

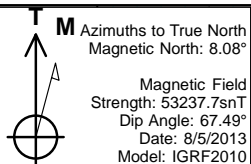


Project: Weld County, CO
Site: S12-T10N-R58W
Well: Razor Federal #12H-1314B
Wellbore: HZ
Design: Plan #1

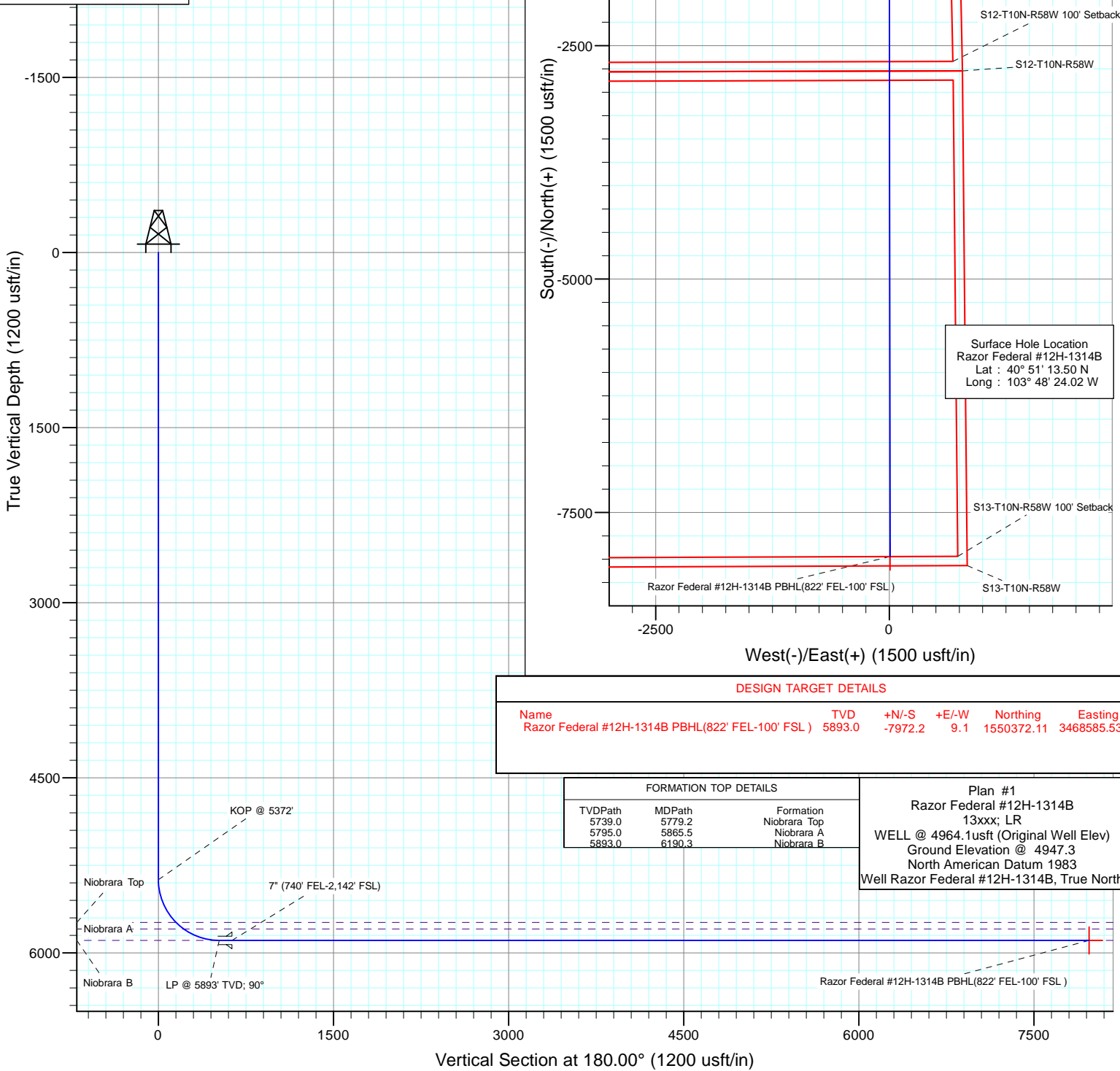


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5372.1	0.00	0.00	5372.1	0.0	0.0	0.00	0.00	0.0	KOP @ 5372'
3	6190.3	90.00	179.93	5893.0	-520.9	0.6	11.00	179.93	520.9	LP @ 5893' TVD; 90°
4	13641.6	90.00	179.93	5893.0	-7972.2	9.1	0.00	0.00	7972.2	TD at 13641.6



M Azimuths to True North
Magnetic North: 8.08°
Magnetic Field
Strength: 53237.7snT
Dip Angle: 67.49°
Date: 8/5/2013
Model: IGRF2010



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor Federal #12H-1314B PBHL(822' FEL-100' FSL)	5893.0	-7972.2	9.1	1550372.11	3468585.53

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5739.0	5779.2	Niobrara Top
5795.0	5865.5	Niobrara A
5893.0	6190.3	Niobrara B

Plan #1
Razor Federal #12H-1314B
13xxx; LR
WELL @ 4964.1usft (Original Well Elev)
Ground Elevation @ 4947.3
North American Datum 1983
Well Razor Federal #12H-1314B, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4964.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4964.1usft (Original Well Elev)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor Federal #12H-1314B	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:	1,558,537.97 usft	Latitude:	40° 51' 16.04 N
From:	Lat/Long	Easting:	3,465,176.15 usft	Longitude:	103° 49' 6.23 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.09 °

Well	Razor Federal #12H-1314B					
Well Position	+N/-S	0.0 usft	Northing:	1,558,342.65 usft	Latitude:	40° 51' 13.50 N
	+E/-W	0.0 usft	Easting:	3,468,424.17 usft	Longitude:	103° 48' 24.02 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,947.3 usft

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	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	180.00	

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,372.1	0.00	0.00	5,372.1	0.0	0.0	0.00	0.00	0.00	0.00	
6,190.3	90.00	179.93	5,893.0	-520.9	0.6	11.00	11.00	0.00	179.93	
13,641.6	90.00	179.93	5,893.0	-7,972.2	9.1	0.00	0.00	0.00	0.00	Razor Federal #12H-'

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4964.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4964.1usft (Original Well Elev)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor Federal #12H-1314B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4964.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4964.1usft (Original Well Elev)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor Federal #12H-1314B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	
5,372.1	0.00	0.00	5,372.1	0.0	0.0	0.0	0.00	0.00	KOP @ 5372'
5,400.0	3.07	179.93	5,400.0	-0.7	0.0	0.7	11.00	11.00	
5,450.0	8.57	179.93	5,449.7	-5.8	0.0	5.8	11.00	11.00	
5,500.0	14.07	179.93	5,498.7	-15.6	0.0	15.6	11.00	11.00	
5,550.0	19.57	179.93	5,546.6	-30.1	0.0	30.1	11.00	11.00	
5,600.0	25.07	179.93	5,592.8	-49.1	0.1	49.1	11.00	11.00	
5,650.0	30.57	179.93	5,637.0	-72.4	0.1	72.4	11.00	11.00	
5,700.0	36.07	179.93	5,678.8	-99.8	0.1	99.8	11.00	11.00	
5,750.0	41.57	179.93	5,717.7	-131.2	0.2	131.2	11.00	11.00	
5,779.2	44.78	179.93	5,739.0	-151.1	0.2	151.1	11.00	11.00	Niobrara Top
5,800.0	47.07	179.93	5,753.5	-166.1	0.2	166.1	11.00	11.00	
5,850.0	52.57	179.93	5,785.7	-204.3	0.2	204.3	11.00	11.00	
5,865.5	54.28	179.93	5,795.0	-216.8	0.2	216.8	11.00	11.00	Niobrara A
5,900.0	58.07	179.93	5,814.2	-245.4	0.3	245.4	11.00	11.00	
5,950.0	63.57	179.93	5,838.5	-289.0	0.3	289.0	11.00	11.00	
6,000.0	69.07	179.93	5,858.6	-334.8	0.4	334.8	11.00	11.00	
6,050.0	74.57	179.93	5,874.2	-382.3	0.4	382.3	11.00	11.00	
6,100.0	80.07	179.93	5,885.2	-431.0	0.5	431.0	11.00	11.00	
6,150.0	85.57	179.93	5,891.4	-480.6	0.6	480.6	11.00	11.00	
6,190.3	90.00	179.93	5,893.0	-520.9	0.6	520.9	11.00	11.00	LP @ 5893' TVD; 90° - Niobrara B
6,200.0	90.00	179.93	5,893.0	-530.6	0.6	530.6	0.01	0.01	
6,300.0	90.00	179.93	5,893.0	-630.6	0.7	630.6	0.00	0.00	7" (740' FEL-2,142' FSL)
6,400.0	90.00	179.93	5,893.0	-730.6	0.8	730.6	0.00	0.00	
6,500.0	90.00	179.93	5,893.0	-830.6	1.0	830.6	0.00	0.00	
6,600.0	90.00	179.93	5,893.0	-930.6	1.1	930.6	0.00	0.00	
6,700.0	90.00	179.93	5,893.0	-1,030.6	1.2	1,030.6	0.00	0.00	
6,800.0	90.00	179.93	5,893.0	-1,130.6	1.3	1,130.6	0.00	0.00	
6,900.0	90.00	179.93	5,893.0	-1,230.6	1.4	1,230.6	0.00	0.00	
7,000.0	90.00	179.93	5,893.0	-1,330.6	1.5	1,330.6	0.00	0.00	
7,100.0	90.00	179.93	5,893.0	-1,430.6	1.6	1,430.6	0.00	0.00	
7,200.0	90.00	179.93	5,893.0	-1,530.6	1.8	1,530.6	0.00	0.00	
7,300.0	90.00	179.93	5,893.0	-1,630.6	1.9	1,630.6	0.00	0.00	
7,400.0	90.00	179.93	5,893.0	-1,730.6	2.0	1,730.6	0.00	0.00	
7,500.0	90.00	179.93	5,893.0	-1,830.6	2.1	1,830.6	0.00	0.00	
7,600.0	90.00	179.93	5,893.0	-1,930.6	2.2	1,930.6	0.00	0.00	
7,700.0	90.00	179.93	5,893.0	-2,030.6	2.3	2,030.6	0.00	0.00	
7,800.0	90.00	179.93	5,893.0	-2,130.6	2.4	2,130.6	0.00	0.00	
7,900.0	90.00	179.93	5,893.0	-2,230.6	2.6	2,230.6	0.00	0.00	
8,000.0	90.00	179.93	5,893.0	-2,330.6	2.7	2,330.6	0.00	0.00	
8,100.0	90.00	179.93	5,893.0	-2,430.6	2.8	2,430.6	0.00	0.00	
8,200.0	90.00	179.93	5,893.0	-2,530.6	2.9	2,530.6	0.00	0.00	
8,300.0	90.00	179.93	5,893.0	-2,630.6	3.0	2,630.6	0.00	0.00	
8,400.0	90.00	179.93	5,893.0	-2,730.6	3.1	2,730.6	0.00	0.00	
8,500.0	90.00	179.93	5,893.0	-2,830.6	3.2	2,830.6	0.00	0.00	
8,600.0	90.00	179.93	5,893.0	-2,930.6	3.4	2,930.6	0.00	0.00	
8,700.0	90.00	179.93	5,893.0	-3,030.6	3.5	3,030.6	0.00	0.00	
8,800.0	90.00	179.93	5,893.0	-3,130.6	3.6	3,130.6	0.00	0.00	
8,900.0	90.00	179.93	5,893.0	-3,230.6	3.7	3,230.6	0.00	0.00	
9,000.0	90.00	179.93	5,893.0	-3,330.6	3.8	3,330.6	0.00	0.00	
9,100.0	90.00	179.93	5,893.0	-3,430.6	3.9	3,430.6	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4964.1usft (Original Well Elev)
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Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor Federal #12H-1314B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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
9,200.0	90.00	179.93	5,893.0	-3,530.6	4.0	3,530.6	0.00	0.00	
9,300.0	90.00	179.93	5,893.0	-3,630.6	4.2	3,630.6	0.00	0.00	
9,400.0	90.00	179.93	5,893.0	-3,730.6	4.3	3,730.6	0.00	0.00	
9,500.0	90.00	179.93	5,893.0	-3,830.6	4.4	3,830.6	0.00	0.00	
9,600.0	90.00	179.93	5,893.0	-3,930.6	4.5	3,930.6	0.00	0.00	
9,700.0	90.00	179.93	5,893.0	-4,030.6	4.6	4,030.6	0.00	0.00	
9,800.0	90.00	179.93	5,893.0	-4,130.6	4.7	4,130.6	0.00	0.00	
9,900.0	90.00	179.93	5,893.0	-4,230.6	4.8	4,230.6	0.00	0.00	
10,000.0	90.00	179.93	5,893.0	-4,330.6	5.0	4,330.6	0.00	0.00	
10,100.0	90.00	179.93	5,893.0	-4,430.6	5.1	4,430.6	0.00	0.00	
10,200.0	90.00	179.93	5,893.0	-4,530.6	5.2	4,530.6	0.00	0.00	
10,300.0	90.00	179.93	5,893.0	-4,630.6	5.3	4,630.6	0.00	0.00	
10,400.0	90.00	179.93	5,893.0	-4,730.6	5.4	4,730.6	0.00	0.00	
10,500.0	90.00	179.93	5,893.0	-4,830.6	5.5	4,830.6	0.00	0.00	
10,600.0	90.00	179.93	5,893.0	-4,930.6	5.6	4,930.6	0.00	0.00	
10,700.0	90.00	179.93	5,893.0	-5,030.6	5.8	5,030.6	0.00	0.00	
10,800.0	90.00	179.93	5,893.0	-5,130.6	5.9	5,130.6	0.00	0.00	
10,900.0	90.00	179.93	5,893.0	-5,230.6	6.0	5,230.6	0.00	0.00	
11,000.0	90.00	179.93	5,893.0	-5,330.6	6.1	5,330.6	0.00	0.00	
11,100.0	90.00	179.93	5,893.0	-5,430.6	6.2	5,430.6	0.00	0.00	
11,200.0	90.00	179.93	5,893.0	-5,530.6	6.3	5,530.6	0.00	0.00	
11,300.0	90.00	179.93	5,893.0	-5,630.6	6.4	5,630.6	0.00	0.00	
11,400.0	90.00	179.93	5,893.0	-5,730.6	6.6	5,730.6	0.00	0.00	
11,500.0	90.00	179.93	5,893.0	-5,830.6	6.7	5,830.6	0.00	0.00	
11,600.0	90.00	179.93	5,893.0	-5,930.6	6.8	5,930.6	0.00	0.00	
11,700.0	90.00	179.93	5,893.0	-6,030.6	6.9	6,030.6	0.00	0.00	
11,800.0	90.00	179.93	5,893.0	-6,130.6	7.0	6,130.6	0.00	0.00	
11,900.0	90.00	179.93	5,893.0	-6,230.6	7.1	6,230.6	0.00	0.00	
12,000.0	90.00	179.93	5,893.0	-6,330.6	7.3	6,330.6	0.00	0.00	
12,100.0	90.00	179.93	5,893.0	-6,430.6	7.4	6,430.6	0.00	0.00	
12,200.0	90.00	179.93	5,893.0	-6,530.6	7.5	6,530.6	0.00	0.00	
12,300.0	90.00	179.93	5,893.0	-6,630.6	7.6	6,630.6	0.00	0.00	
12,400.0	90.00	179.93	5,893.0	-6,730.6	7.7	6,730.6	0.00	0.00	
12,500.0	90.00	179.93	5,893.0	-6,830.6	7.8	6,830.6	0.00	0.00	
12,600.0	90.00	179.93	5,893.0	-6,930.6	7.9	6,930.6	0.00	0.00	
12,700.0	90.00	179.93	5,893.0	-7,030.6	8.1	7,030.6	0.00	0.00	
12,800.0	90.00	179.93	5,893.0	-7,130.6	8.2	7,130.6	0.00	0.00	
12,900.0	90.00	179.93	5,893.0	-7,230.6	8.3	7,230.6	0.00	0.00	
13,000.0	90.00	179.93	5,893.0	-7,330.6	8.4	7,330.6	0.00	0.00	
13,100.0	90.00	179.93	5,893.0	-7,430.6	8.5	7,430.6	0.00	0.00	
13,200.0	90.00	179.93	5,893.0	-7,530.6	8.6	7,530.6	0.00	0.00	
13,300.0	90.00	179.93	5,893.0	-7,630.6	8.7	7,630.6	0.00	0.00	
13,400.0	90.00	179.93	5,893.0	-7,730.6	8.9	7,730.6	0.00	0.00	
13,500.0	90.00	179.93	5,893.0	-7,830.6	9.0	7,830.6	0.00	0.00	
13,600.0	90.00	179.93	5,893.0	-7,930.6	9.1	7,930.6	0.00	0.00	
13,641.6	90.00	179.93	5,893.0	-7,972.2	9.1	7,972.2	0.00	0.00	TD at 13641.6

