PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Fitzsimmons 9J-303**

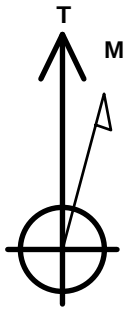
Surface Location: Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4990.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1269642.69	3200316.39	40.071340	-104.784220	

RKB-13' WELL @ 5003.0ft (RKB-13')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E & W Hardline (9J-303)	1.0	-2207.3	-781.0	Rectangle (Sides: L3964.0 W100.0)
SHL 594FNL & 2089'FWL	1.0	0.0	0.0	Point
BHL 500'FSL & 1283'FWL	7327.0	-4189.3	-781.0	Point



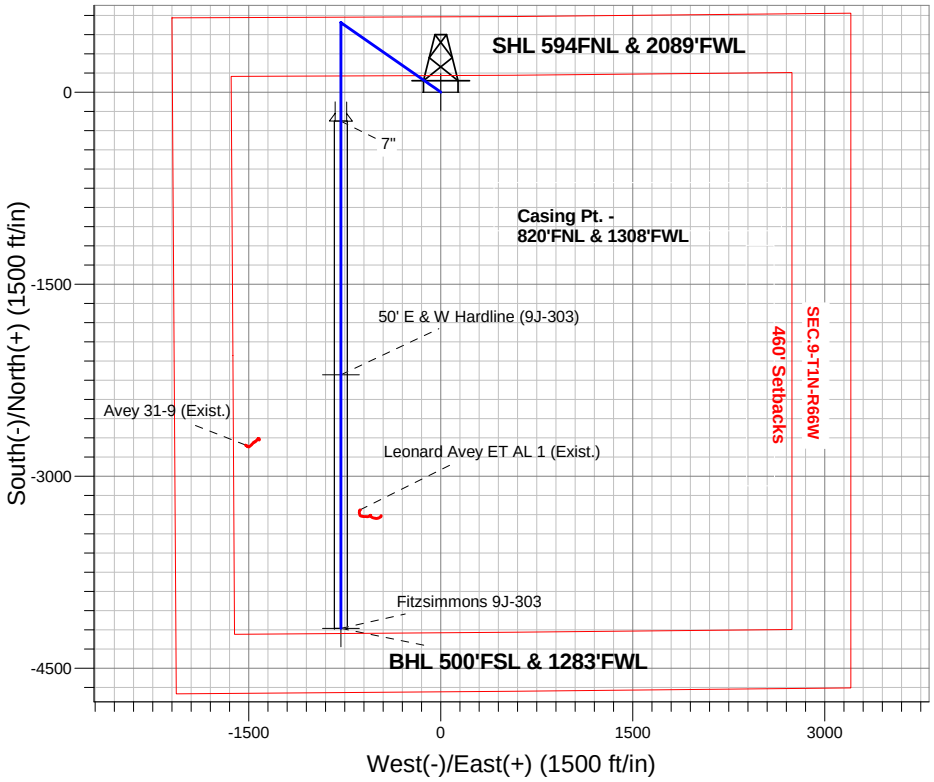
Azimuths to True North
Magnetic North: 8.32°

Magnetic Field
Strength: 52546.2snT
Dip Angle: 66.65°
Date: 5/4/2015
Model: IGRF2010

Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
Fitzsimmons 9J-303
Plan #2 (4-30-15)
6:51, May 04 2015

ANNOTATIONS

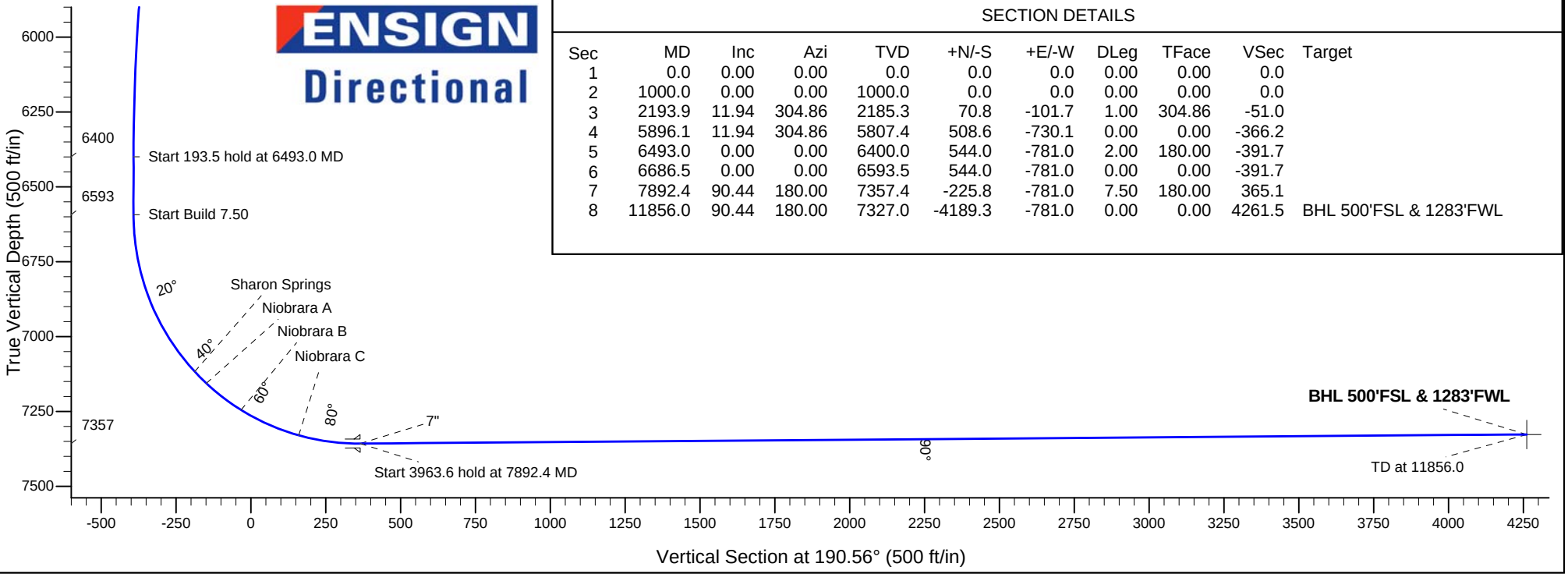
TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.00
5807.4	5896.1	Start Drop -2.00
6400.0	6493.0	Start 193.5 hold at 6493.0 MD
6593.5	6686.5	Start Build 7.50
7357.4	7892.4	Start 3963.6 hold at 7892.4 MD
7327.0	11856.0	TD at 11856.0



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	2193.9	11.94	304.86	2185.3	70.8	-101.7	1.00	304.86	-51.0	
4	5896.1	11.94	304.86	5807.4	508.6	-730.1	0.00	0.00	-366.2	
5	6493.0	0.00	0.00	6400.0	544.0	-781.0	2.00	180.00	-391.7	
6	6686.5	0.00	0.00	6593.5	544.0	-781.0	0.00	0.00	-391.7	
7	7892.4	90.44	180.00	7357.4	-225.8	-781.0	7.50	180.00	365.1	
8	11856.0	90.44	180.00	7327.0	-4189.3	-781.0	0.00	0.00	4261.5	BHL 500'FSL & 1283'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W
Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
Fitzsimmons 9J-303

Wellbore #1

Plan: Plan #2 (4-30-15)

Standard Planning Report

04 May, 2015

Database:	Landmark	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-30-15)		

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:**	1,269,661.10 ft	**Latitude:**	40.071390
From:	Lat/Long	**Easting:**	3,200,338.63 ft	**Longitude:**	-104.784140
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.46 °

Well Fitzsimmons 9J-303

Well Position	**+N/-S**	-18.2 ft	**Northing:**	1,269,642.69 ft	**Latitude:**	40.071340
	+E/-W	-22.4 ft	**Easting:**	3,200,316.39 ft	**Longitude:**	-104.784220
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 (4-30-15)

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	190.56

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	
2,193.9	11.94	304.86	2,185.3	70.8	-101.7	1.00	1.00	0.00	304.86	
5,896.1	11.94	304.86	5,807.4	508.6	-730.1	0.00	0.00	0.00	0.00	
6,493.0	0.00	0.00	6,400.0	544.0	-781.0	2.00	-2.00	0.00	180.00	
6,686.5	0.00	0.00	6,593.5	544.0	-781.0	0.00	0.00	0.00	0.00	
7,892.4	90.44	180.00	7,357.4	-225.8	-781.0	7.50	7.50	0.00	180.00	
11,856.0	90.44	180.00	7,327.0	-4,189.3	-781.0	0.00	0.00	0.00	0.00	BHL 500'FSL & 128

Database:	Landmark	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-30-15)		

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-303) - SHL 594FNL & 2089'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
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	304.86	1,100.0	0.5	-0.7	-0.4	1.00	1.00	0.00
1,200.0	2.00	304.86	1,200.0	2.0	-2.9	-1.4	1.00	1.00	0.00
1,300.0	3.00	304.86	1,299.9	4.5	-6.4	-3.2	1.00	1.00	0.00
1,400.0	4.00	304.86	1,399.7	8.0	-11.5	-5.7	1.00	1.00	0.00
1,500.0	5.00	304.86	1,499.4	12.5	-17.9	-9.0	1.00	1.00	0.00
1,600.0	6.00	304.86	1,598.9	17.9	-25.8	-12.9	1.00	1.00	0.00
1,700.0	7.00	304.86	1,698.3	24.4	-35.0	-17.6	1.00	1.00	0.00
1,800.0	8.00	304.86	1,797.4	31.9	-45.8	-22.9	1.00	1.00	0.00
1,900.0	9.00	304.86	1,896.3	40.3	-57.9	-29.0	1.00	1.00	0.00
2,000.0	10.00	304.86	1,994.9	49.8	-71.4	-35.8	1.00	1.00	0.00
2,100.0	11.00	304.86	2,093.3	60.2	-86.4	-43.3	1.00	1.00	0.00
2,193.9	11.94	304.86	2,185.3	70.8	-101.7	-51.0	1.00	1.00	0.00
2,200.0	11.94	304.86	2,191.2	71.6	-102.7	-51.5	0.00	0.00	0.00
2,300.0	11.94	304.86	2,289.1	83.4	-119.7	-60.0	0.00	0.00	0.00
2,400.0	11.94	304.86	2,386.9	95.2	-136.7	-68.5	0.00	0.00	0.00
2,500.0	11.94	304.86	2,484.8	107.0	-153.7	-77.1	0.00	0.00	0.00
2,600.0	11.94	304.86	2,582.6	118.9	-170.6	-85.6	0.00	0.00	0.00
2,700.0	11.94	304.86	2,680.4	130.7	-187.6	-94.1	0.00	0.00	0.00
2,800.0	11.94	304.86	2,778.3	142.5	-204.6	-102.6	0.00	0.00	0.00
2,900.0	11.94	304.86	2,876.1	154.3	-221.6	-111.1	0.00	0.00	0.00
3,000.0	11.94	304.86	2,973.9	166.2	-238.5	-119.6	0.00	0.00	0.00
3,100.0	11.94	304.86	3,071.8	178.0	-255.5	-128.1	0.00	0.00	0.00
3,200.0	11.94	304.86	3,169.6	189.8	-272.5	-136.7	0.00	0.00	0.00
3,300.0	11.94	304.86	3,267.5	201.6	-289.5	-145.2	0.00	0.00	0.00
3,400.0	11.94	304.86	3,365.3	213.4	-306.4	-153.7	0.00	0.00	0.00
3,500.0	11.94	304.86	3,463.1	225.3	-323.4	-162.2	0.00	0.00	0.00
3,600.0	11.94	304.86	3,561.0	237.1	-340.4	-170.7	0.00	0.00	0.00
3,700.0	11.94	304.86	3,658.8	248.9	-357.4	-179.2	0.00	0.00	0.00
3,800.0	11.94	304.86	3,756.6	260.7	-374.3	-187.7	0.00	0.00	0.00
3,900.0	11.94	304.86	3,854.5	272.6	-391.3	-196.2	0.00	0.00	0.00
4,000.0	11.94	304.86	3,952.3	284.4	-408.3	-204.8	0.00	0.00	0.00
4,100.0	11.94	304.86	4,050.1	296.2	-425.3	-213.3	0.00	0.00	0.00
4,200.0	11.94	304.86	4,148.0	308.0	-442.2	-221.8	0.00	0.00	0.00
4,253.2	11.94	304.86	4,200.0	314.3	-451.3	-226.3	0.00	0.00	0.00
Parkman									
4,300.0	11.94	304.86	4,245.8	319.9	-459.2	-230.3	0.00	0.00	0.00
4,400.0	11.94	304.86	4,343.7	331.7	-476.2	-238.8	0.00	0.00	0.00
4,500.0	11.94	304.86	4,441.5	343.5	-493.1	-247.3	0.00	0.00	0.00

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Well:	Fitzsimmons 9J-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-30-15)		

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	11.94	304.86	4,539.3	355.3	-510.1	-255.8	0.00	0.00	0.00
4,692.7	11.94	304.86	4,630.0	366.3	-525.9	-263.7	0.00	0.00	0.00
Sussex									
4,700.0	11.94	304.86	4,637.2	367.2	-527.1	-264.3	0.00	0.00	0.00
4,800.0	11.94	304.86	4,735.0	379.0	-544.1	-272.9	0.00	0.00	0.00
4,900.0	11.94	304.86	4,832.8	390.8	-561.0	-281.4	0.00	0.00	0.00
5,000.0	11.94	304.86	4,930.7	402.6	-578.0	-289.9	0.00	0.00	0.00
5,100.0	11.94	304.86	5,028.5	414.5	-595.0	-298.4	0.00	0.00	0.00
5,173.1	11.94	304.86	5,100.0	423.1	-607.4	-304.6	0.00	0.00	0.00
Shannon									
5,200.0	11.94	304.86	5,126.4	426.3	-612.0	-306.9	0.00	0.00	0.00
5,300.0	11.94	304.86	5,224.2	438.1	-628.9	-315.4	0.00	0.00	0.00
5,400.0	11.94	304.86	5,322.0	449.9	-645.9	-323.9	0.00	0.00	0.00
5,500.0	11.94	304.86	5,419.9	461.7	-662.9	-332.4	0.00	0.00	0.00
5,600.0	11.94	304.86	5,517.7	473.6	-679.9	-341.0	0.00	0.00	0.00
5,700.0	11.94	304.86	5,615.5	485.4	-696.8	-349.5	0.00	0.00	0.00
5,800.0	11.94	304.86	5,713.4	497.2	-713.8	-358.0	0.00	0.00	0.00
5,896.1	11.94	304.86	5,807.4	508.6	-730.1	-366.2	0.00	0.00	0.00
Start Drop -2.00									
5,900.0	11.86	304.86	5,811.2	509.0	-730.8	-366.5	2.01	-2.01	0.00
6,000.0	9.86	304.86	5,909.4	519.8	-746.3	-374.2	2.00	-2.00	0.00
6,100.0	7.86	304.86	6,008.2	528.6	-758.9	-380.6	2.00	-2.00	0.00
6,200.0	5.86	304.86	6,107.5	535.4	-768.7	-385.5	2.00	-2.00	0.00
6,300.0	3.86	304.86	6,207.1	540.3	-775.6	-389.0	2.00	-2.00	0.00
6,400.0	1.86	304.86	6,307.0	543.1	-779.7	-391.0	2.00	-2.00	0.00
6,493.0	0.00	304.86	6,400.0	544.0	-781.0	-391.7	2.00	-2.00	0.00
Start 193.5 hold at 6493.0 MD									
6,500.0	0.00	0.00	6,407.0	544.0	-781.0	-391.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,507.0	544.0	-781.0	-391.7	0.00	0.00	0.00
6,686.5	0.00	0.00	6,593.5	544.0	-781.0	-391.7	0.00	0.00	0.00
Start Build 7.50									
6,700.0	1.01	180.00	6,607.0	543.9	-781.0	-391.5	7.48	7.48	0.00
6,800.0	8.51	180.00	6,706.6	535.6	-781.0	-383.4	7.50	7.50	0.00
6,900.0	16.01	180.00	6,804.2	514.4	-781.0	-362.5	7.50	7.50	0.00
7,000.0	23.51	180.00	6,898.3	480.6	-781.0	-329.3	7.50	7.50	0.00
7,100.0	31.01	180.00	6,987.1	434.8	-781.0	-284.3	7.50	7.50	0.00
7,200.0	38.51	180.00	7,069.2	377.8	-781.0	-228.3	7.50	7.50	0.00
7,263.3	43.25	180.00	7,117.0	336.5	-781.0	-187.6	7.50	7.50	0.00
Sharon Springs									
7,300.0	46.01	180.00	7,143.1	310.6	-781.0	-162.3	7.50	7.50	0.00
7,318.7	47.42	180.00	7,156.0	297.0	-781.0	-148.8	7.50	7.50	0.00
Niobrara A									
7,400.0	53.51	180.00	7,207.7	234.4	-781.0	-87.3	7.50	7.50	0.00
7,466.7	58.52	180.00	7,245.0	179.0	-781.0	-32.9	7.50	7.50	0.00
Niobrara B									
7,500.0	61.01	180.00	7,261.7	150.3	-781.0	-4.6	7.50	7.50	0.00
7,600.0	68.51	180.00	7,304.4	59.9	-781.0	84.2	7.50	7.50	0.00
7,681.1	74.59	180.00	7,330.0	-17.0	-781.0	159.8	7.50	7.50	0.00
Niobrara C									
7,700.0	76.01	180.00	7,334.8	-35.3	-781.0	177.8	7.50	7.50	0.00
7,800.0	83.51	180.00	7,352.6	-133.6	-781.0	274.5	7.50	7.50	0.00

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Site:	Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W	**North Reference:**	True
Well:	Fitzsimmons 9J-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-30-15)		

