



Whiting Petroleum Corporation

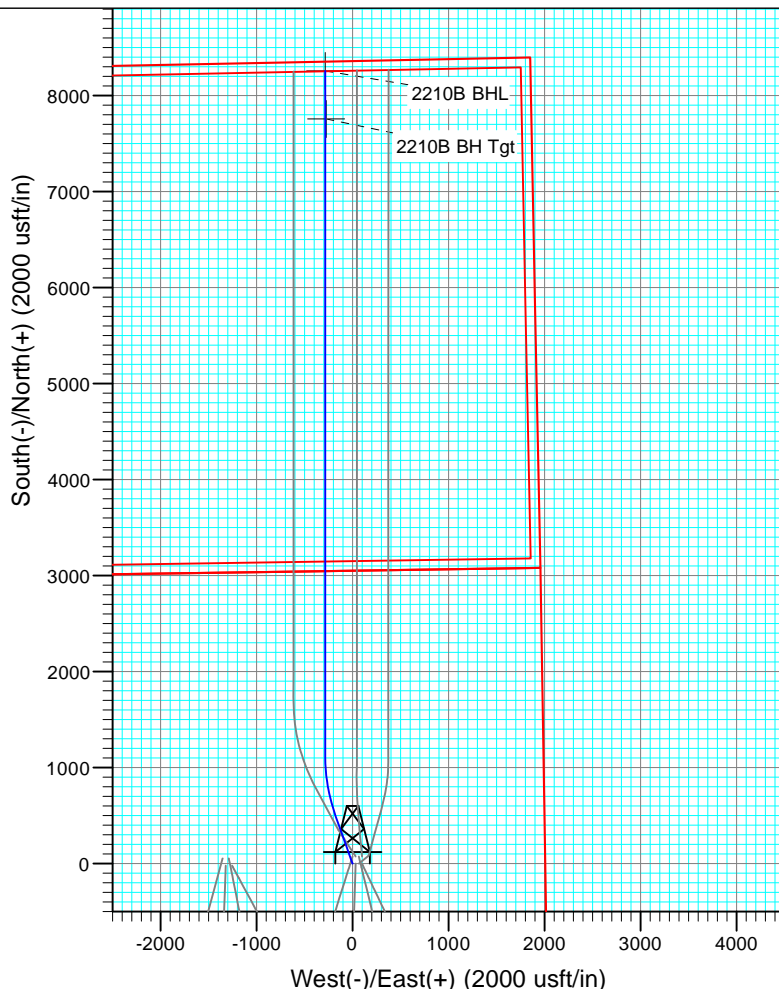
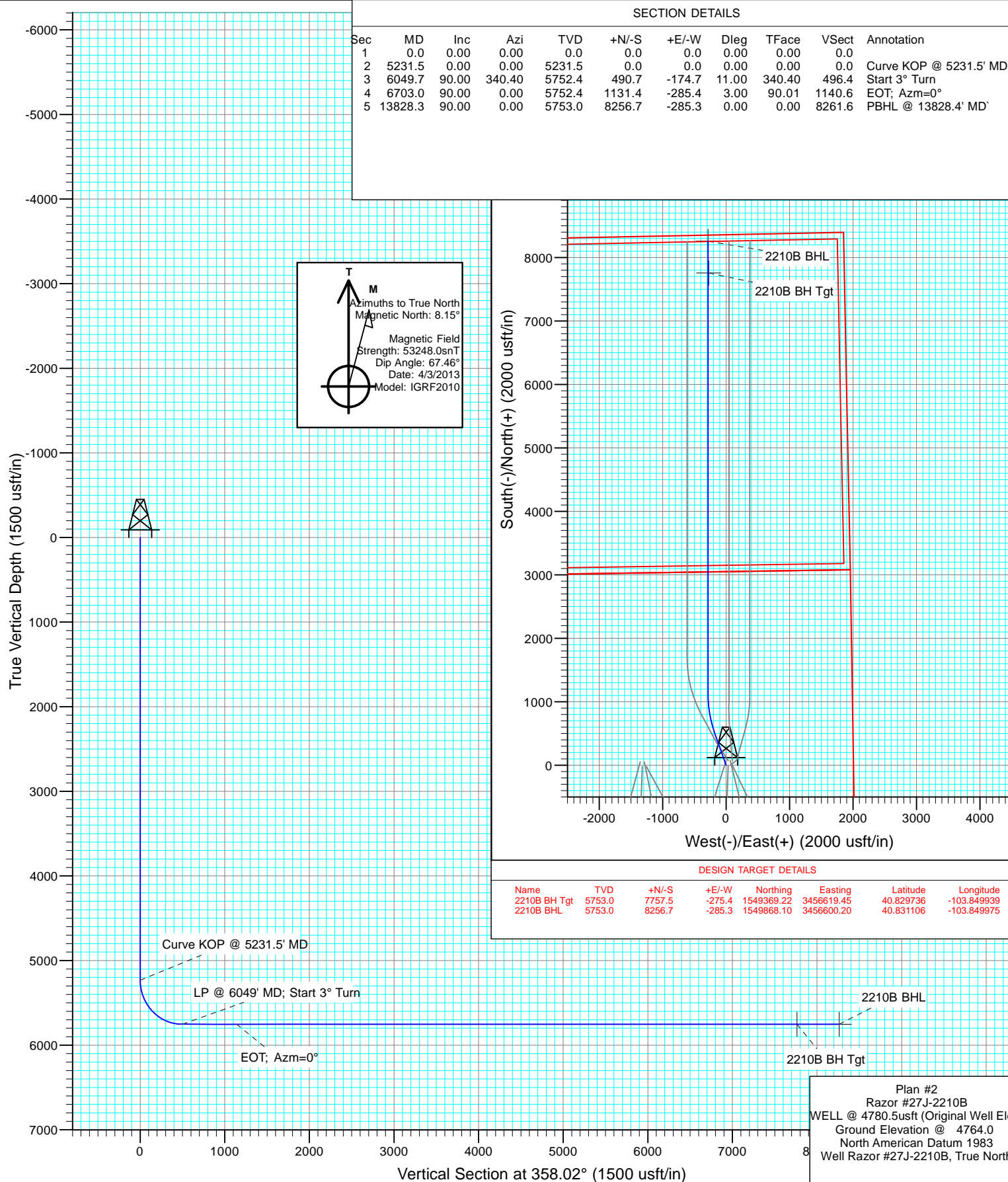
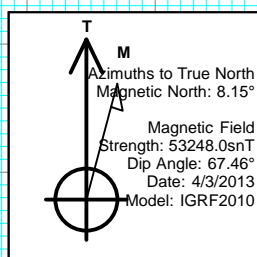
Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27J-2210B
Wellbore: HZ
Design: Plan #2



CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5231.5	0.00	0.00	5231.5	0.0	0.0	0.00	0.00	0.0	Curve KOP @ 5231.5' MD
3	6049.7	90.00	340.40	5752.4	490.7	-174.7	11.00	340.40	496.4	Start 3° Turn
4	6703.0	90.00	0.00	5752.4	1131.4	-285.4	3.00	90.01	1140.6	EOT; Azm=0°
5	13828.3	90.00	0.00	5753.0	8256.7	-285.3	0.00	0.00	8261.6	PBHL @ 13828.4' MD



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
2210B BH Tgt	5753.0	7757.5	-275.4	1549369.22	3456619.45	40.829736	-103.849939
2210B BHL	5753.0	8256.7	-285.3	1549868.10	3456600.20	40.831106	-103.849975

Plan #2
Razor #27J-2210B
WELL @ 4780.5usft (Original Well Elev)
Ground Elevation @ 4764.0
North American Datum 1983
Well Razor #27J-2210B, True North

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #27J-2210B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S27-T10N-R58W			
Site Position:		Northing:	1,541,647.64 usft	Latitude:	40° 48' 30.94 N
From:	Lat/Long	Easting:	3,455,684.98 usft	Longitude:	103° 51' 13.80 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.06 °

Well	Razor #27J-2210B					
Well Position	+N/-S	0.0 usft	Northing:	1,541,618.15 usft	Latitude:	40° 48' 30.40 N
	+E/-W	0.0 usft	Easting:	3,457,039.20 usft	Longitude:	103° 50' 56.20 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,764.0 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/3/2013	8.15	67.46	53,248

Design	Plan #2				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	358.02	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
5,231.5	0.00	0.00	5,231.5	0.0	0.0	0.00	0.00	0.00	0.00	
6,049.7	90.00	340.40	5,752.4	490.7	-174.7	11.00	11.00	0.00	340.40	
6,703.0	90.00	0.00	5,752.4	1,131.4	-285.4	3.00	0.00	3.00	90.01	
13,828.3	90.00	0.00	5,753.0	8,256.7	-285.3	0.00	0.00	0.00	0.00	2210B BHL

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #27J-2210B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	

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Project:	Weld County, CO	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	
5,231.5	0.00	0.00	5,231.5	0.0	0.0	0.0	0.00	0.00	Curve KOP @ 5231.5' MD
5,300.0	7.54	340.40	5,299.8	4.2	-1.5	4.3	11.00	11.00	
5,400.0	18.54	340.40	5,397.1	25.5	-9.1	25.8	11.00	11.00	
5,500.0	29.54	340.40	5,488.3	63.8	-22.7	64.5	11.00	11.00	
5,600.0	40.54	340.40	5,570.0	117.8	-41.9	119.1	11.00	11.00	
5,700.0	51.54	340.40	5,639.3	185.5	-66.0	187.6	11.00	11.00	
5,800.0	62.54	340.40	5,693.7	264.4	-94.1	267.5	11.00	11.00	
5,900.0	73.54	340.40	5,731.0	351.6	-125.2	355.7	11.00	11.00	
6,000.0	84.54	340.40	5,750.0	444.0	-158.1	449.2	11.00	11.00	
6,049.7	90.00	340.40	5,752.4	490.7	-174.7	496.4	11.00	11.00	Start 3° Turn
6,100.0	90.00	341.91	5,752.4	538.3	-191.0	544.6	3.00	0.00	
6,200.0	90.00	344.91	5,752.4	634.1	-219.5	641.3	3.00	0.00	
6,300.0	90.00	347.91	5,752.4	731.3	-243.0	739.3	3.00	0.00	
6,400.0	90.00	350.91	5,752.4	829.6	-261.4	838.2	3.00	0.00	
6,500.0	90.00	353.91	5,752.4	928.7	-274.6	937.7	3.00	0.00	
6,600.0	90.00	356.91	5,752.4	1,028.4	-282.6	1,037.5	3.00	0.00	
6,700.0	90.00	359.91	5,752.4	1,128.4	-285.4	1,137.5	3.00	0.00	
6,703.0	90.00	0.00	5,752.4	1,131.4	-285.4	1,140.6	3.00	0.00	EOT; Azm=0°
6,800.0	90.00	0.00	5,752.4	1,228.4	-285.4	1,237.5	0.00	0.00	
6,900.0	90.00	0.00	5,752.4	1,328.4	-285.4	1,337.4	0.00	0.00	
7,000.0	90.00	0.00	5,752.4	1,428.4	-285.4	1,437.4	0.00	0.00	
7,100.0	90.00	0.00	5,752.4	1,528.4	-285.4	1,537.3	0.00	0.00	
7,200.0	90.00	0.00	5,752.4	1,628.4	-285.4	1,637.2	0.00	0.00	
7,300.0	90.00	0.00	5,752.4	1,728.4	-285.4	1,737.2	0.00	0.00	
7,400.0	90.00	0.00	5,752.4	1,828.4	-285.4	1,837.1	0.00	0.00	
7,500.0	90.00	0.00	5,752.5	1,928.4	-285.4	1,937.1	0.00	0.00	
7,600.0	90.00	0.00	5,752.5	2,028.4	-285.4	2,037.0	0.00	0.00	
7,700.0	90.00	0.00	5,752.5	2,128.4	-285.4	2,136.9	0.00	0.00	
7,800.0	90.00	0.00	5,752.5	2,228.4	-285.4	2,236.9	0.00	0.00	
7,900.0	90.00	0.00	5,752.5	2,328.4	-285.4	2,336.8	0.00	0.00	
8,000.0	90.00	0.00	5,752.5	2,428.4	-285.4	2,436.8	0.00	0.00	
8,100.0	90.00	0.00	5,752.5	2,528.4	-285.4	2,536.7	0.00	0.00	
8,200.0	90.00	0.00	5,752.5	2,628.4	-285.4	2,636.6	0.00	0.00	
8,300.0	90.00	0.00	5,752.5	2,728.4	-285.4	2,736.6	0.00	0.00	
8,400.0	90.00	0.00	5,752.5	2,828.4	-285.4	2,836.5	0.00	0.00	
8,500.0	90.00	0.00	5,752.5	2,928.4	-285.4	2,936.5	0.00	0.00	
8,600.0	90.00	0.00	5,752.6	3,028.4	-285.4	3,036.4	0.00	0.00	
8,700.0	90.00	0.00	5,752.6	3,128.4	-285.4	3,136.3	0.00	0.00	
8,800.0	90.00	0.00	5,752.6	3,228.4	-285.4	3,236.3	0.00	0.00	
8,900.0	90.00	0.00	5,752.6	3,328.4	-285.4	3,336.2	0.00	0.00	
9,000.0	90.00	0.00	5,752.6	3,428.4	-285.4	3,436.2	0.00	0.00	
9,100.0	90.00	0.00	5,752.6	3,528.4	-285.4	3,536.1	0.00	0.00	
9,200.0	90.00	0.00	5,752.6	3,628.4	-285.4	3,636.0	0.00	0.00	
9,300.0	90.00	0.00	5,752.6	3,728.4	-285.4	3,736.0	0.00	0.00	
9,400.0	90.00	0.00	5,752.6	3,828.4	-285.4	3,835.9	0.00	0.00	
9,500.0	90.00	0.00	5,752.6	3,928.4	-285.4	3,935.9	0.00	0.00	
9,600.0	90.00	0.00	5,752.6	4,028.4	-285.4	4,035.8	0.00	0.00	
9,700.0	90.00	0.00	5,752.6	4,128.4	-285.4	4,135.7	0.00	0.00	
9,800.0	90.00	0.00	5,752.7	4,228.4	-285.4	4,235.7	0.00	0.00	
9,900.0	90.00	0.00	5,752.7	4,328.4	-285.4	4,335.6	0.00	0.00	
10,000.0	90.00	0.00	5,752.7	4,428.4	-285.4	4,435.6	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #27J-2210B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site:	S27-T10N-R58W	North Reference:	True
Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,100.0	90.00	0.00	5,752.7	4,528.4	-285.4	4,535.5	0.00	0.00	
10,200.0	90.00	0.00	5,752.7	4,628.4	-285.4	4,635.4	0.00	0.00	
10,300.0	90.00	0.00	5,752.7	4,728.4	-285.4	4,735.4	0.00	0.00	
10,400.0	90.00	0.00	5,752.7	4,828.4	-285.4	4,835.3	0.00	0.00	
10,500.0	90.00	0.00	5,752.7	4,928.4	-285.4	4,935.3	0.00	0.00	
10,600.0	90.00	0.00	5,752.7	5,028.4	-285.3	5,035.2	0.00	0.00	
10,700.0	90.00	0.00	5,752.7	5,128.4	-285.3	5,135.1	0.00	0.00	
10,800.0	90.00	0.00	5,752.7	5,228.4	-285.3	5,235.1	0.00	0.00	
10,900.0	90.00	0.00	5,752.7	5,328.4	-285.3	5,335.0	0.00	0.00	
11,000.0	90.00	0.00	5,752.8	5,428.4	-285.3	5,435.0	0.00	0.00	
11,100.0	90.00	0.00	5,752.8	5,528.4	-285.3	5,534.9	0.00	0.00	
11,200.0	90.00	0.00	5,752.8	5,628.4	-285.3	5,634.8	0.00	0.00	
11,300.0	90.00	0.00	5,752.8	5,728.4	-285.3	5,734.8	0.00	0.00	
11,400.0	90.00	0.00	5,752.8	5,828.4	-285.3	5,834.7	0.00	0.00	
11,500.0	90.00	0.00	5,752.8	5,928.4	-285.3	5,934.7	0.00	0.00	
11,600.0	90.00	0.00	5,752.8	6,028.4	-285.3	6,034.6	0.00	0.00	
11,700.0	90.00	0.00	5,752.8	6,128.4	-285.3	6,134.6	0.00	0.00	
11,800.0	90.00	0.00	5,752.8	6,228.4	-285.3	6,234.5	0.00	0.00	
11,900.0	90.00	0.00	5,752.8	6,328.4	-285.3	6,334.4	0.00	0.00	
12,000.0	90.00	0.00	5,752.8	6,428.4	-285.3	6,434.4	0.00	0.00	
12,100.0	90.00	0.00	5,752.9	6,528.4	-285.3	6,534.3	0.00	0.00	
12,200.0	90.00	0.00	5,752.9	6,628.4	-285.3	6,634.3	0.00	0.00	
12,300.0	90.00	0.00	5,752.9	6,728.4	-285.3	6,734.2	0.00	0.00	
12,400.0	90.00	0.00	5,752.9	6,828.4	-285.3	6,834.1	0.00	0.00	
12,500.0	90.00	0.00	5,752.9	6,928.4	-285.3	6,934.1	0.00	0.00	
12,600.0	90.00	0.00	5,752.9	7,028.4	-285.3	7,034.0	0.00	0.00	
12,700.0	90.00	0.00	5,752.9	7,128.4	-285.3	7,134.0	0.00	0.00	
12,800.0	90.00	0.00	5,752.9	7,228.4	-285.3	7,233.9	0.00	0.00	
12,900.0	90.00	0.00	5,752.9	7,328.4	-285.3	7,333.8	0.00	0.00	
13,000.0	90.00	0.00	5,752.9	7,428.4	-285.3	7,433.8	0.00	0.00	
13,100.0	90.00	0.00	5,752.9	7,528.4	-285.3	7,533.7	0.00	0.00	
13,200.0	90.00	0.00	5,752.9	7,628.4	-285.3	7,633.7	0.00	0.00	
13,300.0	90.00	0.00	5,753.0	7,728.4	-285.3	7,733.6	0.00	0.00	
13,400.0	90.00	0.00	5,753.0	7,828.4	-285.3	7,833.5	0.00	0.00	
13,500.0	90.00	0.00	5,753.0	7,928.4	-285.3	7,933.5	0.00	0.00	
13,600.0	90.00	0.00	5,753.0	8,028.4	-285.3	8,033.4	0.00	0.00	
13,700.0	90.00	0.00	5,753.0	8,128.4	-285.3	8,133.4	0.00	0.00	
13,800.0	90.00	0.00	5,753.0	8,228.4	-285.3	8,233.3	0.00	0.00	
13,828.3	90.00	0.00	5,753.0	8,256.7	-285.3	8,261.6	0.00	0.00	PBHL @ 13828.4' MD'