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4964.1usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4964.1usft (Original Well Elev)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor Federal #12H-1314B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Razor Federal #12H-131	0.00	0.00	5,893.0	-7,972.2	9.1	1,550,372.11	3,468,585.53	40° 49' 54.73 N	103° 48' 23.90 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,300.0	5,893.0	7" (740' FEL-2,142' FSL)	7	7-1/2	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,779.2	5,739.0	Niobrara Top		0.00	
5,865.5	5,795.0	Niobrara A		0.00	
6,190.3	5,893.0	Niobrara B		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,372.1	5,372.1	0.0	0.0	KOP @ 5372'	
6,190.3	5,893.0	-520.9	0.6	LP @ 5893' TVD; 90°	
13,641.6	5,893.0	-7,972.2	9.1	TD at 13641.6	

Whiting Petroleum Corporation

Weld County, CO

S12-T10N-R58W

Razor Federal #12H-1314B

Hz

Plan #1

Anticollision Report

05 August, 2013

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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 1,566.5ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	8/5/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,641.6	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-1310B - HZ - Plan #1	6,778.3	6,424.3	1,312.1	1,264.4	27.503	CC
Razor #12G-1310B - HZ - Plan #1	13,641.6	13,287.6	1,319.9	1,015.1	4.331	ES, SF
Razor #12G-1311A - HZ - Plan #1	7,185.7	6,790.2	985.0	924.1	16.181	CC
Razor #12G-1311A - HZ - Plan #1	13,641.6	13,246.2	993.1	690.1	3.277	ES, SF
Razor #12G-1312B - HZ - Plan #1	7,472.8	7,264.1	652.4	580.6	9.075	CC
Razor #12G-1312B - HZ - Plan #1	13,641.6	13,432.9	659.6	355.8	2.171	ES, SF
Razor #12H-0113A - HZ - Plan #1	500.0	500.0	82.1	80.1	41.342	CC
Razor #12H-0113A - HZ - Plan #1	600.0	599.4	82.4	80.0	34.052	ES
Razor #12H-0113A - HZ - Plan #1	2,800.0	2,788.5	228.3	215.8	18.296	SF
Razor #12H-0115A - HZ - Plan #1	4,042.6	4,042.6	75.1	57.2	4.192	CC
Razor #12H-0115A - HZ - Plan #1	4,200.0	4,199.7	75.3	56.8	4.055	ES
Razor #12H-0115A - HZ - Plan #1	4,300.0	4,298.9	76.6	57.6	4.030	SF
Razor #12H-0116B - HZ - Plan #1	500.0	500.0	82.0	80.0	41.293	CC
Razor #12H-0116B - HZ - Plan #1	600.0	599.4	82.3	79.9	34.008	ES
Razor #12H-0116B - HZ - Plan #1	2,500.0	2,489.4	205.7	194.6	18.527	SF
RAZOR 12-0141H (EXISTING) - WHTING WELL - SURV	5,153.0	5,154.5	132.1	110.0	5.968	CC, ES
RAZOR 12-0141H (EXISTING) - WHTING WELL - SURV	5,200.0	5,199.5	132.5	110.1	5.931	SF
Razor Federal #12H-1313A - HZ - Plan #1	1,500.0	1,500.0	33.2	26.7	5.123	CC, ES
Razor Federal #12H-1313A - HZ - Plan #1	13,641.6	13,551.5	344.1	48.0	1.162	Level 2, SF
Razor Federal #12H-1315A - HZ - Plan #1	1,200.0	1,200.0	32.9	27.8	6.415	CC, ES
Razor Federal #12H-1315A - HZ - Plan #1	13,641.6	13,552.8	344.1	47.8	1.161	Level 2, SF
Razor Federal #12H-1316B - HZ - Plan #1	500.0	500.0	66.1	64.1	33.307	CC, ES
Razor Federal #12H-1316B - HZ - Plan #1	13,641.6	13,661.1	660.3	353.1	2.150	SF
S18-T10N-R57W						
HORSETAIL #18-0713H - HZ - FINAL	6,432.7	12,435.0	1,364.2	1,213.2	9.033	CC, ES
HORSETAIL #18-0713H - HZ - FINAL	6,500.0	12,435.0	1,365.9	1,213.9	8.986	SF
HORSETAIL #18-0713H - HZ - Plan #1	6,447.4	12,479.0	1,399.2	1,240.1	8.798	CC, ES, SF
HORSETAIL #18-0713H - HZ - Plan #2	6,447.4	12,455.0	1,399.9	1,240.9	8.807	CC, ES, SF
HORSETAIL #18-0713H - HZ - Plan #3	6,447.4	12,416.7	1,400.9	1,242.9	8.865	CC, ES
HORSETAIL #18-0713H - HZ - Plan #3	6,500.0	12,381.0	1,401.5	1,243.3	8.863	SF

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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-1310B - 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		
0.0	0.0	6.2	6.2	0.0	0.0	-93.79	-93.1	-1,406.4	1,409.4					
100.0	100.0	106.2	106.2	0.1	0.1	-93.79	-93.1	-1,406.4	1,409.4	1,409.2	0.20	7,013.375		
200.0	200.0	206.2	206.2	0.3	0.3	-93.79	-93.1	-1,406.4	1,409.4	1,408.8	0.65	2,166.703		
300.0	300.0	306.2	306.2	0.5	0.6	-93.79	-93.1	-1,406.4	1,409.4	1,408.3	1.10	1,281.268		
400.0	400.0	406.2	406.2	0.8	0.8	-93.79	-93.1	-1,406.4	1,409.4	1,407.9	1.55	909.568		
500.0	500.0	506.2	506.2	1.0	1.0	-93.79	-93.1	-1,406.4	1,409.4	1,407.4	2.00	705.035		
600.0	600.0	606.2	606.2	1.2	1.2	-93.79	-93.1	-1,406.4	1,409.4	1,407.0	2.45	575.601		
700.0	700.0	706.2	706.2	1.4	1.5	-93.79	-93.1	-1,406.4	1,409.4	1,406.5	2.90	486.320		
800.0	800.0	806.2	806.2	1.7	1.7	-93.79	-93.1	-1,406.4	1,409.4	1,406.1	3.35	421.016		
900.0	900.0	906.2	906.2	1.9	1.9	-93.79	-93.1	-1,406.4	1,409.4	1,405.6	3.80	371.174		
1,000.0	1,000.0	1,006.2	1,006.2	2.1	2.1	-93.79	-93.1	-1,406.4	1,409.4	1,405.2	4.25	331.884		
1,100.0	1,100.0	1,106.3	1,106.3	2.3	2.4	-93.79	-93.1	-1,406.4	1,409.4	1,404.7	4.69	300.217		
1,200.0	1,200.0	1,208.2	1,208.2	2.6	2.6	-93.87	-95.1	-1,406.1	1,409.4	1,404.2	5.12	275.428		
1,300.0	1,300.0	1,309.7	1,309.5	2.8	2.7	-94.10	-100.7	-1,405.6	1,409.2	1,403.6	5.52	255.272		
1,400.0	1,400.0	1,409.4	1,409.0	3.0	2.9	-94.38	-107.6	-1,404.8	1,408.9	1,403.0	5.93	237.458		
1,500.0	1,500.0	1,509.2	1,508.5	3.2	3.1	-94.66	-114.5	-1,404.1	1,408.8	1,402.4	6.36	221.580		
1,600.0	1,600.0	1,608.9	1,608.0	3.5	3.3	-94.95	-121.4	-1,403.4	1,408.6	1,401.8	6.79	207.414		
1,700.0	1,700.0	1,708.7	1,707.5	3.7	3.5	-95.23	-128.4	-1,402.6	1,408.5	1,401.3	7.23	194.750		
1,800.0	1,800.0	1,808.4	1,807.0	3.9	3.8	-95.51	-135.3	-1,401.9	1,408.4	1,400.8	7.68	183.396		
1,900.0	1,900.0	1,908.2	1,906.6	4.1	4.0	-95.79	-142.2	-1,401.2	1,408.4	1,400.3	8.13	173.186		
1,971.4	1,971.4	1,979.4	1,977.6	4.3	4.2	-96.00	-147.1	-1,400.7	1,408.4	1,399.9	8.46	166.512		
2,000.0	2,000.0	2,008.0	2,006.1	4.4	4.2	-96.08	-149.1	-1,400.5	1,408.4	1,399.8	8.59	163.972		
2,100.0	2,100.0	2,107.7	2,105.6	4.6	4.5	-96.36	-156.0	-1,399.7	1,408.4	1,399.4	9.05	155.630		
2,200.0	2,200.0	2,207.5	2,205.1	4.8	4.7	-96.64	-163.0	-1,399.0	1,408.5	1,399.0	9.51	148.050		
2,300.0	2,300.0	2,307.2	2,304.6	5.0	4.9	-96.93	-169.9	-1,398.3	1,408.6	1,398.6	9.98	141.140		
2,400.0	2,400.0	2,407.0	2,404.1	5.3	5.2	-97.21	-176.8	-1,397.6	1,408.7	1,398.2	10.45	134.821		
2,500.0	2,500.0	2,506.7	2,503.6	5.5	5.4	-97.49	-183.7	-1,396.8	1,408.9	1,397.9	10.92	129.024		
2,600.0	2,600.0	2,606.5	2,603.2	5.7	5.7	-97.78	-190.6	-1,396.1	1,409.1	1,397.7	11.39	123.690		
2,700.0	2,700.0	2,706.3	2,702.7	5.9	5.9	-98.06	-197.6	-1,395.4	1,409.3	1,397.4	11.87	118.769		
2,800.0	2,800.0	2,806.0	2,802.2	6.2	6.2	-98.34	-204.5	-1,394.6	1,409.6	1,397.2	12.34	114.216		
2,900.0	2,900.0	2,905.8	2,901.7	6.4	6.4	-98.62	-211.4	-1,393.9	1,409.9	1,397.1	12.82	109.993		
3,000.0	3,000.0	3,005.5	3,001.2	6.6	6.7	-98.91	-218.3	-1,393.2	1,410.2	1,396.9	13.30	106.068		
3,100.0	3,100.0	3,105.3	3,100.7	6.8	6.9	-99.19	-225.2	-1,392.5	1,410.6	1,396.8	13.77	102.410		
3,200.0	3,200.0	3,205.0	3,200.2	7.1	7.2	-99.47	-232.2	-1,391.7	1,411.0	1,396.7	14.25	98.994		
3,300.0	3,300.0	3,304.8	3,299.7	7.3	7.4	-99.75	-239.1	-1,391.0	1,411.4	1,396.7	14.73	95.799		
3,400.0	3,400.0	3,404.5	3,399.3	7.5	7.7	-100.03	-246.0	-1,390.3	1,411.9	1,396.7	15.21	92.803		
3,500.0	3,500.0	3,504.3	3,498.8	7.7	7.9	-100.32	-252.9	-1,389.6	1,412.4	1,396.7	15.70	89.989		
3,600.0	3,600.0	3,604.1	3,598.3	8.0	8.2	-100.60	-259.8	-1,388.8	1,413.0	1,396.8	16.18	87.342		
3,700.0	3,700.0	3,703.8	3,697.8	8.2	8.5	-100.88	-266.8	-1,388.1	1,413.5	1,396.9	16.66	84.848		
3,800.0	3,800.0	3,803.6	3,797.3	8.4	8.7	-101.16	-273.7	-1,387.4	1,414.1	1,397.0	17.14	82.494		
3,900.0	3,900.0	3,903.3	3,896.8	8.6	9.0	-101.44	-280.6	-1,386.7	1,414.8	1,397.2	17.63	80.269		
4,000.0	4,000.0	4,003.1	3,996.3	8.9	9.2	-101.72	-287.5	-1,385.9	1,415.5	1,397.4	18.11	78.163		
4,100.0	4,100.0	4,102.8	4,095.9	9.1	9.5	-102.00	-294.4	-1,385.2	1,416.2	1,397.6	18.59	76.167		
4,200.0	4,200.0	4,202.6	4,195.4	9.3	9.7	-102.28	-301.4	-1,384.5	1,416.9	1,397.9	19.08	74.272		
4,300.0	4,300.0	4,302.4	4,294.9	9.5	10.0	-102.56	-308.3	-1,383.7	1,417.7	1,398.2	19.56	72.473		
4,400.0	4,400.0	4,402.1	4,394.4	9.8	10.3	-102.84	-315.2	-1,383.0	1,418.5	1,398.5	20.05	70.761		
4,500.0	4,500.0	4,501.9	4,493.9	10.0	10.5	-103.12	-322.1	-1,382.3	1,419.4	1,398.9	20.53	69.131		
4,600.0	4,600.0	4,601.6	4,593.4	10.2	10.8	-103.40	-329.1	-1,381.6	1,420.3	1,399.3	21.02	67.577		
4,700.0	4,700.0	4,701.4	4,692.9	10.4	11.0	-103.67	-336.0	-1,380.8	1,421.2	1,399.7	21.50	66.094		
4,800.0	4,800.0	4,801.1	4,792.4	10.7	11.3	-103.95	-342.9	-1,380.1	1,422.1	1,400.1	21.99	64.678		
4,900.0	4,900.0	4,900.9	4,892.0	10.9	11.6	-104.23	-349.8	-1,379.4	1,423.1	1,400.6	22.47	63.324		

