

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Rio-LA 6E-304**

Surface Location: Rio-LA 1S67W6E Pad Sec.6-T1S-R67W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 5070.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1242828.94 3156944.24 39.998590 -104.939800
 RKB - 13' WELL @ 5083.0ft (RKB - 13')

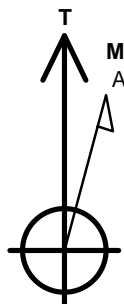
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' S Hardline (6E-304)	1.0	493.3	-2951.5	Rectangle (Sides: L4031.6 W0.0)
SHL 639'FNL & 149'FWL, Sec.6	1.0	0.0	0.0	Point
BHL 90'FNL & 500'FWL, Sec.1	7740.0	543.3	-4967.3	Point

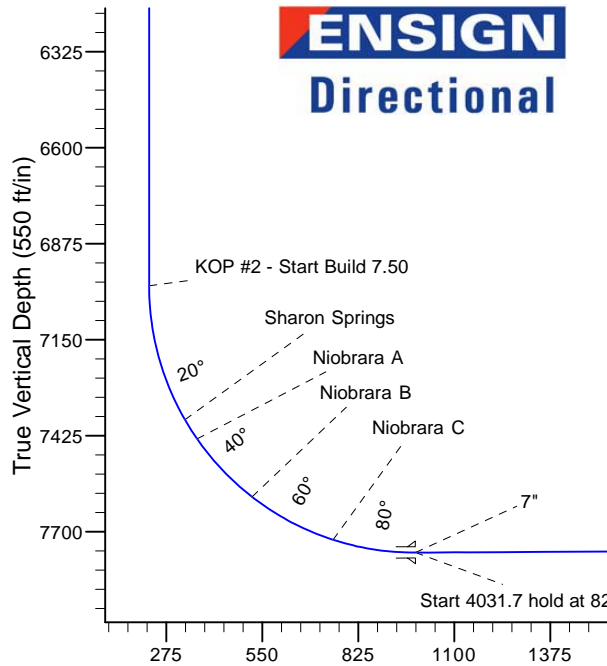
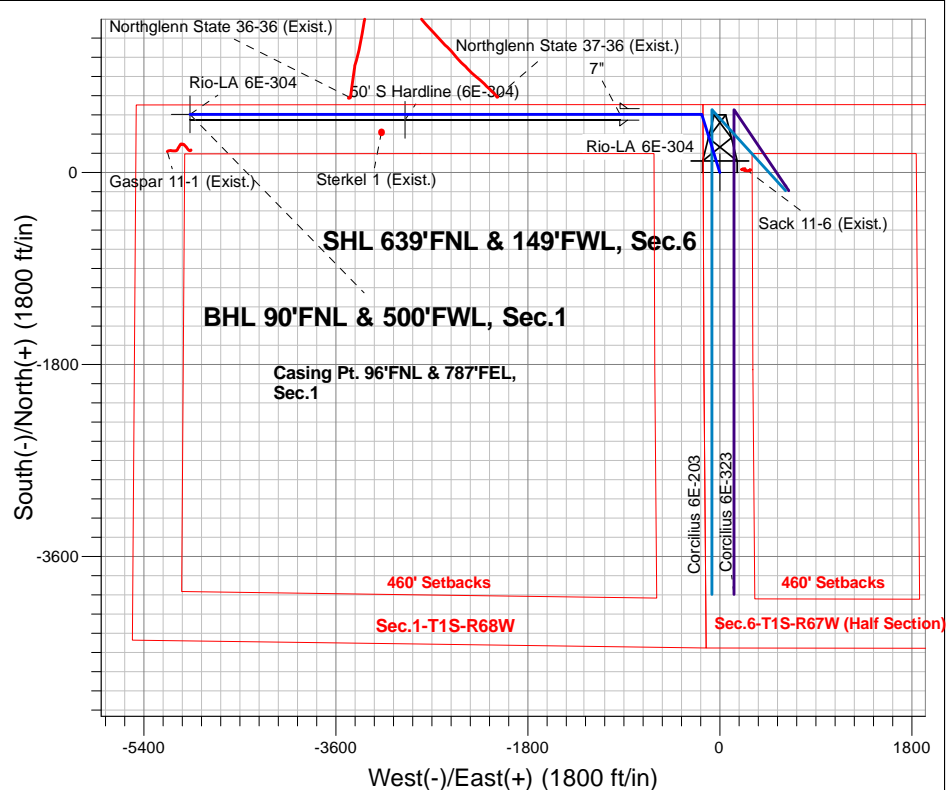
ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.00
4507.0	4550.1	Start Drop -2.00
6995.8	7041.4	KOP #2 - Start Build 7.50
7759.7	8245.1	Start 4031.7 hold at 8245.1 MD
7740.0	12276.8	TD at 12276.8

Rio-LA 1S67W6E Pad Sec.6-T1S-R67W
 Rio-LA 6E-304
 Plan #1 (8-4-15)



Azimuths to True North
 Magnetic North: 8.37°
 Magnetic Field
 Strength: 52464.4snT
 Dip Angle: 66.56°
 Date: 8/4/2015
 Model: IGRF2010



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	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	1991.0	9.91	342.82	1986.1	81.7	-25.3	1.00	342.82	34.0	
4	4550.1	9.91	342.82	4506.9	502.5	-155.4	0.00	0.00	209.1	
5	5045.6	0.00	0.00	5000.0	543.3	-168.0	2.00	180.00	226.1	
6	7041.4	0.00	0.00	6995.8	543.3	-168.0	0.00	0.00	226.1	
7	8245.1	90.28	270.00	7759.7	543.3	-935.7	7.50	270.00	989.2	
8	12276.8	90.28	270.00	7740.0	543.3	-4967.3	0.00	0.00	4996.9	BHL 90'FNL & 500'FWL, Sec.1

BHL 90'FNL & 500'FWL, Sec.1

TD at 12276.8

Vertical Section at 276.24° (550 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T1S-R67W

Rio-LA 1S67W6E Pad Sec.6-T1S-R67W

Rio-LA 6E-304

Wellbore #1

Plan: Plan #1 (8-4-15)

Standard Planning Report

10 August, 2015



Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Project	SEC.6-T1S-R67W, Adams 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	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W				
Site Position:		Northing:	1,242,767.06 usft	Latitude:	39.998420
From:	Lat/Long	Easting:	3,156,950.24 usft	Longitude:	-104.939780
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.36 °

Well	Rio-LA 6E-304					
Well Position	+N/-S	61.9 ft	Northing:	1,242,828.94 usft	Latitude:	39.998590
	+E/-W	-5.6 ft	Easting:	3,156,944.24 usft	Longitude:	-104.939800
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	5,070.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/4/2015	8.37	66.56	52,464

Design	Plan #1 (8-4-15)			
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	276.24

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,991.0	9.91	342.82	1,986.1	81.7	-25.3	1.00	1.00	0.00	342.82	
4,550.1	9.91	342.82	4,506.9	502.5	-155.4	0.00	0.00	0.00	0.00	
5,045.6	0.00	0.00	5,000.0	543.3	-168.0	2.00	-2.00	0.00	180.00	
7,041.4	0.00	0.00	6,995.8	543.3	-168.0	0.00	0.00	0.00	0.00	
8,245.1	90.28	270.00	7,759.7	543.3	-935.7	7.50	7.50	0.00	270.00	
12,276.8	90.28	270.00	7,740.0	543.3	-4,967.3	0.00	0.00	0.00	0.00	BHL 90°FNL & 500°FV

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
KOP - Start Build 1.00										
1,100.0	1.00	342.82	1,100.0	0.8	-0.3	0.3	1.00	1.00	0.00	
1,200.0	2.00	342.82	1,200.0	3.3	-1.0	1.4	1.00	1.00	0.00	
1,300.0	3.00	342.82	1,299.9	7.5	-2.3	3.1	1.00	1.00	0.00	
1,400.0	4.00	342.82	1,399.7	13.3	-4.1	5.5	1.00	1.00	0.00	
1,500.0	5.00	342.82	1,499.4	20.8	-6.4	8.7	1.00	1.00	0.00	
1,600.0	6.00	342.82	1,598.9	30.0	-9.3	12.5	1.00	1.00	0.00	
1,700.0	7.00	342.82	1,698.3	40.8	-12.6	17.0	1.00	1.00	0.00	
1,800.0	8.00	342.82	1,797.4	53.3	-16.5	22.2	1.00	1.00	0.00	
1,900.0	9.00	342.82	1,896.3	67.4	-20.8	28.0	1.00	1.00	0.00	
1,991.0	9.91	342.82	1,986.1	81.7	-25.3	34.0	1.00	1.00	0.00	
2,000.0	9.91	342.82	1,994.9	83.2	-25.7	34.6	0.00	0.00	0.00	
2,100.0	9.91	342.82	2,093.4	99.6	-30.8	41.4	0.00	0.00	0.00	
2,200.0	9.91	342.82	2,191.9	116.0	-35.9	48.3	0.00	0.00	0.00	
2,300.0	9.91	342.82	2,290.5	132.5	-41.0	55.1	0.00	0.00	0.00	
2,400.0	9.91	342.82	2,389.0	148.9	-46.1	62.0	0.00	0.00	0.00	
2,500.0	9.91	342.82	2,487.5	165.4	-51.1	68.8	0.00	0.00	0.00	
2,600.0	9.91	342.82	2,586.0	181.8	-56.2	75.7	0.00	0.00	0.00	
2,700.0	9.91	342.82	2,684.5	198.3	-61.3	82.5	0.00	0.00	0.00	
2,800.0	9.91	342.82	2,783.0	214.7	-66.4	89.3	0.00	0.00	0.00	
2,900.0	9.91	342.82	2,881.5	231.1	-71.5	96.2	0.00	0.00	0.00	
3,000.0	9.91	342.82	2,980.0	247.6	-76.6	103.0	0.00	0.00	0.00	
3,100.0	9.91	342.82	3,078.5	264.0	-81.6	109.9	0.00	0.00	0.00	
3,200.0	9.91	342.82	3,177.0	280.5	-86.7	116.7	0.00	0.00	0.00	
3,300.0	9.91	342.82	3,275.5	296.9	-91.8	123.5	0.00	0.00	0.00	
3,400.0	9.91	342.82	3,374.0	313.4	-96.9	130.4	0.00	0.00	0.00	
3,500.0	9.91	342.82	3,472.5	329.8	-102.0	137.2	0.00	0.00	0.00	
3,600.0	9.91	342.82	3,571.1	346.2	-107.1	144.1	0.00	0.00	0.00	
3,700.0	9.91	342.82	3,669.6	362.7	-112.1	150.9	0.00	0.00	0.00	
3,800.0	9.91	342.82	3,768.1	379.1	-117.2	157.8	0.00	0.00	0.00	
3,900.0	9.91	342.82	3,866.6	395.6	-122.3	164.6	0.00	0.00	0.00	
4,000.0	9.91	342.82	3,965.1	412.0	-127.4	171.4	0.00	0.00	0.00	
4,100.0	9.91	342.82	4,063.6	428.4	-132.5	178.3	0.00	0.00	0.00	
4,200.0	9.91	342.82	4,162.1	444.9	-137.6	185.1	0.00	0.00	0.00	
4,300.0	9.91	342.82	4,260.6	461.3	-142.7	192.0	0.00	0.00	0.00	
4,400.0	9.91	342.82	4,359.1	477.8	-147.7	198.8	0.00	0.00	0.00	
4,500.0	9.91	342.82	4,457.6	494.2	-152.8	205.6	0.00	0.00	0.00	
4,550.1	9.91	342.82	4,507.0	502.5	-155.4	209.1	0.00	0.00	0.00	
Start Drop -2.00										
4,600.0	8.91	342.82	4,556.2	510.3	-157.8	212.3	2.00	-2.00	0.00	
4,700.0	6.91	342.82	4,655.3	523.4	-161.8	217.8	2.00	-2.00	0.00	
4,800.0	4.91	342.82	4,754.7	533.2	-164.9	221.9	2.00	-2.00	0.00	

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Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,900.0	2.91	342.82	4,854.5	539.8	-166.9	224.6	2.00	-2.00	0.00	
5,000.0	0.91	342.82	4,954.4	542.9	-167.9	225.9	2.00	-2.00	0.00	
5,045.6	0.00	0.00	5,000.0	543.3	-168.0	226.1	2.00	-2.00	0.00	
5,100.0	0.00	0.00	5,054.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,154.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,254.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,354.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,454.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,554.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,654.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,754.4	543.3	-168.0	226.1	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,854.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,000.0	0.00	0.00	5,954.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,054.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,154.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,254.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,354.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,454.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,554.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,654.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,754.4	543.3	-168.0	226.1	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,854.4	543.3	-168.0	226.1	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,954.4	543.3	-168.0	226.1	0.00	0.00	0.00	
7,041.4	0.00	0.00	6,995.8	543.3	-168.0	226.1	0.00	0.00	0.00	
KOP #2 - Start Build 7.50										
7,100.0	4.40	270.00	7,054.4	543.3	-170.2	228.3	7.51	7.51	0.00	
7,200.0	11.90	270.00	7,153.3	543.3	-184.4	242.4	7.50	7.50	0.00	
7,300.0	19.40	270.00	7,249.5	543.3	-211.4	269.2	7.50	7.50	0.00	
7,400.0	26.90	270.00	7,341.4	543.3	-250.7	308.2	7.50	7.50	0.00	
7,500.0	34.40	270.00	7,427.4	543.3	-301.6	358.9	7.50	7.50	0.00	
7,600.0	41.90	270.00	7,505.9	543.3	-363.3	420.2	7.50	7.50	0.00	
7,700.0	49.40	270.00	7,575.8	543.3	-434.8	491.3	7.50	7.50	0.00	
7,800.0	56.90	270.00	7,635.7	543.3	-514.7	570.7	7.50	7.50	0.00	
7,900.0	64.40	270.00	7,684.7	543.3	-601.8	657.3	7.50	7.50	0.00	
8,000.0	71.90	270.00	7,721.9	543.3	-694.6	749.5	7.50	7.50	0.00	
8,100.0	79.40	270.00	7,746.7	543.3	-791.4	845.8	7.50	7.50	0.00	
8,200.0	86.90	270.00	7,758.6	543.3	-890.6	944.4	7.50	7.50	0.00	
8,245.1	90.28	270.00	7,759.7	543.3	-935.7	989.2	7.50	7.50	0.00	
Start 4031.7 hold at 8245.1 MD - 7"										
8,300.0	90.28	270.00	7,759.4	543.3	-990.6	1,043.8	0.00	0.00	0.00	
8,400.0	90.28	270.00	7,758.9	543.3	-1,090.6	1,143.2	0.00	0.00	0.00	
8,500.0	90.28	270.00	7,758.5	543.3	-1,190.6	1,242.6	0.00	0.00	0.00	
8,600.0	90.28	270.00	7,758.0	543.3	-1,290.6	1,342.0	0.00	0.00	0.00	
8,700.0	90.28	270.00	7,757.5	543.3	-1,390.6	1,441.4	0.00	0.00	0.00	
8,800.0	90.28	270.00	7,757.0	543.3	-1,490.6	1,540.8	0.00	0.00	0.00	
8,900.0	90.28	270.00	7,756.5	543.3	-1,590.6	1,640.2	0.00	0.00	0.00	
9,000.0	90.28	270.00	7,756.0	543.3	-1,690.6	1,739.6	0.00	0.00	0.00	
9,100.0	90.28	270.00	7,755.5	543.3	-1,790.6	1,839.0	0.00	0.00	0.00	
9,200.0	90.28	270.00	7,755.0	543.3	-1,890.6	1,938.4	0.00	0.00	0.00	
9,300.0	90.28	270.00	7,754.5	543.3	-1,990.6	2,037.8	0.00	0.00	0.00	
9,400.0	90.28	270.00	7,754.1	543.3	-2,090.6	2,137.2	0.00	0.00	0.00	
9,500.0	90.28	270.00	7,753.6	543.3	-2,190.6	2,236.7	0.00	0.00	0.00	
9,600.0	90.28	270.00	7,753.1	543.3	-2,290.6	2,336.1	0.00	0.00	0.00	

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,700.0	90.28	270.00	7,752.6	543.3	-2,390.6	2,435.5	0.00	0.00	0.00	
9,800.0	90.28	270.00	7,752.1	543.3	-2,490.6	2,534.9	0.00	0.00	0.00	
9,900.0	90.28	270.00	7,751.6	543.3	-2,590.6	2,634.3	0.00	0.00	0.00	
10,000.0	90.28	270.00	7,751.1	543.3	-2,690.6	2,733.7	0.00	0.00	0.00	
10,100.0	90.28	270.00	7,750.6	543.3	-2,790.6	2,833.1	0.00	0.00	0.00	
10,200.0	90.28	270.00	7,750.1	543.3	-2,890.6	2,932.5	0.00	0.00	0.00	
10,300.0	90.28	270.00	7,749.7	543.3	-2,990.6	3,031.9	0.00	0.00	0.00	
10,400.0	90.28	270.00	7,749.2	543.3	-3,090.6	3,131.3	0.00	0.00	0.00	
10,500.0	90.28	270.00	7,748.7	543.3	-3,190.6	3,230.7	0.00	0.00	0.00	
10,600.0	90.28	270.00	7,748.2	543.3	-3,290.6	3,330.1	0.00	0.00	0.00	
10,700.0	90.28	270.00	7,747.7	543.3	-3,390.6	3,429.5	0.00	0.00	0.00	
10,800.0	90.28	270.00	7,747.2	543.3	-3,490.6	3,528.9	0.00	0.00	0.00	
10,900.0	90.28	270.00	7,746.7	543.3	-3,590.6	3,628.3	0.00	0.00	0.00	
11,000.0	90.28	270.00	7,746.2	543.3	-3,690.6	3,727.7	0.00	0.00	0.00	
11,100.0	90.28	270.00	7,745.8	543.3	-3,790.6	3,827.2	0.00	0.00	0.00	
11,200.0	90.28	270.00	7,745.3	543.3	-3,890.6	3,926.6	0.00	0.00	0.00	
11,300.0	90.28	270.00	7,744.8	543.3	-3,990.6	4,026.0	0.00	0.00	0.00	
11,400.0	90.28	270.00	7,744.3	543.3	-4,090.6	4,125.4	0.00	0.00	0.00	
11,500.0	90.28	270.00	7,743.8	543.3	-4,190.6	4,224.8	0.00	0.00	0.00	
11,600.0	90.28	270.00	7,743.3	543.3	-4,290.5	4,324.2	0.00	0.00	0.00	
11,700.0	90.28	270.00	7,742.8	543.3	-4,390.5	4,423.6	0.00	0.00	0.00	
11,800.0	90.28	270.00	7,742.3	543.3	-4,490.5	4,523.0	0.00	0.00	0.00	
11,900.0	90.28	270.00	7,741.8	543.3	-4,590.5	4,622.4	0.00	0.00	0.00	
12,000.0	90.28	270.00	7,741.4	543.3	-4,690.5	4,721.8	0.00	0.00	0.00	
12,100.0	90.28	270.00	7,740.9	543.3	-4,790.5	4,821.2	0.00	0.00	0.00	
12,200.0	90.28	270.00	7,740.4	543.3	-4,890.5	4,920.6	0.00	0.00	0.00	
12,276.8	90.28	270.00	7,740.0	543.3	-4,967.3	4,996.9	0.00	0.00	0.00	
TD at 12276.8										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 639'FNL & 149'FWI - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,242,828.95	3,156,944.24	39.998590	-104.939800	
50' N/S Hardline (6E-304) - plan misses target center by 3001.1ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W100.0 H4,031.6 D0.0)	0.00	0.00	1.0	543.3	-2,951.5	1,243,353.57	3,153,989.48	40.000081	-104.950335	
BHL 90'FNL & 500'FWL, - plan hits target center - Point	0.00	0.00	7,740.0	543.3	-4,967.3	1,243,340.82	3,151,973.79	40.000080	-104.957530	

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
8,245.1	7,759.7	7"	7	8-3/4	

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,472.0	4,430.0	Parkman		0.00	
4,845.4	4,800.0	Sussex		0.00	
5,425.6	5,380.0	Shannon		0.00	
7,442.8	7,379.0	Sharon Springs		0.00	
7,508.1	7,434.0	Niobrara A		0.00	
7,738.3	7,600.0	Niobrara B		0.00	
8,003.6	7,723.0	Niobrara C		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,000.0	1,000.0	0.0	0.0	KOP - Start Build 1.00	
4,550.1	4,506.9	81.7	-25.3	Start Drop -2.00	
7,041.4	6,995.8	502.5	-155.4	KOP #2 - Start Build 7.50	
8,245.1	7,759.7	543.3	-168.0	Start 4031.7 hold at 8245.1 MD	
12,276.8	7,740.0	543.3	-168.0	TD at 12276.8	



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T1S-R67W

Rio-LA 1S67W6E Pad Sec.6-T1S-R67W

Rio-LA 6E-304

Wellbore #1

Plan #1 (8-4-15)

