

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #12H-0113A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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		S12-T10N-R58W			
Site Position:		Northing:	1,558,541.09 ft	Latitude:	40.854456
From:	Lat/Long	Easting:	3,465,183.08 ft	Longitude:	-103.818397
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.09 °

Well	Razor #12H-0113A					
Well Position	+N/-S	0.0 ft	Northing:	1,558,420.18 ft	Latitude:	40.853956
	+E/-W	0.0 ft	Easting:	3,468,396.49 ft	Longitude:	-103.806792
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,947.3 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	8/5/2013	8.08	67.49	53,238

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	0.00	

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,012.2	5.12	270.08	1,011.5	0.0	-22.9	1.00	1.00	0.00	270.08	
5,294.1	5.12	270.08	5,276.3	0.6	-405.1	0.00	0.00	0.00	0.00	
6,112.2	90.00	0.00	5,795.0	521.5	-451.6	11.00	10.37	10.99	89.92	
12,758.2	90.00	0.00	5,795.0	7,167.5	-451.6	0.00	0.00	0.00	0.00	Razor #12H-0113A PI

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Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	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	KOP @ 500'
600.0	1.00	270.08	600.0	0.0	-0.9	0.0	1.00	1.00	
700.0	2.00	270.08	700.0	0.0	-3.5	0.0	1.00	1.00	
800.0	3.00	270.08	799.9	0.0	-7.9	0.0	1.00	1.00	
900.0	4.00	270.08	899.7	0.0	-14.0	0.0	1.00	1.00	
1,000.0	5.00	270.08	999.4	0.0	-21.8	0.0	1.00	1.00	
1,012.2	5.12	270.08	1,011.5	0.0	-22.9	0.0	1.00	1.00	EOB; Inc=5.12°
1,100.0	5.12	270.08	1,099.0	0.0	-30.7	0.0	0.00	0.00	
1,200.0	5.12	270.08	1,198.6	0.1	-39.6	0.1	0.00	0.00	
1,300.0	5.12	270.08	1,298.2	0.1	-48.6	0.1	0.00	0.00	
1,400.0	5.12	270.08	1,397.8	0.1	-57.5	0.1	0.00	0.00	
1,500.0	5.12	270.08	1,497.4	0.1	-66.4	0.1	0.00	0.00	
1,600.0	5.12	270.08	1,597.0	0.1	-75.4	0.1	0.00	0.00	
1,700.0	5.12	270.08	1,696.6	0.1	-84.3	0.1	0.00	0.00	
1,800.0	5.12	270.08	1,796.2	0.1	-93.2	0.1	0.00	0.00	
1,900.0	5.12	270.08	1,895.8	0.1	-102.1	0.1	0.00	0.00	
2,000.0	5.12	270.08	1,995.4	0.2	-111.1	0.2	0.00	0.00	
2,100.0	5.12	270.08	2,095.0	0.2	-120.0	0.2	0.00	0.00	
2,200.0	5.12	270.08	2,194.6	0.2	-128.9	0.2	0.00	0.00	
2,300.0	5.12	270.08	2,294.2	0.2	-137.8	0.2	0.00	0.00	
2,400.0	5.12	270.08	2,393.8	0.2	-146.8	0.2	0.00	0.00	
2,500.0	5.12	270.08	2,493.4	0.2	-155.7	0.2	0.00	0.00	
2,600.0	5.12	270.08	2,593.0	0.2	-164.6	0.2	0.00	0.00	
2,700.0	5.12	270.08	2,692.6	0.2	-173.6	0.2	0.00	0.00	
2,800.0	5.12	270.08	2,792.2	0.3	-182.5	0.3	0.00	0.00	
2,900.0	5.12	270.08	2,891.8	0.3	-191.4	0.3	0.00	0.00	
3,000.0	5.12	270.08	2,991.4	0.3	-200.3	0.3	0.00	0.00	
3,100.0	5.12	270.08	3,091.0	0.3	-209.3	0.3	0.00	0.00	
3,200.0	5.12	270.08	3,190.6	0.3	-218.2	0.3	0.00	0.00	
3,300.0	5.12	270.08	3,290.2	0.3	-227.1	0.3	0.00	0.00	
3,400.0	5.12	270.08	3,389.8	0.3	-236.0	0.3	0.00	0.00	
3,500.0	5.12	270.08	3,489.4	0.4	-245.0	0.4	0.00	0.00	
3,600.0	5.12	270.08	3,589.0	0.4	-253.9	0.4	0.00	0.00	
3,700.0	5.12	270.08	3,688.6	0.4	-262.8	0.4	0.00	0.00	
3,800.0	5.12	270.08	3,788.2	0.4	-271.8	0.4	0.00	0.00	
3,900.0	5.12	270.08	3,887.8	0.4	-280.7	0.4	0.00	0.00	
4,000.0	5.12	270.08	3,987.4	0.4	-289.6	0.4	0.00	0.00	
4,100.0	5.12	270.08	4,087.0	0.4	-298.5	0.4	0.00	0.00	
4,200.0	5.12	270.08	4,186.6	0.4	-307.5	0.4	0.00	0.00	
4,300.0	5.12	270.08	4,286.2	0.5	-316.4	0.5	0.00	0.00	
4,400.0	5.12	270.08	4,385.8	0.5	-325.3	0.5	0.00	0.00	
4,500.0	5.12	270.08	4,485.4	0.5	-334.2	0.5	0.00	0.00	
4,600.0	5.12	270.08	4,585.0	0.5	-343.2	0.5	0.00	0.00	
4,700.0	5.12	270.08	4,684.6	0.5	-352.1	0.5	0.00	0.00	
4,800.0	5.12	270.08	4,784.2	0.5	-361.0	0.5	0.00	0.00	
4,900.0	5.12	270.08	4,883.8	0.5	-370.0	0.5	0.00	0.00	
5,000.0	5.12	270.08	4,983.4	0.5	-378.9	0.5	0.00	0.00	

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Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,100.0	5.12	270.08	5,083.0	0.6	-387.8	0.6	0.00	0.00	
5,200.0	5.12	270.08	5,182.6	0.6	-396.7	0.6	0.00	0.00	
5,294.1	5.12	270.08	5,276.3	0.6	-405.1	0.6	0.00	0.00	Start build/turn @ 5294' MD
5,300.0	5.16	277.37	5,282.2	0.6	-405.7	0.6	11.00	0.71	
5,350.0	8.01	320.41	5,331.9	3.6	-410.1	3.6	11.00	5.68	
5,400.0	12.72	336.61	5,381.1	11.3	-414.5	11.3	11.00	9.43	
5,450.0	17.89	343.88	5,429.3	23.8	-418.9	23.8	11.00	10.33	
5,500.0	23.20	347.93	5,476.1	40.8	-423.0	40.8	11.00	10.63	
5,550.0	28.59	350.53	5,521.1	62.2	-427.1	62.2	11.00	10.77	
5,600.0	34.00	352.36	5,563.8	87.9	-430.9	87.9	11.00	10.84	
5,650.0	39.44	353.74	5,603.8	117.6	-434.5	117.6	11.00	10.88	
5,700.0	44.89	354.84	5,640.9	151.0	-437.8	151.0	11.00	10.90	
5,750.0	50.35	355.74	5,674.6	187.8	-440.8	187.8	11.00	10.92	
5,800.0	55.82	356.51	5,704.6	227.6	-443.5	227.6	11.00	10.93	
5,850.0	61.29	357.19	5,730.7	270.2	-445.9	270.2	11.00	10.94	
5,867.9	63.25	357.41	5,739.0	286.1	-446.6	286.1	11.00	10.94	Niobrara Top
5,900.0	66.76	357.79	5,752.6	315.1	-447.8	315.1	11.00	10.95	
5,950.0	72.23	358.35	5,770.1	361.9	-449.4	361.9	11.00	10.95	
6,000.0	77.71	358.88	5,783.0	410.1	-450.6	410.1	11.00	10.95	
6,050.0	83.19	359.39	5,791.3	459.4	-451.3	459.4	11.00	10.95	
6,100.0	88.67	359.88	5,794.9	509.3	-451.6	509.3	11.00	10.96	
6,111.9	89.97	360.00	5,795.0	521.2	-451.6	521.2	11.00	10.96	Niobrara A
6,112.2	90.00	0.00	5,795.0	521.5	-451.6	521.5	11.00	10.96	LP @ 5795' TVD; 90°
6,200.0	90.00	0.00	5,795.0	609.3	-451.6	609.3	0.00	0.00	7" (1,206' FEL-1,839' FWL)
6,300.0	90.00	0.00	5,795.0	709.3	-451.6	709.3	0.00	0.00	
6,400.0	90.00	0.00	5,795.0	809.3	-451.6	809.3	0.00	0.00	
6,500.0	90.00	0.00	5,795.0	909.3	-451.6	909.3	0.00	0.00	
6,600.0	90.00	0.00	5,795.0	1,009.3	-451.6	1,009.3	0.00	0.00	
6,700.0	90.00	0.00	5,795.0	1,109.3	-451.6	1,109.3	0.00	0.00	
6,800.0	90.00	0.00	5,795.0	1,209.3	-451.6	1,209.3	0.00	0.00	
6,900.0	90.00	0.00	5,795.0	1,309.3	-451.6	1,309.3	0.00	0.00	
7,000.0	90.00	0.00	5,795.0	1,409.3	-451.6	1,409.3	0.00	0.00	
7,100.0	90.00	0.00	5,795.0	1,509.3	-451.6	1,509.3	0.00	0.00	
7,200.0	90.00	0.00	5,795.0	1,609.3	-451.6	1,609.3	0.00	0.00	
7,300.0	90.00	0.00	5,795.0	1,709.3	-451.6	1,709.3	0.00	0.00	
7,400.0	90.00	0.00	5,795.0	1,809.3	-451.6	1,809.3	0.00	0.00	
7,500.0	90.00	0.00	5,795.0	1,909.3	-451.6	1,909.3	0.00	0.00	
7,600.0	90.00	0.00	5,795.0	2,009.3	-451.6	2,009.3	0.00	0.00	
7,700.0	90.00	0.00	5,795.0	2,109.3	-451.6	2,109.3	0.00	0.00	
7,800.0	90.00	0.00	5,795.0	2,209.3	-451.6	2,209.3	0.00	0.00	
7,900.0	90.00	0.00	5,795.0	2,309.3	-451.6	2,309.3	0.00	0.00	
8,000.0	90.00	0.00	5,795.0	2,409.3	-451.6	2,409.3	0.00	0.00	
8,100.0	90.00	0.00	5,795.0	2,509.3	-451.6	2,509.3	0.00	0.00	
8,200.0	90.00	0.00	5,795.0	2,609.3	-451.6	2,609.3	0.00	0.00	
8,300.0	90.00	0.00	5,795.0	2,709.3	-451.6	2,709.3	0.00	0.00	
8,400.0	90.00	0.00	5,795.0	2,809.3	-451.6	2,809.3	0.00	0.00	
8,500.0	90.00	0.00	5,795.0	2,909.3	-451.6	2,909.3	0.00	0.00	
8,600.0	90.00	0.00	5,795.0	3,009.3	-451.6	3,009.3	0.00	0.00	
8,700.0	90.00	0.00	5,795.0	3,109.3	-451.6	3,109.3	0.00	0.00	
8,800.0	90.00	0.00	5,795.0	3,209.3	-451.6	3,209.3	0.00	0.00	
8,900.0	90.00	0.00	5,795.0	3,309.3	-451.6	3,309.3	0.00	0.00	
9,000.0	90.00	0.00	5,795.0	3,409.3	-451.6	3,409.3	0.00	0.00	