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 Federal #12H-1314B
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 Federal #12H-1314B	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-1310B - 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				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)				
5,000.0	5,000.0	5,000.6	4,991.5	11.1	11.8	-104.51	-356.7	-1,378.7	1,424.1	1,401.2	22.96	62.028		
5,100.0	5,100.0	5,100.4	5,091.0	11.3	12.1	-104.78	-363.7	-1,377.9	1,425.2	1,401.7	23.45	60.787		
5,200.0	5,200.0	5,200.2	5,190.5	11.6	12.3	-105.06	-370.6	-1,377.2	1,426.3	1,402.3	23.93	59.597		
5,300.0	5,300.0	5,299.9	5,290.0	11.8	12.6	-105.34	-377.5	-1,376.5	1,427.4	1,403.0	24.42	58.456		
5,400.0	5,400.0	5,399.7	5,389.6	12.0	12.9	74.47	-384.4	-1,375.7	1,428.3	1,403.5	24.82	57.540		
5,500.0	5,498.7	5,480.0	5,469.5	12.2	13.1	74.87	-391.8	-1,375.0	1,426.0	1,400.8	25.18	56.640		
5,600.0	5,592.8	5,550.0	5,537.8	12.4	13.4	75.76	-406.9	-1,373.4	1,420.6	1,395.1	25.54	55.624		
5,700.0	5,678.8	5,618.8	5,602.3	12.5	13.7	77.07	-430.5	-1,370.9	1,412.8	1,386.7	26.04	54.249		
5,800.0	5,753.5	5,689.7	5,664.9	12.9	14.2	78.80	-463.5	-1,367.4	1,402.8	1,376.0	26.79	52.370		
5,900.0	5,814.2	5,762.1	5,723.6	13.4	14.7	80.88	-505.6	-1,363.0	1,391.3	1,363.4	27.90	49.873		
6,000.0	5,858.6	5,836.6	5,777.2	14.1	15.4	83.26	-556.8	-1,357.6	1,378.8	1,349.5	29.38	46.932		
6,100.0	5,885.2	5,913.9	5,824.6	15.0	16.2	85.87	-617.5	-1,351.3	1,366.2	1,335.0	31.21	43.768		
6,200.0	5,893.0	5,995.1	5,864.0	16.1	17.2	88.50	-688.0	-1,343.9	1,354.1	1,320.8	33.34	40.618		
6,300.0	5,893.0	6,085.1	5,894.2	17.3	18.4	89.79	-772.2	-1,335.0	1,343.2	1,307.5	35.76	37.566		
6,400.0	5,893.0	6,183.9	5,910.1	18.7	19.8	90.47	-869.1	-1,324.8	1,332.9	1,294.4	38.49	34.634		
6,500.0	5,893.0	6,257.4	5,911.3	20.1	20.9	90.53	-942.2	-1,317.5	1,323.3	1,282.3	40.98	32.293		
6,600.0	5,893.0	6,300.0	5,911.3	21.7	21.5	90.53	-984.7	-1,314.4	1,316.7	1,273.5	43.12	30.535		
6,700.0	5,893.0	6,375.6	5,911.3	23.2	22.5	90.53	-1,060.2	-1,311.2	1,312.8	1,267.1	45.72	28.712		
6,778.3	5,893.0	6,424.3	5,911.3	24.5	23.2	90.53	-1,108.9	-1,310.7	1,312.1	1,264.4	47.71	27.503 CC		
6,800.0	5,893.0	6,446.0	5,911.3	24.8	23.5	90.53	-1,130.6	-1,310.7	1,312.1	1,263.7	48.37	27.125		
6,900.0	5,893.0	6,546.0	5,911.3	26.5	25.1	90.53	-1,230.6	-1,310.7	1,312.2	1,260.6	51.62	25.420		
7,000.0	5,893.0	6,646.0	5,911.3	28.2	26.8	90.53	-1,330.6	-1,310.7	1,312.3	1,257.3	54.99	23.863		
7,100.0	5,893.0	6,746.0	5,911.3	29.9	28.5	90.53	-1,430.6	-1,310.7	1,312.4	1,254.0	58.42	22.464		
7,200.0	5,893.0	6,846.0	5,911.3	31.7	30.2	90.53	-1,530.6	-1,310.7	1,312.5	1,250.6	61.90	21.203		
7,300.0	5,893.0	6,946.0	5,911.3	33.4	31.9	90.53	-1,630.6	-1,310.7	1,312.7	1,247.2	65.43	20.064		
7,400.0	5,893.0	7,046.0	5,911.3	35.2	33.7	90.53	-1,730.6	-1,310.7	1,312.8	1,243.8	68.98	19.031		
7,500.0	5,893.0	7,146.0	5,911.3	37.0	35.5	90.53	-1,830.6	-1,310.7	1,312.9	1,240.3	72.57	18.093		
7,600.0	5,893.0	7,246.0	5,911.3	38.8	37.3	90.53	-1,930.6	-1,310.7	1,313.0	1,236.8	76.18	17.237		
7,700.0	5,893.0	7,346.0	5,911.3	40.7	39.1	90.53	-2,030.6	-1,310.7	1,313.1	1,233.3	79.81	16.454		
7,800.0	5,893.0	7,446.0	5,911.3	42.5	40.9	90.53	-2,130.6	-1,310.7	1,313.2	1,229.8	83.46	15.735		
7,900.0	5,893.0	7,546.0	5,911.3	44.3	42.8	90.53	-2,230.6	-1,310.7	1,313.3	1,226.2	87.13	15.074		
8,000.0	5,893.0	7,646.0	5,911.3	46.2	44.6	90.53	-2,330.6	-1,310.7	1,313.5	1,222.7	90.81	14.464		
8,100.0	5,893.0	7,746.0	5,911.2	48.0	46.4	90.53	-2,430.6	-1,310.7	1,313.6	1,219.1	94.50	13.900		
8,200.0	5,893.0	7,846.0	5,911.2	49.9	48.3	90.52	-2,530.6	-1,310.7	1,313.7	1,215.5	98.21	13.376		
8,300.0	5,893.0	7,946.0	5,911.2	51.7	50.1	90.52	-2,630.6	-1,310.7	1,313.8	1,211.9	101.93	12.890		
8,400.0	5,893.0	8,046.0	5,911.2	53.6	52.0	90.52	-2,730.6	-1,310.7	1,313.9	1,208.3	105.65	12.436		
8,500.0	5,893.0	8,146.0	5,911.2	55.5	53.9	90.52	-2,830.6	-1,310.7	1,314.0	1,204.6	109.39	12.013		
8,600.0	5,893.0	8,246.0	5,911.2	57.3	55.7	90.52	-2,930.6	-1,310.7	1,314.1	1,201.0	113.13	11.616		
8,700.0	5,893.0	8,346.0	5,911.2	59.2	57.6	90.52	-3,030.6	-1,310.7	1,314.3	1,197.4	116.88	11.245		
8,800.0	5,893.0	8,446.0	5,911.2	61.1	59.5	90.52	-3,130.6	-1,310.7	1,314.4	1,193.7	120.63	10.896		
8,900.0	5,893.0	8,546.0	5,911.2	63.0	61.4	90.52	-3,230.6	-1,310.7	1,314.5	1,190.1	124.39	10.567		
9,000.0	5,893.0	8,646.0	5,911.2	64.8	63.2	90.52	-3,330.6	-1,310.7	1,314.6	1,186.4	128.16	10.258		
9,100.0	5,893.0	8,746.0	5,911.2	66.7	65.1	90.52	-3,430.6	-1,310.7	1,314.7	1,182.8	131.93	9.966		
9,200.0	5,893.0	8,846.0	5,911.2	68.6	67.0	90.52	-3,530.6	-1,310.7	1,314.8	1,179.1	135.70	9.689		
9,300.0	5,893.0	8,946.0	5,911.2	70.5	68.9	90.52	-3,630.6	-1,310.7	1,314.9	1,175.5	139.48	9.428		
9,400.0	5,893.0	9,046.0	5,911.2	72.4	70.8	90.52	-3,730.6	-1,310.7	1,315.1	1,171.8	143.26	9.180		
9,500.0	5,893.0	9,146.0	5,911.2	74.3	72.7	90.52	-3,830.6	-1,310.7	1,315.2	1,168.1	147.04	8.944		
9,600.0	5,893.0	9,246.0	5,911.2	76.2	74.6	90.52	-3,930.6	-1,310.7	1,315.3	1,164.5	150.83	8.720		
9,700.0	5,893.0	9,346.0	5,911.2	78.1	76.5	90.52	-4,030.6	-1,310.7	1,315.4	1,160.8	154.62	8.507		
9,800.0	5,893.0	9,446.0	5,911.2	80.0	78.4	90.52	-4,130.6	-1,310.7	1,315.5	1,157.1	158.41	8.304		
9,900.0	5,893.0	9,546.0	5,911.2	81.9	80.3	90.52	-4,230.6	-1,310.7	1,315.6	1,153.4	162.21	8.111		
10,000.0	5,893.0	9,646.0	5,911.2	83.8	82.2	90.52	-4,330.6	-1,310.7	1,315.7	1,149.7	166.00	7.926		

