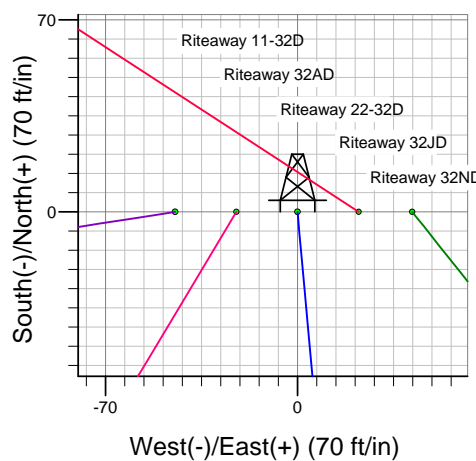
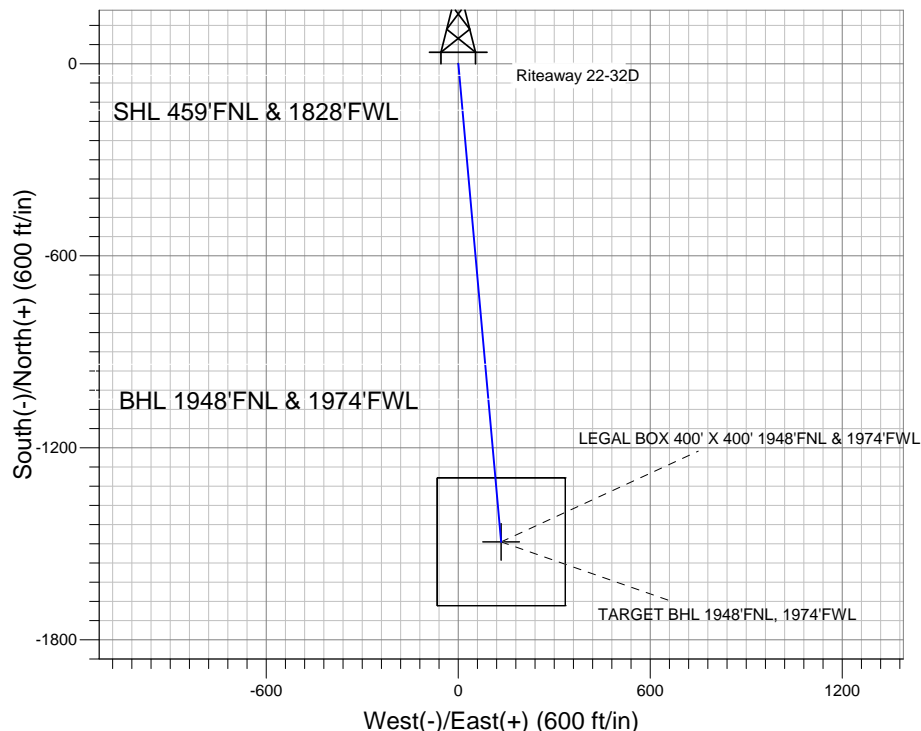
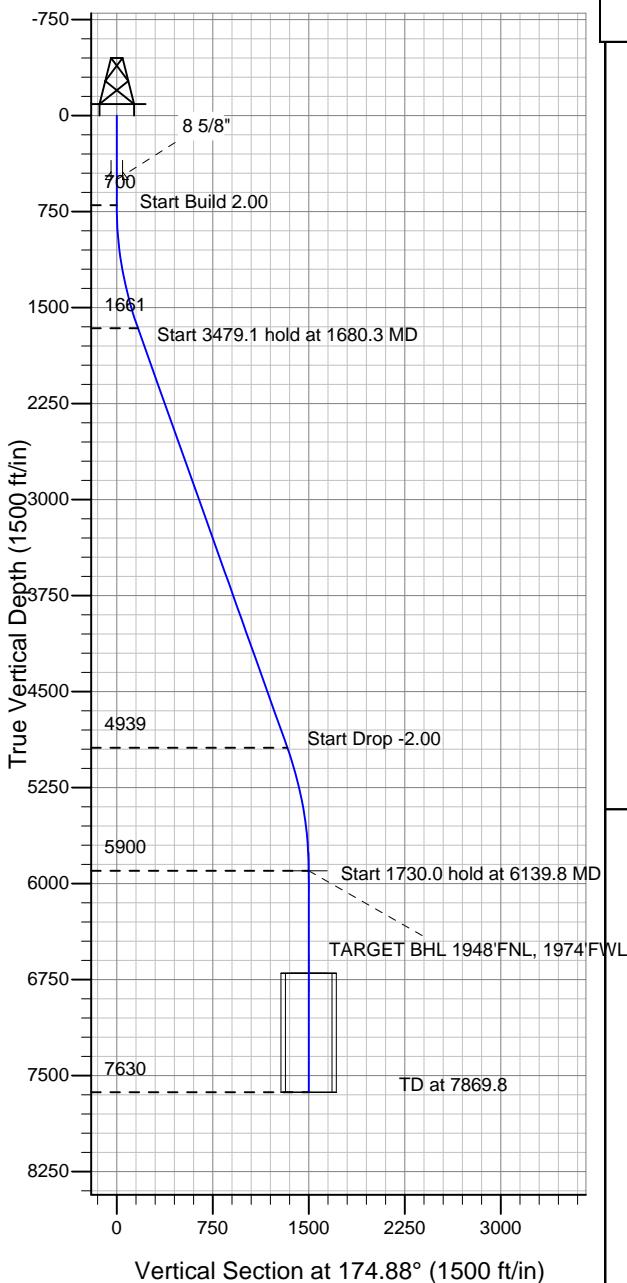


Well Name: Riteaway 22-32D

Surface Location: Riteaway 32ND Pad Sec.32-T5N-R67W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4794.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1375307.73 3161636.14 40.362170 -104.919960
 Original Well Elev WELL @ 4807.0ft (Original Well Elev)

PETROLEUM DEVELOPMENT CORP Weld County CO



Riteaway 32ND Pad Sec.32-T5N-R67W
 Riteaway 22-32D
 Plan #2 (3-29-11)
 11:34, March 29 2011



Azimuths to True North
 Magnetic North: 8.97°
 Magnetic Field
 Strength: 53117.5snT
 Dip Angle: 67.00°
 Date: 3/29/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1948'FNL, 1974'FWL	5900.0	-1493.7	133.8	40.358070	-104.919480	Point
LEGAL BOX 400' X 400' 1948'FNL & 1974'FWL	6700.0	-1493.7	133.8	40.358070	-104.919480	Rectangle (Sides: L400.0 W400.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	1680.3	19.61	174.88	1661.3	-165.4	14.8	2.00	174.88	166.1	
4	5159.4	19.61	174.88	4938.7	-1328.2	119.0	0.00	0.00	1333.5	
5	6139.8	0.00	0.00	5900.0	-1493.7	133.8	2.00	180.00	1499.6	TARGET BHL 1948'FNL, 1974'FWL
6	7869.8	0.00	0.00	7630.0	-1493.7	133.8	0.00	0.00	1499.6	