Database: USA EDM 5000 Multi Users DB
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27J-2210B
Wellbore: HZ
Design: Plan #2

Local Co-ordinate Reference: Well Razor #27J-2210B
TVD Reference: WELL @ 4780.5usft (Original Well Elev)
MD Reference: WELL @ 4780.5usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
2210B BHL	0.00	1.07	5,753.0	8,256.7	-285.3	1,549,868.10	3,456,600.20	40° 49' 51.98 N	103° 50' 59.91 W
- plan hits target center									
- Point									
2210B BH Tgt	0.00	1.07	5,753.0	7,757.5	-275.4	1,549,369.22	3,456,619.45	40° 49' 47.05 N	103° 50' 59.78 W
- plan misses target center by 10.0usft at 13329.2usft MD (5753.0 TVD, 7757.5 N, -285.3 E)									
- Point									

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
		(usft)	(usft)		
5,231.5	5,231.5	0.0	0.0	Curve KOP @ 5231.5' MD	
6,049.7	5,752.4	490.7	-174.7	Start 3° Turn	
6,703.0	5,752.4	1,131.4	-285.4	EOT; Azm=0°	
13,828.3	5,753.0	8,256.7	-285.3	PBHL @ 13828.4' MD`	



WHITING PETROLEUM CORPORATION

Whiting Petroleum Corporation

Weld County, CO

S27-T10N-R58W

Razor #27J-2210B

HZ

Plan #2

Anticollision Report

09 July, 2013

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	7/9/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,827.4	Plan #2 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S27-T10N-R58W						
Razor #27I-2213A - HZ - Plan #2	13,828.3	13,622.7	994.0	682.5	3.190	CC, ES, SF
Razor #27I-2214B - HZ - Plan #3						Out of range
Razor #27I-2215A - HZ - Plan #1						Out of range
Razor #27J-2209A - HZ - Plan #3	465.6	468.6	81.6	79.8	44.411	CC
Razor #27J-2209A - HZ - Plan #3	13,305.0	12,935.7	332.1	47.6	1.167	Level 2, ES, SF
Razor #27J-2211A - HZ - Plan #2	5,123.7	5,126.7	123.7	100.9	5.429	CC
Razor #27J-2211A - HZ - Plan #2	13,828.3	13,627.2	341.7	36.7	1.120	Level 2, ES, SF
Razor #27J-2212B - HZ - Plan #2	1,466.7	1,466.7	65.3	59.0	10.319	CC
Razor #27J-2212B - HZ - Plan #2	1,500.0	1,500.0	65.3	58.9	10.080	ES
Razor #27J-2212B - HZ - Plan #2	13,828.3	13,732.1	659.5	345.0	2.097	SF
Razor #27J-3409A - HZ - Plan #3	1,618.6	1,624.0	23.0	15.9	3.244	CC, ES
Razor #27J-3409A - HZ - Plan #3	1,700.0	1,705.2	23.7	16.2	3.159	SF
Razor #27J-3410B - HZ - Plan #3	5,231.5	5,231.5	32.9	9.7	1.417	Level 3, CC, ES
Razor #27J-3410B - HZ - Plan #3	5,250.0	5,250.0	33.0	9.7	1.416	Level 3, SF
Razor #27J-3411A - HZ - Plan #3	1,426.0	1,431.0	80.9	74.7	13.117	CC
Razor #27J-3411A - HZ - Plan #3	1,500.0	1,504.8	81.0	74.5	12.454	ES
Razor #27J-3411A - HZ - Plan #3	2,400.0	2,402.6	105.6	95.1	10.046	SF
Razor #27J-3412B - HZ - Plan #3	466.7	466.7	98.3	96.4	53.528	CC
Razor #27J-3412B - HZ - Plan #3	500.0	500.0	98.3	96.3	49.489	ES
Razor #27J-3412B - HZ - Plan #3	5,250.0	5,235.6	377.5	354.1	16.175	SF
Razor #27K-3407A - HZ - Plan #3						Out of range
Razor #27K-3408B - HZ - Plan #3						Out of range

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2213A - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
7,100.0	5,752.4	6,935.9	5,649.3	32.0	32.6	84.49	1,569.9	705.7	996.6	933.6	62.97	15.826	
7,200.0	5,752.4	7,000.0	5,649.3	33.7	33.6	84.48	1,634.0	704.1	994.1	928.4	65.72	15.128	
7,246.8	5,752.4	7,041.1	5,649.3	34.4	34.3	84.48	1,675.2	704.0	994.0	926.9	67.15	14.804	
7,300.0	5,752.4	7,094.3	5,649.3	35.4	35.1	84.48	1,728.4	704.0	994.0	925.1	68.97	14.413	
7,400.0	5,752.4	7,194.3	5,649.3	37.1	36.6	84.48	1,828.4	704.0	994.0	921.7	72.31	13.746	
7,500.0	5,752.5	7,294.3	5,649.3	38.8	38.2	84.48	1,928.4	704.0	994.0	918.3	75.71	13.130	
7,600.0	5,752.5	7,394.3	5,649.3	40.6	39.8	84.48	2,028.4	704.0	994.0	914.9	79.14	12.561	
7,700.0	5,752.5	7,494.3	5,649.3	42.3	41.4	84.48	2,128.4	704.0	994.0	911.4	82.60	12.034	
7,800.0	5,752.5	7,594.3	5,649.3	44.1	43.1	84.48	2,228.4	704.0	994.0	907.9	86.10	11.545	
7,900.0	5,752.5	7,694.3	5,649.3	45.9	44.7	84.48	2,328.4	704.0	994.0	904.4	89.63	11.091	
8,000.0	5,752.5	7,794.3	5,649.3	47.7	46.4	84.47	2,428.4	704.0	994.0	900.9	93.18	10.668	
8,100.0	5,752.5	7,894.3	5,649.3	49.5	48.1	84.47	2,528.4	704.0	994.0	897.3	96.75	10.274	
8,200.0	5,752.5	7,994.3	5,649.3	51.3	49.8	84.47	2,628.4	704.0	994.0	893.7	100.34	9.907	
8,300.0	5,752.5	8,094.3	5,649.3	53.2	51.6	84.47	2,728.4	704.0	994.0	890.1	103.95	9.563	
8,400.0	5,752.5	8,194.3	5,649.3	55.0	53.3	84.47	2,828.4	704.0	994.0	886.5	107.57	9.241	
8,500.0	5,752.5	8,294.3	5,649.3	56.8	55.1	84.47	2,928.4	704.0	994.0	882.8	111.21	8.939	
8,600.0	5,752.6	8,394.3	5,649.3	58.7	56.9	84.47	3,028.4	704.0	994.0	879.2	114.86	8.655	
8,700.0	5,752.6	8,494.3	5,649.3	60.5	58.6	84.47	3,128.4	704.0	994.0	875.5	118.52	8.387	
8,800.0	5,752.6	8,594.3	5,649.3	62.4	60.4	84.47	3,228.4	704.0	994.0	871.8	122.19	8.135	
8,900.0	5,752.6	8,694.3	5,649.3	64.2	62.2	84.47	3,328.4	704.0	994.0	868.2	125.87	7.897	
9,000.0	5,752.6	8,794.3	5,649.3	66.1	64.0	84.47	3,428.4	704.0	994.0	864.5	129.56	7.673	
9,100.0	5,752.6	8,894.3	5,649.2	68.0	65.8	84.47	3,528.4	704.0	994.0	860.8	133.26	7.460	
9,200.0	5,752.6	8,994.3	5,649.2	69.8	67.6	84.47	3,628.4	704.0	994.0	857.1	136.96	7.258	
9,300.0	5,752.6	9,094.3	5,649.2	71.7	69.5	84.46	3,728.4	704.0	994.0	853.4	140.67	7.066	
9,400.0	5,752.6	9,194.3	5,649.2	73.6	71.3	84.46	3,828.4	704.0	994.0	849.7	144.39	6.885	
9,500.0	5,752.6	9,294.3	5,649.2	75.5	73.1	84.46	3,928.4	704.0	994.0	845.9	148.11	6.711	
9,600.0	5,752.6	9,394.3	5,649.2	77.3	75.0	84.46	4,028.4	704.0	994.0	842.2	151.84	6.547	
9,700.0	5,752.6	9,494.3	5,649.2	79.2	76.8	84.46	4,128.4	704.0	994.0	838.5	155.57	6.390	
9,800.0	5,752.7	9,594.3	5,649.2	81.1	78.7	84.46	4,228.4	704.0	994.0	834.7	159.31	6.240	
9,900.0	5,752.7	9,694.3	5,649.2	83.0	80.5	84.46	4,328.4	704.0	994.0	831.0	163.05	6.097	
10,000.0	5,752.7	9,794.3	5,649.2	84.9	82.4	84.46	4,428.4	704.0	994.0	827.2	166.79	5.960	
10,100.0	5,752.7	9,894.3	5,649.2	86.7	84.2	84.46	4,528.4	704.0	994.0	823.5	170.54	5.829	
10,200.0	5,752.7	9,994.3	5,649.2	88.6	86.1	84.46	4,628.4	704.0	994.0	819.7	174.30	5.703	
10,300.0	5,752.7	10,094.3	5,649.2	90.5	87.9	84.46	4,728.4	704.0	994.0	816.0	178.05	5.583	
10,400.0	5,752.7	10,194.3	5,649.2	92.4	89.8	84.46	4,828.4	704.0	994.0	812.2	181.81	5.467	
10,500.0	5,752.7	10,294.3	5,649.2	94.3	91.7	84.46	4,928.4	704.0	994.0	808.5	185.57	5.357	
10,600.0	5,752.7	10,394.3	5,649.2	96.2	93.5	84.45	5,028.4	704.0	994.0	804.7	189.33	5.250	
10,700.0	5,752.7	10,494.3	5,649.2	98.1	95.4	84.45	5,128.4	704.0	994.0	800.9	193.10	5.148	
10,800.0	5,752.7	10,594.3	5,649.2	100.0	97.3	84.45	5,228.4	704.0	994.0	797.2	196.87	5.049	
10,900.0	5,752.7	10,694.3	5,649.2	101.9	99.1	84.45	5,328.4	704.0	994.0	793.4	200.64	4.954	
11,000.0	5,752.8	10,794.3	5,649.1	103.8	101.0	84.45	5,428.4	704.0	994.0	789.6	204.41	4.863	
11,100.0	5,752.8	10,894.3	5,649.1	105.7	102.9	84.45	5,528.4	704.0	994.0	785.9	208.19	4.775	
11,200.0	5,752.8	10,994.3	5,649.1	107.6	104.8	84.45	5,628.4	704.0	994.0	782.1	211.97	4.690	
11,300.0	5,752.8	11,094.3	5,649.1	109.5	106.6	84.45	5,728.4	704.0	994.0	778.3	215.74	4.607	
11,400.0	5,752.8	11,194.3	5,649.1	111.4	108.5	84.45	5,828.4	704.0	994.0	774.5	219.52	4.528	
11,500.0	5,752.8	11,294.3	5,649.1	113.3	110.4	84.45	5,928.4	704.0	994.0	770.7	223.31	4.451	
11,600.0	5,752.8	11,394.3	5,649.1	115.2	112.3	84.45	6,028.4	704.0	994.0	766.9	227.09	4.377	
11,700.0	5,752.8	11,494.3	5,649.1	117.1	114.2	84.45	6,128.4	704.0	994.0	763.2	230.87	4.306	
11,800.0	5,752.8	11,594.3	5,649.1	119.0	116.1	84.44	6,228.4	704.0	994.0	759.4	234.66	4.236	
11,900.0	5,752.8	11,694.3	5,649.1	120.9	118.0	84.44	6,328.4	704.0	994.0	755.6	238.45	4.169	
12,000.0	5,752.8	11,794.3	5,649.1	122.8	119.8	84.44	6,428.4	704.0	994.0	751.8	242.24	4.104	
12,100.0	5,752.9	11,894.3	5,649.1	124.7	121.7	84.44	6,528.4	704.0	994.0	748.0	246.03	4.040	