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 Federal #12H-1314B
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 Federal #12H-1314B	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-1310B - 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				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)				
10,100.0	5,893.0	9,746.0	5,911.2	85.7	84.1	90.52	-4,430.6	-1,310.7	1,315.9	1,146.1	169.80	7.749		
10,200.0	5,893.0	9,846.0	5,911.2	87.6	86.0	90.52	-4,530.6	-1,310.7	1,316.0	1,142.4	173.60	7.580		
10,300.0	5,893.0	9,946.0	5,911.2	89.5	87.9	90.52	-4,630.6	-1,310.7	1,316.1	1,138.7	177.41	7.418		
10,400.0	5,893.0	10,046.0	5,911.1	91.4	89.8	90.52	-4,730.6	-1,310.7	1,316.2	1,135.0	181.21	7.263		
10,500.0	5,893.0	10,146.0	5,911.1	93.3	91.7	90.52	-4,830.6	-1,310.7	1,316.3	1,131.3	185.02	7.114		
10,600.0	5,893.0	10,246.0	5,911.1	95.2	93.6	90.52	-4,930.6	-1,310.7	1,316.4	1,127.6	188.83	6.972		
10,700.0	5,893.0	10,346.0	5,911.1	97.1	95.5	90.52	-5,030.6	-1,310.7	1,316.5	1,123.9	192.64	6.834		
10,800.0	5,893.0	10,446.0	5,911.1	99.0	97.4	90.52	-5,130.6	-1,310.7	1,316.7	1,120.2	196.45	6.702		
10,900.0	5,893.0	10,546.0	5,911.1	100.9	99.3	90.52	-5,230.6	-1,310.7	1,316.8	1,116.5	200.26	6.575		
11,000.0	5,893.0	10,646.0	5,911.1	102.8	101.2	90.52	-5,330.6	-1,310.7	1,316.9	1,112.8	204.07	6.453		
11,100.0	5,893.0	10,746.0	5,911.1	104.7	103.1	90.52	-5,430.6	-1,310.7	1,317.0	1,109.1	207.89	6.335		
11,200.0	5,893.0	10,846.0	5,911.1	106.6	105.0	90.52	-5,530.6	-1,310.7	1,317.1	1,105.4	211.70	6.222		
11,300.0	5,893.0	10,946.0	5,911.1	108.5	106.9	90.52	-5,630.6	-1,310.7	1,317.2	1,101.7	215.52	6.112		
11,400.0	5,893.0	11,046.0	5,911.1	110.4	108.8	90.52	-5,730.6	-1,310.7	1,317.3	1,098.0	219.34	6.006		
11,500.0	5,893.0	11,146.0	5,911.1	112.3	110.7	90.52	-5,830.6	-1,310.7	1,317.5	1,094.3	223.16	5.904		
11,600.0	5,893.0	11,246.0	5,911.1	114.3	112.6	90.52	-5,930.6	-1,310.7	1,317.6	1,090.6	226.98	5.805		
11,700.0	5,893.0	11,346.0	5,911.1	116.2	114.5	90.52	-6,030.6	-1,310.7	1,317.7	1,086.9	230.80	5.709		
11,800.0	5,893.0	11,446.0	5,911.1	118.1	116.4	90.52	-6,130.6	-1,310.7	1,317.8	1,083.2	234.62	5.617		
11,900.0	5,893.0	11,546.0	5,911.1	120.0	118.4	90.52	-6,230.6	-1,310.7	1,317.9	1,079.5	238.44	5.527		
12,000.0	5,893.0	11,646.0	5,911.1	121.9	120.3	90.52	-6,330.6	-1,310.7	1,318.0	1,075.8	242.26	5.441		
12,100.0	5,893.0	11,746.0	5,911.1	123.8	122.2	90.52	-6,430.6	-1,310.7	1,318.1	1,072.1	246.08	5.356		
12,200.0	5,893.0	11,846.0	5,911.1	125.7	124.1	90.52	-6,530.6	-1,310.7	1,318.3	1,068.3	249.91	5.275		
12,300.0	5,893.0	11,946.0	5,911.1	127.6	126.0	90.52	-6,630.6	-1,310.7	1,318.4	1,064.6	253.73	5.196		
12,400.0	5,893.0	12,046.0	5,911.1	129.5	127.9	90.52	-6,730.6	-1,310.7	1,318.5	1,060.9	257.56	5.119		
12,500.0	5,893.0	12,146.0	5,911.1	131.5	129.8	90.51	-6,830.6	-1,310.7	1,318.6	1,057.2	261.38	5.045		
12,600.0	5,893.0	12,246.0	5,911.1	133.4	131.7	90.51	-6,930.6	-1,310.7	1,318.7	1,053.5	265.21	4.972		
12,700.0	5,893.0	12,346.0	5,911.1	135.3	133.7	90.51	-7,030.6	-1,310.7	1,318.8	1,049.8	269.03	4.902		
12,800.0	5,893.0	12,446.0	5,911.0	137.2	135.6	90.51	-7,130.6	-1,310.7	1,318.9	1,046.1	272.86	4.834		
12,900.0	5,893.0	12,546.0	5,911.0	139.1	137.5	90.51	-7,230.6	-1,310.7	1,319.1	1,042.4	276.69	4.767		
13,000.0	5,893.0	12,646.0	5,911.0	141.0	139.4	90.51	-7,330.6	-1,310.7	1,319.2	1,038.7	280.52	4.703		
13,100.0	5,893.0	12,746.0	5,911.0	142.9	141.3	90.51	-7,430.6	-1,310.7	1,319.3	1,034.9	284.34	4.640		
13,200.0	5,893.0	12,846.0	5,911.0	144.9	143.2	90.51	-7,530.6	-1,310.7	1,319.4	1,031.2	288.17	4.578		
13,300.0	5,893.0	12,946.0	5,911.0	146.8	145.1	90.51	-7,630.6	-1,310.7	1,319.5	1,027.5	292.00	4.519		
13,400.0	5,893.0	13,046.0	5,911.0	148.7	147.0	90.51	-7,730.6	-1,310.7	1,319.6	1,023.8	295.83	4.461		
13,500.0	5,893.0	13,146.0	5,911.0	150.6	149.0	90.51	-7,830.6	-1,310.7	1,319.7	1,020.1	299.66	4.404		
13,600.0	5,893.0	13,246.0	5,911.0	152.5	150.7	90.51	-7,930.6	-1,310.7	1,319.9	1,016.5	303.33	4.351		
13,641.6	5,893.0	13,287.6	5,911.0	153.3	151.4	90.51	-7,972.2	-1,310.7	1,319.9	1,015.1	304.78	4.331 ES, SF		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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-1311A - 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				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			
0.0	0.0	6.2	6.2	0.0	0.0	-93.88	-93.1	-1,373.3	1,376.5						
100.0	100.0	106.2	106.2	0.1	0.1	-93.88	-93.1	-1,373.3	1,376.5	1,376.3	0.20	6,849.318			
200.0	200.0	206.2	206.2	0.3	0.3	-93.88	-93.1	-1,373.3	1,376.5	1,375.8	0.65	2,116.019			
300.0	300.0	306.2	306.2	0.5	0.6	-93.88	-93.1	-1,373.3	1,376.5	1,375.4	1.10	1,251.297			
400.0	400.0	406.2	406.2	0.8	0.8	-93.88	-93.1	-1,373.3	1,376.5	1,374.9	1.55	888.292			
500.0	500.0	506.2	506.2	1.0	1.0	-93.88	-93.1	-1,373.3	1,376.5	1,374.5	2.00	688.543			
600.0	600.0	606.2	606.2	1.2	1.2	-93.88	-93.1	-1,373.3	1,376.5	1,374.0	2.45	562.136			
700.0	700.0	706.2	706.2	1.4	1.5	-93.88	-93.1	-1,373.3	1,376.5	1,373.6	2.90	474.944			
800.0	800.0	806.2	806.2	1.7	1.7	-93.88	-93.1	-1,373.3	1,376.5	1,373.1	3.35	411.168			
900.0	900.0	906.2	906.2	1.9	1.9	-93.88	-93.1	-1,373.3	1,376.5	1,372.7	3.80	362.492			
1,000.0	1,000.0	1,007.2	1,007.2	2.1	2.1	-93.88	-93.1	-1,373.3	1,376.5	1,372.2	4.25	324.110			
1,100.0	1,100.0	1,122.5	1,122.4	2.3	2.4	-93.98	-95.5	-1,372.4	1,375.8	1,371.1	4.69	293.098			
1,200.0	1,200.0	1,232.5	1,232.3	2.6	2.6	-94.25	-101.8	-1,370.1	1,374.2	1,369.1	5.12	268.457			
1,300.0	1,300.0	1,332.3	1,331.8	2.8	2.7	-94.53	-108.3	-1,367.8	1,372.3	1,366.7	5.54	247.794			
1,400.0	1,400.0	1,432.0	1,431.3	3.0	3.0	-94.81	-114.8	-1,365.4	1,370.4	1,364.5	5.97	229.638			
1,500.0	1,500.0	1,531.8	1,530.8	3.2	3.2	-95.09	-121.4	-1,363.0	1,368.6	1,362.2	6.41	213.638			
1,600.0	1,600.0	1,631.6	1,630.3	3.5	3.4	-95.37	-127.9	-1,360.6	1,366.8	1,360.0	6.85	199.487			
1,700.0	1,700.0	1,731.3	1,729.9	3.7	3.6	-95.65	-134.5	-1,358.2	1,365.1	1,357.8	7.30	186.920			
1,800.0	1,800.0	1,831.1	1,829.4	3.9	3.8	-95.94	-141.0	-1,355.9	1,363.4	1,355.6	7.76	175.711			
1,900.0	1,900.0	1,930.8	1,928.9	4.1	4.1	-96.22	-147.5	-1,353.5	1,361.7	1,353.5	8.22	165.670			
2,000.0	2,000.0	2,030.6	2,028.4	4.4	4.3	-96.51	-154.1	-1,351.1	1,360.0	1,351.4	8.68	156.638			
2,100.0	2,100.0	2,130.3	2,127.9	4.6	4.6	-96.79	-160.6	-1,348.7	1,358.4	1,349.3	9.15	148.477			
2,200.0	2,200.0	2,230.1	2,227.4	4.8	4.8	-97.08	-167.2	-1,346.4	1,356.9	1,347.2	9.62	141.076			
2,300.0	2,300.0	2,329.8	2,326.9	5.0	5.1	-97.36	-173.7	-1,344.0	1,355.3	1,345.2	10.09	134.338			
2,400.0	2,400.0	2,429.6	2,426.4	5.3	5.3	-97.65	-180.2	-1,341.6	1,353.8	1,343.2	10.56	128.182			
2,500.0	2,500.0	2,529.4	2,526.0	5.5	5.6	-97.94	-186.8	-1,339.2	1,352.3	1,341.3	11.04	122.539			
2,600.0	2,600.0	2,629.1	2,625.5	5.7	5.8	-98.23	-193.3	-1,336.8	1,350.9	1,339.4	11.51	117.349			
2,700.0	2,700.0	2,728.9	2,725.0	5.9	6.1	-98.52	-199.8	-1,334.5	1,349.5	1,337.5	11.99	112.563			
2,800.0	2,800.0	2,828.6	2,824.5	6.2	6.3	-98.81	-206.4	-1,332.1	1,348.1	1,335.6	12.47	108.136			
2,900.0	2,900.0	2,928.4	2,924.0	6.4	6.6	-99.10	-212.9	-1,329.7	1,346.8	1,333.8	12.95	104.031			
3,000.0	3,000.0	3,028.1	3,023.5	6.6	6.8	-99.39	-219.5	-1,327.3	1,345.4	1,332.0	13.43	100.214			
3,100.0	3,100.0	3,127.9	3,123.0	6.8	7.1	-99.68	-226.0	-1,324.9	1,344.2	1,330.3	13.91	96.658			
3,200.0	3,200.0	3,227.7	3,222.6	7.1	7.3	-99.97	-232.5	-1,322.6	1,342.9	1,328.6	14.39	93.337			
3,300.0	3,300.0	3,327.4	3,322.1	7.3	7.6	-100.27	-239.1	-1,320.2	1,341.7	1,326.9	14.87	90.230			
3,400.0	3,400.0	3,427.2	3,421.6	7.5	7.8	-100.56	-245.6	-1,317.8	1,340.6	1,325.2	15.35	87.317			
3,500.0	3,500.0	3,526.9	3,521.1	7.7	8.1	-100.85	-252.2	-1,315.4	1,339.5	1,323.6	15.84	84.580			
3,600.0	3,600.0	3,626.7	3,620.6	8.0	8.4	-101.15	-258.7	-1,313.0	1,338.4	1,322.0	16.32	82.005			
3,700.0	3,700.0	3,726.4	3,720.1	8.2	8.6	-101.44	-265.2	-1,310.7	1,337.3	1,320.5	16.80	79.579			
3,800.0	3,800.0	3,826.2	3,819.6	8.4	8.9	-101.74	-271.8	-1,308.3	1,336.3	1,319.0	17.29	77.288			
3,900.0	3,900.0	3,926.0	3,919.1	8.6	9.1	-102.03	-278.3	-1,305.9	1,335.3	1,317.5	17.77	75.123			
4,000.0	4,000.0	4,025.7	4,018.7	8.9	9.4	-102.33	-284.9	-1,303.5	1,334.3	1,316.1	18.26	73.073			
4,100.0	4,100.0	4,125.5	4,118.2	9.1	9.7	-102.62	-291.4	-1,301.1	1,333.4	1,314.7	18.75	71.130			
4,200.0	4,200.0	4,225.2	4,217.7	9.3	9.9	-102.92	-297.9	-1,298.8	1,332.5	1,313.3	19.23	69.286			
4,300.0	4,300.0	4,325.0	4,317.2	9.5	10.2	-103.22	-304.5	-1,296.4	1,331.7	1,312.0	19.72	67.533			
4,400.0	4,400.0	4,424.7	4,416.7	9.8	10.4	-103.51	-311.0	-1,294.0	1,330.9	1,310.7	20.21	65.866			
4,500.0	4,500.0	4,524.5	4,516.2	10.0	10.7	-103.81	-317.6	-1,291.6	1,330.1	1,309.4	20.69	64.278			
4,600.0	4,600.0	4,624.2	4,615.7	10.2	11.0	-104.11	-324.1	-1,289.2	1,329.4	1,308.2	21.18	62.764			
4,700.0	4,700.0	4,724.0	4,715.3	10.4	11.2	-104.41	-330.6	-1,286.9	1,328.7	1,307.0	21.67	61.320			
4,800.0	4,800.0	4,823.8	4,814.8	10.7	11.5	-104.71	-337.2	-1,284.5	1,328.0	1,305.9	22.16	59.939			
4,900.0	4,900.0	4,923.5	4,914.3	10.9	11.7	-105.01	-343.7	-1,282.1	1,327.4	1,304.8	22.64	58.620			
5,000.0	5,000.0	5,023.3	5,013.8	11.1	12.0	-105.31	-350.2	-1,279.7	1,326.8	1,303.7	23.13	57.357			
5,100.0	5,100.0	5,123.0	5,113.3	11.3	12.3	-105.61	-356.8	-1,277.3	1,326.3	1,302.6	23.62	56.147			

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 Federal #12H-1314B
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 Federal #12H-1314B	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-1311A - 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)				
5,200.0	5,200.0	5,222.8	5,212.8	11.6	12.5	-105.91	-363.3	-1,275.0	1,325.7	1,301.6	24.11	54.988		
5,300.0	5,300.0	5,322.5	5,312.3	11.8	12.8	-106.21	-369.9	-1,272.6	1,325.3	1,300.7	24.60	53.876		
5,400.0	5,400.0	5,436.8	5,425.1	12.0	13.2	73.21	-386.1	-1,266.7	1,324.1	1,299.0	25.16	52.631		
5,500.0	5,498.7	5,547.4	5,528.2	12.2	13.7	72.79	-423.2	-1,253.2	1,318.0	1,292.2	25.83	51.024		
5,600.0	5,592.8	5,651.5	5,615.5	12.4	14.5	72.96	-476.0	-1,234.0	1,305.9	1,279.3	26.61	49.073		
5,700.0	5,678.8	5,749.3	5,686.0	12.5	15.4	73.72	-539.6	-1,210.8	1,288.3	1,260.8	27.55	46.767		
5,800.0	5,753.5	5,841.6	5,739.8	12.9	16.4	75.08	-610.0	-1,185.2	1,265.9	1,237.2	28.73	44.070		
5,900.0	5,814.2	5,929.5	5,777.9	13.4	17.6	77.00	-684.2	-1,158.2	1,239.5	1,209.3	30.22	41.023		
6,000.0	5,858.6	6,013.8	5,801.6	14.1	18.8	79.45	-760.2	-1,130.5	1,210.0	1,177.9	32.05	37.756		
6,100.0	5,885.2	6,095.6	5,811.7	15.0	20.1	82.35	-836.4	-1,102.8	1,178.1	1,143.9	34.19	34.456		
6,200.0	5,893.0	6,161.0	5,812.3	16.1	21.1	85.41	-898.0	-1,080.9	1,145.5	1,109.2	36.30	31.553		
6,300.0	5,893.0	6,220.8	5,812.3	17.3	22.0	85.33	-954.9	-1,062.5	1,115.0	1,076.7	38.34	29.084		
6,400.0	5,893.0	6,281.9	5,812.3	18.7	22.8	85.25	-1,013.6	-1,045.6	1,087.6	1,047.1	40.49	26.858		
6,500.0	5,893.0	6,344.0	5,812.3	20.1	23.8	85.18	-1,073.8	-1,030.4	1,063.2	1,020.4	42.79	24.846		
6,600.0	5,893.0	6,400.0	5,812.3	21.7	24.6	85.13	-1,128.5	-1,018.3	1,042.1	997.0	45.10	23.108		
6,700.0	5,893.0	6,471.0	5,812.3	23.2	25.7	85.07	-1,198.3	-1,005.4	1,024.1	976.4	47.72	21.462		
6,800.0	5,893.0	6,535.6	5,812.3	24.8	26.7	85.02	-1,262.2	-995.8	1,009.5	959.2	50.31	20.064		
6,900.0	5,893.0	6,600.0	5,812.3	26.5	27.7	84.98	-1,326.2	-988.5	998.3	945.3	52.96	18.850		
7,000.0	5,893.0	6,666.5	5,812.3	28.2	28.7	84.96	-1,392.5	-983.1	990.4	934.7	55.69	17.783		
7,100.0	5,893.0	6,732.4	5,812.3	29.9	29.7	84.94	-1,458.3	-980.1	986.0	927.6	58.46	16.868		
7,185.7	5,893.0	6,790.2	5,812.3	31.4	30.6	84.94	-1,516.1	-979.4	985.0	924.1	60.87	16.181 CC		
7,200.0	5,893.0	6,804.6	5,812.3	31.7	30.9	84.94	-1,530.4	-979.4	985.0	923.6	61.36	16.053		
7,300.0	5,893.0	6,904.6	5,812.3	33.4	32.5	84.94	-1,630.4	-979.4	985.1	920.3	64.83	15.195		
7,400.0	5,893.0	7,004.6	5,812.3	35.2	34.2	84.94	-1,730.4	-979.4	985.2	916.9	68.34	14.417		
7,500.0	5,893.0	7,104.6	5,812.3	37.0	36.0	84.94	-1,830.4	-979.4	985.4	913.5	71.88	13.708		
7,600.0	5,893.0	7,204.6	5,812.3	38.8	37.7	84.94	-1,930.4	-979.4	985.5	910.0	75.45	13.061		
7,700.0	5,893.0	7,304.6	5,812.3	40.7	39.4	84.94	-2,030.4	-979.4	985.6	906.6	79.05	12.468		
7,800.0	5,893.0	7,404.6	5,812.3	42.5	41.2	84.94	-2,130.4	-979.5	985.7	903.1	82.67	11.924		
7,900.0	5,893.0	7,504.6	5,812.3	44.3	43.0	84.94	-2,230.4	-979.5	985.9	899.6	86.30	11.424		
8,000.0	5,893.0	7,604.6	5,812.3	46.2	44.8	84.94	-2,330.4	-979.5	986.0	896.0	89.95	10.961		
8,100.0	5,893.0	7,704.6	5,812.3	48.0	46.6	84.94	-2,430.4	-979.5	986.1	892.5	93.62	10.534		
8,200.0	5,893.0	7,804.6	5,812.2	49.9	48.4	84.94	-2,530.4	-979.5	986.2	889.0	97.30	10.137		
8,300.0	5,893.0	7,904.6	5,812.2	51.7	50.2	84.94	-2,630.4	-979.5	986.4	885.4	100.99	9.767		
8,400.0	5,893.0	8,004.6	5,812.2	53.6	52.1	84.94	-2,730.4	-979.5	986.5	881.8	104.69	9.423		
8,500.0	5,893.0	8,104.6	5,812.2	55.5	53.9	84.94	-2,830.4	-979.5	986.6	878.2	108.39	9.102		
8,600.0	5,893.0	8,204.6	5,812.2	57.3	55.7	84.94	-2,930.4	-979.6	986.8	874.6	112.11	8.801		
8,700.0	5,893.0	8,304.6	5,812.2	59.2	57.6	84.94	-3,030.4	-979.6	986.9	871.0	115.84	8.520		
8,800.0	5,893.0	8,404.6	5,812.2	61.1	59.4	84.94	-3,130.4	-979.6	987.0	867.4	119.57	8.255		
8,900.0	5,893.0	8,504.6	5,812.2	63.0	61.3	84.94	-3,230.4	-979.6	987.1	863.8	123.31	8.006		
9,000.0	5,893.0	8,604.6	5,812.2	64.8	63.1	84.94	-3,330.4	-979.6	987.3	860.2	127.05	7.771		
9,100.0	5,893.0	8,704.6	5,812.2	66.7	65.0	84.94	-3,430.4	-979.6	987.4	856.6	130.80	7.549		
9,200.0	5,893.0	8,804.6	5,812.2	68.6	66.9	84.95	-3,530.4	-979.6	987.5	853.0	134.55	7.339		
9,300.0	5,893.0	8,904.6	5,812.2	70.5	68.7	84.95	-3,630.4	-979.6	987.6	849.3	138.31	7.141		
9,400.0	5,893.0	9,004.6	5,812.2	72.4	70.6	84.95	-3,730.4	-979.7	987.8	845.7	142.07	6.953		
9,500.0	5,893.0	9,104.6	5,812.2	74.3	72.5	84.95	-3,830.4	-979.7	987.9	842.1	145.83	6.774		
9,600.0	5,893.0	9,204.6	5,812.2	76.2	74.4	84.95	-3,930.4	-979.7	988.0	838.4	149.60	6.604		
9,700.0	5,893.0	9,304.6	5,812.2	78.1	76.2	84.95	-4,030.4	-979.7	988.1	834.8	153.37	6.443		
9,800.0	5,893.0	9,404.6	5,812.2	80.0	78.1	84.95	-4,130.4	-979.7	988.3	831.1	157.15	6.289		
9,900.0	5,893.0	9,504.6	5,812.2	81.9	80.0	84.95	-4,230.4	-979.7	988.4	827.5	160.92	6.142		
10,000.0	5,893.0	9,604.6	5,812.2	83.8	81.9	84.95	-4,330.4	-979.7	988.5	823.8	164.70	6.002		
10,100.0	5,893.0	9,704.6	5,812.2	85.7	83.8	84.95	-4,430.4	-979.7	988.7	820.2	168.48	5.868		
10,200.0	5,893.0	9,804.6	5,812.2	87.6	85.7	84.95	-4,530.4	-979.8	988.8	816.5	172.27	5.740		