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T5N-R67W

Riteaway 32ND Pad Sec.32-T5N-R67W

Riteaway 22-32D

Wellbore #1

Plan: Plan #2 (3-29-11)

Standard Planning Report

29 March, 2011

Database:	Landmark	Local Co-ordinate Reference:	Well Riteaway 22-32D
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	North Reference:	True
Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (3-29-11)		

Project	SEC.32-T5N-R67W		
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	Riteaway 32ND Pad Sec.32-T5N-R67W		
Site Position:		Northing:	1,375,308.02 ft
From:	Lat/Long	Easting:	3,161,677.94 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.362170
		Longitude:	-104.919810
		Grid Convergence:	0.37 °

Well	Riteaway 22-32D		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	-41.8 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/29/2011	8.97	67.00	53,117

Design	Plan #2 (3-29-11)			
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	174.88

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,680.3	19.61	174.88	1,661.3	-165.4	14.8	2.00	2.00	0.00	174.88	
5,159.4	19.61	174.88	4,938.7	-1,328.2	119.0	0.00	0.00	0.00	0.00	
6,139.8	0.00	0.00	5,900.0	-1,493.7	133.8	2.00	-2.00	0.00	180.00	TARGET BHL 1948
7,869.8	0.00	0.00	7,630.0	-1,493.7	133.8	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Riteaway 22-32D
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	North Reference:	True
Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (3-29-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	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
8 5/8"									
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	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
720.0	0.40	174.88	720.0	-0.1	0.0	0.1	2.00	2.00	0.00
760.0	1.20	174.88	760.0	-0.6	0.1	0.6	2.00	2.00	0.00
800.0	2.00	174.88	800.0	-1.7	0.2	1.7	2.00	2.00	0.00
840.0	2.80	174.88	839.9	-3.4	0.3	3.4	2.00	2.00	0.00
880.0	3.60	174.88	879.9	-5.6	0.5	5.7	2.00	2.00	0.00
920.0	4.40	174.88	919.8	-8.4	0.8	8.4	2.00	2.00	0.00
960.0	5.20	174.88	959.6	-11.7	1.1	11.8	2.00	2.00	0.00
1,000.0	6.00	174.88	999.5	-15.6	1.4	15.7	2.00	2.00	0.00
1,040.0	6.80	174.88	1,039.2	-20.1	1.8	20.2	2.00	2.00	0.00
1,080.0	7.60	174.88	1,078.9	-25.1	2.2	25.2	2.00	2.00	0.00
1,120.0	8.40	174.88	1,118.5	-30.6	2.7	30.7	2.00	2.00	0.00
1,160.0	9.20	174.88	1,158.0	-36.7	3.3	36.9	2.00	2.00	0.00
1,200.0	10.00	174.88	1,197.5	-43.3	3.9	43.5	2.00	2.00	0.00
1,240.0	10.80	174.88	1,236.8	-50.5	4.5	50.7	2.00	2.00	0.00
1,280.0	11.60	174.88	1,276.0	-58.3	5.2	58.5	2.00	2.00	0.00
1,320.0	12.40	174.88	1,315.2	-66.6	6.0	66.8	2.00	2.00	0.00
1,360.0	13.20	174.88	1,354.2	-75.4	6.8	75.7	2.00	2.00	0.00
1,400.0	14.00	174.88	1,393.1	-84.8	7.6	85.1	2.00	2.00	0.00
1,440.0	14.80	174.88	1,431.8	-94.7	8.5	95.0	2.00	2.00	0.00
1,480.0	15.60	174.88	1,470.4	-105.1	9.4	105.5	2.00	2.00	0.00
1,520.0	16.40	174.88	1,508.8	-116.1	10.4	116.6	2.00	2.00	0.00
1,560.0	17.20	174.88	1,547.1	-127.6	11.4	128.1	2.00	2.00	0.00
1,600.0	18.00	174.88	1,585.3	-139.7	12.5	140.2	2.00	2.00	0.00
1,640.0	18.80	174.88	1,623.2	-152.2	13.6	152.8	2.00	2.00	0.00
1,680.0	19.60	174.88	1,661.0	-165.3	14.8	166.0	2.00	2.00	0.00
1,680.3	19.61	174.88	1,661.3	-165.4	14.8	166.1	2.00	2.00	0.00
1,720.0	19.61	174.88	1,698.7	-178.7	16.0	179.4	0.00	0.00	0.00
1,760.0	19.61	174.88	1,736.4	-192.1	17.2	192.8	0.00	0.00	0.00
1,800.0	19.61	174.88	1,774.0	-205.4	18.4	206.3	0.00	0.00	0.00
1,840.0	19.61	174.88	1,811.7	-218.8	19.6	219.7	0.00	0.00	0.00
1,880.0	19.61	174.88	1,849.4	-232.2	20.8	233.1	0.00	0.00	0.00
1,920.0	19.61	174.88	1,887.1	-245.5	22.0	246.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Riteaway 22-32D
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	North Reference:	True
Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (3-29-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,960.0	19.61	174.88	1,924.8	-258.9	23.2	259.9	0.00	0.00	0.00
2,000.0	19.61	174.88	1,962.4	-272.3	24.4	273.4	0.00	0.00	0.00
2,040.0	19.61	174.88	2,000.1	-285.6	25.6	286.8	0.00	0.00	0.00
2,080.0	19.61	174.88	2,037.8	-299.0	26.8	300.2	0.00	0.00	0.00
2,120.0	19.61	174.88	2,075.5	-312.4	28.0	313.6	0.00	0.00	0.00
2,160.0	19.61	174.88	2,113.2	-325.8	29.2	327.1	0.00	0.00	0.00
2,200.0	19.61	174.88	2,150.8	-339.1	30.4	340.5	0.00	0.00	0.00
2,240.0	19.61	174.88	2,188.5	-352.5	31.6	353.9	0.00	0.00	0.00
2,280.0	19.61	174.88	2,226.2	-365.9	32.8	367.3	0.00	0.00	0.00
2,320.0	19.61	174.88	2,263.9	-379.2	34.0	380.7	0.00	0.00	0.00
2,360.0	19.61	174.88	2,301.6	-392.6	35.2	394.2	0.00	0.00	0.00
2,400.0	19.61	174.88	2,339.3	-406.0	36.4	407.6	0.00	0.00	0.00
2,440.0	19.61	174.88	2,376.9	-419.3	37.6	421.0	0.00	0.00	0.00
2,480.0	19.61	174.88	2,414.6	-432.7	38.8	434.4	0.00	0.00	0.00
2,520.0	19.61	174.88	2,452.3	-446.1	40.0	447.9	0.00	0.00	0.00
2,560.0	19.61	174.88	2,490.0	-459.4	41.1	461.3	0.00	0.00	0.00
2,600.0	19.61	174.88	2,527.7	-472.8	42.3	474.7	0.00	0.00	0.00
2,640.0	19.61	174.88	2,565.3	-486.2	43.5	488.1	0.00	0.00	0.00
2,680.0	19.61	174.88	2,603.0	-499.5	44.7	501.5	0.00	0.00	0.00
2,720.0	19.61	174.88	2,640.7	-512.9	45.9	515.0	0.00	0.00	0.00
2,760.0	19.61	174.88	2,678.4	-526.3	47.1	528.4	0.00	0.00	0.00
2,800.0	19.61	174.88	2,716.1	-539.7	48.3	541.8	0.00	0.00	0.00
2,840.0	19.61	174.88	2,753.7	-553.0	49.5	555.2	0.00	0.00	0.00
2,880.0	19.61	174.88	2,791.4	-566.4	50.7	568.7	0.00	0.00	0.00
2,920.0	19.61	174.88	2,829.1	-579.8	51.9	582.1	0.00	0.00	0.00
2,960.0	19.61	174.88	2,866.8	-593.1	53.1	595.5	0.00	0.00	0.00
3,000.0	19.61	174.88	2,904.5	-606.5	54.3	608.9	0.00	0.00	0.00
3,040.0	19.61	174.88	2,942.1	-619.9	55.5	622.3	0.00	0.00	0.00
3,080.0	19.61	174.88	2,979.8	-633.2	56.7	635.8	0.00	0.00	0.00
3,120.0	19.61	174.88	3,017.5	-646.6	57.9	649.2	0.00	0.00	0.00
3,160.0	19.61	174.88	3,055.2	-660.0	59.1	662.6	0.00	0.00	0.00
3,200.0	19.61	174.88	3,092.9	-673.3	60.3	676.0	0.00	0.00	0.00
3,240.0	19.61	174.88	3,130.6	-686.7	61.5	689.5	0.00	0.00	0.00
3,280.0	19.61	174.88	3,168.2	-700.1	62.7	702.9	0.00	0.00	0.00
3,320.0	19.61	174.88	3,205.9	-713.4	63.9	716.3	0.00	0.00	0.00
3,360.0	19.61	174.88	3,243.6	-726.8	65.1	729.7	0.00	0.00	0.00
3,400.0	19.61	174.88	3,281.3	-740.2	66.3	743.1	0.00	0.00	0.00
3,440.0	19.61	174.88	3,319.0	-753.6	67.5	756.6	0.00	0.00	0.00
3,480.0	19.61	174.88	3,356.6	-766.9	68.7	770.0	0.00	0.00	0.00
3,520.0	19.61	174.88	3,394.3	-780.3	69.9	783.4	0.00	0.00	0.00
3,560.0	19.61	174.88	3,432.0	-793.7	71.1	796.8	0.00	0.00	0.00
3,600.0	19.61	174.88	3,469.7	-807.0	72.3	810.3	0.00	0.00	0.00
3,640.0	19.61	174.88	3,507.4	-820.4	73.5	823.7	0.00	0.00	0.00
3,680.0	19.61	174.88	3,545.0	-833.8	74.7	837.1	0.00	0.00	0.00
3,720.0	19.61	174.88	3,582.7	-847.1	75.9	850.5	0.00	0.00	0.00
3,760.0	19.61	174.88	3,620.4	-860.5	77.1	863.9	0.00	0.00	0.00
3,800.0	19.61	174.88	3,658.1	-873.9	78.3	877.4	0.00	0.00	0.00
3,840.0	19.61	174.88	3,695.8	-887.2	79.5	890.8	0.00	0.00	0.00
3,880.0	19.61	174.88	3,733.4	-900.6	80.7	904.2	0.00	0.00	0.00
3,920.0	19.61	174.88	3,771.1	-914.0	81.9	917.6	0.00	0.00	0.00
3,960.0	19.61	174.88	3,808.8	-927.3	83.1	931.1	0.00	0.00	0.00
4,000.0	19.61	174.88	3,846.5	-940.7	84.3	944.5	0.00	0.00	0.00
4,040.0	19.61	174.88	3,884.2	-954.1	85.4	957.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Riteaway 22-32D
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	North Reference:	True
Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (3-29-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,080.0	19.61	174.88	3,921.8	-967.5	86.6	971.3	0.00	0.00	0.00
4,120.0	19.61	174.88	3,959.5	-980.8	87.8	984.7	0.00	0.00	0.00
4,160.0	19.61	174.88	3,997.2	-994.2	89.0	998.2	0.00	0.00	0.00
4,200.0	19.61	174.88	4,034.9	-1,007.6	90.2	1,011.6	0.00	0.00	0.00
4,240.0	19.61	174.88	4,072.6	-1,020.9	91.4	1,025.0	0.00	0.00	0.00
4,280.0	19.61	174.88	4,110.3	-1,034.3	92.6	1,038.4	0.00	0.00	0.00
4,320.0	19.61	174.88	4,147.9	-1,047.7	93.8	1,051.9	0.00	0.00	0.00
4,360.0	19.61	174.88	4,185.6	-1,061.0	95.0	1,065.3	0.00	0.00	0.00
4,400.0	19.61	174.88	4,223.3	-1,074.4	96.2	1,078.7	0.00	0.00	0.00
4,440.0	19.61	174.88	4,261.0	-1,087.8	97.4	1,092.1	0.00	0.00	0.00
4,480.0	19.61	174.88	4,298.7	-1,101.1	98.6	1,105.5	0.00	0.00	0.00
4,520.0	19.61	174.88	4,336.3	-1,114.5	99.8	1,119.0	0.00	0.00	0.00
4,560.0	19.61	174.88	4,374.0	-1,127.9	101.0	1,132.4	0.00	0.00	0.00
4,600.0	19.61	174.88	4,411.7	-1,141.2	102.2	1,145.8	0.00	0.00	0.00
4,640.0	19.61	174.88	4,449.4	-1,154.6	103.4	1,159.2	0.00	0.00	0.00
4,680.0	19.61	174.88	4,487.1	-1,168.0	104.6	1,172.7	0.00	0.00	0.00
4,720.0	19.61	174.88	4,524.7	-1,181.4	105.8	1,186.1	0.00	0.00	0.00
4,760.0	19.61	174.88	4,562.4	-1,194.7	107.0	1,199.5	0.00	0.00	0.00
4,800.0	19.61	174.88	4,600.1	-1,208.1	108.2	1,212.9	0.00	0.00	0.00
4,840.0	19.61	174.88	4,637.8	-1,221.5	109.4	1,226.3	0.00	0.00	0.00
4,880.0	19.61	174.88	4,675.5	-1,234.8	110.6	1,239.8	0.00	0.00	0.00
4,920.0	19.61	174.88	4,713.1	-1,248.2	111.8	1,253.2	0.00	0.00	0.00
4,960.0	19.61	174.88	4,750.8	-1,261.6	113.0	1,266.6	0.00	0.00	0.00
5,000.0	19.61	174.88	4,788.5	-1,274.9	114.2	1,280.0	0.00	0.00	0.00
5,040.0	19.61	174.88	4,826.2	-1,288.3	115.4	1,293.5	0.00	0.00	0.00
5,080.0	19.61	174.88	4,863.9	-1,301.7	116.6	1,306.9	0.00	0.00	0.00
5,120.0	19.61	174.88	4,901.5	-1,315.0	117.8	1,320.3	0.00	0.00	0.00
5,159.4	19.61	174.88	4,938.7	-1,328.2	119.0	1,333.5	0.00	0.00	0.00
5,160.0	19.60	174.88	4,939.2	-1,328.4	119.0	1,333.7	2.00	-2.00	0.00
5,200.0	18.80	174.88	4,977.0	-1,341.5	120.1	1,346.9	2.00	-2.00	0.00
5,240.0	18.00	174.88	5,015.0	-1,354.1	121.3	1,359.5	2.00	-2.00	0.00
5,280.0	17.20	174.88	5,053.1	-1,366.1	122.4	1,371.6	2.00	-2.00	0.00
5,320.0	16.40	174.88	5,091.4	-1,377.6	123.4	1,383.1	2.00	-2.00	0.00
5,360.0	15.60	174.88	5,129.8	-1,388.6	124.4	1,394.2	2.00	-2.00	0.00
5,400.0	14.80	174.88	5,168.4	-1,399.1	125.3	1,404.7	2.00	-2.00	0.00
5,440.0	14.00	174.88	5,207.2	-1,409.0	126.2	1,414.6	2.00	-2.00	0.00
5,480.0	13.20	174.88	5,246.1	-1,418.3	127.0	1,424.0	2.00	-2.00	0.00
5,520.0	12.40	174.88	5,285.1	-1,427.1	127.8	1,432.9	2.00	-2.00	0.00
5,560.0	11.60	174.88	5,324.2	-1,435.4	128.6	1,441.2	2.00	-2.00	0.00
5,600.0	10.80	174.88	5,363.4	-1,443.2	129.3	1,448.9	2.00	-2.00	0.00
5,640.0	10.00	174.88	5,402.8	-1,450.3	129.9	1,456.2	2.00	-2.00	0.00
5,680.0	9.20	174.88	5,442.2	-1,457.0	130.5	1,462.8	2.00	-2.00	0.00
5,720.0	8.40	174.88	5,481.7	-1,463.1	131.0	1,468.9	2.00	-2.00	0.00
5,760.0	7.60	174.88	5,521.4	-1,468.6	131.5	1,474.5	2.00	-2.00	0.00
5,800.0	6.80	174.88	5,561.0	-1,473.6	132.0	1,479.5	2.00	-2.00	0.00
5,840.0	6.00	174.88	5,600.8	-1,478.1	132.4	1,484.0	2.00	-2.00	0.00
5,880.0	5.20	174.88	5,640.6	-1,481.9	132.7	1,487.9	2.00	-2.00	0.00
5,920.0	4.40	174.88	5,680.5	-1,485.3	133.0	1,491.2	2.00	-2.00	0.00
5,960.0	3.60	174.88	5,720.4	-1,488.0	133.3	1,494.0	2.00	-2.00	0.00
6,000.0	2.80	174.88	5,760.3	-1,490.3	133.5	1,496.2	2.00	-2.00	0.00
6,040.0	2.00	174.88	5,800.3	-1,491.9	133.6	1,497.9	2.00	-2.00	0.00
6,080.0	1.20	174.88	5,840.2	-1,493.0	133.7	1,499.0	2.00	-2.00	0.00
6,120.0	0.40	174.88	5,880.2	-1,493.6	133.8	1,499.6	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Riteaway 22-32D
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	North Reference:	True
Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (3-29-11)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,139.8	0.00	0.00	5,900.0	-1,493.7	133.8	1,499.6	2.00	-2.00	-885.13
TARGET BHL 1948'FNL, 1974'FWL									
6,160.0	0.00	0.00	5,920.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,200.0	0.00	0.00	5,960.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,000.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,040.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,080.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,120.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,160.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,200.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,240.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,280.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,320.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,360.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,400.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,440.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,480.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,520.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,560.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,600.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,640.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,680.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
6,939.8	0.00	0.00	6,700.0	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
LEGAL BOX 400' X 400' 1948'FNL & 1974'FWL									
6,960.0	0.00	0.00	6,720.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,760.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,800.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,840.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,120.0	0.00	0.00	6,880.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,160.0	0.00	0.00	6,920.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,200.0	0.00	0.00	6,960.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,000.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,280.0	0.00	0.00	7,040.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,320.0	0.00	0.00	7,080.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,360.0	0.00	0.00	7,120.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,160.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,200.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,240.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,520.0	0.00	0.00	7,280.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,560.0	0.00	0.00	7,320.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,360.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,640.0	0.00	0.00	7,400.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,680.0	0.00	0.00	7,440.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,720.0	0.00	0.00	7,480.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,760.0	0.00	0.00	7,520.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,560.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,840.0	0.00	0.00	7,600.2	-1,493.7	133.8	1,499.6	0.00	0.00	0.00
7,869.8	0.00	0.00	7,630.0	-1,493.7	133.8	1,499.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Riteaway 22-32D
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	North Reference:	True
Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (3-29-11)		

Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
TARGET BHL 1948'F	0.00	0.00	5,900.0	-1,493.7	133.8	1,373,815.05	3,161,779.68	40.358070	-104.919480
- plan hits target center									
- Point									
LEGAL BOX 400' X 40'	0.00	0.00	6,700.0	-1,493.7	133.8	1,373,815.01	3,161,779.70	40.358070	-104.919480
- plan misses target center by 0.1ft at 6939.8ft MD (6700.0 TVD, -1493.7 N, 133.8 E)									
- Rectangle (sides W400.0 H400.0 D930.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
500.0	500.0	8 5/8"	8-5/8	12-1/4



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T5N-R67W

Riteaway 32ND Pad Sec.32-T5N-R67W

Riteaway 22-32D

Wellbore #1

Plan #2 (3-29-11)

Anticollision Report

29 March, 2011



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Riteaway 22-32D
Project:	SEC.32-T5N-R67W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (3-29-11)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (3-29-11)		
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 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 3/29/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,869.8	Plan #2 (3-29-11) (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						
Riteaway 32ND Pad Sec.32-T5N-R67W						
Riteaway 32AD - Wellbore #1 - Plan #1 (1-07-10)	700.0	700.0	22.3	19.4	7.630	CC
Riteaway 32AD - Wellbore #1 - Plan #1 (1-07-10)	800.0	800.0	22.5	19.2	6.736	ES
Riteaway 32AD - Wellbore #1 - Plan #1 (1-07-10)	900.0	899.8	23.9	20.2	6.391	SF
Riteaway 32JD - Wellbore #1 - Plan #1 (1-07-11)	806.8	806.7	22.2	18.8	6.589	CC, ES
Riteaway 32JD - Wellbore #1 - Plan #1 (1-07-11)	900.0	899.8	22.8	19.0	6.073	SF