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2213A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
12,200.0	5,752.9	11,994.3	5,649.1	126.6	123.6	84.44	6,628.4	704.0	994.0	744.2	249.82	3.979		
12,300.0	5,752.9	12,094.3	5,649.1	128.5	125.5	84.44	6,728.4	704.0	994.0	740.4	253.61	3.920		
12,400.0	5,752.9	12,194.3	5,649.1	130.4	127.4	84.44	6,828.4	704.0	994.0	736.6	257.40	3.862		
12,500.0	5,752.9	12,294.3	5,649.1	132.3	129.3	84.44	6,928.4	704.0	994.0	732.8	261.20	3.806		
12,600.0	5,752.9	12,394.3	5,649.1	134.2	131.2	84.44	7,028.4	704.0	994.0	729.0	264.99	3.751		
12,700.0	5,752.9	12,494.3	5,649.1	136.1	133.1	84.44	7,128.4	704.0	994.0	725.3	268.79	3.698		
12,800.0	5,752.9	12,594.3	5,649.1	138.0	135.0	84.44	7,228.4	704.0	994.0	721.5	272.58	3.647		
12,900.0	5,752.9	12,694.3	5,649.0	140.0	136.9	84.44	7,328.4	704.0	994.0	717.7	276.38	3.597		
13,000.0	5,752.9	12,794.3	5,649.0	141.9	138.8	84.44	7,428.4	704.0	994.0	713.9	280.18	3.548		
13,100.0	5,752.9	12,894.3	5,649.0	143.8	140.7	84.43	7,528.4	704.0	994.0	710.1	283.98	3.500		
13,200.0	5,752.9	12,994.3	5,649.0	145.7	142.6	84.43	7,628.4	704.0	994.0	706.3	287.78	3.454		
13,300.0	5,753.0	13,094.3	5,649.0	147.6	144.5	84.43	7,728.4	704.0	994.0	702.5	291.58	3.409		
13,400.0	5,753.0	13,194.3	5,649.0	149.5	146.4	84.43	7,828.4	704.0	994.0	698.7	295.38	3.365		
13,500.0	5,753.0	13,294.3	5,649.0	151.4	148.3	84.43	7,928.4	704.0	994.0	694.9	299.18	3.323		
13,600.0	5,753.0	13,394.3	5,649.0	153.3	150.2	84.43	8,028.4	704.0	994.0	691.1	302.98	3.281		
13,700.0	5,753.0	13,494.3	5,649.0	155.2	152.1	84.43	8,128.4	704.0	994.0	687.3	306.79	3.240		
13,800.0	5,753.0	13,594.3	5,649.0	157.1	154.0	84.43	8,228.4	704.0	994.0	683.4	310.59	3.200		
13,828.3	5,753.0	13,622.7	5,649.0	157.6	154.5	84.43	8,256.7	704.0	994.0	682.5	311.57	3.190 CC, ES, SF		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2209A - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
0.0	0.0	3.0	3.0	0.0	0.0	23.17	75.0	32.1	81.6					
100.0	100.0	103.0	103.0	0.1	0.1	23.17	75.0	32.1	81.6	81.4	0.19	419.865		
200.0	200.0	203.0	203.0	0.3	0.3	23.17	75.0	32.1	81.6	81.0	0.64	126.766		
300.0	300.0	303.0	303.0	0.5	0.6	23.17	75.0	32.1	81.6	80.5	1.09	74.652		
400.0	400.0	403.0	403.0	0.8	0.8	23.17	75.0	32.1	81.6	80.1	1.54	52.904		
465.6	465.6	468.6	468.6	0.9	0.9	23.17	75.0	32.1	81.6	79.8	1.84	44.411 CC		
500.0	500.0	502.9	502.9	1.0	1.0	23.16	75.1	32.1	81.6	79.6	1.99	40.972		
600.0	600.0	601.2	601.2	1.2	1.2	22.19	76.6	31.3	82.8	80.3	2.44	33.965		
700.0	700.0	700.0	699.8	1.4	1.4	19.51	81.2	28.8	86.2	83.3	2.89	29.852		
800.0	800.0	798.9	798.5	1.7	1.7	16.27	87.2	25.5	91.0	87.6	3.34	27.198		
900.0	900.0	898.7	898.0	1.9	1.9	13.33	93.3	22.1	96.0	92.2	3.81	25.221		
1,000.0	1,000.0	998.4	997.5	2.1	2.2	10.69	99.4	18.8	101.3	97.1	4.27	23.717		
1,100.0	1,100.0	1,098.2	1,097.0	2.3	2.4	8.32	105.5	15.4	106.8	102.1	4.74	22.546		
1,200.0	1,200.0	1,197.9	1,196.6	2.6	2.7	6.18	111.6	12.1	112.5	107.3	5.20	21.616		
1,300.0	1,300.0	1,297.7	1,296.1	2.8	2.9	4.25	117.7	8.8	118.3	112.6	5.67	20.866		
1,400.0	1,400.0	1,397.4	1,395.6	3.0	3.2	2.50	123.9	5.4	124.2	118.1	6.13	20.251		
1,500.0	1,500.0	1,497.2	1,495.1	3.2	3.4	0.91	130.0	2.1	130.2	123.6	6.60	19.740		
1,600.0	1,600.0	1,597.0	1,594.6	3.5	3.7	-0.53	136.1	-1.3	136.3	129.3	7.06	19.308		
1,700.0	1,700.0	1,696.7	1,694.1	3.7	3.9	-1.85	142.2	-4.6	142.5	135.0	7.52	18.941		
1,800.0	1,800.0	1,796.5	1,793.6	3.9	4.2	-3.07	148.3	-7.9	148.8	140.8	7.99	18.627		
1,900.0	1,900.0	1,896.2	1,893.2	4.1	4.4	-4.18	154.4	-11.3	155.1	146.7	8.45	18.355		
2,000.0	2,000.0	1,996.0	1,992.7	4.4	4.7	-5.21	160.5	-14.6	161.5	152.6	8.91	18.118		
2,100.0	2,100.0	2,095.7	2,092.2	4.6	4.9	-6.15	166.6	-18.0	167.9	158.5	9.37	17.911		
2,200.0	2,200.0	2,195.5	2,191.7	4.8	5.2	-7.03	172.7	-21.3	174.4	164.5	9.84	17.728		
2,300.0	2,300.0	2,295.3	2,291.2	5.0	5.4	-7.85	178.8	-24.6	180.9	170.6	10.30	17.565		
2,400.0	2,400.0	2,395.0	2,390.7	5.3	5.7	-8.61	184.9	-28.0	187.4	176.7	10.76	17.420		
2,500.0	2,500.0	2,494.8	2,490.2	5.5	6.0	-9.31	191.0	-31.3	194.0	182.8	11.22	17.290		
2,600.0	2,600.0	2,594.5	2,589.7	5.7	6.2	-9.97	197.1	-34.7	200.6	188.9	11.68	17.173		
2,700.0	2,700.0	2,694.3	2,689.3	5.9	6.5	-10.59	203.2	-38.0	207.2	195.1	12.14	17.067		
2,800.0	2,800.0	2,794.0	2,788.8	6.2	6.7	-11.17	209.3	-41.3	213.8	201.2	12.60	16.971		
2,900.0	2,900.0	2,893.8	2,888.3	6.4	7.0	-11.72	215.4	-44.7	220.5	207.4	13.06	16.883		
3,000.0	3,000.0	2,993.5	2,987.8	6.6	7.2	-12.23	221.5	-48.0	227.2	213.7	13.52	16.803		
3,100.0	3,100.0	3,093.3	3,087.3	6.8	7.5	-12.71	227.6	-51.4	233.9	219.9	13.98	16.730		
3,200.0	3,200.0	3,193.1	3,186.8	7.1	7.7	-13.17	233.7	-54.7	240.6	226.2	14.44	16.663		
3,300.0	3,300.0	3,292.8	3,286.3	7.3	8.0	-13.60	239.8	-58.0	247.3	232.4	14.90	16.600		
3,400.0	3,400.0	3,392.6	3,385.9	7.5	8.3	-14.01	246.0	-61.4	254.1	238.7	15.36	16.543		
3,500.0	3,500.0	3,492.3	3,485.4	7.7	8.5	-14.40	252.1	-64.7	260.8	245.0	15.82	16.490		
3,600.0	3,600.0	3,592.1	3,584.9	8.0	8.8	-14.77	258.2	-68.1	267.6	251.3	16.28	16.440		
3,700.0	3,700.0	3,691.8	3,684.4	8.2	9.0	-15.12	264.3	-71.4	274.4	257.6	16.74	16.394		
3,800.0	3,800.0	3,791.6	3,783.9	8.4	9.3	-15.45	270.4	-74.7	281.2	264.0	17.20	16.351		
3,900.0	3,900.0	3,891.4	3,883.4	8.6	9.5	-15.77	276.5	-78.1	288.0	270.3	17.65	16.311		
4,000.0	4,000.0	3,991.1	3,982.9	8.9	9.8	-16.07	282.6	-81.4	294.8	276.6	18.11	16.273		
4,100.0	4,100.0	4,090.9	4,082.4	9.1	10.0	-16.36	288.7	-84.8	301.6	283.0	18.57	16.238		
4,200.0	4,200.0	4,190.6	4,182.0	9.3	10.3	-16.64	294.8	-88.1	308.4	289.4	19.03	16.205		
4,300.0	4,300.0	4,290.4	4,281.5	9.5	10.6	-16.90	300.9	-91.4	315.2	295.7	19.49	16.173		
4,400.0	4,400.0	4,390.1	4,381.0	9.8	10.8	-17.16	307.0	-94.8	322.1	302.1	19.95	16.144		
4,500.0	4,500.0	4,489.9	4,480.5	10.0	11.1	-17.40	313.1	-98.1	328.9	308.5	20.41	16.116		
4,600.0	4,600.0	4,589.6	4,580.0	10.2	11.3	-17.63	319.2	-101.5	335.7	314.9	20.87	16.090		
4,700.0	4,700.0	4,689.4	4,679.5	10.4	11.6	-17.85	325.3	-104.8	342.6	321.3	21.32	16.065		
4,800.0	4,800.0	4,789.2	4,779.0	10.7	11.8	-18.07	331.4	-108.1	349.4	327.7	21.78	16.041		
4,900.0	4,900.0	4,888.9	4,878.6	10.9	12.1	-18.28	337.5	-111.5	356.3	334.1	22.24	16.019		
5,000.0	5,000.0	4,988.7	4,978.1	11.1	12.4	-18.47	343.6	-114.8	363.2	340.5	22.70	15.998		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2209A - HZ - Plan #3												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,100.0	5,088.4	5,077.6	11.3	12.6	-18.67	349.7	-118.2	370.0	346.9	23.16	15.978	
5,200.0	5,200.0	5,188.2	5,177.1	11.6	12.9	-18.85	355.8	-121.5	376.9	353.3	23.62	15.958	
5,231.5	5,231.5	5,200.0	5,188.9	11.6	12.9	-18.87	356.6	-121.9	379.6	355.9	23.72	16.006	
5,250.0	5,250.0	5,219.2	5,208.0	11.7	13.0	0.67	358.3	-122.8	381.1	357.6	23.52	16.201	
5,300.0	5,299.8	5,250.0	5,238.4	11.8	13.1	0.56	362.3	-125.0	384.2	360.6	23.60	16.284	
5,350.0	5,349.0	5,277.1	5,264.9	11.9	13.2	0.43	367.2	-127.7	385.3	361.8	23.46	16.424	
5,400.0	5,397.1	5,300.0	5,287.1	12.0	13.3	0.29	372.2	-130.4	384.4	361.2	23.10	16.636	
5,450.0	5,443.6	5,334.8	5,320.3	12.1	13.4	0.05	381.5	-135.5	381.2	358.6	22.58	16.884	
5,500.0	5,488.3	5,363.7	5,347.2	12.3	13.6	-0.21	390.6	-140.5	376.1	354.3	21.84	17.219	
5,550.0	5,530.5	5,400.0	5,380.2	12.4	13.8	-0.59	404.0	-147.8	369.1	348.2	20.94	17.628	
5,600.0	5,570.0	5,421.5	5,399.2	12.6	13.9	-0.87	412.8	-152.7	359.9	340.1	19.83	18.151	
5,650.0	5,606.4	5,450.0	5,423.7	12.8	14.1	-1.29	425.6	-159.6	348.8	330.3	18.57	18.781	
5,700.0	5,639.3	5,479.6	5,448.2	13.0	14.3	-1.82	440.0	-167.5	335.8	318.6	17.19	19.537	
5,750.0	5,668.5	5,500.0	5,464.6	13.3	14.5	-2.27	450.7	-173.4	321.1	305.5	15.67	20.488	
5,800.0	5,693.7	5,538.0	5,493.8	13.7	14.8	-3.22	472.1	-185.1	304.2	290.1	14.15	21.503	
5,850.0	5,714.6	5,567.4	5,515.1	14.1	15.1	-4.17	489.8	-194.8	285.8	273.2	12.61	22.665	
5,900.0	5,731.0	5,600.0	5,537.3	14.6	15.4	-5.49	510.8	-206.2	265.7	254.4	11.21	23.706	
5,950.0	5,742.9	5,626.8	5,554.5	15.1	15.7	-6.91	528.8	-216.1	243.9	233.8	10.08	24.197	
6,000.0	5,750.0	5,650.0	5,568.4	15.7	15.9	-8.50	545.1	-225.0	220.8	211.4	9.44	23.382	
6,049.7	5,752.4	5,687.0	5,589.0	16.3	16.3	-11.54	572.1	-239.8	196.3	186.3	9.99	19.650	
6,100.0	5,752.4	5,718.8	5,604.8	17.0	16.7	-15.23	596.3	-253.0	172.8	161.0	11.81	14.633	
6,200.0	5,752.4	5,788.0	5,633.3	18.2	17.7	-25.03	651.5	-283.2	138.7	121.4	17.31	8.013	
6,299.7	5,752.4	5,863.5	5,654.6	19.6	18.8	-37.28	715.0	-317.9	126.6	101.9	24.69	5.127	
6,300.0	5,752.4	5,863.7	5,654.7	19.6	18.8	-37.32	715.2	-318.1	126.6	101.9	24.71	5.123	
6,400.0	5,752.4	5,943.2	5,665.6	21.1	20.1	-48.19	784.2	-355.8	138.0	106.6	31.42	4.392	
6,500.0	5,752.4	6,035.5	5,666.5	22.6	21.5	-55.78	865.6	-399.3	165.6	129.1	36.52	4.534	
6,600.0	5,752.4	6,137.4	5,666.5	24.1	23.1	-61.53	957.7	-442.9	196.4	155.7	40.72	4.823	
6,703.0	5,752.4	6,244.7	5,666.5	25.7	24.9	-65.83	1,057.0	-483.4	229.4	184.9	44.51	5.154	
6,800.0	5,752.4	6,348.8	5,666.5	27.2	26.6	-69.03	1,155.4	-517.3	258.8	210.5	48.35	5.353	
6,900.0	5,752.4	6,459.9	5,666.5	28.7	28.4	-71.28	1,262.4	-547.6	284.6	232.4	52.15	5.456	
7,000.0	5,752.4	6,574.5	5,666.5	30.3	30.3	-72.78	1,374.2	-572.2	305.1	249.2	55.91	5.456	
7,100.0	5,752.4	6,691.7	5,666.5	32.0	32.3	-73.75	1,490.0	-590.4	320.0	260.3	59.66	5.364	
7,200.0	5,752.4	6,810.7	5,666.6	33.7	34.2	-74.30	1,608.4	-601.6	329.0	265.6	63.38	5.191	
7,300.0	5,752.4	6,930.7	5,666.6	35.4	36.1	-74.48	1,728.3	-605.3	332.1	265.0	67.06	4.952	
7,400.0	5,752.4	7,030.7	5,666.6	37.1	37.7	-74.48	1,828.4	-605.3	332.1	261.7	70.38	4.718	
7,500.0	5,752.5	7,130.7	5,666.6	38.8	39.3	-74.47	1,928.4	-605.3	332.1	258.3	73.73	4.504	
7,600.0	5,752.5	7,230.7	5,666.6	40.6	41.0	-74.47	2,028.4	-605.3	332.1	255.0	77.11	4.307	
7,700.0	5,752.5	7,330.7	5,666.6	42.3	42.6	-74.47	2,128.4	-605.3	332.1	251.5	80.52	4.124	
7,800.0	5,752.5	7,430.7	5,666.6	44.1	44.3	-74.47	2,228.4	-605.3	332.1	248.1	83.96	3.955	
7,900.0	5,752.5	7,530.7	5,666.6	45.9	46.0	-74.47	2,328.4	-605.3	332.1	244.6	87.42	3.799	
8,000.0	5,752.5	7,630.7	5,666.6	47.7	47.7	-74.47	2,428.4	-605.3	332.1	241.2	90.90	3.653	
8,100.0	5,752.5	7,730.7	5,666.6	49.5	49.5	-74.47	2,528.4	-605.3	332.1	237.7	94.40	3.518	
8,200.0	5,752.5	7,830.7	5,666.6	51.3	51.2	-74.47	2,628.4	-605.3	332.1	234.2	97.91	3.391	
8,300.0	5,752.5	7,930.7	5,666.6	53.2	53.0	-74.47	2,728.4	-605.3	332.1	230.6	101.45	3.273	
8,400.0	5,752.5	8,030.7	5,666.6	55.0	54.7	-74.47	2,828.4	-605.3	332.1	227.1	104.99	3.163	
8,500.0	5,752.5	8,130.7	5,666.6	56.8	56.5	-74.47	2,928.4	-605.3	332.1	223.5	108.55	3.059	
8,600.0	5,752.6	8,230.7	5,666.7	58.7	58.3	-74.47	3,028.4	-605.3	332.1	220.0	112.11	2.962	
8,700.0	5,752.6	8,330.7	5,666.7	60.5	60.1	-74.47	3,128.4	-605.3	332.1	216.4	115.69	2.870	
8,800.0	5,752.6	8,430.7	5,666.7	62.4	61.9	-74.47	3,228.4	-605.3	332.1	212.8	119.27	2.784	
8,900.0	5,752.6	8,530.7	5,666.7	64.2	63.7	-74.47	3,328.4	-605.3	332.1	209.2	122.87	2.703	
9,000.0	5,752.6	8,630.7	5,666.7	66.1	65.5	-74.47	3,428.4	-605.3	332.1	205.6	126.47	2.626	
9,100.0	5,752.6	8,730.7	5,666.7	68.0	67.4	-74.47	3,528.4	-605.3	332.1	202.0	130.08	2.553	

