584.5	517.0	67.55	8.653		
9,000.0	7,262.5	9,079.9	7,339.2	36.1	35.6	97.54	-1,558.1	-246.3	584.5	513.6	70.89	8.245		
9,100.0	7,262.2	9,179.9	7,338.8	37.8	37.3	97.53	-1,658.1	-246.3	584.5	510.2	74.28	7.868		
9,200.0	7,262.0	9,279.9	7,338.3	39.5	39.0	97.51	-1,758.1	-246.3	584.4	506.7	77.71	7.521		
9,300.0	7,261.7	9,379.9	7,337.9	41.2	40.8	97.49	-1,858.1	-246.3	584.4	503.2	81.17	7.200		
9,400.0	7,261.4	9,479.9	7,337.4	43.0	42.5	97.47	-1,958.1	-246.3	584.4	499.7	84.66	6.903		
9,500.0	7,261.1	9,579.9	7,337.0	44.7	44.3	97.46	-2,058.1	-246.3	584.4	496.2	88.18	6.627		
9,600.0	7,260.8	9,679.9	7,336.5	46.5	46.1	97.44	-2,158.1	-246.3	584.3	492.6	91.72	6.371		
9,700.0	7,260.6	9,779.9	7,336.1	48.3	47.8	97.42	-2,258.1	-246.3	584.3	489.0	95.28	6.133		
9,800.0	7,260.3	9,879.9	7,335.6	50.1	49.6	97.41	-2,358.1	-246.3	584.3	485.4	98.86	5.910		
9,900.0	7,260.0	9,979.9	7,335.2	51.9	51.4	97.39	-2,458.1	-246.3	584.3	481.8	102.45	5.703		
10,000.0	7,259.7	10,079.9	7,334.7	53.7	53.3	97.37	-2,558.1	-246.3	584.3	478.2	106.07	5.508		
10,100.0	7,259.4	10,179.9	7,334.2	55.5	55.1	97.36	-2,658.1	-246.3	584.2	474.5	109.69	5.326		
10,200.0	7,259.2	10,279.9	7,333.8	57.4	56.9	97.34	-2,758.1	-246.3	584.2	470.9	113.33	5.155		
10,300.0	7,258.9	10,379.9	7,333.3	59.2	58.7	97.32	-2,858.1	-246.3	584.2	467.2	116.98	4.994		
10,400.0	7,258.6	10,479.9	7,332.9	61.0	60.6	97.30	-2,958.1	-246.3	584.2	463.5	120.63	4.842		
10,500.0	7,258.3	10,579.9	7,332.4	62.9	62.4	97.29	-3,058.1	-246.3	584.1	459.8	124.30	4.699		
10,600.0	7,258.1	10,679.9	7,332.0	64.7	64.3	97.27	-3,158.1	-246.3	584.1	456.1	127.98	4.564		
10,700.0	7,257.8	10,779.9	7,331.5	66.6	66.1	97.25	-3,258.1	-246.3	584.1	452.4	131.66	4.436		
10,800.0	7,257.5	10,879.9	7,331.1	68.4	68.0	97.24	-3,358.1	-246.3	584.1	448.7	135.35	4.315		
10,900.0	7,257.2	10,979.9	7,330.6	70.3	69.8	97.22	-3,458.1	-246.3	584.1	445.0	139.05	4.200		
11,000.0	7,256.9	11,079.9	7,330.2	72.1	71.7	97.20	-3,558.1	-246.3	584.0	441.3	142.75	4.091		
11,100.0	7,256.7	11,179.9	7,329.7	74.0	73.5	97.19	-3,658.1	-246.3	584.0	437.5	146.46	3.987		
11,200.0	7,256.4	11,279.9	7,329.3	75.9	75.4	97.17	-3,758.1	-246.3	584.0	433.8	150.18	3.889		
11,300.0	7,256.1	11,379.9	7,328.8	77.7	77.3	97.15	-3,858.1	-246.3	584.0	430.1	153.90	3.794		
11,400.0	7,255.8	11,479.9	7,328.3	79.6	79.1	97.13	-3,958.1	-246.3	583.9	426.3	157.62	3.705		
11,500.0	7,255.5	11,579.9	7,327.9	81.5	81.0	97.12	-4,058.1	-246.3	583.9	422.6	161.35	3.619		