Offset Design Riteaway 32ND Pad Sec.32-T5N-R67W - Riteaway 32AD - Wellbore #1 - Plan #1 (1-07-10)													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	-90.00	0.0	-22.3	22.3					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-22.3	22.3	22.1	0.22	99.189		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-22.3	22.3	21.6	0.67	33.063		
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-22.3	22.3	21.2	1.12	19.838		
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-22.3	22.3	20.7	1.57	14.170		
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-22.3	22.3	20.3	2.02	11.021		
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-22.3	22.3	19.8	2.47	9.017		
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-22.3	22.3	19.4	2.92	7.630	CC	
800.0	800.0	800.0	800.0	1.7	1.7	99.54	0.0	-22.3	22.5	19.2	3.34	6.736	ES	
900.0	899.8	899.8	899.8	1.8	1.9	111.94	0.0	-22.3	23.9	20.2	3.75	6.391	SF	
1,000.0	999.5	999.5	999.5	2.0	2.1	128.38	0.0	-22.3	28.4	24.2	4.17	6.813		
1,100.0	1,098.7	1,099.0	1,099.0	2.3	2.3	140.59	-1.5	-23.2	36.7	32.2	4.57	8.045		
1,200.0	1,197.5	1,198.8	1,198.6	2.5	2.5	146.41	-5.9	-25.8	47.8	42.8	4.96	9.642		
1,300.0	1,295.6	1,298.6	1,298.1	2.9	2.7	148.62	-13.3	-30.3	60.8	55.4	5.38	11.299		
1,400.0	1,393.1	1,398.5	1,397.2	3.2	2.9	148.90	-23.7	-36.5	75.4	69.5	5.84	12.899		
1,500.0	1,489.6	1,498.3	1,495.8	3.7	3.2	148.16	-37.1	-44.5	91.6	85.2	6.37	14.375		
1,600.0	1,585.3	1,598.0	1,593.7	4.2	3.5	146.86	-53.4	-54.2	109.4	102.4	6.98	15.677		
1,680.3	1,661.3	1,678.0	1,671.7	4.6	3.8	145.60	-68.5	-63.3	124.9	117.3	7.54	16.568		
1,700.0	1,679.8	1,697.6	1,690.7	4.8	3.8	145.30	-72.5	-65.7	128.8	121.1	7.69	16.755		
1,800.0	1,774.0	1,797.2	1,787.0	5.4	4.2	143.26	-94.6	-78.9	148.0	139.5	8.53	17.346		
1,900.0	1,868.2	1,895.3	1,881.2	6.0	4.7	141.13	-117.7	-92.7	166.9	157.4	9.47	17.633		

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 Riteaway 22-32D
Project:	SEC.32-T5N-R67W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (3-29-11)	Offset TVD Reference:	Offset Datum