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 Federal #12H-1314B
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 Federal #12H-1314B	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-1311A - 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		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)					
10,300.0	5,893.0	9,904.6	5,812.2	89.5	87.6	84.95	-4,630.4	-979.8	988.9	812.9	176.05	5.617	
10,400.0	5,893.0	10,004.6	5,812.2	91.4	89.4	84.95	-4,730.4	-979.8	989.0	809.2	179.84	5.500	
10,500.0	5,893.0	10,104.6	5,812.1	93.3	91.3	84.95	-4,830.4	-979.8	989.2	805.5	183.63	5.387	
10,600.0	5,893.0	10,204.6	5,812.1	95.2	93.2	84.95	-4,930.4	-979.8	989.3	801.9	187.42	5.278	
10,700.0	5,893.0	10,304.6	5,812.1	97.1	95.1	84.95	-5,030.4	-979.8	989.4	798.2	191.21	5.174	
10,800.0	5,893.0	10,404.6	5,812.1	99.0	97.0	84.95	-5,130.4	-979.8	989.5	794.5	195.01	5.074	
10,900.0	5,893.0	10,504.6	5,812.1	100.9	98.9	84.95	-5,230.4	-979.8	989.7	790.9	198.80	4.978	
11,000.0	5,893.0	10,604.6	5,812.1	102.8	100.8	84.95	-5,330.4	-979.8	989.8	787.2	202.60	4.885	
11,100.0	5,893.0	10,704.6	5,812.1	104.7	102.7	84.95	-5,430.4	-979.9	989.9	783.5	206.40	4.796	
11,200.0	5,893.0	10,804.6	5,812.1	106.6	104.6	84.95	-5,530.4	-979.9	990.0	779.8	210.20	4.710	
11,300.0	5,893.0	10,904.6	5,812.1	108.5	106.5	84.95	-5,630.4	-979.9	990.2	776.2	214.00	4.627	
11,400.0	5,893.0	11,004.6	5,812.1	110.4	108.4	84.95	-5,730.4	-979.9	990.3	772.5	217.80	4.547	
11,500.0	5,893.0	11,104.6	5,812.1	112.3	110.3	84.95	-5,830.4	-979.9	990.4	768.8	221.60	4.469	
11,600.0	5,893.0	11,204.6	5,812.1	114.3	112.2	84.95	-5,930.4	-979.9	990.6	765.1	225.41	4.395	
11,700.0	5,893.0	11,304.6	5,812.1	116.2	114.1	84.96	-6,030.4	-979.9	990.7	761.5	229.21	4.322	
11,800.0	5,893.0	11,404.6	5,812.1	118.1	116.0	84.96	-6,130.4	-979.9	990.8	757.8	233.02	4.252	
11,900.0	5,893.0	11,504.6	5,812.1	120.0	117.9	84.96	-6,230.4	-980.0	990.9	754.1	236.82	4.184	
12,000.0	5,893.0	11,604.6	5,812.1	121.9	119.8	84.96	-6,330.4	-980.0	991.1	750.4	240.63	4.119	
12,100.0	5,893.0	11,704.6	5,812.1	123.8	121.7	84.96	-6,430.4	-980.0	991.2	746.7	244.44	4.055	
12,200.0	5,893.0	11,804.6	5,812.1	125.7	123.6	84.96	-6,530.4	-980.0	991.3	743.1	248.25	3.993	
12,300.0	5,893.0	11,904.6	5,812.1	127.6	125.5	84.96	-6,630.4	-980.0	991.4	739.4	252.06	3.933	
12,400.0	5,893.0	12,004.6	5,812.1	129.5	127.5	84.96	-6,730.4	-980.0	991.6	735.7	255.87	3.875	
12,500.0	5,893.0	12,104.6	5,812.1	131.5	129.4	84.96	-6,830.4	-980.0	991.7	732.0	259.68	3.819	
12,600.0	5,893.0	12,204.6	5,812.1	133.4	131.3	84.96	-6,930.4	-980.0	991.8	728.3	263.49	3.764	
12,700.0	5,893.0	12,304.6	5,812.1	135.3	133.2	84.96	-7,030.4	-980.1	991.9	724.6	267.30	3.711	
12,800.0	5,893.0	12,404.6	5,812.0	137.2	135.1	84.96	-7,130.4	-980.1	992.1	721.0	271.11	3.659	
12,900.0	5,893.0	12,504.6	5,812.0	139.1	137.0	84.96	-7,230.4	-980.1	992.2	717.3	274.92	3.609	
13,000.0	5,893.0	12,604.6	5,812.0	141.0	138.9	84.96	-7,330.4	-980.1	992.3	713.6	278.74	3.560	
13,100.0	5,893.0	12,704.6	5,812.0	142.9	140.8	84.96	-7,430.4	-980.1	992.5	709.9	282.55	3.512	
13,200.0	5,893.0	12,804.6	5,812.0	144.9	142.7	84.96	-7,530.4	-980.1	992.6	706.2	286.36	3.466	
13,300.0	5,893.0	12,904.6	5,812.0	146.8	144.6	84.96	-7,630.4	-980.1	992.7	702.5	290.18	3.421	
13,400.0	5,893.0	13,004.6	5,812.0	148.7	146.5	84.96	-7,730.4	-980.1	992.8	698.8	293.99	3.377	
13,500.0	5,893.0	13,104.6	5,812.0	150.6	148.5	84.96	-7,830.4	-980.2	993.0	695.1	297.81	3.334	
13,600.0	5,893.0	13,204.6	5,812.0	152.5	150.3	84.96	-7,930.4	-980.2	993.1	691.5	301.61	3.293	
13,641.6	5,893.0	13,246.2	5,812.0	153.3	151.0	84.96	-7,972.1	-980.2	993.1	690.1	303.05	3.277 ES, SF	

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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-1312B - 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				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			
0.0	0.0	6.2	6.2	0.0	0.0	-93.97	-93.1	-1,340.3	1,343.5						
100.0	100.0	106.2	106.2	0.1	0.1	-93.97	-93.1	-1,340.3	1,343.5	1,343.3	0.19	6,925.792			
200.0	200.0	206.2	206.2	0.3	0.3	-93.97	-93.1	-1,340.3	1,343.5	1,342.9	0.64	2,087.740			
300.0	300.0	306.2	306.2	0.5	0.6	-93.97	-93.1	-1,340.3	1,343.5	1,342.4	1.09	1,229.126			
400.0	400.0	406.2	406.2	0.8	0.8	-93.97	-93.1	-1,340.3	1,343.5	1,342.0	1.54	870.940			
500.0	500.0	506.2	506.2	1.0	1.0	-93.97	-93.1	-1,340.3	1,343.5	1,341.5	1.99	674.407			
600.0	600.0	606.2	606.2	1.2	1.2	-93.97	-93.1	-1,340.3	1,343.5	1,341.1	2.44	550.242			
700.0	700.0	706.2	706.2	1.4	1.4	-93.97	-93.1	-1,340.3	1,343.5	1,340.6	2.89	464.688			
800.0	800.0	806.2	806.2	1.7	1.7	-93.97	-93.1	-1,340.3	1,343.5	1,340.2	3.34	402.159			
900.0	900.0	907.9	907.9	1.9	1.9	-93.97	-93.1	-1,340.3	1,343.5	1,339.7	3.79	354.308			
1,000.0	1,000.0	1,034.5	1,034.4	2.1	2.1	-94.09	-95.8	-1,338.7	1,342.4	1,338.1	4.26	314.983			
1,100.0	1,100.0	1,148.0	1,147.7	2.3	2.4	-94.37	-102.0	-1,335.0	1,339.5	1,334.8	4.70	285.072			
1,200.0	1,200.0	1,247.7	1,247.2	2.6	2.6	-94.64	-107.9	-1,331.5	1,336.4	1,331.3	5.12	260.849			
1,300.0	1,300.0	1,347.5	1,346.7	2.8	2.8	-94.90	-113.9	-1,327.9	1,333.4	1,327.8	5.56	239.922			
1,400.0	1,400.0	1,447.2	1,446.2	3.0	3.0	-95.17	-119.9	-1,324.4	1,330.4	1,324.4	6.00	221.738			
1,500.0	1,500.0	1,547.0	1,545.7	3.2	3.2	-95.45	-125.9	-1,320.8	1,327.4	1,320.9	6.45	205.851			
1,600.0	1,600.0	1,646.8	1,645.3	3.5	3.5	-95.72	-131.9	-1,317.3	1,324.4	1,317.5	6.90	191.890			
1,700.0	1,700.0	1,746.5	1,744.8	3.7	3.7	-95.99	-137.9	-1,313.7	1,321.5	1,314.1	7.36	179.552			
1,800.0	1,800.0	1,846.3	1,844.3	3.9	3.9	-96.27	-143.9	-1,310.2	1,318.6	1,310.8	7.82	168.587			
1,900.0	1,900.0	1,946.0	1,943.8	4.1	4.2	-96.54	-149.8	-1,306.6	1,315.7	1,307.4	8.29	158.791			
2,000.0	2,000.0	2,045.8	2,043.3	4.4	4.4	-96.82	-155.8	-1,303.1	1,312.9	1,304.1	8.75	149.995			
2,100.0	2,100.0	2,145.5	2,142.8	4.6	4.7	-97.10	-161.8	-1,299.5	1,310.1	1,300.8	9.22	142.061			
2,200.0	2,200.0	2,245.3	2,242.3	4.8	4.9	-97.38	-167.8	-1,296.0	1,307.3	1,297.6	9.69	134.872			
2,300.0	2,300.0	2,345.0	2,341.9	5.0	5.2	-97.66	-173.8	-1,292.4	1,304.5	1,294.4	10.17	128.332			
2,400.0	2,400.0	2,444.8	2,441.4	5.3	5.4	-97.94	-179.8	-1,288.9	1,301.8	1,291.2	10.64	122.360			
2,500.0	2,500.0	2,544.6	2,540.9	5.5	5.7	-98.22	-185.8	-1,285.3	1,299.1	1,288.0	11.11	116.886			
2,600.0	2,600.0	2,644.3	2,640.4	5.7	5.9	-98.51	-191.7	-1,281.8	1,296.5	1,284.9	11.59	111.854			
2,700.0	2,700.0	2,744.1	2,739.9	5.9	6.2	-98.79	-197.7	-1,278.2	1,293.9	1,281.8	12.07	107.213			
2,800.0	2,800.0	2,843.8	2,839.4	6.2	6.4	-99.08	-203.7	-1,274.7	1,291.3	1,278.7	12.55	102.920			
2,900.0	2,900.0	2,943.6	2,938.9	6.4	6.7	-99.37	-209.7	-1,271.1	1,288.7	1,275.7	13.03	98.938			
3,000.0	3,000.0	3,043.3	3,038.4	6.6	6.9	-99.66	-215.7	-1,267.6	1,286.2	1,272.7	13.51	95.236			
3,100.0	3,100.0	3,143.1	3,138.0	6.8	7.2	-99.95	-221.7	-1,264.0	1,283.7	1,269.7	13.99	91.786			
3,200.0	3,200.0	3,242.9	3,237.5	7.1	7.5	-100.24	-227.7	-1,260.5	1,281.2	1,266.8	14.47	88.563			
3,300.0	3,300.0	3,342.6	3,337.0	7.3	7.7	-100.53	-233.6	-1,256.9	1,278.8	1,263.9	14.95	85.547			
3,400.0	3,400.0	3,442.4	3,436.5	7.5	8.0	-100.82	-239.6	-1,253.4	1,276.4	1,261.0	15.43	82.718			
3,500.0	3,500.0	3,542.1	3,536.0	7.7	8.2	-101.12	-245.6	-1,249.8	1,274.1	1,258.2	15.91	80.061			
3,600.0	3,600.0	3,641.9	3,635.5	8.0	8.5	-101.41	-251.6	-1,246.3	1,271.8	1,255.4	16.40	77.559			
3,700.0	3,700.0	3,741.6	3,735.0	8.2	8.8	-101.71	-257.6	-1,242.7	1,269.5	1,252.6	16.88	75.201			
3,800.0	3,800.0	3,841.4	3,834.6	8.4	9.0	-102.01	-263.6	-1,239.2	1,267.2	1,249.8	17.37	72.974			
3,900.0	3,900.0	3,941.1	3,934.1	8.6	9.3	-102.31	-269.6	-1,235.6	1,265.0	1,247.1	17.85	70.868			
4,000.0	4,000.0	4,040.9	4,033.6	8.9	9.5	-102.61	-275.5	-1,232.1	1,262.8	1,244.5	18.33	68.875			
4,100.0	4,100.0	4,140.7	4,133.1	9.1	9.8	-102.91	-281.5	-1,228.5	1,260.7	1,241.8	18.82	66.984			
4,200.0	4,200.0	4,240.4	4,232.6	9.3	10.1	-103.21	-287.5	-1,225.0	1,258.5	1,239.2	19.31	65.189			
4,300.0	4,300.0	4,340.2	4,332.1	9.5	10.3	-103.51	-293.5	-1,221.4	1,256.5	1,236.7	19.79	63.483			
4,400.0	4,400.0	4,439.9	4,431.6	9.8	10.6	-103.82	-299.5	-1,217.9	1,254.4	1,234.1	20.28	61.859			
4,500.0	4,500.0	4,539.7	4,531.1	10.0	10.8	-104.12	-305.5	-1,214.3	1,252.4	1,231.6	20.77	60.313			
4,600.0	4,600.0	4,639.4	4,630.7	10.2	11.1	-104.43	-311.5	-1,210.8	1,250.4	1,229.2	21.25	58.837			
4,700.0	4,700.0	4,739.2	4,730.2	10.4	11.4	-104.73	-317.4	-1,207.2	1,248.5	1,226.8	21.74	57.429			
4,800.0	4,800.0	4,839.0	4,829.7	10.7	11.6	-105.04	-323.4	-1,203.7	1,246.6	1,224.4	22.23	56.084			
4,900.0	4,900.0	4,938.7	4,929.2	10.9	11.9	-105.35	-329.4	-1,200.1	1,244.7	1,222.0	22.72	54.797			
5,000.0	5,000.0	5,038.5	5,028.7	11.1	12.2	-105.66	-335.4	-1,196.6	1,242.9	1,219.7	23.20	53.566			
5,100.0	5,100.0	5,138.2	5,128.2	11.3	12.4	-105.97	-341.4	-1,193.0	1,241.1	1,217.4	23.69	52.386			