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2209A - HZ - Plan #3												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	5,752.6	8,830.7	5,666.7	69.8	69.2	-74.47	3,628.4	-605.3	332.1	198.4	133.69	2.484	
9,300.0	5,752.6	8,930.7	5,666.7	71.7	71.0	-74.47	3,728.4	-605.3	332.1	194.8	137.31	2.418	
9,400.0	5,752.6	9,030.7	5,666.7	73.6	72.9	-74.47	3,828.4	-605.3	332.1	191.1	140.94	2.356	
9,500.0	5,752.6	9,130.7	5,666.7	75.5	74.7	-74.47	3,928.4	-605.3	332.1	187.5	144.57	2.297	
9,600.0	5,752.6	9,230.7	5,666.7	77.3	76.5	-74.47	4,028.4	-605.3	332.1	183.9	148.20	2.241	
9,700.0	5,752.6	9,330.7	5,666.7	79.2	78.4	-74.47	4,128.4	-605.3	332.1	180.2	151.84	2.187	
9,800.0	5,752.7	9,430.7	5,666.7	81.1	80.2	-74.47	4,228.4	-605.3	332.1	176.6	155.48	2.136	
9,900.0	5,752.7	9,530.7	5,666.7	83.0	82.1	-74.47	4,328.4	-605.3	332.1	172.9	159.13	2.087	
10,000.0	5,752.7	9,630.7	5,666.8	84.9	84.0	-74.47	4,428.4	-605.3	332.1	169.3	162.78	2.040	
10,100.0	5,752.7	9,730.7	5,666.8	86.7	85.8	-74.47	4,528.4	-605.3	332.1	165.6	166.43	1.995	
10,200.0	5,752.7	9,830.7	5,666.8	88.6	87.7	-74.47	4,628.4	-605.3	332.1	162.0	170.09	1.952	
10,300.0	5,752.7	9,930.7	5,666.8	90.5	89.6	-74.47	4,728.4	-605.3	332.1	158.3	173.75	1.911	
10,400.0	5,752.7	10,030.7	5,666.8	92.4	91.4	-74.47	4,828.4	-605.3	332.1	154.7	177.41	1.872	
10,500.0	5,752.7	10,130.7	5,666.8	94.3	93.3	-74.47	4,928.4	-605.3	332.1	151.0	181.07	1.834	
10,600.0	5,752.7	10,230.7	5,666.8	96.2	95.2	-74.47	5,028.4	-605.3	332.1	147.3	184.74	1.797	
10,700.0	5,752.7	10,330.7	5,666.8	98.1	97.0	-74.47	5,128.4	-605.3	332.1	143.7	188.41	1.762	
10,800.0	5,752.7	10,430.7	5,666.8	100.0	98.9	-74.47	5,228.4	-605.3	332.1	140.0	192.08	1.729	
10,900.0	5,752.7	10,530.7	5,666.8	101.9	100.8	-74.47	5,328.4	-605.3	332.1	136.3	195.75	1.696	
11,000.0	5,752.8	10,630.7	5,666.8	103.8	102.7	-74.47	5,428.4	-605.3	332.1	132.6	199.42	1.665	
11,100.0	5,752.8	10,730.7	5,666.8	105.7	104.6	-74.47	5,528.4	-605.3	332.1	129.0	203.10	1.635	
11,200.0	5,752.8	10,830.7	5,666.8	107.6	106.4	-74.46	5,628.4	-605.3	332.1	125.3	206.78	1.606	
11,300.0	5,752.8	10,930.7	5,666.8	109.5	108.3	-74.46	5,728.4	-605.3	332.1	121.6	210.45	1.578	
11,400.0	5,752.8	11,030.7	5,666.9	111.4	110.2	-74.46	5,828.4	-605.3	332.1	117.9	214.13	1.551	
11,500.0	5,752.8	11,130.7	5,666.9	113.3	112.1	-74.46	5,928.4	-605.3	332.1	114.2	217.82	1.524	
11,600.0	5,752.8	11,230.7	5,666.9	115.2	114.0	-74.46	6,028.4	-605.3	332.1	110.6	221.50	1.499 Level 3	
11,700.0	5,752.8	11,330.7	5,666.9	117.1	115.9	-74.46	6,128.4	-605.3	332.1	106.9	225.18	1.475 Level 3	
11,800.0	5,752.8	11,430.7	5,666.9	119.0	117.8	-74.46	6,228.4	-605.3	332.1	103.2	228.87	1.451 Level 3	
11,900.0	5,752.8	11,530.7	5,666.9	120.9	119.6	-74.46	6,328.4	-605.3	332.1	99.5	232.56	1.428 Level 3	
12,000.0	5,752.8	11,630.7	5,666.9	122.8	121.5	-74.46	6,428.4	-605.3	332.1	95.8	236.24	1.406 Level 3	
12,100.0	5,752.9	11,730.7	5,666.9	124.7	123.4	-74.46	6,528.4	-605.3	332.1	92.1	239.93	1.384 Level 3	
12,200.0	5,752.9	11,830.7	5,666.9	126.6	125.3	-74.46	6,628.4	-605.3	332.1	88.4	243.62	1.363 Level 3	
12,300.0	5,752.9	11,930.7	5,666.9	128.5	127.2	-74.46	6,728.4	-605.3	332.1	84.7	247.31	1.343 Level 3	
12,400.0	5,752.9	12,030.7	5,666.9	130.4	129.1	-74.46	6,828.4	-605.3	332.1	81.1	251.01	1.323 Level 3	
12,500.0	5,752.9	12,130.7	5,666.9	132.3	131.0	-74.46	6,928.4	-605.3	332.1	77.4	254.70	1.304 Level 3	
12,600.0	5,752.9	12,230.7	5,666.9	134.2	132.9	-74.46	7,028.4	-605.3	332.1	73.7	258.39	1.285 Level 3	
12,700.0	5,752.9	12,330.7	5,666.9	136.1	134.8	-74.46	7,128.4	-605.3	332.1	70.0	262.09	1.267 Level 3	
12,800.0	5,752.9	12,430.7	5,667.0	138.0	136.7	-74.46	7,228.4	-605.2	332.1	66.3	265.78	1.249 Level 2	
12,900.0	5,752.9	12,530.7	5,667.0	140.0	138.6	-74.46	7,328.4	-605.2	332.1	62.6	269.48	1.232 Level 2	
13,000.0	5,752.9	12,630.7	5,667.0	141.9	140.5	-74.46	7,428.4	-605.2	332.1	58.9	273.17	1.216 Level 2	
13,100.0	5,752.9	12,730.7	5,667.0	143.8	142.4	-74.46	7,528.4	-605.2	332.1	55.2	276.87	1.199 Level 2	
13,200.0	5,752.9	12,830.7	5,667.0	145.7	144.3	-74.46	7,628.4	-605.2	332.1	51.5	280.57	1.184 Level 2	
13,300.0	5,753.0	12,930.7	5,667.0	147.6	146.2	-74.46	7,728.4	-605.2	332.1	47.8	284.27	1.168 Level 2	
13,305.0	5,753.0	12,935.7	5,667.0	147.7	146.3	-74.46	7,733.4	-605.2	332.1	47.6	284.45	1.167 Level 2, ES, SF	
13,400.0	5,753.0	12,953.0	5,667.0	149.5	146.6	-74.46	7,750.6	-605.2	341.0	54.5	286.53	1.190 Level 2	
13,500.0	5,753.0	12,953.0	5,667.0	151.4	146.6	-74.46	7,750.6	-605.2	376.6	88.3	288.38	1.306 Level 3	
13,600.0	5,753.0	12,953.0	5,667.0	153.3	146.6	-74.46	7,750.6	-605.2	432.9	142.7	290.23	1.492 Level 3	
13,700.0	5,753.0	12,953.0	5,667.0	155.2	146.6	-74.46	7,750.6	-605.2	502.9	210.9	292.08	1.722	
13,800.0	5,753.0	12,953.0	5,667.0	157.1	146.6	-74.46	7,750.6	-605.2	581.8	287.9	293.93	1.979	
13,828.3	5,753.0	12,953.0	5,667.0	157.6	146.6	-74.46	7,750.6	-605.2	605.3	310.9	294.36	2.056	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
0.0	0.0	3.0	3.0	0.0	0.0	52.63	75.1	98.3	123.7					
100.0	100.0	103.0	103.0	0.1	0.1	52.63	75.1	98.3	123.7	123.5	0.19	636.022		
200.0	200.0	203.0	203.0	0.3	0.3	52.63	75.1	98.3	123.7	123.0	0.64	192.028		
300.0	300.0	303.0	303.0	0.5	0.6	52.63	75.1	98.3	123.7	122.6	1.09	113.085		
400.0	400.0	403.0	403.0	0.8	0.8	52.63	75.1	98.3	123.7	122.1	1.54	80.140		
500.0	500.0	503.0	503.0	1.0	1.0	52.63	75.1	98.3	123.7	121.7	1.99	62.060		
600.0	600.0	603.0	603.0	1.2	1.2	52.63	75.1	98.3	123.7	121.2	2.44	50.636		
700.0	700.0	703.0	703.0	1.4	1.4	52.63	75.1	98.3	123.7	120.8	2.89	42.764		
800.0	800.0	803.0	803.0	1.7	1.7	52.63	75.1	98.3	123.7	120.3	3.34	37.010		
900.0	900.0	903.0	903.0	1.9	1.9	52.63	75.1	98.3	123.7	119.9	3.79	32.621		
1,000.0	1,000.0	1,003.0	1,003.0	2.1	2.1	52.63	75.1	98.3	123.7	119.4	4.24	29.163		
1,100.0	1,100.0	1,103.0	1,103.0	2.3	2.3	52.63	75.1	98.3	123.7	119.0	4.69	26.368		
1,200.0	1,200.0	1,203.0	1,203.0	2.6	2.6	52.63	75.1	98.3	123.7	118.5	5.14	24.061		
1,300.0	1,300.0	1,303.0	1,303.0	2.8	2.8	52.63	75.1	98.3	123.7	118.1	5.59	22.126		
1,400.0	1,400.0	1,403.0	1,403.0	3.0	3.0	52.63	75.1	98.3	123.7	117.6	6.04	20.479		
1,500.0	1,500.0	1,503.0	1,503.0	3.2	3.2	52.63	75.1	98.3	123.7	117.2	6.49	19.060		
1,600.0	1,600.0	1,603.0	1,603.0	3.5	3.5	52.63	75.1	98.3	123.7	116.7	6.94	17.825		
1,700.0	1,700.0	1,703.0	1,703.0	3.7	3.7	52.63	75.1	98.3	123.7	116.3	7.39	16.740		
1,800.0	1,800.0	1,803.0	1,803.0	3.9	3.9	52.63	75.1	98.3	123.7	115.8	7.84	15.780		
1,900.0	1,900.0	1,903.0	1,903.0	4.1	4.1	52.63	75.1	98.3	123.7	115.4	8.29	14.924		
2,000.0	2,000.0	2,003.0	2,003.0	4.4	4.4	52.63	75.1	98.3	123.7	114.9	8.74	14.156		
2,100.0	2,100.0	2,103.0	2,103.0	4.6	4.6	52.63	75.1	98.3	123.7	114.5	9.19	13.463		
2,200.0	2,200.0	2,203.0	2,203.0	4.8	4.8	52.63	75.1	98.3	123.7	114.0	9.63	12.835		
2,300.0	2,300.0	2,303.0	2,303.0	5.0	5.0	52.63	75.1	98.3	123.7	113.6	10.08	12.263		
2,400.0	2,400.0	2,403.0	2,403.0	5.3	5.3	52.63	75.1	98.3	123.7	113.1	10.53	11.739		
2,500.0	2,500.0	2,503.0	2,503.0	5.5	5.5	52.63	75.1	98.3	123.7	112.7	10.98	11.259		
2,600.0	2,600.0	2,603.0	2,603.0	5.7	5.7	52.63	75.1	98.3	123.7	112.2	11.43	10.816		
2,700.0	2,700.0	2,703.0	2,703.0	5.9	5.9	52.63	75.1	98.3	123.7	111.8	11.88	10.407		
2,800.0	2,800.0	2,803.0	2,803.0	6.2	6.2	52.63	75.1	98.3	123.7	111.3	12.33	10.028		
2,900.0	2,900.0	2,903.0	2,903.0	6.4	6.4	52.63	75.1	98.3	123.7	110.9	12.78	9.675		
3,000.0	3,000.0	3,003.0	3,003.0	6.6	6.6	52.63	75.1	98.3	123.7	110.4	13.23	9.346		
3,100.0	3,100.0	3,103.0	3,103.0	6.8	6.8	52.63	75.1	98.3	123.7	110.0	13.68	9.039		
3,200.0	3,200.0	3,203.0	3,203.0	7.1	7.1	52.63	75.1	98.3	123.7	109.5	14.13	8.751		
3,300.0	3,300.0	3,303.0	3,303.0	7.3	7.3	52.63	75.1	98.3	123.7	109.1	14.58	8.482		
3,400.0	3,400.0	3,403.0	3,403.0	7.5	7.5	52.63	75.1	98.3	123.7	108.6	15.03	8.228		
3,500.0	3,500.0	3,503.0	3,503.0	7.7	7.7	52.63	75.1	98.3	123.7	108.2	15.48	7.989		
3,600.0	3,600.0	3,603.0	3,603.0	8.0	8.0	52.63	75.1	98.3	123.7	107.7	15.93	7.763		
3,700.0	3,700.0	3,703.0	3,703.0	8.2	8.2	52.63	75.1	98.3	123.7	107.3	16.38	7.550		
3,800.0	3,800.0	3,803.0	3,803.0	8.4	8.4	52.63	75.1	98.3	123.7	106.8	16.83	7.349		
3,900.0	3,900.0	3,903.0	3,903.0	8.6	8.6	52.63	75.1	98.3	123.7	106.4	17.28	7.157		
4,000.0	4,000.0	4,003.0	4,003.0	8.9	8.9	52.63	75.1	98.3	123.7	105.9	17.73	6.976		
4,100.0	4,100.0	4,103.0	4,103.0	9.1	9.1	52.63	75.1	98.3	123.7	105.5	18.18	6.803		
4,200.0	4,200.0	4,203.0	4,203.0	9.3	9.3	52.63	75.1	98.3	123.7	105.0	18.63	6.639		
4,300.0	4,300.0	4,303.0	4,303.0	9.5	9.5	52.63	75.1	98.3	123.7	104.6	19.07	6.483		
4,400.0	4,400.0	4,403.0	4,403.0	9.8	9.8	52.63	75.1	98.3	123.7	104.1	19.52	6.334		
4,500.0	4,500.0	4,503.0	4,503.0	10.0	10.0	52.63	75.1	98.3	123.7	103.7	19.97	6.191		
4,600.0	4,600.0	4,603.0	4,603.0	10.2	10.2	52.63	75.1	98.3	123.7	103.2	20.42	6.055		
4,700.0	4,700.0	4,703.0	4,703.0	10.4	10.4	52.63	75.1	98.3	123.7	102.8	20.87	5.924		
4,800.0	4,800.0	4,803.0	4,803.0	10.7	10.7	52.63	75.1	98.3	123.7	102.3	21.32	5.799		
4,900.0	4,900.0	4,903.0	4,903.0	10.9	10.9	52.63	75.1	98.3	123.7	101.9	21.77	5.680		
5,000.0	5,000.0	5,003.0	5,003.0	11.1	11.1	52.63	75.1	98.3	123.7	101.4	22.22	5.565		
5,100.0	5,100.0	5,103.0	5,103.0	11.3	11.3	52.63	75.1	98.3	123.7	101.0	22.67	5.454		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
5,123.7	5,123.7	5,126.7	5,126.7	11.4	11.4	52.63	75.1	98.3	123.7	100.9	22.78	5.429	CC	
5,200.0	5,200.0	5,196.4	5,196.3	11.6	11.5	51.68	77.5	98.1	125.2	102.0	23.10	5.417		
5,231.5	5,231.5	5,223.9	5,223.7	11.6	11.6	50.41	80.9	97.8	127.3	104.1	23.23	5.480		
5,250.0	5,250.0	5,240.0	5,239.5	11.7	11.7	68.99	83.5	97.5	129.0	105.7	23.31	5.532		
5,300.0	5,299.8	5,283.0	5,281.4	11.8	11.8	66.58	92.9	96.7	134.0	110.5	23.49	5.705		
5,350.0	5,349.0	5,325.5	5,322.0	11.9	11.8	64.68	105.6	95.6	139.8	116.2	23.62	5.918		
5,400.0	5,397.1	5,367.6	5,361.0	12.0	11.9	63.25	121.3	94.1	146.2	122.5	23.71	6.167		
5,450.0	5,443.6	5,409.3	5,398.2	12.1	12.0	62.25	140.0	92.5	153.0	129.3	23.75	6.444		
5,500.0	5,488.3	5,450.0	5,433.0	12.3	12.1	61.62	160.9	90.6	160.2	136.5	23.76	6.744		
5,550.0	5,530.5	5,491.7	5,466.9	12.4	12.3	61.33	185.2	88.4	167.7	144.0	23.77	7.056		
5,600.0	5,570.0	5,532.4	5,497.9	12.6	12.4	61.31	211.4	86.1	175.5	151.7	23.81	7.370		
5,650.0	5,606.4	5,572.9	5,526.7	12.8	12.6	61.53	239.8	83.6	183.5	159.6	23.91	7.674		
5,700.0	5,639.3	5,613.2	5,553.0	13.0	12.8	61.95	270.2	80.9	191.6	167.5	24.09	7.954		
5,750.0	5,668.5	5,650.0	5,574.9	13.3	13.0	62.40	299.6	78.2	200.0	175.7	24.36	8.213		
5,800.0	5,693.7	5,693.4	5,598.1	13.7	13.3	63.23	336.1	75.0	208.5	183.7	24.83	8.398		
5,850.0	5,714.6	5,733.4	5,616.6	14.1	13.6	64.05	371.4	71.8	217.2	191.8	25.42	8.545		
5,900.0	5,731.0	5,773.4	5,632.3	14.6	13.9	64.95	408.1	68.6	226.0	199.8	26.16	8.639		
5,950.0	5,742.9	5,813.5	5,645.2	15.1	14.2	65.92	445.9	65.2	234.9	207.9	27.05	8.684		
6,000.0	5,750.0	5,850.0	5,654.4	15.7	14.6	66.75	481.1	62.0	244.0	216.0	28.01	8.712		
6,049.7	5,752.4	5,894.0	5,662.1	16.3	15.1	67.99	524.2	58.2	253.1	223.9	29.23	8.659		
6,100.0	5,752.4	5,935.4	5,666.1	17.0	15.5	69.73	565.2	54.5	262.6	232.1	30.57	8.592		
6,200.0	5,752.4	6,020.5	5,666.9	18.2	16.5	71.35	650.1	47.8	282.0	249.1	32.98	8.553		
6,300.0	5,752.4	6,106.1	5,666.9	19.6	17.5	72.59	735.6	44.6	301.0	265.5	35.44	8.493		
6,400.0	5,752.4	6,200.1	5,666.9	21.1	18.7	73.67	829.6	44.4	318.4	280.2	38.14	8.347		
6,500.0	5,752.4	6,299.3	5,666.9	22.6	20.2	74.41	928.7	44.4	331.1	290.1	41.00	8.074		
6,600.0	5,752.4	6,398.9	5,666.9	24.1	21.7	74.83	1,028.4	44.4	338.8	294.9	43.88	7.721		
6,703.0	5,752.4	6,501.9	5,666.9	25.7	23.3	74.98	1,131.4	44.4	341.5	294.7	46.80	7.297		
6,800.0	5,752.4	6,598.9	5,666.9	27.2	24.9	74.97	1,228.3	44.4	341.5	291.7	49.81	6.855		
6,900.0	5,752.4	6,698.9	5,666.9	28.7	26.5	74.97	1,328.3	44.4	341.5	288.5	52.98	6.445		