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)
7,892.4	90.44	180.00	7,357.4	-225.8	-781.0	365.1	7.50	7.50	0.00
Start 3963.6 hold at 7892.4 MD - 7"									
7,900.0	90.44	180.00	7,357.4	-233.4	-781.0	372.6	0.00	0.00	0.00
8,000.0	90.44	180.00	7,356.6	-333.4	-781.0	470.9	0.00	0.00	0.00
8,100.0	90.44	180.00	7,355.8	-433.4	-781.0	569.2	0.00	0.00	0.00
8,200.0	90.44	180.00	7,355.1	-533.4	-781.0	667.5	0.00	0.00	0.00
8,300.0	90.44	180.00	7,354.3	-633.4	-781.0	765.8	0.00	0.00	0.00
8,400.0	90.44	180.00	7,353.5	-733.4	-781.0	864.1	0.00	0.00	0.00
8,500.0	90.44	180.00	7,352.8	-833.4	-781.0	962.4	0.00	0.00	0.00
8,600.0	90.44	180.00	7,352.0	-933.4	-781.0	1,060.7	0.00	0.00	0.00
8,700.0	90.44	180.00	7,351.2	-1,033.4	-781.0	1,159.0	0.00	0.00	0.00
8,800.0	90.44	180.00	7,350.5	-1,133.4	-781.0	1,257.3	0.00	0.00	0.00
8,900.0	90.44	180.00	7,349.7	-1,233.4	-781.0	1,355.6	0.00	0.00	0.00
9,000.0	90.44	180.00	7,348.9	-1,333.4	-781.0	1,453.9	0.00	0.00	0.00
9,100.0	90.44	180.00	7,348.2	-1,433.4	-781.0	1,552.2	0.00	0.00	0.00
9,200.0	90.44	180.00	7,347.4	-1,533.4	-781.0	1,650.5	0.00	0.00	0.00
9,300.0	90.44	180.00	7,346.6	-1,633.4	-781.0	1,748.8	0.00	0.00	0.00
9,400.0	90.44	180.00	7,345.9	-1,733.4	-781.0	1,847.1	0.00	0.00	0.00
9,500.0	90.44	180.00	7,345.1	-1,833.4	-781.0	1,945.4	0.00	0.00	0.00
9,600.0	90.44	180.00	7,344.3	-1,933.4	-781.0	2,043.7	0.00	0.00	0.00
9,700.0	90.44	180.00	7,343.6	-2,033.4	-781.0	2,142.0	0.00	0.00	0.00
9,800.0	90.44	180.00	7,342.8	-2,133.4	-781.0	2,240.4	0.00	0.00	0.00
9,900.0	90.44	180.00	7,342.0	-2,233.4	-781.0	2,338.7	0.00	0.00	0.00
10,000.0	90.44	180.00	7,341.3	-2,333.4	-781.0	2,437.0	0.00	0.00	0.00
10,100.0	90.44	180.00	7,340.5	-2,433.3	-781.0	2,535.3	0.00	0.00	0.00
10,200.0	90.44	180.00	7,339.7	-2,533.3	-781.0	2,633.6	0.00	0.00	0.00
10,300.0	90.44	180.00	7,338.9	-2,633.3	-781.0	2,731.9	0.00	0.00	0.00
10,400.0	90.44	180.00	7,338.2	-2,733.3	-781.0	2,830.2	0.00	0.00	0.00
10,500.0	90.44	180.00	7,337.4	-2,833.3	-781.0	2,928.5	0.00	0.00	0.00
10,600.0	90.44	180.00	7,336.6	-2,933.3	-781.0	3,026.8	0.00	0.00	0.00
10,700.0	90.44	180.00	7,335.9	-3,033.3	-781.0	3,125.1	0.00	0.00	0.00
10,800.0	90.44	180.00	7,335.1	-3,133.3	-781.0	3,223.4	0.00	0.00	0.00
10,900.0	90.44	180.00	7,334.3	-3,233.3	-781.0	3,321.7	0.00	0.00	0.00
11,000.0	90.44	180.00	7,333.6	-3,333.3	-781.0	3,420.0	0.00	0.00	0.00
11,100.0	90.44	180.00	7,332.8	-3,433.3	-781.0	3,518.3	0.00	0.00	0.00
11,200.0	90.44	180.00	7,332.0	-3,533.3	-781.0	3,616.6	0.00	0.00	0.00
11,300.0	90.44	180.00	7,331.3	-3,633.3	-781.0	3,714.9	0.00	0.00	0.00
11,400.0	90.44	180.00	7,330.5	-3,733.3	-781.0	3,813.2	0.00	0.00	0.00
11,500.0	90.44	180.00	7,329.7	-3,833.3	-781.0	3,911.5	0.00	0.00	0.00
11,600.0	90.44	180.00	7,329.0	-3,933.3	-781.0	4,009.8	0.00	0.00	0.00
11,700.0	90.44	180.00	7,328.2	-4,033.3	-781.0	4,108.1	0.00	0.00	0.00
11,800.0	90.44	180.00	7,327.4	-4,133.3	-781.0	4,206.4	0.00	0.00	0.00
11,856.0	90.44	180.00	7,327.0	-4,189.3	-781.0	4,261.5	0.00	0.00	0.00
TD at 11856.0 - BHL 500'FSL & 1283'FWL									

Database:	Landmark	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (4-30-15)		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 500'FSL & 1283'I - plan hits target center - Point	0.00	0.00	7,327.0	-4,189.3	-781.0	1,265,447.37	3,199,569.29	40.059840	-104.787010
50' E & W Hardline (9. - plan misses target center by 2341.4ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W3,964.0 H100.0 D0.0)	0.00	0.00	1.0	-2,207.3	-781.0	1,267,429.25	3,199,553.27	40.065281	-104.787010
SHL 594FNL & 2089'F - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,269,642.70	3,200,316.39	40.071340	-104.784220

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,892.4	7,357.4	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,253.2	4,200.0	Parkman		0.00	
4,692.7	4,630.0	Sussex		0.00	
5,173.1	5,100.0	Shannon		0.00	
7,263.3	7,117.0	Sharon Springs		0.00	
7,318.7	7,156.0	Niobrara A		0.00	
7,466.7	7,245.0	Niobrara B		0.00	
7,681.1	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)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.0	1,000.0	0.0	0.0	KOP - Start Build 1.00
5,896.1	5,807.4	508.6	-730.1	Start Drop -2.00
6,493.0	6,400.0	544.0	-781.0	Start 193.5 hold at 6493.0 MD
6,686.5	6,593.5	544.0	-781.0	Start Build 7.50
7,892.4	7,357.4	-225.8	-781.0	Start 3963.6 hold at 7892.4 MD
11,856.0	7,327.0	-4,189.3	-781.0	TD at 11856.0

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W
Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W
Fitzsimmons 9J-303

Wellbore #1
Plan #2 (4-30-15)

Anticollision Report

04 May, 2015

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (4-30-15)