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 Federal #12H-1314B
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 Federal #12H-1314B	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-1312B - 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)				
5,200.0	5,200.0	5,238.0	5,227.7	11.6	12.7	-106.28	-347.4	-1,189.5	1,239.4	1,215.2	24.18	51.254		
5,300.0	5,300.0	5,337.7	5,327.3	11.8	12.9	-106.59	-353.4	-1,185.9	1,237.6	1,213.0	24.67	50.169		
5,400.0	5,400.0	5,438.2	5,427.5	12.0	13.2	73.27	-359.4	-1,182.4	1,235.7	1,210.6	25.13	49.165		
5,500.0	5,498.7	5,659.4	5,638.1	12.2	14.2	73.04	-412.4	-1,150.9	1,224.7	1,198.5	26.22	46.714		
5,600.0	5,592.8	5,843.8	5,781.5	12.4	15.8	72.73	-510.8	-1,092.6	1,200.1	1,172.4	27.72	43.297		
5,700.0	5,678.8	5,988.5	5,860.7	12.5	17.5	73.19	-614.6	-1,031.0	1,165.8	1,136.5	29.32	39.768		
5,800.0	5,753.5	6,104.3	5,898.3	12.9	19.2	74.69	-708.5	-975.3	1,124.8	1,093.9	30.89	36.411		
5,900.0	5,814.2	6,201.4	5,910.5	13.4	20.8	77.14	-791.3	-926.3	1,079.2	1,046.6	32.53	33.178		
6,000.0	5,858.6	6,259.5	5,910.8	14.1	21.7	81.28	-841.4	-897.0	1,031.6	997.6	33.96	30.380		
6,100.0	5,885.2	6,300.0	5,910.8	15.0	22.3	86.25	-876.9	-877.5	984.9	949.5	35.44	27.789		
6,200.0	5,893.0	6,373.9	5,910.8	16.1	23.5	90.79	-942.7	-843.8	939.7	902.1	37.53	25.037		
6,300.0	5,893.0	6,435.1	5,910.8	17.3	24.4	90.81	-998.1	-817.8	897.4	857.8	39.58	22.671		
6,400.0	5,893.0	6,500.0	5,910.8	18.7	25.5	90.84	-1,057.8	-792.3	858.0	816.2	41.83	20.513		
6,500.0	5,893.0	6,562.8	5,910.8	20.1	26.5	90.86	-1,116.3	-769.5	821.8	777.6	44.19	18.597		
6,600.0	5,893.0	6,629.2	5,910.8	21.7	27.6	90.89	-1,178.9	-747.5	788.7	742.0	46.70	16.891		
6,700.0	5,893.0	6,700.0	5,910.8	23.2	28.7	90.91	-1,246.5	-726.4	759.0	709.7	49.36	15.379		
6,800.0	5,893.0	6,766.6	5,910.8	24.8	29.8	90.94	-1,310.7	-708.9	732.8	680.8	52.03	14.083		
6,900.0	5,893.0	6,837.3	5,910.8	26.5	31.0	90.96	-1,379.6	-692.8	710.1	655.3	54.83	12.952		
7,000.0	5,893.0	6,900.0	5,910.8	28.2	32.0	90.98	-1,441.1	-680.6	691.2	633.6	57.54	12.012		
7,100.0	5,893.0	6,981.9	5,910.8	29.9	33.3	90.99	-1,522.0	-667.8	675.8	615.2	60.61	11.150		
7,200.0	5,893.0	7,055.4	5,910.8	31.7	34.5	91.01	-1,595.0	-659.3	664.3	600.7	63.57	10.449		
7,300.0	5,893.0	7,129.5	5,910.8	33.4	35.7	91.02	-1,668.9	-653.5	656.6	590.1	66.57	9.864		
7,400.0	5,893.0	7,200.0	5,910.8	35.2	36.8	91.02	-1,739.3	-650.7	652.9	583.3	69.52	9.391		
7,472.8	5,893.0	7,264.1	5,910.8	36.5	37.8	91.02	-1,803.4	-650.3	652.4	580.6	71.90	9.075 CC		
7,500.0	5,893.0	7,291.2	5,910.8	37.0	38.2	91.02	-1,830.5	-650.3	652.5	579.6	72.84	8.957		
7,600.0	5,893.0	7,391.2	5,910.8	38.8	39.8	91.02	-1,930.5	-650.3	652.6	576.2	76.36	8.546		
7,700.0	5,893.0	7,491.2	5,910.8	40.7	41.5	91.02	-2,030.5	-650.3	652.7	572.8	79.91	8.168		
7,800.0	5,893.0	7,591.2	5,910.8	42.5	43.1	91.02	-2,130.5	-650.3	652.8	569.3	83.49	7.819		
7,900.0	5,893.0	7,691.2	5,910.8	44.3	44.8	91.02	-2,230.5	-650.3	652.9	565.9	87.09	7.498		
8,000.0	5,893.0	7,791.2	5,910.9	46.2	46.5	91.02	-2,330.5	-650.3	653.1	562.4	90.71	7.200		
8,100.0	5,893.0	7,891.2	5,910.9	48.0	48.2	91.02	-2,430.5	-650.3	653.2	558.8	94.34	6.923		
8,200.0	5,893.0	7,991.2	5,910.9	49.9	50.0	91.02	-2,530.5	-650.3	653.3	555.3	98.00	6.666		
8,300.0	5,893.0	8,091.2	5,910.9	51.7	51.7	91.02	-2,630.5	-650.3	653.4	551.7	101.66	6.427		
8,400.0	5,893.0	8,191.2	5,910.9	53.6	53.5	91.02	-2,730.5	-650.3	653.5	548.2	105.34	6.204		
8,500.0	5,893.0	8,291.2	5,910.9	55.5	55.2	91.02	-2,830.5	-650.3	653.6	544.6	109.03	5.995		
8,600.0	5,893.0	8,391.2	5,910.9	57.3	57.0	91.02	-2,930.5	-650.3	653.8	541.0	112.73	5.799		
8,700.0	5,893.0	8,491.2	5,910.9	59.2	58.8	91.02	-3,030.5	-650.3	653.9	537.4	116.45	5.615		
8,800.0	5,893.0	8,591.2	5,910.9	61.1	60.6	91.02	-3,130.5	-650.3	654.0	533.8	120.16	5.443		
8,900.0	5,893.0	8,691.2	5,910.9	63.0	62.4	91.02	-3,230.5	-650.3	654.1	530.2	123.89	5.280		
9,000.0	5,893.0	8,791.2	5,910.9	64.8	64.2	91.02	-3,330.5	-650.3	654.2	526.6	127.62	5.126		
9,100.0	5,893.0	8,891.2	5,910.9	66.7	66.0	91.02	-3,430.5	-650.3	654.3	523.0	131.36	4.981		
9,200.0	5,893.0	8,991.2	5,910.9	68.6	67.8	91.02	-3,530.5	-650.3	654.5	519.4	135.11	4.844		
9,300.0	5,893.0	9,091.2	5,910.9	70.5	69.6	91.02	-3,630.5	-650.3	654.6	515.7	138.86	4.714		
9,400.0	5,893.0	9,191.2	5,910.9	72.4	71.5	91.02	-3,730.5	-650.3	654.7	512.1	142.61	4.591		
9,500.0	5,893.0	9,291.2	5,910.9	74.3	73.3	91.02	-3,830.5	-650.3	654.8	508.4	146.37	4.474		
9,600.0	5,893.0	9,391.2	5,910.9	76.2	75.1	91.02	-3,930.5	-650.3	654.9	504.8	150.14	4.362		
9,700.0	5,893.0	9,491.2	5,910.9	78.1	77.0	91.02	-4,030.5	-650.3	655.0	501.1	153.91	4.256		
9,800.0	5,893.0	9,591.2	5,910.9	80.0	78.8	91.02	-4,130.5	-650.3	655.2	497.5	157.68	4.155		
9,900.0	5,893.0	9,691.2	5,910.9	81.9	80.7	91.02	-4,230.5	-650.3	655.3	493.8	161.45	4.059		
10,000.0	5,893.0	9,791.2	5,910.9	83.8	82.5	91.02	-4,330.5	-650.3	655.4	490.2	165.23	3.966		
10,100.0	5,893.0	9,891.2	5,910.9	85.7	84.4	91.02	-4,430.5	-650.3	655.5	486.5	169.01	3.878		
10,200.0	5,893.0	9,991.2	5,910.9	87.6	86.3	91.02	-4,530.5	-650.3	655.6	482.8	172.80	3.794		

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 Federal #12H-1314B
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 Federal #12H-1314B	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-1312B - 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
10,300.0	5,893.0	10,091.2	5,910.9	89.5	88.1	91.02	-4,630.5	-650.3	655.7	479.2	176.59	3.713	
10,400.0	5,893.0	10,191.2	5,910.9	91.4	90.0	91.02	-4,730.5	-650.3	655.9	475.5	180.37	3.636	
10,500.0	5,893.0	10,291.2	5,910.9	93.3	91.9	91.02	-4,830.5	-650.3	656.0	471.8	184.17	3.562	
10,600.0	5,893.0	10,391.2	5,910.9	95.2	93.7	91.02	-4,930.5	-650.3	656.1	468.1	187.96	3.491	
10,700.0	5,893.0	10,491.2	5,910.9	97.1	95.6	91.02	-5,030.5	-650.3	656.2	464.5	191.75	3.422	
10,800.0	5,893.0	10,591.2	5,910.9	99.0	97.5	91.02	-5,130.5	-650.3	656.3	460.8	195.55	3.356	
10,900.0	5,893.0	10,691.2	5,910.9	100.9	99.3	91.02	-5,230.5	-650.3	656.4	457.1	199.35	3.293	
11,000.0	5,893.0	10,791.2	5,910.9	102.8	101.2	91.02	-5,330.5	-650.3	656.6	453.4	203.15	3.232	
11,100.0	5,893.0	10,891.2	5,910.9	104.7	103.1	91.02	-5,430.5	-650.3	656.7	449.7	206.95	3.173	
11,200.0	5,893.0	10,991.2	5,910.9	106.6	105.0	91.02	-5,530.5	-650.3	656.8	446.0	210.76	3.116	
11,300.0	5,893.0	11,091.2	5,910.9	108.5	106.9	91.02	-5,630.5	-650.3	656.9	442.3	214.56	3.062	
11,400.0	5,893.0	11,191.2	5,910.9	110.4	108.7	91.02	-5,730.5	-650.4	657.0	438.7	218.37	3.009	
11,500.0	5,893.0	11,291.2	5,911.0	112.3	110.6	91.02	-5,830.5	-650.4	657.1	435.0	222.18	2.958	
11,600.0	5,893.0	11,391.2	5,911.0	114.3	112.5	91.02	-5,930.5	-650.4	657.3	431.3	225.99	2.908	
11,700.0	5,893.0	11,491.2	5,911.0	116.2	114.4	91.02	-6,030.5	-650.4	657.4	427.6	229.80	2.861	
11,800.0	5,893.0	11,591.2	5,911.0	118.1	116.3	91.02	-6,130.5	-650.4	657.5	423.9	233.61	2.814	
11,900.0	5,893.0	11,691.2	5,911.0	120.0	118.2	91.02	-6,230.5	-650.4	657.6	420.2	237.42	2.770	
12,000.0	5,893.0	11,791.2	5,911.0	121.9	120.1	91.02	-6,330.5	-650.4	657.7	416.5	241.23	2.726	
12,100.0	5,893.0	11,891.2	5,911.0	123.8	122.0	91.02	-6,430.5	-650.4	657.8	412.8	245.05	2.685	
12,200.0	5,893.0	11,991.2	5,911.0	125.7	123.9	91.02	-6,530.5	-650.4	658.0	409.1	248.86	2.644	
12,300.0	5,893.0	12,091.2	5,911.0	127.6	125.7	91.02	-6,630.5	-650.4	658.1	405.4	252.68	2.604	
12,400.0	5,893.0	12,191.2	5,911.0	129.5	127.6	91.02	-6,730.5	-650.4	658.2	401.7	256.50	2.566	
12,500.0	5,893.0	12,291.2	5,911.0	131.5	129.5	91.02	-6,830.5	-650.4	658.3	398.0	260.31	2.529	
12,600.0	5,893.0	12,391.2	5,911.0	133.4	131.4	91.02	-6,930.5	-650.4	658.4	394.3	264.13	2.493	
12,700.0	5,893.0	12,491.2	5,911.0	135.3	133.3	91.02	-7,030.5	-650.4	658.5	390.6	267.95	2.458	
12,800.0	5,893.0	12,591.2	5,911.0	137.2	135.2	91.02	-7,130.5	-650.4	658.7	386.9	271.77	2.424	
12,900.0	5,893.0	12,691.2	5,911.0	139.1	137.1	91.02	-7,230.5	-650.4	658.8	383.2	275.59	2.390	
13,000.0	5,893.0	12,791.2	5,911.0	141.0	139.0	91.02	-7,330.5	-650.4	658.9	379.5	279.41	2.358	
13,100.0	5,893.0	12,891.2	5,911.0	142.9	140.9	91.02	-7,430.5	-650.4	659.0	375.8	283.23	2.327	
13,200.0	5,893.0	12,991.2	5,911.0	144.9	142.8	91.02	-7,530.5	-650.4	659.1	372.1	287.05	2.296	
13,300.0	5,893.0	13,091.2	5,911.0	146.8	144.7	91.02	-7,630.5	-650.4	659.2	368.4	290.88	2.266	
13,400.0	5,893.0	13,191.2	5,911.0	148.7	146.6	91.03	-7,730.5	-650.4	659.3	364.6	294.70	2.237	
13,500.0	5,893.0	13,291.2	5,911.0	150.6	148.5	91.03	-7,830.5	-650.4	659.5	360.9	298.52	2.209	
13,600.0	5,893.0	13,391.2	5,911.0	152.5	150.4	91.03	-7,930.5	-650.4	659.6	357.2	302.35	2.182	
13,641.6	5,893.0	13,432.9	5,911.0	153.3	151.1	91.03	-7,972.2	-650.4	659.6	355.8	303.83	2.171 ES, SF	