7,000.0	5,752.4	6,798.9	5,666.9	30.3	28.2	74.97	1,428.3	44.4	341.5	285.3	56.22	6.074		
7,100.0	5,752.4	6,898.9	5,666.9	32.0	29.9	74.97	1,528.3	44.4	341.5	282.0	59.51	5.738		
7,200.0	5,752.4	6,998.9	5,666.9	33.7	31.7	74.97	1,628.3	44.4	341.5	278.6	62.86	5.433		
7,300.0	5,752.4	7,098.9	5,666.9	35.4	33.4	74.97	1,728.3	44.4	341.5	275.2	66.24	5.155		
7,400.0	5,752.4	7,198.9	5,666.9	37.1	35.2	74.97	1,828.3	44.4	341.5	271.8	69.66	4.902		
7,500.0	5,752.5	7,298.9	5,666.9	38.8	37.0	74.97	1,928.3	44.4	341.5	268.4	73.11	4.671		
7,600.0	5,752.5	7,398.9	5,666.9	40.6	38.8	74.97	2,028.3	44.4	341.5	264.9	76.59	4.459		
7,700.0	5,752.5	7,498.9	5,666.9	42.3	40.6	74.97	2,128.3	44.4	341.5	261.4	80.09	4.264		
7,800.0	5,752.5	7,598.9	5,666.9	44.1	42.5	74.96	2,228.3	44.4	341.5	257.9	83.61	4.085		
7,900.0	5,752.5	7,698.9	5,666.9	45.9	44.3	74.96	2,328.3	44.4	341.5	254.4	87.15	3.919		
8,000.0	5,752.5	7,798.9	5,666.9	47.7	46.1	74.96	2,428.3	44.4	341.5	250.8	90.70	3.765		
8,100.0	5,752.5	7,898.9	5,666.9	49.5	48.0	74.96	2,528.3	44.4	341.5	247.3	94.26	3.623		
8,200.0	5,752.5	7,998.9	5,666.9	51.3	49.8	74.96	2,628.3	44.4	341.5	243.7	97.84	3.491		
8,300.0	5,752.5	8,098.9	5,666.9	53.2	51.7	74.96	2,728.3	44.4	341.5	240.1	101.43	3.367		
8,400.0	5,752.5	8,198.9	5,666.9	55.0	53.6	74.96	2,828.3	44.4	341.5	236.5	105.03	3.252		
8,500.0	5,752.5	8,298.9	5,666.9	56.8	55.4	74.96	2,928.3	44.5	341.5	232.9	108.64	3.144		
8,600.0	5,752.6	8,398.9	5,666.9	58.7	57.3	74.96	3,028.3	44.5	341.5	229.3	112.25	3.043		
8,700.0	5,752.6	8,498.9	5,666.9	60.5	59.2	74.95	3,128.3	44.5	341.5	225.7	115.88	2.947		
8,800.0	5,752.6	8,598.9	5,666.9	62.4	61.1	74.95	3,228.3	44.5	341.5	222.0	119.50	2.858		
8,900.0	5,752.6	8,698.9	5,666.9	64.2	62.9	74.95	3,328.3	44.5	341.5	218.4	123.14	2.774		
9,000.0	5,752.6	8,798.9	5,666.9	66.1	64.8	74.95	3,428.3	44.5	341.5	214.8	126.78	2.694		
9,100.0	5,752.6	8,898.9	5,666.9	68.0	66.7	74.95	3,528.3	44.5	341.5	211.1	130.43	2.619		
9,200.0	5,752.6	8,998.9	5,666.9	69.8	68.6	74.95	3,628.3	44.5	341.5	207.5	134.08	2.547		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
9,300.0	5,752.6	9,098.9	5,666.9	71.7	70.5	74.95	3,728.3	44.5	341.5	203.8	137.73	2.480		
9,400.0	5,752.6	9,198.9	5,666.9	73.6	72.4	74.95	3,828.3	44.5	341.5	200.2	141.39	2.416		
9,500.0	5,752.6	9,298.9	5,666.9	75.5	74.3	74.95	3,928.3	44.5	341.6	196.5	145.05	2.355		
9,600.0	5,752.6	9,398.9	5,666.9	77.3	76.1	74.95	4,028.3	44.5	341.6	192.8	148.72	2.297		
9,700.0	5,752.6	9,498.9	5,666.9	79.2	78.0	74.94	4,128.3	44.5	341.6	189.2	152.38	2.241		
9,800.0	5,752.7	9,598.9	5,666.9	81.1	79.9	74.94	4,228.3	44.5	341.6	185.5	156.06	2.189		
9,900.0	5,752.7	9,698.9	5,666.9	83.0	81.8	74.94	4,328.3	44.5	341.6	181.8	159.73	2.138		
10,000.0	5,752.7	9,798.9	5,666.9	84.9	83.7	74.94	4,428.3	44.5	341.6	178.2	163.41	2.090		
10,100.0	5,752.7	9,898.9	5,666.9	86.7	85.6	74.94	4,528.3	44.5	341.6	174.5	167.09	2.044		
10,200.0	5,752.7	9,998.9	5,666.9	88.6	87.5	74.94	4,628.3	44.5	341.6	170.8	170.77	2.000		
10,300.0	5,752.7	10,098.9	5,666.9	90.5	89.4	74.94	4,728.3	44.5	341.6	167.1	174.45	1.958		
10,400.0	5,752.7	10,198.9	5,666.9	92.4	91.3	74.94	4,828.3	44.5	341.6	163.4	178.13	1.918		
10,500.0	5,752.7	10,298.9	5,666.9	94.3	93.2	74.94	4,928.3	44.5	341.6	159.8	181.82	1.879		
10,600.0	5,752.7	10,398.9	5,666.9	96.2	95.1	74.93	5,028.3	44.5	341.6	156.1	185.51	1.841		
10,700.0	5,752.7	10,498.9	5,666.9	98.1	97.0	74.93	5,128.3	44.5	341.6	152.4	189.20	1.805		
10,800.0	5,752.7	10,598.9	5,666.9	100.0	98.9	74.93	5,228.3	44.5	341.6	148.7	192.89	1.771		
10,900.0	5,752.7	10,698.9	5,666.9	101.9	100.8	74.93	5,328.3	44.5	341.6	145.0	196.58	1.738		
11,000.0	5,752.8	10,798.9	5,666.9	103.8	102.8	74.93	5,428.3	44.5	341.6	141.3	200.28	1.706		
11,100.0	5,752.8	10,898.9	5,666.9	105.7	104.7	74.93	5,528.3	44.5	341.6	137.6	203.97	1.675		
11,200.0	5,752.8	10,998.9	5,667.0	107.6	106.6	74.93	5,628.3	44.5	341.6	133.9	207.67	1.645		
11,300.0	5,752.8	11,098.9	5,667.0	109.5	108.5	74.93	5,728.3	44.5	341.6	130.2	211.37	1.616		
11,400.0	5,752.8	11,198.9	5,667.0	111.4	110.4	74.93	5,828.3	44.5	341.6	126.5	215.07	1.588		
11,500.0	5,752.8	11,298.9	5,667.0	113.3	112.3	74.93	5,928.3	44.5	341.6	122.8	218.77	1.562		
11,600.0	5,752.8	11,398.9	5,667.0	115.2	114.2	74.92	6,028.3	44.5	341.6	119.1	222.47	1.536		
11,700.0	5,752.8	11,498.9	5,667.0	117.1	116.1	74.92	6,128.3	44.5	341.6	115.4	226.17	1.510		
11,800.0	5,752.8	11,598.9	5,667.0	119.0	118.0	74.92	6,228.3	44.5	341.6	111.7	229.87	1.486 Level 3		
11,900.0	5,752.8	11,698.9	5,667.0	120.9	119.9	74.92	6,328.3	44.5	341.6	108.0	233.57	1.463 Level 3		
12,000.0	5,752.8	11,798.9	5,667.0	122.8	121.8	74.92	6,428.3	44.5	341.6	104.3	237.28	1.440 Level 3		
12,100.0	5,752.9	11,898.9	5,667.0	124.7	123.7	74.92	6,528.3	44.5	341.6	100.6	240.98	1.418 Level 3		
12,200.0	5,752.9	11,998.9	5,667.0	126.6	125.7	74.92	6,628.3	44.5	341.6	96.9	244.69	1.396 Level 3		
12,300.0	5,752.9	12,098.9	5,667.0	128.5	127.6	74.92	6,728.3	44.5	341.6	93.2	248.39	1.375 Level 3		
12,400.0	5,752.9	12,198.9	5,667.0	130.4	129.5	74.92	6,828.3	44.5	341.6	89.5	252.10	1.355 Level 3		
12,500.0	5,752.9	12,298.9	5,667.0	132.3	131.4	74.91	6,928.3	44.5	341.6	85.8	255.81	1.336 Level 3		
12,600.0	5,752.9	12,398.9	5,667.0	134.2	133.3	74.91	7,028.3	44.5	341.6	82.1	259.52	1.316 Level 3		
12,700.0	5,752.9	12,498.9	5,667.0	136.1	135.2	74.91	7,128.3	44.5	341.6	78.4	263.22	1.298 Level 3		
12,800.0	5,752.9	12,598.9	5,667.0	138.0	137.1	74.91	7,228.3	44.5	341.6	74.7	266.93	1.280 Level 3		
12,900.0	5,752.9	12,698.9	5,667.0	140.0	139.0	74.91	7,328.3	44.5	341.6	71.0	270.64	1.262 Level 3		
13,000.0	5,752.9	12,798.9	5,667.0	141.9	141.0	74.91	7,428.3	44.5	341.6	67.3	274.35	1.245 Level 2		
13,100.0	5,752.9	12,898.9	5,667.0	143.8	142.9	74.91	7,528.3	44.5	341.6	63.6	278.06	1.229 Level 2		
13,200.0	5,752.9	12,998.9	5,667.0	145.7	144.8	74.91	7,628.3	44.5	341.7	59.9	281.77	1.212 Level 2		
13,300.0	5,753.0	13,098.9	5,667.0	147.6	146.7	74.91	7,728.3	44.5	341.7	56.2	285.49	1.197 Level 2		
13,400.0	5,753.0	13,198.9	5,667.0	149.5	148.6	74.91	7,828.3	44.5	341.7	52.5	289.20	1.181 Level 2		
13,500.0	5,753.0	13,298.9	5,667.0	151.4	150.5	74.90	7,928.3	44.5	341.7	48.7	292.91	1.166 Level 2		
13,600.0	5,753.0	13,398.9	5,667.0	153.3	152.4	74.90	8,028.3	44.6	341.7	45.0	296.62	1.152 Level 2		
13,700.0	5,753.0	13,498.9	5,667.0	155.2	154.3	74.90	8,128.3	44.6	341.7	41.3	300.34	1.138 Level 2		
13,800.0	5,753.0	13,598.9	5,667.0	157.1	156.3	74.90	8,228.3	44.6	341.7	37.6	304.05	1.124 Level 2		
13,828.3	5,753.0	13,627.2	5,667.0	157.6	156.8	74.90	8,256.7	44.6	341.7	36.7	305.00	1.120 Level 2, ES, SF		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	65.3	65.3					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	65.3	65.3	65.1	0.19	348.066		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	65.3	65.3	64.7	0.64	102.525		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	65.3	65.3	64.2	1.09	60.116		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	65.3	65.3	63.8	1.54	42.526		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	65.3	65.3	63.3	1.99	32.899		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	65.3	65.3	62.9	2.44	26.827		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	65.3	65.3	62.4	2.88	22.646		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	65.3	65.3	62.0	3.33	19.593		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	65.3	65.3	61.5	3.78	17.266		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	65.3	65.3	61.1	4.23	15.432		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	90.00	0.0	65.3	65.3	60.6	4.68	13.951		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.00	0.0	65.3	65.3	60.2	5.13	12.729		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.00	0.0	65.3	65.3	59.8	5.58	11.704		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.00	0.0	65.3	65.3	59.3	6.03	10.832		
1,466.7	1,466.7	1,466.7	1,466.7	3.2	3.2	90.00	0.0	65.3	65.3	59.0	6.33	10.319 CC		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	90.00	0.0	65.3	65.3	58.9	6.48	10.080 ES		
1,600.0	1,600.0	1,598.2	1,598.2	3.5	3.5	89.09	1.1	66.6	66.7	59.8	6.92	9.634		
1,700.0	1,700.0	1,696.2	1,696.1	3.7	3.7	86.58	4.2	70.6	70.8	63.4	7.36	9.623		
1,800.0	1,800.0	1,795.9	1,795.5	3.9	3.9	83.55	8.6	76.0	76.6	68.8	7.80	9.819		
1,900.0	1,900.0	1,895.7	1,895.0	4.1	4.1	80.95	13.0	81.4	82.6	74.3	8.24	10.015		
2,000.0	2,000.0	1,995.4	1,994.5	4.4	4.3	78.70	17.3	86.8	88.7	80.0	8.69	10.205		
2,100.0	2,100.0	2,095.2	2,094.0	4.6	4.6	76.75	21.7	92.2	94.9	85.8	9.14	10.388		
2,200.0	2,200.0	2,194.9	2,193.6	4.8	4.8	75.04	26.1	97.6	101.2	91.7	9.59	10.563		
2,300.0	2,300.0	2,294.7	2,293.1	5.0	5.1	73.53	30.5	103.0	107.7	97.6	10.03	10.729		
2,400.0	2,400.0	2,394.4	2,392.6	5.3	5.3	72.20	34.8	108.4	114.1	103.7	10.48	10.886		
2,500.0	2,500.0	2,494.2	2,492.1	5.5	5.5	71.00	39.2	113.9	120.7	109.7	10.94	11.035		
2,600.0	2,600.0	2,593.9	2,591.6	5.7	5.8	69.93	43.6	119.3	127.3	115.9	11.39	11.176		
2,700.0	2,700.0	2,693.7	2,691.1	5.9	6.0	68.97	47.9	124.7	133.9	122.0	11.84	11.308		
2,800.0	2,800.0	2,793.5	2,790.6	6.2	6.3	68.09	52.3	130.1	140.5	128.2	12.29	11.434		
2,900.0	2,900.0	2,893.2	2,890.1	6.4	6.5	67.30	56.7	135.5	147.2	134.5	12.74	11.553		
3,000.0	3,000.0	2,993.0	2,989.7	6.6	6.8	66.57	61.1	140.9	153.9	140.7	13.20	11.665		
3,100.0	3,100.0	3,092.7	3,089.2	6.8	7.0	65.91	65.4	146.3	160.7	147.0	13.65	11.771		
3,200.0	3,200.0	3,192.5	3,188.7	7.1	7.2	65.30	69.8	151.7	167.4	153.3	14.10	11.872		
3,300.0	3,300.0	3,292.2	3,288.2	7.3	7.5	64.73	74.2	157.2	174.2	159.6	14.56	11.967		
3,400.0	3,400.0	3,392.0	3,387.7	7.5	7.7	64.21	78.6	162.6	181.0	166.0	15.01	12.058		
3,500.0	3,500.0	3,498.0	3,493.5	7.7	8.0	63.81	82.2	167.0	186.2	170.8	15.45	12.053		
3,600.0	3,600.0	3,604.5	3,600.0	8.0	8.2	63.69	83.3	168.4	187.9	172.0	15.87	11.843		
3,700.0	3,700.0	3,704.5	3,700.0	8.2	8.4	63.69	83.3	168.4	187.9	171.6	16.29	11.536		
3,800.0	3,800.0	3,804.5	3,800.0	8.4	8.6	63.69	83.3	168.4	187.9	171.2	16.73	11.231		
3,900.0	3,900.0	3,904.5	3,900.0	8.6	8.8	63.69	83.3	168.4	187.9	170.7	17.17	10.942		
4,000.0	4,000.0	4,004.5	4,000.0	8.9	9.0	63.69	83.3	168.4	187.9	170.3	17.62	10.667		
4,100.0	4,100.0	4,104.5	4,100.0	9.1	9.2	63.69	83.3	168.4	187.9	169.8	18.06	10.405		
4,200.0	4,200.0	4,204.5	4,200.0	9.3	9.4	63.69	83.3	168.4	187.9	169.4	18.50	10.155		
4,300.0	4,300.0	4,304.5	4,300.0	9.5	9.6	63.69	83.3	168.4	187.9	169.0	18.95	9.918		
4,400.0	4,400.0	4,404.5	4,400.0	9.8	9.9	63.69	83.3	168.4	187.9	168.5	19.39	9.691		
4,500.0	4,500.0	4,504.5	4,500.0	10.0	10.1	63.69	83.3	168.4	187.9	168.1	19.83	9.474		
4,600.0	4,600.0	4,604.5	4,600.0	10.2	10.3	63.69	83.3	168.4	187.9	167.6	20.28	9.266		
4,700.0	4,700.0	4,704.5	4,700.0	10.4	10.5	63.69	83.3	168.4	187.9	167.2	20.72	9.067		
4,800.0	4,800.0	4,804.5	4,800.0	10.7	10.7	63.69	83.3	168.4	187.9	166.7	21.17	8.877		
4,900.0	4,900.0	4,904.5	4,900.0	10.9	10.9	63.69	83.3	168.4	187.9	166.3	21.61	8.694		
5,000.0	5,000.0	5,004.5	5,000.0	11.1	11.2	63.69	83.3	168.4	187.9	165.8	22.06	8.518		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,100.0	5,104.5	5,100.0	11.3	11.4	63.69	83.3	168.4	187.9	165.4	22.50	8.350		
5,200.0	5,200.0	5,204.5	5,200.0	11.6	11.6	63.69	83.3	168.4	187.9	165.0	22.95	8.188		
5,231.5	5,231.5	5,236.0	5,231.5	11.6	11.7	63.69	83.3	168.4	187.9	164.8	23.09	8.138		
5,250.0	5,250.0	5,250.0	5,245.5	11.7	11.7	83.31	83.4	168.5	188.0	164.9	23.13	8.130		
5,300.0	5,299.8	5,291.4	5,286.8	11.8	11.8	83.54	86.0	169.2	189.7	166.4	23.33	8.131		
5,350.0	5,349.0	5,331.5	5,326.5	11.9	11.9	83.97	91.5	170.7	193.5	169.9	23.54	8.220		
5,400.0	5,397.1	5,371.4	5,365.4	12.0	12.0	84.57	99.9	173.0	199.2	175.5	23.74	8.392		
5,450.0	5,443.6	5,410.9	5,403.2	12.1	12.1	85.26	111.1	176.0	207.1	183.1	23.96	8.644		
5,500.0	5,488.3	5,450.0	5,439.6	12.3	12.3	85.98	124.7	179.8	217.0	192.8	24.19	8.970		