Anticollision Report

10 August, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (8-4-15)		
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 1,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	8/10/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,276.8	Plan #1 (8-4-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Corcilius 1S67W6J Pad Sec.6-T1S-R67W						
Corcilius 6E-203 - Wellbore #1 - Plan #1 (4-29-15)	7,050.0	7,089.7	101.5	59.6	2.423	SF
Corcilius 6E-203 - Wellbore #1 - Plan #1 (4-29-15)	7,088.1	7,128.8	100.6	59.1	2.424	CC, ES
Corcilius 6E-323 - Wellbore #1 - Plan #1 (4-29-15)	7,043.0	7,068.9	305.5	265.4	7.623	CC, ES
Corcilius 6E-323 - Wellbore #1 - Plan #1 (4-29-15)	7,050.0	7,076.3	305.5	265.4	7.620	SF
Existing Pad Sec.12-T1S-R68W						
Gaspar 11-1 (Exist.) - Wellbore #1 - Wellbore #1	12,277.5	7,737.7	391.7	238.9	2.564	CC, ES, SF
Sterkel 1 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Existing Wells Sec.6-T1S-R67W						
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	1,269.8	1,257.2	277.7	271.9	47.314	CC
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	1,300.0	1,287.3	277.8	271.7	46.163	ES
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	7,041.4	6,978.6	638.0	604.4	19.010	SF
Northglenn State 19-36 Pad Sec.36-T1N-R68W						
Northglenn State 19-36X (Exist.) - Wellbore #1 - Wellbore						Out of range
Northglenn State 36-36 (Exist.) - Wellbore #1 - Wellbore	10,791.7	7,891.8	154.4	42.0	1.374	Level 3, CC
Northglenn State 36-36 (Exist.) - Wellbore #1 - Wellbore	10,800.0	7,891.7	154.7	42.0	1.373	Level 3, ES, SF
Northglenn State 24-36 Pad Sec.36-T1N-R68W						
Northglenn State 37-36 (Exist.) - Wellbore #1 - Wellbore	9,396.6	8,011.2	162.7	78.5	1.932	CC
Northglenn State 37-36 (Exist.) - Wellbore #1 - Wellbore	9,400.0	8,011.2	162.8	78.5	1.931	ES, SF
Rio-LA 1S67W6E Pad Sec.6-T1S-R67W						
Rio-LA 6E-234 - Wellbore #1 - Plan #1 (8-4-15)	1,000.0	1,000.0	14.8	10.6	3.475	CC, ES
Rio-LA 6E-234 - Wellbore #1 - Plan #1 (8-4-15)	12,277.5	12,417.3	354.7	92.2	1.351	Level 3, SF
Rio-LA 6F-204 - Wellbore #1 - Plan #1 (8-4-15)	800.0	800.0	62.2	58.8	18.442	CC, ES
Rio-LA 6F-204 - Wellbore #1 - Plan #1 (8-4-15)	1,100.0	1,096.5	70.7	66.1	15.365	SF
Rio-LA 6F-314 - Wellbore #1 - Plan #1 (8-4-15)	1,000.0	1,000.0	47.7	43.4	11.167	CC, ES
Rio-LA 6F-314 - Wellbore #1 - Plan #1 (8-4-15)	12,277.5	12,528.4	841.5	566.7	3.063	SF
Rio-LA 6F-334 - Wellbore #1 - Plan #1 (8-4-15)	400.0	400.0	77.0	75.4	48.917	CC, ES
Rio-LA 6F-334 - Wellbore #1 - Plan #1 (8-4-15)	1,000.0	990.0	107.9	103.7	26.080	SF
Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)	1,000.0	1,000.0	29.3	25.0	6.856	CC, ES
Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)	12,277.5	12,520.1	593.5	330.8	2.260	SF
Rio-LA 6F-434 - Wellbore #1 - Plan #1 (8-4-15)	200.0	200.0	91.5	90.8	135.648	CC, ES
Rio-LA 6F-434 - Wellbore #1 - Plan #1 (8-4-15)	1,100.0	1,078.8	161.3	156.6	34.710	SF

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)	Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	105.52	-171.2	616.4	639.8					
100.0	100.0	91.0	91.0	0.1	0.1	105.52	-171.2	616.4	639.7	639.5	0.21	2,979.988		
200.0	200.0	191.0	191.0	0.3	0.3	105.52	-171.2	616.4	639.7	639.1	0.65	978.050		
300.0	300.0	306.0	306.0	0.6	0.6	105.45	-170.1	615.4	638.6	637.5	1.14	562.336		
400.0	400.0	422.3	422.1	0.8	0.8	105.21	-166.4	612.0	635.0	633.4	1.63	390.668		
500.0	500.0	538.1	537.7	1.0	1.1	104.79	-160.1	606.3	628.8	626.7	2.12	296.490		
600.0	600.0	653.4	652.3	1.2	1.4	104.19	-151.3	598.3	620.2	617.6	2.62	236.731		
700.0	700.0	767.8	765.7	1.5	1.8	103.39	-140.0	588.1	609.1	606.0	3.12	194.935		
800.0	800.0	881.0	877.4	1.7	2.2	102.38	-126.4	575.7	595.7	592.0	3.64	163.775		
900.0	900.0	979.4	974.3	1.9	2.5	101.38	-113.5	564.0	581.3	577.2	4.12	141.237		
1,000.0	1,000.0	1,077.8	1,071.1	2.1	2.9	100.32	-100.6	552.3	567.0	562.4	4.60	123.370		
1,100.0	1,100.0	1,176.4	1,168.1	2.4	3.3	116.60	-87.7	540.5	553.4	548.2	5.24	105.621		
1,200.0	1,200.0	1,275.2	1,265.4	2.6	3.7	115.80	-74.8	528.8	540.7	534.9	5.77	93.696		
1,300.0	1,299.9	1,374.2	1,362.8	2.8	4.0	115.13	-61.8	517.0	528.8	522.5	6.31	83.835		
1,400.0	1,399.7	1,473.4	1,460.5	3.0	4.4	114.58	-48.8	505.2	517.8	511.0	6.85	75.564		
1,500.0	1,499.4	1,572.8	1,558.3	3.3	4.8	114.18	-35.8	493.4	507.6	500.2	7.40	68.553		
1,600.0	1,598.9	1,672.3	1,656.2	3.5	5.2	113.94	-22.8	481.5	498.1	490.1	7.96	62.548		
1,700.0	1,698.3	1,771.9	1,754.3	3.8	5.6	113.86	-9.7	469.7	489.3	480.8	8.53	57.361		
1,800.0	1,797.4	1,871.6	1,852.4	4.0	6.0	113.97	3.3	457.8	481.2	472.1	9.11	52.848		
1,900.0	1,896.3	1,971.3	1,950.5	4.3	6.4	114.26	16.4	446.0	473.8	464.1	9.69	48.901		
1,991.0	1,986.1	2,062.1	2,039.9	4.6	6.8	114.70	28.3	435.2	467.8	457.5	10.23	45.729		
2,000.0	1,994.9	2,071.0	2,048.6	4.6	6.8	114.74	29.5	434.1	467.2	456.9	10.28	45.436		
2,100.0	2,093.4	2,170.7	2,146.8	4.9	7.2	115.26	42.5	422.3	460.9	450.0	10.88	42.348		
2,200.0	2,191.9	2,270.4	2,244.9	5.3	7.6	115.80	55.6	410.4	454.6	443.1	11.49	39.572		
2,300.0	2,290.5	2,370.2	2,343.1	5.6	8.0	116.35	68.6	398.5	448.4	436.3	12.10	37.070		
2,400.0	2,389.0	2,469.9	2,441.2	6.0	8.4	116.91	81.7	386.7	442.2	429.5	12.70	34.807		
2,500.0	2,487.5	2,569.6	2,539.3	6.3	8.8	117.49	94.8	374.8	436.0	422.7	13.31	32.755		
2,600.0	2,586.0	2,669.3	2,637.5	6.7	9.2	118.09	107.8	363.0	429.9	416.0	13.92	30.889		
2,700.0	2,684.5	2,769.0	2,735.6	7.0	9.6	118.70	120.9	351.1	423.9	409.4	14.52	29.187		
2,800.0	2,783.0	2,868.7	2,833.8	7.4	10.0	119.33	133.9	339.2	417.9	402.8	15.12	27.629		
2,900.0	2,881.5	2,968.4	2,931.9	7.7	10.4	119.98	147.0	327.4	411.9	396.2	15.72	26.200		
3,000.0	2,980.0	3,068.1	3,030.0	8.1	10.8	120.65	160.0	315.5	406.0	389.7	16.32	24.886		
3,100.0	3,078.5	3,167.9	3,128.2	8.5	11.2	121.34	173.1	303.7	400.2	383.3	16.90	23.675		
3,200.0	3,177.0	3,267.6	3,226.3	8.8	11.6	122.05	186.2	291.8	394.4	376.9	17.49	22.556		
3,300.0	3,275.5	3,367.3	3,324.5	9.2	12.0	122.78	199.2	279.9	388.7	370.6	18.06	21.519		
3,400.0	3,374.0	3,467.0	3,422.6	9.6	12.4	123.53	212.3	268.1	383.1	364.4	18.63	20.558		
3,500.0	3,472.5	3,566.7	3,520.7	10.0	12.8	124.30	225.3	256.2	377.5	358.3	19.20	19.664		
3,600.0	3,571.1	3,666.4	3,618.9	10.3	13.2	125.10	238.4	244.4	372.0	352.2	19.75	18.832		
3,700.0	3,669.6	3,766.1	3,717.0	10.7	13.6	125.92	251.5	232.5	366.5	346.2	20.30	18.056		
3,800.0	3,768.1	3,865.8	3,815.2	11.1	14.0	126.76	264.5	220.6	361.2	340.3	20.84	17.332		
3,900.0	3,866.6	3,965.6	3,913.3	11.5	14.4	127.63	277.6	208.8	355.9	334.5	21.37	16.654		
4,000.0	3,965.1	4,065.3	4,011.4	11.8	14.8	128.53	290.6	196.9	350.7	328.8	21.89	16.020		
4,100.0	4,063.6	4,165.0	4,109.6	12.2	15.2	129.45	303.7	185.1	345.6	323.2	22.40	15.425		
4,200.0	4,162.1	4,264.7	4,207.7	12.6	15.6	130.40	316.7	173.2	340.6	317.6	22.91	14.868		
4,300.0	4,260.6	4,364.4	4,305.9	13.0	16.0	131.37	329.8	161.3	335.6	312.2	23.40	14.344		
4,400.0	4,359.1	4,464.1	4,404.0	13.4	16.4	132.38	342.9	149.5	330.8	306.9	23.88	13.851		
4,500.0	4,457.6	4,563.8	4,502.1	13.7	16.8	133.42	355.9	137.6	326.1	301.7	24.36	13.388		
4,550.1	4,506.9	4,613.7	4,551.3	13.9	17.0	133.95	362.5	131.7	323.8	299.2	24.59	13.166		
4,600.0	4,556.2	4,663.5	4,600.3	14.1	17.2	134.39	369.0	125.8	321.2	296.4	24.81	12.945		
4,700.0	4,655.3	4,763.2	4,698.4	14.4	17.6	134.94	382.0	113.9	314.2	289.0	25.24	12.450		
4,800.0	4,754.7	4,862.8	4,796.4	14.6	18.0	135.03	395.1	102.1	304.8	279.1	25.69	11.866		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,854.5	4,962.1	4,894.1	14.8	18.4	134.61	408.1	90.2	293.0	266.8	26.17	11.194				
5,000.0	4,954.4	5,060.9	4,991.4	15.0	18.8	133.62	421.0	78.5	278.7	252.0	26.70	10.437				
5,045.6	5,000.0	5,105.9	5,035.6	15.0	18.9	115.76	426.9	73.1	271.4	239.8	31.61	8.587				
5,100.0	5,054.4	5,159.4	5,088.3	15.1	19.1	114.98	433.9	66.8	262.5	230.7	31.81	8.254				
5,200.0	5,154.4	5,257.9	5,185.2	15.3	19.5	113.39	446.8	55.1	246.3	214.1	32.16	7.656				
5,300.0	5,254.4	5,356.3	5,282.1	15.4	19.9	111.58	459.7	43.4	230.2	197.7	32.48	7.087				
5,400.0	5,354.4	5,454.7	5,378.9	15.6	20.3	109.50	472.6	31.6	214.4	181.7	32.75	6.547				
5,500.0	5,454.4	5,553.1	5,475.8	15.8	20.7	107.10	485.5	19.9	199.0	166.0	32.96	6.036				
5,600.0	5,554.4	5,651.5	5,572.7	15.9	21.1	104.30	498.4	8.2	183.9	150.8	33.10	5.557				
5,700.0	5,654.4	5,750.0	5,669.6	16.1	21.5	101.02	511.3	-3.5	169.3	136.2	33.13	5.111				
5,800.0	5,754.4	5,848.4	5,766.4	16.3	21.9	97.14	524.2	-15.2	155.4	122.4	33.05	4.703				
5,900.0	5,854.4	5,946.8	5,863.3	16.4	22.3	92.54	537.0	-26.9	142.4	109.6	32.82	4.338				
6,000.0	5,954.4	6,045.2	5,960.2	16.6	22.7	87.06	549.9	-38.6	130.4	98.0	32.44	4.020				
6,100.0	6,054.4	6,142.2	6,055.7	16.8	23.0	80.96	562.1	-49.7	120.3	88.3	31.94	3.766				
6,200.0	6,154.4	6,239.2	6,151.8	16.9	23.3	75.26	572.1	-58.7	113.2	81.7	31.52	3.592				
6,300.0	6,254.4	6,337.1	6,249.1	17.1	23.5	70.47	579.6	-65.6	108.7	77.4	31.31	3.474				
6,400.0	6,354.4	6,435.5	6,347.3	17.3	23.7	67.02	584.8	-70.2	106.2	74.9	31.32	3.392				
6,500.0	6,454.4	6,534.3	6,446.0	17.5	23.8	65.18	587.4	-72.6	105.1	73.6	31.51	3.334				
6,572.8	6,527.2	6,606.4	6,518.2	17.6	23.9	64.92	587.8	-73.0	104.9	73.2	31.76	3.304				
6,600.0	6,554.4	6,633.7	6,545.4	17.6	24.0	64.92	587.8	-73.0	104.9	73.1	31.87	3.293				
6,700.0	6,654.4	6,733.7	6,645.4	17.8	24.1	64.92	587.8	-73.0	104.9	72.7	32.27	3.252				
6,800.0	6,754.4	6,833.7	6,745.4	18.0	24.2	64.92	587.8	-73.0	104.9	72.3	32.66	3.212				
6,900.0	6,854.4	6,933.7	6,845.4	18.2	24.4	64.92	587.8	-73.0	104.9	71.9	33.07	3.173				
7,000.0	6,954.4	7,037.5	6,949.1	18.4	24.5	66.42	584.8	-73.0	103.8	70.2	33.58	3.089				
7,041.4	6,995.8	7,080.8	6,992.1	18.4	24.5	69.03	579.7	-73.0	101.9	67.9	33.99	2.998				
7,050.0	7,004.4	7,089.7	7,001.0	18.5	24.5	159.77	578.4	-73.0	101.5	59.6	41.88	2.423 SF				
7,088.1	7,042.5	7,128.8	7,039.4	18.5	24.5	163.86	571.3	-73.0	100.6	59.1	41.51	2.424 CC, ES				
7,100.0	7,054.4	7,140.8	7,051.1	18.6	24.4	165.40	568.7	-73.0	100.7	59.4	41.34	2.436				
7,150.0	7,104.0	7,190.2	7,098.9	18.7	24.4	172.83	556.2	-73.0	103.6	63.3	40.30	2.571				
7,200.0	7,153.3	7,237.3	7,143.6	18.8	24.3	-178.99	541.4	-73.0	111.5	72.6	38.85	2.869				
7,250.0	7,201.8	7,281.8	7,184.9	18.9	24.2	-171.04	524.9	-73.0	125.0	87.7	37.27	3.353				
7,300.0	7,249.5	7,323.3	7,222.6	19.0	24.2	-163.91	507.4	-73.0	144.1	108.3	35.79	4.026				
7,350.0	7,296.1	7,361.9	7,256.6	19.2	24.1	-157.74	489.3	-73.0	168.4	133.8	34.57	4.871				
7,400.0	7,341.4	7,397.4	7,287.1	19.4	24.0	-152.39	471.1	-73.0	197.1	163.4	33.63	5.859				
7,450.0	7,385.2	7,429.9	7,314.3	19.5	23.9	-147.63	453.3	-73.0	229.4	196.4	32.99	6.954				
7,500.0	7,427.4	7,459.5	7,338.3	19.8	23.8	-143.22	436.1	-73.0	264.9	232.3	32.65	8.115				
7,550.0	7,467.7	7,486.2	7,359.5	20.0	23.7	-138.92	419.7	-73.0	303.0	270.3	32.61	9.290				
7,600.0	7,505.9	7,510.3	7,378.0	20.3	23.6	-134.53	404.3	-73.0	343.2	310.2	32.94	10.419				
7,650.0	7,542.0	7,531.9	7,394.2	20.6	23.5	-129.85	390.0	-73.0	385.1	351.5	33.67	11.440				
7,700.0	7,575.8	7,550.0	7,407.5	21.0	23.5	-124.67	377.7	-73.0	428.6	393.8	34.84	12.303				
7,750.0	7,607.1	7,568.2	7,420.5	21.4	23.4	-118.88	365.1	-73.0	473.2	436.8	36.43	12.988				
7,800.0	7,635.7	7,583.1	7,431.0	21.8	23.3	-112.26	354.4	-73.0	518.8	480.4	38.37	13.520				
7,850.0	7,661.6	7,600.0	7,442.6	22.4	23.3	-105.14	342.1	-73.0	565.1	524.7	40.37	13.999				
7,900.0	7,684.7	7,607.4	7,447.6	23.0	23.2	-96.30	336.7	-73.0	611.9	569.7	42.25	14.482				
7,950.0	7,704.8	7,616.9	7,453.9	23.7	23.2	-87.15	329.6	-73.0	659.1	615.7	43.40	15.186				
8,000.0	7,721.9	7,624.7	7,459.1	24.4	23.2	-77.64	323.7	-73.0	706.4	663.0	43.49	16.243				
8,050.0	7,735.9	7,631.0	7,463.2	25.2	23.2	-68.26	318.9	-73.0	753.8	711.5	42.37	17.792				
8,100.0	7,746.7	7,635.8	7,466.3	26.1	23.1	-59.45	315.3	-73.0	801.1	761.0	40.17	19.943				
8,150.0	7,754.3	7,639.1	7,468.4	27.0	23.1	-51.52	312.7	-73.0	848.2	810.9	37.24	22.775				
8,200.0	7,758.6	7,641.0	7,469.6	27.9	23.1	-44.59	311.3	-73.0	894.9	860.9	33.97	26.341				
8,245.1	7,759.7	7,641.5	7,469.9	28.8	23.1	-39.19	310.9	-73.0	936.6	905.5	31.01	30.202				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	7,759.4	7,641.4	7,469.8	29.9	23.1	-39.17	311.0	-73.0	987.3	955.5	31.78	31.064	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance			Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	104.82	-171.2	647.2	669.5							
100.0	100.0	91.0	91.0	0.1	0.1	104.82	-171.2	647.2	669.5	669.2	0.21	3,118.550				
200.0	200.0	191.0	191.0	0.3	0.3	104.82	-171.2	647.2	669.5	668.8	0.65	1,023.528				
300.0	300.0	291.0	291.0	0.6	0.5	104.82	-171.2	647.2	669.5	668.4	1.10	606.612				
400.0	400.0	391.0	391.0	0.8	0.8	104.82	-171.2	647.2	669.5	667.9	1.55	431.037				
500.0	500.0	504.8	504.8	1.0	1.0	104.74	-170.0	646.4	668.5	666.5	2.03	329.015				
600.0	600.0	619.8	619.7	1.2	1.3	104.46	-166.0	643.7	665.3	662.8	2.52	264.472				
700.0	700.0	734.4	734.0	1.5	1.6	103.98	-159.1	639.0	659.9	656.9	3.00	219.660				
800.0	800.0	848.4	847.4	1.7	1.8	103.29	-149.4	632.5	652.3	648.8	3.50	186.495				
900.0	900.0	961.6	959.6	1.9	2.2	102.39	-137.1	624.1	642.6	638.6	4.00	160.685				
1,000.0	1,000.0	1,073.8	1,070.4	2.1	2.5	101.25	-122.1	614.0	631.0	626.5	4.51	139.838				
1,100.0	1,100.0	1,174.6	1,169.4	2.4	2.9	117.42	-107.1	603.8	618.6	613.6	5.08	121.673				
1,200.0	1,200.0	1,273.3	1,266.6	2.6	3.2	116.53	-92.3	593.8	607.3	601.6	5.61	108.202				
1,300.0	1,299.9	1,372.4	1,364.0	2.8	3.6	115.74	-77.6	583.8	596.8	590.6	6.15	97.012				
1,400.0	1,399.7	1,471.6	1,461.6	3.0	4.0	115.07	-62.7	573.8	587.2	580.5	6.70	87.615				
1,500.0	1,499.4	1,571.0	1,559.4	3.3	4.4	114.52	-47.9	563.8	578.5	571.2	7.26	79.637				
1,600.0	1,598.9	1,670.6	1,657.3	3.5	4.8	114.11	-33.0	553.7	570.5	562.7	7.84	72.797				
1,700.0	1,698.3	1,770.2	1,755.3	3.8	5.1	113.83	-18.1	543.6	563.3	554.8	8.42	66.883				
1,800.0	1,797.4	1,870.0	1,853.5	4.0	5.5	113.71	-3.2	533.6	556.7	547.7	9.02	61.729				
1,900.0	1,896.3	1,969.8	1,951.7	4.3	5.9	113.74	11.7	523.5	550.9	541.3	9.63	57.211				
1,991.0	1,986.1	2,060.8	2,041.1	4.6	6.3	113.91	25.2	514.3	546.3	536.1	10.20	53.568				
2,000.0	1,994.9	2,069.7	2,049.9	4.6	6.3	113.93	26.6	513.4	545.8	535.6	10.25	53.230				
2,100.0	2,093.4	2,169.6	2,148.1	4.9	6.7	114.15	41.5	503.3	541.0	530.1	10.89	49.677				
2,200.0	2,191.9	2,269.4	2,246.3	5.3	7.1	114.37	56.4	493.2	536.2	524.7	11.53	46.486				
2,300.0	2,290.5	2,369.3	2,344.6	5.6	7.5	114.60	71.3	483.1	531.4	519.2	12.18	43.612				
2,400.0	2,389.0	2,469.2	2,442.8	6.0	7.9	114.83	86.2	473.0	526.6	513.8	12.84	41.016				
2,500.0	2,487.5	2,569.0	2,541.0	6.3	8.3	115.06	101.1	462.9	521.8	508.3	13.50	38.662				
2,600.0	2,586.0	2,668.9	2,639.3	6.7	8.7	115.30	116.1	452.8	517.1	502.9	14.16	36.521				
2,700.0	2,684.5	2,768.7	2,737.5	7.0	9.1	115.55	131.0	442.8	512.3	497.5	14.82	34.568				
2,800.0	2,783.0	2,868.6	2,835.7	7.4	9.5	115.79	145.9	432.7	507.5	492.1	15.48	32.780				
2,900.0	2,881.5	2,968.5	2,933.9	7.7	9.9	116.05	160.8	422.6	502.8	486.7	16.15	31.138				
3,000.0	2,980.0	3,068.3	3,032.2	8.1	10.3	116.31	175.7	412.5	498.1	481.3	16.81	29.626				
3,100.0	3,078.5	3,168.2	3,130.4	8.5	10.7	116.57	190.6	402.4	493.3	475.9	17.48	28.230				
3,200.0	3,177.0	3,268.1	3,228.6	8.8	11.1	116.84	205.5	392.3	488.6	470.5	18.14	26.938				
3,300.0	3,275.5	3,367.9	3,326.8	9.2	11.5	117.11	220.5	382.2	483.9	465.1	18.80	25.739				
3,400.0	3,374.0	3,467.8	3,425.1	9.6	11.9	117.39	235.4	372.1	479.2	459.8	19.46	24.623				
3,500.0	3,472.5	3,567.6	3,523.3	10.0	12.3	117.67	250.3	362.0	474.6	454.4	20.12	23.584				
3,600.0	3,571.1	3,667.5	3,621.5	10.3	12.7	117.96	265.2	352.0	469.9	449.1	20.78	22.612				
3,700.0	3,669.6	3,767.4	3,719.7	10.7	13.1	118.26	280.1	341.9	465.2	443.8	21.44	21.703				
3,800.0	3,768.1	3,867.2	3,818.0	11.1	13.5	118.56	295.0	331.8	460.6	438.5	22.09	20.851				
3,900.0	3,866.6	3,967.1	3,916.2	11.5	13.9	118.87	309.9	321.7	456.0	433.2	22.74	20.050				
4,000.0	3,965.1	4,067.0	4,014.4	11.8	14.3	119.18	324.8	311.6	451.3	428.0	23.39	19.297				
4,100.0	4,063.6	4,166.8	4,112.6	12.2	14.7	119.50	339.8	301.5	446.7	422.7	24.04	18.587				
4,200.0	4,162.1	4,266.7	4,210.9	12.6	15.1	119.83	354.7	291.4	442.2	417.5	24.68	17.917				
4,300.0	4,260.6	4,366.5	4,309.1	13.0	15.6	120.16	369.6	281.3	437.6	412.3	25.32	17.283				
4,400.0	4,359.1	4,466.4	4,407.3	13.4	16.0	120.50	384.5	271.2	433.0	407.1	25.95	16.684				
4,500.0	4,457.6	4,566.3	4,505.5	13.7	16.4	120.85	399.4	261.1	428.5	401.9	26.59	16.116				
4,550.1	4,506.9	4,616.3	4,554.7	13.9	16.6	121.03	406.9	256.1	426.2	399.3	26.90	15.843				
4,600.0	4,556.2	4,666.1	4,603.8	14.1	16.8	121.11	414.3	251.1	423.7	396.5	27.20	15.576				
4,700.0	4,655.3	4,765.9	4,701.9	14.4	17.2	120.96	429.2	241.0	417.4	389.6	27.80	15.016				
4,800.0	4,754.7	4,865.5	4,799.9	14.6	17.6	120.35	444.1	230.9	409.3	380.9	28.43	14.399				