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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-0113A - 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				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	-23.86	75.1	-33.2	82.1					
100.0	100.0	100.0	100.0	0.1	0.1	-23.86	75.1	-33.2	82.1	81.9	0.19	438.860		
200.0	200.0	200.0	200.0	0.3	0.3	-23.86	75.1	-33.2	82.1	81.4	0.64	128.931		
300.0	300.0	300.0	300.0	0.5	0.5	-23.86	75.1	-33.2	82.1	81.0	1.09	75.565		
400.0	400.0	400.0	400.0	0.8	0.8	-23.86	75.1	-33.2	82.1	80.5	1.54	53.444		
500.0	500.0	500.0	500.0	1.0	1.0	-23.86	75.1	-33.2	82.1	80.1	1.99	41.342	CC	
600.0	600.0	599.4	599.4	1.2	1.2	-24.41	75.1	-34.1	82.4	80.0	2.42	34.052	ES	
700.0	700.0	698.8	698.7	1.4	1.4	-26.02	75.1	-36.6	83.5	80.7	2.85	29.305		
800.0	800.0	798.0	797.9	1.7	1.6	-28.61	75.1	-40.9	85.5	82.2	3.29	26.002		
900.0	900.0	897.1	896.7	1.9	1.8	-32.02	75.1	-46.9	88.6	84.9	3.74	23.710		
1,000.0	1,000.0	995.9	995.2	2.1	2.1	-36.04	75.1	-54.6	93.0	88.8	4.19	22.178		
1,100.0	1,100.0	1,095.3	1,094.3	2.3	2.3	-40.21	75.1	-63.5	98.5	93.9	4.65	21.162		
1,200.0	1,200.0	1,194.9	1,193.5	2.6	2.6	-43.94	75.1	-72.4	104.5	99.4	5.12	20.423		
1,300.0	1,300.0	1,294.5	1,292.7	2.8	2.9	-47.25	75.1	-81.3	110.9	105.3	5.58	19.879		
1,400.0	1,400.0	1,394.1	1,391.9	3.0	3.1	-50.20	75.1	-90.2	117.7	111.6	6.04	19.475		
1,500.0	1,500.0	1,493.7	1,491.1	3.2	3.4	-52.82	75.2	-99.1	124.7	118.2	6.50	19.175		
1,600.0	1,600.0	1,593.3	1,590.3	3.5	3.7	-55.15	75.2	-108.0	131.9	124.9	6.96	18.951		
1,700.0	1,700.0	1,692.9	1,689.5	3.7	3.9	-57.24	75.2	-116.8	139.3	131.9	7.42	18.779		
1,800.0	1,800.0	1,792.5	1,788.7	3.9	4.2	-59.12	75.2	-125.7	146.9	139.1	7.88	18.647		
1,900.0	1,900.0	1,892.1	1,887.9	4.1	4.5	-60.81	75.2	-134.6	154.7	146.3	8.34	18.548		
2,000.0	2,000.0	1,991.7	1,987.1	4.4	4.8	-62.34	75.2	-143.5	162.5	153.7	8.80	18.473		
2,100.0	2,100.0	2,091.3	2,086.3	4.6	5.0	-63.73	75.2	-152.4	170.5	161.3	9.26	18.417		
2,200.0	2,200.0	2,190.9	2,185.5	4.8	5.3	-64.99	75.2	-161.3	178.6	168.9	9.72	18.376		
2,300.0	2,300.0	2,290.5	2,284.7	5.0	5.6	-66.15	75.3	-170.2	186.7	176.5	10.18	18.346		
2,400.0	2,400.0	2,390.1	2,383.9	5.3	5.9	-67.20	75.3	-179.1	194.9	184.3	10.64	18.325		
2,500.0	2,500.0	2,489.7	2,483.1	5.5	6.1	-68.18	75.3	-188.0	203.2	192.1	11.10	18.310		
2,600.0	2,600.0	2,589.3	2,582.3	5.7	6.4	-69.07	75.3	-196.9	211.5	200.0	11.56	18.302		
2,700.0	2,700.0	2,688.9	2,681.5	5.9	6.7	-69.90	75.3	-205.8	219.9	207.9	12.02	18.297		
2,800.0	2,800.0	2,788.5	2,780.8	6.2	7.0	-70.67	75.3	-214.7	228.3	215.8	12.48	18.296	SF	
2,900.0	2,900.0	2,888.1	2,880.0	6.4	7.2	-71.38	75.3	-223.5	236.7	223.8	12.94	18.298		
3,000.0	3,000.0	2,987.7	2,979.2	6.6	7.5	-72.04	75.3	-232.4	245.2	231.8	13.40	18.301		
3,100.0	3,100.0	3,087.3	3,078.4	6.8	7.8	-72.66	75.4	-241.3	253.7	239.9	13.86	18.306		
3,200.0	3,200.0	3,186.9	3,177.6	7.1	8.1	-73.24	75.4	-250.2	262.3	248.0	14.32	18.313		
3,300.0	3,300.0	3,286.5	3,276.8	7.3	8.4	-73.78	75.4	-259.1	270.9	256.1	14.78	18.320		
3,400.0	3,400.0	3,386.1	3,376.0	7.5	8.6	-74.29	75.4	-268.0	279.4	264.2	15.25	18.328		
3,500.0	3,500.0	3,485.7	3,475.2	7.7	8.9	-74.77	75.4	-276.9	288.1	272.3	15.71	18.336		
3,600.0	3,600.0	3,585.3	3,574.4	8.0	9.2	-75.22	75.4	-285.8	296.7	280.5	16.17	18.345		
3,700.0	3,700.0	3,684.9	3,673.6	8.2	9.5	-75.64	75.4	-294.7	305.3	288.7	16.64	18.354		
3,800.0	3,800.0	3,784.5	3,772.8	8.4	9.8	-76.04	75.4	-303.6	314.0	296.9	17.10	18.363		
3,900.0	3,900.0	3,884.1	3,872.0	8.6	10.0	-76.42	75.5	-312.5	322.7	305.1	17.56	18.372		
4,000.0	4,000.0	3,983.7	3,971.2	8.9	10.3	-76.78	75.5	-321.4	331.4	313.3	18.03	18.382		
4,100.0	4,100.0	4,083.3	4,070.4	9.1	10.6	-77.13	75.5	-330.2	340.1	321.6	18.49	18.391		
4,200.0	4,200.0	4,182.9	4,169.6	9.3	10.9	-77.45	75.5	-339.1	348.8	329.8	18.96	18.399		
4,300.0	4,300.0	4,282.5	4,268.8	9.5	11.2	-77.76	75.5	-348.0	357.5	338.1	19.42	18.408		
4,400.0	4,400.0	4,382.1	4,368.0	9.8	11.4	-78.05	75.5	-356.9	366.2	346.3	19.89	18.417		
4,500.0	4,500.0	4,481.7	4,467.2	10.0	11.7	-78.33	75.5	-365.8	375.0	354.6	20.35	18.425		
4,600.0	4,600.0	4,581.3	4,566.4	10.2	12.0	-78.60	75.5	-374.7	383.7	362.9	20.82	18.433		
4,700.0	4,700.0	4,680.9	4,665.6	10.4	12.3	-78.86	75.6	-383.6	392.5	371.2	21.28	18.441		
4,800.0	4,800.0	4,780.5	4,764.8	10.7	12.6	-79.10	75.6	-392.5	401.2	379.5	21.75	18.449		
4,900.0	4,900.0	4,880.1	4,864.0	10.9	12.8	-79.34	75.6	-401.4	410.0	387.8	22.22	18.456		
5,000.0	5,000.0	4,979.7	4,963.2	11.1	13.1	-79.56	75.6	-410.3	418.8	396.1	22.68	18.464		
5,100.0	5,100.0	5,079.3	5,062.4	11.3	13.4	-79.77	75.6	-419.2	427.6	404.4	23.15	18.471		

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 Federal #12H-1314B
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 Federal #12H-1314B	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-0113A - 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	5,200.0	5,178.9	5,161.6	11.6	13.7	-79.98	75.6	-428.1	436.4	412.8	23.62	18.477	
5,300.0	5,300.0	5,278.5	5,260.8	11.8	14.0	-80.18	75.6	-436.9	445.2	421.1	24.08	18.484	
5,400.0	5,400.0	5,366.9	5,348.6	12.0	14.2	100.09	80.7	-444.8	455.1	430.9	24.19	18.816	
5,500.0	5,498.7	5,444.9	5,424.4	12.2	14.4	101.52	97.3	-451.6	471.4	447.0	24.44	19.286	
5,600.0	5,592.8	5,500.0	5,476.1	12.4	14.5	102.41	115.9	-456.2	499.0	474.4	24.60	20.287	
5,700.0	5,678.8	5,550.0	5,521.1	12.5	14.7	102.17	137.3	-460.3	541.4	516.6	24.77	21.852	
5,800.0	5,753.5	5,564.6	5,533.8	12.9	14.7	96.31	144.4	-461.4	598.1	572.8	25.26	23.674	
5,900.0	5,814.2	5,571.6	5,539.8	13.4	14.7	86.96	147.9	-462.0	666.0	640.0	25.99	25.622	
6,000.0	5,858.6	5,568.1	5,536.8	14.1	14.7	74.43	146.1	-461.7	740.5	714.3	26.17	28.298	
6,100.0	5,885.2	5,550.0	5,521.1	15.0	14.7	60.48	137.3	-460.3	817.2	792.4	24.83	32.907	
6,200.0	5,893.0	5,550.0	5,521.1	16.1	14.7	51.05	137.3	-460.3	892.6	869.3	23.36	38.207	
6,300.0	5,893.0	5,522.3	5,496.4	17.3	14.6	49.10	124.9	-458.1	968.7	945.0	23.75	40.791	
6,400.0	5,893.0	5,500.0	5,476.1	18.7	14.5	47.57	115.9	-456.2	1,048.4	1,024.1	24.31	43.131	
6,500.0	5,893.0	5,500.0	5,476.1	20.1	14.5	47.57	115.9	-456.2	1,130.7	1,105.3	25.44	44.441	
6,600.0	5,893.0	5,481.6	5,459.1	21.7	14.5	46.33	109.1	-454.7	1,215.3	1,189.1	26.18	46.428	
6,700.0	5,893.0	5,471.0	5,449.1	23.2	14.5	45.63	105.4	-453.8	1,301.7	1,274.6	27.12	47.998	
6,800.0	5,893.0	5,450.0	5,429.3	24.8	14.4	44.26	98.8	-452.0	1,389.9	1,362.1	27.81	49.989	
6,900.0	5,893.0	5,450.0	5,429.3	26.5	14.4	44.26	98.8	-452.0	1,479.2	1,450.1	29.06	50.898	

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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-ISCSA 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	0.00	75.1	0.0	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	75.1	0.0	75.1	74.9	0.19	401.352		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	75.1	0.0	75.1	74.4	0.64	117.912		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	75.1	0.0	75.1	74.0	1.09	69.107		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	75.1	0.0	75.1	73.5	1.54	48.877		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	75.1	0.0	75.1	73.1	1.99	37.809		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	75.1	0.0	75.1	72.6	2.43	30.828		
700.0	700.0	700.0	700.0	1.4	1.4	0.00	75.1	0.0	75.1	72.2	2.88	26.023		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	75.1	0.0	75.1	71.7	3.33	22.514		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	75.1	0.0	75.1	71.3	3.78	19.839		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	75.1	0.0	75.1	70.8	4.23	17.732		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	0.00	75.1	0.0	75.1	70.4	4.68	16.029		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	75.1	0.0	75.1	69.9	5.13	14.625		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	75.1	0.0	75.1	69.5	5.58	13.447		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	75.1	0.0	75.1	69.0	6.03	12.445		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	0.00	75.1	0.0	75.1	68.6	6.48	11.582		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	0.00	75.1	0.0	75.1	68.1	6.93	10.830		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	0.00	75.1	0.0	75.1	67.7	7.38	10.171		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	0.00	75.1	0.0	75.1	67.2	7.83	9.587		
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	0.00	75.1	0.0	75.1	66.8	8.28	9.066		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	0.00	75.1	0.0	75.1	66.3	8.73	8.599		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	0.00	75.1	0.0	75.1	65.9	9.18	8.178		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	0.00	75.1	0.0	75.1	65.4	9.63	7.796		
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	0.00	75.1	0.0	75.1	65.0	10.08	7.448		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	0.00	75.1	0.0	75.1	64.5	10.53	7.130		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	0.00	75.1	0.0	75.1	64.1	10.98	6.838		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	0.00	75.1	0.0	75.1	63.6	11.43	6.569		
2,700.0	2,700.0	2,700.0	2,700.0	5.9	5.9	0.00	75.1	0.0	75.1	63.2	11.87	6.321		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	0.00	75.1	0.0	75.1	62.7	12.32	6.090		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	0.00	75.1	0.0	75.1	62.3	12.77	5.876		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	0.00	75.1	0.0	75.1	61.8	13.22	5.676		
3,100.0	3,100.0	3,100.0	3,100.0	6.8	6.8	0.00	75.1	0.0	75.1	61.4	13.67	5.489		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	0.00	75.1	0.0	75.1	60.9	14.12	5.315		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	0.00	75.1	0.0	75.1	60.5	14.57	5.151		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	0.00	75.1	0.0	75.1	60.0	15.02	4.996		
3,500.0	3,500.0	3,500.0	3,500.0	7.7	7.7	0.00	75.1	0.0	75.1	59.6	15.47	4.851		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	0.00	75.1	0.0	75.1	59.1	15.92	4.714		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	0.00	75.1	0.0	75.1	58.7	16.37	4.585		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	0.00	75.1	0.0	75.1	58.2	16.82	4.462		
3,900.0	3,900.0	3,900.0	3,900.0	8.6	8.6	0.00	75.1	0.0	75.1	57.8	17.27	4.346		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	0.00	75.1	0.0	75.1	57.3	17.72	4.236		
4,042.6	4,042.6	4,042.6	4,042.6	9.0	8.9	0.24	75.1	0.3	75.1	57.2	17.90	4.192 CC		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	1.33	75.0	1.7	75.1	56.9	18.15	4.135		
4,200.0	4,200.0	4,199.7	4,199.5	9.3	9.3	5.30	75.0	7.0	75.3	56.8	18.58	4.055 ES		
4,300.0	4,300.0	4,298.9	4,298.4	9.5	9.5	11.74	75.0	15.6	76.6	57.6	19.01	4.030 SF		
4,400.0	4,400.0	4,398.4	4,397.3	9.8	9.7	19.21	74.9	26.1	79.4	60.0	19.44	4.084		
4,500.0	4,500.0	4,497.8	4,496.1	10.0	9.9	26.07	74.9	36.6	83.5	63.6	19.88	4.199		
4,600.0	4,600.0	4,597.2	4,595.0	10.2	10.1	32.23	74.9	47.2	88.6	68.3	20.32	4.361		
4,700.0	4,700.0	4,696.7	4,693.9	10.4	10.3	37.65	74.8	57.7	94.7	73.9	20.77	4.559		
4,800.0	4,800.0	4,796.1	4,792.8	10.7	10.6	42.40	74.8	68.3	101.5	80.3	21.21	4.784		
4,900.0	4,900.0	4,895.5	4,891.6	10.9	10.8	46.52	74.7	78.8	108.9	87.3	21.66	5.028		
5,000.0	5,000.0	4,995.0	4,990.5	11.1	11.0	50.11	74.7	89.3	116.8	94.7	22.11	5.284		