5,550.0	5,530.5	5,488.6	5,474.4	12.4	12.4	86.65	140.8	184.2	228.9	204.5	24.45	9.364		
5,600.0	5,570.0	5,526.6	5,507.4	12.6	12.5	87.21	159.0	189.1	242.9	218.2	24.74	9.818		
5,650.0	5,606.4	5,564.1	5,538.5	12.8	12.7	87.62	179.1	194.7	258.9	233.8	25.08	10.320		
5,700.0	5,639.3	5,600.0	5,566.8	13.0	12.9	87.78	200.5	200.5	276.6	251.2	25.47	10.861		
5,750.0	5,668.5	5,637.3	5,594.6	13.3	13.1	87.85	224.5	207.1	296.1	270.2	25.93	11.421		
5,800.0	5,693.7	5,673.2	5,619.5	13.7	13.3	87.66	249.4	213.9	317.2	290.7	26.45	11.993		
5,850.0	5,714.6	5,708.6	5,642.3	14.1	13.6	87.25	275.6	221.0	339.7	312.7	27.03	12.567		
5,900.0	5,731.0	5,743.7	5,663.0	14.6	13.8	86.64	302.9	228.5	363.5	335.8	27.68	13.130		
5,950.0	5,742.9	5,778.6	5,681.6	15.1	14.1	85.86	331.3	236.3	388.4	360.0	28.40	13.675		
6,000.0	5,750.0	5,813.3	5,698.2	15.7	14.4	84.92	360.8	244.3	414.2	385.0	29.17	14.199		
6,049.7	5,752.4	5,847.9	5,712.7	16.3	14.7	83.86	391.1	252.6	440.6	410.6	29.98	14.695		
6,100.0	5,752.4	5,884.4	5,725.6	17.0	15.1	86.12	423.9	261.6	467.6	436.6	30.99	15.088		
6,200.0	5,752.4	5,964.0	5,745.4	18.2	16.0	89.11	498.2	281.9	519.6	486.6	33.06	15.717		
6,300.0	5,752.4	6,050.8	5,753.3	19.6	17.1	90.11	581.5	304.7	567.9	532.5	35.39	16.047		
6,400.0	5,752.4	6,180.9	5,753.4	21.1	18.7	90.10	708.0	335.0	608.7	570.4	38.35	15.874		
6,500.0	5,752.4	6,322.8	5,753.4	22.6	20.5	90.09	848.0	358.2	638.0	596.2	41.73	15.289		
6,600.0	5,752.4	6,471.9	5,753.4	24.1	22.6	90.09	996.5	371.3	654.7	609.2	45.45	14.403		
6,703.0	5,752.4	6,606.8	5,753.3	25.7	24.6	90.08	1,131.3	373.6	659.0	609.8	49.14	13.409		
6,800.0	5,752.4	6,703.8	5,753.3	27.2	26.1	90.08	1,228.3	373.6	659.0	606.8	52.20	12.624		
6,900.0	5,752.4	6,803.8	5,753.3	28.7	27.7	90.08	1,328.3	373.6	659.0	603.6	55.42	11.891		
7,000.0	5,752.4	6,903.8	5,753.3	30.3	29.3	90.08	1,428.3	373.6	659.0	600.3	58.71	11.225		
7,100.0	5,752.4	7,003.8	5,753.3	32.0	31.0	90.08	1,528.3	373.6	659.0	596.9	62.06	10.618		
7,200.0	5,752.4	7,103.8	5,753.3	33.7	32.7	90.08	1,628.3	373.6	659.0	593.5	65.47	10.065		
7,300.0	5,752.4	7,203.8	5,753.3	35.4	34.4	90.08	1,728.3	373.6	659.0	590.1	68.93	9.561		
7,400.0	5,752.4	7,303.8	5,753.3	37.1	36.1	90.07	1,828.3	373.6	659.0	586.6	72.42	9.100		
7,500.0	5,752.5	7,403.8	5,753.3	38.8	37.9	90.07	1,928.3	373.6	659.0	583.1	75.95	8.677		
7,600.0	5,752.5	7,503.8	5,753.3	40.6	39.7	90.07	2,028.3	373.6	659.0	579.5	79.50	8.289		
7,700.0	5,752.5	7,603.8	5,753.3	42.3	41.5	90.07	2,128.3	373.7	659.0	575.9	83.08	7.932		
7,800.0	5,752.5	7,703.8	5,753.3	44.1	43.2	90.07	2,228.3	373.7	659.0	572.3	86.69	7.603		
7,900.0	5,752.5	7,803.8	5,753.3	45.9	45.0	90.07	2,328.3	373.7	659.0	568.7	90.31	7.298		
8,000.0	5,752.5	7,903.8	5,753.3	47.7	46.9	90.07	2,428.3	373.7	659.1	565.1	93.95	7.015		
8,100.0	5,752.5	8,003.8	5,753.3	49.5	48.7	90.07	2,528.3	373.7	659.1	561.5	97.61	6.752		
8,200.0	5,752.5	8,103.8	5,753.3	51.3	50.5	90.06	2,628.3	373.7	659.1	557.8	101.28	6.508		
8,300.0	5,752.5	8,203.8	5,753.3	53.2	52.3	90.06	2,728.3	373.7	659.1	554.1	104.96	6.279		
8,400.0	5,752.5	8,303.8	5,753.3	55.0	54.2	90.06	2,828.3	373.7	659.1	550.4	108.65	6.066		
8,500.0	5,752.5	8,403.8	5,753.3	56.8	56.0	90.06	2,928.3	373.7	659.1	546.7	112.36	5.866		
8,600.0	5,752.6	8,503.8	5,753.3	58.7	57.9	90.06	3,028.3	373.7	659.1	543.0	116.07	5.679		
8,700.0	5,752.6	8,603.8	5,753.2	60.5	59.7	90.06	3,128.3	373.7	659.1	539.3	119.79	5.502		
8,800.0	5,752.6	8,703.8	5,753.2	62.4	61.6	90.06	3,228.3	373.7	659.1	535.6	123.52	5.336		
8,900.0	5,752.6	8,803.8	5,753.2	64.2	63.5	90.06	3,328.3	373.7	659.1	531.9	127.25	5.180		
9,000.0	5,752.6	8,903.8	5,753.2	66.1	65.3	90.06	3,428.3	373.8	659.1	528.1	130.99	5.032		
9,100.0	5,752.6	9,003.8	5,753.2	68.0	67.2	90.05	3,528.3	373.8	659.1	524.4	134.74	4.892		
9,200.0	5,752.6	9,103.8	5,753.2	69.8	69.1	90.05	3,628.3	373.8	659.1	520.6	138.49	4.759		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,752.6	9,203.8	5,753.2	71.7	70.9	90.05	3,728.3	373.8	659.1	516.9	142.25	4.634	
9,400.0	5,752.6	9,303.8	5,753.2	73.6	72.8	90.05	3,828.3	373.8	659.2	513.1	146.01	4.514	
9,500.0	5,752.6	9,403.8	5,753.2	75.5	74.7	90.05	3,928.3	373.8	659.2	509.4	149.77	4.401	
9,600.0	5,752.6	9,503.8	5,753.2	77.3	76.6	90.05	4,028.3	373.8	659.2	505.6	153.54	4.293	
9,700.0	5,752.6	9,603.8	5,753.2	79.2	78.5	90.05	4,128.3	373.8	659.2	501.9	157.31	4.190	
9,800.0	5,752.7	9,703.8	5,753.2	81.1	80.4	90.05	4,228.3	373.8	659.2	498.1	161.09	4.092	
9,900.0	5,752.7	9,803.8	5,753.2	83.0	82.2	90.05	4,328.3	373.8	659.2	494.3	164.87	3.998	
10,000.0	5,752.7	9,903.8	5,753.2	84.9	84.1	90.04	4,428.3	373.8	659.2	490.5	168.65	3.909	
10,100.0	5,752.7	10,003.8	5,753.2	86.7	86.0	90.04	4,528.3	373.8	659.2	486.8	172.44	3.823	
10,200.0	5,752.7	10,103.8	5,753.2	88.6	87.9	90.04	4,628.3	373.9	659.2	483.0	176.22	3.741	
10,300.0	5,752.7	10,203.8	5,753.2	90.5	89.8	90.04	4,728.3	373.9	659.2	479.2	180.01	3.662	
10,400.0	5,752.7	10,303.8	5,753.2	92.4	91.7	90.04	4,828.3	373.9	659.2	475.4	183.80	3.587	
10,500.0	5,752.7	10,403.8	5,753.2	94.3	93.6	90.04	4,928.3	373.9	659.2	471.6	187.60	3.514	
10,600.0	5,752.7	10,503.8	5,753.2	96.2	95.5	90.04	5,028.3	373.9	659.2	467.8	191.39	3.444	
10,700.0	5,752.7	10,603.8	5,753.2	98.1	97.4	90.04	5,128.3	373.9	659.2	464.1	195.19	3.377	
10,800.0	5,752.7	10,703.8	5,753.1	100.0	99.3	90.03	5,228.3	373.9	659.3	460.3	198.99	3.313	
10,900.0	5,752.7	10,803.8	5,753.1	101.9	101.2	90.03	5,328.3	373.9	659.3	456.5	202.79	3.251	
11,000.0	5,752.8	10,903.8	5,753.1	103.8	103.1	90.03	5,428.3	373.9	659.3	452.7	206.59	3.191	
11,100.0	5,752.8	11,003.8	5,753.1	105.7	105.0	90.03	5,528.3	373.9	659.3	448.9	210.39	3.134	
11,200.0	5,752.8	11,103.8	5,753.1	107.6	106.9	90.03	5,628.3	373.9	659.3	445.1	214.20	3.078	
11,300.0	5,752.8	11,203.8	5,753.1	109.5	108.8	90.03	5,728.3	373.9	659.3	441.3	218.01	3.024	
11,400.0	5,752.8	11,303.8	5,753.1	111.4	110.7	90.03	5,828.3	374.0	659.3	437.5	221.81	2.972	
11,500.0	5,752.8	11,403.8	5,753.1	113.3	112.6	90.03	5,928.3	374.0	659.3	433.7	225.62	2.922	
11,600.0	5,752.8	11,503.8	5,753.1	115.2	114.5	90.03	6,028.3	374.0	659.3	429.9	229.43	2.874	
11,700.0	5,752.8	11,603.8	5,753.1	117.1	116.4	90.02	6,128.3	374.0	659.3	426.1	233.24	2.827	
11,800.0	5,752.8	11,703.8	5,753.1	119.0	118.3	90.02	6,228.3	374.0	659.3	422.3	237.05	2.781	
11,900.0	5,752.8	11,803.8	5,753.1	120.9	120.2	90.02	6,328.3	374.0	659.3	418.5	240.87	2.737	
12,000.0	5,752.8	11,903.8	5,753.1	122.8	122.1	90.02	6,428.3	374.0	659.3	414.7	244.68	2.695	
12,100.0	5,752.9	12,003.8	5,753.1	124.7	124.0	90.02	6,528.3	374.0	659.3	410.8	248.49	2.653	
12,200.0	5,752.9	12,103.8	5,753.1	126.6	125.9	90.02	6,628.3	374.0	659.4	407.0	252.31	2.613	
12,300.0	5,752.9	12,203.8	5,753.1	128.5	127.8	90.02	6,728.3	374.0	659.4	403.2	256.13	2.574	
12,400.0	5,752.9	12,303.8	5,753.1	130.4	129.7	90.02	6,828.3	374.0	659.4	399.4	259.94	2.537	
12,500.0	5,752.9	12,403.8	5,753.1	132.3	131.7	90.01	6,928.3	374.0	659.4	395.6	263.76	2.500	
12,600.0	5,752.9	12,503.8	5,753.1	134.2	133.6	90.01	7,028.3	374.0	659.4	391.8	267.58	2.464	
12,700.0	5,752.9	12,603.8	5,753.1	136.1	135.5	90.01	7,128.3	374.1	659.4	388.0	271.40	2.430	
12,800.0	5,752.9	12,703.8	5,753.1	138.0	137.4	90.01	7,228.3	374.1	659.4	384.2	275.22	2.396	
12,900.0	5,752.9	12,803.8	5,753.0	140.0	139.3	90.01	7,328.3	374.1	659.4	380.4	279.04	2.363	
13,000.0	5,752.9	12,903.8	5,753.0	141.9	141.2	90.01	7,428.3	374.1	659.4	376.5	282.86	2.331	
13,100.0	5,752.9	13,003.8	5,753.0	143.8	143.1	90.01	7,528.3	374.1	659.4	372.7	286.68	2.300	
13,200.0	5,752.9	13,103.8	5,753.0	145.7	145.0	90.01	7,628.3	374.1	659.4	368.9	290.50	2.270	
13,300.0	5,753.0	13,203.8	5,753.0	147.6	146.9	90.01	7,728.3	374.1	659.4	365.1	294.33	2.240	
13,400.0	5,753.0	13,303.8	5,753.0	149.5	148.8	90.00	7,828.3	374.1	659.4	361.3	298.15	2.212	
13,500.0	5,753.0	13,403.8	5,753.0	151.4	150.8	90.00	7,928.3	374.1	659.4	357.5	301.97	2.184	
13,600.0	5,753.0	13,503.8	5,753.0	153.3	152.7	90.00	8,028.3	374.1	659.5	353.7	305.80	2.157	
13,700.0	5,753.0	13,603.8	5,753.0	155.2	154.6	90.00	8,128.3	374.1	659.5	349.8	309.62	2.130	
13,800.0	5,753.0	13,703.8	5,753.0	157.1	156.5	90.00	8,228.3	374.1	659.5	346.0	313.44	2.104	
13,828.3	5,753.0	13,732.1	5,753.0	157.6	157.0	90.00	8,256.6	374.2	659.5	345.0	314.43	2.097 SF	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	3.0	3.0	0.0	0.0	0.00	75.0	0.0	75.0					
100.0	100.0	103.0	103.0	0.1	0.1	0.00	75.0	0.0	75.0	74.9	0.19	385.970		
200.0	200.0	203.0	203.0	0.3	0.3	0.00	75.0	0.0	75.0	74.4	0.64	116.541		
300.0	300.0	303.0	303.0	0.5	0.6	0.00	75.0	0.0	75.0	74.0	1.09	68.632		
400.0	400.0	403.0	403.0	0.8	0.8	0.00	75.0	0.0	75.0	73.5	1.54	48.638		
500.0	500.0	503.1	503.1	1.0	1.0	0.00	75.0	0.0	75.0	73.1	1.99	37.675		
600.0	600.0	605.6	605.6	1.2	1.2	-0.47	73.2	-0.6	73.2	70.8	2.42	30.253		
700.0	700.0	707.7	707.5	1.4	1.4	-1.94	67.9	-2.3	68.1	65.2	2.84	23.959		
800.0	800.0	807.4	807.0	1.7	1.6	-4.14	61.3	-4.4	61.6	58.3	3.27	18.847		
900.0	900.0	907.2	906.5	1.9	1.8	-6.86	54.7	-6.6	55.2	51.5	3.70	14.924		
1,000.0	1,000.0	1,006.9	1,006.0	2.1	2.1	-10.27	48.0	-8.7	48.9	44.8	4.13	11.836		
1,100.0	1,100.0	1,106.7	1,105.5	2.3	2.3	-14.67	41.4	-10.8	42.9	38.3	4.57	9.373		
1,200.0	1,200.0	1,206.4	1,205.0	2.6	2.5	-20.46	34.8	-13.0	37.2	32.2	5.02	7.400		
1,300.0	1,300.0	1,306.2	1,304.6	2.8	2.8	-28.22	28.2	-15.1	32.0	26.5	5.49	5.832		
1,400.0	1,400.0	1,406.0	1,404.1	3.0	3.0	-38.68	21.5	-17.2	27.6	21.6	5.97	4.627		
1,500.0	1,500.0	1,505.7	1,503.6	3.2	3.3	-52.42	14.9	-19.4	24.5	18.0	6.47	3.778		
1,600.0	1,600.0	1,605.5	1,603.1	3.5	3.6	-68.93	8.3	-21.5	23.1	16.1	7.00	3.295		
1,618.6	1,618.6	1,624.0	1,621.6	3.5	3.6	-72.14	7.1	-21.9	23.0	15.9	7.09	3.244 CC, ES		
1,700.0	1,700.0	1,705.2	1,702.6	3.7	3.8	-85.97	1.7	-23.6	23.7	16.2	7.51	3.159 SF		
1,800.0	1,800.0	1,805.0	1,802.1	3.9	4.1	-100.88	-5.0	-25.8	26.3	18.3	7.98	3.293		
1,900.0	1,900.0	1,904.7	1,901.6	4.1	4.3	-112.53	-11.6	-27.9	30.3	21.8	8.42	3.591		
2,000.0	2,000.0	2,004.5	2,001.2	4.4	4.6	-121.21	-18.2	-30.0	35.2	26.3	8.86	3.970		
2,100.0	2,100.0	2,104.3	2,100.7	4.6	4.8	-127.65	-24.8	-32.2	40.7	31.4	9.30	4.379		
2,200.0	2,200.0	2,204.0	2,200.2	4.8	5.1	-132.50	-31.5	-34.3	46.6	36.9	9.73	4.791		
2,300.0	2,300.0	2,303.8	2,299.7	5.0	5.4	-136.25	-38.1	-36.5	52.8	42.6	10.17	5.191		
2,400.0	2,400.0	2,403.5	2,399.2	5.3	5.6	-139.20	-44.7	-38.6	59.2	48.6	10.62	5.573		
2,500.0	2,500.0	2,503.3	2,498.7	5.5	5.9	-141.57	-51.3	-40.7	65.7	54.6	11.06	5.934		
2,600.0	2,600.0	2,603.0	2,598.2	5.7	6.1	-143.51	-57.9	-42.9	72.2	60.7	11.51	6.275		
2,700.0	2,700.0	2,702.8	2,697.7	5.9	6.4	-145.13	-64.6	-45.0	78.9	66.9	11.96	6.595		
2,800.0	2,800.0	2,802.5	2,797.3	6.2	6.7	-146.50	-71.2	-47.1	85.6	73.2	12.41	6.895		
2,900.0	2,900.0	2,902.3	2,896.8	6.4	6.9	-147.67	-77.8	-49.3	92.3	79.4	12.86	7.177		
3,000.0	3,000.0	3,002.1	2,996.3	6.6	7.2	-148.67	-84.4	-51.4	99.1	85.8	13.31	7.442		
3,100.0	3,100.0	3,101.8	3,095.8	6.8	7.5	-149.55	-91.1	-53.5	105.9	92.1	13.76	7.692		
3,200.0	3,200.0	3,201.6	3,195.3	7.1	7.7	-150.33	-97.7	-55.7	112.7	98.5	14.22	7.926		
3,300.0	3,300.0	3,301.3	3,294.8	7.3	8.0	-151.01	-104.3	-57.8	119.5	104.9	14.67	8.147		
3,400.0	3,400.0	3,401.1	3,394.3	7.5	8.2	-151.62	-110.9	-59.9	126.4	111.3	15.13	8.355		
3,500.0	3,500.0	3,500.8	3,493.9	7.7	8.5	-152.17	-117.6	-62.1	133.2	117.7	15.58	8.552		
3,600.0	3,600.0	3,600.6	3,593.4	8.0	8.8	-152.66	-124.2	-64.2	140.1	124.1	16.04	8.738		
3,700.0	3,700.0	3,700.4	3,692.9	8.2	9.0	-153.11	-130.8	-66.3	147.0	130.5	16.49	8.915		
3,800.0	3,800.0	3,800.1	3,792.4	8.4	9.3	-153.52	-137.4	-68.5	153.9	137.0	16.95	9.082		
3,900.0	3,900.0	3,899.9	3,891.9	8.6	9.6	-153.89	-144.0	-70.6	160.8	143.4	17.40	9.241		
4,000.0	4,000.0	3,999.6	3,991.4	8.9	9.8	-154.23	-150.7	-72.7	167.7	149.9	17.86	9.392		
4,100.0	4,100.0	4,099.4	4,090.9	9.1	10.1	-154.55	-157.3	-74.9	174.6	156.3	18.31	9.535		