11,600.0	7,255.3	11,679.9	7,327.4	83.4	82.9	97.10	-4,158.1	-246.3	583.9	418.8	165.08	3.537		
11,693.5	7,255.0	11,773.4	7,327.0	85.1	84.6	97.08	-4,251.6	-246.3	583.9	415.3	168.58	3.464 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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	-129.14	-18.2	-22.4	28.9					
100.0	100.0	100.0	100.0	0.1	0.1	-129.14	-18.2	-22.4	28.9	28.6	0.22	128.425		
200.0	200.0	200.0	200.0	0.3	0.3	-129.14	-18.2	-22.4	28.9	28.2	0.67	42.808		
300.0	300.0	300.0	300.0	0.6	0.6	-129.14	-18.2	-22.4	28.9	27.7	1.12	25.685		
400.0	400.0	400.0	400.0	0.8	0.8	-129.14	-18.2	-22.4	28.9	27.3	1.57	18.346		
500.0	500.0	500.0	500.0	1.0	1.0	-129.14	-18.2	-22.4	28.9	26.8	2.02	14.269		
600.0	600.0	600.0	600.0	1.2	1.2	-129.14	-18.2	-22.4	28.9	26.4	2.47	11.675		
700.0	700.0	700.0	700.0	1.5	1.5	-129.14	-18.2	-22.4	28.9	25.9	2.92	9.879		
800.0	800.0	800.0	800.0	1.7	1.7	-129.14	-18.2	-22.4	28.9	25.5	3.37	8.562		
900.0	900.0	900.0	900.0	1.9	1.9	-129.14	-18.2	-22.4	28.9	25.0	3.82	7.554		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-129.14	-18.2	-22.4	28.9	24.6	4.27	6.759 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-164.91	-18.2	-22.4	29.7	25.0	4.72	6.298		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-166.12	-18.2	-22.4	32.2	27.1	5.16	6.247		
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	-167.75	-18.2	-22.4	36.5	30.9	5.60	6.512		
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	-169.49	-18.2	-22.4	42.5	36.4	6.05	7.025		
1,500.0	1,499.4	1,499.4	1,499.4	3.3	3.3	-171.11	-18.2	-22.4	50.2	43.7	6.49	7.739		
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	-172.52	-18.2	-22.4	59.7	52.8	6.93	8.617		
1,702.9	1,701.1	1,701.1	1,701.1	3.8	3.7	-173.73	-18.2	-22.4	71.3	63.9	7.38	9.660		
1,800.0	1,797.5	1,797.5	1,797.5	4.0	3.9	-174.62	-18.2	-22.4	83.1	75.3	7.82	10.632		
1,900.0	1,896.8	1,898.1	1,898.1	4.3	4.2	-175.05	-17.4	-22.3	94.6	86.3	8.27	11.439		
2,000.0	1,996.0	1,999.1	1,999.1	4.6	4.4	-174.88	-14.8	-21.9	104.6	95.9	8.72	11.990		
2,100.0	2,095.3	2,100.4	2,100.2	4.9	4.6	-174.25	-10.4	-21.2	113.1	103.9	9.18	12.321		
2,200.0	2,194.5	2,201.9	2,201.5	5.1	4.8	-173.25	-4.3	-20.3	120.2	110.5	9.64	12.465		
2,300.0	2,293.8	2,303.5	2,302.8	5.4	5.1	-171.89	3.6	-19.1	125.8	115.7	10.10	12.450		
2,400.0	2,393.0	2,405.1	2,404.0	5.7	5.3	-170.19	13.4	-17.7	130.1	119.5	10.57	12.301		
2,500.0	2,492.2	2,506.2	2,504.4	6.0	5.5	-168.15	24.7	-16.0	133.1	122.1	11.05	12.049		