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

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Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,854.5	4,964.8	4,897.6	14.8	18.0	119.26	458.9	220.9	399.5	370.4	29.10	13.732				
5,000.0	4,954.4	5,063.7	4,994.8	15.0	18.4	117.64	473.7	210.9	388.2	358.4	29.81	13.021				
5,045.6	5,000.0	5,108.6	5,039.0	15.0	18.6	99.54	480.4	206.3	382.6	354.4	28.20	13.569				
5,100.0	5,054.4	5,162.1	5,091.6	15.1	18.8	98.46	488.4	200.9	375.9	347.6	28.30	13.279				
5,200.0	5,154.4	5,260.5	5,188.4	15.3	19.2	96.39	503.1	191.0	363.8	335.3	28.50	12.764				
5,300.0	5,254.4	5,358.9	5,285.1	15.4	19.6	94.18	517.8	181.1	352.2	323.6	28.67	12.284				
5,400.0	5,354.4	5,457.2	5,381.9	15.6	20.0	91.83	532.5	171.1	341.3	312.4	28.82	11.839				
5,500.0	5,454.4	5,555.6	5,478.6	15.8	20.4	89.33	547.2	161.2	330.9	301.9	28.95	11.428				
5,600.0	5,554.4	5,648.8	5,570.6	15.9	20.7	87.02	560.0	152.5	321.9	292.9	29.04	11.085				
5,700.0	5,654.4	5,742.6	5,663.5	16.1	20.9	85.07	570.4	145.5	315.2	286.0	29.16	10.808				
5,800.0	5,754.4	5,837.2	5,757.6	16.3	21.1	83.52	578.3	140.1	310.4	281.0	29.33	10.580				
5,900.0	5,854.4	5,932.3	5,852.5	16.4	21.3	82.45	583.6	136.5	307.3	277.7	29.56	10.393				
6,000.0	5,954.4	6,027.7	5,947.9	16.6	21.4	81.90	586.4	134.7	305.7	275.9	29.85	10.242				
6,073.3	6,027.7	6,098.5	6,018.7	16.7	21.5	81.82	586.8	134.4	305.5	275.4	30.10	10.149				
6,100.0	6,054.4	6,125.3	6,045.4	16.8	21.6	81.82	586.8	134.4	305.5	275.3	30.20	10.114				
6,200.0	6,154.4	6,225.3	6,145.4	16.9	21.7	81.82	586.8	134.4	305.5	274.9	30.60	9.985				
6,300.0	6,254.4	6,325.3	6,245.4	17.1	21.8	81.82	586.8	134.4	305.5	274.5	30.99	9.858				
6,400.0	6,354.4	6,425.3	6,345.4	17.3	22.0	81.82	586.8	134.4	305.5	274.1	31.38	9.734				
6,500.0	6,454.4	6,525.3	6,445.4	17.5	22.1	81.82	586.8	134.4	305.5	273.7	31.78	9.613				
6,600.0	6,554.4	6,625.3	6,545.4	17.6	22.2	81.82	586.8	134.4	305.5	273.3	32.18	9.494				
6,700.0	6,654.4	6,725.3	6,645.4	17.8	22.4	81.82	586.8	134.4	305.5	272.9	32.58	9.378				
6,800.0	6,754.4	6,825.3	6,745.4	18.0	22.5	81.82	586.8	134.4	305.5	272.5	32.97	9.265				
6,900.0	6,854.4	6,925.3	6,845.4	18.2	22.7	81.82	586.8	134.4	305.5	272.1	33.38	9.153				
7,000.0	6,954.4	7,025.3	6,945.4	18.4	22.8	81.82	586.8	134.4	305.5	271.7	33.78	9.044				
7,041.4	6,995.8	7,067.2	6,987.3	18.4	22.9	81.83	586.7	134.4	305.5	271.5	33.94	9.000				
7,043.0	6,997.4	7,068.9	6,989.0	18.4	22.9	171.83	586.7	134.4	305.5	265.4	40.07	7.623 CC, ES				
7,050.0	7,004.4	7,076.3	6,996.5	18.5	22.9	171.86	586.6	134.4	305.5	265.4	40.09	7.620 SF				
7,100.0	7,054.4	7,129.1	7,049.1	18.6	22.9	172.48	583.4	134.4	307.3	267.2	40.11	7.662				
7,150.0	7,104.0	7,180.9	7,100.5	18.7	22.9	173.77	576.9	134.4	312.0	272.1	39.87	7.824				
7,200.0	7,153.3	7,231.1	7,149.8	18.8	22.9	175.64	567.2	134.4	319.7	280.3	39.40	8.115				
7,250.0	7,201.8	7,279.2	7,196.3	18.9	22.9	177.92	554.9	134.4	330.9	292.2	38.71	8.549				
7,300.0	7,249.5	7,324.8	7,239.5	19.0	22.8	-179.52	540.6	134.4	345.8	307.9	37.83	9.140				
7,350.0	7,296.1	7,367.4	7,279.2	19.2	22.7	-176.81	524.8	134.4	364.4	327.6	36.80	9.904				
7,400.0	7,341.4	7,407.1	7,315.1	19.4	22.6	-174.04	508.3	134.4	387.0	351.4	35.65	10.857				
7,450.0	7,385.2	7,443.5	7,347.5	19.5	22.5	-171.25	491.4	134.4	413.4	379.0	34.42	12.010				
7,500.0	7,427.4	7,476.9	7,376.3	19.8	22.4	-168.45	474.6	134.4	443.4	410.2	33.16	13.371				
7,550.0	7,467.7	7,507.3	7,401.9	20.0	22.3	-165.60	458.3	134.4	476.6	444.7	31.91	14.935				
7,600.0	7,505.9	7,534.7	7,424.4	20.3	22.2	-162.64	442.7	134.4	512.9	482.2	30.75	16.683				
7,650.0	7,542.0	7,559.3	7,444.1	20.6	22.2	-159.50	428.0	134.4	551.9	522.1	29.73	18.560				
7,700.0	7,575.8	7,581.2	7,461.3	21.0	22.1	-156.05	414.3	134.4	593.0	564.1	28.99	20.457				
7,750.0	7,607.1	7,600.0	7,475.7	21.4	22.0	-152.14	402.2	134.4	636.2	607.5	28.67	22.192				
7,800.0	7,635.7	7,617.8	7,489.1	21.8	22.0	-147.43	390.5	134.4	680.9	651.9	28.99	23.484				
7,850.0	7,661.6	7,632.7	7,500.1	22.4	21.9	-141.69	380.4	134.4	727.0	696.8	30.19	24.077				
7,900.0	7,684.7	7,650.0	7,512.6	23.0	21.8	-134.36	368.4	134.4	774.1	741.6	32.50	23.819				
7,950.0	7,704.8	7,656.4	7,517.1	23.7	21.8	-124.91	364.0	134.4	822.0	786.1	35.88	22.906				
8,000.0	7,721.9	7,665.3	7,523.4	24.4	21.8	-112.64	357.6	134.4	870.4	830.5	39.89	21.820				
8,050.0	7,735.9	7,672.5	7,528.4	25.2	21.8	-97.50	352.4	134.4	919.2	876.1	43.08	21.336				
8,100.0	7,746.7	7,678.0	7,532.2	26.1	21.7	-80.77	348.5	134.4	968.1	924.6	43.57	22.221				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100- Existing Pad Sec.12-T1S-R68W - Gaspar 11-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
11,600.0	7,743.3	7,707.2	7,701.9	116.5	17.7	-82.61	203.0	-5,159.1	934.0	801.2	132.85	7.031			
11,700.0	7,742.8	7,711.9	7,706.7	119.3	17.7	-83.40	203.0	-5,159.3	841.8	706.0	135.84	6.197			
11,800.0	7,742.3	7,716.6	7,711.3	122.1	17.8	-84.17	202.9	-5,159.5	751.6	612.8	138.82	5.414			
11,900.0	7,741.8	7,721.1	7,715.8	124.8	17.8	-84.93	202.8	-5,159.7	664.1	522.3	141.78	4.684			
12,000.0	7,741.4	7,725.6	7,720.3	127.6	17.8	-85.68	202.7	-5,159.9	580.6	435.9	144.72	4.012			
12,100.0	7,740.9	7,730.0	7,724.7	130.4	17.8	-86.42	202.6	-5,160.1	503.2	355.6	147.64	3.408			
12,200.0	7,740.4	7,734.4	7,729.1	133.1	17.8	-87.15	202.5	-5,160.3	435.0	284.5	150.54	2.890			
12,276.8	7,740.0	7,737.6	7,732.3	135.3	17.8	-87.70	202.5	-5,160.5	392.0	239.3	152.75	2.566			
12,277.5	7,740.0	7,737.7	7,732.4	135.3	17.8	-87.70	202.5	-5,160.5	391.7	238.9	152.77	2.564	CC, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Existing Wells Sec.6-T1S-R67W - Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS														Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	84.95	25.5	288.6	290.1						
100.0	100.0	86.9	86.9	0.1	0.1	84.97	25.4	288.1	289.3	289.0	0.23	1,268.645			
200.0	200.0	187.0	187.0	0.3	0.4	85.05	24.9	287.1	288.2	287.5	0.70	412.197			
300.0	300.0	285.7	285.7	0.6	0.6	85.17	24.2	286.3	287.4	286.2	1.18	243.643			
400.0	400.0	385.6	385.6	0.8	0.9	85.27	23.6	285.9	286.8	285.2	1.66	172.357			
500.0	500.0	486.7	486.7	1.0	1.1	85.33	23.3	285.2	286.1	284.0	2.15	133.352			
600.0	600.0	587.9	587.8	1.2	1.4	85.33	23.2	284.0	285.0	282.3	2.62	108.619			
700.0	700.0	688.2	688.2	1.5	1.6	85.41	22.7	282.6	283.5	280.4	3.11	91.219			
800.0	800.0	787.9	787.8	1.7	1.9	85.62	21.5	281.2	282.1	278.5	3.59	78.537			
900.0	900.0	887.7	887.6	1.9	2.2	85.90	20.1	280.0	280.8	276.7	4.07	68.924			
1,000.0	1,000.0	987.3	987.3	2.1	2.4	86.16	18.7	278.9	279.5	275.0	4.56	61.340			
1,100.0	1,100.0	1,087.7	1,087.6	2.4	2.7	103.73	17.7	277.7	278.5	273.5	5.04	55.216			
1,200.0	1,200.0	1,187.6	1,187.5	2.6	3.0	104.39	17.0	276.5	277.9	272.4	5.53	50.244			
1,269.8	1,269.7	1,257.2	1,257.1	2.7	3.1	105.02	16.6	275.6	277.7	271.9	5.87	47.314 CC			
1,300.0	1,299.9	1,287.3	1,287.2	2.8	3.2	105.36	16.4	275.3	277.8	271.7	6.02	46.163 ES			
1,400.0	1,399.7	1,386.9	1,386.7	3.0	3.5	106.69	15.8	274.2	278.3	271.8	6.51	42.766			
1,500.0	1,499.4	1,485.9	1,485.8	3.3	3.7	108.34	15.1	273.2	279.7	272.7	7.00	39.946			
1,600.0	1,598.9	1,586.2	1,586.0	3.5	4.0	110.29	14.5	272.2	281.9	274.4	7.50	37.571			
1,700.0	1,698.3	1,685.8	1,685.6	3.8	4.3	112.47	14.2	271.0	284.9	276.9	8.00	35.593			
1,800.0	1,797.4	1,785.5	1,785.3	4.0	4.5	114.85	14.1	269.8	288.9	280.4	8.51	33.969			
1,900.0	1,896.3	1,885.2	1,885.1	4.3	4.7	117.43	14.3	268.3	294.0	285.0	9.01	32.637			
1,991.0	1,986.1	1,975.4	1,975.3	4.6	5.0	119.92	14.5	266.8	299.7	290.2	9.47	31.651			
2,000.0	1,994.9	1,984.3	1,984.1	4.6	5.0	120.17	14.5	266.6	300.3	290.8	9.52	31.564			
2,100.0	2,093.4	2,083.4	2,083.2	4.9	5.2	122.95	14.8	264.9	307.6	297.6	10.03	30.664			
2,200.0	2,191.9	2,182.8	2,182.5	5.3	5.5	125.64	14.9	262.9	315.4	304.9	10.56	29.880			
2,300.0	2,290.5	2,281.5	2,281.3	5.6	5.7	128.22	14.9	260.6	323.8	312.7	11.09	29.208			
2,400.0	2,389.0	2,380.8	2,380.5	6.0	6.0	130.69	14.9	258.3	332.6	321.0	11.61	28.647			
2,500.0	2,487.5	2,479.6	2,479.3	6.3	6.2	133.00	15.1	255.9	341.9	329.8	12.13	28.183			
2,600.0	2,586.0	2,579.0	2,578.7	6.7	6.5	135.18	15.4	253.4	351.6	339.0	12.65	27.803			
2,700.0	2,684.5	2,678.5	2,678.2	7.0	6.7	137.21	16.1	250.8	361.5	348.4	13.15	27.490			
2,800.0	2,783.0	2,777.6	2,777.2	7.4	6.9	139.09	16.9	248.2	371.7	358.1	13.65	27.230			
2,900.0	2,881.5	2,875.9	2,875.5	7.7	7.2	140.89	17.7	245.5	382.3	368.1	14.15	27.020			
3,000.0	2,980.0	2,972.0	2,971.5	8.1	7.4	142.55	18.2	243.1	393.6	378.9	14.65	26.873			
3,100.0	3,078.5	3,067.3	3,066.8	8.5	7.7	144.14	18.0	241.3	406.0	390.8	15.15	26.804			
3,200.0	3,177.0	3,164.0	3,163.5	8.8	7.9	145.65	17.5	239.9	419.4	403.7	15.65	26.796			
3,300.0	3,275.5	3,261.4	3,260.9	9.2	8.2	147.04	17.0	239.0	433.3	417.1	16.15	26.826			
3,400.0	3,374.0	3,359.3	3,358.8	9.6	8.4	148.32	16.6	238.3	447.7	431.0	16.65	26.883			
3,500.0	3,472.5	3,457.9	3,457.4	10.0	8.7	149.49	16.4	237.9	462.3	445.2	17.16	26.948			
3,600.0	3,571.1	3,557.7	3,557.2	10.3	8.9	150.59	16.4	237.5	477.0	459.4	17.63	27.058			
3,700.0	3,669.6	3,657.1	3,656.5	10.7	9.1	151.55	16.9	237.3	491.6	473.5	18.03	27.261			
3,800.0	3,768.1	3,755.2	3,754.7	11.1	9.2	152.41	17.7	237.2	506.2	487.9	18.39	27.534			
3,900.0	3,866.6	3,852.3	3,851.7	11.5	9.3	153.23	18.2	237.2	521.2	502.4	18.77	27.772			
4,000.0	3,965.1	3,949.8	3,949.3	11.8	9.5	154.06	18.2	237.1	536.6	517.4	19.22	27.917			
4,100.0	4,063.6	4,050.7	4,050.1	12.2	9.8	154.88	18.2	236.9	552.0	532.3	19.72	27.989			
4,200.0	4,162.1	4,152.4	4,151.9	12.6	10.0	155.68	18.5	236.0	566.9	546.7	20.22	28.042			
4,300.0	4,260.6	4,252.6	4,252.1	13.0	10.3	156.43	19.1	234.9	581.5	560.8	20.69	28.099			
4,400.0	4,359.1	4,352.6	4,352.0	13.4	10.5	157.15	19.8	233.5	596.0	574.8	21.17	28.149			
4,500.0	4,457.6	4,452.5	4,451.9	13.7	10.7	157.86	20.6	232.0	610.3	588.7	21.65	28.186			
4,550.1	4,506.9	4,502.4	4,501.8	13.9	10.9	158.21	20.9	231.0	617.5	595.6	21.90	28.201			
4,600.0	4,556.2	4,553.3	4,552.7	14.1	11.0	158.60	21.3	230.0	624.2	602.0	22.16	28.169			
4,700.0	4,655.3	4,654.5	4,653.9	14.4	11.2	159.26	22.2	227.6	634.8	612.2	22.63	28.048			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 100-NS-GYRO-MS													Existing Wells Sec.6-T1S-R67W - Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,800.0	4,754.7	4,754.6	4,753.9	14.6	11.5	159.75	23.3	225.1	642.1	619.1	23.08	27.823				
4,900.0	4,854.5	4,854.4	4,853.7	14.8	11.7	160.08	24.5	222.8	646.2	622.7	23.49	27.505				
5,000.0	4,954.4	4,954.1	4,953.4	15.0	12.0	160.29	25.7	220.5	647.0	623.1	23.88	27.096				
5,045.6	5,000.0	4,999.5	4,998.8	15.0	12.1	143.16	26.2	219.4	646.3	619.5	26.79	24.125				
5,100.0	5,054.4	5,053.4	5,052.6	15.1	12.2	143.22	26.8	218.2	645.1	618.0	27.01	23.886				
5,200.0	5,154.4	5,152.7	5,151.9	15.3	12.5	143.35	27.6	215.7	642.9	615.5	27.43	23.442				
5,300.0	5,254.4	5,251.3	5,250.5	15.4	12.7	143.51	28.2	213.1	640.9	613.0	27.85	23.010				
5,400.0	5,354.4	5,346.7	5,345.9	15.6	13.0	143.65	28.5	210.9	639.3	611.0	28.28	22.609				
5,500.0	5,454.4	5,441.7	5,440.8	15.8	13.2	143.74	28.4	209.7	638.6	609.9	28.69	22.254				
5,600.0	5,554.4	5,539.7	5,538.8	15.9	13.5	143.82	28.0	208.9	638.4	609.3	29.11	21.927				
5,641.6	5,596.0	5,580.9	5,580.0	16.0	13.6	143.84	27.9	208.7	638.4	609.1	29.29	21.797				
5,700.0	5,654.4	5,639.1	5,638.3	16.1	13.7	143.86	27.7	208.5	638.4	608.9	29.53	21.619				
5,800.0	5,754.4	5,738.5	5,737.7	16.3	14.0	143.89	27.5	208.2	638.4	608.5	29.93	21.328				
5,900.0	5,854.4	5,838.2	5,837.3	16.4	14.2	143.94	27.0	207.9	638.6	608.3	30.33	21.055				
6,000.0	5,954.4	5,939.9	5,939.0	16.6	14.4	143.99	26.7	207.5	638.7	607.9	30.75	20.769				
6,100.0	6,054.4	6,040.5	6,039.6	16.8	14.7	144.04	26.5	207.0	638.5	607.3	31.19	20.472				
6,200.0	6,154.4	6,140.6	6,139.7	16.9	14.9	144.08	26.4	206.4	638.3	606.7	31.60	20.202				
6,300.0	6,254.4	6,240.7	6,239.9	17.1	15.0	144.08	26.6	206.4	638.1	606.2	31.91	19.994				
6,400.0	6,354.4	6,340.4	6,339.5	17.3	15.1	144.04	27.0	206.6	637.9	605.7	32.16	19.836				
6,500.0	6,454.4	6,440.6	6,439.7	17.5	15.2	144.00	27.4	206.9	637.7	605.3	32.38	19.693				
6,600.0	6,554.4	6,542.0	6,541.1	17.6	15.2	143.94	28.0	207.1	637.4	604.8	32.63	19.536				
6,700.0	6,654.4	6,640.5	6,639.6	17.8	15.3	143.88	28.8	207.5	637.0	604.1	32.87	19.379				
6,726.5	6,680.9	6,665.8	6,664.9	17.9	15.3	143.86	28.9	207.7	637.0	604.0	32.93	19.343				
6,800.0	6,754.4	6,737.4	6,736.6	18.0	15.3	143.79	29.2	208.3	637.1	604.0	33.08	19.259				
6,900.0	6,854.4	6,837.0	6,836.1	18.2	15.3	143.71	29.5	209.3	637.4	604.2	33.28	19.156				
7,000.0	6,954.4	6,937.0	6,936.1	18.4	15.3	143.63	29.8	210.3	637.8	604.3	33.47	19.054				
7,041.4	6,995.8	6,978.6	6,977.7	18.4	15.3	143.58	29.9	210.7	638.0	604.4	33.56	19.010 SF				
7,050.0	7,004.4	6,987.3	6,986.4	18.5	15.3	-126.43	30.0	210.8	638.0	606.6	31.42	20.307				
7,100.0	7,054.4	7,038.0	7,037.1	18.6	15.4	-126.56	30.2	211.4	639.5	607.9	31.55	20.267				
7,150.0	7,104.0	7,088.6	7,087.7	18.7	15.4	-126.82	30.6	212.0	642.8	611.2	31.63	20.320				
7,200.0	7,153.3	7,136.7	7,135.8	18.8	15.4	-127.15	31.0	212.6	648.1	616.5	31.66	20.471				
7,250.0	7,201.8	7,183.5	7,182.6	18.9	15.4	-127.53	31.2	213.1	655.7	624.0	31.63	20.728				
7,300.0	7,249.5	7,230.5	7,229.6	19.0	15.4	-127.98	31.4	213.8	665.4	633.9	31.55	21.093				
7,350.0	7,296.1	7,276.9	7,276.0	19.2	15.4	-128.46	31.5	214.4	677.5	646.1	31.41	21.568				
7,400.0	7,341.4	7,322.0	7,321.0	19.4	15.5	-128.93	31.7	215.0	691.8	660.6	31.23	22.154				
7,450.0	7,385.2	7,365.4	7,364.5	19.5	15.5	-129.36	31.9	215.6	708.5	677.5	31.00	22.852				
7,500.0	7,427.4	7,407.1	7,406.1	19.8	15.5	-129.70	32.1	216.3	727.7	696.9	30.76	23.658				
7,550.0	7,467.7	7,446.5	7,445.6	20.0	15.5	-129.90	32.4	216.9	749.3	718.8	30.51	24.559				
7,600.0	7,505.9	7,484.0	7,483.0	20.3	15.5	-129.95	32.6	217.5	773.5	743.2	30.29	25.535				
7,650.0	7,542.0	7,519.4	7,518.4	20.6	15.5	-129.79	32.8	218.1	800.1	770.0	30.13	26.554				
7,700.0	7,575.8	7,552.6	7,551.7	21.0	15.6	-129.40	33.0	218.7	829.2	799.1	30.08	27.570				
7,750.0	7,607.1	7,583.4	7,582.4	21.4	15.6	-128.70	33.1	219.2	860.6	830.4	30.17	28.520				
7,800.0	7,635.7	7,611.3	7,610.4	21.8	15.6	-127.63	33.3	219.7	894.2	863.7	30.48	29.333				
7,850.0	7,661.6	7,636.3	7,635.4	22.4	15.6	-126.13	33.4	220.1	929.9	898.8	31.06	29.938				
7,900.0	7,684.7	7,658.5	7,657.5	23.0	15.6	-124.11	33.5	220.5	967.5	935.6	31.95	30.282				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 104-Reference													Northglenn State 19-36 Pad Sec.36-T1N-R68W - Northglenn State 36-36 (Exist.) - Wellbore #1 - Wellbo		Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Offset		Semi Major Axis			Distance						Warning			
		Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
9,900.0	7,751.6	7,899.9	7,785.9	70.0	26.1	92.10	697.8	-3,482.2	904.9	816.8	88.13	10.268				
10,000.0	7,751.1	7,899.0	7,784.9	72.7	26.1	91.73	697.8	-3,482.2	806.6	715.7	90.84	8.879				
10,100.0	7,750.6	7,898.0	7,784.0	75.4	26.1	91.37	697.8	-3,482.2	708.7	615.1	93.56	7.575				
10,200.0	7,750.1	7,897.0	7,783.0	78.1	26.1	91.02	697.8	-3,482.2	611.5	515.2	96.28	6.351				
10,300.0	7,749.7	7,896.1	7,782.1	80.8	26.1	90.68	697.8	-3,482.2	515.4	416.4	99.01	5.205				
10,400.0	7,749.2	7,895.2	7,781.2	83.6	26.1	90.34	697.8	-3,482.2	421.0	319.3	101.74	4.138				
10,500.0	7,748.7	7,894.3	7,780.3	86.3	26.1	90.01	697.7	-3,482.2	330.1	225.6	104.47	3.159				
10,600.0	7,748.2	7,893.4	7,779.4	89.0	26.1	89.68	697.7	-3,482.2	246.2	139.0	107.20	2.296				
10,700.0	7,747.7	7,892.6	7,778.5	91.8	26.1	89.37	697.7	-3,482.2	179.6	69.7	109.93	1.634				
10,791.7	7,747.3	7,891.8	7,777.8	94.3	26.1	89.08	697.7	-3,482.2	154.4	42.0	112.43	1.374	Level 3, CC			
10,800.0	7,747.2	7,891.7	7,777.7	94.5	26.1	89.05	697.7	-3,482.2	154.7	42.0	112.66	1.373	Level 3, ES, SF			
10,900.0	7,746.7	7,890.9	7,776.9	97.2	26.1	88.75	697.7	-3,482.2	188.6	73.2	115.39	1.635				
11,000.0	7,746.2	7,890.1	7,776.1	100.0	26.1	88.45	697.7	-3,482.3	259.3	141.2	118.12	2.195				
11,100.0	7,745.8	7,889.3	7,775.3	102.7	26.1	88.16	697.7	-3,482.3	344.8	224.0	120.85	2.853				
11,200.0	7,745.3	7,888.5	7,774.5	105.5	26.1	87.87	697.7	-3,482.3	436.5	312.9	123.58	3.532				
11,300.0	7,744.8	7,887.8	7,773.8	108.3	26.1	87.59	697.6	-3,482.3	531.2	404.9	126.31	4.206				
11,400.0	7,744.3	7,887.0	7,773.0	111.0	26.1	87.31	697.6	-3,482.3	627.6	498.5	129.04	4.863				
11,500.0	7,743.8	7,886.3	7,772.3	113.8	26.1	87.04	697.6	-3,482.3	724.9	593.2	131.77	5.501				
11,600.0	7,743.3	7,885.6	7,771.6	116.5	26.1	86.77	697.6	-3,482.3	822.9	688.4	134.49	6.118				
11,700.0	7,742.8	7,884.9	7,770.9	119.3	26.1	86.51	697.6	-3,482.3	921.3	784.1	137.22	6.714				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 111-Reference													Northglenn State 24-36 Pad Sec.36-T1N-R68W - Northglenn State 37-36 (Exist.) - Wellbore #1 - Wellbo		Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Offset		Semi Major Axis			Distance						Warning			
		Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,500.0	7,758.5	8,006.7	7,782.8	34.3	34.6	88.15	706.0	-2,087.1	911.3	849.8	61.47	14.825				
8,600.0	7,758.0	8,007.2	7,783.4	36.6	34.6	88.34	706.0	-2,087.1	813.1	749.2	63.84	12.735				
8,700.0	7,757.5	8,007.8	7,783.9	39.0	34.6	88.52	706.0	-2,087.2	715.4	649.1	66.28	10.793				
8,800.0	7,757.0	8,008.3	7,784.4	41.4	34.6	88.71	706.0	-2,087.2	618.4	549.6	68.76	8.993				
8,900.0	7,756.5	8,008.8	7,784.9	43.9	34.6	88.89	706.0	-2,087.2	522.6	451.3	71.28	7.331				
9,000.0	7,756.0	8,009.3	7,785.4	46.4	34.6	89.06	706.0	-2,087.2	428.7	354.9	73.84	5.806				
9,100.0	7,755.5	8,009.8	7,785.9	48.9	34.6	89.24	706.0	-2,087.2	338.3	261.9	76.42	4.427				
9,200.0	7,755.0	8,010.3	7,786.4	51.5	34.6	89.41	706.0	-2,087.2	255.2	176.2	79.03	3.229				
9,300.0	7,754.5	8,010.8	7,786.9	54.1	34.6	89.58	706.0	-2,087.2	189.3	107.6	81.66	2.318				
9,396.6	7,754.1	8,011.2	7,787.3	56.6	34.6	89.74	706.0	-2,087.2	162.7	78.5	84.21	1.932 CC				
9,400.0	7,754.1	8,011.2	7,787.3	56.7	34.6	89.74	706.0	-2,087.2	162.8	78.5	84.30	1.931 ES, SF				
9,500.0	7,753.6	8,011.7	7,787.8	59.3	34.6	89.90	706.0	-2,087.2	192.8	105.8	86.96	2.217				
9,600.0	7,753.1	8,012.1	7,788.3	62.0	34.6	90.06	706.0	-2,087.2	260.5	170.8	89.63	2.906				
9,700.0	7,752.6	8,012.6	7,788.7	64.7	34.6	90.22	706.0	-2,087.2	344.3	252.0	92.31	3.729				
9,800.0	7,752.1	8,013.0	7,789.1	67.3	34.6	90.38	706.0	-2,087.2	435.0	340.0	95.01	4.578				
9,900.0	7,751.6	8,013.5	7,789.6	70.0	34.6	90.53	706.0	-2,087.2	529.0	431.3	97.71	5.415				
10,000.0	7,751.1	8,013.9	7,790.0	72.7	34.6	90.68	706.0	-2,087.2	624.9	524.5	100.41	6.224				
10,100.0	7,750.6	8,014.3	7,790.4	75.4	34.6	90.83	706.0	-2,087.2	722.0	618.8	103.13	7.001				
10,200.0	7,750.1	8,014.7	7,790.8	78.1	34.6	90.97	706.0	-2,087.2	819.7	713.8	105.84	7.744				
10,300.0	7,749.7	8,015.1	7,791.2	80.8	34.6	91.12	706.0	-2,087.2	917.9	809.3	108.57	8.455				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft								
Survey Program: 0-MWD													Offset Well Error:		0.0 ft							
Reference													Offset		Semi Major Axis		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor										
0.0	0.0	0.0	0.0	0.0	0.0	169.12	-14.6	2.8	14.8	14.8	0.00	N/A										
100.0	100.0	100.0	100.0	0.1	0.1	169.12	-14.6	2.8	14.8	14.6	0.22	66.017										
200.0	200.0	200.0	200.0	0.3	0.3	169.12	-14.6	2.8	14.8	14.2	0.67	22.006										
300.0	300.0	300.0	300.0	0.6	0.6	169.12	-14.6	2.8	14.8	13.7	1.12	13.203										
400.0	400.0	400.0	400.0	0.8	0.8	169.12	-14.6	2.8	14.8	13.3	1.57	9.431										
500.0	500.0	500.0	500.0	1.0	1.0	169.12	-14.6	2.8	14.8	12.8	2.02	7.335										
600.0	600.0	600.0	600.0	1.2	1.2	169.12	-14.6	2.8	14.8	12.4	2.47	6.002										
700.0	700.0	700.0	700.0	1.5	1.5	169.12	-14.6	2.8	14.8	11.9	2.92	5.078										
800.0	800.0	800.0	800.0	1.7	1.7	169.12	-14.6	2.8	14.8	11.5	3.37	4.401										
900.0	900.0	900.0	900.0	1.9	1.9	169.12	-14.6	2.8	14.8	11.0	3.82	3.883										
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	169.12	-14.6	2.8	14.8	10.6	4.27	3.475 CC, ES										
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-174.05	-14.6	2.8	15.7	11.0	4.72	3.328										
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-174.90	-14.6	2.8	18.3	13.1	5.17	3.543										
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	-175.87	-14.6	2.8	22.7	17.0	5.62	4.034										
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	-176.75	-14.6	2.8	28.8	22.7	6.06	4.742										
1,500.0	1,499.4	1,499.4	1,499.4	3.3	3.3	-177.44	-14.6	2.8	36.6	30.1	6.51	5.621										
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	-177.97	-14.6	2.8	46.2	39.2	6.95	6.639										
1,700.0	1,698.3	1,698.3	1,698.3	3.8	3.7	-178.36	-14.6	2.8	57.5	50.1	7.40	7.771										
1,800.0	1,797.4	1,797.4	1,797.4	4.0	3.9	-178.66	-14.6	2.8	70.5	62.7	7.84	8.998										
1,900.0	1,896.3	1,897.4	1,897.3	4.3	4.2	-179.28	-13.8	3.2	84.7	76.4	8.28	10.232										
1,991.0	1,986.1	1,988.5	1,988.4	4.6	4.4	179.69	-11.8	4.2	98.0	89.4	8.68	11.301										
2,000.0	1,994.9	1,997.4	1,997.4	4.6	4.4	179.57	-11.5	4.3	99.4	90.7	8.72	11.401										
2,100.0	2,093.4	2,097.7	2,097.5	4.9	4.6	178.09	-7.7	6.3	113.6	104.4	9.17	12.384										
2,200.0	2,191.9	2,198.2	2,197.9	5.3	4.8	176.35	-2.2	9.1	126.7	117.0	9.63	13.150										
2,300.0	2,290.5	2,297.4	2,296.8	5.6	5.0	174.67	4.0	12.2	139.2	129.1	10.10	13.790										
2,400.0	2,389.0	2,396.5	2,395.7	6.0	5.3	173.27	10.2	15.3	151.9	141.3	10.57	14.377										
2,500.0	2,487.5	2,495.6	2,494.6	6.3	5.5	172.09	16.3	18.5	164.6	153.6	11.04	14.914										
2,600.0	2,586.0	2,594.8	2,593.5	6.7	5.7	171.07	22.5	21.6	177.4	165.9	11.52	15.407										
2,700.0	2,684.5	2,693.9	2,692.4	7.0	6.0	170.19	28.7	24.8	190.3	178.3	12.00	15.861										
2,800.0	2,783.0	2,793.0	2,791.3	7.4	6.2	169.43	34.9	27.9	203.2	190.7	12.48	16.278										
2,900.0	2,881.5	2,892.2	2,890.1	7.7	6.4	168.75	41.1	31.0	216.1	203.1	12.97	16.662										
3,000.0	2,980.0	2,991.3	2,989.0	8.1	6.7	168.15	47.3	34.2	229.0	215.6	13.46	17.018										
3,100.0	3,078.5	3,090.4	3,087.9	8.5	6.9	167.62	53.5	37.3	242.0	228.0	13.95	17.347										
3,200.0	3,177.0	3,189.6	3,186.8	8.8	7.2	167.14	59.7	40.5	255.0	240.5	14.44	17.652										
3,300.0	3,275.5	3,288.7	3,285.7	9.2	7.4	166.70	65.9	43.6	268.0	253.0	14.94	17.936										
3,400.0	3,374.0	3,387.8	3,384.6	9.6	7.6	166.31	72.1	46.7	281.0	265.6	15.44	18.200										
3,500.0	3,472.5	3,487.0	3,483.5	10.0	7.9	165.95	78.3	49.9	294.0	278.1	15.94	18.446										
3,600.0	3,571.1	3,586.1	3,582.4	10.3	8.1	165.62	84.5	53.0	307.1	290.6	16.44	18.677										
3,700.0	3,669.6	3,685.2	3,681.3	10.7	8.4	165.32	90.6	56.2	320.1	303.2	16.94	18.892										
3,800.0	3,768.1	3,784.4	3,780.1	11.1	8.6	165.04	96.8	59.3	333.2	315.7	17.45	19.095										
3,900.0	3,866.6	3,883.5	3,879.0	11.5	8.9	164.78	103.0	62.4	346.2	328.3	17.95	19.285										
4,000.0	3,965.1	3,982.6	3,977.9	11.8	9.1	164.54	109.2	65.6	359.3	340.8	18.46	19.464										
4,100.0	4,063.6	4,081.8	4,076.8	12.2	9.4	164.32	115.4	68.7	372.4	353.4	18.97	19.633										
4,200.0	4,162.1	4,180.9	4,175.7	12.6	9.6	164.12	121.6	71.9	385.4	366.0	19.47	19.792										
4,300.0	4,260.6	4,280.0	4,274.6	13.0	9.8	163.92	127.8	75.0	398.5	378.5	19.98	19.943										
4,400.0	4,359.1	4,379.1	4,373.5	13.4	10.1	163.74	134.0	78.1	411.6	391.1	20.49	20.085										
4,500.0	4,457.6	4,478.3	4,472.4	13.7	10.3	163.57	140.2	81.3	424.7	403.7	21.00	20.220										
4,550.1	4,506.9	4,527.9	4,521.9	13.9	10.5	163.49	143.3	82.9	431.2	410.0	21.26	20.285										
4,600.0	4,556.2	4,577.5	4,571.3	14.1	10.6	163.43	146.4	84.4	437.4	415.8	21.53	20.315										
4,700.0	4,655.3	4,677.0	4,670.5	14.4	10.8	163.21	152.6	87.6	447.2	425.1	22.03	20.301										
4,800.0	4,754.7	4,776.7	4,770.0	14.6	11.1	162.85	158.8	90.7	453.6	431.1	22.50	20.162										