Offset Design Riteaway 32ND Pad Sec.32-T5N-R67W - Riteaway 32AD - Wellbore #1 - Plan #1 (1-07-10)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,000.0	1,962.4	1,993.3	1,975.5	6.6	5.1	139.44		-140.9	-106.5	185.9	175.5	10.44	17.809	
2,100.0	2,056.6	2,091.3	2,069.7	7.3	5.6	138.06		-164.1	-120.4	205.1	193.7	11.45	17.917	
2,200.0	2,150.8	2,189.4	2,164.0	7.9	6.1	136.91		-187.2	-134.2	224.4	211.9	12.48	17.979	
2,300.0	2,245.1	2,287.4	2,258.2	8.6	6.6	135.95		-210.4	-148.1	243.7	230.2	13.53	18.012	
2,400.0	2,339.3	2,385.4	2,352.5	9.2	7.2	135.13		-233.5	-161.9	263.1	248.5	14.60	18.026	
2,500.0	2,433.5	2,483.5	2,446.7	9.9	7.7	134.42		-256.7	-175.8	282.6	266.9	15.67	18.028	
2,600.0	2,527.7	2,581.5	2,541.0	10.5	8.2	133.80		-279.8	-189.6	302.0	285.3	16.76	18.022	
2,700.0	2,621.9	2,679.6	2,635.2	11.2	8.7	133.26		-303.0	-203.5	321.6	303.7	17.85	18.010	
2,800.0	2,716.1	2,777.6	2,729.5	11.9	9.3	132.78		-326.1	-217.3	341.1	322.1	18.95	17.996	
2,900.0	2,810.3	2,875.6	2,823.7	12.5	9.8	132.35		-349.3	-231.1	360.6	340.6	20.06	17.979	
3,000.0	2,904.5	2,973.7	2,918.0	13.2	10.4	131.97		-372.4	-245.0	380.2	359.0	21.17	17.961	
3,100.0	2,998.7	3,071.7	3,012.3	13.9	10.9	131.62		-395.6	-258.8	399.8	377.5	22.28	17.942	
3,200.0	3,092.9	3,169.7	3,106.5	14.6	11.5	131.30		-418.7	-272.7	419.4	396.0	23.40	17.924	
3,300.0	3,187.1	3,267.8	3,200.8	15.2	12.0	131.02		-441.9	-286.5	439.0	414.5	24.52	17.905	
3,400.0	3,281.3	3,365.8	3,295.0	15.9	12.6	130.76		-465.0	-300.4	458.6	433.0	25.64	17.887	
3,500.0	3,375.5	3,463.8	3,389.3	16.6	13.1	130.52		-488.2	-314.2	478.2	451.5	26.76	17.870	
3,600.0	3,469.7	3,561.9	3,483.5	17.2	13.7	130.29		-511.3	-328.1	497.9	470.0	27.89	17.852	
3,700.0	3,563.9	3,659.9	3,577.8	17.9	14.2	130.09		-534.5	-341.9	517.5	488.5	29.02	17.836	
3,800.0	3,658.1	3,758.0	3,672.0	18.6	14.8	129.90		-557.6	-355.7	537.2	507.0	30.14	17.820	
3,900.0	3,752.3	3,856.0	3,766.3	19.3	15.3	129.72		-580.8	-369.6	556.8	525.6	31.27	17.805	
4,000.0	3,846.5	3,954.0	3,860.5	20.0	15.9	129.56		-603.9	-383.4	576.5	544.1	32.41	17.790	
4,100.0	3,940.7	4,052.1	3,954.8	20.6	16.5	129.41		-627.1	-397.3	596.1	562.6	33.54	17.776	
4,200.0	4,034.9	4,150.1	4,049.0	21.3	17.0	129.26		-650.2	-411.1	615.8	581.1	34.67	17.762	
4,300.0	4,129.1	4,248.1	4,143.3	22.0	17.6	129.13		-673.4	-425.0	635.5	599.7	35.80	17.749	
4,400.0	4,223.3	4,346.2	4,237.5	22.7	18.1	129.00		-696.6	-438.8	655.2	618.2	36.94	17.736	
4,500.0	4,317.5	4,444.2	4,331.8	23.3	18.7	128.88		-719.7	-452.6	674.8	636.8	38.07	17.724	
4,600.0	4,411.7	4,542.0	4,425.8	24.0	19.2	128.77		-742.8	-466.4	694.5	655.3	39.19	17.720	
4,700.0	4,505.9	4,638.2	4,518.8	24.7	19.6	128.84		-763.7	-479.0	714.4	674.2	40.16	17.789	
4,800.0	4,600.1	4,734.2	4,612.4	25.4	20.0	129.16		-782.0	-489.9	734.5	693.5	40.99	17.918	
4,900.0	4,694.3	4,829.6	4,706.2	26.1	20.3	129.71		-797.5	-499.1	754.9	713.1	41.74	18.086	
5,000.0	4,788.5	4,924.5	4,799.8	26.7	20.6	130.46		-810.1	-506.7	775.7	733.3	42.39	18.298	
5,100.0	4,882.7	5,018.4	4,893.0	27.4	20.8	131.39		-820.1	-512.7	797.0	754.0	42.96	18.554	
5,159.4	4,938.7	5,073.7	4,948.1	27.8	20.9	132.02		-824.7	-515.5	810.0	766.7	43.25	18.729	
5,200.0	4,977.0	5,111.3	4,985.6	28.0	21.0	132.60		-827.4	-517.0	818.8	775.4	43.41	18.863	
5,300.0	5,072.2	5,203.8	5,077.9	28.5	21.1	133.99		-832.0	-519.8	839.4	795.7	43.67	19.222	
5,400.0	5,168.4	5,296.0	5,170.0	28.9	21.2	135.33		-834.1	-521.1	858.5	814.6	43.85	19.578	
5,500.0	5,265.5	5,391.5	5,265.5	29.3	21.3	136.62		-834.3	-521.1	875.8	831.8	43.97	19.919	
5,600.0	5,363.4	5,489.4	5,363.4	29.6	21.4	137.72		-834.3	-521.1	890.9	846.9	44.08	20.212	
5,700.0	5,462.0	5,587.9	5,462.0	29.9	21.5	138.61		-834.3	-521.1	903.7	859.5	44.20	20.446	
5,800.0	5,561.0	5,687.0	5,561.0	30.1	21.7	139.31		-834.3	-521.1	914.0	869.6	44.32	20.620	
5,900.0	5,660.5	5,786.5	5,660.5	30.3	21.8	139.82		-834.3	-521.1	921.7	877.2	44.45	20.733	
6,000.0	5,760.3	5,886.2	5,760.3	30.5	21.9	140.15		-834.3	-521.1	926.7	882.2	44.59	20.784	
6,100.0	5,860.2	5,986.2	5,860.2	30.6	22.0	140.30		-834.3	-521.1	929.2	884.4	44.73	20.774	
6,139.8	5,900.0	6,025.9	5,900.0	30.6	22.0	-44.80		-834.3	-521.1	929.4	884.6	44.79	20.750	
6,200.0	5,960.2	6,086.2	5,960.2	30.7	22.1	-44.80		-834.3	-521.1	929.4	884.4	44.92	20.688	
6,300.0	6,060.2	6,186.2	6,060.2	30.8	22.2	-44.80		-834.3	-521.1	929.4	884.2	45.14	20.589	
6,400.0	6,160.2	6,286.2	6,160.2	30.8	22.3	-44.80		-834.3	-521.1	929.4	884.0	45.36	20.490	
6,500.0	6,260.2	6,386.2	6,260.2	30.9	22.4	-44.80		-834.3	-521.1	929.4	883.8	45.58	20.391	
6,600.0	6,360.2	6,486.2	6,360.2	31.0	22.5	-44.80		-834.3	-521.1	929.4	883.6	45.80	20.291	
6,700.0	6,460.2	6,586.2	6,460.2	31.1	22.7	-44.80		-834.3	-521.1	929.4	883.3	46.03	20.190	
6,800.0	6,560.2	6,686.2	6,560.2	31.2	22.8	-44.80		-834.3	-521.1	929.4	883.1	46.26	20.089	

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 Riteaway 22-32D
Project:	SEC.32-T5N-R67W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (3-29-11)	Offset TVD Reference:	Offset Datum

Offset Design													Riteaway 32ND Pad Sec.32-T5N-R67W - Riteaway 32AD - Wellbore #1 - Plan #1 (1-07-10)		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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor					
6,900.0	6,660.2	6,786.2	6,660.2	31.2	22.9	-44.80	-834.3	-521.1	929.4	882.9	46.50	19.988					
7,000.0	6,760.2	6,886.2	6,760.2	31.3	23.0	-44.80	-834.3	-521.1	929.4	882.6	46.73	19.886					
7,100.0	6,860.2	6,986.2	6,860.2	31.4	23.2	-44.80	-834.3	-521.1	929.4	882.4	46.98	19.784					
7,200.0	6,960.2	7,086.2	6,960.2	31.5	23.3	-44.80	-834.3	-521.1	929.4	882.1	47.22	19.682					
7,300.0	7,060.2	7,186.2	7,060.2	31.6	23.4	-44.80	-834.3	-521.1	929.4	881.9	47.47	19.579					
7,362.9	7,123.1	7,249.0	7,123.1	31.6	23.5	-44.80	-834.3	-521.1	929.4	881.7	47.62	19.515					
7,400.0	7,160.2	7,275.9	7,150.0	31.7	23.5	-44.80	-834.3	-521.1	929.4	881.7	47.70	19.484					
7,500.0	7,260.2	7,275.9	7,150.0	31.8	23.5	-44.80	-834.3	-521.1	935.9	888.1	47.82	19.571					
7,600.0	7,360.2	7,275.9	7,150.0	31.9	23.5	-44.80	-834.3	-521.1	952.9	904.9	47.94	19.876					
7,700.0	7,460.2	7,275.9	7,150.0	32.0	23.5	-44.80	-834.3	-521.1	979.8	931.7	48.06	20.386					
7,800.0	7,560.2	7,275.9	7,150.0	32.0	23.5	-44.80	-834.3	-521.1	1,015.9	967.7	48.18	21.084					
7,869.8	7,630.0	7,275.9	7,150.0	32.1	23.5	-44.80	-834.3	-521.1	1,046.0	997.7	48.27	21.670					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Riteaway 22-32D
Project:	SEC.32-T5N-R67W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (3-29-11)	Offset TVD Reference:	Offset Datum