2,600.0	2,591.5	2,606.0	2,603.6	6.3	5.8	-166.13	36.2	-14.3	136.1	124.5	11.53	11.800		
2,700.0	2,690.7	2,705.9	2,702.7	6.6	6.0	-164.19	47.8	-12.6	139.1	127.1	12.02	11.577		
2,800.0	2,790.0	2,805.7	2,801.9	6.9	6.3	-162.34	59.3	-10.8	142.4	129.9	12.52	11.377		
2,900.0	2,889.2	2,905.6	2,901.1	7.2	6.6	-160.58	70.9	-9.1	145.8	132.8	13.02	11.196		
3,000.0	2,988.5	3,005.4	3,000.2	7.5	6.8	-158.89	82.5	-7.4	149.3	135.8	13.53	11.032		
3,100.0	3,087.7	3,105.3	3,099.4	7.8	7.1	-157.29	94.0	-5.7	152.9	138.9	14.05	10.883		
3,200.0	3,187.0	3,205.1	3,198.5	8.1	7.4	-155.76	105.6	-4.0	156.7	142.1	14.58	10.747		
3,300.0	3,286.2	3,305.0	3,297.7	8.4	7.7	-154.30	117.1	-2.2	160.5	145.4	15.11	10.623		
3,400.0	3,385.5	3,404.8	3,396.9	8.7	7.9	-152.91	128.7	-0.5	164.5	148.8	15.65	10.509		
3,500.0	3,484.7	3,504.6	3,496.0	9.0	8.2	-151.59	140.3	1.2	168.5	152.3	16.20	10.405		
3,600.0	3,584.0	3,604.5	3,595.2	9.4	8.5	-150.33	151.8	2.9	172.7	155.9	16.75	10.309		
3,700.0	3,683.2	3,704.3	3,694.3	9.7	8.8	-149.13	163.4	4.6	176.9	159.6	17.31	10.221		
3,800.0	3,782.5	3,804.2	3,793.5	10.0	9.1	-147.99	174.9	6.4	181.2	163.3	17.87	10.140		
3,900.0	3,881.7	3,904.0	3,892.6	10.3	9.3	-146.90	186.5	8.1	185.5	167.1	18.43	10.065		
4,000.0	3,981.0	4,003.9	3,991.8	10.6	9.6	-145.86	198.0	9.8	190.0	171.0	19.00	9.996		
4,100.0	4,080.2	4,103.7	4,091.0	10.9	9.9	-144.86	209.6	11.5	194.4	174.9	19.58	9.932		
4,200.0	4,179.5	4,203.6	4,190.1	11.2	10.2	-143.92	221.2	13.2	199.0	178.8	20.16	9.872		
4,300.0	4,278.7	4,303.4	4,289.3	11.5	10.5	-143.01	232.7	15.0	203.6	182.8	20.74	9.817		
4,400.0	4,378.0	4,403.2	4,388.4	11.8	10.8	-142.15	244.3	16.7	208.2	186.9	21.32	9.766		
4,500.0	4,477.2	4,503.1	4,487.6	12.2	11.1	-141.32	255.8	18.4	212.9	191.0	21.91	9.719		
4,600.0	4,576.5	4,602.9	4,586.7	12.5	11.4	-140.53	267.4	20.1	217.6	195.1	22.49	9.674		
4,700.0	4,675.7	4,702.8	4,685.9	12.8	11.7	-139.77	278.9	21.8	222.4	199.3	23.09	9.633		
4,800.0	4,775.0	4,802.6	4,785.1	13.1	12.0	-139.04	290.5	23.6	227.2	203.5	23.68	9.595		
4,900.0	4,874.2	4,902.5	4,884.2	13.4	12.3	-138.35	302.1	25.3	232.0	207.8	24.27	9.559		
5,000.0	4,973.5	5,002.3	4,983.4	13.7	12.6	-137.68	313.6	27.0	236.9	212.0	24.87	9.526		

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 9M-203
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 9M-203	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				
5,100.0	5,072.7	5,102.2	5,082.5	14.0	12.9	-137.04	325.2	28.7	241.8	216.3	25.47	9.494				
5,200.0	5,172.0	5,202.0	5,181.7	14.3	13.2	-136.42	336.7	30.4	246.7	220.7	26.07	9.465				