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6E-234 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,854.5	4,876.6	4,869.7	14.8	11.3	162.35	165.1	93.9	456.8	433.8	22.94	19.908				
5,000.0	4,954.4	4,976.4	4,969.3	15.0	11.6	161.70	171.3	97.1	456.7	433.3	23.36	19.546				
5,045.6	5,000.0	5,021.9	5,014.7	15.0	11.7	144.17	174.1	98.5	455.5	429.5	26.04	17.497				
5,100.0	5,054.4	5,076.2	5,068.8	15.1	11.8	143.75	177.5	100.2	453.8	427.6	26.23	17.303				
5,200.0	5,154.4	5,175.9	5,168.3	15.3	12.1	142.95	183.8	103.4	450.7	424.1	26.59	16.948				
5,300.0	5,254.4	5,275.7	5,267.8	15.4	12.3	142.15	190.0	106.5	447.6	420.7	26.96	16.606				
5,400.0	5,354.4	5,375.4	5,367.3	15.6	12.6	141.34	196.2	109.7	444.7	417.4	27.32	16.275				
5,500.0	5,454.4	5,471.2	5,462.9	15.8	12.8	140.63	201.6	112.4	442.1	414.5	27.67	15.981				
5,600.0	5,554.4	5,565.4	5,557.0	15.9	13.0	140.27	204.2	113.8	440.9	412.9	27.99	15.749				
5,661.2	5,615.6	5,624.0	5,615.6	16.0	13.1	140.24	204.5	113.9	440.7	412.5	28.20	15.628				
5,700.0	5,654.4	5,662.8	5,654.4	16.1	13.2	140.24	204.5	113.9	440.7	412.4	28.34	15.550				
5,800.0	5,754.4	5,762.8	5,754.4	16.3	13.4	140.24	204.5	113.9	440.7	412.0	28.73	15.342				
5,900.0	5,854.4	5,862.8	5,854.4	16.4	13.6	140.24	204.5	113.9	440.7	411.6	29.12	15.134				
6,000.0	5,954.4	5,962.8	5,954.4	16.6	13.8	140.24	204.5	113.9	440.7	411.2	29.52	14.931				
6,100.0	6,054.4	6,062.8	6,054.4	16.8	14.0	140.24	204.5	113.9	440.7	410.8	29.91	14.733				
6,200.0	6,154.4	6,162.8	6,154.4	16.9	14.2	140.24	204.5	113.9	440.7	410.4	30.31	14.540				
6,300.0	6,254.4	6,262.8	6,254.4	17.1	14.4	140.24	204.5	113.9	440.7	410.0	30.71	14.350				
6,400.0	6,354.4	6,362.8	6,354.4	17.3	14.6	140.24	204.5	113.9	440.7	409.6	31.11	14.165				
6,500.0	6,454.4	6,462.8	6,454.4	17.5	14.8	140.24	204.5	113.9	440.7	409.2	31.52	13.985				
6,600.0	6,554.4	6,562.8	6,554.4	17.6	15.1	140.24	204.5	113.9	440.7	408.8	31.92	13.808				
6,700.0	6,654.4	6,662.8	6,654.4	17.8	15.3	140.24	204.5	113.9	440.7	408.4	32.32	13.635				
6,800.0	6,754.4	6,762.8	6,754.4	18.0	15.5	140.24	204.5	113.9	440.7	408.0	32.73	13.466				
6,900.0	6,854.4	6,862.8	6,854.4	18.2	15.7	140.24	204.5	113.9	440.7	407.6	33.13	13.301				
7,000.0	6,954.4	6,999.1	6,990.4	18.4	16.0	140.89	204.5	107.5	438.1	404.5	33.63	13.029				
7,041.4	6,995.8	7,062.6	7,053.1	18.4	16.1	142.01	204.5	96.6	433.7	399.8	33.87	12.803				
7,050.0	7,004.4	7,075.7	7,065.8	18.5	16.1	-127.77	204.5	93.7	432.5	400.4	32.12	13.465				
7,100.0	7,054.4	7,149.9	7,137.1	18.6	16.2	-126.34	204.5	73.3	425.4	393.1	32.28	13.178				
7,150.0	7,104.0	7,221.7	7,203.9	18.7	16.3	-124.71	204.5	47.1	417.6	385.2	32.38	12.896				
7,200.0	7,153.3	7,291.1	7,265.9	18.8	16.4	-122.90	204.5	15.8	409.3	376.9	32.46	12.611				
7,250.0	7,201.8	7,358.2	7,322.8	18.9	16.5	-120.91	204.5	-19.5	400.8	368.3	32.55	12.312				
7,300.0	7,249.5	7,422.8	7,374.5	19.0	16.6	-118.76	204.5	-58.2	392.2	359.5	32.70	11.995				
7,350.0	7,296.1	7,485.1	7,421.1	19.2	16.9	-116.46	204.5	-99.6	383.8	350.8	32.95	11.649				
7,400.0	7,341.4	7,545.2	7,462.8	19.4	17.2	-114.02	204.5	-142.9	375.6	342.3	33.32	11.272				
7,450.0	7,385.2	7,603.3	7,499.6	19.5	17.6	-111.45	204.5	-187.8	368.0	334.1	33.88	10.863				
7,500.0	7,427.4	7,659.4	7,531.9	19.8	18.1	-108.77	204.5	-233.6	361.0	326.4	34.62	10.428				
7,550.0	7,467.7	7,713.7	7,559.8	20.0	18.7	-105.99	204.5	-280.2	354.8	319.2	35.55	9.979				
7,600.0	7,505.9	7,766.3	7,583.7	20.3	19.3	-103.12	204.5	-327.0	349.5	312.8	36.67	9.531				
7,650.0	7,542.0	7,817.3	7,603.7	20.6	20.0	-100.18	204.5	-374.0	345.2	307.2	37.94	9.098				
7,700.0	7,575.8	7,867.0	7,620.1	21.0	20.7	-97.19	204.5	-420.8	342.0	302.6	39.34	8.694				
7,750.0	7,607.1	7,915.3	7,633.2	21.4	21.4	-94.18	204.5	-467.3	339.9	299.0	40.81	8.328				
7,800.0	7,635.7	7,962.4	7,643.0	21.8	22.2	-91.16	204.5	-513.4	338.9	296.5	42.32	8.008				
7,819.2	7,646.0	7,980.2	7,646.0	22.1	22.6	-90.00	204.5	-531.0	338.8	295.9	42.91	7.896				
7,850.0	7,661.6	8,008.4	7,649.9	22.4	23.1	-88.15	204.5	-558.9	339.0	295.2	43.82	7.736				
7,900.0	7,684.7	8,053.4	7,653.9	23.0	23.9	-85.18	204.5	-603.7	340.2	294.9	45.27	7.515				
7,950.0	7,704.8	8,097.5	7,655.3	23.7	24.8	-82.27	204.5	-647.7	342.4	295.7	46.64	7.340				
8,000.0	7,721.9	8,144.0	7,655.1	24.4	25.7	-79.41	204.5	-694.3	345.3	297.3	47.99	7.195				
8,050.0	7,735.9	8,191.9	7,654.9	25.2	26.7	-76.98	204.5	-742.2	348.3	299.0	49.32	7.063				
8,100.0	7,746.7	8,240.7	7,654.7	26.1	27.7	-75.07	204.5	-791.0	351.0	300.3	50.71	6.923				
8,150.0	7,754.3	8,290.1	7,654.5	27.0	28.8	-73.71	204.5	-840.3	353.2	301.0	52.20	6.766				
8,200.0	7,758.6	8,339.8	7,654.2	27.9	29.9	-72.91	204.5	-890.1	354.5	300.6	53.86	6.582				
8,245.1	7,759.7	8,384.9	7,654.0	28.8	31.0	-72.67	204.5	-935.2	354.9	299.4	55.53	6.391				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6E-234 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,300.0	7,759.4	8,439.8	7,653.8	29.9	32.3	-72.68	204.5	-990.1	354.9	297.0	57.88	6.132				
8,400.0	7,758.9	8,539.8	7,653.3	32.1	34.6	-72.68	204.5	-1,090.1	354.9	292.6	62.28	5.698				
8,500.0	7,758.5	8,639.8	7,652.8	34.3	37.1	-72.68	204.5	-1,190.1	354.9	288.0	66.83	5.310				
8,600.0	7,758.0	8,739.8	7,652.3	36.6	39.6	-72.68	204.5	-1,290.1	354.9	283.4	71.50	4.964				
8,700.0	7,757.5	8,839.8	7,651.9	39.0	42.1	-72.69	204.5	-1,390.1	354.9	278.6	76.25	4.654				
8,800.0	7,757.0	8,939.8	7,651.4	41.4	44.6	-72.69	204.5	-1,490.1	354.9	273.8	81.09	4.376				
8,900.0	7,756.5	9,039.8	7,650.9	43.9	47.2	-72.69	204.5	-1,590.1	354.9	268.9	85.99	4.127				
9,000.0	7,756.0	9,139.8	7,650.5	46.4	49.9	-72.69	204.5	-1,690.1	354.8	263.9	90.94	3.902				
9,100.0	7,755.5	9,239.8	7,650.0	48.9	52.5	-72.70	204.5	-1,790.1	354.8	258.9	95.94	3.699				
9,200.0	7,755.0	9,339.8	7,649.5	51.5	55.1	-72.70	204.5	-1,890.1	354.8	253.9	100.98	3.514				
9,300.0	7,754.5	9,439.8	7,649.0	54.1	57.8	-72.70	204.5	-1,990.1	354.8	248.8	106.05	3.346				
9,400.0	7,754.1	9,539.8	7,648.6	56.7	60.5	-72.71	204.5	-2,090.1	354.8	243.7	111.15	3.192				
9,500.0	7,753.6	9,639.8	7,648.1	59.3	63.2	-72.71	204.5	-2,190.1	354.8	238.5	116.27	3.052				
9,600.0	7,753.1	9,739.8	7,647.6	62.0	65.9	-72.71	204.5	-2,290.1	354.8	233.4	121.42	2.922				
9,700.0	7,752.6	9,839.8	7,647.2	64.7	68.6	-72.71	204.5	-2,390.1	354.8	228.2	126.59	2.803				
9,800.0	7,752.1	9,939.8	7,646.7	67.3	71.3	-72.72	204.5	-2,490.1	354.8	223.0	131.77	2.693				
9,900.0	7,751.6	10,039.8	7,646.2	70.0	74.0	-72.72	204.5	-2,590.1	354.8	217.8	136.96	2.590				
10,000.0	7,751.1	10,139.8	7,645.7	72.7	76.7	-72.72	204.5	-2,690.1	354.8	212.6	142.17	2.496				
10,100.0	7,750.6	10,239.8	7,645.3	75.4	79.5	-72.72	204.5	-2,790.1	354.8	207.4	147.40	2.407				
10,200.0	7,750.1	10,339.8	7,644.8	78.1	82.2	-72.73	204.5	-2,890.1	354.8	202.2	152.63	2.325				
10,300.0	7,749.7	10,439.8	7,644.3	80.8	84.9	-72.73	204.5	-2,990.1	354.8	196.9	157.87	2.247				
10,400.0	7,749.2	10,539.8	7,643.9	83.6	87.7	-72.73	204.5	-3,090.1	354.8	191.7	163.12	2.175				
10,500.0	7,748.7	10,639.8	7,643.4	86.3	90.4	-72.73	204.5	-3,190.1	354.8	186.4	168.38	2.107				
10,600.0	7,748.2	10,739.8	7,642.9	89.0	93.2	-72.74	204.5	-3,290.1	354.8	181.1	173.65	2.043				
10,700.0	7,747.7	10,839.8	7,642.4	91.8	95.9	-72.74	204.5	-3,390.1	354.8	175.8	178.92	1.983				
10,800.0	7,747.2	10,939.8	7,642.0	94.5	98.7	-72.74	204.5	-3,490.1	354.8	170.6	184.20	1.926				
10,900.0	7,746.7	11,039.8	7,641.5	97.2	101.5	-72.75	204.5	-3,590.1	354.8	165.3	189.48	1.872				
11,000.0	7,746.2	11,139.8	7,641.0	100.0	104.2	-72.75	204.5	-3,690.1	354.7	160.0	194.77	1.821				
11,100.0	7,745.8	11,239.8	7,640.6	102.7	107.0	-72.75	204.5	-3,790.1	354.7	154.7	200.07	1.773				
11,200.0	7,745.3	11,339.8	7,640.1	105.5	109.8	-72.75	204.5	-3,890.1	354.7	149.4	205.36	1.727				
11,300.0	7,744.8	11,439.8	7,639.6	108.3	112.5	-72.76	204.5	-3,990.1	354.7	144.1	210.67	1.684				
11,400.0	7,744.3	11,539.8	7,639.1	111.0	115.3	-72.76	204.5	-4,090.1	354.7	138.8	215.97	1.642				
11,500.0	7,743.8	11,639.8	7,638.7	113.8	118.1	-72.76	204.5	-4,190.1	354.7	133.4	221.28	1.603				
11,600.0	7,743.3	11,739.8	7,638.2	116.5	120.8	-72.76	204.5	-4,290.1	354.7	128.1	226.59	1.565				
11,700.0	7,742.8	11,839.8	7,637.7	119.3	123.6	-72.77	204.5	-4,390.1	354.7	122.8	231.91	1.530				
11,800.0	7,742.3	11,939.8	7,637.3	122.1	126.4	-72.77	204.5	-4,490.1	354.7	117.5	237.23	1.495	Level 3			
11,900.0	7,741.8	12,039.8	7,636.8	124.8	129.2	-72.77	204.5	-4,590.1	354.7	112.2	242.55	1.462	Level 3			
12,000.0	7,741.4	12,139.8	7,636.3	127.6	131.9	-72.78	204.5	-4,690.0	354.7	106.8	247.87	1.431	Level 3			
12,100.0	7,740.9	12,239.8	7,635.8	130.4	134.7	-72.78	204.5	-4,790.0	354.7	101.5	253.20	1.401	Level 3			
12,200.0	7,740.4	12,339.8	7,635.4	133.1	137.5	-72.78	204.5	-4,890.0	354.7	96.2	258.53	1.372	Level 3			
12,276.8	7,740.0	12,416.6	7,635.0	135.3	139.5	-72.78	204.5	-4,966.8	354.7	92.2	262.46	1.351	Level 3			
12,277.5	7,740.0	12,417.3	7,635.0	135.3	139.5	-72.78	204.5	-4,967.5	354.7	92.2	262.49	1.351	Level 3, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-204 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	174.83	-61.9	5.6	62.2							
100.0	100.0	100.0	100.0	0.1	0.1	174.83	-61.9	5.6	62.2	62.0	0.22	276.632				
200.0	200.0	200.0	200.0	0.3	0.3	174.83	-61.9	5.6	62.2	61.5	0.67	92.211				
300.0	300.0	300.0	300.0	0.6	0.6	174.83	-61.9	5.6	62.2	61.1	1.12	55.326				
400.0	400.0	400.0	400.0	0.8	0.8	174.83	-61.9	5.6	62.2	60.6	1.57	39.519				
500.0	500.0	500.0	500.0	1.0	1.0	174.83	-61.9	5.6	62.2	60.2	2.02	30.737				
600.0	600.0	600.0	600.0	1.2	1.2	174.83	-61.9	5.6	62.2	59.7	2.47	25.148				
700.0	700.0	700.0	700.0	1.5	1.5	174.83	-61.9	5.6	62.2	59.3	2.92	21.279				
800.0	800.0	800.0	800.0	1.7	1.7	174.83	-61.9	5.6	62.2	58.8	3.37	18.442 CC, ES				
900.0	900.0	898.9	898.9	1.9	1.9	174.73	-62.8	5.8	63.0	59.2	3.79	16.626				
1,000.0	1,000.0	997.8	997.8	2.1	2.1	174.45	-65.3	6.3	65.6	61.4	4.19	15.647				
1,100.0	1,100.0	1,096.5	1,096.4	2.4	2.2	-168.91	-69.4	7.3	70.7	66.1	4.60	15.365 SF				
1,200.0	1,200.0	1,194.8	1,194.5	2.6	2.4	-169.74	-75.2	8.5	79.3	74.3	5.02	15.792				
1,300.0	1,299.9	1,292.7	1,292.0	2.8	2.6	-170.66	-82.6	10.2	91.3	85.8	5.44	16.767				
1,400.0	1,399.7	1,389.8	1,388.7	3.0	2.9	-171.56	-91.5	12.2	106.7	100.8	5.87	18.173				
1,500.0	1,499.4	1,486.0	1,484.4	3.3	3.1	-172.37	-102.0	14.5	125.5	119.2	6.30	19.923				
1,600.0	1,598.9	1,583.3	1,580.9	3.5	3.4	-173.07	-113.6	17.0	147.1	140.3	6.73	21.860				
1,700.0	1,698.3	1,680.5	1,677.4	3.8	3.6	-173.66	-125.2	19.6	170.4	163.2	7.15	23.814				
1,800.0	1,797.4	1,777.3	1,773.5	4.0	3.9	-174.15	-136.8	22.2	195.4	187.8	7.58	25.772				
1,900.0	1,896.3	1,873.7	1,869.1	4.3	4.2	-174.57	-148.3	24.7	222.1	214.1	8.01	27.734				
1,991.0	1,986.1	1,961.0	1,955.8	4.6	4.4	-174.90	-158.7	27.0	247.9	239.5	8.39	29.525				
2,000.0	1,994.9	1,969.6	1,964.3	4.6	4.5	-174.93	-159.7	27.2	250.5	242.0	8.43	29.696				
2,100.0	2,093.4	2,065.2	2,059.2	4.9	4.7	-175.26	-171.1	29.8	279.5	270.7	8.88	31.493				
2,200.0	2,191.9	2,160.9	2,154.2	5.3	5.0	-175.52	-182.6	32.3	308.6	299.3	9.32	33.108				
2,300.0	2,290.5	2,256.6	2,249.1	5.6	5.3	-175.73	-194.0	34.8	337.7	327.9	9.77	34.566				
2,400.0	2,389.0	2,352.2	2,344.1	6.0	5.6	-175.91	-205.4	37.4	366.8	356.6	10.22	35.886				
2,500.0	2,487.5	2,447.9	2,439.0	6.3	5.9	-176.07	-216.9	39.9	395.9	385.2	10.67	37.088				
2,600.0	2,586.0	2,543.6	2,534.0	6.7	6.2	-176.20	-228.3	42.4	425.0	413.9	11.13	38.185				
2,700.0	2,684.5	2,639.2	2,628.9	7.0	6.5	-176.32	-239.7	44.9	454.1	442.5	11.59	39.190				
2,800.0	2,783.0	2,734.9	2,723.9	7.4	6.8	-176.42	-251.2	47.5	483.2	471.1	12.05	40.113				
2,900.0	2,881.5	2,830.6	2,818.8	7.7	7.1	-176.51	-262.6	50.0	512.3	499.8	12.51	40.964				
3,000.0	2,980.0	2,926.2	2,913.8	8.1	7.4	-176.59	-274.0	52.5	541.4	528.4	12.97	41.751				
3,100.0	3,078.5	3,021.9	3,008.7	8.5	7.7	-176.67	-285.4	55.0	570.5	557.1	13.43	42.480				
3,200.0	3,177.0	3,117.6	3,103.7	8.8	8.0	-176.73	-296.9	57.6	599.6	585.7	13.89	43.158				
3,300.0	3,275.5	3,213.3	3,198.6	9.2	8.3	-176.79	-308.3	60.1	628.7	614.3	14.36	43.789				
3,400.0	3,374.0	3,308.9	3,293.6	9.6	8.6	-176.85	-319.7	62.6	657.8	643.0	14.82	44.378				
3,500.0	3,472.5	3,404.6	3,388.5	10.0	8.9	-176.90	-331.2	65.2	686.9	671.6	15.29	44.929				
3,600.0	3,571.1	3,500.3	3,483.5	10.3	9.2	-176.94	-342.6	67.7	716.0	700.3	15.76	45.446				
3,700.0	3,669.6	3,595.9	3,578.4	10.7	9.5	-176.98	-354.0	70.2	745.1	728.9	16.22	45.931				
3,800.0	3,768.1	3,691.6	3,673.4	11.1	9.9	-177.02	-365.4	72.7	774.2	757.5	16.69	46.387				
3,900.0	3,866.6	3,787.3	3,768.3	11.5	10.2	-177.06	-376.9	75.3	803.3	786.2	17.16	46.817				
4,000.0	3,965.1	3,882.9	3,863.3	11.8	10.5	-177.09	-388.3	77.8	832.4	814.8	17.63	47.223				
4,100.0	4,063.6	3,978.6	3,958.2	12.2	10.8	-177.12	-399.7	80.3	861.6	843.5	18.10	47.606				
4,200.0	4,162.1	4,074.3	4,053.2	12.6	11.1	-177.15	-411.2	82.9	890.7	872.1	18.57	47.969				
4,300.0	4,260.6	4,169.9	4,148.1	13.0	11.4	-177.18	-422.6	85.4	919.8	900.7	19.04	48.313				
4,400.0	4,359.1	4,265.6	4,243.1	13.4	11.7	-177.21	-434.0	87.9	948.9	929.4	19.51	48.640				
4,500.0	4,457.6	4,361.3	4,338.0	13.7	12.0	-177.23	-445.4	90.4	978.0	958.0	19.98	48.950				
4,550.1	4,506.9	4,409.2	4,385.6	13.9	12.2	-177.24	-451.2	91.7	992.6	972.3	20.22	49.100				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-314 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance			Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	173.25	-47.4	5.6	47.7							