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	11,855.3	Plan #2 (4-30-15) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.9-T1N-R66W						
Avey 31-9 (Exist.) - Wellbore #1 - Wellbore #1	10,429.9	7,315.7	737.2	663.4	9.996	CC, ES
Avey 31-9 (Exist.) - Wellbore #1 - Wellbore #1	10,600.0	7,313.9	756.5	679.7	9.843	SF
Leonard Avey ET AL 1 (Exist.) - Wellbore #1 - Wellbore #	10,932.0	7,335.5	150.8	68.1	1.824	CC, ES, SF
Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W						
Fitzsimmons 9J-223 - Wellbore #1 - Plan #2 (5-01-15)	907.0	907.0	28.8	25.0	7.495	CC
Fitzsimmons 9J-223 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	29.0	24.7	6.794	ES
Fitzsimmons 9J-223 - Wellbore #1 - Plan #2 (5-01-15)	11,856.0	11,724.3	353.5	188.3	2.140	SF
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	57.7	53.5	13.517	CC
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	1,100.0	1,100.0	58.0	53.3	12.297	ES
Fitzsimmons 9J-323 - Wellbore #1 - Plan #2 (5-01-15)	11,856.0	11,774.1	627.1	458.3	3.716	SF
Fitzsimmons 9M-203 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	117.6	113.4	27.546	CC, ES
Fitzsimmons 9M-203 - Wellbore #1 - Plan #2 (5-01-15)	1,400.0	1,391.3	135.1	129.1	22.465	SF
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	1,000.0	1,000.0	88.8	84.5	20.788	CC
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	1,100.0	1,100.0	89.0	84.3	18.887	ES
Fitzsimmons 9M-443 - Wellbore #1 - Plan #2 (5-01-15)	1,600.0	1,598.9	102.5	95.6	14.768	SF
Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W						
Fitzsimmons 9E-223 - Wellbore #1 - Plan #2 (5-01-15)	366.0	368.0	657.0	655.6	461.074	CC
Fitzsimmons 9E-223 - Wellbore #1 - Plan #2 (5-01-15)	500.0	497.3	657.4	655.4	326.708	ES
Fitzsimmons 9E-223 - Wellbore #1 - Plan #2 (5-01-15)	2,800.0	2,701.4	797.4	780.0	45.919	SF
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	566.0	568.0	628.2	625.8	270.289	CC
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	700.0	700.0	628.4	625.5	215.433	ES
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	5,400.0	5,327.4	797.1	760.7	21.909	SF
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	166.0	168.0	688.1	687.5	1,308.394	CC
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	300.0	296.5	688.5	687.4	619.147	ES
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	1,700.0	1,583.0	791.9	782.9	88.386	SF
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	3,735.8	3,704.6	558.1	534.2	23.367	CC
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	11,856.0	11,849.9	575.1	411.4	3.513	ES, SF
Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (5-01-15)	6,098.1	6,099.6	292.6	252.3	7.252	CC
Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (5-01-15)	11,856.0	12,007.0	344.9	198.0	2.348	ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.9-T1N-R66W - Avey 31-9 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	7,339.7	7,318.2	7,316.3	54.7	15.9	89.33	-2,763.2	-1,518.1	772.2	702.6	69.57	11.100	
10,300.0	7,338.9	7,317.1	7,315.2	56.5	15.9	89.24	-2,763.2	-1,518.1	748.5	677.1	71.38	10.486	
10,400.0	7,338.2	7,316.0	7,314.1	58.3	15.9	89.16	-2,763.2	-1,518.1	737.8	664.6	73.20	10.079	
10,429.9	7,338.0	7,315.7	7,313.8	58.9	15.9	89.13	-2,763.2	-1,518.1	737.2	663.4	73.75	9.996	CC, ES
10,500.0	7,337.4	7,314.9	7,313.0	60.1	15.9	89.07	-2,763.2	-1,518.0	740.5	665.5	75.03	9.870	
10,600.0	7,336.6	7,313.9	7,312.0	61.9	15.9	88.99	-2,763.2	-1,518.0	756.5	679.7	76.86	9.843	SF
10,700.0	7,335.9	7,312.8	7,310.9	63.7	15.9	88.91	-2,763.2	-1,518.0	785.1	706.4	78.70	9.976	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	7,339.7	7,342.0	7,337.2	54.7	15.6	-92.71	-3,265.3	-630.2	747.3	678.0	69.35	10.776	
10,300.0	7,338.9	7,341.1	7,336.3	56.5	15.6	-92.36	-3,265.3	-630.2	649.7	578.5	71.16	9.131	
10,400.0	7,338.2	7,340.2	7,335.4	58.3	15.6	-92.01	-3,265.3	-630.2	552.9	480.0	72.97	7.578	
10,500.0	7,337.4	7,339.3	7,334.5	60.1	15.6	-91.67	-3,265.3	-630.2	457.5	382.7	74.78	6.118	
10,600.0	7,336.6	7,338.4	7,333.6	61.9	15.6	-91.33	-3,265.3	-630.2	364.6	288.0	76.60	4.760	
10,700.0	7,335.9	7,337.5	7,332.7	63.7	15.6	-90.99	-3,265.3	-630.2	276.7	198.3	78.42	3.528	
10,800.0	7,335.1	7,336.7	7,331.8	65.6	15.6	-90.66	-3,265.3	-630.2	200.4	120.1	80.25	2.497	
10,900.0	7,334.3	7,335.8	7,330.9	67.4	15.6	-90.32	-3,265.3	-630.2	154.2	72.1	82.08	1.878	
10,932.0	7,334.1	7,335.5	7,330.7	68.0	15.6	-90.22	-3,265.3	-630.2	150.8	68.1	82.66	1.824	CC, ES, SF
11,000.0	7,333.6	7,334.9	7,330.1	69.2	15.6	-89.99	-3,265.3	-630.2	165.4	81.5	83.91	1.972	
11,100.0	7,332.8	7,334.0	7,329.2	71.0	15.6	-89.66	-3,265.3	-630.2	225.8	140.0	85.74	2.633	
11,200.0	7,332.0	7,333.2	7,328.3	72.9	15.6	-89.33	-3,265.3	-630.2	307.5	220.0	87.57	3.512	
11,300.0	7,331.3	7,332.3	7,327.5	74.7	15.6	-89.01	-3,265.3	-630.2	397.7	308.3	89.40	4.448	
11,400.0	7,330.5	7,331.5	7,326.6	76.6	15.6	-88.69	-3,265.3	-630.2	491.7	400.5	91.24	5.389	
11,500.0	7,329.7	7,330.6	7,325.8	78.4	15.6	-88.37	-3,265.3	-630.2	587.7	494.6	93.07	6.314	
11,600.0	7,329.0	7,329.8	7,325.0	80.3	15.6	-88.05	-3,265.3	-630.2	684.8	589.9	94.91	7.216	
11,700.0	7,328.2	7,329.0	7,324.1	82.1	15.6	-87.73	-3,265.3	-630.2	782.7	685.9	96.74	8.090	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	50.88	18.2	22.4	28.9				
100.0	100.0	100.0	100.0	0.1	0.1	50.88	18.2	22.4	28.9	28.6	0.22	128.402	
200.0	200.0	200.0	200.0	0.3	0.3	50.88	18.2	22.4	28.9	28.2	0.67	42.801	
300.0	300.0	300.0	300.0	0.6	0.6	50.88	18.2	22.4	28.9	27.7	1.12	25.680	
400.0	400.0	400.0	400.0	0.8	0.8	50.88	18.2	22.4	28.9	27.3	1.57	18.343	
500.0	500.0	500.0	500.0	1.0	1.0	50.88	18.2	22.4	28.9	26.8	2.02	14.267	
600.0	600.0	600.0	600.0	1.2	1.2	50.88	18.2	22.4	28.9	26.4	2.47	11.673	
700.0	700.0	700.0	700.0	1.5	1.5	50.88	18.2	22.4	28.9	25.9	2.92	9.877	
800.0	800.0	800.0	800.0	1.7	1.7	50.88	18.2	22.4	28.9	25.5	3.37	8.560	
900.0	900.0	900.0	900.0	1.9	1.9	49.14	18.9	21.8	28.8	25.0	3.82	7.556	
907.0	907.0	907.0	907.0	1.9	1.9	48.89	19.0	21.7	28.8	25.0	3.85	7.495	CC
1,000.0	1,000.0	1,000.0	999.9	2.1	2.1	43.96	20.8	20.1	29.0	24.7	4.26	6.794	ES
1,100.0	1,100.0	1,099.8	1,099.7	2.4	2.4	92.36	24.1	17.2	29.7	25.0	4.70	6.306	
1,200.0	1,200.0	1,199.6	1,199.3	2.6	2.6	86.17	28.7	13.2	31.2	26.0	5.15	6.058	
1,300.0	1,299.9	1,299.3	1,298.7	2.8	2.8	80.82	34.6	8.1	33.5	27.8	5.60	5.969	
1,400.0	1,399.7	1,399.0	1,397.9	3.0	3.1	76.42	41.8	1.8	36.4	30.3	6.07	5.987	
1,500.0	1,499.4	1,498.6	1,496.9	3.2	3.3	72.94	50.3	-5.6	39.8	33.3	6.56	6.074	
1,600.0	1,598.9	1,598.1	1,595.6	3.5	3.6	70.29	60.0	-14.1	43.8	36.7	7.06	6.202	
1,700.0	1,698.3	1,698.1	1,694.5	3.7	3.9	69.32	70.4	-23.1	47.6	40.0	7.59	6.276	
1,800.0	1,797.4	1,798.0	1,793.5	4.0	4.2	70.33	80.7	-32.1	50.8	42.7	8.14	6.246	
1,900.0	1,896.3	1,897.9	1,892.5	4.3	4.5	72.98	91.0	-41.2	53.5	44.8	8.73	6.135	
2,000.0	1,994.9	1,997.8	1,991.5	4.6	4.8	77.10	101.4	-50.2	55.9	46.6	9.35	5.979	
2,100.0	2,093.3	2,097.7	2,090.4	5.0	5.1	82.55	111.7	-59.2	58.3	48.3	10.02	5.822	
2,193.9	2,185.3	2,191.3	2,183.1	5.3	5.4	88.72	121.4	-67.6	61.0	50.3	10.67	5.715	
2,200.0	2,191.2	2,197.4	2,189.1	5.3	5.4	89.15	122.0	-68.2	61.2	50.5	10.71	5.710	
2,300.0	2,289.1	2,297.0	2,287.8	5.7	5.7	95.78	132.3	-77.2	64.8	53.4	11.41	5.684	
2,400.0	2,386.9	2,396.7	2,386.6	6.1	6.1	101.64	142.6	-86.2	69.3	57.2	12.08	5.734	
2,500.0	2,484.8	2,496.4	2,485.3	6.5	6.4	106.75	152.9	-95.2	74.4	61.6	12.74	5.838	
2,600.0	2,582.6	2,596.0	2,584.0	6.9	6.7	111.18	163.2	-104.2	79.9	66.6	13.37	5.979	
2,700.0	2,680.4	2,695.7	2,682.7	7.3	7.0	115.01	173.6	-113.2	85.9	72.0	13.99	6.143	
2,800.0	2,778.3	2,795.4	2,781.5	7.7	7.4	118.33	183.9	-122.2	92.3	77.7	14.60	6.321	
2,900.0	2,876.1	2,895.0	2,880.2	8.1	7.7	121.22	194.2	-131.2	98.9	83.7	15.20	6.507	
3,000.0	2,973.9	2,994.7	2,978.9	8.6	8.0	123.74	204.5	-140.1	105.7	89.9	15.79	6.695	
3,100.0	3,071.8	3,094.4	3,077.6	9.0	8.3	125.95	214.8	-149.1	112.7	96.3	16.37	6.883	
3,200.0	3,169.6	3,194.0	3,176.3	9.4	8.7	127.91	225.1	-158.1	119.9	102.9	16.96	7.068	
3,300.0	3,267.5	3,293.7	3,275.1	9.8	9.0	129.64	235.4	-167.1	127.1	109.6	17.54	7.249	
3,400.0	3,365.3	3,393.4	3,373.8	10.3	9.3	131.18	245.7	-176.1	134.5	116.4	18.11	7.425	
3,500.0	3,463.1	3,493.0	3,472.5	10.7	9.7	132.56	256.0	-185.1	142.0	123.3	18.69	7.595	
3,600.0	3,561.0	3,592.7	3,571.2	11.1	10.0	133.80	266.3	-194.1	149.5	130.2	19.27	7.760	
3,700.0	3,658.8	3,692.4	3,670.0	11.6	10.3	134.92	276.7	-203.1	157.1	137.3	19.84	7.918	
3,800.0	3,756.6	3,792.0	3,768.7	12.0	10.7	135.94	287.0	-212.1	164.8	144.3	20.42	8.070	
3,900.0	3,854.5	3,891.7	3,867.4	12.5	11.0	136.87	297.3	-221.1	172.5	151.5	20.99	8.216	
4,000.0	3,952.3	3,991.4	3,966.1	12.9	11.3	137.72	307.6	-230.1	180.2	158.6	21.57	8.356	
4,100.0	4,050.1	4,091.0	4,064.8	13.3	11.7	138.50	317.9	-239.1	188.0	165.8	22.14	8.490	
4,200.0	4,148.0	4,190.7	4,163.6	13.8	12.0	139.22	328.2	-248.1	195.8	173.1	22.72	8.619	
4,300.0	4,245.8	4,290.4	4,262.3	14.2	12.3	139.88	338.5	-257.1	203.6	180.3	23.29	8.743	
4,400.0	4,343.7	4,390.0	4,361.0	14.7	12.7	140.49	348.8	-266.1	211.5	187.6	23.87	8.862	
4,500.0	4,441.5	4,489.7	4,459.7	15.1	13.0	141.06	359.1	-275.1	219.4	194.9	24.44	8.976	
4,600.0	4,539.3	4,589.4	4,558.5	15.6	13.3	141.59	369.4	-284.1	227.3	202.3	25.02	9.085	
4,700.0	4,637.2	4,689.0	4,657.2	16.0	13.7	142.08	379.7	-293.1	235.2	209.6	25.59	9.190	
4,800.0	4,735.0	4,788.7	4,755.9	16.5	14.0	142.54	390.1	-302.1	243.2	217.0	26.17	9.291	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,832.8	4,888.4	4,854.6	16.9	14.3	142.98	400.4	-311.1	251.1	224.4	26.75	9.389	
5,000.0	4,930.7	4,988.0	4,953.3	17.4	14.7	143.38	410.7	-320.1	259.1	231.8	27.32	9.482	
5,100.0	5,028.5	5,087.7	5,052.1	17.8	15.0	143.76	421.0	-329.1	267.1	239.2	27.90	9.572	
5,200.0	5,126.4	5,187.4	5,150.8	18.3	15.4	144.12	431.3	-338.1	275.1	246.6	28.48	9.659	
5,300.0	5,224.2	5,287.0	5,249.5	18.7	15.7	144.46	441.6	-347.0	283.1	254.0	29.05	9.742	
5,400.0	5,322.0	5,386.7	5,348.2	19.2	16.0	144.78	451.9	-356.0	291.1	261.4	29.63	9.823	
5,500.0	5,419.9	5,486.3	5,447.0	19.6	16.4	145.08	462.2	-365.0	299.1	268.9	30.21	9.900	
5,600.0	5,517.7	5,586.0	5,545.7	20.0	16.7	145.37	472.5	-374.0	307.1	276.3	30.79	9.975	
5,700.0	5,615.5	5,685.7	5,644.4	20.5	17.0	145.64	482.8	-383.0	315.1	283.8	31.37	10.047	
5,800.0	5,713.4	5,785.3	5,743.1	20.9	17.4	145.90	493.2	-392.0	323.2	291.2	31.94	10.117	
5,896.1	5,807.4	5,881.1	5,838.0	21.4	17.7	146.14	503.1	-400.7	330.9	298.4	32.50	10.182	
5,900.0	5,811.2	5,885.0	5,841.8	21.4	17.7	146.15	503.5	-401.0	331.2	298.7	32.52	10.185	
6,000.0	5,909.4	5,984.8	5,940.7	21.7	18.0	146.28	513.8	-410.0	337.7	304.6	33.10	10.205	
6,100.0	6,008.2	6,082.2	6,037.2	22.0	18.4	146.08	523.7	-418.7	341.4	307.8	33.67	10.140	
6,200.0	6,107.5	6,174.8	6,129.2	22.3	18.6	145.87	531.5	-425.4	344.0	309.8	34.14	10.074	
6,300.0	6,207.1	6,267.3	6,221.5	22.5	18.8	145.73	536.9	-430.2	345.7	311.2	34.54	10.011	
6,400.0	6,307.0	6,359.9	6,313.9	22.6	18.9	145.64	540.1	-433.0	346.8	311.9	34.85	9.950	
6,493.0	6,400.0	6,446.0	6,400.0	22.7	19.1	90.48	541.1	-433.9	347.1	312.0	35.09	9.892	
6,495.3	6,402.3	6,448.3	6,402.3	22.7	19.1	90.48	541.1	-433.9	347.1	312.0	35.10	9.890	
6,500.0	6,407.0	6,453.0	6,407.0	22.8	19.1	90.48	541.1	-433.9	347.1	312.0	35.11	9.886	
6,600.0	6,507.0	6,553.0	6,507.0	22.9	19.2	90.48	541.1	-433.9	347.1	311.7	35.45	9.792	
6,600.8	6,507.7	6,553.7	6,507.7	22.9	19.2	90.48	541.1	-433.9	347.1	311.7	35.45	9.792	
6,686.5	6,593.5	6,638.9	6,592.8	23.0	19.3	91.12	537.2	-433.9	347.2	311.6	35.56	9.762	
6,700.0	6,607.0	6,652.2	6,606.0	23.0	19.3	-88.65	535.7	-433.9	347.2	311.6	35.55	9.766	
6,750.0	6,656.9	6,701.3	6,654.5	23.1	19.3	-87.83	528.3	-433.9	347.3	311.9	35.45	9.798	
6,800.0	6,706.6	6,750.0	6,702.1	23.1	19.3	-87.02	518.0	-433.9	347.6	312.3	35.31	9.844	
6,850.0	6,755.7	6,798.5	6,748.7	23.1	19.3	-86.22	504.6	-433.9	347.9	312.7	35.12	9.904	
6,900.0	6,804.2	6,846.6	6,794.1	23.1	19.3	-85.44	488.5	-433.9	348.2	313.3	34.91	9.975	
6,950.0	6,851.8	6,894.5	6,838.1	23.0	19.2	-84.68	469.6	-433.9	348.6	313.9	34.67	10.055	
7,000.0	6,898.3	6,942.2	6,880.6	23.0	19.1	-83.95	448.2	-433.9	349.1	314.6	34.42	10.142	
7,050.0	6,943.4	6,989.6	6,921.5	22.9	19.0	-83.25	424.2	-433.9	349.5	315.4	34.16	10.234	
7,100.0	6,987.1	7,036.7	6,960.7	22.8	18.9	-82.58	398.0	-433.9	350.0	316.2	33.89	10.328	
7,150.0	7,029.1	7,083.7	6,997.9	22.7	18.8	-81.94	369.4	-433.9	350.6	316.9	33.64	10.421	
7,200.0	7,069.2	7,130.4	7,033.2	22.6	18.7	-81.33	338.8	-433.9	351.1	317.7	33.41	10.511	
7,250.0	7,107.3	7,176.9	7,066.5	22.5	18.6	-80.77	306.3	-433.9	351.7	318.5	33.20	10.594	
7,300.0	7,143.1	7,223.3	7,097.5	22.4	18.5	-80.24	271.9	-433.9	352.2	319.2	33.02	10.668	
7,350.0	7,176.7	7,269.5	7,126.4	22.3	18.4	-79.75	235.8	-433.9	352.7	319.9	32.88	10.729	
7,400.0	7,207.7	7,315.5	7,152.9	22.2	18.3	-79.30	198.2	-433.9	353.3	320.5	32.79	10.774	
7,450.0	7,236.1	7,361.4	7,177.0	22.1	18.2	-78.90	159.1	-433.9	353.7	321.0	32.75	10.801	
7,500.0	7,261.7	7,407.2	7,198.7	22.0	18.1	-78.53	118.8	-433.9	354.2	321.4	32.77	10.807	
7,550.0	7,284.5	7,452.9	7,217.9	21.9	18.0	-78.22	77.3	-433.9	354.6	321.7	32.86	10.792	
7,600.0	7,304.4	7,500.0	7,235.1	21.8	18.0	-77.94	33.5	-433.9	354.9	321.9	33.01	10.751	
7,650.0	7,321.1	7,544.0	7,248.6	21.7	17.9	-77.73	-8.4	-433.9	355.2	322.0	33.24	10.686	
7,700.0	7,334.8	7,589.5	7,260.1	21.6	17.8	-77.55	-52.4	-433.9	355.5	321.9	33.54	10.597	
7,750.0	7,345.3	7,634.9	7,268.9	21.6	17.8	-77.42	-96.9	-433.9	355.6	321.7	33.91	10.486	
7,800.0	7,352.6	7,680.3	7,275.1	21.6	17.9	-77.34	-141.9	-433.9	355.7	321.4	34.36	10.353	
7,850.0	7,356.6	7,725.6	7,278.5	21.6	18.2	-77.31	-187.1	-433.9	355.8	320.9	34.88	10.201	
7,892.4	7,357.4	7,764.1	7,279.4	21.7	18.5	-77.32	-225.5	-433.9	355.8	320.4	35.36	10.061	
7,900.0	7,357.4	7,771.6	7,279.3	21.7	18.6	-77.32	-233.0	-433.9	355.8	320.3	35.46	10.032	
8,000.0	7,356.6	7,871.6	7,278.8	22.1	19.5	-77.37	-333.0	-433.9	355.7	318.7	36.99	9.615	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,100.0	7,355.8	7,971.6	7,278.3	22.8	20.5	-77.41	-433.0	-433.9	355.6	316.8	38.81	9.163	
8,200.0	7,355.1	8,071.6	7,277.9	23.6	21.7	-77.46	-533.0	-433.9	355.6	314.7	40.90	8.694	
8,300.0	7,354.3	8,171.6	7,277.4	24.7	22.9	-77.50	-633.0	-433.9	355.5	312.3	43.21	8.227	
8,400.0	7,353.5	8,271.6	7,276.9	25.8	24.2	-77.54	-733.0	-433.9	355.5	309.7	45.72	7.774	
8,500.0	7,352.8	8,371.6	7,276.4	27.1	25.6	-77.59	-833.0	-433.9	355.4	307.0	48.39	7.344	
8,600.0	7,352.0	8,471.6	7,275.9	28.4	27.0	-77.63	-933.0	-433.9	355.3	304.1	51.20	6.940	
8,700.0	7,351.2	8,571.6	7,275.4	29.9	28.5	-77.68	-1,033.0	-433.9	355.3	301.2	54.13	6.564	
8,800.0	7,350.5	8,671.6	7,274.9	31.3	30.0	-77.72	-1,133.0	-433.9	355.2	298.1	57.15	6.215	
8,900.0	7,349.7	8,771.6	7,274.4	32.8	31.6	-77.76	-1,233.0	-433.9	355.2	294.9	60.26	5.894	
9,000.0	7,348.9	8,871.6	7,273.9	34.4	33.2	-77.81	-1,333.0	-433.9	355.1	291.7	63.44	5.597	
9,100.0	7,348.2	8,971.6	7,273.5	36.0	34.9	-77.85	-1,433.0	-433.9	355.0	288.4	66.69	5.324	
9,200.0	7,347.4	9,071.6	7,273.0	37.6	36.5	-77.90	-1,533.0	-433.9	355.0	285.0	69.98	5.072	
9,300.0	7,346.6	9,171.6	7,272.5	39.2	38.2	-77.94	-1,633.0	-433.9	354.9	281.6	73.33	4.840	
9,400.0	7,345.9	9,271.6	7,272.0	40.9	39.9	-77.98	-1,733.0	-433.9	354.9	278.2	76.71	4.626	
9,500.0	7,345.1	9,371.6	7,271.5	42.5	41.7	-78.03	-1,833.0	-433.9	354.8	274.7	80.13	4.428	
9,600.0	7,344.3	9,471.6	7,271.0	44.2	43.4	-78.07	-1,933.0	-433.9	354.8	271.2	83.58	4.244	
9,700.0	7,343.6	9,571.6	7,270.5	46.0	45.2	-78.12	-2,033.0	-433.9	354.7	267.6	87.06	4.074	