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Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,100.0	90.00	0.00	5,795.0	3,509.3	-451.6	3,509.3	0.00	0.00	
9,200.0	90.00	0.00	5,795.0	3,609.3	-451.6	3,609.3	0.00	0.00	
9,300.0	90.00	0.00	5,795.0	3,709.3	-451.6	3,709.3	0.00	0.00	
9,400.0	90.00	0.00	5,795.0	3,809.3	-451.6	3,809.3	0.00	0.00	
9,500.0	90.00	0.00	5,795.0	3,909.3	-451.6	3,909.3	0.00	0.00	
9,600.0	90.00	0.00	5,795.0	4,009.3	-451.6	4,009.3	0.00	0.00	
9,700.0	90.00	0.00	5,795.0	4,109.3	-451.6	4,109.3	0.00	0.00	
9,800.0	90.00	0.00	5,795.0	4,209.3	-451.6	4,209.3	0.00	0.00	
9,900.0	90.00	0.00	5,795.0	4,309.3	-451.6	4,309.3	0.00	0.00	
10,000.0	90.00	0.00	5,795.0	4,409.3	-451.6	4,409.3	0.00	0.00	
10,100.0	90.00	0.00	5,795.0	4,509.3	-451.6	4,509.3	0.00	0.00	
10,200.0	90.00	0.00	5,795.0	4,609.3	-451.6	4,609.3	0.00	0.00	
10,300.0	90.00	0.00	5,795.0	4,709.3	-451.6	4,709.3	0.00	0.00	
10,400.0	90.00	0.00	5,795.0	4,809.3	-451.6	4,809.3	0.00	0.00	
10,500.0	90.00	0.00	5,795.0	4,909.3	-451.6	4,909.3	0.00	0.00	
10,600.0	90.00	0.00	5,795.0	5,009.3	-451.6	5,009.3	0.00	0.00	
10,700.0	90.00	0.00	5,795.0	5,109.3	-451.6	5,109.3	0.00	0.00	
10,800.0	90.00	0.00	5,795.0	5,209.3	-451.6	5,209.3	0.00	0.00	
10,900.0	90.00	0.00	5,795.0	5,309.3	-451.6	5,309.3	0.00	0.00	
11,000.0	90.00	0.00	5,795.0	5,409.3	-451.6	5,409.3	0.00	0.00	
11,100.0	90.00	0.00	5,795.0	5,509.3	-451.6	5,509.3	0.00	0.00	
11,200.0	90.00	0.00	5,795.0	5,609.3	-451.6	5,609.3	0.00	0.00	
11,300.0	90.00	0.00	5,795.0	5,709.3	-451.6	5,709.3	0.00	0.00	
11,400.0	90.00	0.00	5,795.0	5,809.3	-451.6	5,809.3	0.00	0.00	
11,500.0	90.00	0.00	5,795.0	5,909.3	-451.6	5,909.3	0.00	0.00	
11,600.0	90.00	0.00	5,795.0	6,009.3	-451.6	6,009.3	0.00	0.00	
11,700.0	90.00	0.00	5,795.0	6,109.3	-451.6	6,109.3	0.00	0.00	
11,800.0	90.00	0.00	5,795.0	6,209.3	-451.6	6,209.3	0.00	0.00	
11,900.0	90.00	0.00	5,795.0	6,309.3	-451.6	6,309.3	0.00	0.00	
12,000.0	90.00	0.00	5,795.0	6,409.3	-451.6	6,409.3	0.00	0.00	
12,100.0	90.00	0.00	5,795.0	6,509.3	-451.6	6,509.3	0.00	0.00	
12,200.0	90.00	0.00	5,795.0	6,609.3	-451.6	6,609.3	0.00	0.00	
12,300.0	90.00	0.00	5,795.0	6,709.3	-451.6	6,709.3	0.00	0.00	
12,400.0	90.00	0.00	5,795.0	6,809.3	-451.6	6,809.3	0.00	0.00	
12,500.0	90.00	0.00	5,795.0	6,909.3	-451.6	6,909.3	0.00	0.00	
12,600.0	90.00	0.00	5,795.0	7,009.3	-451.6	7,009.3	0.00	0.00	
12,700.0	90.00	0.00	5,795.0	7,109.3	-451.6	7,109.3	0.00	0.00	
12,758.2	90.00	0.00	5,795.0	7,167.5	-451.6	7,167.5	0.00	0.00	TD at 12758.2

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Razor #12H-0113A PBH	0.00	0.00	5,795.0	7,167.5	-451.6	1,565,577.70	3,467,808.09	40.873628	-103.808425
- plan hits target center									
- Point									

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #12H-0113A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,200.0	5,795.0	7" (1,206' FEL-1,839' FWL)	7.000	7.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,867.9	5,739.0	Niobrara Top		0.00	
6,111.9	5,795.0	Niobrara A		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
500.0	500.0	0.0	0.0	KOP @ 500'	
1,012.2	1,011.5	0.0	-22.9	EOB; Inc=5.12°	
5,294.1	5,276.3	0.6	-405.1	Start build/turn @ 5294' MD	
6,112.2	5,795.0	521.5	-451.6	LP @ 5795' TVD; 90°	
12,758.2	5,795.0	7,167.5	-451.6	TD at 12758.2	

Whiting Petroleum Corporation

Weld County, CO

S12-T10N-R58W

Razor #12H-0113A

Hz

Plan #1

Anticollision Report

08 August, 2013

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	8/8/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,758.2	Plan #1 (Hz)	ISCWSA MWD	MWD - ISCWSA	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S12-T10N-R58W						
ALLAN 1 (EXISTING) - DAVIS OIL WELL - NO SURVEY						Out of range
Razor #12G-0109A - HZ - Plan #1						Out of range
Razor #12G-0110B - HZ - Plan #1						Out of range
Razor #12G-0111A - HZ - Plan #1						Out of range
Razor #12G-0112B - HZ - Plan #1	12,743.5	12,759.3	347.4	82.2	1.310	Level 3, CC
Razor #12G-0112B - HZ - Plan #1	12,758.2	12,771.8	347.4	81.8	1.308	Level 3, ES, SF
Razor #12H-0115A - Hz - Plan #1	500.0	500.0	33.2	31.2	16.723	CC, ES
Razor #12H-0115A - Hz - Plan #1	800.0	799.9	41.0	37.8	12.491	SF
Razor #12H-0116B - Hz - Plan #1	500.0	500.0	66.1	64.1	33.307	CC, ES
Razor #12H-0116B - Hz - Plan #1	800.0	795.8	81.7	78.5	25.230	SF
RAZOR 12-0141H (EXISTING) - WHTING WELL - SURV	552.4	553.6	111.7	109.5	51.207	CC, ES
RAZOR 12-0141H (EXISTING) - WHTING WELL - SURV	12,500.0	12,629.9	498.9	251.9	2.020	SF
Razor Federal #12H-1313A - Hz - Plan #1	500.0	500.0	75.1	73.1	37.809	CC
Razor Federal #12H-1313A - Hz - Plan #1	800.0	799.9	75.5	72.2	22.900	ES
Razor Federal #12H-1313A - Hz - Plan #1	5,300.0	5,300.0	172.4	148.1	7.080	SF
Razor Federal #12H-1314B - Hz - Plan #1	500.0	500.0	82.1	80.1	41.342	CC
Razor Federal #12H-1314B - Hz - Plan #1	600.0	600.0	82.4	80.0	34.035	ES
Razor Federal #12H-1314B - Hz - Plan #1	2,600.0	2,593.0	211.7	200.2	18.378	SF
Razor Federal #12H-1315A - Hz - Plan #1	500.0	500.0	100.0	98.0	50.387	CC, ES
Razor Federal #12H-1315A - Hz - Plan #1	1,400.0	1,393.5	147.5	141.6	24.713	SF
Razor Federal #12H-1316B - Hz - Plan #1	500.0	500.0	124.5	122.5	62.705	CC, ES
Razor Federal #12H-1316B - Hz - Plan #1	1,100.0	1,083.6	177.3	172.8	38.960	SF