4,200.0	4,200.0	4,199.1	4,190.4	9.3	10.3	-154.84	-163.9	-77.0	181.5	162.8	18.77	9.672		
4,300.0	4,300.0	4,298.9	4,290.0	9.5	10.6	-155.11	-170.5	-79.1	188.5	169.2	19.23	9.803		
4,400.0	4,400.0	4,398.6	4,389.5	9.8	10.9	-155.36	-177.2	-81.3	195.4	175.7	19.68	9.927		
4,500.0	4,500.0	4,498.4	4,489.0	10.0	11.1	-155.59	-183.8	-83.4	202.3	182.2	20.14	10.046		
4,600.0	4,600.0	4,598.2	4,588.5	10.2	11.4	-155.81	-190.4	-85.5	209.2	188.6	20.59	10.160		
4,700.0	4,700.0	4,697.9	4,688.0	10.4	11.7	-156.01	-197.0	-87.7	216.2	195.1	21.05	10.269		
4,800.0	4,800.0	4,797.7	4,787.5	10.7	11.9	-156.20	-203.7	-89.8	223.1	201.6	21.51	10.373		
4,900.0	4,900.0	4,897.4	4,887.0	10.9	12.2	-156.38	-210.3	-91.9	230.1	208.1	21.97	10.474		
5,000.0	5,000.0	4,997.2	4,986.6	11.1	12.5	-156.55	-216.9	-94.1	237.0	214.6	22.42	10.570		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3												Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,100.0	5,096.9	5,086.1	11.3	12.7	-156.71	-223.5	-96.2	243.9	221.1	22.88	10.662	
5,200.0	5,200.0	5,195.5	5,184.4	11.6	13.0	-156.86	-230.1	-98.3	250.9	227.6	23.33	10.752	
5,231.5	5,231.5	5,216.7	5,205.5	11.6	13.0	-156.90	-232.0	-98.9	253.9	230.4	23.46	10.822	
5,250.0	5,250.0	5,229.0	5,217.7	11.7	13.1	-137.18	-233.5	-99.4	256.4	233.2	23.23	11.038	
5,300.0	5,299.8	5,261.3	5,249.5	11.8	13.2	-136.81	-238.7	-101.1	267.9	244.6	23.29	11.501	
5,350.0	5,349.0	5,300.0	5,287.1	11.9	13.4	-136.64	-247.3	-103.9	285.8	262.5	23.27	12.282	
5,400.0	5,397.1	5,319.0	5,305.3	12.0	13.4	-135.51	-252.6	-105.6	309.2	286.0	23.13	13.365	
5,450.0	5,443.6	5,350.0	5,334.5	12.1	13.6	-134.63	-262.4	-108.7	338.2	315.2	22.97	14.724	
5,500.0	5,488.3	5,364.0	5,347.5	12.3	13.7	-132.10	-267.4	-110.4	371.6	348.7	22.83	16.273	
5,550.0	5,530.5	5,381.2	5,363.3	12.4	13.8	-128.96	-274.0	-112.5	409.0	386.1	22.83	17.913	
5,600.0	5,570.0	5,400.0	5,380.2	12.6	13.9	-125.01	-281.8	-115.0	449.6	426.6	23.06	19.497	
5,650.0	5,606.4	5,400.0	5,380.2	12.8	13.9	-116.94	-281.8	-115.0	492.8	468.8	23.94	20.580	
5,700.0	5,639.3	5,413.4	5,392.1	13.0	14.0	-108.89	-287.7	-116.9	537.7	512.5	25.14	21.389	
5,750.0	5,668.5	5,418.4	5,396.5	13.3	14.0	-97.02	-290.0	-117.6	583.9	557.3	26.60	21.955	
5,800.0	5,693.7	5,421.0	5,398.7	13.7	14.0	-82.71	-291.1	-118.0	630.8	603.5	27.34	23.078	
5,850.0	5,714.6	5,421.3	5,399.0	14.1	14.0	-67.70	-291.3	-118.0	678.0	651.5	26.50	25.583	
5,900.0	5,731.0	5,419.7	5,397.6	14.6	14.0	-54.17	-290.5	-117.8	725.0	700.8	24.18	29.987	
5,950.0	5,742.9	5,416.2	5,394.5	15.1	14.0	-43.27	-289.0	-117.3	771.4	750.2	21.20	36.382	
6,000.0	5,750.0	5,400.0	5,380.2	15.7	13.9	-33.66	-281.8	-115.0	817.1	799.3	17.81	45.873	
6,049.7	5,752.4	5,400.0	5,380.2	16.3	13.9	-28.40	-281.8	-115.0	860.9	845.0	15.87	54.230	
6,100.0	5,752.4	5,400.0	5,380.2	17.0	13.9	-25.93	-281.8	-115.0	905.1	889.7	15.33	59.044	
6,200.0	5,752.4	5,400.0	5,380.2	18.2	13.9	-20.13	-281.8	-115.0	995.3	981.5	13.77	72.281	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	32.9	32.9					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	32.9	32.9	32.8	0.19	175.508		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	32.9	32.9	32.3	0.64	51.697		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	32.9	32.9	31.9	1.09	30.313		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	32.9	32.9	31.4	1.54	21.443		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	32.9	32.9	31.0	1.99	16.589		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	32.9	32.9	30.5	2.44	13.527		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	32.9	32.9	30.1	2.88	11.419		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	32.9	32.9	29.6	3.33	9.880		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	32.9	32.9	29.2	3.78	8.706		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	32.9	32.9	28.7	4.23	7.782		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	90.00	0.0	32.9	32.9	28.3	4.68	7.035		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.00	0.0	32.9	32.9	27.8	5.13	6.418		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.00	0.0	32.9	32.9	27.4	5.58	5.902		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.00	0.0	32.9	32.9	26.9	6.03	5.462		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	90.00	0.0	32.9	32.9	26.5	6.48	5.083		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	90.00	0.0	32.9	32.9	26.0	6.93	4.753		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	90.00	0.0	32.9	32.9	25.6	7.38	4.464		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	90.00	0.0	32.9	32.9	25.1	7.83	4.207		
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	90.00	0.0	32.9	32.9	24.7	8.28	3.979		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	90.00	0.0	32.9	32.9	24.2	8.73	3.774		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	90.00	0.0	32.9	32.9	23.8	9.18	3.589		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	90.00	0.0	32.9	32.9	23.3	9.63	3.422		
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	90.00	0.0	32.9	32.9	22.9	10.08	3.269		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	90.00	0.0	32.9	32.9	22.4	10.53	3.129		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	90.00	0.0	32.9	32.9	22.0	10.98	3.001		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	90.00	0.0	32.9	32.9	21.5	11.43	2.883		
2,700.0	2,700.0	2,700.0	2,700.0	5.9	5.9	90.00	0.0	32.9	32.9	21.1	11.88	2.774		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	90.00	0.0	32.9	32.9	20.6	12.33	2.673		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	90.00	0.0	32.9	32.9	20.2	12.77	2.579		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	90.00	0.0	32.9	32.9	19.7	13.22	2.491		
3,100.0	3,100.0	3,100.0	3,100.0	6.8	6.8	90.00	0.0	32.9	32.9	19.3	13.67	2.409		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	90.00	0.0	32.9	32.9	18.8	14.12	2.333		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	90.00	0.0	32.9	32.9	18.4	14.57	2.261		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	90.00	0.0	32.9	32.9	17.9	15.02	2.193		
3,500.0	3,500.0	3,500.0	3,500.0	7.7	7.7	90.00	0.0	32.9	32.9	17.5	15.47	2.129		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	90.00	0.0	32.9	32.9	17.0	15.92	2.069		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	90.00	0.0	32.9	32.9	16.6	16.37	2.012		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	90.00	0.0	32.9	32.9	16.1	16.82	1.959		
3,900.0	3,900.0	3,900.0	3,900.0	8.6	8.6	90.00	0.0	32.9	32.9	15.7	17.27	1.908		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	90.00	0.0	32.9	32.9	15.2	17.72	1.859		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	90.00	0.0	32.9	32.9	14.8	18.17	1.813		
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	90.00	0.0	32.9	32.9	14.3	18.62	1.769		
4,300.0	4,300.0	4,300.0	4,300.0	9.5	9.5	90.00	0.0	32.9	32.9	13.9	19.07	1.728		
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	90.00	0.0	32.9	32.9	13.4	19.52	1.688		
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	90.00	0.0	32.9	32.9	13.0	19.97	1.650		
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	90.00	0.0	32.9	32.9	12.5	20.42	1.614		
4,700.0	4,700.0	4,700.0	4,700.0	10.4	10.4	90.00	0.0	32.9	32.9	12.1	20.87	1.579		
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	90.00	0.0	32.9	32.9	11.6	21.32	1.545		
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	90.00	0.0	32.9	32.9	11.2	21.77	1.514		
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	90.00	0.0	32.9	32.9	10.7	22.21	1.483 Level 3		
5,100.0	5,100.0	5,100.0	5,100.0	11.3	11.3	90.00	0.0	32.9	32.9	10.3	22.66	1.454 Level 3		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance			Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)				Between Ellipses (usft)	
5,200.0	5,200.0	5,200.0	5,200.0	11.6	11.6	90.00	0.0	32.9	32.9	9.8	23.11	1.425 Level 3		
5,231.5	5,231.5	5,231.5	5,231.5	11.6	11.6	90.00	0.0	32.9	32.9	9.7	23.26	1.417 Level 3, CC, ES		
5,250.0	5,250.0	5,250.0	5,250.0	11.7	11.7	110.66	-0.3	32.9	33.0	9.7	23.33	1.416 Level 3, SF		
5,300.0	5,299.8	5,299.1	5,298.9	11.8	11.7	123.19	-4.3	32.8	35.3	11.9	23.46	1.506		
5,350.0	5,349.0	5,344.8	5,343.9	11.9	11.8	141.79	-12.1	32.4	44.8	21.4	23.36	1.917		
5,400.0	5,397.1	5,385.3	5,383.1	12.0	11.9	156.17	-22.4	32.0	64.6	41.6	22.94	2.814		
5,450.0	5,443.6	5,419.8	5,415.8	12.1	12.0	164.83	-33.4	31.6	93.5	71.2	22.30	4.192		
5,500.0	5,488.3	5,450.0	5,443.7	12.3	12.0	170.23	-44.9	31.1	129.2	107.7	21.45	6.022		
5,550.0	5,530.5	5,470.1	5,461.9	12.4	12.1	172.79	-53.4	30.8	169.9	149.4	20.44	8.312		
5,600.0	5,570.0	5,486.7	5,476.7	12.6	12.1	174.51	-60.9	30.4	214.2	195.0	19.25	11.127		
5,650.0	5,606.4	5,500.0	5,488.3	12.8	12.1	175.64	-67.3	30.2	261.1	243.2	17.92	14.572		
5,700.0	5,639.3	5,500.0	5,488.3	13.0	12.1	173.33	-67.3	30.2	309.8	293.2	16.55	18.717		
5,750.0	5,668.5	5,500.0	5,488.3	13.3	12.1	162.05	-67.3	30.2	359.5	343.4	16.12	22.296		
5,800.0	5,693.7	5,500.0	5,488.3	13.7	12.1	17.24	-67.3	30.2	409.5	394.6	14.84	27.586		
5,850.0	5,714.6	5,500.0	5,488.3	14.1	12.1	5.53	-67.3	30.2	459.2	447.3	11.90	38.597		
5,900.0	5,731.0	5,500.0	5,488.3	14.6	12.1	3.15	-67.3	30.2	508.5	498.2	10.25	49.629		
5,950.0	5,742.9	5,500.0	5,488.3	15.1	12.1	2.15	-67.3	30.2	557.0	548.1	8.89	62.647		
6,000.0	5,750.0	5,500.0	5,488.3	15.7	12.1	1.61	-67.3	30.2	604.4	596.5	7.93	76.203		
6,049.7	5,752.4	5,481.4	5,472.0	16.3	12.1	1.87	-58.5	30.5	649.9	642.3	7.59	85.603		
6,100.0	5,752.4	5,471.8	5,463.4	17.0	12.1	5.30	-54.1	30.7	695.5	687.2	8.24	84.426		
6,200.0	5,752.4	5,450.0	5,443.7	18.2	12.0	11.93	-44.9	31.1	786.9	776.6	10.32	76.245		
6,300.0	5,752.4	5,450.0	5,443.7	19.6	12.0	18.87	-44.9	31.1	879.2	865.9	13.26	66.309		
6,400.0	5,752.4	5,425.3	5,420.9	21.1	12.0	24.72	-35.4	31.5	971.6	955.3	16.23	59.845		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #3													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	3.0	3.0	0.0	0.0	41.04	75.1	65.3	99.5					
100.0	100.0	103.0	103.0	0.1	0.1	41.04	75.1	65.3	99.5	99.3	0.19	511.744		
200.0	200.0	203.0	203.0	0.3	0.3	41.04	75.1	65.3	99.5	98.9	0.64	154.518		
300.0	300.0	303.0	303.0	0.5	0.6	41.04	75.1	65.3	99.5	98.4	1.09	90.997		
400.0	400.0	403.0	403.0	0.8	0.8	41.04	75.1	65.3	99.5	98.0	1.54	64.487		
500.0	500.0	503.1	503.1	1.0	1.0	41.04	75.1	65.3	99.5	97.5	1.99	49.955		
600.0	600.0	605.1	605.1	1.2	1.2	41.95	73.2	65.8	98.4	96.0	2.42	40.699		
700.0	700.0	706.7	706.5	1.4	1.4	44.68	67.8	67.0	95.4	92.6	2.84	33.651		
800.0	800.0	806.5	806.1	1.7	1.6	48.36	61.0	68.7	91.9	88.6	3.27	28.101		
900.0	900.0	906.2	905.6	1.9	1.8	52.32	54.3	70.3	88.8	85.1	3.72	23.873		
1,000.0	1,000.0	1,006.0	1,005.1	2.1	2.1	56.54	47.5	71.9	86.2	82.0	4.18	20.618		
1,100.0	1,100.0	1,105.7	1,104.6	2.3	2.3	61.00	40.7	73.5	84.0	79.4	4.64	18.091		
1,200.0	1,200.0	1,205.5	1,204.1	2.6	2.5	65.66	34.0	75.1	82.4	77.3	5.11	16.121		
1,300.0	1,300.0	1,305.3	1,303.6	2.8	2.8	70.48	27.2	76.7	81.4	75.8	5.58	14.582		
1,400.0	1,400.0	1,405.0	1,403.1	3.0	3.0	75.39	20.4	78.3	80.9	74.9	6.04	13.382		
1,426.0	1,426.0	1,431.0	1,429.0	3.1	3.1	76.67	18.6	78.7	80.9	74.7	6.17	13.117 CC		
1,500.0	1,500.0	1,504.8	1,502.6	3.2	3.3	80.31	13.6	79.9	81.0	74.5	6.51	12.454 ES		
1,600.0	1,600.0	1,604.5	1,602.2	3.5	3.6	85.18	6.9	81.5	81.8	74.8	6.97	11.741		
1,700.0	1,700.0	1,704.3	1,701.7	3.7	3.8	89.93	0.1	83.1	83.1	75.7	7.42	11.199		
1,800.0	1,800.0	1,804.0	1,801.2	3.9	4.1	94.51	-6.7	84.7	85.0	77.1	7.87	10.797		
1,900.0	1,900.0	1,903.8	1,900.7	4.1	4.3	98.86	-13.4	86.3	87.4	79.1	8.32	10.505		
2,000.0	2,000.0	2,003.6	2,000.2	4.4	4.6	102.95	-20.2	87.9	90.2	81.5	8.76	10.302		
2,100.0	2,100.0	2,103.3	2,099.7	4.6	4.8	106.78	-27.0	89.5	93.5	84.3	9.20	10.168		
2,200.0	2,200.0	2,203.1	2,199.2	4.8	5.1	110.33	-33.8	91.1	97.2	87.6	9.64	10.088		
2,300.0	2,300.0	2,302.8	2,298.8	5.0	5.4	113.61	-40.5	92.7	101.3	91.2	10.08	10.050		