100.0	100.0	100.0	100.0	0.1	0.1	173.25	-47.4	5.6	47.7	47.5	0.22	212.166				
200.0	200.0	200.0	200.0	0.3	0.3	173.25	-47.4	5.6	47.7	47.0	0.67	70.722				
300.0	300.0	300.0	300.0	0.6	0.6	173.25	-47.4	5.6	47.7	46.6	1.12	42.433				
400.0	400.0	400.0	400.0	0.8	0.8	173.25	-47.4	5.6	47.7	46.1	1.57	30.309				
500.0	500.0	500.0	500.0	1.0	1.0	173.25	-47.4	5.6	47.7	45.7	2.02	23.574				
600.0	600.0	600.0	600.0	1.2	1.2	173.25	-47.4	5.6	47.7	45.2	2.47	19.288				
700.0	700.0	700.0	700.0	1.5	1.5	173.25	-47.4	5.6	47.7	44.8	2.92	16.320				
800.0	800.0	800.0	800.0	1.7	1.7	173.25	-47.4	5.6	47.7	44.3	3.37	14.144				
900.0	900.0	900.0	900.0	1.9	1.9	173.25	-47.4	5.6	47.7	43.9	3.82	12.480				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	173.25	-47.4	5.6	47.7	43.4	4.27	11.167	CC, ES			
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-169.75	-47.4	5.6	48.5	43.8	4.72	10.286				
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-170.27	-47.4	5.6	51.1	46.0	5.17	9.891				
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	-171.02	-47.4	5.6	55.4	49.8	5.62	9.868				
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	-171.90	-47.4	5.6	61.5	55.4	6.06	10.136				
1,500.0	1,499.4	1,498.2	1,498.2	3.3	3.2	-172.96	-48.1	5.9	70.1	63.6	6.48	10.809				
1,600.0	1,598.9	1,596.2	1,596.2	3.5	3.4	-174.18	-50.4	7.0	82.1	75.2	6.88	11.933				
1,700.0	1,698.3	1,693.5	1,693.4	3.8	3.6	-175.37	-54.2	8.6	97.5	90.2	7.28	13.397				
1,800.0	1,797.4	1,789.9	1,789.6	4.0	3.8	-176.43	-59.5	11.0	116.3	108.6	7.68	15.145				
1,900.0	1,896.3	1,885.3	1,884.8	4.3	3.9	-177.34	-66.1	13.9	138.5	130.4	8.08	17.131				
1,991.0	1,986.1	1,973.6	1,972.7	4.6	4.1	-178.02	-73.0	16.9	160.9	152.4	8.45	19.031				
2,000.0	1,994.9	1,982.2	1,981.3	4.6	4.2	-178.08	-73.6	17.2	163.1	154.6	8.49	19.215				
2,100.0	2,093.4	2,078.9	2,077.7	4.9	4.4	-178.64	-81.1	20.5	188.5	179.6	8.91	21.157				
2,200.0	2,191.9	2,175.7	2,174.0	5.3	4.6	-179.07	-88.6	23.9	213.9	204.6	9.33	22.915				
2,300.0	2,290.5	2,272.4	2,270.4	5.6	4.8	-179.40	-96.0	27.2	239.3	229.5	9.76	24.506				
2,400.0	2,389.0	2,369.1	2,366.8	6.0	5.0	-179.67	-103.5	30.5	264.7	254.5	10.20	25.957				
2,500.0	2,487.5	2,465.8	2,463.1	6.3	5.3	-179.90	-111.0	33.8	290.1	279.5	10.63	27.281				
2,600.0	2,586.0	2,562.5	2,559.5	6.7	5.5	179.92	-118.4	37.1	315.5	304.5	11.07	28.493				
2,700.0	2,684.5	2,659.2	2,655.9	7.0	5.7	179.76	-125.9	40.4	340.9	329.4	11.52	29.606				
2,800.0	2,783.0	2,755.9	2,752.2	7.4	6.0	179.62	-133.4	43.7	366.4	354.4	11.96	30.631				
2,900.0	2,881.5	2,852.6	2,848.6	7.7	6.2	179.50	-140.8	47.0	391.8	379.4	12.41	31.577				
3,000.0	2,980.0	2,949.4	2,945.0	8.1	6.4	179.40	-148.3	50.3	417.2	404.3	12.86	32.452				
3,100.0	3,078.5	3,046.1	3,041.3	8.5	6.7	179.30	-155.8	53.6	442.6	429.3	13.31	33.264				
3,200.0	3,177.0	3,142.8	3,137.7	8.8	6.9	179.22	-163.3	56.9	468.1	454.3	13.76	34.019				
3,300.0	3,275.5	3,239.5	3,234.1	9.2	7.2	179.15	-170.7	60.2	493.5	479.3	14.21	34.723				
3,400.0	3,374.0	3,336.2	3,330.4	9.6	7.4	179.08	-178.2	63.6	518.9	504.2	14.67	35.381				
3,500.0	3,472.5	3,432.9	3,426.8	10.0	7.7	179.02	-185.7	66.9	544.3	529.2	15.12	35.995				
3,600.0	3,571.1	3,529.6	3,523.2	10.3	8.0	178.96	-193.1	70.2	569.8	554.2	15.58	36.572				
3,700.0	3,669.6	3,626.3	3,619.5	10.7	8.2	178.91	-200.6	73.5	595.2	579.1	16.04	37.113				
3,800.0	3,768.1	3,723.0	3,715.9	11.1	8.5	178.87	-208.1	76.8	620.6	604.1	16.50	37.623				
3,900.0	3,866.6	3,819.8	3,812.3	11.5	8.7	178.82	-215.5	80.1	646.0	629.1	16.96	38.102				
4,000.0	3,965.1	3,916.5	3,908.6	11.8	9.0	178.78	-223.0	83.4	671.5	654.1	17.42	38.555				
4,100.0	4,063.6	4,013.2	4,005.0	12.2	9.2	178.75	-230.5	86.7	696.9	679.0	17.88	38.983				
4,200.0	4,162.1	4,109.9	4,101.4	12.6	9.5	178.71	-237.9	90.0	722.3	704.0	18.34	39.388				
4,300.0	4,260.6	4,206.6	4,197.7	13.0	9.8	178.68	-245.4	93.3	747.8	729.0	18.80	39.772				
4,400.0	4,359.1	4,303.3	4,294.1	13.4	10.0	178.65	-252.9	96.6	773.2	753.9	19.26	40.137				
4,500.0	4,457.6	4,400.0	4,390.5	13.7	10.3	178.62	-260.4	99.9	798.6	778.9	19.73	40.483				
4,550.1	4,506.9	4,448.4	4,438.7	13.9	10.4	178.61	-264.1	101.6	811.3	791.4	19.96	40.649				
4,600.0	4,556.2	4,496.9	4,486.9	14.1	10.5	178.60	-267.8	103.3	823.6	803.4	20.22	40.735				
4,700.0	4,655.3	4,594.4	4,584.1	14.4	10.8	178.58	-275.4	106.6	845.7	825.0	20.69	40.867				
4,800.0	4,754.7	4,692.6	4,682.0	14.6	11.1	178.56	-283.0	109.9	864.3	843.2	21.14	40.881				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-314 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,854.5	4,801.4	4,790.4	14.8	11.4	178.52	-291.2	113.6	879.4	857.8	21.58	40.750				
5,000.0	4,954.4	4,945.2	4,934.1	15.0	11.6	178.49	-297.5	116.4	887.5	865.4	22.03	40.290				
5,045.6	5,000.0	5,011.2	5,000.0	15.0	11.8	161.31	-298.2	116.7	888.4	861.6	26.77	33.179				
5,100.0	5,054.4	5,065.6	5,054.4	15.1	11.9	161.31	-298.2	116.7	888.4	861.4	26.95	32.958				
5,200.0	5,154.4	5,165.6	5,154.4	15.3	12.0	161.31	-298.2	116.7	888.4	861.1	27.29	32.549				
5,300.0	5,254.4	5,265.6	5,254.4	15.4	12.2	161.31	-298.2	116.7	888.4	860.7	27.63	32.150				
5,400.0	5,354.4	5,365.6	5,354.4	15.6	12.4	161.31	-298.2	116.7	888.4	860.4	27.97	31.757				
5,500.0	5,454.4	5,465.6	5,454.4	15.8	12.6	161.31	-298.2	116.7	888.4	860.0	28.32	31.371				
5,600.0	5,554.4	5,565.6	5,554.4	15.9	12.8	161.31	-298.2	116.7	888.4	859.7	28.67	30.991				
5,700.0	5,654.4	5,665.6	5,654.4	16.1	12.9	161.31	-298.2	116.7	888.4	859.3	29.02	30.616				
5,800.0	5,754.4	5,765.6	5,754.4	16.3	13.1	161.31	-298.2	116.7	888.4	859.0	29.37	30.248				
5,900.0	5,854.4	5,865.6	5,854.4	16.4	13.3	161.31	-298.2	116.7	888.4	858.6	29.72	29.887				
6,000.0	5,954.4	5,965.6	5,954.4	16.6	13.5	161.31	-298.2	116.7	888.4	858.3	30.08	29.531				
6,100.0	6,054.4	6,065.6	6,054.4	16.8	13.7	161.31	-298.2	116.7	888.4	857.9	30.44	29.181				
6,200.0	6,154.4	6,165.6	6,154.4	16.9	13.9	161.31	-298.2	116.7	888.4	857.6	30.81	28.838				
6,300.0	6,254.4	6,265.6	6,254.4	17.1	14.1	161.31	-298.2	116.7	888.4	857.2	31.17	28.500				
6,400.0	6,354.4	6,365.6	6,354.4	17.3	14.3	161.31	-298.2	116.7	888.4	856.8	31.54	28.168				
6,500.0	6,454.4	6,465.6	6,454.4	17.5	14.4	161.31	-298.2	116.7	888.4	856.5	31.91	27.842				
6,600.0	6,554.4	6,565.6	6,554.4	17.6	14.6	161.31	-298.2	116.7	888.4	856.1	32.28	27.522				
6,700.0	6,654.4	6,665.6	6,654.4	17.8	14.8	161.31	-298.2	116.7	888.4	855.7	32.65	27.207				
6,800.0	6,754.4	6,765.6	6,754.4	18.0	15.0	161.31	-298.2	116.7	888.4	855.3	33.03	26.898				
6,900.0	6,854.4	6,865.6	6,854.4	18.2	15.2	161.31	-298.2	116.7	888.4	855.0	33.40	26.594				
7,000.0	6,954.4	6,965.6	6,954.4	18.4	15.4	161.31	-298.2	116.7	888.4	854.6	33.78	26.296				
7,041.4	6,995.8	7,006.9	6,995.8	18.4	15.5	161.31	-298.2	116.7	888.4	854.4	33.94	26.175				
7,050.0	7,004.4	7,020.3	7,009.2	18.5	15.5	-108.69	-298.2	116.6	888.4	857.8	30.55	29.076				
7,100.0	7,054.4	7,099.9	7,088.5	18.6	15.7	-108.60	-298.2	111.1	888.0	857.1	30.82	28.814				
7,150.0	7,104.0	7,179.0	7,166.4	18.7	15.8	-108.36	-298.2	97.6	887.0	855.9	31.07	28.550				
7,200.0	7,153.3	7,257.2	7,241.6	18.8	15.9	-107.99	-298.2	76.3	885.4	854.1	31.31	28.277				
7,250.0	7,201.8	7,334.1	7,313.1	18.9	16.0	-107.50	-298.2	48.0	883.3	851.7	31.56	27.983				
7,300.0	7,249.5	7,409.5	7,380.0	19.0	16.1	-106.88	-298.2	13.4	880.7	848.9	31.85	27.652				
7,350.0	7,296.1	7,483.0	7,441.7	19.2	16.2	-106.17	-298.2	-26.5	877.8	845.6	32.20	27.264				
7,400.0	7,341.4	7,554.5	7,497.8	19.4	16.3	-105.36	-298.2	-70.8	874.6	842.0	32.62	26.810				
7,450.0	7,385.2	7,623.9	7,548.0	19.5	16.5	-104.47	-298.2	-118.7	871.2	838.0	33.17	26.265				
7,500.0	7,427.4	7,691.2	7,592.4	19.8	16.9	-103.53	-298.2	-169.2	867.7	833.8	33.85	25.635				
7,550.0	7,467.7	7,756.3	7,630.9	20.0	17.4	-102.52	-298.2	-221.7	864.1	829.5	34.68	24.918				
7,600.0	7,505.9	7,819.2	7,663.8	20.3	18.0	-101.48	-298.2	-275.4	860.7	825.0	35.68	24.124				
7,650.0	7,542.0	7,880.1	7,691.3	20.6	18.8	-100.40	-298.2	-329.7	857.3	820.5	36.83	23.278				
7,700.0	7,575.8	7,939.1	7,713.7	21.0	19.6	-99.29	-298.2	-384.2	854.2	816.1	38.14	22.399				
7,750.0	7,607.1	7,996.2	7,731.3	21.4	20.4	-98.15	-298.2	-438.5	851.4	811.8	39.58	21.509				
7,800.0	7,635.7	8,051.5	7,744.5	21.8	21.4	-97.01	-298.2	-492.2	848.8	807.6	41.15	20.625				
7,850.0	7,661.6	8,105.1	7,753.5	22.4	22.3	-95.85	-298.2	-545.1	846.6	803.8	42.84	19.763				
7,900.0	7,684.7	8,157.3	7,758.7	23.0	23.3	-94.68	-298.2	-597.0	844.8	800.2	44.61	18.938				
7,950.0	7,704.8	8,208.0	7,760.4	23.7	24.3	-93.51	-298.2	-647.6	843.3	796.9	46.44	18.160				
8,000.0	7,721.9	8,255.1	7,760.2	24.4	25.3	-92.47	-298.2	-694.8	842.4	794.1	48.29	17.444				
8,050.0	7,735.9	8,303.1	7,759.9	25.2	26.3	-91.59	-298.2	-742.7	841.8	791.6	50.20	16.769				
8,100.0	7,746.7	8,351.8	7,759.7	26.1	27.4	-90.87	-298.2	-791.5	841.6	789.4	52.22	16.116				
8,150.0	7,754.3	8,401.2	7,759.5	27.0	28.5	-90.35	-298.2	-840.8	841.5	787.2	54.28	15.502				
8,200.0	7,758.6	8,451.0	7,759.2	27.9	29.6	-90.04	-298.2	-890.6	841.5	785.1	56.44	14.910				
8,212.7	7,759.2	8,463.7	7,759.2	28.2	29.9	-90.00	-298.2	-903.3	841.5	784.5	56.99	14.765				
8,245.1	7,759.7	8,496.0	7,759.0	28.8	30.7	-89.95	-298.2	-935.7	841.5	783.1	58.41	14.408				
8,300.0	7,759.4	8,551.0	7,758.8	29.9	32.0	-89.95	-298.2	-990.6	841.5	780.6	60.88	13.823				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
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Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-314 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,400.0	7,758.9	8,651.0	7,758.3	32.1	34.4	-89.96	-298.2	-1,090.6	841.5	776.0	65.50	12.848				
8,500.0	7,758.5	8,751.0	7,757.8	34.3	36.8	-89.96	-298.2	-1,190.6	841.5	771.2	70.26	11.977				
8,600.0	7,758.0	8,851.0	7,757.4	36.6	39.3	-89.96	-298.2	-1,290.6	841.5	766.4	75.14	11.199				
8,700.0	7,757.5	8,951.0	7,756.9	39.0	41.9	-89.96	-298.2	-1,390.6	841.5	761.4	80.12	10.503				
8,800.0	7,757.0	9,051.0	7,756.4	41.4	44.5	-89.96	-298.2	-1,490.6	841.5	756.3	85.18	9.879				
8,900.0	7,756.5	9,151.0	7,755.9	43.9	47.1	-89.96	-298.2	-1,590.6	841.5	751.2	90.30	9.319				
9,000.0	7,756.0	9,251.0	7,755.5	46.4	49.7	-89.96	-298.2	-1,690.6	841.5	746.0	95.48	8.813				
9,100.0	7,755.5	9,351.0	7,755.0	48.9	52.3	-89.96	-298.2	-1,790.6	841.5	740.8	100.71	8.356				
9,200.0	7,755.0	9,451.0	7,754.5	51.5	55.0	-89.97	-298.2	-1,890.6	841.5	735.5	105.97	7.941				
9,300.0	7,754.5	9,551.0	7,754.1	54.1	57.7	-89.97	-298.2	-1,990.6	841.5	730.2	111.27	7.563				
9,400.0	7,754.1	9,651.0	7,753.6	56.7	60.4	-89.97	-298.2	-2,090.6	841.5	724.9	116.60	7.217				
9,500.0	7,753.6	9,751.0	7,753.1	59.3	63.1	-89.97	-298.2	-2,190.6	841.5	719.6	121.95	6.900				
9,600.0	7,753.1	9,851.0	7,752.6	62.0	65.8	-89.97	-298.2	-2,290.6	841.5	714.2	127.33	6.609				
9,700.0	7,752.6	9,951.0	7,752.2	64.7	68.5	-89.97	-298.2	-2,390.6	841.5	708.8	132.72	6.340				
9,800.0	7,752.1	10,051.0	7,751.7	67.3	71.2	-89.97	-298.2	-2,490.6	841.5	703.4	138.13	6.092				
9,900.0	7,751.6	10,151.0	7,751.2	70.0	73.9	-89.97	-298.2	-2,590.6	841.5	697.9	143.56	5.862				
10,000.0	7,751.1	10,251.0	7,750.8	72.7	76.7	-89.97	-298.2	-2,690.6	841.5	692.5	149.00	5.648				
10,100.0	7,750.6	10,351.0	7,750.3	75.4	79.4	-89.98	-298.2	-2,790.6	841.5	687.0	154.46	5.448				
10,200.0	7,750.1	10,451.0	7,749.8	78.1	82.1	-89.98	-298.2	-2,890.6	841.5	681.6	159.92	5.262				
10,300.0	7,749.7	10,551.0	7,749.3	80.8	84.9	-89.98	-298.2	-2,990.6	841.5	676.1	165.39	5.088				
10,400.0	7,749.2	10,651.0	7,748.9	83.6	87.6	-89.98	-298.2	-3,090.6	841.5	670.6	170.88	4.925				
10,500.0	7,748.7	10,751.0	7,748.4	86.3	90.4	-89.98	-298.2	-3,190.6	841.5	665.1	176.37	4.771				
10,600.0	7,748.2	10,851.0	7,747.9	89.0	93.1	-89.98	-298.2	-3,290.6	841.5	659.6	181.86	4.627				
10,700.0	7,747.7	10,951.0	7,747.5	91.8	95.9	-89.98	-298.2	-3,390.6	841.5	654.1	187.37	4.491				
10,800.0	7,747.2	11,051.0	7,747.0	94.5	98.7	-89.98	-298.2	-3,490.6	841.5	648.6	192.88	4.363				
10,900.0	7,746.7	11,151.0	7,746.5	97.2	101.4	-89.99	-298.2	-3,590.6	841.5	643.1	198.40	4.242				
11,000.0	7,746.2	11,251.0	7,746.0	100.0	104.2	-89.99	-298.2	-3,690.6	841.5	637.6	203.92	4.127				
11,100.0	7,745.8	11,351.0	7,745.6	102.7	107.0	-89.99	-298.2	-3,790.6	841.5	632.1	209.44	4.018				
11,200.0	7,745.3	11,451.0	7,745.1	105.5	109.7	-89.99	-298.2	-3,890.6	841.5	626.5	214.97	3.914				
11,300.0	7,744.8	11,551.0	7,744.6	108.3	112.5	-89.99	-298.2	-3,990.6	841.5	621.0	220.51	3.816				
11,400.0	7,744.3	11,651.0	7,744.2	111.0	115.3	-89.99	-298.2	-4,090.6	841.5	615.5	226.05	3.723				
11,500.0	7,743.8	11,751.0	7,743.7	113.8	118.0	-89.99	-298.2	-4,190.5	841.5	609.9	231.59	3.634				
11,600.0	7,743.3	11,851.0	7,743.2	116.5	120.8	-89.99	-298.2	-4,290.5	841.5	604.4	237.13	3.549				
11,700.0	7,742.8	11,951.0	7,742.7	119.3	123.6	-90.00	-298.2	-4,390.5	841.5	598.8	242.68	3.468				
11,800.0	7,742.3	12,051.0	7,742.3	122.1	126.4	-90.00	-298.2	-4,490.5	841.5	593.3	248.23	3.390				
11,900.0	7,741.8	12,151.0	7,741.8	124.8	129.2	-90.00	-298.2	-4,590.5	841.5	587.7	253.78	3.316				
12,000.0	7,741.4	12,251.0	7,741.3	127.6	131.9	-90.00	-298.2	-4,690.5	841.5	582.2	259.34	3.245				
12,100.0	7,740.9	12,351.0	7,740.9	130.4	134.7	-90.00	-298.2	-4,790.5	841.5	576.6	264.90	3.177				
12,200.0	7,740.4	12,451.0	7,740.4	133.1	137.5	-90.00	-298.2	-4,890.5	841.5	571.0	270.46	3.111				
12,276.8	7,740.0	12,527.7	7,740.0	135.3	139.6	-90.00	-298.2	-4,967.3	841.5	566.8	274.73	3.063				
12,277.5	7,740.0	12,528.4	7,740.0	135.3	139.7	-90.00	-298.2	-4,968.0	841.5	566.7	274.76	3.063 SF				