5,300.0	5,271.2	5,301.8	5,280.9	14.7	13.5	-135.83	348.3	32.2	251.7	225.0	26.67	9.438				
5,400.0	5,370.5	5,401.7	5,380.0	15.0	13.8	-135.26	359.8	33.9	256.7	229.4	27.27	9.412				
5,500.0	5,469.7	5,501.5	5,479.2	15.3	14.1	-134.72	371.4	35.6	261.7	233.8	27.87	9.388				
5,600.0	5,568.9	5,601.4	5,578.3	15.6	14.4	-134.19	383.0	37.3	266.7	238.2	28.48	9.366				
5,700.0	5,668.2	5,701.2	5,677.5	15.9	14.7	-133.69	394.5	39.0	271.8	242.7	29.08	9.345				
5,800.0	5,767.4	5,801.1	5,776.6	16.2	15.0	-133.20	406.1	40.8	276.8	247.1	29.69	9.325				
5,882.6	5,849.4	5,883.5	5,858.6	16.5	15.2	-132.81	415.6	42.2	281.0	250.8	30.19	9.309				
5,900.0	5,866.7	5,900.9	5,875.8	16.5	15.3	-132.73	417.6	42.5	281.9	251.6	30.29	9.305				
6,000.0	5,966.2	6,000.8	5,975.0	16.8	15.6	-131.98	429.2	44.2	285.4	254.6	30.87	9.247				
6,100.0	6,066.0	6,100.5	6,074.1	17.0	15.9	-130.70	440.7	45.9	286.7	255.3	31.44	9.119				
6,200.0	6,165.9	6,200.0	6,172.8	17.1	16.2	-128.86	452.2	47.6	286.0	254.0	32.02	8.931				
6,234.1	6,200.0	6,233.1	6,205.8	17.2	16.2	-92.85	455.8	48.2	285.3	253.2	32.18	8.866				
6,300.0	6,265.9	6,297.6	6,270.0	17.3	16.4	-91.69	461.6	49.0	284.2	251.7	32.51	8.742				
6,400.0	6,365.9	6,395.8	6,368.0	17.5	16.6	-90.45	467.8	49.9	283.2	250.2	32.97	8.590				
6,500.0	6,465.9	6,494.3	6,466.4	17.6	16.7	-89.88	470.6	50.4	282.7	249.4	33.35	8.477				
6,536.2	6,502.1	6,530.0	6,502.1	17.7	16.8	-89.84	470.8	50.4	282.7	249.2	33.48	8.445				
6,550.0	6,515.9	6,543.8	6,515.9	17.7	16.8	90.18	470.8	50.4	282.7	249.2	33.52	8.433				
6,600.0	6,565.9	6,593.7	6,565.9	17.8	16.9	90.70	470.8	50.4	282.7	249.0	33.69	8.391				
6,650.0	6,615.5	6,643.4	6,615.5	17.8	17.0	91.85	470.8	50.4	282.9	249.0	33.88	8.348				
6,700.0	6,664.7	6,692.6	6,664.7	17.8	17.1	93.62	470.8	50.4	283.3	249.2	34.07	8.315				
6,750.0	6,713.2	6,741.6	6,713.7	17.8	17.2	95.93	470.7	50.4	284.3	250.1	34.24	8.305				
6,800.0	6,760.7	6,792.3	6,764.4	17.8	17.2	98.43	468.1	50.4	286.0	251.7	34.33	8.331				
6,850.0	6,807.2	6,844.0	6,815.7	17.7	17.3	100.89	462.0	50.4	288.2	253.9	34.34	8.394				
6,900.0	6,852.3	6,896.7	6,867.4	17.7	17.3	103.28	452.3	50.4	291.0	256.7	34.26	8.494				
6,950.0	6,896.0	6,950.3	6,919.4	17.6	17.3	105.61	438.7	50.4	294.2	260.1	34.09	8.630				
7,000.0	6,938.0	7,005.1	6,971.2	17.5	17.2	107.85	421.2	50.4	297.9	264.0	33.84	8.802				
7,050.0	6,978.1	7,061.0	7,022.7	17.4	17.1	109.98	399.5	50.4	301.8	268.3	33.51	9.007				