9,800.0	7,342.8	9,671.6	7,270.0	47.7	46.9	-78.16	-2,133.0	-433.9	354.6	264.1	90.56	3.916	
9,900.0	7,342.0	9,771.6	7,269.5	49.4	48.7	-78.21	-2,233.0	-433.9	354.6	260.5	94.09	3.769	
10,000.0	7,341.3	9,871.6	7,269.1	51.2	50.5	-78.25	-2,333.0	-433.9	354.5	256.9	97.63	3.631	
10,100.0	7,340.5	9,971.6	7,268.6	53.0	52.3	-78.29	-2,433.0	-433.9	354.5	253.3	101.20	3.503	
10,200.0	7,339.7	10,071.6	7,268.1	54.7	54.1	-78.34	-2,533.0	-433.9	354.4	249.6	104.77	3.383	
10,300.0	7,338.9	10,171.6	7,267.6	56.5	55.9	-78.38	-2,633.0	-433.9	354.4	246.0	108.37	3.270	
10,400.0	7,338.2	10,271.6	7,267.1	58.3	57.7	-78.43	-2,733.0	-433.9	354.3	242.3	111.97	3.164	
10,500.0	7,337.4	10,371.6	7,266.6	60.1	59.6	-78.47	-2,833.0	-433.9	354.2	238.7	115.59	3.065	
10,600.0	7,336.6	10,471.6	7,266.1	61.9	61.4	-78.51	-2,933.0	-433.9	354.2	235.0	119.22	2.971	
10,700.0	7,335.9	10,571.6	7,265.6	63.7	63.2	-78.56	-3,033.0	-433.9	354.1	231.3	122.86	2.882	
10,800.0	7,335.1	10,671.6	7,265.1	65.6	65.1	-78.60	-3,133.0	-433.9	354.1	227.6	126.51	2.799	
10,900.0	7,334.3	10,771.6	7,264.7	67.4	66.9	-78.65	-3,233.0	-433.9	354.0	223.9	130.17	2.720	
11,000.0	7,333.6	10,871.6	7,264.2	69.2	68.8	-78.69	-3,333.0	-433.9	354.0	220.1	133.84	2.645	
11,100.0	7,332.8	10,971.6	7,263.7	71.0	70.6	-78.74	-3,433.0	-433.9	353.9	216.4	137.51	2.574	
11,200.0	7,332.0	11,071.6	7,263.2	72.9	72.5	-78.78	-3,533.0	-433.9	353.9	212.7	141.19	2.506	
11,300.0	7,331.3	11,171.6	7,262.7	74.7	74.3	-78.83	-3,633.0	-433.9	353.8	208.9	144.88	2.442	
11,400.0	7,330.5	11,271.6	7,262.2	76.6	76.2	-78.87	-3,733.0	-433.9	353.8	205.2	148.57	2.381	
11,500.0	7,329.7	11,371.6	7,261.7	78.4	78.1	-78.91	-3,833.0	-433.9	353.7	201.4	152.27	2.323	
11,600.0	7,329.0	11,471.6	7,261.2	80.3	79.9	-78.96	-3,933.0	-433.9	353.6	197.7	155.97	2.267	
11,700.0	7,328.2	11,571.6	7,260.7	82.1	81.8	-79.00	-4,033.0	-433.9	353.6	193.9	159.68	2.214	
11,800.0	7,327.4	11,671.6	7,260.3	84.0	83.7	-79.05	-4,133.0	-433.9	353.5	190.1	163.40	2.164	
11,842.8	7,327.1	11,714.4	7,260.0	84.6	84.5	-79.07	-4,175.8	-433.9	353.5	188.7	164.83	2.145	
11,856.0	7,327.0	11,724.3	7,260.0	84.9	84.6	-79.07	-4,185.7	-433.9	353.5	188.3	165.21	2.140	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	50.87	36.4	44.8	57.7				
100.0	100.0	100.0	100.0	0.1	0.1	50.87	36.4	44.8	57.7	57.5	0.22	256.815	
200.0	200.0	200.0	200.0	0.3	0.3	50.87	36.4	44.8	57.7	57.0	0.67	85.605	
300.0	300.0	300.0	300.0	0.6	0.6	50.87	36.4	44.8	57.7	56.6	1.12	51.363	
400.0	400.0	400.0	400.0	0.8	0.8	50.87	36.4	44.8	57.7	56.1	1.57	36.688	
500.0	500.0	500.0	500.0	1.0	1.0	50.87	36.4	44.8	57.7	55.7	2.02	28.535	
600.0	600.0	600.0	600.0	1.2	1.2	50.87	36.4	44.8	57.7	55.3	2.47	23.347	
700.0	700.0	700.0	700.0	1.5	1.5	50.87	36.4	44.8	57.7	54.8	2.92	19.755	
800.0	800.0	800.0	800.0	1.7	1.7	50.87	36.4	44.8	57.7	54.4	3.37	17.121	
900.0	900.0	900.0	900.0	1.9	1.9	50.87	36.4	44.8	57.7	53.9	3.82	15.107	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	50.87	36.4	44.8	57.7	53.5	4.27	13.517	CC
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	106.84	36.4	44.8	58.0	53.3	4.71	12.297	ES
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	109.28	36.4	44.8	58.8	53.6	5.15	11.406	
1,300.0	1,299.9	1,299.7	1,299.7	2.8	2.8	112.35	37.2	44.5	60.5	54.9	5.59	10.820	
1,400.0	1,399.7	1,399.4	1,399.4	3.0	3.0	115.11	39.7	43.5	63.4	57.4	6.04	10.507	
1,500.0	1,499.4	1,499.1	1,499.0	3.2	3.3	117.46	43.7	41.9	67.5	61.0	6.49	10.401	
1,600.0	1,598.9	1,598.9	1,598.5	3.5	3.5	119.35	49.3	39.7	72.6	65.6	6.95	10.452	
1,700.0	1,698.3	1,698.6	1,697.9	3.7	3.7	120.81	56.6	36.8	78.8	71.3	7.42	10.618	
1,800.0	1,797.4	1,798.3	1,797.2	4.0	4.0	121.86	65.5	33.3	85.9	78.0	7.91	10.869	
1,900.0	1,896.3	1,897.9	1,896.2	4.3	4.2	122.57	75.9	29.2	94.1	85.7	8.42	11.179	
2,000.0	1,994.9	1,997.4	1,994.9	4.6	4.5	123.13	87.8	24.6	103.2	94.3	8.95	11.529	
2,100.0	2,093.3	2,096.9	2,093.5	5.0	4.7	124.21	99.8	19.8	113.4	103.8	9.51	11.920	
2,193.9	2,185.3	2,190.2	2,186.0	5.3	5.0	125.64	111.1	15.4	123.8	113.8	10.04	12.326	
2,200.0	2,191.2	2,196.2	2,192.0	5.3	5.0	125.75	111.8	15.1	124.5	114.4	10.08	12.353	
2,300.0	2,289.1	2,295.5	2,290.4	5.7	5.3	127.37	123.8	10.4	136.2	125.6	10.67	12.771	
2,400.0	2,386.9	2,394.7	2,388.8	6.1	5.6	128.73	135.8	5.6	148.0	136.8	11.26	13.143	
2,500.0	2,484.8	2,494.0	2,487.2	6.5	5.9	129.89	147.8	0.9	159.9	148.0	11.86	13.475	
2,600.0	2,582.6	2,593.2	2,585.6	6.9	6.2	130.89	159.8	-3.8	171.8	159.3	12.47	13.774	
2,700.0	2,680.4	2,692.5	2,684.0	7.3	6.5	131.76	171.8	-8.5	183.8	170.7	13.09	14.043	
2,800.0	2,778.3	2,791.7	2,782.4	7.7	6.8	132.53	183.8	-13.2	195.8	182.1	13.70	14.287	
2,900.0	2,876.1	2,890.9	2,880.8	8.1	7.1	133.20	195.8	-18.0	207.8	193.5	14.32	14.508	
3,000.0	2,973.9	2,990.2	2,979.2	8.6	7.4	133.80	207.8	-22.7	219.9	204.9	14.95	14.710	
3,100.0	3,071.8	3,089.4	3,077.6	9.0	7.7	134.34	219.8	-27.4	232.0	216.4	15.57	14.894	
3,200.0	3,169.6	3,188.7	3,176.0	9.4	8.0	134.83	231.8	-32.1	244.1	227.9	16.20	15.064	
3,300.0	3,267.5	3,287.9	3,274.4	9.8	8.3	135.27	243.8	-36.9	256.2	239.3	16.83	15.219	
3,400.0	3,365.3	3,387.2	3,372.8	10.3	8.6	135.67	255.8	-41.6	268.3	250.8	17.46	15.363	
3,500.0	3,463.1	3,486.4	3,471.2	10.7	8.9	136.03	267.8	-46.3	280.4	262.3	18.10	15.496	
3,600.0	3,561.0	3,585.7	3,569.7	11.1	9.2	136.37	279.8	-51.0	292.6	273.9	18.73	15.620	
3,700.0	3,658.8	3,684.9	3,668.1	11.6	9.5	136.68	291.8	-55.8	304.8	285.4	19.37	15.734	
3,800.0	3,756.6	3,784.1	3,766.5	12.0	9.8	136.96	303.8	-60.5	316.9	296.9	20.01	15.841	
3,900.0	3,854.5	3,883.4	3,864.9	12.5	10.2	137.23	315.8	-65.2	329.1	308.5	20.64	15.942	
4,000.0	3,952.3	3,982.6	3,963.3	12.9	10.5	137.47	327.8	-69.9	341.3	320.0	21.28	16.035	
4,100.0	4,050.1	4,081.9	4,061.7	13.3	10.8	137.70	339.8	-74.7	353.5	331.5	21.92	16.123	
4,200.0	4,148.0	4,181.1	4,160.1	13.8	11.1	137.91	351.8	-79.4	365.7	343.1	22.56	16.206	
4,300.0	4,245.8	4,280.4	4,258.5	14.2	11.4	138.11	363.8	-84.1	377.9	354.6	23.21	16.283	
4,400.0	4,343.7	4,379.6	4,356.9	14.7	11.7	138.30	375.8	-88.8	390.1	366.2	23.85	16.356	
4,500.0	4,441.5	4,478.9	4,455.3	15.1	12.1	138.47	387.8	-93.6	402.3	377.8	24.49	16.426	
4,600.0	4,539.3	4,578.1	4,553.7	15.6	12.4	138.64	399.8	-98.3	414.5	389.3	25.13	16.491	
4,700.0	4,637.2	4,677.4	4,652.1	16.0	12.7	138.79	411.8	-103.0	426.7	400.9	25.78	16.553	
4,800.0	4,735.0	4,776.6	4,750.5	16.5	13.0	138.94	423.8	-107.7	438.9	412.5	26.42	16.612	
4,900.0	4,832.8	4,875.8	4,848.9	16.9	13.3	139.08	435.7	-112.5	451.1	424.0	27.07	16.668	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,930.7	4,975.1	4,947.3	17.4	13.6	139.21	447.7	-117.2	463.3	435.6	27.71	16.721	
5,100.0	5,028.5	5,074.3	5,045.7	17.8	14.0	139.34	459.7	-121.9	475.6	447.2	28.36	16.771	
5,200.0	5,126.4	5,173.6	5,144.1	18.3	14.3	139.45	471.7	-126.6	487.8	458.8	29.00	16.819	
5,300.0	5,224.2	5,272.8	5,242.5	18.7	14.6	139.57	483.7	-131.4	500.0	470.4	29.65	16.865	
5,400.0	5,322.0	5,372.1	5,340.9	19.2	14.9	139.67	495.7	-136.1	512.2	481.9	30.29	16.909	
5,500.0	5,419.9	5,471.3	5,439.3	19.6	15.2	139.78	507.7	-140.8	524.5	493.5	30.94	16.951	
5,600.0	5,517.7	5,570.0	5,537.2	20.0	15.6	139.88	519.7	-145.5	536.7	505.1	31.58	16.994	
5,700.0	5,615.5	5,664.0	5,630.6	20.5	15.8	140.15	529.3	-149.3	549.5	517.4	32.12	17.109	
5,800.0	5,713.4	5,757.5	5,723.8	20.9	16.0	140.71	536.1	-152.0	563.3	530.7	32.58	17.290	
5,896.1	5,807.4	5,846.7	5,812.9	21.4	16.1	141.50	539.9	-153.5	577.5	544.6	32.95	17.525	
5,900.0	5,811.2	5,850.3	5,816.5	21.4	16.2	141.54	540.0	-153.5	578.1	545.2	32.97	17.536	
6,000.0	5,909.4	5,943.2	5,909.4	21.7	16.3	142.67	541.1	-154.0	592.7	559.4	33.27	17.816	
6,100.0	6,008.2	6,042.0	6,008.2	22.0	16.5	143.70	541.1	-154.0	605.1	571.5	33.55	18.032	
6,200.0	6,107.5	6,141.3	6,107.5	22.3	16.6	144.47	541.1	-154.0	614.8	580.9	33.85	18.162	
6,300.0	6,207.1	6,240.9	6,207.1	22.5	16.8	145.00	541.1	-154.0	621.7	587.5	34.14	18.210	
6,400.0	6,307.0	6,340.8	6,307.0	22.6	17.0	145.31	541.1	-154.0	625.8	591.4	34.42	18.178	
6,493.0	6,400.0	6,433.8	6,400.0	22.7	17.2	90.26	541.1	-154.0	627.0	592.3	34.69	18.077	
6,500.0	6,407.0	6,440.8	6,407.0	22.8	17.2	90.26	541.1	-154.0	627.0	592.3	34.71	18.065	
6,600.0	6,507.0	6,540.8	6,507.0	22.9	17.4	90.26	541.1	-154.0	627.0	592.0	35.06	17.885	
6,652.9	6,559.9	6,593.7	6,559.9	23.0	17.5	90.26	541.1	-154.0	627.0	591.8	35.24	17.791	
6,686.5	6,593.5	6,627.3	6,593.5	23.0	17.5	90.27	541.0	-154.0	627.0	591.7	35.36	17.735	
6,700.0	6,607.0	6,640.7	6,606.9	23.0	17.5	-89.71	540.7	-154.0	627.0	591.6	35.39	17.716	
6,750.0	6,656.9	6,690.4	6,656.5	23.1	17.6	-89.63	537.4	-154.0	627.0	591.5	35.48	17.673	
6,800.0	6,706.6	6,740.1	6,705.8	23.1	17.6	-89.56	530.9	-154.0	627.0	591.5	35.51	17.657	
6,850.0	6,755.7	6,789.8	6,754.5	23.1	17.6	-89.49	521.2	-154.0	627.0	591.5	35.50	17.665	
6,900.0	6,804.2	6,839.4	6,802.4	23.1	17.6	-89.42	508.3	-154.0	627.0	591.6	35.43	17.696	
6,950.0	6,851.8	6,889.0	6,849.3	23.0	17.5	-89.36	492.4	-154.0	627.1	591.7	35.33	17.748	
7,000.0	6,898.3	6,938.5	6,895.1	23.0	17.5	-89.30	473.6	-154.0	627.1	591.9	35.19	17.818	
7,050.0	6,943.4	6,988.0	6,939.5	22.9	17.4	-89.24	451.8	-154.0	627.1	592.0	35.03	17.901	
7,100.0	6,987.1	7,037.4	6,982.4	22.8	17.3	-89.18	427.2	-154.0	627.1	592.2	34.85	17.996	
7,150.0	7,029.1	7,086.8	7,023.5	22.7	17.2	-89.13	399.9	-154.0	627.1	592.4	34.65	18.096	
7,200.0	7,069.2	7,136.2	7,062.8	22.6	17.1	-89.08	370.0	-154.0	627.1	592.6	34.46	18.197	
7,250.0	7,107.3	7,185.5	7,100.1	22.5	17.0	-89.03	337.7	-154.0	627.1	592.8	34.28	18.294	
7,300.0	7,143.1	7,234.8	7,135.2	22.4	17.0	-88.99	303.0	-154.0	627.1	593.0	34.12	18.381	
7,350.0	7,176.7	7,284.1	7,167.9	22.3	16.9	-88.96	266.2	-154.0	627.1	593.1	33.99	18.451	
7,400.0	7,207.7	7,333.3	7,198.2	22.2	16.8	-88.92	227.4	-154.0	627.1	593.2	33.90	18.498	
7,450.0	7,236.1	7,382.6	7,225.9	22.1	16.8	-88.90	186.7	-154.0	627.1	593.3	33.87	18.516	
7,500.0	7,261.7	7,431.8	7,250.9	22.0	16.7	-88.87	144.4	-154.0	627.1	593.2	33.90	18.501	
7,550.0	7,284.5	7,481.0	7,273.2	21.9	16.7	-88.85	100.5	-154.0	627.1	593.1	34.00	18.447	
7,600.0	7,304.4	7,530.2	7,292.5	21.8	16.8	-88.84	55.3	-154.0	627.1	593.0	34.17	18.351	
7,650.0	7,321.1	7,579.3	7,309.0	21.7	16.9	-88.83	8.9	-154.0	627.1	592.7	34.43	18.213	
7,700.0	7,334.8	7,628.5	7,322.4	21.6	17.1	-88.83	-38.4	-154.0	627.1	592.4	34.78	18.033	
7,750.0	7,345.3	7,677.7	7,332.7	21.6	17.3	-88.83	-86.4	-154.0	627.1	591.9	35.21	17.813	
7,800.0	7,352.6	7,726.9	7,339.9	21.6	17.6	-88.84	-135.1	-154.0	627.1	591.4	35.72	17.556	
7,850.0	7,356.6	7,776.0	7,344.0	21.6	17.9	-88.85	-184.1	-154.0	627.1	590.8	36.32	17.267	
7,892.4	7,357.4	7,817.8	7,345.0	21.7	18.2	-88.86	-225.8	-154.0	627.1	590.3	36.88	17.003	
7,900.0	7,357.4	7,825.3	7,344.9	21.7	18.3	-88.86	-233.4	-154.0	627.1	590.1	37.00	16.951	
8,000.0	7,356.6	7,925.3	7,344.5	22.1	19.2	-88.89	-333.4	-154.0	627.1	588.5	38.62	16.240	
8,100.0	7,355.8	8,025.3	7,344.0	22.8	20.2	-88.92	-433.4	-154.0	627.1	586.6	40.52	15.476	
8,200.0	7,355.1	8,125.3	7,343.6	23.6	21.3	-88.95	-533.4	-154.0	627.1	584.4	42.69	14.690	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	7,354.3	8,225.3	7,343.1	24.7	22.5	-88.98	-633.4	-154.0	627.1	582.0	45.08	13.912	
8,400.0	7,353.5	8,325.3	7,342.6	25.8	23.9	-89.00	-733.4	-154.0	627.1	579.5	47.66	13.159	
8,500.0	7,352.8	8,425.3	7,342.2	27.1	25.3	-89.03	-833.3	-154.0	627.1	576.7	50.39	12.444	
8,600.0	7,352.0	8,525.3	7,341.7	28.4	26.7	-89.06	-933.3	-154.0	627.1	573.8	53.27	11.773	
8,700.0	7,351.2	8,625.3	7,341.3	29.9	28.3	-89.09	-1,033.3	-154.0	627.1	570.8	56.25	11.147	
8,800.0	7,350.5	8,725.3	7,340.8	31.3	29.8	-89.12	-1,133.3	-154.0	627.1	567.7	59.34	10.568	
8,900.0	7,349.7	8,825.3	7,340.4	32.8	31.4	-89.15	-1,233.3	-154.0	627.1	564.6	62.51	10.032	
9,000.0	7,348.9	8,925.3	7,339.9	34.4	33.1	-89.18	-1,333.3	-154.0	627.1	561.3	65.75	9.538	
9,100.0	7,348.2	9,025.3	7,339.5	36.0	34.7	-89.21	-1,433.3	-154.0	627.1	558.0	69.05	9.082	
9,200.0	7,347.4	9,125.3	7,339.0	37.6	36.4	-89.23	-1,533.3	-154.0	627.1	554.7	72.40	8.661	
9,300.0	7,346.6	9,225.3	7,338.6	39.2	38.1	-89.26	-1,633.3	-154.0	627.1	551.3	75.80	8.273	
9,400.0	7,345.9	9,325.3	7,338.1	40.9	39.8	-89.29	-1,733.3	-154.0	627.1	547.8	79.23	7.914	
9,500.0	7,345.1	9,425.3	7,337.7	42.5	41.6	-89.32	-1,833.3	-154.0	627.1	544.4	82.71	7.582	
9,600.0	7,344.3	9,525.3	7,337.2	44.2	43.3	-89.35	-1,933.3	-154.0	627.1	540.8	86.21	7.274	
9,700.0	7,343.6	9,625.3	7,336.8	46.0	45.1	-89.38	-2,033.3	-154.0	627.0	537.3	89.74	6.988	
9,800.0	7,342.8	9,725.3	7,336.3	47.7	46.9	-89.41	-2,133.3	-154.0	627.0	533.8	93.29	6.721	
9,900.0	7,342.0	9,825.3	7,335.8	49.4	48.7	-89.44	-2,233.3	-154.0	627.0	530.2	96.87	6.473	
10,000.0	7,341.3	9,925.3	7,335.4	51.2	50.5	-89.46	-2,333.3	-154.0	627.0	526.6	100.46	6.242	
10,100.0	7,340.5	10,025.3	7,334.9	53.0	52.3	-89.49	-2,433.3	-154.0	627.0	523.0	104.07	6.025	
10,200.0	7,339.7	10,125.3	7,334.5	54.7	54.1	-89.52	-2,533.3	-154.0	627.0	519.3	107.70	5.822	
10,300.0	7,338.9	10,225.3	7,334.0	56.5	55.9	-89.55	-2,633.3	-154.0	627.0	515.7	111.34	5.632	
10,400.0	7,338.2	10,325.3	7,333.6	58.3	57.8	-89.58	-2,733.3	-154.0	627.0	512.0	114.99	5.453	
10,500.0	7,337.4	10,425.3	7,333.1	60.1	59.6	-89.61	-2,833.3	-154.0	627.0	508.4	118.66	5.284	
10,600.0	7,336.6	10,525.3	7,332.7	61.9	61.4	-89.64	-2,933.3	-154.0	627.0	504.7	122.33	5.126	
10,700.0	7,335.9	10,625.3	7,332.2	63.7	63.3	-89.67	-3,033.3	-154.0	627.0	501.0	126.02	4.976	
10,800.0	7,335.1	10,725.3	7,331.8	65.6	65.1	-89.69	-3,133.3	-154.0	627.0	497.3	129.71	4.834	
10,900.0	7,334.3	10,825.3	7,331.3	67.4	67.0	-89.72	-3,233.3	-154.0	627.0	493.6	133.41	4.700	
11,000.0	7,333.6	10,925.3	7,330.9	69.2	68.8	-89.75	-3,333.3	-154.0	627.0	489.9	137.12	4.573	
11,100.0	7,332.8	11,025.3	7,330.4	71.0	70.7	-89.78	-3,433.3	-154.0	627.0	486.2	140.83	4.452	
11,200.0	7,332.0	11,125.3	7,329.9	72.9	72.6	-89.81	-3,533.3	-154.0	627.0	482.5	144.55	4.338	
11,300.0	7,331.3	11,225.3	7,329.5	74.7	74.4	-89.84	-3,633.3	-154.0	627.0	478.7	148.28	4.229	
11,400.0	7,330.5	11,325.3	7,329.0	76.6	76.3	-89.87	-3,733.3	-154.0	627.0	475.0	152.01	4.125	
11,500.0	7,329.7	11,425.3	7,328.6	78.4	78.2	-89.89	-3,833.3	-154.0	627.0	471.3	155.75	4.026	
11,600.0	7,329.0	11,525.3	7,328.1	80.3	80.0	-89.92	-3,933.3	-154.0	627.0	467.5	159.49	3.931	
11,700.0	7,328.2	11,625.3	7,327.7	82.1	81.9	-89.95	-4,033.3	-154.0	627.0	463.8	163.24	3.841	
11,800.0	7,327.4	11,725.3	7,327.2	84.0	83.8	-89.98	-4,133.3	-154.0	627.0	460.0	166.98	3.755	
11,839.6	7,327.1	11,764.9	7,327.0	84.6	84.5	-89.99	-4,172.9	-154.0	627.0	458.7	168.32	3.725	
11,856.0	7,327.0	11,774.1	7,327.0	84.9	84.7	-89.99	-4,182.0	-154.0	627.1	458.3	168.74	3.716	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	51.73	72.9	92.4	117.6				
100.0	100.0	100.0	100.0	0.1	0.1	51.73	72.9	92.4	117.6	117.4	0.22	523.371	
200.0	200.0	200.0	200.0	0.3	0.3	51.73	72.9	92.4	117.6	117.0	0.67	174.457	
300.0	300.0	300.0	300.0	0.6	0.6	51.73	72.9	92.4	117.6	116.5	1.12	104.674	
400.0	400.0	400.0	400.0	0.8	0.8	51.73	72.9	92.4	117.6	116.1	1.57	74.767	
500.0	500.0	500.0	500.0	1.0	1.0	51.73	72.9	92.4	117.6	115.6	2.02	58.152	
600.0	600.0	600.0	600.0	1.2	1.2	51.73	72.9	92.4	117.6	115.2	2.47	47.579	
700.0	700.0	700.0	700.0	1.5	1.5	51.73	72.9	92.4	117.6	114.7	2.92	40.259	
800.0	800.0	800.0	800.0	1.7	1.7	51.73	72.9	92.4	117.6	114.3	3.37	34.891	
900.0	900.0	900.0	900.0	1.9	1.9	51.73	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	51.73	72.9	92.4	117.6	113.4	4.27	27.546	CC, ES
1,100.0	1,100.0	1,098.1	1,098.1	2.4	2.4	107.14	73.5	92.8	118.7	114.0	4.71	25.219	
1,200.0	1,200.0	1,196.0	1,196.0	2.6	2.6	107.92	75.6	94.3	122.0	116.8	5.14	23.732	