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Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-334 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance			Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	173.73	-76.5	8.4	77.0							
100.0	100.0	100.0	100.0	0.1	0.1	173.73	-76.5	8.4	77.0	76.7	0.22	342.422				
200.0	200.0	200.0	200.0	0.3	0.3	173.73	-76.5	8.4	77.0	76.3	0.67	114.141				
300.0	300.0	300.0	300.0	0.6	0.6	173.73	-76.5	8.4	77.0	75.8	1.12	68.484				
400.0	400.0	400.0	400.0	0.8	0.8	173.73	-76.5	8.4	77.0	75.4	1.57	48.917	CC, ES			
500.0	500.0	498.7	498.7	1.0	1.0	173.72	-77.3	8.5	77.8	75.8	1.99	39.028				
600.0	600.0	597.3	597.2	1.2	1.2	173.68	-79.9	8.8	80.4	78.0	2.40	33.451				
700.0	700.0	695.8	695.6	1.5	1.4	173.62	-84.1	9.4	84.7	81.9	2.83	29.977				
800.0	800.0	794.1	793.8	1.7	1.6	173.55	-89.9	10.2	90.7	87.5	3.26	27.860				
900.0	900.0	892.2	891.6	1.9	1.8	173.47	-97.4	11.2	98.4	94.8	3.69	26.653				
1,000.0	1,000.0	990.0	988.9	2.1	2.1	173.38	-106.6	12.4	107.9	103.7	4.14	26.080	SF			
1,100.0	1,100.0	1,087.3	1,085.7	2.4	2.3	-169.57	-117.3	13.8	119.9	115.3	4.58	26.191				
1,200.0	1,200.0	1,184.0	1,181.5	2.6	2.6	-169.80	-129.6	15.4	135.2	130.2	5.02	26.916				
1,300.0	1,299.9	1,279.8	1,276.3	2.8	2.9	-170.10	-143.3	17.2	153.9	148.4	5.47	28.133				
1,400.0	1,399.7	1,374.6	1,369.9	3.0	3.2	-170.41	-158.5	19.2	175.9	170.0	5.92	29.728				
1,500.0	1,499.4	1,470.8	1,464.6	3.3	3.6	-170.72	-174.9	21.4	200.8	194.4	6.37	31.530				
1,600.0	1,598.9	1,567.2	1,559.6	3.5	3.9	-171.03	-191.5	23.5	227.3	220.5	6.81	33.359				
1,700.0	1,698.3	1,663.1	1,654.1	3.8	4.3	-171.32	-207.9	25.7	255.5	248.3	7.26	35.214				
1,800.0	1,797.4	1,758.5	1,748.1	4.0	4.6	-171.60	-224.3	27.8	285.4	277.7	7.70	37.076				
1,900.0	1,896.3	1,853.4	1,841.5	4.3	5.0	-171.87	-240.6	30.0	316.9	308.8	8.14	38.949				
1,991.0	1,986.1	1,939.3	1,926.1	4.6	5.3	-172.09	-255.3	31.9	347.0	338.5	8.53	40.662				
2,000.0	1,994.9	1,947.8	1,934.4	4.6	5.4	-172.12	-256.7	32.1	350.0	341.5	8.57	40.823				
2,100.0	2,093.4	2,041.8	2,027.1	4.9	5.7	-172.38	-272.9	34.2	383.9	374.8	9.03	42.508				
2,200.0	2,191.9	2,135.9	2,119.8	5.3	6.1	-172.60	-289.0	36.4	417.7	408.2	9.49	44.017				
2,300.0	2,290.5	2,230.0	2,212.4	5.6	6.5	-172.78	-305.1	38.5	451.6	441.6	9.95	45.376				
2,400.0	2,389.0	2,324.1	2,305.1	6.0	6.8	-172.94	-321.3	40.6	485.4	475.0	10.42	46.605				
2,500.0	2,487.5	2,418.2	2,397.8	6.3	7.2	-173.08	-337.4	42.7	519.3	508.4	10.88	47.721				
2,600.0	2,586.0	2,512.3	2,490.5	6.7	7.6	-173.20	-353.5	44.8	553.1	541.8	11.35	48.737				
2,700.0	2,684.5	2,606.4	2,583.1	7.0	7.9	-173.31	-369.7	47.0	587.0	575.2	11.82	49.668				
2,800.0	2,783.0	2,700.5	2,675.8	7.4	8.3	-173.41	-385.8	49.1	620.8	608.6	12.29	50.522				
2,900.0	2,881.5	2,794.6	2,768.5	7.7	8.7	-173.49	-402.0	51.2	654.7	641.9	12.76	51.308				
3,000.0	2,980.0	2,888.6	2,861.1	8.1	9.1	-173.57	-418.1	53.3	688.6	675.3	13.23	52.034				
3,100.0	3,078.5	2,982.7	2,953.8	8.5	9.4	-173.64	-434.2	55.5	722.4	708.7	13.71	52.706				
3,200.0	3,177.0	3,076.8	3,046.5	8.8	9.8	-173.70	-450.4	57.6	756.3	742.1	14.18	53.331				
3,300.0	3,275.5	3,170.9	3,139.1	9.2	10.2	-173.76	-466.5	59.7	790.2	775.5	14.66	53.912				
3,400.0	3,374.0	3,265.0	3,231.8	9.6	10.6	-173.82	-482.6	61.8	824.0	808.9	15.13	54.454				
3,500.0	3,472.5	3,359.1	3,324.5	10.0	10.9	-173.87	-498.8	63.9	857.9	842.3	15.61	54.961				
3,600.0	3,571.1	3,453.2	3,417.2	10.3	11.3	-173.91	-514.9	66.1	891.7	875.7	16.09	55.436				
3,700.0	3,669.6	3,547.3	3,509.8	10.7	11.7	-173.95	-531.0	68.2	925.6	909.1	16.56	55.882				
3,800.0	3,768.1	3,641.3	3,602.5	11.1	12.1	-173.99	-547.2	70.3	959.5	942.4	17.04	56.301				
3,900.0	3,866.6	3,735.4	3,695.2	11.5	12.4	-174.03	-563.3	72.4	993.3	975.8	17.52	56.696				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance			Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	174.51	-29.1	2.8	29.3							
100.0	100.0	100.0	100.0	0.1	0.1	174.51	-29.1	2.8	29.3	29.1	0.22	130.257				
200.0	200.0	200.0	200.0	0.3	0.3	174.51	-29.1	2.8	29.3	28.6	0.67	43.419				
300.0	300.0	300.0	300.0	0.6	0.6	174.51	-29.1	2.8	29.3	28.2	1.12	26.051				
400.0	400.0	400.0	400.0	0.8	0.8	174.51	-29.1	2.8	29.3	27.7	1.57	18.608				
500.0	500.0	500.0	500.0	1.0	1.0	174.51	-29.1	2.8	29.3	27.3	2.02	14.473				
600.0	600.0	600.0	600.0	1.2	1.2	174.51	-29.1	2.8	29.3	26.8	2.47	11.842				
700.0	700.0	700.0	700.0	1.5	1.5	174.51	-29.1	2.8	29.3	26.4	2.92	10.020				
800.0	800.0	800.0	800.0	1.7	1.7	174.51	-29.1	2.8	29.3	25.9	3.37	8.684				
900.0	900.0	900.0	900.0	1.9	1.9	174.51	-29.1	2.8	29.3	25.5	3.82	7.662				
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	174.51	-29.1	2.8	29.3	25.0	4.27	6.856 CC, ES				
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-168.64	-29.1	2.8	30.1	25.4	4.72	6.384				
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-169.54	-29.1	2.8	32.7	27.5	5.17	6.327				
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	-170.76	-29.1	2.8	37.0	31.4	5.62	6.587				
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	-172.06	-29.1	2.8	43.0	37.0	6.06	7.097				
1,500.0	1,499.4	1,499.4	1,499.4	3.3	3.3	-173.27	-29.1	2.8	50.8	44.3	6.51	7.806				
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	-174.33	-29.1	2.8	60.3	53.4	6.96	8.677				
1,700.0	1,698.3	1,698.3	1,698.3	3.8	3.7	-175.21	-29.1	2.8	71.6	64.2	7.40	9.681				
1,800.0	1,797.4	1,797.4	1,797.4	4.0	3.9	-175.94	-29.1	2.8	84.6	76.8	7.84	10.795				
1,900.0	1,896.3	1,896.3	1,896.3	4.3	4.1	-176.54	-29.1	2.8	99.4	91.1	8.28	12.003				
1,991.0	1,986.1	1,986.1	1,986.1	4.6	4.4	-176.98	-29.1	2.8	114.3	105.6	8.68	13.170				
2,000.0	1,994.9	1,994.9	1,994.9	4.6	4.4	-177.02	-29.1	2.8	115.9	107.1	8.72	13.286				
2,100.0	2,093.4	2,093.4	2,093.4	4.9	4.6	-177.41	-29.1	2.8	133.1	123.9	9.18	14.501				
2,200.0	2,191.9	2,191.9	2,191.9	5.3	4.8	-177.70	-29.1	2.8	150.2	140.6	9.63	15.600				
2,300.0	2,290.5	2,290.5	2,290.5	5.6	5.0	-177.94	-29.1	2.8	167.4	157.4	10.09	16.596				
2,400.0	2,389.0	2,389.0	2,389.0	6.0	5.3	-178.13	-29.1	2.8	184.6	174.1	10.55	17.504				
2,500.0	2,487.5	2,487.5	2,487.5	6.3	5.5	-178.29	-29.1	2.8	201.8	190.8	11.01	18.333				
2,600.0	2,586.0	2,586.0	2,586.0	6.7	5.7	-178.42	-29.1	2.8	219.1	207.6	11.47	19.095				
2,700.0	2,684.5	2,684.5	2,684.5	7.0	5.9	-178.54	-29.1	2.8	236.3	224.3	11.93	19.796				
2,800.0	2,783.0	2,783.0	2,783.0	7.4	6.1	-178.64	-29.1	2.8	253.5	241.1	12.40	20.443				
2,900.0	2,881.5	2,881.5	2,881.5	7.7	6.4	-178.73	-29.1	2.8	270.7	257.8	12.86	21.042				
3,000.0	2,980.0	2,980.0	2,980.0	8.1	6.6	-178.80	-29.1	2.8	287.9	274.5	13.33	21.599				
3,100.0	3,078.5	3,078.5	3,078.5	8.5	6.8	-178.87	-29.1	2.8	305.1	291.3	13.79	22.117				
3,200.0	3,177.0	3,177.0	3,177.0	8.8	7.0	-178.93	-29.1	2.8	322.3	308.0	14.26	22.600				
3,300.0	3,275.5	3,275.5	3,275.5	9.2	7.2	-178.98	-29.1	2.8	339.5	324.8	14.73	23.052				
3,400.0	3,374.0	3,374.0	3,374.0	9.6	7.5	-179.03	-29.1	2.8	356.7	341.5	15.20	23.475				
3,500.0	3,472.5	3,472.5	3,472.5	10.0	7.7	-179.08	-29.1	2.8	373.9	358.3	15.66	23.872				
3,600.0	3,571.1	3,571.1	3,571.1	10.3	7.9	-179.12	-29.1	2.8	391.1	375.0	16.13	24.246				
3,700.0	3,669.6	3,669.6	3,669.6	10.7	8.1	-179.15	-29.1	2.8	408.3	391.7	16.60	24.599				
3,800.0	3,768.1	3,768.1	3,768.1	11.1	8.4	-179.19	-29.1	2.8	425.5	408.5	17.07	24.931				
3,900.0	3,866.6	3,866.6	3,866.6	11.5	8.6	-179.22	-29.1	2.8	442.8	425.2	17.54	25.245				
4,000.0	3,965.1	3,965.1	3,965.1	11.8	8.8	-179.25	-29.1	2.8	460.0	442.0	18.01	25.543				
4,100.0	4,063.6	4,063.6	4,063.6	12.2	9.0	-179.28	-29.1	2.8	477.2	458.7	18.48	25.825				
4,200.0	4,162.1	4,162.1	4,162.1	12.6	9.2	-179.30	-29.1	2.8	494.4	475.4	18.95	26.093				
4,300.0	4,260.6	4,260.6	4,260.6	13.0	9.5	-179.33	-29.1	2.8	511.6	492.2	19.42	26.347				
4,400.0	4,359.1	4,359.1	4,359.1	13.4	9.7	-179.35	-29.1	2.8	528.8	508.9	19.89	26.589				
4,500.0	4,457.6	4,457.6	4,457.6	13.7	9.9	-179.37	-29.1	2.8	546.0	525.7	20.36	26.820				
4,550.1	4,506.9	4,506.9	4,506.9	13.9	10.0	-179.38	-29.1	2.8	554.6	534.0	20.59	26.932				
4,600.0	4,556.2	4,556.2	4,556.2	14.1	10.1	-179.39	-29.1	2.8	562.8	541.9	20.85	26.993				
4,700.0	4,655.3	4,655.3	4,655.3	14.4	10.4	-179.41	-29.1	2.8	576.6	555.2	21.31	27.051				
4,800.0	4,754.7	4,754.7	4,754.7	14.6	10.6	-179.42	-29.1	2.8	586.9	565.1	21.75	26.983				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: O-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,854.5	4,854.5	4,854.5	14.8	10.8	-179.43	-29.1	2.8	593.7	571.5	22.15	26.799				
5,000.0	4,954.4	4,954.4	4,954.4	15.0	11.0	-179.43	-29.1	2.8	597.0	574.5	22.52	26.505				
5,045.6	5,000.0	5,000.0	5,000.0	15.0	11.1	163.39	-29.1	2.8	597.4	571.2	26.15	22.846				
5,100.0	5,054.4	5,054.4	5,054.4	15.1	11.2	163.39	-29.1	2.8	597.4	571.0	26.35	22.671				
5,200.0	5,154.4	5,154.4	5,154.4	15.3	11.5	163.39	-29.1	2.8	597.4	570.6	26.73	22.345				
5,300.0	5,254.4	5,254.4	5,254.4	15.4	11.7	163.39	-29.1	2.8	597.4	570.3	27.12	22.027				
5,400.0	5,354.4	5,354.4	5,354.4	15.6	11.9	163.39	-29.1	2.8	597.4	569.9	27.51	21.717				
5,500.0	5,454.4	5,454.4	5,454.4	15.8	12.1	163.39	-29.1	2.8	597.4	569.5	27.90	21.414				
5,600.0	5,554.4	5,554.4	5,554.4	15.9	12.4	163.39	-29.1	2.8	597.4	569.1	28.29	21.118				
5,700.0	5,654.4	5,654.4	5,654.4	16.1	12.6	163.39	-29.1	2.8	597.4	568.7	28.68	20.830				
5,800.0	5,754.4	5,754.4	5,754.4	16.3	12.8	163.39	-29.1	2.8	597.4	568.3	29.07	20.548				
5,900.0	5,854.4	5,854.4	5,854.4	16.4	13.0	163.39	-29.1	2.8	597.4	567.9	29.47	20.273				
6,000.0	5,954.4	5,954.4	5,954.4	16.6	13.3	163.39	-29.1	2.8	597.4	567.5	29.86	20.004				
6,100.0	6,054.4	6,054.4	6,054.4	16.8	13.5	163.39	-29.1	2.8	597.4	567.1	30.26	19.741				
6,200.0	6,154.4	6,154.4	6,154.4	16.9	13.7	163.39	-29.1	2.8	597.4	566.7	30.66	19.485				
6,300.0	6,254.4	6,254.4	6,254.4	17.1	13.9	163.39	-29.1	2.8	597.4	566.3	31.06	19.234				
6,400.0	6,354.4	6,354.4	6,354.4	17.3	14.2	163.39	-29.1	2.8	597.4	565.9	31.46	18.989				
6,500.0	6,454.4	6,454.4	6,454.4	17.5	14.4	163.39	-29.1	2.8	597.4	565.5	31.86	18.749				
6,600.0	6,554.4	6,554.4	6,554.4	17.6	14.6	163.39	-29.1	2.8	597.4	565.1	32.26	18.515				
6,700.0	6,654.4	6,654.4	6,654.4	17.8	14.8	163.39	-29.1	2.8	597.4	564.7	32.67	18.286				
6,800.0	6,754.4	6,754.4	6,754.4	18.0	15.1	163.39	-29.1	2.8	597.4	564.3	33.07	18.062				
6,900.0	6,854.4	6,854.4	6,854.4	18.2	15.3	163.39	-29.1	2.8	597.4	563.9	33.48	17.843				
7,000.0	6,954.4	6,954.4	6,954.4	18.4	15.5	163.39	-29.1	2.8	597.4	563.5	33.89	17.629				
7,041.4	6,995.8	6,995.8	6,995.8	18.4	15.6	163.39	-29.1	2.8	597.4	563.3	34.06	17.541				
7,050.0	7,004.4	7,004.4	7,004.4	18.5	15.6	-106.62	-29.1	2.8	597.4	565.9	31.44	18.998				
7,100.0	7,054.4	7,054.4	7,054.4	18.6	15.7	-106.77	-29.1	2.8	598.0	566.3	31.67	18.880				
7,150.0	7,104.0	7,104.0	7,104.0	18.7	15.9	-107.16	-29.1	2.8	599.6	567.7	31.90	18.799				
7,200.0	7,153.3	7,166.0	7,166.0	18.8	16.0	-107.83	-29.1	1.0	601.9	569.7	32.13	18.733				
7,250.0	7,201.8	7,232.0	7,231.5	18.9	16.1	-108.45	-29.1	-6.3	603.9	571.5	32.35	18.666				
7,300.0	7,249.5	7,298.8	7,297.0	19.0	16.3	-108.97	-29.1	-19.4	605.6	573.0	32.57	18.592				
7,350.0	7,296.1	7,366.3	7,361.7	19.2	16.4	-109.39	-29.1	-38.5	607.0	574.2	32.80	18.504				
7,400.0	7,341.4	7,434.4	7,425.1	19.4	16.6	-109.69	-29.1	-63.4	608.0	575.0	33.05	18.395				
7,450.0	7,385.2	7,502.9	7,486.3	19.5	16.8	-109.88	-29.1	-94.1	608.6	575.3	33.34	18.255				
7,500.0	7,427.4	7,571.6	7,544.7	19.8	17.0	-109.95	-29.0	-130.2	608.9	575.2	33.70	18.067				
7,550.0	7,467.7	7,640.3	7,599.6	20.0	17.3	-109.90	-29.0	-171.4	608.6	574.5	34.15	17.823				
7,600.0	7,505.9	7,708.8	7,650.5	20.3	17.7	-109.73	-29.0	-217.3	608.0	573.3	34.73	17.508				
7,650.0	7,542.0	7,776.9	7,696.8	20.6	18.2	-109.44	-28.9	-267.2	607.0	571.5	35.47	17.114				
7,700.0	7,575.8	7,844.5	7,738.2	21.0	18.8	-109.05	-28.9	-320.7	605.6	569.2	36.39	16.644				
7,750.0	7,607.1	7,911.4	7,774.3	21.4	19.5	-108.54	-28.8	-377.0	603.9	566.4	37.51	16.097				
7,800.0	7,635.7	7,977.5	7,805.0	21.8	20.3	-107.93	-28.8	-435.4	601.8	563.0	38.86	15.488				
7,850.0	7,661.6	8,042.6	7,830.2	22.4	21.2	-107.23	-28.7	-495.4	599.6	559.2	40.41	14.837				
7,900.0	7,684.7	8,106.6	7,849.9	23.0	22.2	-106.43	-28.7	-556.3	597.1	554.9	42.17	14.161				
7,950.0	7,704.8	8,169.5	7,864.3	23.7	23.3	-105.56	-28.6	-617.6	594.5	550.4	44.11	13.479				
8,000.0	7,721.9	8,231.3	7,873.4	24.4	24.4	-104.60	-28.6	-678.6	591.8	545.6	46.20	12.811				
8,050.0	7,735.9	8,291.8	7,877.6	25.2	25.6	-103.59	-28.5	-738.9	589.1	540.7	48.41	12.170				
8,100.0	7,746.7	8,343.7	7,878.2	26.1	26.6	-102.75	-28.5	-790.8	586.7	536.2	50.54	11.608				
8,150.0	7,754.3	8,393.1	7,878.6	27.0	27.7	-102.19	-28.4	-840.3	585.1	532.4	52.64	11.115				
8,200.0	7,758.6	8,443.0	7,879.0	27.9	28.7	-101.87	-28.4	-890.1	584.2	529.4	54.80	10.661				
8,238.4	7,759.7	8,481.4	7,879.3	28.7	29.6	-101.81	-28.4	-928.5	584.0	527.6	56.46	10.344				
8,245.1	7,759.7	8,488.1	7,879.3	28.8	29.7	-101.82	-28.4	-935.2	584.0	527.3	56.75	10.292				
8,300.0	7,759.4	8,543.0	7,879.7	29.9	31.0	-101.89	-28.3	-990.1	584.1	525.0	59.09	9.885				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance			Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,400.0	7,758.9	8,643.0	7,880.5	32.1	33.3	-102.01	-28.2	-1,090.1	584.3	520.8	63.49	9.203				
8,500.0	7,758.5	8,742.9	7,881.3	34.3	35.7	-102.13	-28.1	-1,190.1	584.5	516.4	68.05	8.589				
8,600.0	7,758.0	8,842.9	7,882.1	36.6	38.1	-102.26	-28.1	-1,290.1	584.7	512.0	72.73	8.040				
8,700.0	7,757.5	8,942.9	7,882.9	39.0	40.6	-102.38	-28.0	-1,390.1	584.9	507.4	77.50	7.546				
8,800.0	7,757.0	9,042.9	7,883.7	41.4	43.1	-102.50	-27.9	-1,490.1	585.1	502.7	82.36	7.104				
8,900.0	7,756.5	9,142.9	7,884.5	43.9	45.7	-102.63	-27.8	-1,590.1	585.3	498.0	87.29	6.705				
9,000.0	7,756.0	9,242.9	7,885.2	46.4	48.2	-102.75	-27.7	-1,690.0	585.5	493.2	92.27	6.345				
9,100.0	7,755.5	9,342.9	7,886.0	48.9	50.9	-102.87	-27.6	-1,790.0	585.7	488.4	97.29	6.019				
9,200.0	7,755.0	9,442.9	7,886.8	51.5	53.5	-103.00	-27.6	-1,890.0	585.9	483.5	102.36	5.724				
9,300.0	7,754.5	9,542.9	7,887.6	54.1	56.1	-103.12	-27.5	-1,990.0	586.1	478.6	107.45	5.454				
9,400.0	7,754.1	9,642.9	7,888.4	56.7	58.8	-103.24	-27.4	-2,090.0	586.3	473.7	112.58	5.208				
9,500.0	7,753.6	9,742.9	7,889.2	59.3	61.5	-103.37	-27.3	-2,190.0	586.5	468.8	117.72	4.982				
9,600.0	7,753.1	9,842.9	7,889.9	62.0	64.1	-103.49	-27.2	-2,290.0	586.7	463.8	122.88	4.775				
9,700.0	7,752.6	9,942.8	7,890.7	64.7	66.8	-103.61	-27.1	-2,390.0	586.9	458.9	128.06	4.583				
9,800.0	7,752.1	10,042.8	7,891.5	67.3	69.5	-103.74	-27.1	-2,490.0	587.1	453.9	133.25	4.406				
9,900.0	7,751.6	10,142.8	7,892.3	70.0	72.3	-103.86	-27.0	-2,589.9	587.4	448.9	138.45	4.242				
10,000.0	7,751.1	10,242.8	7,893.1	72.7	75.0	-103.98	-26.9	-2,689.9	587.6	443.9	143.67	4.090				
10,100.0	7,750.6	10,342.8	7,893.9	75.4	77.7	-104.10	-26.8	-2,789.9	587.8	438.9	148.88	3.948				
10,200.0	7,750.1	10,442.8	7,894.7	78.1	80.4	-104.23	-26.7	-2,889.9	588.1	433.9	154.11	3.816				
10,300.0	7,749.7	10,542.8	7,895.4	80.8	83.2	-104.35	-26.6	-2,989.9	588.3	429.0	159.34	3.692				
10,400.0	7,749.2	10,642.8	7,896.2	83.6	85.9	-104.47	-26.6	-3,089.9	588.5	424.0	164.57	3.576				
10,500.0	7,748.7	10,742.8	7,897.0	86.3	88.6	-104.59	-26.5	-3,189.9	588.8	419.0	169.81	3.467				
10,600.0	7,748.2	10,842.8	7,897.8	89.0	91.4	-104.71	-26.4	-3,289.9	589.0	414.0	175.04	3.365				
10,700.0	7,747.7	10,942.8	7,898.6	91.8	94.1	-104.84	-26.3	-3,389.9	589.3	409.0	180.28	3.269				
10,800.0	7,747.2	11,042.8	7,899.4	94.5	96.9	-104.96	-26.2	-3,489.8	589.5	404.0	185.52	3.178				
10,900.0	7,746.7	11,142.7	7,900.2	97.2	99.6	-105.08	-26.1	-3,589.8	589.7	399.0	190.76	3.092				
11,000.0	7,746.2	11,242.7	7,900.9	100.0	102.4	-105.20	-26.1	-3,689.8	590.0	394.0	195.99	3.010				
11,100.0	7,745.8	11,342.7	7,901.7	102.7	105.2	-105.32	-26.0	-3,789.8	590.3	389.0	201.23	2.933				
11,200.0	7,745.3	11,442.7	7,902.5	105.5	107.9	-105.44	-25.9	-3,889.8	590.5	384.0	206.46	2.860				
11,300.0	7,744.8	11,542.7	7,903.3	108.3	110.7	-105.56	-25.8	-3,989.8	590.8	379.1	211.69	2.791				
11,400.0	7,744.3	11,642.7	7,904.1	111.0	113.5	-105.69	-25.7	-4,089.8	591.0	374.1	216.92	2.725				
11,500.0	7,743.8	11,742.7	7,904.9	113.8	116.2	-105.81	-25.6	-4,189.8	591.3	369.2	222.15	2.662				
11,600.0	7,743.3	11,842.7	7,905.7	116.5	119.0	-105.93	-25.6	-4,289.7	591.6	364.2	227.37	2.602				
11,700.0	7,742.8	11,942.7	7,906.4	119.3	121.8	-106.05	-25.5	-4,389.7	591.8	359.2	232.59	2.545				
11,800.0	7,742.3	12,042.7	7,907.2	122.1	124.6	-106.17	-25.4	-4,489.7	592.1	354.3	237.81	2.490				
11,900.0	7,741.8	12,142.7	7,908.0	124.8	127.3	-106.29	-25.3	-4,589.7	592.4	349.4	243.02	2.438				
12,000.0	7,741.4	12,242.7	7,908.8	127.6	130.1	-106.41	-25.2	-4,689.7	592.7	344.4	248.23	2.388				
12,100.0	7,740.9	12,342.6	7,909.6	130.4	132.9	-106.53	-25.1	-4,789.7	592.9	339.5	253.43	2.340				
12,200.0	7,740.4	12,442.6	7,910.4	133.1	135.7	-106.65	-25.1	-4,889.7	593.2	334.6	258.63	2.294				
12,276.8	7,740.0	12,519.4	7,911.0	135.3	137.8	-106.74	-25.0	-4,966.4	593.5	330.8	262.61	2.260				
12,277.5	7,740.0	12,520.1	7,911.0	135.3	137.8	-106.74	-25.0	-4,967.1	593.5	330.8	262.64	2.260 SF				