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12G-0112B - HZ - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
6,200.0	5,795.0	6,370.9	5,910.6	18.8	22.1	-103.59	779.1	-903.8	495.3	456.0	39.25	12.618	
6,300.0	5,795.0	6,446.7	5,910.6	20.0	23.2	-104.36	850.6	-878.6	462.9	421.3	41.56	11.138	
6,400.0	5,795.0	6,524.5	5,910.6	21.4	24.3	-105.14	924.9	-855.7	434.3	390.3	43.99	9.873	
6,500.0	5,795.0	6,600.0	5,910.6	22.8	25.5	-105.87	997.9	-836.3	409.7	363.2	46.47	8.815	
6,600.0	5,795.0	6,685.5	5,910.6	24.3	26.7	-106.62	1,081.4	-817.9	389.0	339.9	49.16	7.914	
6,700.0	5,795.0	6,768.3	5,910.6	25.8	28.0	-107.25	1,162.9	-803.7	372.6	320.7	51.87	7.183	
6,800.0	5,795.0	6,852.1	5,910.6	27.4	29.3	-107.77	1,246.0	-792.9	360.3	305.6	54.65	6.592	
6,900.0	5,795.0	6,936.7	5,910.6	29.1	30.6	-108.13	1,330.3	-785.7	352.2	294.7	57.51	6.124	
7,000.0	5,795.0	7,021.8	5,910.6	30.8	31.9	-108.30	1,415.4	-782.3	348.3	287.9	60.45	5.762	
7,057.2	5,795.0	7,072.9	5,910.6	31.7	32.7	-108.32	1,466.5	-781.9	347.9	285.7	62.24	5.591	
7,100.0	5,795.0	7,115.8	5,910.6	32.5	33.4	-108.32	1,509.3	-781.9	347.9	284.4	63.59	5.472	
7,200.0	5,795.0	7,215.8	5,910.6	34.2	35.0	-108.32	1,609.3	-781.9	347.9	281.1	66.85	5.205	
7,300.0	5,795.0	7,315.8	5,910.6	35.9	36.6	-108.33	1,709.3	-781.9	347.9	277.8	70.15	4.959	
7,400.0	5,795.0	7,415.8	5,910.6	37.7	38.2	-108.33	1,809.3	-781.9	347.9	274.4	73.50	4.734	
7,500.0	5,795.0	7,515.8	5,910.6	39.5	39.9	-108.33	1,909.3	-781.9	347.9	271.0	76.87	4.526	
7,600.0	5,795.0	7,615.8	5,910.6	41.3	41.6	-108.33	2,009.3	-781.9	347.9	267.6	80.27	4.334	
7,700.0	5,795.0	7,715.8	5,910.6	43.1	43.3	-108.33	2,109.3	-781.9	347.9	264.2	83.69	4.157	
7,800.0	5,795.0	7,815.8	5,910.6	44.9	45.0	-108.34	2,209.3	-781.8	347.9	260.7	87.14	3.992	
7,900.0	5,795.0	7,915.8	5,910.7	46.7	46.7	-108.34	2,309.3	-781.8	347.9	257.3	90.60	3.839	
8,000.0	5,795.0	8,015.8	5,910.7	48.5	48.5	-108.34	2,409.3	-781.8	347.9	253.8	94.08	3.697	
8,100.0	5,795.0	8,115.8	5,910.7	50.4	50.3	-108.34	2,509.3	-781.8	347.8	250.3	97.58	3.565	
8,200.0	5,795.0	8,215.8	5,910.7	52.2	52.0	-108.34	2,609.3	-781.8	347.8	246.7	101.09	3.441	
8,300.0	5,795.0	8,315.8	5,910.7	54.0	53.8	-108.34	2,709.3	-781.8	347.8	243.2	104.61	3.325	
8,400.0	5,795.0	8,415.8	5,910.7	55.9	55.6	-108.35	2,809.3	-781.8	347.8	239.7	108.14	3.216	
8,500.0	5,795.0	8,515.8	5,910.7	57.8	57.4	-108.35	2,909.3	-781.8	347.8	236.1	111.68	3.114	
8,600.0	5,795.0	8,615.8	5,910.7	59.6	59.2	-108.35	3,009.3	-781.7	347.8	232.6	115.23	3.018	
8,700.0	5,795.0	8,715.8	5,910.7	61.5	61.0	-108.35	3,109.3	-781.7	347.8	229.0	118.79	2.928	
8,800.0	5,795.0	8,815.8	5,910.7	63.3	62.9	-108.35	3,209.3	-781.7	347.8	225.4	122.35	2.842	
8,900.0	5,795.0	8,915.8	5,910.7	65.2	64.7	-108.36	3,309.3	-781.7	347.8	221.8	125.92	2.762	
9,000.0	5,795.0	9,015.8	5,910.7	67.1	66.5	-108.36	3,409.3	-781.7	347.8	218.3	129.50	2.685	
9,100.0	5,795.0	9,115.8	5,910.7	69.0	68.4	-108.36	3,509.3	-781.7	347.7	214.7	133.08	2.613	
9,200.0	5,795.0	9,215.8	5,910.7	70.8	70.2	-108.36	3,609.3	-781.7	347.7	211.1	136.67	2.544	
9,300.0	5,795.0	9,315.8	5,910.8	72.7	72.1	-108.36	3,709.3	-781.7	347.7	207.5	140.26	2.479	
9,400.0	5,795.0	9,415.8	5,910.8	74.6	73.9	-108.36	3,809.3	-781.6	347.7	203.9	143.86	2.417	
9,500.0	5,795.0	9,515.8	5,910.8	76.5	75.8	-108.37	3,909.3	-781.6	347.7	200.2	147.46	2.358	
9,600.0	5,795.0	9,615.8	5,910.8	78.4	77.6	-108.37	4,009.3	-781.6	347.7	196.6	151.06	2.302	
9,700.0	5,795.0	9,715.8	5,910.8	80.3	79.5	-108.37	4,109.3	-781.6	347.7	193.0	154.67	2.248	
9,800.0	5,795.0	9,815.8	5,910.8	82.2	81.4	-108.37	4,209.3	-781.6	347.7	189.4	158.28	2.197	
9,900.0	5,795.0	9,915.8	5,910.8	84.0	83.2	-108.37	4,309.3	-781.6	347.7	185.8	161.89	2.147	
10,000.0	5,795.0	10,015.8	5,910.8	85.9	85.1	-108.38	4,409.3	-781.6	347.7	182.1	165.51	2.101	
10,100.0	5,795.0	10,115.8	5,910.8	87.8	87.0	-108.38	4,509.3	-781.5	347.6	178.5	169.13	2.056	
10,200.0	5,795.0	10,215.8	5,910.8	89.7	88.8	-108.38	4,609.3	-781.5	347.6	174.9	172.75	2.012	
10,300.0	5,795.0	10,315.8	5,910.8	91.6	90.7	-108.38	4,709.3	-781.5	347.6	171.3	176.37	1.971	
10,400.0	5,795.0	10,415.8	5,910.8	93.5	92.6	-108.38	4,809.3	-781.5	347.6	167.6	180.00	1.931	
10,500.0	5,795.0	10,515.8	5,910.8	95.4	94.5	-108.38	4,909.3	-781.5	347.6	164.0	183.63	1.893	
10,600.0	5,795.0	10,615.8	5,910.9	97.3	96.4	-108.39	5,009.3	-781.5	347.6	160.3	187.26	1.856	
10,700.0	5,795.0	10,715.8	5,910.9	99.2	98.2	-108.39	5,109.3	-781.5	347.6	156.7	190.89	1.821	
10,800.0	5,795.0	10,815.8	5,910.9	101.1	100.1	-108.39	5,209.3	-781.5	347.6	153.1	194.52	1.787	
10,900.0	5,795.0	10,915.8	5,910.9	103.0	102.0	-108.39	5,309.3	-781.4	347.6	149.4	198.15	1.754	
11,000.0	5,795.0	11,015.8	5,910.9	104.9	103.9	-108.39	5,409.3	-781.4	347.6	145.8	201.79	1.722	
11,100.0	5,795.0	11,115.8	5,910.9	106.8	105.8	-108.40	5,509.3	-781.4	347.5	142.1	205.43	1.692	
11,200.0	5,795.0	11,215.8	5,910.9	108.7	107.7	-108.40	5,609.3	-781.4	347.5	138.5	209.06	1.662	