7,100.0	7,016.1	7,117.9	7,073.4	17.3	17.1	112.01	373.6	50.4	306.1	273.0	33.12	9.241				
7,150.0	7,052.0	7,176.0	7,123.0	17.2	17.0	113.91	343.3	50.4	310.5	277.8	32.68	9.500				
7,200.0	7,085.5	7,235.3	7,171.0	17.1	16.9	115.68	308.6	50.4	315.0	282.7	32.21	9.777				
7,250.0	7,116.5	7,295.7	7,217.1	17.1	16.8	117.31	269.6	50.4	319.4	287.7	31.74	10.063				
7,300.0	7,144.9	7,357.2	7,260.7	17.0	16.7	118.80	226.2	50.4	323.8	292.5	31.30	10.345				
7,350.0	7,170.5	7,419.8	7,301.3	16.9	16.7	120.14	178.7	50.4	328.0	297.1	30.91	10.610				
7,400.0	7,193.3	7,483.3	7,338.4	16.8	16.7	121.32	127.1	50.4	331.9	301.3	30.61	10.843				
7,450.0	7,213.1	7,547.9	7,371.6	16.8	16.7	122.35	71.8	50.4	335.4	305.0	30.41	11.027				
7,500.0	7,229.8	7,613.2	7,400.3	16.7	16.8	123.22	13.1	50.4	338.5	308.1	30.37	11.145				
7,550.0	7,243.5	7,679.3	7,424.2	17.0	17.0	123.92	-48.5	50.4	341.0	310.5	30.49	11.186				
7,600.0	7,253.9	7,746.0	7,442.7	17.3	17.3	124.45	-112.6	50.4	343.0	312.3	30.79	11.142				
7,650.0	7,261.2	7,813.1	7,455.7	17.6	17.6	124.82	-178.4	50.4	344.4	313.2	31.28	11.012				
7,700.0	7,265.2	7,880.5	7,462.9	18.0	18.1	125.02	-245.4	50.4	345.2	313.2	31.96	10.802				
7,738.3	7,266.0	7,930.0	7,464.4	18.4	18.4	125.06	-294.8	50.4	345.4	312.8	32.58	10.600				
7,800.0	7,265.9	7,991.7	7,464.8	18.9	18.9	125.13	-356.5	50.4	345.7	312.2	33.47	10.328				
7,900.0	7,265.6	8,091.7	7,465.5	19.9	19.9	125.26	-456.5	50.4	346.2	311.1	35.10	9.863				
8,000.0	7,265.3	8,191.7	7,466.1	21.1	21.0	125.38	-556.5	50.4	346.8	309.8	36.94	9.387				
8,100.0	7,265.0	8,291.7	7,466.8	22.3	22.2	125.51	-656.5	50.4	347.3	308.3	38.95	8.916				
8,200.0	7,264.8	8,391.6	7,467.4	23.6	23.4	125.63	-756.5	50.4	347.8	306.7	41.11	8.460				
8,300.0	7,264.5	8,491.6	7,468.1	25.0	24.8	125.76	-856.5	50.4	348.4	305.0	43.40	8.027				
8,400.0	7,264.2	8,591.6	7,468.7	26.4	26.2	125.88	-956.5	50.4	348.9	303.1	45.79	7.621				

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 9M-203
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 9M-203	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	
8,500.0	7,263.9	8,691.6	7,469.3	27.9	27.7	126.00	-1,056.5	50.4	349.5	301.2	48.26	7.241			
8,600.0	7,263.6	8,791.6	7,470.0	29.5	29.3	126.13	-1,156.4	50.4	350.0	299.2	50.81	6.889			
8,700.0	7,263.4	8,891.6	7,470.6	31.1	30.9	126.25	-1,256.4	50.4	350.6	297.1	53.42	6.563			
8,800.0	7,263.1	8,991.6	7,471.3	32.7	32.5	126.37	-1,356.4	50.4	351.1	295.0	56.07	6.261			