1,300.0	1,299.9	1,293.8	1,293.7	2.8	2.8	109.13	79.0	96.7	127.4	121.8	5.57	22.856	
1,400.0	1,399.7	1,391.3	1,391.0	3.0	3.0	110.65	83.8	100.1	135.1	129.1	6.01	22.465	SF
1,500.0	1,499.4	1,488.5	1,487.9	3.2	3.2	112.36	89.9	104.4	145.1	138.7	6.46	22.465	
1,600.0	1,598.9	1,585.3	1,584.3	3.5	3.5	114.14	97.3	109.6	157.5	150.6	6.92	22.780	
1,700.0	1,698.3	1,681.5	1,679.9	3.7	3.7	115.89	105.9	115.7	172.4	165.0	7.38	23.349	
1,800.0	1,797.4	1,779.3	1,776.9	4.0	4.0	117.66	115.7	122.6	189.2	181.3	7.86	24.059	
1,900.0	1,896.3	1,877.4	1,874.3	4.3	4.2	119.54	125.5	129.5	207.1	198.7	8.36	24.775	
2,000.0	1,994.9	1,975.3	1,971.5	4.6	4.5	121.47	135.4	136.5	226.0	217.2	8.87	25.497	
2,100.0	2,093.3	2,072.8	2,068.3	5.0	4.8	123.41	145.1	143.4	246.2	236.8	9.39	26.230	
2,193.9	2,185.3	2,164.1	2,158.9	5.3	5.0	125.22	154.3	149.8	266.3	256.4	9.89	26.931	
2,200.0	2,191.2	2,170.1	2,164.8	5.3	5.1	125.34	154.9	150.3	267.7	257.7	9.92	26.975	
2,300.0	2,289.1	2,267.2	2,261.1	5.7	5.3	127.25	164.6	157.1	289.9	279.4	10.48	27.671	
2,400.0	2,386.9	2,364.2	2,357.5	6.1	5.6	128.90	174.4	164.0	312.3	301.3	11.03	28.303	
2,500.0	2,484.8	2,461.3	2,453.8	6.5	5.9	130.32	184.1	170.9	335.0	323.4	11.60	28.879	
2,600.0	2,582.6	2,558.4	2,550.2	6.9	6.2	131.56	193.8	177.7	357.8	345.7	12.17	29.405	
2,700.0	2,680.4	2,655.5	2,646.5	7.3	6.5	132.65	203.6	184.6	380.8	368.1	12.74	29.886	
2,800.0	2,778.3	2,752.6	2,742.9	7.7	6.8	133.62	213.3	191.5	403.9	390.6	13.32	30.328	
2,900.0	2,876.1	2,849.6	2,839.2	8.1	7.1	134.48	223.0	198.4	427.1	413.2	13.90	30.733	
3,000.0	2,973.9	2,946.7	2,935.6	8.6	7.4	135.26	232.8	205.2	450.4	435.9	14.48	31.107	
3,100.0	3,071.8	3,043.8	3,031.9	9.0	7.7	135.96	242.5	212.1	473.7	458.7	15.06	31.452	
3,200.0	3,169.6	3,140.9	3,128.3	9.4	8.0	136.59	252.2	219.0	497.1	481.5	15.65	31.772	
3,300.0	3,267.5	3,238.0	3,224.6	9.8	8.2	137.17	262.0	225.8	520.6	504.4	16.23	32.069	
3,400.0	3,365.3	3,335.1	3,321.0	10.3	8.5	137.69	271.7	232.7	544.1	527.3	16.82	32.345	
3,500.0	3,463.1	3,432.1	3,417.3	10.7	8.8	138.18	281.4	239.6	567.6	550.2	17.41	32.602	
3,600.0	3,561.0	3,529.2	3,513.6	11.1	9.1	138.62	291.2	246.5	591.2	573.2	18.00	32.842	
3,700.0	3,658.8	3,626.3	3,610.0	11.6	9.4	139.03	300.9	253.3	614.8	596.2	18.59	33.067	
3,800.0	3,756.6	3,723.4	3,706.3	12.0	9.7	139.41	310.6	260.2	638.5	619.3	19.19	33.278	
3,900.0	3,854.5	3,820.5	3,802.7	12.5	10.0	139.76	320.4	267.1	662.1	642.4	19.78	33.476	
4,000.0	3,952.3	3,917.5	3,899.0	12.9	10.3	140.09	330.1	273.9	685.8	665.4	20.37	33.662	
4,100.0	4,050.1	4,014.6	3,995.4	13.3	10.7	140.40	339.8	280.8	709.5	688.6	20.97	33.837	
4,200.0	4,148.0	4,111.7	4,091.7	13.8	11.0	140.69	349.6	287.7	733.3	711.7	21.56	34.003	
4,300.0	4,245.8	4,208.8	4,188.1	14.2	11.3	140.96	359.3	294.6	757.0	734.8	22.16	34.159	
4,400.0	4,343.7	4,305.9	4,284.4	14.7	11.6	141.21	369.0	301.4	780.8	758.0	22.76	34.308	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	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	394.966	
200.0	200.0	200.0	200.0	0.3	0.3	52.01	54.6	70.0	88.8	88.1	0.67	131.655	
300.0	300.0	300.0	300.0	0.6	0.6	52.01	54.6	70.0	88.8	87.7	1.12	78.993	
400.0	400.0	400.0	400.0	0.8	0.8	52.01	54.6	70.0	88.8	87.2	1.57	56.424	
500.0	500.0	500.0	500.0	1.0	1.0	52.01	54.6	70.0	88.8	86.8	2.02	43.885	
600.0	600.0	600.0	600.0	1.2	1.2	52.01	54.6	70.0	88.8	86.3	2.47	35.906	
700.0	700.0	700.0	700.0	1.5	1.5	52.01	54.6	70.0	88.8	85.9	2.92	30.382	
800.0	800.0	800.0	800.0	1.7	1.7	52.01	54.6	70.0	88.8	85.4	3.37	26.331	
900.0	900.0	900.0	900.0	1.9	1.9	52.01	54.6	70.0	88.8	85.0	3.82	23.233	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	52.01	54.6	70.0	88.8	84.5	4.27	20.788	CC
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	107.69	54.6	70.0	89.0	84.3	4.71	18.887	ES
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	109.27	54.6	70.0	89.9	84.7	5.15	17.438	
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	111.83	54.6	70.0	91.4	85.8	5.60	16.334	
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	115.27	54.6	70.0	93.8	87.8	6.04	15.534	
1,500.0	1,499.4	1,499.4	1,499.4	3.2	3.3	119.40	54.6	70.0	97.5	91.0	6.49	15.016	
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	124.02	54.6	70.0	102.5	95.6	6.94	14.768	SF
1,700.0	1,698.3	1,698.3	1,698.3	3.7	3.7	128.87	54.6	70.0	109.3	101.9	7.40	14.776	
1,800.0	1,797.4	1,797.4	1,797.4	4.0	3.9	133.73	54.6	70.0	117.9	110.1	7.85	15.027	
1,900.0	1,896.3	1,895.7	1,895.7	4.3	4.1	138.03	55.4	70.1	128.9	120.6	8.30	15.524	
2,000.0	1,994.9	1,994.0	1,994.0	4.6	4.4	141.39	57.9	70.5	142.1	133.4	8.75	16.234	
2,100.0	2,093.3	2,092.1	2,092.0	5.0	4.6	143.92	62.0	71.1	157.5	148.2	9.21	17.095	
2,193.9	2,185.3	2,184.1	2,183.8	5.3	4.8	145.65	67.4	71.9	173.6	163.9	9.65	17.997	
2,200.0	2,191.2	2,190.1	2,189.8	5.3	4.8	145.75	67.8	71.9	174.7	165.0	9.68	18.057	
2,300.0	2,289.1	2,287.9	2,287.4	5.7	5.0	146.95	75.2	73.0	192.9	182.7	10.16	18.979	
2,400.0	2,386.9	2,385.9	2,384.9	6.1	5.3	147.49	84.2	74.4	211.3	200.7	10.67	19.812	
2,500.0	2,484.8	2,483.8	2,482.2	6.5	5.5	147.52	94.9	76.0	229.9	218.8	11.19	20.553	
2,600.0	2,582.6	2,582.0	2,579.7	6.9	5.7	147.39	106.3	77.6	248.6	236.9	11.72	21.207	
2,700.0	2,680.4	2,680.3	2,677.3	7.3	6.0	147.27	117.7	79.3	267.3	255.0	12.27	21.789	
2,800.0	2,778.3	2,778.5	2,774.9	7.7	6.2	147.17	129.1	81.0	285.9	273.1	12.82	22.307	
2,900.0	2,876.1	2,876.8	2,872.4	8.1	6.5	147.09	140.5	82.7	304.6	291.2	13.38	22.771	
3,000.0	2,973.9	2,975.0	2,970.0	8.6	6.8	147.01	151.9	84.4	323.3	309.3	13.94	23.188	
3,100.0	3,071.8	3,073.3	3,067.6	9.0	7.0	146.94	163.3	86.1	342.0	327.4	14.51	23.563	
3,200.0	3,169.6	3,171.5	3,165.1	9.4	7.3	146.88	174.7	87.8	360.6	345.5	15.09	23.902	
3,300.0	3,267.5	3,269.7	3,262.7	9.8	7.6	146.83	186.1	89.5	379.3	363.6	15.67	24.209	
3,400.0	3,365.3	3,368.0	3,360.2	10.3	7.8	146.78	197.5	91.2	398.0	381.7	16.25	24.489	
3,500.0	3,463.1	3,466.2	3,457.8	10.7	8.1	146.73	208.9	92.9	416.6	399.8	16.84	24.744	
3,600.0	3,561.0	3,564.5	3,555.4	11.1	8.4	146.69	220.3	94.6	435.3	417.9	17.43	24.977	
3,700.0	3,658.8	3,662.7	3,652.9	11.6	8.7	146.65	231.7	96.3	454.0	436.0	18.02	25.191	
3,800.0	3,756.6	3,760.9	3,750.5	12.0	8.9	146.62	243.1	98.0	472.7	454.0	18.62	25.388	
3,900.0	3,854.5	3,859.2	3,848.1	12.5	9.2	146.58	254.5	99.7	491.3	472.1	19.22	25.570	
4,000.0	3,952.3	3,957.4	3,945.6	12.9	9.5	146.55	265.9	101.4	510.0	490.2	19.82	25.738	
4,100.0	4,050.1	4,055.7	4,043.2	13.3	9.8	146.53	277.3	103.0	528.7	508.3	20.42	25.893	
4,200.0	4,148.0	4,153.9	4,140.7	13.8	10.1	146.50	288.7	104.7	547.4	526.3	21.02	26.038	
4,300.0	4,245.8	4,252.1	4,238.3	14.2	10.4	146.47	300.1	106.4	566.0	544.4	21.63	26.172	
4,400.0	4,343.7	4,350.4	4,335.9	14.7	10.7	146.45	311.5	108.1	584.7	562.5	22.23	26.298	
4,500.0	4,441.5	4,448.6	4,433.4	15.1	10.9	146.43	322.9	109.8	603.4	580.5	22.84	26.415	
4,600.0	4,539.3	4,546.9	4,531.0	15.6	11.2	146.41	334.3	111.5	622.0	598.6	23.45	26.524	
4,700.0	4,637.2	4,645.1	4,628.6	16.0	11.5	146.39	345.7	113.2	640.7	616.7	24.06	26.627	
4,800.0	4,735.0	4,743.3	4,726.1	16.5	11.8	146.37	357.1	114.9	659.4	634.7	24.67	26.723	
4,900.0	4,832.8	4,841.6	4,823.7	16.9	12.1	146.36	368.5	116.6	678.1	652.8	25.29	26.814	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,930.7	4,939.8	4,921.2	17.4	12.4	146.34	379.9	118.3	696.7	670.8	25.90	26.899	
5,100.0	5,028.5	5,038.1	5,018.8	17.8	12.7	146.33	391.3	120.0	715.4	688.9	26.52	26.980	
5,200.0	5,126.4	5,136.3	5,116.4	18.3	13.0	146.31	402.7	121.7	734.1	707.0	27.13	27.056	
5,300.0	5,224.2	5,234.5	5,213.9	18.7	13.3	146.30	414.1	123.4	752.8	725.0	27.75	27.127	
5,400.0	5,322.0	5,332.8	5,311.5	19.2	13.6	146.28	425.5	125.1	771.4	743.1	28.37	27.195	
5,500.0	5,419.9	5,431.0	5,409.1	19.6	13.9	146.27	436.9	126.7	790.1	761.1	28.98	27.260	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	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	2,865.767	
200.0	200.0	202.0	202.0	0.3	0.3	-128.39	-408.0	-515.0	657.0	656.3	0.68	967.908	
300.0	300.0	302.0	302.0	0.6	0.6	-128.39	-408.0	-515.0	657.0	655.9	1.13	582.287	
366.0	366.0	368.0	368.0	0.7	0.7	-128.39	-408.0	-515.0	657.0	655.6	1.42	461.074	CC
400.0	400.0	400.0	400.0	0.8	0.8	-128.39	-408.0	-515.0	657.0	655.4	1.57	417.585	
500.0	500.0	497.3	497.3	1.0	1.0	-128.29	-407.3	-516.0	657.4	655.4	2.01	326.708	ES
600.0	600.0	592.6	592.6	1.2	1.2	-127.98	-405.2	-518.9	658.4	656.0	2.45	269.091	
700.0	700.0	687.7	687.4	1.5	1.4	-127.49	-401.7	-523.8	660.3	657.4	2.89	228.819	
800.0	800.0	782.4	781.8	1.7	1.7	-126.80	-396.9	-530.5	662.9	659.5	3.33	199.220	
900.0	900.0	876.7	875.4	1.9	1.9	-125.93	-390.7	-539.1	666.4	662.6	3.77	176.648	
1,000.0	1,000.0	970.3	968.2	2.1	2.2	-124.90	-383.3	-549.6	670.9	666.7	4.22	158.959	
1,100.0	1,100.0	1,063.4	1,060.1	2.4	2.5	-68.57	-374.6	-561.8	676.2	671.4	4.81	140.445	
1,200.0	1,200.0	1,156.1	1,151.2	2.6	2.8	-67.36	-364.7	-575.7	682.0	676.7	5.34	127.665	
1,300.0	1,299.9	1,248.3	1,241.3	2.8	3.2	-66.12	-353.5	-591.3	688.4	682.5	5.90	116.706	
1,400.0	1,399.7	1,340.0	1,330.5	3.0	3.6	-64.85	-341.1	-608.6	695.4	688.9	6.49	107.223	
1,500.0	1,499.4	1,431.2	1,418.7	3.2	4.0	-63.57	-327.6	-627.6	703.0	695.9	7.10	98.962	
1,600.0	1,598.9	1,521.9	1,505.8	3.5	4.5	-62.27	-313.0	-648.1	711.2	703.5	7.76	91.713	
1,700.0	1,698.3	1,612.1	1,591.8	3.7	5.0	-60.96	-297.2	-670.2	720.1	711.7	8.44	85.361	
1,800.0	1,797.4	1,709.4	1,684.3	4.0	5.6	-59.61	-279.4	-695.1	729.3	720.1	9.18	79.404	
1,900.0	1,896.3	1,808.0	1,777.8	4.3	6.2	-58.39	-261.4	-720.3	737.8	727.9	9.95	74.143	
2,000.0	1,994.9	1,906.8	1,871.6	4.6	6.8	-57.32	-243.4	-745.6	745.8	735.0	10.73	69.471	
2,100.0	2,093.3	2,005.8	1,965.6	5.0	7.5	-56.38	-225.3	-770.9	752.9	741.4	11.54	65.275	
2,193.9	2,185.3	2,099.1	2,054.1	5.3	8.1	-55.61	-208.3	-794.8	759.0	746.7	12.30	61.688	
2,200.0	2,191.2	2,105.1	2,059.9	5.3	8.1	-55.57	-207.2	-796.4	759.3	747.0	12.35	61.462	
2,300.0	2,289.1	2,204.5	2,154.2	5.7	8.7	-54.87	-189.0	-821.8	765.4	752.2	13.19	58.024	
2,400.0	2,386.9	2,303.9	2,248.6	6.1	9.4	-54.18	-170.9	-847.2	771.6	757.6	14.03	54.997	
2,500.0	2,484.8	2,403.3	2,342.9	6.5	10.0	-53.50	-152.7	-872.7	777.9	763.0	14.87	52.321	
2,600.0	2,582.6	2,502.6	2,437.2	6.9	10.7	-52.84	-134.6	-898.1	784.3	768.6	15.70	49.943	
2,700.0	2,680.4	2,602.0	2,531.6	7.3	11.3	-52.18	-116.4	-923.5	790.8	774.3	16.54	47.821	
2,800.0	2,778.3	2,701.4	2,625.9	7.7	11.9	-51.54	-98.3	-948.9	797.4	780.0	17.37	45.919	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	2.0	2.0	0.0	0.0	-128.36	-389.8	-492.6	628.2				
100.0	100.0	102.0	102.0	0.1	0.1	-128.36	-389.8	-492.6	628.2	627.9	0.23	2,739.915	
200.0	200.0	202.0	202.0	0.3	0.3	-128.36	-389.8	-492.6	628.2	627.5	0.68	925.402	
300.0	300.0	302.0	302.0	0.6	0.6	-128.36	-389.8	-492.6	628.2	627.0	1.13	556.716	
400.0	400.0	402.0	402.0	0.8	0.8	-128.36	-389.8	-492.6	628.2	626.6	1.58	398.107	
500.0	500.0	502.0	502.0	1.0	1.0	-128.36	-389.8	-492.6	628.2	626.1	2.03	309.835	
566.0	566.0	568.0	568.0	1.2	1.2	-128.36	-389.8	-492.6	628.2	625.8	2.32	270.289	CC
600.0	600.0	601.9	601.9	1.2	1.2	-128.36	-389.8	-492.6	628.2	625.7	2.48	253.630	
700.0	700.0	700.0	700.0	1.5	1.5	-128.24	-389.0	-493.6	628.4	625.5	2.92	215.433	ES
800.0	800.0	794.8	794.7	1.7	1.7	-127.91	-386.7	-496.4	629.3	626.0	3.35	187.885	
900.0	900.0	890.9	890.6	1.9	1.9	-127.37	-382.8	-501.2	630.8	627.0	3.79	166.511	
1,000.0	1,000.0	986.7	986.0	2.1	2.1	-126.63	-377.5	-507.8	632.9	628.7	4.23	149.633	
1,100.0	1,100.0	1,082.0	1,080.8	2.4	2.4	-70.59	-370.7	-516.2	635.6	630.9	4.71	135.003	
1,200.0	1,200.0	1,177.1	1,174.9	2.6	2.6	-69.63	-362.4	-526.4	638.5	633.3	5.19	123.118	
1,300.0	1,299.9	1,271.7	1,268.3	2.8	2.9	-68.62	-352.8	-538.4	641.7	636.0	5.69	112.764	
1,400.0	1,399.7	1,366.0	1,360.9	3.0	3.3	-67.57	-341.7	-552.1	645.1	638.9	6.23	103.634	
1,500.0	1,499.4	1,459.9	1,452.7	3.2	3.6	-66.46	-329.2	-567.5	649.0	642.2	6.79	95.518	
1,600.0	1,598.9	1,553.4	1,543.6	3.5	4.0	-65.31	-315.4	-584.6	653.2	645.8	7.40	88.264	
1,700.0	1,698.3	1,646.5	1,633.4	3.7	4.5	-64.12	-300.2	-603.4	657.9	649.8	8.05	81.750	
1,800.0	1,797.4	1,741.3	1,724.4	4.0	4.9	-62.88	-283.5	-624.1	662.9	654.2	8.74	75.877	
1,900.0	1,896.3	1,840.3	1,819.3	4.3	5.5	-61.69	-265.7	-646.1	667.7	658.2	9.48	70.445	
2,000.0	1,994.9	1,939.5	1,914.4	4.6	6.0	-60.66	-247.8	-668.1	671.9	661.6	10.24	65.607	
2,100.0	2,093.3	2,038.9	2,009.6	5.0	6.6	-59.76	-230.0	-690.2	675.4	664.3	11.03	61.255	
2,193.9	2,185.3	2,132.4	2,099.2	5.3	7.1	-59.05	-213.2	-711.0	678.0	666.2	11.78	57.538	
2,200.0	2,191.2	2,138.5	2,105.1	5.3	7.1	-59.01	-212.1	-712.3	678.1	666.3	11.83	57.305	
2,300.0	2,289.1	2,238.2	2,200.6	5.7	7.7	-58.34	-194.2	-734.5	680.6	667.9	12.66	53.753	
2,400.0	2,386.9	2,337.8	2,296.1	6.1	8.3	-57.68	-176.3	-756.6	683.1	669.6	13.49	50.624	
2,500.0	2,484.8	2,437.5	2,391.6	6.5	8.8	-57.02	-158.3	-778.8	685.8	671.4	14.33	47.856	
2,600.0	2,582.6	2,537.1	2,487.0	6.9	9.4	-56.37	-140.4	-800.9	688.5	673.3	15.17	45.397	
2,700.0	2,680.4	2,636.8	2,582.5	7.3	10.0	-55.72	-122.5	-823.1	691.3	675.3	16.00	43.203	
2,800.0	2,778.3	2,736.4	2,678.0	7.7	10.6	-55.08	-104.6	-845.2	694.2	677.4	16.83	41.238	
2,900.0	2,876.1	2,836.1	2,773.5	8.1	11.2	-54.44	-86.7	-867.4	697.2	679.6	17.66	39.470	
3,000.0	2,973.9	2,935.7	2,869.0	8.6	11.8	-53.80	-68.8	-889.5	700.3	681.8	18.49	37.873	
3,100.0	3,071.8	3,035.4	2,964.5	9.0	12.3	-53.18	-50.9	-911.7	703.5	684.2	19.31	36.426	
3,200.0	3,169.6	3,135.0	3,060.0	9.4	12.9	-52.56	-33.0	-933.8	706.7	686.6	20.13	35.111	
3,300.0	3,267.5	3,234.7	3,155.5	9.8	13.5	-51.94	-15.1	-956.0	710.0	689.1	20.94	33.912	
3,400.0	3,365.3	3,334.3	3,251.0	10.3	14.1	-51.33	2.9	-978.1	713.5	691.7	21.74	32.814	
3,500.0	3,463.1	3,434.0	3,346.5	10.7	14.7	-50.73	20.8	-1,000.3	717.0	694.4	22.54	31.808	
3,600.0	3,561.0	3,533.6	3,442.0	11.1	15.3	-50.13	38.7	-1,022.4	720.5	697.2	23.33	30.883	
3,700.0	3,658.8	3,633.3	3,537.5	11.6	15.9	-49.54	56.6	-1,044.6	724.2	700.1	24.12	30.029	
3,800.0	3,756.6	3,732.9	3,633.0	12.0	16.5	-48.95	74.5	-1,066.7	727.9	703.0	24.89	29.241	
3,900.0	3,854.5	3,832.6	3,728.5	12.5	17.1	-48.37	92.4	-1,088.8	731.7	706.1	25.66	28.512	
4,000.0	3,952.3	3,932.3	3,824.0	12.9	17.7	-47.80	110.3	-1,111.0	735.6	709.2	26.43	27.835	
4,100.0	4,050.1	4,031.9	3,919.5	13.3	18.3	-47.23	128.2	-1,133.1	739.6	712.4	27.18	27.206	
4,200.0	4,148.0	4,131.6	4,015.0	13.8	18.8	-46.67	146.1	-1,155.3	743.6	715.6	27.93	26.620	
4,300.0	4,245.8	4,231.2	4,110.5	14.2	19.4	-46.11	164.1	-1,177.4	747.7	719.0	28.68	26.074	
4,400.0	4,343.7	4,330.9	4,206.0	14.7	20.0	-45.56	182.0	-1,199.6	751.8	722.4	29.41	25.564	
4,500.0	4,441.5	4,430.5	4,301.5	15.1	20.6	-45.02	199.9	-1,221.7	756.1	725.9	30.14	25.087	
4,600.0	4,539.3	4,530.2	4,397.0	15.6	21.2	-44.48	217.8	-1,243.9	760.4	729.5	30.86	24.640	
4,700.0	4,637.2	4,629.8	4,492.5	16.0	21.8	-43.95	235.7	-1,266.0	764.7	733.2	31.57	24.222	
4,800.0	4,735.0	4,729.5	4,587.9	16.5	22.4	-43.42	253.6	-1,288.2	769.2	736.9	32.28	23.829	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,832.8	4,829.1	4,683.4	16.9	23.0	-42.90	271.5	-1,310.3	773.7	740.7	32.98	23.459	
5,000.0	4,930.7	4,928.8	4,778.9	17.4	23.6	-42.39	289.4	-1,332.5	778.2	744.6	33.67	23.111	
5,100.0	5,028.5	5,028.4	4,874.4	17.8	24.2	-41.88	307.3	-1,354.6	782.9	748.5	34.36	22.784	
5,200.0	5,126.4	5,128.1	4,969.9	18.3	24.8	-41.38	325.2	-1,376.8	787.5	752.5	35.04	22.475	
5,300.0	5,224.2	5,227.7	5,065.4	18.7	25.4	-40.89	343.2	-1,398.9	792.3	756.6	35.71	22.184	
5,400.0	5,322.0	5,327.4	5,160.9	19.2	26.0	-40.40	361.1	-1,421.1	797.1	760.7	36.38	21.909 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**Offset TVD Reference:**	Offset Datum