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

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12G-0112B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
11,300.0	5,795.0	11,315.8	5,910.9	110.6	109.6	-108.40	5,709.3	-781.4	347.5	134.8	212.70	1.634		
11,400.0	5,795.0	11,415.8	5,910.9	112.5	111.4	-108.40	5,809.3	-781.4	347.5	131.2	216.34	1.606		
11,500.0	5,795.0	11,515.8	5,910.9	114.4	113.3	-108.40	5,909.3	-781.4	347.5	127.5	219.99	1.580		
11,600.0	5,795.0	11,615.8	5,910.9	116.4	115.2	-108.40	6,009.3	-781.4	347.5	123.9	223.63	1.554		
11,700.0	5,795.0	11,715.8	5,910.9	118.3	117.1	-108.41	6,109.3	-781.3	347.5	120.2	227.27	1.529		
11,800.0	5,795.0	11,815.8	5,910.9	120.2	119.0	-108.41	6,209.3	-781.3	347.5	116.6	230.92	1.505		
11,900.0	5,795.0	11,915.8	5,910.9	122.1	120.9	-108.41	6,309.3	-781.3	347.5	112.9	234.56	1.481 Level 3		
12,000.0	5,795.0	12,015.8	5,911.0	124.0	122.8	-108.41	6,409.3	-781.3	347.5	109.2	238.21	1.459 Level 3		
12,100.0	5,795.0	12,115.8	5,911.0	125.9	124.7	-108.41	6,509.3	-781.3	347.4	105.6	241.86	1.437 Level 3		
12,200.0	5,795.0	12,215.8	5,911.0	127.8	126.6	-108.42	6,609.3	-781.3	347.4	101.9	245.51	1.415 Level 3		
12,300.0	5,795.0	12,315.8	5,911.0	129.7	128.5	-108.42	6,709.3	-781.3	347.4	98.3	249.15	1.394 Level 3		
12,400.0	5,795.0	12,415.8	5,911.0	131.6	130.4	-108.42	6,809.3	-781.3	347.4	94.6	252.80	1.374 Level 3		
12,500.0	5,795.0	12,515.8	5,911.0	133.5	132.3	-108.42	6,909.3	-781.2	347.4	91.0	256.45	1.355 Level 3		
12,600.0	5,795.0	12,615.8	5,911.0	135.4	134.2	-108.42	7,009.3	-781.2	347.4	87.3	260.10	1.336 Level 3		
12,700.0	5,795.0	12,715.8	5,911.0	137.3	136.1	-108.43	7,109.3	-781.2	347.4	83.7	263.70	1.317 Level 3		
12,743.5	5,795.0	12,759.3	5,911.0	138.2	136.7	-108.43	7,152.9	-781.2	347.4	82.2	265.16	1.310 Level 3, CC		
12,758.2	5,795.0	12,771.8	5,911.0	138.5	136.9	-108.43	7,165.4	-781.2	347.4	81.8	265.60	1.308 Level 3, ES, SF		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12H-0115A - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	33.2	33.2					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	33.2	33.2	33.0	0.19	177.521		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	33.2	33.2	32.6	0.64	52.153		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	33.2	33.2	32.1	1.09	30.567		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	33.2	33.2	31.7	1.54	21.619		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	33.2	33.2	31.2	1.99	16.723 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	179.92	0.0	33.2	34.1	31.6	2.42	14.068		
700.0	700.0	700.0	700.0	1.4	1.4	179.93	0.0	33.2	36.7	33.8	2.85	12.866		
800.0	799.9	799.9	799.9	1.6	1.7	179.93	0.0	33.2	41.0	37.8	3.29	12.491 SF		
900.0	899.7	899.7	899.7	1.9	1.9	179.94	0.0	33.2	47.2	43.4	3.72	12.661		
1,000.0	999.4	999.4	999.4	2.1	2.1	179.95	0.0	33.2	55.0	50.8	4.16	13.207		
1,100.0	1,099.0	1,099.0	1,099.0	2.3	2.3	179.96	0.0	33.2	63.9	59.3	4.61	13.871		
1,200.0	1,198.6	1,198.6	1,198.6	2.6	2.6	179.96	0.0	33.2	72.8	67.8	5.05	14.413		
1,300.0	1,298.2	1,298.2	1,298.2	2.9	2.8	179.97	0.0	33.2	81.8	76.3	5.50	14.863		
1,400.0	1,397.8	1,397.8	1,397.8	3.1	3.0	179.97	0.0	33.2	90.7	84.7	5.95	15.242		
1,500.0	1,497.4	1,497.4	1,497.4	3.4	3.2	179.97	0.0	33.2	99.6	93.2	6.40	15.564		
1,600.0	1,597.0	1,597.0	1,597.0	3.7	3.5	179.97	0.0	33.2	108.6	101.7	6.85	15.843		
1,700.0	1,696.6	1,696.6	1,696.6	3.9	3.7	179.98	0.0	33.2	117.5	110.2	7.30	16.085		
1,800.0	1,796.2	1,796.2	1,796.2	4.2	3.9	179.98	0.0	33.2	126.4	118.7	7.76	16.298		
1,900.0	1,895.8	1,895.8	1,895.8	4.5	4.1	179.98	0.0	33.2	135.3	127.1	8.21	16.487		
2,000.0	1,995.4	1,995.4	1,995.4	4.8	4.4	179.98	0.0	33.2	144.3	135.6	8.66	16.655		
2,100.0	2,095.0	2,095.0	2,095.0	5.1	4.6	179.98	0.0	33.2	153.2	144.1	9.12	16.805		
2,200.0	2,194.6	2,194.6	2,194.6	5.3	4.8	179.98	0.0	33.2	162.1	152.5	9.57	16.941		
2,300.0	2,294.2	2,294.2	2,294.2	5.6	5.0	179.98	0.0	33.2	171.0	161.0	10.02	17.064		
2,400.0	2,393.8	2,393.8	2,393.8	5.9	5.2	179.98	0.0	33.2	180.0	169.5	10.48	17.177		
2,500.0	2,493.4	2,493.4	2,493.4	6.2	5.5	179.99	0.0	33.2	188.9	178.0	10.93	17.279		
2,600.0	2,593.0	2,593.0	2,593.0	6.4	5.7	179.99	0.0	33.2	197.8	186.4	11.39	17.373		
2,700.0	2,692.6	2,692.6	2,692.6	6.7	5.9	179.99	0.0	33.2	206.8	194.9	11.84	17.460		
2,800.0	2,792.2	2,792.2	2,792.2	7.0	6.1	179.99	0.0	33.2	215.7	203.4	12.30	17.540		
2,900.0	2,891.8	2,891.8	2,891.8	7.3	6.4	179.99	0.0	33.2	224.6	211.9	12.75	17.614		
3,000.0	2,991.4	2,991.4	2,991.4	7.6	6.6	179.99	0.0	33.2	233.5	220.3	13.21	17.683		
3,100.0	3,091.0	3,091.0	3,091.0	7.8	6.8	179.99	0.0	33.2	242.5	228.8	13.66	17.747		
3,200.0	3,190.6	3,190.6	3,190.6	8.1	7.0	179.99	0.0	33.2	251.4	237.3	14.12	17.807		
3,300.0	3,290.2	3,290.2	3,290.2	8.4	7.3	179.99	0.0	33.2	260.3	245.7	14.57	17.863		
3,400.0	3,389.8	3,389.8	3,389.8	8.7	7.5	179.99	0.0	33.2	269.2	254.2	15.03	17.915		
3,500.0	3,489.4	3,489.4	3,489.4	9.0	7.7	179.99	0.0	33.2	278.2	262.7	15.48	17.965		
3,600.0	3,589.0	3,589.0	3,589.0	9.2	7.9	179.99	0.0	33.2	287.1	271.2	15.94	18.011		
3,700.0	3,688.6	3,688.6	3,688.6	9.5	8.2	179.99	0.0	33.2	296.0	279.6	16.40	18.055		
3,800.0	3,788.2	3,788.2	3,788.2	9.8	8.4	179.99	0.0	33.2	305.0	288.1	16.85	18.097		
3,900.0	3,887.8	3,887.8	3,887.8	10.1	8.6	179.99	0.0	33.2	313.9	296.6	17.31	18.136		
4,000.0	3,987.4	3,987.4	3,987.4	10.4	8.8	179.99	0.0	33.2	322.8	305.0	17.76	18.173		
4,100.0	4,087.0	4,077.9	4,077.9	10.7	9.0	179.99	0.0	34.3	332.9	314.7	18.19	18.305		
4,200.0	4,186.6	4,166.6	4,166.5	10.9	9.2	179.99	0.0	38.0	346.1	327.5	18.60	18.609		
4,300.0	4,286.2	4,254.4	4,254.1	11.2	9.4	180.00	0.0	44.5	362.3	343.3	19.00	19.064		
4,400.0	4,385.8	4,346.2	4,345.4	11.5	9.6	-180.00	-0.1	53.8	381.3	361.8	19.42	19.633		
4,500.0	4,485.4	4,444.3	4,442.9	11.8	9.8	-179.99	-0.1	64.2	400.7	380.8	19.85	20.190		
4,600.0	4,585.0	4,542.4	4,540.5	12.1	10.0	-179.99	-0.2	74.6	420.1	399.8	20.27	20.724		
4,700.0	4,684.6	4,640.5	4,638.0	12.3	10.2	-179.99	-0.2	85.0	439.5	418.8	20.70	21.234		
4,800.0	4,784.2	4,738.6	4,735.6	12.6	10.4	-179.98	-0.3	95.4	459.0	437.8	21.13	21.722		
4,900.0	4,883.8	4,836.7	4,833.1	12.9	10.7	-179.98	-0.3	105.8	478.4	456.8	21.56	22.189		
5,000.0	4,983.4	4,934.8	4,930.6	13.2	10.9	-179.98	-0.3	116.2	497.8	475.8	21.99	22.637		