Offset Design Riteaway 32ND Pad Sec.32-T5N-R67W - Riteaway 32JD - Wellbore #1 - Plan #1 (1-07-11)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +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	90.00		0.0	22.3	22.3				
100.0	100.0	100.0	100.0	0.1	0.1	90.00		0.0	22.3	22.3	22.1	0.22	99.189	
200.0	200.0	200.0	200.0	0.3	0.3	90.00		0.0	22.3	22.3	21.6	0.67	33.063	
300.0	300.0	300.0	300.0	0.6	0.6	90.00		0.0	22.3	22.3	21.2	1.12	19.838	
400.0	400.0	400.0	400.0	0.8	0.8	90.00		0.0	22.3	22.3	20.7	1.57	14.170	
500.0	500.0	500.0	500.0	1.0	1.0	90.00		0.0	22.3	22.3	20.3	2.02	11.021	
600.0	600.0	600.0	600.0	1.2	1.2	90.00		0.0	22.3	22.3	19.8	2.47	9.017	
700.0	700.0	700.0	700.0	1.5	1.5	90.00		0.0	22.3	22.3	19.4	2.92	7.630	
800.0	800.0	800.0	800.0	1.7	1.7	-89.37		0.0	22.3	22.2	18.9	3.34	6.643	
806.8	806.7	806.7	806.7	1.7	1.7	-90.00		0.0	22.3	22.2	18.8	3.37	6.589 CC, ES	
900.0	899.8	899.8	899.8	1.8	1.9	-102.63		0.0	22.3	22.8	19.0	3.75	6.073 SF	
1,000.0	999.5	999.5	999.5	2.0	2.1	-121.54		0.0	22.3	26.1	21.9	4.17	6.258	
1,100.0	1,098.7	1,098.7	1,098.7	2.3	2.4	-139.11		0.0	22.3	34.1	29.5	4.60	7.419	
1,200.0	1,197.5	1,197.5	1,197.5	2.5	2.6	-151.50		0.0	22.3	47.1	42.1	5.02	9.381	
1,300.0	1,295.6	1,294.9	1,294.9	2.9	2.8	-160.76		0.9	21.0	65.1	59.6	5.43	11.978	
1,400.0	1,393.1	1,390.5	1,390.4	3.2	3.0	-168.38		3.5	17.0	88.8	82.9	5.84	15.207	
1,500.0	1,489.6	1,483.8	1,483.3	3.7	3.2	-174.27		7.7	10.5	118.4	112.1	6.25	18.949	
1,600.0	1,585.3	1,574.2	1,573.1	4.2	3.4	-178.78		13.3	1.8	153.8	147.1	6.67	23.069	
1,680.3	1,661.3	1,644.6	1,642.8	4.6	3.6	178.35		18.8	-6.6	186.4	179.4	7.02	26.566	
1,700.0	1,679.8	1,661.5	1,659.5	4.8	3.7	177.73		20.2	-8.8	194.8	187.7	7.11	27.399	
1,800.0	1,774.0	1,746.3	1,743.0	5.4	3.9	174.99		28.3	-21.2	239.1	231.5	7.61	31.420	
1,900.0	1,868.2	1,829.0	1,824.0	6.0	4.2	172.71		37.5	-35.4	285.6	277.5	8.13	35.121	
2,000.0	1,962.4	1,914.5	1,907.3	6.6	4.5	170.75		48.0	-51.4	333.7	325.0	8.68	38.442	
2,100.0	2,056.6	2,001.6	1,992.2	7.3	4.8	169.24		58.7	-67.9	382.1	372.9	9.25	41.327	
2,200.0	2,150.8	2,088.7	2,077.0	7.9	5.1	168.06		69.4	-84.4	430.7	420.9	9.83	43.836	
2,300.0	2,245.1	2,175.8	2,161.9	8.6	5.5	167.12		80.1	-100.8	479.4	469.0	10.41	46.036	
2,400.0	2,339.3	2,262.9	2,246.7	9.2	5.9	166.36		90.8	-117.3	528.2	517.2	11.01	47.970	
2,500.0	2,433.5	2,350.0	2,331.6	9.9	6.2	165.72		101.5	-133.8	577.0	565.4	11.62	49.678	
2,600.0	2,527.7	2,437.1	2,416.4	10.5	6.6	165.18		112.3	-150.2	625.9	613.7	12.23	51.195	
2,700.0	2,621.9	2,524.2	2,501.3	11.2	7.0	164.72		123.0	-166.7	674.8	662.0	12.84	52.548	
2,800.0	2,716.1	2,611.3	2,586.1	11.9	7.4	164.33		133.7	-183.2	723.8	710.3	13.46	53.760	
2,900.0	2,810.3	2,698.4	2,671.0	12.5	7.8	163.98		144.4	-199.6	772.7	758.7	14.09	54.851	
3,000.0	2,904.5	2,785.5	2,755.9	13.2	8.2	163.67		155.1	-216.1	821.7	807.0	14.72	55.835	
3,100.0	2,998.7	2,872.6	2,840.7	13.9	8.6	163.40		165.8	-232.5	870.7	855.4	15.35	56.728	
3,200.0	3,092.9	2,959.7	2,925.6	14.6	9.0	163.16		176.5	-249.0	919.8	903.8	15.98	57.542	
3,300.0	3,187.1	3,046.8	3,010.4	15.2	9.4	162.94		187.2	-265.5	968.8	952.2	16.62	58.286	
3,400.0	3,281.3	3,133.9	3,095.3	15.9	9.8	162.74		198.0	-281.9	1,017.8	1,000.6	17.26	58.967	
3,500.0	3,375.5	3,221.0	3,180.1	16.6	10.2	162.56		208.7	-298.4	1,066.9	1,049.0	17.90	59.594	
3,600.0	3,469.7	3,308.1	3,265.0	17.2	10.6	162.40		219.4	-314.9	1,115.9	1,097.4	18.55	60.172	
3,700.0	3,563.9	3,395.2	3,349.8	17.9	11.0	162.25		230.1	-331.3	1,165.0	1,145.8	19.19	60.707	
3,800.0	3,658.1	3,482.3	3,434.7	18.6	11.4	162.11		240.8	-347.8	1,214.1	1,194.2	19.84	61.201	
3,900.0	3,752.3	3,569.4	3,519.5	19.3	11.8	161.99		251.5	-364.3	1,263.1	1,242.6	20.49	61.661	
4,000.0	3,846.5	3,656.5	3,604.4	20.0	12.2	161.87		262.2	-380.7	1,312.2	1,291.1	21.13	62.089	
4,100.0	3,940.7	3,743.6	3,689.3	20.6	12.6	161.76		273.0	-397.2	1,361.3	1,339.5	21.78	62.488	
4,200.0	4,034.9	3,830.7	3,774.1	21.3	13.1	161.66		283.7	-413.6	1,410.4	1,387.9	22.44	62.862	
4,300.0	4,129.1	3,917.8	3,859.0	22.0	13.5	161.56		294.4	-430.1	1,459.5	1,436.4	23.09	63.212	
4,400.0	4,223.3	4,004.9	3,943.8	22.7	13.9	161.47		305.1	-446.6	1,508.6	1,484.8	23.74	63.540	
4,500.0	4,317.5	4,092.0	4,028.7	23.3	14.3	161.39		315.8	-463.0	1,557.6	1,533.2	24.40	63.848	
4,600.0	4,411.7	4,179.1	4,113.5	24.0	14.7	161.31		326.5	-479.5	1,606.7	1,581.7	25.05	64.138	
4,700.0	4,505.9	4,266.2	4,198.4	24.7	15.1	161.24		337.2	-496.0	1,655.8	1,630.1	25.71	64.412	
4,800.0	4,600.1	4,353.3	4,283.2	25.4	15.6	161.17		347.9	-512.4	1,704.9	1,678.6	26.36	64.670	