Offset Design Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	2.0	2.0	0.0	0.0	-128.28	-426.2	-540.2	688.1				
100.0	100.0	102.0	102.0	0.1	0.1	-128.28	-426.2	-540.2	688.1	687.8	0.23	3,001.261	
166.0	166.0	168.0	168.0	0.3	0.3	-128.28	-426.2	-540.2	688.1	687.5	0.53	1,308.394	CC
200.0	200.0	200.0	200.0	0.3	0.3	-128.28	-426.2	-540.2	688.1	687.4	0.67	1,020.433	
300.0	300.0	296.5	296.4	0.6	0.6	-128.18	-425.6	-541.2	688.5	687.4	1.11	619.147	ES
400.0	400.0	390.9	390.8	0.8	0.8	-127.90	-423.6	-544.2	689.7	688.1	1.55	445.250	
500.0	500.0	485.1	484.9	1.0	1.0	-127.44	-420.4	-549.1	691.7	689.7	1.99	347.581	
600.0	600.0	579.0	578.4	1.2	1.2	-126.81	-415.9	-555.9	694.7	692.2	2.43	285.336	
700.0	700.0	672.4	671.2	1.5	1.5	-126.00	-410.3	-564.6	698.6	695.7	2.88	242.407	
800.0	800.0	765.3	763.2	1.7	1.8	-125.05	-403.4	-575.1	703.5	700.2	3.33	211.144	
900.0	900.0	857.4	854.2	1.9	2.1	-123.94	-395.3	-587.4	709.6	705.9	3.78	187.500	
1,000.0	1,000.0	948.9	944.1	2.1	2.4	-122.71	-386.2	-601.4	717.0	712.8	4.24	169.123	
1,100.0	1,100.0	1,039.6	1,032.8	2.4	2.8	-66.19	-375.9	-617.1	725.5	720.4	5.06	143.479	
1,200.0	1,200.0	1,129.7	1,120.6	2.6	3.2	-64.80	-364.6	-634.4	734.7	729.1	5.63	130.385	
1,300.0	1,299.9	1,219.4	1,207.3	2.8	3.7	-63.42	-352.2	-653.3	744.7	738.5	6.24	119.367	
1,400.0	1,399.7	1,308.4	1,292.9	3.0	4.1	-62.04	-338.8	-673.8	755.5	748.6	6.87	110.000	
1,500.0	1,499.4	1,400.0	1,380.4	3.2	4.7	-60.62	-323.8	-696.6	767.1	759.5	7.54	101.746	
1,600.0	1,598.9	1,485.5	1,461.3	3.5	5.2	-59.28	-308.9	-719.4	779.4	771.2	8.21	94.933	
1,700.0	1,698.3	1,583.0	1,553.5	3.7	5.8	-57.87	-291.3	-746.2	791.9	782.9	8.96	88.386	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	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	2,594.582	
200.0	200.0	202.0	202.0	0.3	0.3	-128.21	-367.9	-467.4	594.8	594.2	0.68	876.316	
300.0	300.0	302.0	302.0	0.6	0.6	-128.21	-367.9	-467.4	594.8	593.7	1.13	527.186	
400.0	400.0	402.0	402.0	0.8	0.8	-128.21	-367.9	-467.4	594.8	593.3	1.58	376.991	
500.0	500.0	502.0	502.0	1.0	1.0	-128.21	-367.9	-467.4	594.8	592.8	2.03	293.401	
600.0	600.0	602.0	602.0	1.2	1.2	-128.21	-367.9	-467.4	594.8	592.4	2.48	240.152	
700.0	700.0	702.0	702.0	1.5	1.5	-128.21	-367.9	-467.4	594.8	591.9	2.93	203.262	
766.0	766.0	768.0	768.0	1.6	1.6	-128.21	-367.9	-467.4	594.8	591.6	3.22	184.555	
800.0	800.0	802.0	802.0	1.7	1.7	-128.21	-367.9	-467.4	594.8	591.5	3.38	176.203	
900.0	900.0	900.9	900.9	1.9	1.9	-128.12	-367.3	-468.0	594.9	591.1	3.82	155.784	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-127.88	-365.4	-469.8	595.2	591.0	4.26	139.716	
1,100.0	1,100.0	1,098.5	1,098.4	2.4	2.3	-72.40	-362.4	-472.8	595.4	590.7	4.70	126.735	
1,200.0	1,200.0	1,197.3	1,196.9	2.6	2.6	-72.07	-358.1	-477.0	595.4	590.2	5.14	115.882	
1,300.0	1,299.9	1,295.9	1,295.3	2.8	2.8	-71.73	-352.6	-482.3	595.0	589.4	5.59	106.481	
1,400.0	1,399.7	1,394.5	1,393.4	3.0	3.0	-71.39	-345.8	-488.9	594.3	588.2	6.05	98.193	
1,500.0	1,499.4	1,493.0	1,491.3	3.2	3.3	-71.05	-337.9	-496.6	593.3	586.8	6.54	90.776	
1,600.0	1,598.9	1,591.5	1,589.0	3.5	3.6	-70.70	-328.8	-505.4	592.0	585.0	7.04	84.053	
1,700.0	1,698.3	1,689.9	1,686.3	3.7	3.9	-70.36	-318.5	-515.5	590.4	582.8	7.58	77.902	
1,800.0	1,797.4	1,788.2	1,783.3	4.0	4.2	-70.00	-307.0	-526.6	588.5	580.4	8.15	72.232	
1,900.0	1,896.3	1,886.5	1,880.0	4.3	4.5	-69.65	-294.3	-539.0	586.3	577.5	8.75	66.982	
2,000.0	1,994.9	1,984.7	1,976.3	4.6	4.9	-69.28	-280.4	-552.5	583.8	574.4	9.40	62.110	
2,100.0	2,093.3	2,082.8	2,072.1	5.0	5.2	-68.91	-265.4	-567.1	581.0	570.9	10.09	57.579	
2,193.9	2,185.3	2,174.9	2,161.7	5.3	5.6	-68.56	-250.2	-581.8	578.1	567.4	10.78	53.614	
2,200.0	2,191.2	2,180.9	2,167.5	5.3	5.7	-68.54	-249.2	-582.8	577.9	567.1	10.83	53.367	
2,300.0	2,289.1	2,278.8	2,262.4	5.7	6.1	-68.04	-231.8	-599.7	574.9	563.3	11.61	49.514	
2,400.0	2,386.9	2,376.6	2,356.8	6.1	6.6	-67.37	-213.4	-617.6	572.3	559.9	12.43	46.062	
2,500.0	2,484.8	2,474.3	2,450.6	6.5	7.1	-66.53	-193.8	-636.7	570.2	556.9	13.27	42.983	
2,600.0	2,582.6	2,573.8	2,545.9	6.9	7.6	-65.60	-173.3	-656.6	568.3	554.2	14.13	40.211	
2,700.0	2,680.4	2,673.4	2,641.3	7.3	8.1	-64.67	-152.8	-676.5	566.6	551.6	15.01	37.756	
2,800.0	2,778.3	2,772.9	2,736.7	7.7	8.7	-63.73	-132.4	-696.4	565.1	549.2	15.88	35.573	
2,900.0	2,876.1	2,872.5	2,832.1	8.1	9.2	-62.78	-111.9	-716.2	563.7	546.9	16.76	33.628	
3,000.0	2,973.9	2,972.1	2,927.4	8.6	9.8	-61.84	-91.5	-736.1	562.4	544.8	17.64	31.887	
3,100.0	3,071.8	3,071.6	3,022.8	9.0	10.3	-60.88	-71.0	-756.0	561.3	542.8	18.51	30.326	
3,200.0	3,169.6	3,171.2	3,118.2	9.4	10.9	-59.93	-50.5	-775.9	560.4	541.0	19.38	28.921	
3,300.0	3,267.5	3,270.7	3,213.6	9.8	11.5	-58.97	-30.1	-795.8	559.6	539.4	20.24	27.653	
3,400.0	3,365.3	3,370.3	3,309.0	10.3	12.1	-58.01	-9.6	-815.7	559.0	537.9	21.09	26.506	
3,500.0	3,463.1	3,469.8	3,404.3	10.7	12.6	-57.05	10.8	-835.6	558.6	536.6	21.93	25.465	
3,600.0	3,561.0	3,569.4	3,499.7	11.1	13.2	-56.08	31.3	-855.5	558.3	535.5	22.77	24.519	
3,700.0	3,658.8	3,668.9	3,595.1	11.6	13.8	-55.12	51.8	-875.3	558.1	534.5	23.59	23.657	
3,735.8	3,693.8	3,704.6	3,629.2	11.7	14.0	-54.77	59.1	-882.5	558.1	534.2	23.88	23.367	CC
3,800.0	3,756.6	3,768.5	3,690.5	12.0	14.4	-54.15	72.2	-895.2	558.2	533.7	24.41	22.870	
3,900.0	3,854.5	3,868.0	3,785.8	12.5	14.9	-53.19	92.7	-915.1	558.3	533.1	25.21	22.151	
4,000.0	3,952.3	3,967.6	3,881.2	12.9	15.5	-52.23	113.1	-935.0	558.7	532.7	26.00	21.492	
4,100.0	4,050.1	4,067.1	3,976.6	13.3	16.1	-51.26	133.6	-954.9	559.2	532.4	26.77	20.887	
4,200.0	4,148.0	4,166.7	4,072.0	13.8	16.7	-50.30	154.1	-974.8	559.8	532.3	27.53	20.333	
4,300.0	4,245.8	4,266.2	4,167.3	14.2	17.3	-49.35	174.5	-994.7	560.7	532.4	28.28	19.823	
4,400.0	4,343.7	4,365.8	4,262.7	14.7	17.9	-48.39	195.0	-1,014.6	561.6	532.6	29.02	19.354	
4,500.0	4,441.5	4,465.4	4,358.1	15.1	18.4	-47.44	215.4	-1,034.4	562.8	533.0	29.74	18.922	
4,600.0	4,539.3	4,564.9	4,453.5	15.6	19.0	-46.49	235.9	-1,054.3	564.1	533.6	30.45	18.524	
4,700.0	4,637.2	4,664.5	4,548.8	16.0	19.6	-45.55	256.4	-1,074.2	565.5	534.3	31.14	18.157	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,735.0	4,764.0	4,644.2	16.5	20.2	-44.61	276.8	-1,094.1	567.1	535.3	31.82	17.819	
4,900.0	4,832.8	4,863.6	4,739.6	16.9	20.8	-43.68	297.3	-1,114.0	568.8	536.3	32.49	17.508	
5,000.0	4,930.7	4,963.1	4,835.0	17.4	21.4	-42.75	317.7	-1,133.9	570.7	537.6	33.14	17.220	
5,100.0	5,028.5	5,062.7	4,930.4	17.8	22.0	-41.83	338.2	-1,153.8	572.8	539.0	33.78	16.955	
5,200.0	5,126.4	5,162.2	5,025.7	18.3	22.6	-40.92	358.7	-1,173.7	575.0	540.6	34.41	16.711	
5,300.0	5,224.2	5,261.8	5,121.1	18.7	23.1	-40.02	379.1	-1,193.6	577.3	542.3	35.02	16.486	
5,400.0	5,322.0	5,361.3	5,216.5	19.2	23.7	-39.12	399.6	-1,213.4	579.8	544.2	35.62	16.279	
5,500.0	5,419.9	5,460.9	5,311.9	19.6	24.3	-38.23	420.0	-1,233.3	582.4	546.2	36.20	16.088	
5,600.0	5,517.7	5,560.4	5,407.2	20.0	24.9	-37.34	440.5	-1,253.2	585.2	548.4	36.78	15.912	
5,700.0	5,615.5	5,664.0	5,506.5	20.5	25.5	-36.44	461.7	-1,273.8	588.0	550.7	37.34	15.750	
5,800.0	5,713.4	5,780.2	5,618.7	20.9	26.0	-35.68	483.1	-1,294.7	589.0	551.1	37.88	15.550	
5,896.1	5,807.4	5,892.1	5,727.9	21.4	26.4	-35.26	500.7	-1,311.7	587.3	548.9	38.43	15.282	
5,900.0	5,811.2	5,896.6	5,732.4	21.4	26.5	-35.25	501.3	-1,312.4	587.2	548.7	38.46	15.269	
6,000.0	5,909.4	6,013.1	5,847.0	21.7	26.8	-34.99	516.2	-1,326.8	584.1	545.1	38.99	14.981	
6,100.0	6,008.2	6,129.6	5,962.4	22.0	27.1	-34.83	527.8	-1,338.0	581.1	541.6	39.47	14.724	
6,200.0	6,107.5	6,246.0	6,078.2	22.3	27.4	-34.77	535.9	-1,345.9	578.1	538.2	39.89	14.492	
6,300.0	6,207.1	6,362.3	6,194.3	22.5	27.6	-34.83	540.7	-1,350.6	575.1	534.9	40.26	14.286	
6,400.0	6,307.0	6,477.0	6,309.0	22.6	27.7	-34.98	542.1	-1,351.9	572.2	531.6	40.58	14.101	
6,493.0	6,400.0	6,570.0	6,402.0	22.7	27.8	-90.19	542.1	-1,351.9	571.0	530.2	40.79	13.996	
6,500.0	6,407.0	6,577.0	6,409.0	22.8	27.8	-90.19	542.1	-1,351.9	571.0	530.2	40.81	13.990	
6,600.0	6,507.0	6,677.0	6,509.0	22.9	27.9	-90.19	542.1	-1,351.9	571.0	529.9	41.11	13.890	
6,606.2	6,513.2	6,683.2	6,515.2	22.9	27.9	-90.19	542.1	-1,351.9	571.0	529.8	41.13	13.884	
6,686.5	6,593.5	6,763.0	6,594.9	23.0	28.0	-90.62	537.9	-1,351.9	571.0	529.6	41.43	13.781	
6,700.0	6,607.0	6,776.3	6,608.1	23.0	28.0	89.24	536.3	-1,351.9	571.0	529.5	41.50	13.761	
6,750.0	6,656.9	6,825.4	6,656.5	23.1	27.9	88.72	528.8	-1,351.9	571.1	529.4	41.68	13.701	
6,800.0	6,706.6	6,874.1	6,704.1	23.1	27.9	88.21	518.2	-1,351.9	571.2	529.4	41.81	13.664	
6,850.0	6,755.7	6,922.6	6,750.7	23.1	27.8	87.71	504.7	-1,351.9	571.4	529.6	41.86	13.650	
6,900.0	6,804.2	6,970.7	6,796.0	23.1	27.7	87.22	488.4	-1,351.9	571.6	529.8	41.85	13.658	
6,950.0	6,851.8	7,018.6	6,839.9	23.0	27.6	86.74	469.4	-1,351.9	571.9	530.1	41.78	13.688	
7,000.0	6,898.3	7,066.2	6,882.3	23.0	27.5	86.27	447.8	-1,351.9	572.2	530.5	41.65	13.737	
7,050.0	6,943.4	7,113.6	6,923.1	22.9	27.3	85.83	423.8	-1,351.9	572.5	531.0	41.47	13.805	
7,100.0	6,987.1	7,160.7	6,962.1	22.8	27.2	85.40	397.4	-1,351.9	572.8	531.6	41.24	13.891	
7,150.0	7,029.1	7,207.5	6,999.2	22.7	27.0	84.99	368.8	-1,351.9	573.2	532.2	40.97	13.991	
7,200.0	7,069.2	7,254.2	7,034.4	22.6	26.8	84.60	338.1	-1,351.9	573.5	532.9	40.66	14.105	
7,250.0	7,107.3	7,300.0	7,067.0	22.5	26.6	84.24	306.0	-1,351.9	573.9	533.5	40.34	14.227	
7,300.0	7,143.1	7,346.9	7,098.4	22.4	26.4	83.89	271.1	-1,351.9	574.2	534.2	40.00	14.357	
7,350.0	7,176.7	7,393.0	7,127.0	22.3	26.2	83.57	235.0	-1,351.9	574.6	534.9	39.66	14.488	
7,400.0	7,207.7	7,439.0	7,153.4	22.2	25.9	83.28	197.4	-1,351.9	574.9	535.6	39.34	14.616	
7,450.0	7,236.1	7,484.8	7,177.4	22.1	25.7	83.02	158.4	-1,351.9	575.2	536.2	39.04	14.735	
7,500.0	7,261.7	7,530.5	7,198.9	22.0	25.5	82.78	118.1	-1,351.9	575.5	536.8	38.78	14.842	
7,550.0	7,284.5	7,576.0	7,217.9	21.9	25.3	82.57	76.7	-1,351.9	575.8	537.2	38.57	14.929	
7,600.0	7,304.4	7,621.5	7,234.5	21.8	25.1	82.39	34.3	-1,351.9	576.0	537.6	38.42	14.992	
7,650.0	7,321.1	7,666.9	7,248.4	21.7	24.9	82.24	-8.9	-1,351.9	576.2	537.9	38.35	15.026	
7,700.0	7,334.8	7,712.2	7,259.7	21.6	24.7	82.12	-52.8	-1,351.9	576.4	538.1	38.35	15.029	
7,750.0	7,345.3	7,757.5	7,268.5	21.6	24.5	82.03	-97.2	-1,351.9	576.5	538.1	38.45	14.996	
7,800.0	7,352.6	7,802.8	7,274.5	21.6	24.3	81.98	-142.0	-1,351.9	576.6	538.0	38.63	14.928	
7,850.0	7,356.6	7,850.0	7,278.0	21.6	24.1	81.95	-189.1	-1,351.9	576.6	537.7	38.90	14.824	
7,864.3	7,357.1	7,860.9	7,278.4	21.7	24.1	81.95	-200.0	-1,351.9	576.6	537.6	39.00	14.786	
7,892.4	7,357.4	7,886.4	7,278.7	21.7	24.0	81.95	-225.5	-1,351.9	576.6	537.4	39.20	14.710	
7,900.0	7,357.4	7,893.9	7,278.7	21.7	23.9	81.95	-233.0	-1,351.9	576.6	537.4	39.27	14.685	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,000.0	7,356.6	7,993.9	7,278.2	22.1	23.6	81.98	-333.0	-1,351.9	576.6	536.3	40.32	14.302	
8,100.0	7,355.8	8,093.9	7,277.7	22.8	23.3	82.01	-433.0	-1,351.9	576.6	534.9	41.67	13.835	
8,200.0	7,355.1	8,193.9	7,277.2	23.6	23.1	82.04	-533.0	-1,351.9	576.5	533.2	43.32	13.308	
8,300.0	7,354.3	8,293.9	7,276.8	24.7	23.2	82.07	-633.0	-1,351.9	576.5	531.3	45.22	12.748	
8,400.0	7,353.5	8,393.9	7,276.3	25.8	23.8	82.10	-733.0	-1,351.9	576.4	529.1	47.35	12.174	
8,500.0	7,352.8	8,493.9	7,275.8	27.1	24.8	82.13	-833.0	-1,351.9	576.4	526.7	49.68	11.603	
8,600.0	7,352.0	8,593.9	7,275.4	28.4	26.0	82.16	-933.0	-1,351.9	576.4	524.2	52.17	11.047	
8,700.0	7,351.2	8,693.9	7,274.9	29.9	27.2	82.19	-1,033.0	-1,351.9	576.3	521.5	54.82	10.512	
8,800.0	7,350.5	8,793.9	7,274.4	31.3	28.5	82.22	-1,133.0	-1,351.9	576.3	518.7	57.60	10.005	
8,900.0	7,349.7	8,893.9	7,273.9	32.8	29.9	82.25	-1,233.0	-1,351.9	576.2	515.7	60.49	9.526	
9,000.0	7,348.9	8,993.9	7,273.5	34.4	31.4	82.27	-1,333.0	-1,351.9	576.2	512.7	63.48	9.077	
9,100.0	7,348.2	9,093.9	7,273.0	36.0	32.9	82.30	-1,433.0	-1,351.9	576.2	509.6	66.55	8.658	