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

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12H-0116B - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	89.99	0.0	66.1	66.1					
100.0	100.0	100.0	100.0	0.1	0.1	89.99	0.0	66.1	66.1	65.9	0.19	353.564		
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	66.1	66.1	65.5	0.64	103.872		
300.0	300.0	300.0	300.0	0.5	0.5	89.99	0.0	66.1	66.1	65.0	1.09	60.879		
400.0	400.0	400.0	400.0	0.8	0.8	89.99	0.0	66.1	66.1	64.6	1.54	43.057		
500.0	500.0	500.0	500.0	1.0	1.0	89.99	0.0	66.1	66.1	64.1	1.99	33.307 CC, ES		
600.0	600.0	598.8	598.8	1.2	1.2	179.91	0.0	67.0	67.9	65.4	2.41	28.194		
700.0	700.0	697.5	697.4	1.4	1.4	179.94	0.0	69.5	73.1	70.2	2.82	25.935		
800.0	799.9	795.8	795.6	1.6	1.6	179.97	-0.1	73.8	81.7	78.5	3.24	25.230 SF		
900.0	899.7	893.5	893.2	1.9	1.8	-179.99	-0.1	79.6	93.8	90.1	3.67	25.576		
1,000.0	999.4	990.6	990.0	2.1	2.1	-179.96	-0.2	87.1	109.3	105.2	4.10	26.654		
1,100.0	1,099.0	1,088.3	1,087.3	2.3	2.3	-179.93	-0.3	96.0	127.2	122.7	4.54	28.033		
1,200.0	1,198.6	1,186.7	1,185.2	2.6	2.6	-179.90	-0.4	105.0	145.2	140.3	4.97	29.195		
1,300.0	1,298.2	1,285.0	1,283.2	2.9	2.8	-179.89	-0.5	114.0	163.3	157.9	5.42	30.149		
1,400.0	1,397.8	1,383.4	1,381.1	3.1	3.1	-179.87	-0.6	123.0	181.3	175.4	5.86	30.943		
1,500.0	1,497.4	1,481.7	1,479.1	3.4	3.4	-179.86	-0.7	132.1	199.3	193.0	6.31	31.614		
1,600.0	1,597.0	1,580.1	1,577.0	3.7	3.6	-179.85	-0.8	141.1	217.4	210.6	6.75	32.184		
1,700.0	1,696.6	1,678.5	1,675.0	3.9	3.9	-179.84	-0.9	150.1	235.4	228.2	7.20	32.680		
1,800.0	1,796.2	1,776.8	1,772.9	4.2	4.2	-179.83	-1.0	159.1	253.4	245.8	7.65	33.111		
1,900.0	1,895.8	1,875.2	1,870.9	4.5	4.4	-179.83	-1.0	168.2	271.4	263.3	8.11	33.490		
2,000.0	1,995.4	1,973.5	1,968.8	4.8	4.7	-179.82	-1.1	177.2	289.5	280.9	8.56	33.825		
2,100.0	2,095.0	2,071.9	2,066.8	5.1	5.0	-179.82	-1.2	186.2	307.5	298.5	9.01	34.124		
2,200.0	2,194.6	2,170.3	2,164.7	5.3	5.3	-179.81	-1.3	195.2	325.5	316.1	9.47	34.391		
2,300.0	2,294.2	2,268.6	2,262.7	5.6	5.5	-179.81	-1.4	204.3	343.6	333.6	9.92	34.632		
2,400.0	2,393.8	2,367.0	2,360.6	5.9	5.8	-179.81	-1.5	213.3	361.6	351.2	10.38	34.850		
2,500.0	2,493.4	2,465.4	2,458.5	6.2	6.1	-179.80	-1.6	222.3	379.6	368.8	10.83	35.049		
2,600.0	2,593.0	2,563.7	2,556.5	6.4	6.4	-179.80	-1.7	231.3	397.6	386.4	11.29	35.230		
2,700.0	2,692.6	2,662.1	2,654.4	6.7	6.6	-179.80	-1.8	240.4	415.7	403.9	11.74	35.396		
2,800.0	2,792.2	2,760.4	2,752.4	7.0	6.9	-179.79	-1.9	249.4	433.7	421.5	12.20	35.549		
2,900.0	2,891.8	2,858.8	2,850.3	7.3	7.2	-179.79	-2.0	258.4	451.7	439.1	12.66	35.690		
3,000.0	2,991.4	2,957.2	2,948.3	7.6	7.5	-179.79	-2.1	267.4	469.8	456.6	13.11	35.821		
3,100.0	3,091.0	3,055.5	3,046.2	7.8	7.7	-179.79	-2.2	276.5	487.8	474.2	13.57	35.942		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - RAZOR 12-0141H (EXISTING) - WHTING WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 109-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.3	0.3	0.0	0.0	58.44	60.5	98.5	115.6					
100.0	100.0	101.3	101.3	0.1	0.1	58.57	60.1	98.3	115.2	115.0	0.19	602.225		
200.0	200.0	201.1	201.1	0.3	0.3	58.89	59.1	97.9	114.4	113.7	0.62	184.280		
300.0	300.0	301.3	301.3	0.5	0.5	59.37	57.9	97.7	113.6	112.5	1.06	106.662		
400.0	400.0	401.1	401.1	0.8	0.7	59.96	56.5	97.6	112.8	111.3	1.51	74.840		
500.0	500.0	501.3	501.3	1.0	1.0	60.75	54.7	97.7	112.0	110.0	1.95	57.368		
552.4	552.4	553.6	553.6	1.1	1.1	151.22	53.7	97.8	111.7	109.5	2.18	51.207 CC, ES		
600.0	600.0	601.0	601.0	1.2	1.2	151.83	52.7	97.9	111.9	109.6	2.39	46.923		
700.0	700.0	700.2	700.1	1.4	1.4	153.33	51.0	98.5	114.0	111.2	2.80	40.727		
800.0	799.9	799.3	799.3	1.6	1.6	154.98	49.9	99.6	118.4	115.2	3.22	36.807		
900.0	899.7	898.9	898.8	1.9	1.8	156.91	48.7	101.1	124.9	121.2	3.65	34.190		
1,000.0	999.4	998.7	998.6	2.1	2.0	159.06	47.2	102.7	133.1	129.1	4.09	32.582		
1,100.0	1,099.0	1,098.8	1,098.7	2.3	2.2	160.67	46.7	103.5	142.1	137.6	4.51	31.501		
1,200.0	1,198.6	1,198.4	1,198.3	2.6	2.4	162.01	46.3	104.0	150.9	146.0	4.94	30.551		
1,300.0	1,298.2	1,297.4	1,297.2	2.9	2.7	163.21	45.9	104.7	160.0	154.6	5.38	29.759		
1,400.0	1,397.8	1,395.8	1,395.7	3.1	2.9	164.36	45.4	106.0	169.6	163.8	5.82	29.159		
1,500.0	1,497.4	1,495.5	1,495.4	3.4	3.1	165.47	44.7	107.6	179.7	173.4	6.25	28.737		
1,600.0	1,597.0	1,595.7	1,595.5	3.7	3.3	166.40	44.2	108.9	189.4	182.8	6.68	28.371		
1,700.0	1,696.6	1,695.6	1,695.5	3.9	3.5	167.21	43.7	109.8	198.9	191.8	7.10	28.007		
1,800.0	1,796.2	1,794.5	1,794.3	4.2	3.7	167.99	43.0	110.8	208.5	200.9	7.54	27.653		
1,900.0	1,895.8	1,896.5	1,896.3	4.5	3.9	168.73	42.3	111.8	218.0	210.1	7.97	27.340		
2,000.0	1,995.4	1,997.4	1,997.2	4.8	4.1	169.46	41.1	111.5	226.3	217.9	8.41	26.904		
2,100.0	2,095.0	2,101.1	2,100.8	5.1	4.3	170.38	38.8	110.5	233.7	224.9	8.86	26.391		
2,200.0	2,194.6	2,199.4	2,199.1	5.3	4.5	171.14	36.8	108.6	240.4	231.1	9.29	25.883		
2,300.0	2,294.2	2,295.0	2,294.7	5.6	4.7	171.29	37.3	107.6	248.3	238.6	9.71	25.560		
2,400.0	2,393.8	2,390.7	2,390.3	5.9	4.9	170.95	40.2	108.0	257.9	247.8	10.14	25.428		
2,500.0	2,493.4	2,491.5	2,491.0	6.2	5.1	170.37	44.5	108.5	267.9	257.3	10.58	25.315		
2,600.0	2,593.0	2,591.3	2,590.9	6.4	5.3	170.34	46.2	109.2	277.7	266.7	11.02	25.200		
2,700.0	2,692.6	2,692.2	2,691.7	6.7	5.5	170.13	48.9	109.3	287.0	275.6	11.46	25.051		
2,800.0	2,792.2	2,791.4	2,790.9	7.0	5.7	169.82	52.0	109.2	296.2	284.3	11.89	24.907		
2,900.0	2,891.8	2,890.0	2,889.5	7.3	5.9	170.03	52.5	109.8	305.7	293.4	12.33	24.795		
3,000.0	2,991.4	2,988.5	2,988.0	7.6	6.1	170.12	53.7	110.6	315.5	302.7	12.77	24.711		
3,100.0	3,091.0	3,088.0	3,087.4	7.8	6.4	170.23	54.8	111.7	325.6	312.4	13.21	24.651		
3,200.0	3,190.6	3,187.0	3,186.5	8.1	6.6	170.27	56.3	112.6	335.5	321.9	13.65	24.587		
3,300.0	3,290.2	3,287.4	3,286.8	8.4	6.8	170.47	56.8	113.9	345.7	331.6	14.09	24.535		
3,400.0	3,389.8	3,389.4	3,388.8	8.7	7.0	171.01	55.1	114.9	355.2	340.6	14.53	24.441		
3,500.0	3,489.4	3,488.8	3,488.2	9.0	7.2	171.50	53.4	115.4	364.3	349.3	14.97	24.335		
3,600.0	3,589.0	3,588.9	3,588.2	9.2	7.4	172.03	51.4	116.1	373.5	358.1	15.41	24.237		
3,700.0	3,688.6	3,694.4	3,693.7	9.5	7.6	172.61	48.8	116.1	382.0	366.1	15.86	24.082		
3,800.0	3,788.2	3,808.6	3,807.8	9.8	7.9	173.21	45.6	112.7	387.6	371.3	16.33	23.738		
3,900.0	3,887.8	3,906.8	3,905.9	10.1	8.1	173.61	43.4	108.1	391.6	374.8	16.76	23.359		
4,000.0	3,987.4	3,996.2	3,995.3	10.4	8.3	173.67	43.6	105.3	397.3	380.1	17.18	23.126		
4,100.0	4,087.0	4,095.8	4,094.8	10.7	8.5	173.68	44.3	103.4	404.4	386.8	17.62	22.947		
4,200.0	4,186.6	4,199.1	4,198.0	10.9	8.7	173.87	43.6	101.0	410.9	392.8	18.07	22.737		
4,300.0	4,286.2	4,298.4	4,297.3	11.2	8.9	174.02	43.2	98.3	417.0	398.5	18.51	22.531		
4,400.0	4,385.8	4,395.4	4,394.3	11.5	9.1	174.01	44.0	96.1	423.7	404.8	18.94	22.368		
4,500.0	4,485.4	4,494.7	4,493.5	11.8	9.3	173.83	46.0	94.1	430.8	411.4	19.38	22.226		
4,600.0	4,585.0	4,595.2	4,594.0	12.1	9.5	173.75	47.4	91.9	437.7	417.9	19.83	22.079		
4,700.0	4,684.6	4,693.4	4,692.2	12.3	9.7	173.72	48.4	90.0	444.7	424.4	20.26	21.945		
4,800.0	4,784.2	4,790.7	4,789.4	12.6	9.9	173.76	48.9	88.6	452.3	431.6	20.70	21.845		
4,900.0	4,883.8	4,890.1	4,888.9	12.9	10.1	173.92	48.4	87.7	460.1	439.0	21.15	21.760		
5,000.0	4,983.4	4,988.5	4,987.3	13.2	10.3	174.14	47.5	86.7	468.0	446.4	21.59	21.680		