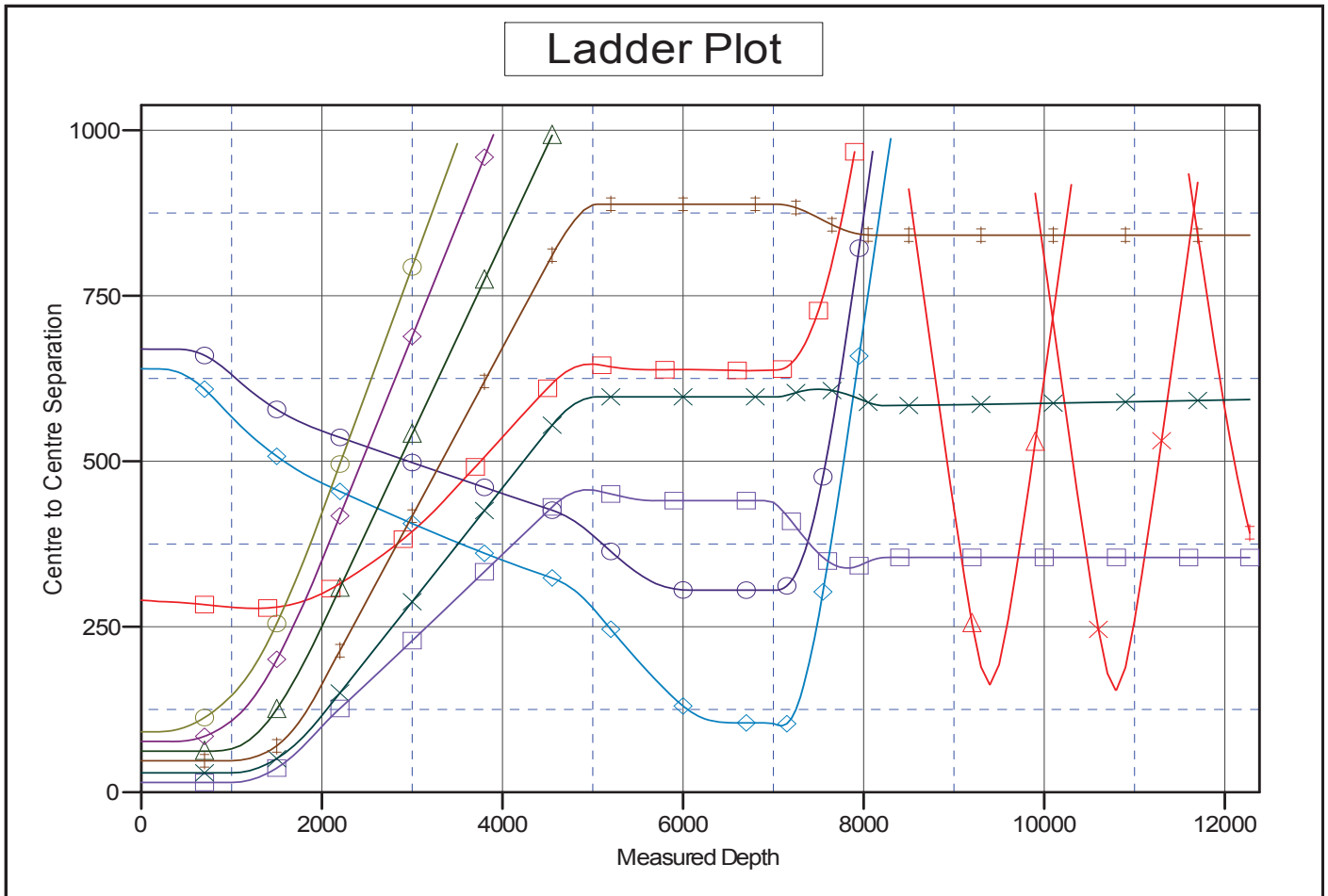
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6F-434 - Wellbore #1 - Plan #1 (8-4-15)		Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance			Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	174.73	-91.1	8.4	91.5							
100.0	100.0	100.0	100.0	0.1	0.1	174.73	-91.1	8.4	91.5	91.2	0.22	406.944				
200.0	200.0	200.0	200.0	0.3	0.3	174.73	-91.1	8.4	91.5	90.8	0.67	135.648 CC, ES				
300.0	300.0	298.4	298.4	0.6	0.5	174.78	-91.9	8.4	92.3	91.2	1.10	84.145				
400.0	400.0	396.8	396.8	0.8	0.7	174.92	-94.5	8.4	94.9	93.4	1.52	62.488				
500.0	500.0	495.0	494.9	1.0	0.9	175.14	-98.7	8.4	99.2	97.2	1.95	50.780				
600.0	600.0	593.1	592.8	1.2	1.2	175.43	-104.6	8.4	105.1	102.7	2.39	43.917				
700.0	700.0	691.0	690.4	1.5	1.4	175.74	-112.1	8.3	112.8	110.0	2.84	39.727				
800.0	800.0	788.5	787.5	1.7	1.7	176.08	-121.3	8.3	122.2	118.9	3.29	37.147				
900.0	900.0	885.8	884.1	1.9	2.0	176.41	-132.1	8.3	133.3	129.5	3.74	35.606				
1,000.0	1,000.0	982.6	980.2	2.1	2.3	176.73	-144.4	8.3	146.0	141.8	4.20	34.769				
1,100.0	1,100.0	1,078.8	1,075.4	2.4	2.6	-165.82	-158.3	8.2	161.3	156.6	4.65	34.710 SF				
1,200.0	1,200.0	1,174.3	1,169.6	2.6	2.9	-165.70	-173.7	8.2	179.9	174.8	5.10	35.241				
1,300.0	1,299.9	1,268.7	1,262.5	2.8	3.3	-165.68	-190.5	8.1	201.7	196.2	5.56	36.278				
1,400.0	1,399.7	1,362.0	1,354.1	3.0	3.6	-165.73	-208.5	8.1	226.8	220.8	6.02	37.704				
1,500.0	1,499.4	1,455.5	1,445.5	3.3	4.0	-165.83	-228.0	8.0	255.0	248.5	6.47	39.381				
1,600.0	1,598.9	1,550.9	1,538.7	3.5	4.5	-165.97	-248.2	8.0	285.1	278.2	6.93	41.148				
1,700.0	1,698.3	1,645.7	1,631.4	3.8	4.9	-166.16	-268.2	7.9	316.8	309.4	7.38	42.927				
1,800.0	1,797.4	1,740.0	1,723.6	4.0	5.3	-166.36	-288.1	7.8	350.1	342.3	7.83	44.716				
1,900.0	1,896.3	1,833.7	1,815.1	4.3	5.7	-166.57	-307.9	7.8	385.1	376.8	8.28	46.515				
1,991.0	1,986.1	1,918.4	1,898.0	4.6	6.1	-166.77	-325.9	7.7	418.3	409.6	8.68	48.162				
2,000.0	1,994.9	1,926.7	1,906.1	4.6	6.1	-166.80	-327.6	7.7	421.6	412.9	8.73	48.313				
2,100.0	2,093.4	2,019.6	1,996.8	4.9	6.5	-167.08	-347.2	7.7	458.8	449.6	9.19	49.898				
2,200.0	2,191.9	2,112.4	2,087.5	5.3	7.0	-167.31	-366.9	7.6	496.0	486.3	9.67	51.314				
2,300.0	2,290.5	2,205.2	2,178.2	5.6	7.4	-167.52	-386.5	7.6	533.2	523.0	10.14	52.585				
2,400.0	2,389.0	2,298.0	2,268.9	6.0	7.8	-167.70	-406.1	7.5	570.4	559.8	10.62	53.730				
2,500.0	2,487.5	2,390.8	2,359.6	6.3	8.2	-167.85	-425.7	7.5	607.6	596.5	11.09	54.767				
2,600.0	2,586.0	2,483.6	2,450.3	6.7	8.7	-167.99	-445.4	7.4	644.8	633.2	11.57	55.710				
2,700.0	2,684.5	2,576.4	2,541.0	7.0	9.1	-168.12	-465.0	7.3	682.0	670.0	12.06	56.571				
2,800.0	2,783.0	2,669.2	2,631.8	7.4	9.5	-168.23	-484.6	7.3	719.3	706.7	12.54	57.360				
2,900.0	2,881.5	2,762.0	2,722.5	7.7	9.9	-168.33	-504.2	7.2	756.5	743.5	13.02	58.085				
3,000.0	2,980.0	2,854.8	2,813.2	8.1	10.4	-168.42	-523.9	7.2	793.7	780.2	13.51	58.753				
3,100.0	3,078.5	2,947.6	2,903.9	8.5	10.8	-168.50	-543.5	7.1	830.9	816.9	14.00	59.371				
3,200.0	3,177.0	3,040.4	2,994.6	8.8	11.2	-168.58	-563.1	7.1	868.2	853.7	14.48	59.944				
3,300.0	3,275.5	3,133.2	3,085.3	9.2	11.6	-168.64	-582.7	7.0	905.4	890.4	14.97	60.476				
3,400.0	3,374.0	3,226.0	3,176.0	9.6	12.1	-168.71	-602.3	7.0	942.6	927.1	15.46	60.972				
3,500.0	3,472.5	3,318.8	3,266.7	10.0	12.5	-168.77	-622.0	6.9	979.8	963.9	15.95	61.435				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5083.0ft (RKB - 13')
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000