2,400.0	2,400.0	2,402.6	2,398.3	5.3	5.6	116.63	-47.3	94.3	105.6	95.1	10.51	10.046 SF		
2,500.0	2,500.0	2,502.3	2,497.8	5.5	5.9	119.41	-54.1	95.9	110.2	99.3	10.95	10.066		
2,600.0	2,600.0	2,602.1	2,597.3	5.7	6.1	121.96	-60.8	97.5	115.1	103.7	11.39	10.104		
2,700.0	2,700.0	2,701.8	2,696.8	5.9	6.4	124.30	-67.6	99.1	120.2	108.3	11.83	10.158		
2,800.0	2,800.0	2,801.6	2,796.3	6.2	6.7	126.44	-74.4	100.7	125.4	113.1	12.27	10.221		
2,900.0	2,900.0	2,901.4	2,895.8	6.4	6.9	128.41	-81.2	102.3	130.8	118.1	12.71	10.292		
3,000.0	3,000.0	3,001.1	2,995.4	6.6	7.2	130.23	-87.9	104.0	136.4	123.2	13.15	10.368		
3,100.0	3,100.0	3,100.9	3,094.9	6.8	7.5	131.90	-94.7	105.6	142.0	128.4	13.60	10.448		
3,200.0	3,200.0	3,200.6	3,194.4	7.1	7.7	133.44	-101.5	107.2	147.8	133.8	14.04	10.530		
3,300.0	3,300.0	3,300.4	3,293.9	7.3	8.0	134.86	-108.2	108.8	153.7	139.2	14.48	10.613		
3,400.0	3,400.0	3,400.1	3,393.4	7.5	8.2	136.18	-115.0	110.4	159.7	144.8	14.93	10.696		
3,500.0	3,500.0	3,499.9	3,492.9	7.7	8.5	137.40	-121.8	112.0	165.7	150.4	15.38	10.779		
3,600.0	3,600.0	3,599.7	3,592.4	8.0	8.8	138.54	-128.6	113.6	171.9	156.0	15.82	10.862		
3,700.0	3,700.0	3,699.4	3,691.9	8.2	9.0	139.60	-135.3	115.2	178.1	161.8	16.27	10.943		
3,800.0	3,800.0	3,799.2	3,791.5	8.4	9.3	140.58	-142.1	116.8	184.3	167.6	16.72	11.023		
3,900.0	3,900.0	3,898.9	3,891.0	8.6	9.6	141.51	-148.9	118.4	190.6	173.4	17.17	11.101		
4,000.0	4,000.0	3,998.7	3,990.5	8.9	9.8	142.37	-155.6	120.0	196.9	179.3	17.62	11.177		
4,100.0	4,100.0	4,098.4	4,090.0	9.1	10.1	143.18	-162.4	121.6	203.3	185.2	18.07	11.252		
4,200.0	4,200.0	4,198.2	4,189.5	9.3	10.3	143.94	-169.2	123.2	209.7	191.2	18.52	11.324		
4,300.0	4,300.0	4,298.0	4,289.0	9.5	10.6	144.65	-176.0	124.8	216.2	197.2	18.97	11.395		
4,400.0	4,400.0	4,397.7	4,388.5	9.8	10.9	145.32	-182.7	126.4	222.7	203.2	19.42	11.464		
4,500.0	4,500.0	4,497.5	4,488.1	10.0	11.1	145.96	-189.5	128.0	229.2	209.3	19.87	11.531		
4,600.0	4,600.0	4,597.2	4,587.6	10.2	11.4	146.56	-196.3	129.6	235.7	215.4	20.33	11.596		
4,700.0	4,700.0	4,697.0	4,687.1	10.4	11.7	147.13	-203.0	131.2	242.3	221.5	20.78	11.660		
4,800.0	4,800.0	4,796.7	4,786.6	10.7	11.9	147.66	-209.8	132.8	248.9	227.6	21.23	11.721		
4,900.0	4,900.0	4,896.5	4,886.1	10.9	12.2	148.17	-216.6	134.4	255.5	233.8	21.68	11.781		
5,000.0	5,000.0	4,996.2	4,985.6	11.1	12.4	148.66	-223.4	136.0	262.1	240.0	22.14	11.839		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3411A - HZ - Plan #3													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,100.0	5,096.0	5,085.1	11.3	12.7	149.12	-230.1	137.6	268.7	246.2	22.59	11.896		
5,200.0	5,200.0	5,195.2	5,184.1	11.6	13.0	149.55	-236.9	139.2	275.4	252.4	23.04	11.951		
5,231.5	5,231.5	5,216.0	5,204.8	11.6	13.0	149.67	-238.7	139.7	278.2	255.0	23.16	12.008		
5,250.0	5,250.0	5,228.1	5,216.8	11.7	13.1	169.31	-240.2	140.0	280.7	257.3	23.35	12.018		
5,300.0	5,299.8	5,259.8	5,248.0	11.8	13.2	169.48	-245.3	141.2	292.6	269.3	23.32	12.549		
5,350.0	5,349.0	5,289.3	5,276.8	11.9	13.3	169.64	-251.6	142.7	311.7	288.7	23.09	13.502		
5,400.0	5,397.1	5,315.8	5,302.3	12.0	13.4	169.72	-258.7	144.4	337.5	314.8	22.66	14.892		
5,450.0	5,443.6	5,338.9	5,324.2	12.1	13.5	169.64	-265.9	146.1	369.0	347.0	22.04	16.743		
5,500.0	5,488.3	5,350.0	5,334.6	12.3	13.6	168.94	-269.7	147.0	405.7	384.4	21.24	19.103		
5,550.0	5,530.5	5,374.3	5,357.0	12.4	13.7	168.54	-278.8	149.2	446.1	425.8	20.30	21.981		
5,600.0	5,570.0	5,386.7	5,368.3	12.6	13.8	167.14	-283.8	150.4	490.0	470.8	19.27	25.434		
5,650.0	5,606.4	5,400.0	5,380.3	12.8	13.9	164.94	-289.4	151.7	536.4	518.1	18.25	29.384		
5,700.0	5,639.3	5,400.0	5,380.3	13.0	13.9	158.86	-289.4	151.7	584.5	566.6	17.85	32.752		
5,750.0	5,668.5	5,400.0	5,380.3	13.3	13.9	143.04	-289.4	151.7	633.8	613.6	20.12	31.506		
5,800.0	5,693.7	5,400.0	5,380.3	13.7	13.9	87.38	-289.4	151.7	683.6	656.0	27.54	24.825		
5,850.0	5,714.6	5,400.0	5,380.3	14.1	13.9	33.26	-289.4	151.7	733.4	715.5	17.85	41.091		
5,900.0	5,731.0	5,400.0	5,380.3	14.6	13.9	17.91	-289.4	151.7	782.8	770.2	12.63	61.994		
5,950.0	5,742.9	5,400.0	5,380.3	15.1	13.9	11.91	-289.4	151.7	831.5	821.3	10.18	81.639		
6,000.0	5,750.0	5,400.0	5,380.3	15.7	13.9	8.82	-289.4	151.7	879.1	870.2	8.87	99.153		
6,049.7	5,752.4	5,400.0	5,380.3	16.3	13.9	6.96	-289.4	151.7	925.1	916.7	8.39	110.265		
6,100.0	5,752.4	5,378.3	5,360.7	17.0	13.8	9.99	-280.4	149.5	970.5	961.1	9.41	103.139		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #3														Offset Site Error:	0.0 usft
Survey Program: 0-ISCSA MWD														Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	98.3	98.3						
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	98.3	98.3	98.1	0.19	523.573			
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	98.3	98.3	97.6	0.64	154.222			
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	98.3	98.3	97.2	1.09	90.429			
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	98.3	98.3	96.7	1.54	63.969			
466.7	466.7	466.7	466.7	0.9	0.9	90.00	0.0	98.3	98.3	96.4	1.84	53.528 CC			
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	98.3	98.3	96.3	1.99	49.489 ES			
600.0	600.0	598.5	598.5	1.2	1.2	90.88	-1.5	99.0	99.0	96.6	2.41	41.147			
700.0	700.0	696.8	696.6	1.4	1.4	93.45	-6.1	101.2	101.4	98.6	2.82	35.990			
800.0	800.0	796.5	796.1	1.7	1.6	96.77	-12.4	104.2	105.0	101.7	3.25	32.348			
900.0	900.0	896.2	895.6	1.9	1.8	99.87	-18.7	107.2	108.9	105.2	3.68	29.591			
1,000.0	1,000.0	996.0	995.1	2.1	2.0	102.75	-24.9	110.2	113.1	108.9	4.12	27.453			
1,100.0	1,100.0	1,095.8	1,094.6	2.3	2.3	105.42	-31.2	113.2	117.5	113.0	4.56	25.768			
1,200.0	1,200.0	1,195.5	1,194.1	2.6	2.5	107.89	-37.5	116.2	122.2	117.2	5.00	24.419			
1,300.0	1,300.0	1,295.3	1,293.7	2.8	2.8	110.17	-43.8	119.2	127.1	121.7	5.45	23.323			
1,400.0	1,400.0	1,395.0	1,393.2	3.0	3.0	112.28	-50.1	122.2	132.2	126.3	5.90	22.422			
1,500.0	1,500.0	1,494.8	1,492.7	3.2	3.3	114.24	-56.3	125.1	137.4	131.1	6.34	21.673			
1,600.0	1,600.0	1,594.5	1,592.2	3.5	3.5	116.04	-62.6	128.1	142.8	136.1	6.79	21.042			
1,700.0	1,700.0	1,694.3	1,691.7	3.7	3.8	117.72	-68.9	131.1	148.4	141.1	7.24	20.507			
1,800.0	1,800.0	1,794.1	1,791.2	3.9	4.0	119.27	-75.2	134.1	154.0	146.3	7.68	20.048			
1,900.0	1,900.0	1,893.8	1,890.7	4.1	4.3	120.71	-81.5	137.1	159.8	151.6	8.13	19.652			
2,000.0	2,000.0	1,993.6	1,990.3	4.4	4.6	122.05	-87.7	140.1	165.6	157.0	8.58	19.308			
2,100.0	2,100.0	2,093.3	2,089.8	4.6	4.8	123.30	-94.0	143.1	171.6	162.5	9.03	19.006			
2,200.0	2,200.0	2,193.1	2,189.3	4.8	5.1	124.47	-100.3	146.1	177.6	168.1	9.47	18.741			
2,300.0	2,300.0	2,292.8	2,288.8	5.0	5.3	125.56	-106.6	149.1	183.6	173.7	9.92	18.506			
2,400.0	2,400.0	2,392.6	2,388.3	5.3	5.6	126.58	-112.9	152.1	189.8	179.4	10.37	18.296			
2,500.0	2,500.0	2,492.3	2,487.8	5.5	5.9	127.53	-119.1	155.1	196.0	185.1	10.82	18.109			
2,600.0	2,600.0	2,592.1	2,587.3	5.7	6.1	128.43	-125.4	158.1	202.2	190.9	11.27	17.940			
2,700.0	2,700.0	2,691.9	2,686.8	5.9	6.4	129.27	-131.7	161.1	208.5	196.8	11.72	17.788			
2,800.0	2,800.0	2,791.6	2,786.4	6.2	6.6	130.06	-138.0	164.1	214.8	202.7	12.17	17.651			
2,900.0	2,900.0	2,891.4	2,885.9	6.4	6.9	130.81	-144.3	167.1	221.2	208.6	12.62	17.526			
3,000.0	3,000.0	2,991.1	2,985.4	6.6	7.2	131.51	-150.6	170.1	227.6	214.5	13.07	17.411			
3,100.0	3,100.0	3,090.9	3,084.9	6.8	7.4	132.18	-156.8	173.1	234.1	220.5	13.52	17.307			
3,200.0	3,200.0	3,190.6	3,184.4	7.1	7.7	132.81	-163.1	176.1	240.5	226.5	13.98	17.211			
3,300.0	3,300.0	3,290.4	3,283.9	7.3	8.0	133.41	-169.4	179.1	247.0	232.6	14.43	17.123			
3,400.0	3,400.0	3,390.2	3,383.4	7.5	8.2	133.98	-175.7	182.1	253.5	238.7	14.88	17.041			
3,500.0	3,500.0	3,489.9	3,483.0	7.7	8.5	134.51	-182.0	185.1	260.1	244.8	15.33	16.966			
3,600.0	3,600.0	3,589.7	3,582.5	8.0	8.7	135.03	-188.2	188.1	266.7	250.9	15.78	16.896			
3,700.0	3,700.0	3,689.4	3,682.0	8.2	9.0	135.51	-194.5	191.1	273.2	257.0	16.23	16.831			
3,800.0	3,800.0	3,789.2	3,781.5	8.4	9.3	135.98	-200.8	194.1	279.9	263.2	16.69	16.770			
3,900.0	3,900.0	3,888.9	3,881.0	8.6	9.5	136.42	-207.1	197.0	286.5	269.3	17.14	16.714			
4,000.0	4,000.0	3,988.7	3,980.5	8.9	9.8	136.84	-213.4	200.0	293.1	275.5	17.59	16.661			
4,100.0	4,100.0	4,088.5	4,080.0	9.1	10.1	137.25	-219.6	203.0	299.8	281.7	18.05	16.612			
4,200.0	4,200.0	4,188.2	4,179.5	9.3	10.3	137.64	-225.9	206.0	306.4	287.9	18.50	16.565			
4,300.0	4,300.0	4,288.0	4,279.1	9.5	10.6	138.01	-232.2	209.0	313.1	294.2	18.95	16.522			
4,400.0	4,400.0	4,387.7	4,378.6	9.8	10.9	138.36	-238.5	212.0	319.8	300.4	19.41	16.481			
4,500.0	4,500.0	4,487.5	4,478.1	10.0	11.1	138.70	-244.8	215.0	326.5	306.7	19.86	16.442			
4,600.0	4,600.0	4,587.2	4,577.6	10.2	11.4	139.03	-251.0	218.0	333.3	312.9	20.31	16.406			
4,700.0	4,700.0	4,687.0	4,677.1	10.4	11.6	139.34	-257.3	221.0	340.0	319.2	20.77	16.371			
4,800.0	4,800.0	4,786.7	4,776.6	10.7	11.9	139.64	-263.6	224.0	346.7	325.5	21.22	16.338			
4,900.0	4,900.0	4,886.5	4,876.1	10.9	12.2	139.93	-269.9	227.0	353.5	331.8	21.68	16.307			
5,000.0	5,000.0	4,986.3	4,975.7	11.1	12.4	140.21	-276.2	230.0	360.2	338.1	22.13	16.278			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #27J-2210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4780.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	MD Reference:	WELL @ 4780.5usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #27J-2210B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #3													Offset Site Error: 0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,100.0	5,086.0	5,075.2	11.3	12.7	140.48	-282.4	233.0	367.0	344.4	22.58	16.250	
5,200.0	5,200.0	5,185.8	5,174.7	11.6	13.0	140.74	-288.7	236.0	373.8	350.7	23.04	16.224	
5,231.5	5,231.5	5,217.2	5,206.0	11.6	13.0	140.82	-290.7	236.9	375.9	352.7	23.18	16.215	
5,250.0	5,250.0	5,235.6	5,224.4	11.7	13.1	160.42	-291.9	237.5	377.5	354.1	23.34	16.175 SF	
5,300.0	5,299.8	5,280.0	5,268.7	11.8	13.2	160.44	-294.7	238.8	384.8	361.5	23.34	16.489	
5,350.0	5,349.0	5,300.0	5,288.6	11.9	13.3	160.14	-296.3	239.6	398.3	375.2	23.11	17.233	
5,400.0	5,397.1	5,336.4	5,324.6	12.0	13.4	159.99	-301.0	241.8	418.0	395.3	22.76	18.365	
5,450.0	5,443.6	5,350.0	5,338.0	12.1	13.4	159.14	-303.3	242.9	444.3	422.0	22.22	19.995	
5,500.0	5,488.3	5,380.0	5,367.1	12.3	13.6	158.52	-309.6	245.9	475.6	454.0	21.58	22.038	
5,550.0	5,530.5	5,400.0	5,386.4	12.4	13.7	157.21	-314.6	248.2	511.8	490.9	20.86	24.540	
5,600.0	5,570.0	5,400.0	5,386.4	12.6	13.7	154.09	-314.6	248.2	552.1	531.9	20.23	27.298	
5,650.0	5,606.4	5,422.4	5,407.7	12.8	13.8	151.33	-321.0	251.3	595.2	575.4	19.72	30.184	
5,700.0	5,639.3	5,430.7	5,415.4	13.0	13.8	145.69	-323.6	252.5	640.9	621.0	19.88	32.241	
5,750.0	5,668.5	5,450.0	5,433.4	13.3	13.9	138.65	-330.0	255.5	688.6	667.8	20.82	33.075	
5,800.0	5,693.7	5,450.0	5,433.4	13.7	13.9	122.04	-330.0	255.5	737.1	712.9	24.24	30.411	
5,850.0	5,714.6	5,450.0	5,433.4	14.1	13.9	94.17	-330.0	255.5	786.3	758.3	27.95	28.130	
5,900.0	5,731.0	5,450.0	5,433.4	14.6	13.9	62.64	-330.0	255.5	835.6	809.8	25.81	32.378	
5,950.0	5,742.9	5,450.0	5,433.4	15.1	13.9	41.25	-330.0	255.5	884.6	864.2	20.33	43.517	
6,000.0	5,750.0	5,433.5	5,418.0	15.7	13.8	27.51	-324.5	252.9	932.5	917.1	15.41	60.508	
6,049.7	5,752.4	5,428.1	5,413.0	16.3	13.8	20.84	-322.8	252.1	979.3	966.3	12.98	75.460	

Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S27-T10N-R58W
Site Error: 0.0usft
Reference Well: Razor #27J-2210B
Well Error: 0.0usft
Reference Wellbore: HZ
Reference Design: Plan #2

Local Co-ordinate Reference: Well Razor #27J-2210B
TVD Reference: WELL @ 4780.5usft (Original Well Elev)
MD Reference: WELL @ 4780.5usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 4780.5usft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #27J-2210B
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.07°