9,200.0	7,347.4	9,193.9	7,272.5	37.6	34.4	82.33	-1,533.0	-1,351.9	576.1	506.4	69.69	8.267	
9,300.0	7,346.6	9,293.9	7,272.1	39.2	35.9	82.36	-1,633.0	-1,351.9	576.1	503.2	72.90	7.903	
9,400.0	7,345.9	9,393.9	7,271.6	40.9	37.5	82.39	-1,733.0	-1,351.9	576.0	499.9	76.16	7.564	
9,500.0	7,345.1	9,493.9	7,271.1	42.5	39.1	82.42	-1,833.0	-1,351.9	576.0	496.5	79.47	7.248	
9,600.0	7,344.3	9,593.9	7,270.6	44.2	40.7	82.45	-1,933.0	-1,351.9	576.0	493.1	82.82	6.954	
9,700.0	7,343.6	9,693.9	7,270.2	46.0	42.4	82.48	-2,033.0	-1,351.9	575.9	489.7	86.21	6.680	
9,800.0	7,342.8	9,793.9	7,269.7	47.7	44.1	82.51	-2,133.0	-1,351.9	575.9	486.2	89.64	6.424	
9,900.0	7,342.0	9,893.9	7,269.2	49.4	45.7	82.54	-2,233.0	-1,351.9	575.8	482.7	93.10	6.185	
10,000.0	7,341.3	9,993.9	7,268.8	51.2	47.5	82.57	-2,333.0	-1,351.9	575.8	479.2	96.58	5.962	
10,100.0	7,340.5	10,093.9	7,268.3	53.0	49.2	82.60	-2,433.0	-1,351.9	575.8	475.7	100.08	5.753	
10,200.0	7,339.7	10,193.9	7,267.8	54.7	50.9	82.63	-2,533.0	-1,351.9	575.7	472.1	103.61	5.556	
10,300.0	7,338.9	10,293.9	7,267.4	56.5	52.6	82.65	-2,633.0	-1,351.9	575.7	468.5	107.16	5.372	
10,400.0	7,338.2	10,393.9	7,266.9	58.3	54.4	82.68	-2,733.0	-1,351.9	575.6	464.9	110.73	5.199	
10,500.0	7,337.4	10,493.9	7,266.4	60.1	56.2	82.71	-2,833.0	-1,351.9	575.6	461.3	114.31	5.036	
10,600.0	7,336.6	10,593.9	7,265.9	61.9	57.9	82.74	-2,933.0	-1,351.9	575.6	457.7	117.90	4.882	
10,700.0	7,335.9	10,693.9	7,265.5	63.7	59.7	82.77	-3,033.0	-1,351.9	575.5	454.0	121.51	4.736	
10,800.0	7,335.1	10,793.9	7,265.0	65.6	61.5	82.80	-3,133.0	-1,351.9	575.5	450.4	125.14	4.599	
10,900.0	7,334.3	10,893.9	7,264.5	67.4	63.3	82.83	-3,233.0	-1,351.9	575.5	446.7	128.77	4.469	
11,000.0	7,333.6	10,993.9	7,264.1	69.2	65.1	82.86	-3,333.0	-1,351.9	575.4	443.0	132.41	4.346	
11,100.0	7,332.8	11,093.9	7,263.6	71.0	66.9	82.89	-3,433.0	-1,351.9	575.4	439.3	136.07	4.229	
11,200.0	7,332.0	11,193.9	7,263.1	72.9	68.7	82.92	-3,533.0	-1,351.9	575.4	435.6	139.73	4.118	
11,300.0	7,331.3	11,293.9	7,262.6	74.7	70.5	82.95	-3,633.0	-1,351.9	575.3	431.9	143.40	4.012	
11,400.0	7,330.5	11,393.9	7,262.2	76.6	72.4	82.98	-3,733.0	-1,351.9	575.3	428.2	147.07	3.911	
11,500.0	7,329.7	11,493.9	7,261.7	78.4	74.2	83.01	-3,833.0	-1,351.9	575.2	424.5	150.76	3.816	
11,600.0	7,329.0	11,593.9	7,261.2	80.3	76.0	83.04	-3,933.0	-1,351.9	575.2	420.8	154.45	3.724	
11,700.0	7,328.2	11,693.9	7,260.8	82.1	77.8	83.07	-4,033.0	-1,351.9	575.2	417.0	158.15	3.637	
11,800.0	7,327.4	11,793.9	7,260.3	84.0	79.7	83.09	-4,133.0	-1,351.9	575.1	413.3	161.85	3.553	
11,856.0	7,327.0	11,849.9	7,260.0	84.9	80.7	83.11	-4,189.0	-1,351.9	575.1	411.4	163.72	3.513	ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	2.0	2.0	0.0	0.0	-128.16	-349.7	-445.0	566.0				
100.0	100.0	102.0	102.0	0.1	0.1	-128.16	-349.7	-445.0	566.0	565.7	0.23	2,468.703	
200.0	200.0	202.0	202.0	0.3	0.3	-128.16	-349.7	-445.0	566.0	565.3	0.68	833.800	
300.0	300.0	302.0	302.0	0.6	0.6	-128.16	-349.7	-445.0	566.0	564.8	1.13	501.609	
400.0	400.0	402.0	402.0	0.8	0.8	-128.16	-349.7	-445.0	566.0	564.4	1.58	358.700	
500.0	500.0	502.0	502.0	1.0	1.0	-128.16	-349.7	-445.0	566.0	564.0	2.03	279.166	
600.0	600.0	602.0	602.0	1.2	1.2	-128.16	-349.7	-445.0	566.0	563.5	2.48	228.501	
700.0	700.0	702.0	702.0	1.5	1.5	-128.16	-349.7	-445.0	566.0	563.1	2.93	193.401	
800.0	800.0	802.0	802.0	1.7	1.7	-128.16	-349.7	-445.0	566.0	562.6	3.38	167.648	
900.0	900.0	902.0	902.0	1.9	1.9	-128.16	-349.7	-445.0	566.0	562.2	3.83	147.948	
1,000.0	1,000.0	1,002.0	1,002.0	2.1	2.1	-128.16	-349.7	-445.0	566.0	561.7	4.28	132.391	
1,100.0	1,100.0	1,102.0	1,102.0	2.4	2.4	-73.11	-349.7	-445.0	565.7	561.0	4.72	119.891	
1,200.0	1,200.0	1,202.0	1,202.0	2.6	2.6	-73.37	-349.7	-445.0	565.0	559.8	5.16	109.528	
1,300.0	1,299.9	1,302.4	1,302.4	2.8	2.8	-73.72	-349.0	-445.5	563.7	558.1	5.60	100.667	
1,400.0	1,399.7	1,402.9	1,402.8	3.0	3.0	-74.06	-346.8	-447.1	561.8	555.8	6.04	92.955	
1,500.0	1,499.4	1,503.4	1,503.2	3.2	3.3	-74.41	-343.2	-449.7	559.4	552.9	6.50	86.088	
1,600.0	1,598.9	1,603.9	1,603.6	3.5	3.5	-74.76	-338.2	-453.3	556.5	549.5	6.97	79.881	
1,700.0	1,698.3	1,704.5	1,703.9	3.7	3.7	-75.11	-331.7	-458.0	552.9	545.5	7.45	74.196	
1,800.0	1,797.4	1,805.1	1,804.0	4.0	4.0	-75.46	-323.8	-463.7	548.8	540.9	7.96	68.931	
1,900.0	1,896.3	1,905.8	1,904.0	4.3	4.2	-75.82	-314.5	-470.4	544.2	535.7	8.50	64.014	
2,000.0	1,994.9	2,006.4	2,003.8	4.6	4.5	-76.19	-303.8	-478.2	539.0	529.9	9.07	59.397	
2,100.0	2,093.3	2,107.1	2,103.3	5.0	4.8	-76.56	-291.6	-487.0	533.2	523.5	9.69	55.045	
2,193.9	2,185.3	2,201.6	2,196.5	5.3	5.1	-76.91	-278.9	-496.1	527.3	517.0	10.30	51.184	
2,200.0	2,191.2	2,207.8	2,202.6	5.3	5.1	-76.93	-278.1	-496.8	526.9	516.5	10.34	50.937	
2,300.0	2,289.1	2,308.5	2,301.6	5.7	5.4	-77.14	-263.1	-507.6	520.2	509.2	11.04	47.115	
2,400.0	2,386.9	2,409.2	2,400.3	6.1	5.8	-77.17	-246.7	-519.5	513.3	501.6	11.77	43.608	
2,500.0	2,484.8	2,509.9	2,498.5	6.5	6.1	-76.99	-228.9	-532.3	506.3	493.8	12.54	40.391	
2,600.0	2,582.6	2,610.5	2,596.3	6.9	6.5	-76.60	-209.7	-546.2	499.1	485.8	13.33	37.443	
2,700.0	2,680.4	2,710.2	2,692.9	7.3	7.0	-76.09	-189.9	-560.5	491.8	477.7	14.15	34.765	
2,800.0	2,778.3	2,809.8	2,789.5	7.7	7.4	-75.57	-170.1	-574.8	484.6	469.6	14.98	32.351	
2,900.0	2,876.1	2,909.4	2,886.1	8.1	7.8	-75.03	-150.3	-589.1	477.4	461.6	15.82	30.171	
3,000.0	2,973.9	3,009.1	2,982.7	8.6	8.3	-74.47	-130.5	-603.4	470.3	453.6	16.68	28.197	
3,100.0	3,071.8	3,108.7	3,079.3	9.0	8.8	-73.90	-110.8	-617.7	463.2	445.7	17.54	26.408	
3,200.0	3,169.6	3,208.4	3,175.9	9.4	9.2	-73.31	-91.0	-632.0	456.1	437.7	18.41	24.780	
3,300.0	3,267.5	3,308.0	3,272.5	9.8	9.7	-72.70	-71.2	-646.3	449.1	429.9	19.28	23.296	
3,400.0	3,365.3	3,407.6	3,369.1	10.3	10.2	-72.07	-51.4	-660.6	442.2	422.0	20.16	21.940	
3,500.0	3,463.1	3,507.3	3,465.7	10.7	10.6	-71.42	-31.6	-674.9	435.3	414.3	21.03	20.697	
3,600.0	3,561.0	3,606.9	3,562.3	11.1	11.1	-70.75	-11.8	-689.2	428.5	406.6	21.91	19.556	
3,700.0	3,658.8	3,706.5	3,658.9	11.6	11.6	-70.06	8.0	-703.5	421.7	398.9	22.79	18.506	
3,800.0	3,756.6	3,806.2	3,755.5	12.0	12.1	-69.34	27.8	-717.7	415.0	391.3	23.66	17.537	
3,900.0	3,854.5	3,905.8	3,852.1	12.5	12.6	-68.61	47.6	-732.0	408.4	383.8	24.54	16.642	
4,000.0	3,952.3	4,005.5	3,948.7	12.9	13.1	-67.85	67.4	-746.3	401.8	376.4	25.41	15.814	
4,100.0	4,050.1	4,105.1	4,045.3	13.3	13.6	-67.06	87.1	-760.6	395.3	369.0	26.27	15.045	
4,200.0	4,148.0	4,204.7	4,141.9	13.8	14.1	-66.25	106.9	-774.9	388.9	361.7	27.13	14.331	
4,300.0	4,245.8	4,304.4	4,238.5	14.2	14.6	-65.41	126.7	-789.2	382.5	354.5	27.99	13.667	
4,400.0	4,343.7	4,404.0	4,335.1	14.7	15.1	-64.54	146.5	-803.5	376.3	347.4	28.83	13.049	
4,500.0	4,441.5	4,503.7	4,431.7	15.1	15.6	-63.64	166.3	-817.8	370.1	340.4	29.67	12.473	
4,600.0	4,539.3	4,603.3	4,528.3	15.6	16.1	-62.72	186.1	-832.1	364.0	333.5	30.50	11.935	
4,700.0	4,637.2	4,702.9	4,624.9	16.0	16.6	-61.76	205.9	-846.4	358.0	326.7	31.31	11.433	
4,800.0	4,735.0	4,802.6	4,721.5	16.5	17.1	-60.77	225.7	-860.7	352.2	320.0	32.12	10.964	
4,900.0	4,832.8	4,902.2	4,818.1	16.9	17.6	-59.75	245.5	-875.0	346.4	313.5	32.91	10.526	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,930.7	5,001.8	4,914.7	17.4	18.1	-58.69	265.3	-889.3	340.7	307.1	33.68	10.116	
5,100.0	5,028.5	5,101.5	5,011.3	17.8	18.6	-57.60	285.0	-903.6	335.2	300.8	34.44	9.733	
5,200.0	5,126.4	5,201.1	5,107.9	18.3	19.1	-56.47	304.8	-917.9	329.8	294.6	35.18	9.375	
5,300.0	5,224.2	5,300.8	5,204.5	18.7	19.6	-55.30	324.6	-932.2	324.5	288.6	35.90	9.040	
5,400.0	5,322.0	5,400.4	5,301.1	19.2	20.1	-54.10	344.4	-946.5	319.4	282.8	36.60	8.728	
5,500.0	5,419.9	5,500.0	5,397.8	19.6	20.6	-52.86	364.2	-960.8	314.4	277.1	37.27	8.436	
5,600.0	5,517.7	5,599.7	5,494.4	20.0	21.1	-51.58	384.0	-975.1	309.6	271.7	37.92	8.164	
5,700.0	5,615.5	5,699.3	5,591.0	20.5	21.6	-50.26	403.8	-989.4	304.9	266.4	38.54	7.911	
5,800.0	5,713.4	5,799.0	5,687.6	20.9	22.1	-48.89	423.6	-1,003.7	300.4	261.3	39.13	7.676	
5,896.1	5,807.4	5,894.7	5,780.4	21.4	22.6	-47.55	442.6	-1,017.5	296.2	256.6	39.67	7.467	
5,900.0	5,811.2	5,898.6	5,784.2	21.4	22.6	-47.49	443.4	-1,018.0	296.1	256.4	39.69	7.459	
6,000.0	5,909.4	5,998.2	5,880.7	21.7	23.1	-45.75	463.1	-1,032.3	293.2	253.1	40.11	7.310	
6,098.1	6,006.4	6,099.6	5,979.3	22.0	23.6	-43.71	482.3	-1,046.2	292.6	252.3	40.35	7.252	CC
6,100.0	6,008.2	6,101.5	5,981.2	22.0	23.6	-43.67	482.7	-1,046.4	292.6	252.3	40.35	7.252	
6,200.0	6,107.5	6,206.1	6,083.7	22.3	23.9	-41.74	499.5	-1,058.5	293.2	252.8	40.47	7.246	
6,300.0	6,207.1	6,311.2	6,187.4	22.5	24.3	-40.01	513.3	-1,068.5	294.9	254.4	40.53	7.277	
6,400.0	6,307.0	6,416.5	6,291.9	22.6	24.5	-38.50	524.0	-1,076.3	297.7	257.1	40.55	7.341	
6,493.0	6,400.0	6,514.9	6,389.8	22.7	24.7	-92.43	531.2	-1,081.5	301.0	260.5	40.53	7.427	
6,500.0	6,407.0	6,522.3	6,397.2	22.8	24.8	-92.35	531.7	-1,081.8	301.3	260.8	40.53	7.434	
6,600.0	6,507.0	6,628.4	6,503.2	22.9	24.9	-91.48	536.2	-1,085.1	304.2	263.6	40.65	7.485	
6,686.5	6,593.5	6,720.5	6,595.2	23.0	25.0	-91.23	537.5	-1,086.0	305.1	264.3	40.85	7.469	
6,700.0	6,607.0	6,734.2	6,609.0	23.0	25.1	88.80	537.5	-1,086.0	305.1	264.2	40.88	7.463	
6,750.0	6,656.9	6,784.2	6,658.9	23.1	25.1	89.27	537.5	-1,086.0	305.1	264.2	40.88	7.463	
6,786.4	6,693.1	6,820.3	6,695.1	23.1	25.2	90.00	537.5	-1,086.0	305.0	264.3	40.75	7.486	
6,800.0	6,706.6	6,833.8	6,708.6	23.1	25.2	90.35	537.5	-1,086.0	305.0	264.4	40.68	7.498	
6,850.0	6,755.7	6,883.5	6,758.3	23.1	25.2	91.84	536.5	-1,086.0	305.2	264.9	40.34	7.566	
6,900.0	6,804.2	6,933.8	6,808.3	23.1	25.2	93.33	532.3	-1,086.0	305.6	265.6	39.94	7.650	
6,950.0	6,851.8	6,984.6	6,858.6	23.0	25.2	94.82	524.6	-1,086.0	306.2	266.7	39.50	7.751	
7,000.0	6,898.3	7,036.0	6,908.7	23.0	25.2	96.29	513.6	-1,086.0	306.9	267.9	39.02	7.865	
7,050.0	6,943.4	7,087.9	6,958.6	22.9	25.1	97.73	499.0	-1,086.0	307.9	269.4	38.52	7.993	
7,100.0	6,987.1	7,140.5	7,007.9	22.8	25.0	99.14	480.8	-1,086.0	309.1	271.1	38.00	8.133	
7,150.0	7,029.1	7,193.6	7,056.3	22.7	24.8	100.51	459.0	-1,086.0	310.4	272.9	37.47	8.283	
7,200.0	7,069.2	7,247.4	7,103.7	22.6	24.7	101.83	433.6	-1,086.0	311.8	274.9	36.94	8.440	
7,250.0	7,107.3	7,301.7	7,149.6	22.5	24.5	103.09	404.6	-1,086.0	313.3	276.9	36.42	8.604	
7,300.0	7,143.1	7,356.6	7,193.9	22.4	24.3	104.29	372.1	-1,086.0	315.0	279.0	35.91	8.771	
7,350.0	7,176.7	7,412.2	7,236.1	22.3	24.0	105.43	336.0	-1,086.0	316.6	281.2	35.43	8.937	
7,400.0	7,207.7	7,468.3	7,275.9	22.2	23.8	106.48	296.6	-1,086.0	318.3	283.3	34.98	9.098	
7,450.0	7,236.1	7,524.9	7,313.1	22.1	23.5	107.46	253.9	-1,086.0	319.9	285.4	34.59	9.251	
7,500.0	7,261.7	7,582.0	7,347.4	22.0	23.3	108.36	208.2	-1,086.0	321.6	287.3	34.24	9.390	
7,550.0	7,284.5	7,639.7	7,378.4	21.9	23.0	109.16	159.6	-1,086.0	323.1	289.1	33.97	9.511	
7,600.0	7,304.4	7,697.7	7,405.8	21.8	22.7	109.87	108.4	-1,086.0	324.5	290.7	33.77	9.608	
7,650.0	7,321.1	7,756.2	7,429.4	21.7	22.5	110.49	54.9	-1,086.0	325.7	292.1	33.66	9.676	
7,700.0	7,334.8	7,815.0	7,448.9	21.6	22.2	111.01	-0.6	-1,086.0	326.8	293.2	33.65	9.713	
7,750.0	7,345.3	7,874.2	7,464.2	21.6	21.9	111.43	-57.7	-1,086.0	327.7	294.0	33.74	9.715	
7,800.0	7,352.6	7,933.5	7,475.0	21.6	21.7	111.75	-116.0	-1,086.0	328.4	294.5	33.92	9.682	
7,850.0	7,356.6	7,993.0	7,481.4	21.6	21.5	111.96	-175.2	-1,086.0	328.9	294.7	34.21	9.614	
7,892.4	7,357.4	8,043.5	7,483.1	21.7	21.3	112.06	-225.6	-1,086.0	329.1	294.6	34.54	9.530	
7,900.0	7,357.4	8,051.1	7,483.1	21.7	21.3	112.07	-233.2	-1,086.0	329.2	294.6	34.59	9.515	
8,000.0	7,356.6	8,151.1	7,483.3	22.1	21.0	112.23	-333.2	-1,086.0	329.5	294.0	35.49	9.286	
8,100.0	7,355.8	8,251.1	7,483.4	22.8	20.8	112.38	-433.2	-1,086.0	329.9	293.2	36.69	8.992	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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