Coordinates are relative to: Rio-LA 6E-304
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.36°



LEGEND

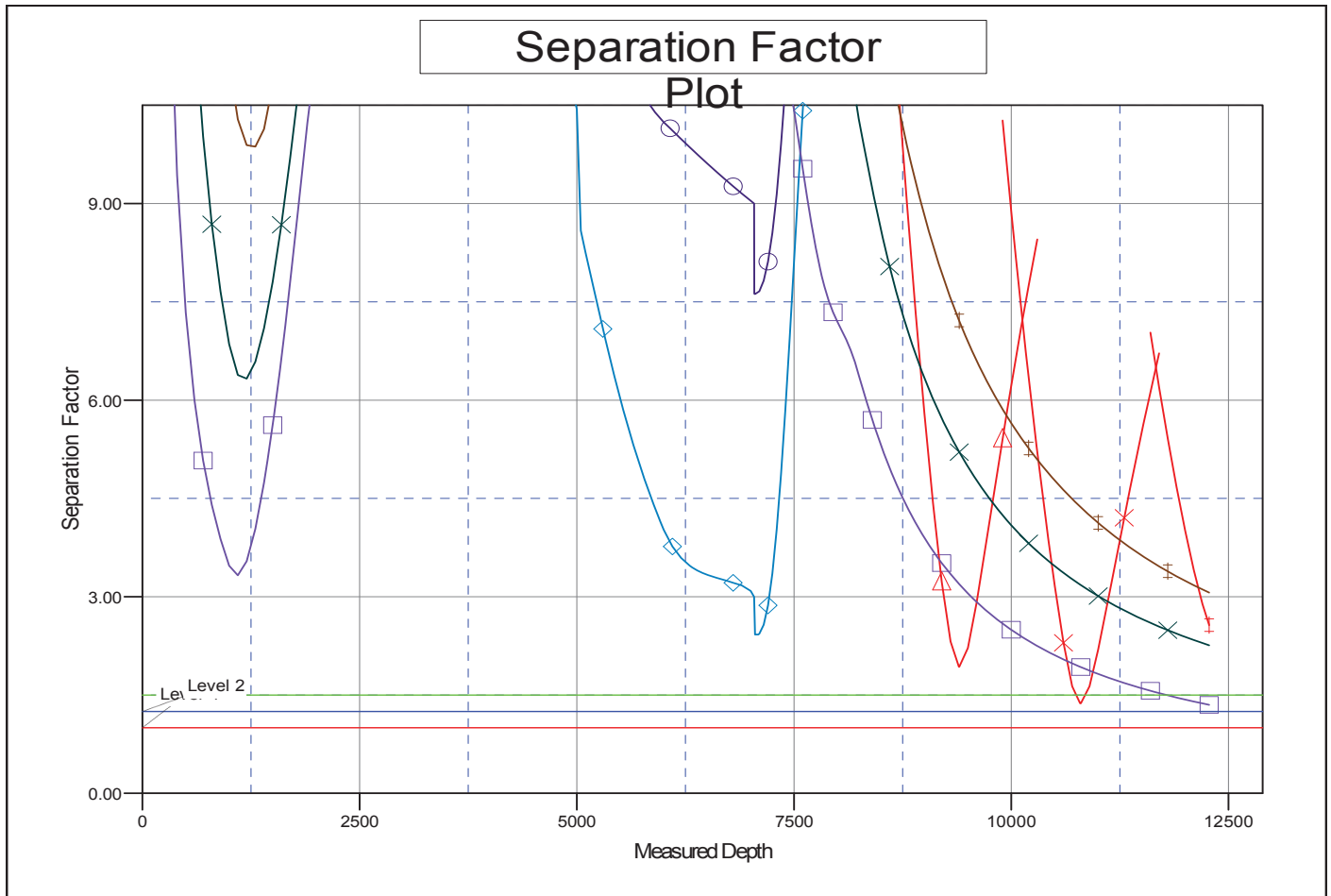
- | | | |
|--|---|--|
| Exist), Wellbore #1, Wellbore #1 V0 | Northglenn State 37-36 (Exist), Wellbore #1, Wellbore #1 V0 | Rio-LA 6F-204, Wellbore #1, Plan #1 (8-4-1 |
| E-323, Wellbore #1, Plan #1 (4-29-15) V0 | Gaspar 11-1 (Exist), Wellbore #1, Wellbore #1 V0 | Rio-LA 6F-434, Wellbore #1, Plan #1 (8-4-1 |
| E-203, Wellbore #1, Plan #1 (4-29-15) V0 | Rio-LA 6E-234, Wellbore #1, Plan #1 (8-4-15) V0 | Rio-LA 6F-334, Wellbore #1, Plan #1 (8-4-1 |
| State 36-36 (Exist), Wellbore #1, Wellbore #1 V0 | Rio-LA 6F-414, Wellbore #1, Plan #1 (8-4-15) V0 | Rio-LA 6F-314, Wellbore #1, Plan #1 (8-4-1 |

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-304
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6E-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5083.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Rio-LA 6E-304
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.36°



LEGEND

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|--|---|--|
| Exist), Wellbore #1, Wellbore #1 V0 | Northglenn State 37-36 (Exist), Wellbore #1, Wellbore #1 V0 | Rio-LA 6F-204, Wellbore #1, Plan #1 (8-4-1 |
| E-323, Wellbore #1, Plan #1 (4-29-15) V0 | Gaspar 11-1 (Exist), Wellbore #1, Wellbore #1 V0 | Rio-LA 6F-434, Wellbore #1, Plan #1 (8-4-1 |
| E-203, Wellbore #1, Plan #1 (4-29-15) V0 | Rio-LA 6E-234, Wellbore #1, Plan #1 (8-4-15) V0 | Rio-LA 6F-334, Wellbore #1, Plan #1 (8-4-1 |
| State 36-36 (Exist), Wellbore #1, Wellbore #1 V0 | Rio-LA 6F-414, Wellbore #1, Plan #1 (8-4-15) V0 | Rio-LA 6F-314, Wellbore #1, Plan #1 (8-4-1 |