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 Riteaway 22-32D
Project:	SEC.32-T5N-R67W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (3-29-11)	Offset TVD Reference:	Offset Datum

Offset Design Riteaway 32ND Pad Sec.32-T5N-R67W - Riteaway 32JD - Wellbore #1 - Plan #1 (1-07-11)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,694.3	4,455.2	4,382.6	26.1	16.0	161.10		360.4	-531.6	1,754.0	1,726.9	27.05	64.831	
5,000.0	4,788.5	4,636.9	4,561.1	26.7	16.6	161.13		378.7	-559.7	1,800.0	1,772.2	27.84	64.651	
5,100.0	4,882.7	4,828.1	4,750.9	27.4	17.1	161.39		391.2	-578.9	1,841.3	1,812.7	28.56	64.475	
5,159.4	4,938.7	4,945.7	4,868.2	27.8	17.3	161.66		395.5	-585.5	1,863.4	1,834.4	28.95	64.365	
5,200.0	4,977.0	5,027.7	4,950.2	28.0	17.4	161.98		396.9	-587.6	1,877.1	1,847.9	29.26	64.150	
5,300.0	5,072.2	5,149.7	5,072.2	28.5	17.6	162.52		397.1	-588.0	1,906.5	1,876.7	29.88	63.815	
5,400.0	5,168.4	5,246.0	5,168.4	28.9	17.7	162.92		397.1	-588.0	1,932.6	1,902.2	30.44	63.500	
5,500.0	5,265.5	5,343.1	5,265.5	29.3	17.9	163.26		397.1	-588.0	1,955.5	1,924.5	30.96	63.168	
5,600.0	5,363.4	5,441.0	5,363.4	29.6	18.0	163.55		397.1	-588.0	1,975.1	1,943.7	31.44	62.823	
5,700.0	5,462.0	5,539.5	5,462.0	29.9	18.2	163.78		397.1	-588.0	1,991.5	1,959.6	31.88	62.467	
5,800.0	5,561.0	5,638.6	5,561.0	30.1	18.3	163.96		397.1	-588.0	2,004.5	1,972.2	32.28	62.099	
5,900.0	5,660.5	5,738.0	5,660.5	30.3	18.4	164.09		397.1	-588.0	2,014.2	1,981.6	32.63	61.720	
6,000.0	5,760.3	5,837.8	5,760.3	30.5	18.6	164.18		397.1	-588.0	2,020.6	1,987.6	32.95	61.330	
6,100.0	5,860.2	5,937.8	5,860.2	30.6	18.7	164.22		397.1	-588.0	2,023.6	1,990.4	33.21	60.927	
6,139.8	5,900.0	5,977.5	5,900.0	30.6	18.8	-20.89		397.1	-588.0	2,023.9	1,990.5	33.31	60.755	
6,200.0	5,960.2	6,037.8	5,960.2	30.7	18.9	-20.89		397.1	-588.0	2,023.9	1,990.3	33.51	60.404	
6,300.0	6,060.2	6,137.8	6,060.2	30.8	19.0	-20.89		397.1	-588.0	2,023.9	1,990.0	33.82	59.846	
6,400.0	6,160.2	6,237.8	6,160.2	30.8	19.2	-20.89		397.1	-588.0	2,023.9	1,989.7	34.13	59.293	
6,500.0	6,260.2	6,337.8	6,260.2	30.9	19.4	-20.89		397.1	-588.0	2,023.9	1,989.4	34.45	58.745	
6,600.0	6,360.2	6,437.8	6,360.2	31.0	19.5	-20.89		397.1	-588.0	2,023.9	1,989.1	34.77	58.203	
6,700.0	6,460.2	6,537.8	6,460.2	31.1	19.7	-20.89		397.1	-588.0	2,023.9	1,988.8	35.10	57.666	
6,800.0	6,560.2	6,637.8	6,560.2	31.2	19.8	-20.89		397.1	-588.0	2,023.9	1,988.4	35.42	57.134	
6,900.0	6,660.2	6,737.8	6,660.2	31.2	20.0	-20.89		397.1	-588.0	2,023.9	1,988.1	35.75	56.609	
7,000.0	6,760.2	6,837.8	6,760.2	31.3	20.2	-20.89		397.1	-588.0	2,023.9	1,987.8	36.08	56.088	
7,100.0	6,860.2	6,937.8	6,860.2	31.4	20.3	-20.89		397.1	-588.0	2,023.9	1,987.4	36.42	55.574	
7,200.0	6,960.2	7,037.8	6,960.2	31.5	20.5	-20.89		397.1	-588.0	2,023.9	1,987.1	36.75	55.065	
7,300.0	7,060.2	7,137.8	7,060.2	31.6	20.7	-20.89		397.1	-588.0	2,023.9	1,986.8	37.09	54.562	
7,362.9	7,123.1	7,200.6	7,123.1	31.6	20.8	-20.89		397.1	-588.0	2,023.9	1,986.5	37.31	54.249	
7,400.0	7,160.2	7,227.5	7,150.0	31.7	20.8	-20.89		397.1	-588.0	2,023.9	1,986.5	37.41	54.094	
7,500.0	7,260.2	7,227.5	7,150.0	31.8	20.8	-20.89		397.1	-588.0	2,026.9	1,989.3	37.57	53.956	
7,600.0	7,360.2	7,227.5	7,150.0	31.9	20.8	-20.89		397.1	-588.0	2,034.7	1,997.0	37.72	53.946	
7,700.0	7,460.2	7,227.5	7,150.0	32.0	20.8	-20.89		397.1	-588.0	2,047.5	2,009.6	37.87	54.063	
7,800.0	7,560.2	7,227.5	7,150.0	32.0	20.8	-20.89		397.1	-588.0	2,065.0	2,027.0	38.03	54.303	
7,869.8	7,630.0	7,227.5	7,150.0	32.1	20.8	-20.89		397.1	-588.0	2,080.0	2,041.9	38.14	54.540	

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Reference Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (3-29-11)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4807.0ft (Original Well Elev) Coordinates are relative to: Riteaway 22-32D
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.37°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Riteaway 22-32D
Project:	SEC.32-T5N-R67W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Riteaway 32ND Pad Sec.32-T5N-R67W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Riteaway 22-32D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (3-29-11)	Offset TVD Reference:	Offset Datum

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