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

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - RAZOR 12-0141H (EXISTING) - WHITING WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 109-ISCWSA MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,083.0	5,082.6	5,081.4	13.5	10.5	174.37	46.4	86.6	476.6	454.6	22.02	21.645	
5,200.0	5,182.6	5,169.4	5,168.1	13.7	10.7	174.62	45.2	87.9	487.0	464.5	22.44	21.704	
10,583.7	5,795.0	10,727.6	5,937.0	97.0	89.6	106.49	4,993.0	27.0	499.2	319.0	180.16	2.771	
10,600.0	5,795.0	10,740.5	5,936.8	97.3	89.8	106.47	5,005.9	27.1	499.3	318.6	180.69	2.763	
11,200.0	5,795.0	11,356.4	5,945.2	108.7	100.7	107.45	5,621.6	25.2	500.0	298.6	201.40	2.483	
11,300.0	5,795.0	11,457.0	5,942.7	110.6	102.5	107.24	5,722.1	23.2	497.3	292.2	205.16	2.424	
11,400.0	5,795.0	11,564.8	5,942.6	112.5	104.4	107.36	5,829.8	19.8	494.3	285.6	208.73	2.368	
11,500.0	5,795.0	11,650.0	5,943.6	114.4	106.0	107.59	5,914.9	16.2	490.8	279.0	211.79	2.317	
11,600.0	5,795.0	11,755.0	5,945.1	116.4	107.8	107.81	6,019.9	14.6	489.8	274.6	215.21	2.276	
11,700.0	5,795.0	11,858.2	5,943.8	118.3	109.7	107.76	6,123.1	12.0	487.1	268.2	218.90	2.225	
11,800.0	5,795.0	11,960.7	5,941.1	120.2	111.5	107.54	6,225.5	9.9	484.3	261.6	222.71	2.174	
11,900.0	5,795.0	12,051.0	5,939.5	122.1	113.1	107.40	6,315.8	8.5	482.3	256.0	226.22	2.132	
11,967.3	5,795.0	12,111.3	5,939.8	123.4	114.2	107.46	6,376.1	7.7	481.6	253.2	228.42	2.108	
12,000.0	5,795.0	12,140.5	5,940.8	124.0	114.7	107.58	6,405.3	7.7	481.8	252.4	229.39	2.100	
12,100.0	5,795.0	12,226.1	5,943.4	125.9	116.2	107.83	6,490.8	8.9	484.1	251.8	232.39	2.083	
12,200.0	5,795.0	12,331.1	5,945.9	127.8	118.1	108.01	6,595.8	11.5	487.2	251.4	235.84	2.066	
12,300.0	5,795.0	12,426.9	5,946.6	129.7	119.8	107.97	6,691.5	14.6	490.5	251.2	239.34	2.049	
12,400.0	5,795.0	12,519.7	5,946.5	131.6	121.4	107.82	6,784.2	18.8	494.8	251.8	242.91	2.037	
12,500.0	5,795.0	12,629.9	5,945.5	133.5	123.4	107.53	6,894.3	23.9	498.9	251.9	246.96	2.020 SF	

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12H-1313A - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-75.1	0.0	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-75.1	0.0	75.1	74.9	0.19	401.352		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-75.1	0.0	75.1	74.4	0.64	117.912		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-75.1	0.0	75.1	74.0	1.09	69.107		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-75.1	0.0	75.1	73.5	1.54	48.877		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-75.1	0.0	75.1	73.1	1.99	37.809 CC		
519.5	519.5	519.5	519.5	1.0	1.0	-90.11	-75.1	0.0	75.1	73.0	2.07	36.250		
600.0	600.0	600.0	600.0	1.2	1.2	-90.75	-75.1	0.0	75.1	72.6	2.42	30.993		
700.0	700.0	700.0	700.0	1.4	1.4	-92.74	-75.1	0.0	75.1	72.3	2.85	26.331		
800.0	799.9	799.9	799.9	1.6	1.7	-96.05	-75.1	0.0	75.5	72.2	3.30	22.900 ES		
900.0	899.7	899.7	899.7	1.9	1.9	-100.59	-75.1	0.0	76.4	72.6	3.75	20.367		
1,000.0	999.4	999.4	999.4	2.1	2.1	-106.22	-75.1	0.0	78.2	74.0	4.21	18.552		
1,100.0	1,099.0	1,099.0	1,099.0	2.3	2.3	-112.25	-75.1	0.0	81.1	76.5	4.69	17.310		
1,200.0	1,198.6	1,198.6	1,198.6	2.6	2.6	-117.81	-75.1	0.0	84.9	79.8	5.16	16.459		
1,300.0	1,298.2	1,298.2	1,298.2	2.9	2.8	-122.86	-75.1	0.0	89.5	83.8	5.63	15.888		
1,400.0	1,397.8	1,397.8	1,397.8	3.1	3.0	-127.40	-75.1	0.0	94.6	88.5	6.10	15.518		
1,500.0	1,497.4	1,497.4	1,497.4	3.4	3.2	-131.44	-75.1	0.0	100.3	93.7	6.56	15.289		
1,600.0	1,597.0	1,598.2	1,598.2	3.7	3.4	-134.76	-75.1	-0.8	105.8	98.8	7.01	15.099		
1,700.0	1,696.6	1,699.4	1,699.4	3.9	3.7	-137.11	-75.1	-3.5	110.4	103.0	7.45	14.821		
1,800.0	1,796.2	1,800.8	1,800.6	4.2	3.9	-138.69	-75.1	-7.9	113.9	106.0	7.90	14.414		
1,900.0	1,895.8	1,902.2	1,901.9	4.5	4.1	-139.59	-75.2	-14.1	116.0	107.7	8.36	13.884		
2,000.0	1,995.4	2,002.2	2,001.6	4.8	4.3	-140.18	-75.2	-21.1	117.5	108.7	8.82	13.332		
2,100.0	2,095.0	2,102.2	2,101.4	5.1	4.5	-140.75	-75.3	-28.1	119.1	109.8	9.28	12.831		
2,200.0	2,194.6	2,202.2	2,201.1	5.3	4.7	-141.30	-75.3	-35.1	120.6	110.9	9.74	12.376		
2,300.0	2,294.2	2,302.2	2,300.9	5.6	5.0	-141.84	-75.4	-42.1	122.1	111.9	10.21	11.962		
2,400.0	2,393.8	2,402.1	2,400.6	5.9	5.2	-142.37	-75.5	-49.1	123.7	113.0	10.68	11.583		
2,500.0	2,493.4	2,502.1	2,500.3	6.2	5.4	-142.88	-75.5	-56.1	125.3	114.1	11.15	11.236		
2,600.0	2,593.0	2,602.1	2,600.1	6.4	5.7	-143.38	-75.6	-63.1	126.9	115.2	11.62	10.918		
2,700.0	2,692.6	2,702.1	2,699.8	6.7	5.9	-143.87	-75.6	-70.1	128.5	116.4	12.09	10.624		
2,800.0	2,792.2	2,802.1	2,799.5	7.0	6.2	-144.35	-75.7	-77.2	130.1	117.5	12.56	10.352		
2,900.0	2,891.8	2,902.1	2,899.3	7.3	6.4	-144.82	-75.7	-84.2	131.7	118.6	13.04	10.101		
3,000.0	2,991.4	3,002.0	2,999.0	7.6	6.7	-145.27	-75.8	-91.2	133.3	119.8	13.51	9.868		
3,100.0	3,091.0	3,102.0	3,098.7	7.8	6.9	-145.71	-75.9	-98.2	134.9	120.9	13.98	9.650		
3,200.0	3,190.6	3,202.0	3,198.5	8.1	7.2	-146.14	-75.9	-105.2	136.5	122.1	14.45	9.447		
3,300.0	3,290.2	3,302.0	3,298.2	8.4	7.4	-146.57	-76.0	-112.2	138.2	123.3	14.93	9.258		
3,400.0	3,389.8	3,402.0	3,397.9	8.7	7.7	-146.98	-76.0	-119.2	139.8	124.4	15.40	9.080		
3,500.0	3,489.4	3,501.9	3,497.7	9.0	7.9	-147.38	-76.1	-126.2	141.5	125.6	15.87	8.914		
3,600.0	3,589.0	3,601.9	3,597.4	9.2	8.2	-147.78	-76.1	-133.2	143.2	126.8	16.35	8.758		
3,700.0	3,688.6	3,701.9	3,697.2	9.5	8.4	-148.16	-76.2	-140.2	144.8	128.0	16.82	8.611		
3,800.0	3,788.2	3,801.9	3,796.9	9.8	8.7	-148.53	-76.3	-147.2	146.5	129.2	17.29	8.472		
3,900.0	3,887.8	3,901.9	3,896.6	10.1	8.9	-148.90	-76.3	-154.2	148.2	130.4	17.77	8.342		
4,000.0	3,987.4	4,001.9	3,996.4	10.4	9.2	-149.26	-76.4	-161.2	149.9	131.6	18.24	8.218		
4,100.0	4,087.0	4,101.8	4,096.1	10.7	9.4	-149.61	-76.4	-168.2	151.6	132.9	18.71	8.101		
4,200.0	4,186.6	4,201.8	4,195.8	10.9	9.7	-149.95	-76.5	-175.2	153.3	134.1	19.18	7.991		
4,300.0	4,286.2	4,301.8	4,295.6	11.2	9.9	-150.29	-76.5	-182.2	155.0	135.3	19.65	7.886		
4,400.0	4,385.8	4,401.8	4,395.3	11.5	10.2	-150.62	-76.6	-189.2	156.7	136.6	20.12	7.786		
4,500.0	4,485.4	4,501.8	4,495.0	11.8	10.4	-150.94	-76.6	-196.2	158.4	137.8	20.60	7.691		
4,600.0	4,585.0	4,601.7	4,594.8	12.1	10.7	-151.25	-76.7	-203.2	160.1	139.1	21.07	7.601		
4,700.0	4,684.6	4,701.7	4,694.5	12.3	10.9	-151.56	-76.8	-210.2	161.8	140.3	21.54	7.515		
4,800.0	4,784.2	4,801.7	4,794.2	12.6	11.2	-151.86	-76.8	-217.2	163.6	141.6	22.01	7.432		
4,900.0	4,883.8	4,901.7	4,894.0	12.9	11.5	-152.16	-76.9	-224.2	165.3	142.8	22.48	7.354		
5,000.0	4,983.4	5,001.7	4,993.7	13.2	11.7	-152.44	-76.9	-231.3	167.0	144.1	22.95	7.279		