8,900.0	7,262.8	9,091.6	7,471.9	34.4	34.1	126.49	-1,456.4	50.4	351.7	292.9	58.78	5.983			
9,000.0	7,262.5	9,191.6	7,472.6	36.1	35.8	126.61	-1,556.4	50.4	352.2	290.7	61.51	5.726			
9,100.0	7,262.2	9,291.6	7,473.2	37.8	37.5	126.73	-1,656.4	50.4	352.8	288.5	64.28	5.488			
9,200.0	7,262.0	9,391.6	7,473.9	39.5	39.2	126.85	-1,756.4	50.4	353.3	286.2	67.07	5.268			
9,300.0	7,261.7	9,491.6	7,474.5	41.2	41.0	126.97	-1,856.4	50.4	353.9	284.0	69.89	5.063			
9,400.0	7,261.4	9,591.6	7,475.2	43.0	42.7	127.09	-1,956.4	50.4	354.4	281.7	72.72	4.874			
9,500.0	7,261.1	9,691.6	7,475.8	44.7	44.5	127.21	-2,056.4	50.4	355.0	279.4	75.57	4.698			
9,600.0	7,260.8	9,791.6	7,476.4	46.5	46.3	127.33	-2,156.4	50.4	355.5	277.1	78.43	4.533			
9,700.0	7,260.6	9,891.6	7,477.1	48.3	48.1	127.45	-2,256.4	50.4	356.1	274.8	81.30	4.380			
9,800.0	7,260.3	9,991.6	7,477.7	50.1	49.9	127.57	-2,356.4	50.4	356.7	272.5	84.17	4.237			
9,900.0	7,260.0	10,091.6	7,478.4	51.9	51.7	127.68	-2,456.4	50.4	357.2	270.2	87.06	4.103			
10,000.0	7,259.7	10,191.6	7,479.0	53.7	53.5	127.80	-2,556.4	50.4	357.8	267.9	89.95	3.978			
10,100.0	7,259.4	10,291.6	7,479.7	55.5	55.3	127.92	-2,656.4	50.4	358.4	265.5	92.84	3.860			
10,200.0	7,259.2	10,391.6	7,480.3	57.4	57.1	128.03	-2,756.3	50.4	358.9	263.2	95.74	3.749			
10,300.0	7,258.9	10,491.6	7,481.0	59.2	59.0	128.15	-2,856.3	50.4	359.5	260.9	98.63	3.645			
10,400.0	7,258.6	10,591.6	7,481.6	61.0	60.8	128.27	-2,956.3	50.4	360.1	258.5	101.53	3.546			
10,500.0	7,258.3	10,691.5	7,482.3	62.9	62.6	128.38	-3,056.3	50.4	360.7	256.2	104.43	3.453			
10,600.0	7,258.1	10,791.5	7,482.9	64.7	64.5	128.50	-3,156.3	50.4	361.2	253.9	107.33	3.366			
10,700.0	7,257.8	10,891.5	7,483.6	66.6	66.3	128.61	-3,256.3	50.4	361.8	251.6	110.23	3.282			
10,800.0	7,257.5	10,991.5	7,484.2	68.4	68.2	128.72	-3,356.3	50.4	362.4	249.3	113.13	3.203			
10,900.0	7,257.2	11,091.5	7,484.8	70.3	70.1	128.84	-3,456.3	50.4	363.0	246.9	116.02	3.128			
11,000.0	7,256.9	11,191.5	7,485.5	72.1	71.9	128.95	-3,556.3	50.4	363.5	244.6	118.91	3.057			
11,100.0	7,256.7	11,291.5	7,486.1	74.0	73.8	129.07	-3,656.3	50.4	364.1	242.3	121.80	2.990			
11,200.0	7,256.4	11,391.5	7,486.8	75.9	75.6	129.18	-3,756.3	50.4	364.7	240.0	124.69	2.925			
11,300.0	7,256.1	11,491.5	7,487.4	77.7	77.5	129.29	-3,856.3	50.4	365.3	237.7	127.57	2.863			
11,400.0	7,255.8	11,591.5	7,488.1	79.6	79.4	129.40	-3,956.3	50.4	365.9	235.4	130.45	2.805			
11,500.0	7,255.5	11,691.5	7,488.7	81.5	81.3	129.51	-4,056.3	50.4	366.5	233.1	133.33	2.749			