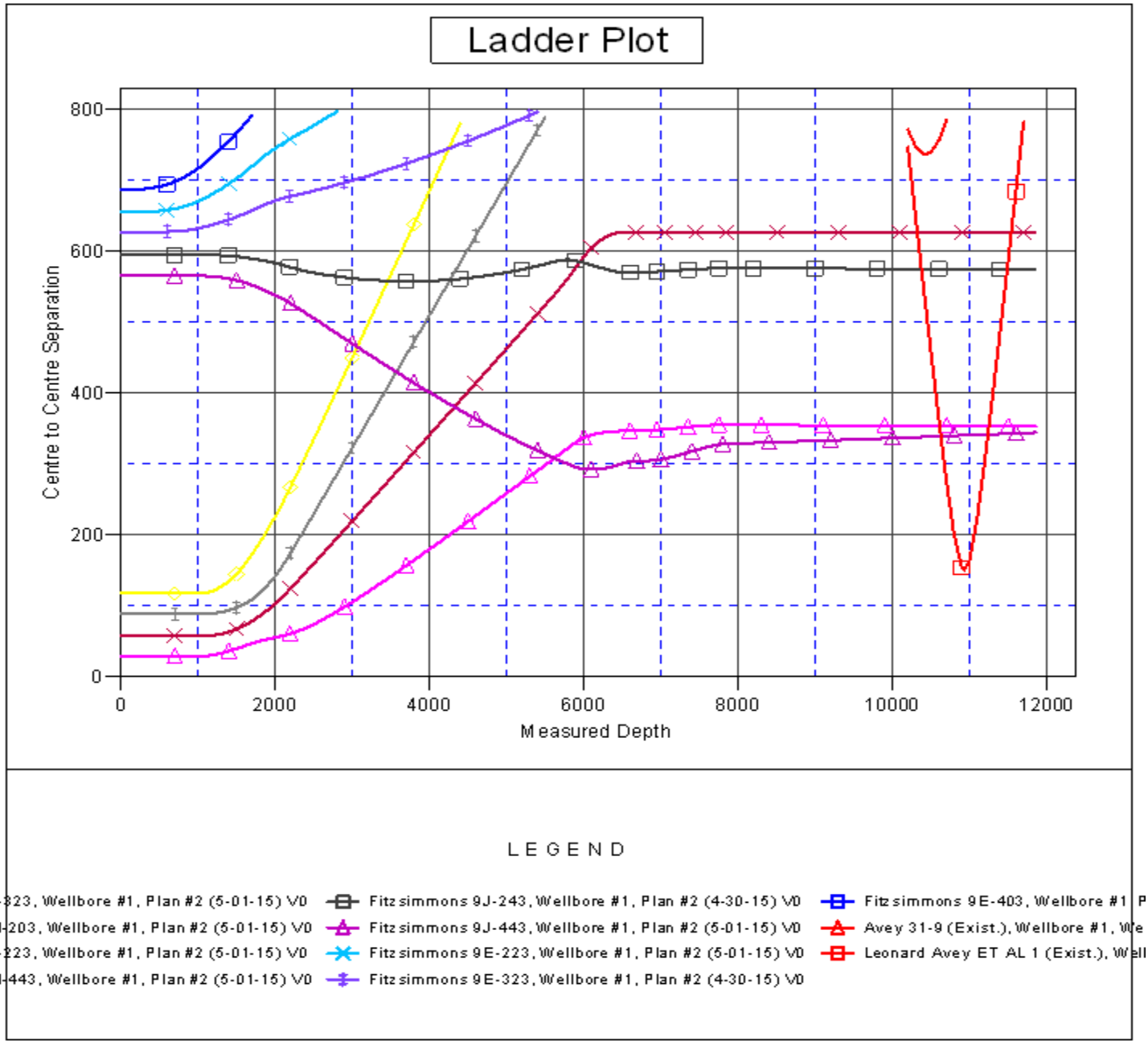
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,200.0	7,355.1	8,351.1	7,483.6	23.6	21.0	112.53	-533.2	-1,086.0	330.2	292.1	38.17	8.651	
8,300.0	7,354.3	8,451.1	7,483.8	24.7	21.8	112.68	-633.2	-1,086.0	330.6	290.7	39.92	8.282	
8,400.0	7,353.5	8,551.1	7,484.0	25.8	22.9	112.83	-733.2	-1,086.0	331.0	289.1	41.89	7.901	
8,500.0	7,352.8	8,651.1	7,484.1	27.1	24.0	112.98	-833.2	-1,086.0	331.3	287.3	44.05	7.521	
8,600.0	7,352.0	8,751.1	7,484.3	28.4	25.2	113.13	-933.2	-1,086.0	331.7	285.3	46.38	7.152	
8,700.0	7,351.2	8,851.1	7,484.5	29.9	26.5	113.28	-1,033.2	-1,086.0	332.1	283.2	48.85	6.798	
8,800.0	7,350.5	8,951.1	7,484.7	31.3	27.9	113.43	-1,133.2	-1,086.0	332.5	281.0	51.44	6.463	
8,900.0	7,349.7	9,051.1	7,484.8	32.8	29.3	113.58	-1,233.2	-1,086.0	332.8	278.7	54.13	6.148	
9,000.0	7,348.9	9,151.1	7,485.0	34.4	30.8	113.73	-1,333.1	-1,086.0	333.2	276.3	56.91	5.855	
9,100.0	7,348.2	9,251.1	7,485.2	36.0	32.3	113.87	-1,433.1	-1,086.0	333.6	273.8	59.76	5.582	
9,200.0	7,347.4	9,351.1	7,485.4	37.6	33.8	114.02	-1,533.1	-1,086.0	334.0	271.3	62.67	5.329	
9,300.0	7,346.6	9,451.0	7,485.5	39.2	35.4	114.17	-1,633.1	-1,086.0	334.4	268.7	65.63	5.094	
9,400.0	7,345.9	9,551.0	7,485.7	40.9	37.0	114.32	-1,733.1	-1,086.0	334.7	266.1	68.64	4.877	
9,500.0	7,345.1	9,651.0	7,485.9	42.5	38.6	114.46	-1,833.1	-1,086.0	335.1	263.4	71.69	4.675	
9,600.0	7,344.3	9,751.0	7,486.1	44.2	40.2	114.61	-1,933.1	-1,086.0	335.5	260.8	74.76	4.488	
9,700.0	7,343.6	9,851.0	7,486.2	46.0	41.9	114.76	-2,033.1	-1,086.0	335.9	258.1	77.87	4.314	
9,800.0	7,342.8	9,951.0	7,486.4	47.7	43.6	114.90	-2,133.1	-1,086.0	336.3	255.3	80.99	4.152	
9,900.0	7,342.0	10,051.0	7,486.6	49.4	45.3	115.05	-2,233.1	-1,086.0	336.7	252.6	84.14	4.002	
10,000.0	7,341.3	10,151.0	7,486.8	51.2	47.0	115.19	-2,333.1	-1,086.0	337.1	249.8	87.31	3.861	
10,100.0	7,340.5	10,251.0	7,486.9	53.0	48.8	115.34	-2,433.1	-1,086.0	337.5	247.0	90.48	3.730	
10,200.0	7,339.7	10,351.0	7,487.1	54.7	50.5	115.48	-2,533.1	-1,086.0	337.9	244.2	93.67	3.607	
10,300.0	7,338.9	10,451.0	7,487.3	56.5	52.3	115.63	-2,633.1	-1,086.0	338.3	241.4	96.87	3.492	
10,400.0	7,338.2	10,551.0	7,487.5	58.3	54.0	115.77	-2,733.1	-1,086.0	338.7	238.6	100.08	3.385	
10,500.0	7,337.4	10,651.0	7,487.6	60.1	55.8	115.91	-2,833.1	-1,086.0	339.1	235.8	103.30	3.283	
10,600.0	7,336.6	10,751.0	7,487.8	61.9	57.6	116.06	-2,933.1	-1,086.0	339.6	233.0	106.52	3.188	
10,700.0	7,335.9	10,851.0	7,488.0	63.7	59.4	116.20	-3,033.1	-1,086.0	340.0	230.2	109.74	3.098	
10,800.0	7,335.1	10,951.0	7,488.2	65.6	61.2	116.34	-3,133.1	-1,086.0	340.4	227.4	112.97	3.013	
10,900.0	7,334.3	11,051.0	7,488.3	67.4	63.0	116.48	-3,233.1	-1,086.0	340.8	224.6	116.20	2.933	
11,000.0	7,333.6	11,151.0	7,488.5	69.2	64.8	116.62	-3,333.1	-1,086.0	341.2	221.8	119.43	2.857	
11,100.0	7,332.8	11,251.0	7,488.7	71.0	66.6	116.77	-3,433.1	-1,086.0	341.7	219.0	122.67	2.785	
11,200.0	7,332.0	11,351.0	7,488.8	72.9	68.5	116.91	-3,533.0	-1,086.0	342.1	216.2	125.90	2.717	
11,300.0	7,331.3	11,451.0	7,489.0	74.7	70.3	117.05	-3,633.0	-1,086.0	342.5	213.4	129.13	2.652	
11,400.0	7,330.5	11,551.0	7,489.2	76.6	72.1	117.19	-3,733.0	-1,086.0	342.9	210.6	132.36	2.591	
11,500.0	7,329.7	11,650.9	7,489.4	78.4	74.0	117.33	-3,833.0	-1,086.0	343.4	207.8	135.59	2.532	
11,600.0	7,329.0	11,750.9	7,489.5	80.3	75.8	117.47	-3,933.0	-1,086.0	343.8	205.0	138.82	2.477	
11,700.0	7,328.2	11,850.9	7,489.7	82.1	77.6	117.61	-4,033.0	-1,086.0	344.2	202.2	142.04	2.423	
11,800.0	7,327.4	11,950.9	7,489.9	84.0	79.5	117.75	-4,133.0	-1,086.0	344.7	199.4	145.26	2.373	
11,856.0	7,327.0	12,007.0	7,490.0	84.9	80.5	117.82	-4,189.0	-1,086.0	344.9	198.0	146.87	2.348	ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Fitzsimmons 9J-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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-303
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-303
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-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #2 (4-30-15)	**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-303
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.46°