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

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													S12-T10N-R58W - Razor Federal #12H-1313A - Hz - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-ISCWSA MWD		Offset Well Error:		0.0 ft
Reference				Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
5,100.0	5,083.0	5,101.6	5,093.5	13.5	12.0	-152.73	-77.0	-238.3	168.8	145.4	23.42	7.207					
5,200.0	5,182.6	5,201.6	5,193.2	13.7	12.2	-153.00	-77.0	-245.3	170.5	146.6	23.89	7.139					
5,300.0	5,282.2	5,300.0	5,291.3	14.0	12.5	-160.46	-77.3	-252.2	172.4	148.1	24.35	7.080 SF					
5,400.0	5,381.1	5,382.7	5,373.3	14.3	12.7	144.38	-86.4	-257.9	184.8	160.1	24.71	7.479					
5,500.0	5,476.1	5,450.0	5,438.2	14.5	12.8	138.89	-103.3	-262.5	219.1	194.4	24.68	8.878					
5,600.0	5,563.8	5,500.0	5,484.7	14.8	13.0	137.01	-121.2	-265.7	278.0	253.9	24.05	11.560					
5,700.0	5,640.9	5,527.3	5,509.4	15.1	13.0	129.38	-132.9	-267.5	356.2	332.6	23.59	15.098					
5,800.0	5,704.6	5,550.0	5,529.3	15.5	13.1	114.50	-143.5	-268.9	446.1	421.4	24.69	18.069					

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12H-1314B - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	156.14	-75.1	33.2	82.1					
100.0	100.0	100.0	100.0	0.1	0.1	156.14	-75.1	33.2	82.1	81.9	0.19	438.860		
200.0	200.0	200.0	200.0	0.3	0.3	156.14	-75.1	33.2	82.1	81.4	0.64	128.931		
300.0	300.0	300.0	300.0	0.5	0.5	156.14	-75.1	33.2	82.1	81.0	1.09	75.565		
400.0	400.0	400.0	400.0	0.8	0.8	156.14	-75.1	33.2	82.1	80.5	1.54	53.444		
500.0	500.0	500.0	500.0	1.0	1.0	156.14	-75.1	33.2	82.1	80.1	1.99	41.342 CC		
600.0	600.0	600.0	600.0	1.2	1.2	-114.49	-75.1	33.2	82.4	80.0	2.42	34.035 ES		
700.0	700.0	700.0	700.0	1.4	1.4	-116.12	-75.1	33.2	83.5	80.7	2.85	29.282		
800.0	799.9	799.9	799.9	1.6	1.7	-118.72	-75.1	33.2	85.6	82.3	3.29	25.975		
900.0	899.7	899.7	899.7	1.9	1.9	-122.15	-75.1	33.2	88.7	84.9	3.74	23.684		
1,000.0	999.4	999.4	999.4	2.1	2.1	-126.20	-75.1	33.2	93.1	88.9	4.20	22.156		
1,100.0	1,099.0	1,099.0	1,099.0	2.3	2.3	-130.37	-75.1	33.2	98.6	94.0	4.66	21.147		
1,200.0	1,198.6	1,198.6	1,198.6	2.6	2.6	-134.09	-75.1	33.2	104.6	99.5	5.13	20.412		
1,300.0	1,298.2	1,298.2	1,298.2	2.9	2.8	-137.39	-75.1	33.2	111.0	105.5	5.59	19.873		
1,400.0	1,397.8	1,397.8	1,397.8	3.1	3.0	-140.33	-75.1	33.2	117.8	111.7	6.05	19.476		
1,500.0	1,497.4	1,497.4	1,497.4	3.4	3.2	-142.94	-75.1	33.2	124.8	118.3	6.51	19.182		
1,600.0	1,597.0	1,597.0	1,597.0	3.7	3.5	-145.28	-75.1	33.2	132.0	125.1	6.96	18.964		
1,700.0	1,696.6	1,696.6	1,696.6	3.9	3.7	-147.36	-75.1	33.2	139.5	132.1	7.42	18.798		
1,800.0	1,796.2	1,796.2	1,796.2	4.2	3.9	-149.24	-75.1	33.2	147.1	139.2	7.88	18.673		
1,900.0	1,895.8	1,895.8	1,895.8	4.5	4.1	-150.93	-75.1	33.2	154.8	146.5	8.33	18.581		
2,000.0	1,995.4	1,995.4	1,995.4	4.8	4.4	-152.45	-75.1	33.2	162.7	153.9	8.79	18.512		
2,100.0	2,095.0	2,095.0	2,095.0	5.1	4.6	-153.84	-75.1	33.2	170.7	161.4	9.24	18.463		
2,200.0	2,194.6	2,194.6	2,194.6	5.3	4.8	-155.10	-75.1	33.2	178.7	169.0	9.70	18.428		
2,300.0	2,294.2	2,294.2	2,294.2	5.6	5.0	-156.25	-75.1	33.2	186.9	176.7	10.15	18.404		
2,400.0	2,393.8	2,393.8	2,393.8	5.9	5.2	-157.31	-75.1	33.2	195.1	184.5	10.61	18.389		
2,500.0	2,493.4	2,493.4	2,493.4	6.2	5.5	-158.28	-75.1	33.2	203.3	192.3	11.06	18.381		
2,600.0	2,593.0	2,593.0	2,593.0	6.4	5.7	-159.17	-75.1	33.2	211.7	200.2	11.52	18.378 SF		
2,700.0	2,692.6	2,692.6	2,692.6	6.7	5.9	-160.00	-75.1	33.2	220.0	208.1	11.97	18.380		
2,800.0	2,792.2	2,792.2	2,792.2	7.0	6.1	-160.76	-75.1	33.2	228.5	216.0	12.43	18.385		
2,900.0	2,891.8	2,891.8	2,891.8	7.3	6.4	-161.47	-75.1	33.2	236.9	224.0	12.88	18.392		
3,000.0	2,991.4	2,991.4	2,991.4	7.6	6.6	-162.13	-75.1	33.2	245.4	232.1	13.33	18.402		
3,100.0	3,091.0	3,091.0	3,091.0	7.8	6.8	-162.75	-75.1	33.2	253.9	240.1	13.79	18.413		
3,200.0	3,190.6	3,190.6	3,190.6	8.1	7.0	-163.33	-75.1	33.2	262.4	248.2	14.24	18.425		
3,300.0	3,290.2	3,290.2	3,290.2	8.4	7.3	-163.87	-75.1	33.2	271.0	256.3	14.70	18.438		
3,400.0	3,389.8	3,389.8	3,389.8	8.7	7.5	-164.38	-75.1	33.2	279.6	264.4	15.15	18.452		
3,500.0	3,489.4	3,489.4	3,489.4	9.0	7.7	-164.86	-75.1	33.2	288.2	272.6	15.61	18.466		
3,600.0	3,589.0	3,589.0	3,589.0	9.2	7.9	-165.31	-75.1	33.2	296.8	280.8	16.06	18.481		
3,700.0	3,688.6	3,688.6	3,688.6	9.5	8.2	-165.73	-75.1	33.2	305.5	289.0	16.52	18.496		
3,800.0	3,788.2	3,788.2	3,788.2	9.8	8.4	-166.13	-75.1	33.2	314.1	297.2	16.97	18.510		
3,900.0	3,887.8	3,887.8	3,887.8	10.1	8.6	-166.51	-75.1	33.2	322.8	305.4	17.43	18.525		
4,000.0	3,987.4	3,987.4	3,987.4	10.4	8.8	-166.87	-75.1	33.2	331.5	313.6	17.88	18.540		
4,100.0	4,087.0	4,087.0	4,087.0	10.7	9.1	-167.21	-75.1	33.2	340.2	321.9	18.34	18.554		
4,200.0	4,186.6	4,186.6	4,186.6	10.9	9.3	-167.54	-75.1	33.2	348.9	330.1	18.79	18.569		
4,300.0	4,286.2	4,286.2	4,286.2	11.2	9.5	-167.85	-75.1	33.2	357.7	338.4	19.25	18.583		
4,400.0	4,385.8	4,385.8	4,385.8	11.5	9.7	-168.14	-75.1	33.2	366.4	346.7	19.70	18.597		
4,500.0	4,485.4	4,485.4	4,485.4	11.8	10.0	-168.42	-75.1	33.2	375.1	355.0	20.16	18.611		
4,600.0	4,585.0	4,585.0	4,585.0	12.1	10.2	-168.69	-75.1	33.2	383.9	363.3	20.61	18.625		
4,700.0	4,684.6	4,684.6	4,684.6	12.3	10.4	-168.94	-75.1	33.2	392.6	371.6	21.07	18.638		
4,800.0	4,784.2	4,784.2	4,784.2	12.6	10.6	-169.19	-75.1	33.2	401.4	379.9	21.52	18.651		
4,900.0	4,883.8	4,883.8	4,883.8	12.9	10.8	-169.42	-75.1	33.2	410.2	388.2	21.98	18.664		
5,000.0	4,983.4	4,983.4	4,983.4	13.2	11.1	-169.65	-75.1	33.2	419.0	396.5	22.43	18.677		
5,100.0	5,083.0	5,083.0	5,083.0	13.5	11.3	-169.86	-75.1	33.2	427.7	404.9	22.89	18.689		

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

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12H-1314B - Hz - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-ISWWSA MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,182.6	5,182.6	5,182.6	13.7	11.5	-170.07	-75.1	33.2	436.5	413.2	23.34	18.701	
5,300.0	5,282.2	5,282.2	5,282.2	14.0	11.7	-177.57	-75.1	33.2	445.3	421.5	23.79	18.716	
5,400.0	5,381.1	5,379.8	5,379.8	14.3	12.0	123.63	-75.1	33.2	456.0	431.8	24.15	18.879	
5,500.0	5,476.1	5,456.4	5,456.0	14.5	12.1	114.31	-81.9	33.2	472.9	448.5	24.38	19.397	