11,600.0	7,255.3	11,791.5	7,489.4	83.4	83.1	129.63	-4,156.3	50.4	367.1	230.9	136.20	2.695			
11,693.5	7,255.0	11,885.0	7,490.0	85.1	84.9	129.73	-4,249.7	50.4	367.6	228.7	138.88	2.647 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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-Reference													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,400.0	7,264.2	7,000.0	7,000.0	26.4	15.6	-64.73	-1,267.7	954.4	754.1	714.8	39.26	19.207		
8,500.0	7,263.9	7,000.0	7,000.0	27.9	15.6	-64.73	-1,267.7	954.4	718.7	678.0	40.65	17.680		
8,600.0	7,263.6	7,000.0	7,000.0	29.5	15.6	-64.73	-1,267.7	954.4	695.9	653.9	42.08	16.539		
8,700.0	7,263.4	7,000.0	7,000.0	31.1	15.6	-64.73	-1,267.7	954.4	687.2	643.6	43.55	15.780		
8,710.7	7,263.3	7,000.0	7,000.0	31.3	15.6	-64.73	-1,267.7	954.4	687.1	643.4	43.71	15.720 CC, ES		
8,800.0	7,263.1	7,000.0	7,000.0	32.7	15.6	-64.73	-1,267.7	954.4	692.8	647.8	45.04	15.381		
8,900.0	7,262.8	7,000.0	7,000.0	34.4	15.6	-64.73	-1,267.7	954.4	712.7	666.1	46.57	15.303 SF		
9,000.0	7,262.5	7,000.0	7,000.0	36.1	15.6	-64.73	-1,267.7	954.4	745.5	697.4	48.12	15.493		
9,100.0	7,262.2	7,000.0	7,000.0	37.8	15.6	-64.73	-1,267.7	954.4	789.7	740.0	49.68	15.894		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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 Ft. Lupton Pad Sec.9-T1N-R66W - Ft. Lupton Highlands USX WW09-18D - Ft. Lupton Highlands USX V														Offset Site Error:	0.0 ft
Survey Program: 352-Reference														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
7,350.0	7,170.5	7,276.6	7,206.9	16.9	19.9	-28.73	-678.9	530.4	780.3	756.8	23.51	33.188			
7,400.0	7,193.3	7,298.5	7,228.8	16.8	20.0	-33.55	-678.8	530.4	737.2	712.9	24.25	30.392			
7,450.0	7,213.1	7,317.7	7,248.0	16.8	20.0	-39.59	-678.6	530.3	692.9	667.2	25.72	26.945			
7,500.0	7,229.8	7,333.9	7,264.2	16.7	20.0	-47.05	-678.5	530.3	647.8	619.9	27.89	23.228			
7,550.0	7,243.5	7,347.1	7,277.5	17.0	20.1	-55.92	-678.5	530.2	602.0	571.5	30.52	19.724			
7,600.0	7,253.9	7,357.2	7,287.6	17.3	20.1	-65.79	-678.4	530.2	556.0	522.9	33.13	16.785			
7,650.0	7,261.2	7,364.2	7,294.5	17.6	20.1	-75.85	-678.4	530.2	510.0	474.9	35.14	14.514			
7,700.0	7,265.2	7,367.8	7,298.1	18.0	20.1	-85.08	-678.3	530.2	464.4	428.1	36.29	12.797			
7,738.3	7,266.0	7,368.5	7,298.8	18.4	20.1	-91.10	-678.3	530.2	430.1	393.4	36.67	11.729			
7,800.0	7,265.9	7,367.9	7,298.2	18.9	20.1	-90.95	-678.3	530.2	376.3	339.1	37.20	10.117			