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12H-1315A - Hz - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	138.62	-75.1	66.1	100.0					
100.0	100.0	100.0	100.0	0.1	0.1	138.62	-75.1	66.1	100.0	99.8	0.19	534.875		
200.0	200.0	200.0	200.0	0.3	0.3	138.62	-75.1	66.1	100.0	99.4	0.64	157.139		
300.0	300.0	300.0	300.0	0.5	0.5	138.62	-75.1	66.1	100.0	98.9	1.09	92.098		
400.0	400.0	400.0	400.0	0.8	0.8	138.62	-75.1	66.1	100.0	98.5	1.54	65.137		
500.0	500.0	500.0	500.0	1.0	1.0	138.62	-75.1	66.1	100.0	98.0	1.99	50.387 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	-131.83	-75.1	66.1	100.6	98.2	2.42	41.541		
700.0	700.0	700.0	700.0	1.4	1.4	-132.91	-75.1	66.1	102.4	99.5	2.85	35.887		
800.0	799.9	799.9	799.9	1.6	1.7	-134.62	-75.1	66.1	105.4	102.1	3.29	32.021		
900.0	899.7	899.7	899.7	1.9	1.9	-136.86	-75.1	66.1	109.8	106.0	3.74	29.373		
1,000.0	999.4	999.4	999.4	2.1	2.1	-139.48	-75.1	66.1	115.6	111.4	4.19	27.604		
1,100.0	1,099.0	1,099.0	1,099.0	2.3	2.3	-142.18	-75.1	66.1	122.5	117.9	4.64	26.385		
1,200.0	1,198.6	1,198.6	1,198.6	2.6	2.6	-144.59	-75.1	66.1	129.7	124.6	5.10	25.429		
1,300.0	1,298.2	1,296.2	1,296.2	2.9	2.8	-146.90	-75.1	66.9	137.8	132.3	5.54	24.869		
1,400.0	1,397.8	1,393.5	1,393.5	3.1	3.0	-149.27	-75.1	69.4	147.5	141.6	5.97	24.713 SF		
1,500.0	1,497.4	1,490.4	1,490.3	3.4	3.2	-151.63	-75.1	73.5	159.0	152.6	6.40	24.840		
1,600.0	1,597.0	1,586.8	1,586.5	3.7	3.4	-153.91	-75.1	79.2	172.2	165.3	6.83	25.204		
1,700.0	1,696.6	1,685.2	1,684.7	3.9	3.6	-156.04	-75.1	86.0	186.5	179.3	7.27	25.671		
1,800.0	1,796.2	1,784.0	1,783.2	4.2	3.8	-157.87	-75.1	92.9	201.1	193.4	7.70	26.112		
1,900.0	1,895.8	1,882.7	1,881.7	4.5	4.0	-159.45	-75.1	99.7	215.9	207.7	8.14	26.521		
2,000.0	1,995.4	1,981.5	1,980.2	4.8	4.3	-160.83	-75.1	106.6	230.8	222.2	8.58	26.901		
2,100.0	2,095.0	2,080.2	2,078.7	5.1	4.5	-162.04	-75.1	113.4	245.8	236.8	9.02	27.249		
2,200.0	2,194.6	2,178.9	2,177.2	5.3	4.7	-163.11	-75.1	120.3	260.9	251.4	9.46	27.574		
2,300.0	2,294.2	2,277.7	2,275.7	5.6	5.0	-164.06	-75.1	127.1	276.1	266.2	9.91	27.874		
2,400.0	2,393.8	2,376.4	2,374.2	5.9	5.2	-164.92	-75.1	134.0	291.4	281.0	10.35	28.151		
2,500.0	2,493.4	2,475.2	2,472.7	6.2	5.5	-165.69	-75.1	140.9	306.7	295.9	10.80	28.409		
2,600.0	2,593.0	2,573.9	2,571.2	6.4	5.7	-166.38	-75.1	147.7	322.0	310.8	11.24	28.648		
2,700.0	2,692.6	2,672.6	2,669.7	6.7	5.9	-167.02	-75.1	154.6	337.5	325.8	11.69	28.871		
2,800.0	2,792.2	2,771.4	2,768.2	7.0	6.2	-167.59	-75.1	161.4	352.9	340.8	12.14	29.078		
2,900.0	2,891.8	2,870.1	2,866.7	7.3	6.4	-168.12	-75.1	168.3	368.4	355.8	12.58	29.272		
3,000.0	2,991.4	2,968.9	2,965.2	7.6	6.7	-168.61	-75.1	175.2	383.9	370.9	13.03	29.453		
3,100.0	3,091.0	3,067.6	3,063.7	7.8	6.9	-169.06	-75.1	182.0	399.4	385.9	13.48	29.623		
3,200.0	3,190.6	3,166.3	3,162.2	8.1	7.2	-169.47	-75.2	188.9	415.0	401.0	13.93	29.782		
3,300.0	3,290.2	3,265.1	3,260.7	8.4	7.4	-169.86	-75.2	195.7	430.5	416.2	14.38	29.932		
3,400.0	3,389.8	3,363.8	3,359.2	8.7	7.7	-170.22	-75.2	202.6	446.1	431.3	14.83	30.073		
3,500.0	3,489.4	3,462.6	3,457.7	9.0	7.9	-170.55	-75.2	209.4	461.7	446.5	15.29	30.206		
3,600.0	3,589.0	3,561.3	3,556.2	9.2	8.2	-170.86	-75.2	216.3	477.4	461.6	15.74	30.332		
3,700.0	3,688.6	3,660.0	3,654.7	9.5	8.4	-171.16	-75.2	223.2	493.0	476.8	16.19	30.451		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #12H-0113A
Project:	Weld County, CO	TVD Reference:	WELL @ 4964.1ft (Original Well Elev)
Reference Site:	S12-T10N-R58W	MD Reference:	WELL @ 4964.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Razor #12H-0113A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12H-1316B - Hz - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	127.07	-75.0	99.3	124.5					
100.0	100.0	100.0	100.0	0.1	0.1	127.07	-75.0	99.3	124.5	124.3	0.19	665.634		
200.0	200.0	200.0	200.0	0.3	0.3	127.07	-75.0	99.3	124.5	123.8	0.64	195.554		
300.0	300.0	300.0	300.0	0.5	0.5	127.07	-75.0	99.3	124.5	123.4	1.09	114.613		
400.0	400.0	400.0	400.0	0.8	0.8	127.07	-75.0	99.3	124.5	122.9	1.54	81.061		
500.0	500.0	500.0	500.0	1.0	1.0	127.07	-75.0	99.3	124.5	122.5	1.99	62.705 CC, ES		
600.0	600.0	598.3	598.3	1.2	1.2	-143.47	-75.0	100.2	125.9	123.5	2.41	52.328		
700.0	700.0	696.3	696.3	1.4	1.4	-144.77	-75.1	102.7	130.1	127.3	2.81	46.219		
800.0	799.9	794.1	793.9	1.6	1.6	-146.77	-75.1	106.9	137.2	134.0	3.24	42.397		
900.0	899.7	891.3	891.0	1.9	1.8	-149.22	-75.1	112.7	147.5	143.8	3.67	40.197		
1,000.0	999.4	987.8	987.2	2.1	2.1	-151.89	-75.2	120.1	161.0	156.9	4.11	39.189		
1,100.0	1,099.0	1,083.6	1,082.6	2.3	2.3	-154.56	-75.2	129.0	177.3	172.8	4.55	38.960 SF		
1,200.0	1,198.6	1,181.3	1,179.8	2.6	2.6	-156.96	-75.3	139.2	195.0	190.0	5.00	38.995		
1,300.0	1,298.2	1,279.4	1,277.4	2.9	2.8	-158.97	-75.3	149.4	212.9	207.4	5.45	39.087		
1,400.0	1,397.8	1,377.6	1,375.0	3.1	3.1	-160.67	-75.4	159.6	231.0	225.1	5.89	39.191		
1,500.0	1,497.4	1,475.7	1,472.6	3.4	3.4	-162.12	-75.5	169.9	249.3	243.0	6.34	39.300		
1,600.0	1,597.0	1,573.8	1,570.2	3.7	3.7	-163.38	-75.5	180.1	267.7	261.0	6.80	39.404		
1,700.0	1,696.6	1,672.0	1,667.7	3.9	3.9	-164.47	-75.6	190.3	286.3	279.0	7.25	39.510		
1,800.0	1,796.2	1,770.1	1,765.3	4.2	4.2	-165.43	-75.7	200.5	304.9	297.2	7.70	39.610		
1,900.0	1,895.8	1,868.2	1,862.9	4.5	4.5	-166.28	-75.7	210.8	323.6	315.5	8.15	39.705		
2,000.0	1,995.4	1,966.3	1,960.5	4.8	4.8	-167.03	-75.8	221.0	342.4	333.8	8.60	39.793		
2,100.0	2,095.0	2,064.5	2,058.1	5.1	5.1	-167.71	-75.8	231.2	361.2	352.2	9.06	39.876		
2,200.0	2,194.6	2,162.6	2,155.7	5.3	5.4	-168.32	-75.9	241.4	380.1	370.6	9.51	39.953		
2,300.0	2,294.2	2,260.7	2,253.3	5.6	5.6	-168.87	-76.0	251.7	399.0	389.0	9.97	40.025		
2,400.0	2,393.8	2,358.9	2,350.9	5.9	5.9	-169.38	-76.0	261.9	417.9	407.5	10.42	40.092		
2,500.0	2,493.4	2,457.0	2,448.5	6.2	6.2	-169.84	-76.1	272.1	436.9	426.0	10.88	40.155		
2,600.0	2,593.0	2,555.1	2,546.1	6.4	6.5	-170.26	-76.2	282.4	455.9	444.5	11.34	40.213		
2,700.0	2,692.6	2,653.2	2,643.7	6.7	6.8	-170.64	-76.2	292.6	474.9	463.1	11.79	40.268		
2,800.0	2,792.2	2,751.4	2,741.3	7.0	7.1	-171.00	-76.3	302.8	493.9	481.7	12.25	40.320		

Anticollision Report

Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S12-T10N-R58W
Site Error: 0.0ft
Reference Well: Razor #12H-0113A
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #1

Local Co-ordinate Reference: Well Razor #12H-0113A
TVD Reference: WELL @ 4964.1ft (Original Well Elev)
MD Reference: WELL @ 4964.1ft (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 @ 4964.1ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Razor #12H-0113A
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.09°