7,900.0	7,265.6	7,367.1	7,297.4	19.9	20.1	-90.70	-678.3	530.2	295.8	257.6	38.17	7.749			
8,000.0	7,265.3	7,366.2	7,296.5	21.1	20.1	-90.45	-678.3	530.2	231.0	191.8	39.28	5.883			
8,100.0	7,265.0	7,365.4	7,295.7	22.3	20.1	-90.20	-678.4	530.2	198.2	157.7	40.49	4.894			
8,120.6	7,265.0	7,365.2	7,295.5	22.6	20.1	-90.15	-678.4	530.2	197.1	156.3	40.76	4.835 CC, ES, SF			
8,200.0	7,264.8	7,364.5	7,294.8	23.6	20.1	-89.95	-678.4	530.2	212.5	170.7	41.80	5.083			
8,300.0	7,264.5	7,363.6	7,294.0	25.0	20.1	-89.70	-678.4	530.2	266.5	223.3	43.19	6.170			
8,400.0	7,264.2	7,362.8	7,293.1	26.4	20.1	-89.45	-678.4	530.2	341.9	297.3	44.65	7.658			
8,500.0	7,263.9	7,361.9	7,292.2	27.9	20.1	-89.20	-678.4	530.2	427.5	381.4	46.16	9.262			
8,600.0	7,263.6	7,361.0	7,291.4	29.5	20.1	-88.95	-678.4	530.2	518.3	470.6	47.72	10.863			
8,700.0	7,263.4	7,360.2	7,290.5	31.1	20.1	-88.69	-678.4	530.2	612.0	562.7	49.31	12.410			
8,800.0	7,263.1	7,359.3	7,289.6	32.7	20.1	-88.44	-678.4	530.2	707.4	656.5	50.94	13.886			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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: 1242- Keller WW Pad SEC.9-T1N-R66W - Keller WW 09-10D - Wellbore #1 - Wellbore #1													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	
10,000.0	7,259.7	7,460.6	7,329.5	53.7	23.8	-92.10	-2,772.1	1,079.3	776.8	705.8	71.03	10.936		
10,100.0	7,259.4	7,460.7	7,329.6	55.5	23.8	-92.11	-2,772.1	1,079.3	755.4	682.5	72.86	10.368		
10,200.0	7,259.2	7,460.8	7,329.8	57.4	23.8	-92.12	-2,772.1	1,079.3	746.8	672.1	74.69	9.999		
10,214.2	7,259.1	7,460.9	7,329.8	57.6	23.8	-92.12	-2,772.1	1,079.3	746.7	671.7	74.95	9.963 CC, ES		
10,300.0	7,258.9	7,461.0	7,329.9	59.2	23.8	-92.13	-2,772.1	1,079.3	751.6	675.1	76.52	9.822		
10,400.0	7,258.6	7,461.1	7,330.0	61.0	23.8	-92.14	-2,772.1	1,079.3	769.5	691.1	78.37	9.819 SF		
10,500.0	7,258.3	7,461.2	7,330.1	62.9	23.8	-92.15	-2,772.1	1,079.3	799.5	719.3	80.21	9.968		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9M-203
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 9M-203	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')

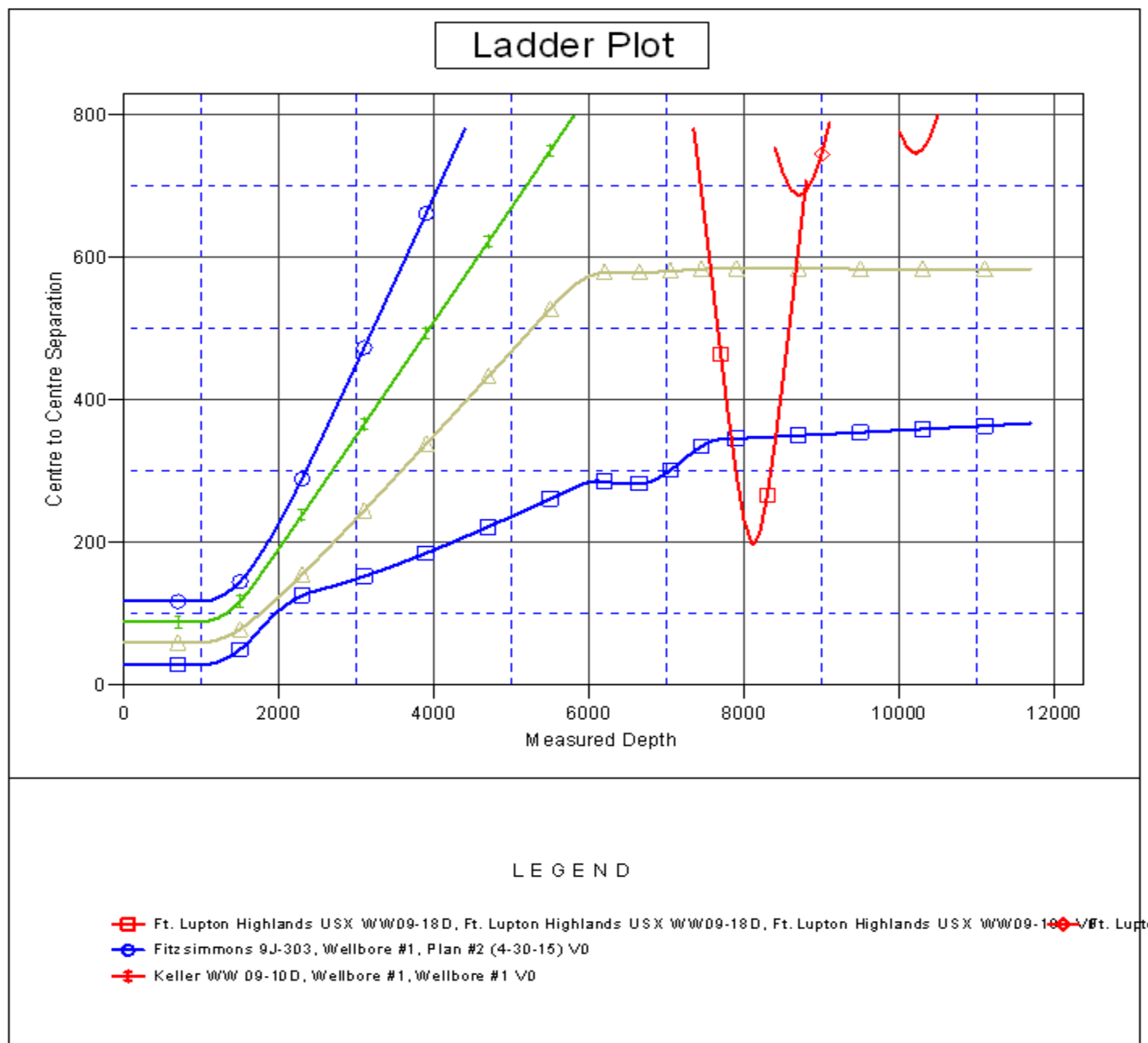
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Fitzsimmons 9M-203

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 9M-203
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 9M-203	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 9M-203
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.46°