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 Federal #12H-1314B
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 Federal #12H-1314B	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)						
5,100.0	5,100.0	5,094.4	5,089.4	11.3	11.3	53.23	74.6	99.9	125.1	102.6	22.56	5.547		
5,200.0	5,200.0	5,193.8	5,188.3	11.6	11.5	55.96	74.6	110.4	133.8	110.8	23.01	5.814		
5,300.0	5,300.0	5,292.0	5,285.9	11.8	11.8	58.30	74.6	120.8	142.7	119.2	23.45	6.084		
5,400.0	5,400.0	5,377.8	5,370.7	12.0	12.0	-122.26	83.1	129.8	157.3	133.6	23.76	6.623		
5,500.0	5,498.7	5,450.0	5,440.2	12.2	12.2	-125.72	101.0	137.3	189.4	165.6	23.84	7.945		
5,600.0	5,592.8	5,510.9	5,496.4	12.4	12.3	-128.82	123.6	143.2	244.1	220.6	23.52	10.380		
5,700.0	5,678.8	5,550.0	5,531.0	12.5	12.4	-126.25	141.4	146.9	318.8	295.6	23.13	13.778		
5,800.0	5,753.5	5,566.7	5,545.3	12.9	12.5	-112.87	149.9	148.5	406.4	382.4	23.95	16.968		
5,900.0	5,814.2	5,572.3	5,550.0	13.4	12.5	-84.76	152.8	149.0	500.4	474.9	25.50	19.624		
6,000.0	5,858.6	5,567.7	5,546.2	14.1	12.5	-51.44	150.4	148.5	595.8	573.9	21.91	27.193		
6,100.0	5,885.2	5,550.0	5,531.0	15.0	12.4	-30.45	141.4	146.9	688.9	673.1	15.85	43.466		
6,200.0	5,893.0	5,550.0	5,531.0	16.1	12.4	-22.11	141.4	146.9	777.2	764.2	12.98	59.899		
6,300.0	5,893.0	5,520.2	5,504.7	17.3	12.4	-20.38	127.6	144.1	863.8	850.8	13.00	66.437		
6,400.0	5,893.0	5,500.0	5,486.5	18.7	12.3	-19.30	119.0	142.2	952.4	939.1	13.31	71.573		
6,500.0	5,893.0	5,500.0	5,486.5	20.1	12.3	-19.30	119.0	142.2	1,042.6	1,028.5	14.05	74.189		
6,600.0	5,893.0	5,478.2	5,466.6	21.7	12.2	-18.20	110.7	140.1	1,133.7	1,119.3	14.40	78.722		
6,700.0	5,893.0	5,450.0	5,440.2	23.2	12.2	-16.87	101.0	137.3	1,226.4	1,211.8	14.67	83.585		
6,800.0	5,893.0	5,450.0	5,440.2	24.8	12.2	-16.87	101.0	137.3	1,319.2	1,303.8	15.47	85.289		
6,900.0	5,893.0	5,450.0	5,440.2	26.5	12.2	-16.87	101.0	137.3	1,413.0	1,396.8	16.28	86.806		
7,000.0	5,893.0	5,450.0	5,440.2	28.2	12.2	-16.87	101.0	137.3	1,507.6	1,490.5	17.10	88.163		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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-ISCSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	23.68	75.1	32.9	82.0					
100.0	100.0	100.0	100.0	0.1	0.1	23.68	75.1	32.9	82.0	81.8	0.19	438.340		
200.0	200.0	200.0	200.0	0.3	0.3	23.68	75.1	32.9	82.0	81.3	0.64	128.778		
300.0	300.0	300.0	300.0	0.5	0.5	23.68	75.1	32.9	82.0	80.9	1.09	75.476		
400.0	400.0	400.0	400.0	0.8	0.8	23.68	75.1	32.9	82.0	80.4	1.54	53.381		
500.0	500.0	500.0	500.0	1.0	1.0	23.68	75.1	32.9	82.0	80.0	1.99	41.293 CC		
600.0	600.0	599.4	599.4	1.2	1.2	24.23	75.1	33.8	82.3	79.9	2.42	34.008 ES		
700.0	700.0	698.8	698.8	1.4	1.4	25.86	75.0	36.4	83.4	80.5	2.85	29.257		
800.0	800.0	798.1	797.9	1.7	1.6	28.47	75.0	40.7	85.3	82.0	3.29	25.945		
900.0	900.0	897.1	896.8	1.9	1.8	31.92	74.9	46.7	88.3	84.6	3.74	23.641		
1,000.0	1,000.0	996.0	995.3	2.1	2.1	36.00	74.8	54.4	92.6	88.4	4.19	22.097		
1,100.0	1,100.0	1,095.3	1,094.2	2.3	2.3	40.30	74.8	63.4	98.2	93.5	4.65	21.095		
1,200.0	1,200.0	1,194.8	1,193.4	2.6	2.6	44.17	74.7	72.5	104.3	99.2	5.12	20.380		
1,300.0	1,300.0	1,294.4	1,292.5	2.8	2.9	47.61	74.6	81.7	110.8	105.3	5.58	19.862		
1,400.0	1,400.0	1,394.0	1,391.7	3.0	3.1	50.65	74.5	90.8	117.7	111.7	6.04	19.485		
1,500.0	1,500.0	1,493.6	1,490.9	3.2	3.4	53.35	74.4	99.9	124.9	118.4	6.50	19.210		
1,600.0	1,600.0	1,593.2	1,590.0	3.5	3.7	55.75	74.3	109.1	132.3	125.4	6.96	19.010		
1,700.0	1,700.0	1,692.7	1,689.2	3.7	3.9	57.89	74.2	118.2	140.0	132.6	7.42	18.862		
1,800.0	1,800.0	1,792.3	1,788.3	3.9	4.2	59.81	74.1	127.4	147.8	139.9	7.88	18.752		
1,900.0	1,900.0	1,891.9	1,887.5	4.1	4.5	61.54	74.0	136.5	155.8	147.4	8.34	18.673		
2,000.0	2,000.0	1,991.5	1,986.7	4.4	4.8	63.10	73.9	145.6	163.9	155.1	8.80	18.616		
2,100.0	2,100.0	2,091.0	2,085.8	4.6	5.0	64.51	73.8	154.8	172.1	162.8	9.26	18.577		
2,200.0	2,200.0	2,190.6	2,185.0	4.8	5.3	65.79	73.7	163.9	180.3	170.6	9.72	18.552		
2,300.0	2,300.0	2,290.2	2,284.1	5.0	5.6	66.96	73.6	173.0	188.7	178.5	10.18	18.536		
2,400.0	2,400.0	2,389.8	2,383.3	5.3	5.9	68.02	73.5	182.2	197.2	186.5	10.64	18.529		
2,500.0	2,500.0	2,489.4	2,482.4	5.5	6.1	69.00	73.4	191.3	205.7	194.6	11.10	18.527 SF		
2,600.0	2,600.0	2,588.9	2,581.6	5.7	6.4	69.91	73.3	200.5	214.2	202.7	11.56	18.530		
2,700.0	2,700.0	2,688.5	2,680.8	5.9	6.7	70.74	73.2	209.6	222.8	210.8	12.02	18.536		
2,800.0	2,800.0	2,788.1	2,779.9	6.2	7.0	71.51	73.1	218.7	231.5	219.0	12.48	18.545		
2,900.0	2,900.0	2,887.7	2,879.1	6.4	7.3	72.23	73.0	227.9	240.2	227.3	12.94	18.556		
3,000.0	3,000.0	2,987.2	2,978.2	6.6	7.5	72.89	72.9	237.0	248.9	235.5	13.41	18.569		
3,100.0	3,100.0	3,086.8	3,077.4	6.8	7.8	73.51	72.9	246.1	257.7	243.8	13.87	18.582		
3,200.0	3,200.0	3,186.4	3,176.5	7.1	8.1	74.09	72.8	255.3	266.5	252.1	14.33	18.596		
3,300.0	3,300.0	3,286.0	3,275.7	7.3	8.4	74.63	72.7	264.4	275.3	260.5	14.79	18.611		
3,400.0	3,400.0	3,385.6	3,374.9	7.5	8.7	75.14	72.6	273.5	284.1	268.9	15.25	18.625		
3,500.0	3,500.0	3,485.1	3,474.0	7.7	8.9	75.62	72.5	282.7	293.0	277.3	15.72	18.640		
3,600.0	3,600.0	3,584.7	3,573.2	8.0	9.2	76.07	72.4	291.8	301.9	285.7	16.18	18.655		
3,700.0	3,700.0	3,684.3	3,672.3	8.2	9.5	76.50	72.3	301.0	310.7	294.1	16.64	18.670		
3,800.0	3,800.0	3,783.9	3,771.5	8.4	9.8	76.90	72.2	310.1	319.7	302.5	17.11	18.684		
3,900.0	3,900.0	3,883.4	3,870.7	8.6	10.1	77.27	72.1	319.2	328.6	311.0	17.57	18.698		
4,000.0	4,000.0	3,983.0	3,969.8	8.9	10.4	77.63	72.0	328.4	337.5	319.5	18.04	18.712		
4,100.0	4,100.0	4,082.6	4,069.0	9.1	10.6	77.97	71.9	337.5	346.5	328.0	18.50	18.726		
4,200.0	4,200.0	4,182.2	4,168.1	9.3	10.9	78.30	71.8	346.6	355.4	336.5	18.97	18.739		
4,300.0	4,300.0	4,281.8	4,267.3	9.5	11.2	78.60	71.7	355.8	364.4	345.0	19.43	18.752		
4,400.0	4,400.0	4,381.3	4,366.4	9.8	11.5	78.90	71.6	364.9	373.4	353.5	19.90	18.765		
4,500.0	4,500.0	4,480.9	4,465.6	10.0	11.8	79.18	71.5	374.0	382.4	362.0	20.36	18.777		
4,600.0	4,600.0	4,580.5	4,564.8	10.2	12.0	79.44	71.4	383.2	391.4	370.5	20.83	18.788		
4,700.0	4,700.0	4,680.1	4,663.9	10.4	12.3	79.70	71.3	392.3	400.4	379.1	21.30	18.800		
4,800.0	4,800.0	4,779.7	4,763.1	10.7	12.6	79.94	71.2	401.5	409.4	387.6	21.76	18.811		
4,900.0	4,900.0	4,879.2	4,862.2	10.9	12.9	80.17	71.1	410.6	418.4	396.2	22.23	18.821		
5,000.0	5,000.0	4,978.8	4,961.4	11.1	13.2	80.39	71.0	419.7	427.4	404.7	22.70	18.831		
5,100.0	5,100.0	5,078.4	5,060.6	11.3	13.4	80.61	70.9	428.9	436.5	413.3	23.17	18.841		

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 Federal #12H-1314B
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 Federal #12H-1314B	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		Distance		Total		Separation		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			
5,200.0	5,200.0	5,178.0	5,159.7	11.6	13.7	80.81	70.9	438.0	445.5	421.9	23.63	18.850		
5,300.0	5,300.0	5,277.5	5,258.9	11.8	14.0	81.01	70.8	447.1	454.6	430.5	24.10	18.859		
5,400.0	5,400.0	5,377.1	5,358.0	12.0	14.3	-98.54	70.7	456.3	463.7	439.5	24.25	19.126		
5,500.0	5,498.7	5,463.3	5,443.6	12.2	14.5	-99.09	75.3	464.2	476.2	451.6	24.54	19.401		
5,600.0	5,592.8	5,532.8	5,511.4	12.4	14.7	-100.86	89.2	470.4	497.0	472.2	24.76	20.069		
5,700.0	5,678.8	5,581.6	5,557.6	12.5	14.8	-101.11	104.3	474.7	530.6	505.6	24.94	21.272		
5,800.0	5,753.5	5,610.7	5,584.4	12.9	14.9	-98.05	115.3	477.1	579.0	553.6	25.34	22.848		
5,900.0	5,814.2	5,623.7	5,596.2	13.4	14.9	-91.00	120.7	478.2	640.3	614.2	26.07	24.559		
6,000.0	5,858.6	5,624.6	5,597.0	14.1	14.9	-80.31	121.1	478.3	710.4	683.7	26.66	26.644		
6,100.0	5,885.2	5,616.5	5,589.7	15.0	14.9	-67.64	117.7	477.6	784.9	758.7	26.22	29.937		
6,200.0	5,893.0	5,600.0	5,574.6	16.1	14.9	-56.24	111.1	476.2	859.8	835.0	24.83	34.632		
6,300.0	5,893.0	5,600.0	5,574.6	17.3	14.9	-56.24	111.1	476.2	936.7	910.8	25.89	36.184		
6,400.0	5,893.0	5,573.0	5,549.6	18.7	14.8	-54.08	101.3	473.9	1,016.7	990.3	26.41	38.492		
6,500.0	5,893.0	5,550.0	5,527.8	20.1	14.7	-52.27	94.0	471.9	1,100.0	1,072.9	27.06	40.653		
6,600.0	5,893.0	5,550.0	5,527.8	21.7	14.7	-52.27	94.0	471.9	1,185.2	1,156.9	28.32	41.857		
6,700.0	5,893.0	5,550.0	5,527.8	23.2	14.7	-52.27	94.0	471.9	1,272.6	1,243.0	29.62	42.960		
6,800.0	5,893.0	5,550.0	5,527.8	24.8	14.7	-52.27	94.0	471.9	1,361.7	1,330.8	30.97	43.969		
6,900.0	5,893.0	5,526.2	5,505.1	26.5	14.7	-50.46	87.5	469.8	1,451.6	1,419.9	31.65	45.858		
7,000.0	5,893.0	5,519.6	5,498.7	28.2	14.7	-49.96	85.8	469.2	1,542.9	1,510.0	32.83	46.994		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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		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	0.3	0.3	0.0	0.0	25.72	135.6	65.3	150.5					
100.0	100.0	101.8	101.8	0.1	0.1	25.71	135.1	65.1	150.0	149.8	0.19	776.345		
200.0	200.0	201.9	201.8	0.3	0.3	25.75	134.1	64.7	148.9	148.3	0.62	239.551		
300.0	300.0	302.3	302.2	0.5	0.5	25.89	132.9	64.5	147.7	146.7	1.07	138.650		
400.0	400.0	402.3	402.2	0.8	0.7	26.11	131.5	64.4	146.5	144.9	1.51	97.124		
500.0	500.0	502.8	502.8	1.0	1.0	26.43	129.7	64.5	144.9	142.9	1.95	74.189		
600.0	600.0	602.6	602.5	1.2	1.2	26.86	127.7	64.7	143.2	140.8	2.40	59.753		
700.0	700.0	701.6	701.5	1.4	1.4	27.38	126.0	65.3	141.9	139.1	2.83	50.209		
800.0	800.0	800.8	800.7	1.7	1.6	27.99	124.9	66.4	141.5	138.2	3.26	43.423		
900.0	900.0	901.0	900.9	1.9	1.8	28.75	123.7	67.9	141.1	137.4	3.70	38.115		
1,000.0	1,000.0	1,000.9	1,000.7	2.1	2.0	29.62	122.3	69.5	140.6	136.5	4.14	33.955		
1,056.6	1,056.6	1,057.0	1,056.9	2.2	2.1	29.90	121.9	70.1	140.6	136.2	4.38	32.059		
1,100.0	1,100.0	1,100.4	1,100.3	2.3	2.2	30.01	121.7	70.3	140.6	136.0	4.57	30.760		
1,200.0	1,200.0	1,200.6	1,200.4	2.6	2.4	30.28	121.3	70.8	140.5	135.5	5.00	28.079		
1,264.0	1,264.0	1,264.5	1,264.3	2.7	2.6	30.47	121.1	71.2	140.5	135.2	5.28	26.583		
1,300.0	1,300.0	1,300.3	1,300.1	2.8	2.7	30.61	120.9	71.5	140.5	135.0	5.44	25.817		
1,400.0	1,400.0	1,400.0	1,399.9	3.0	2.9	31.18	120.4	72.8	140.7	134.8	5.89	23.906		
1,500.0	1,500.0	1,500.1	1,499.9	3.2	3.1	31.88	119.7	74.5	141.0	134.7	6.32	22.310		
1,600.0	1,600.0	1,600.2	1,600.1	3.5	3.3	32.42	119.2	75.7	141.3	134.5	6.74	20.943		
1,700.0	1,700.0	1,700.5	1,700.4	3.7	3.5	32.85	118.7	76.7	141.3	134.1	7.17	19.710		
1,770.3	1,770.3	1,770.8	1,770.6	3.8	3.6	33.18	118.3	77.3	141.3	133.8	7.48	18.898		
1,800.0	1,800.0	1,800.4	1,800.2	3.9	3.7	33.35	118.0	77.7	141.3	133.7	7.61	18.576		
1,900.0	1,900.0	1,901.3	1,901.1	4.1	3.9	33.82	117.3	78.6	141.2	133.2	8.04	17.570		
2,000.0	2,000.0	2,003.0	2,002.8	4.4	4.1	34.00	116.1	78.3	140.0	131.6	8.47	16.528		
2,100.0	2,100.0	2,104.8	2,104.5	4.6	4.3	34.15	113.8	77.2	137.6	128.7	8.91	15.441		
2,200.0	2,200.0	2,203.1	2,202.8	4.8	4.5	33.99	111.8	75.4	134.8	125.5	9.33	14.447		
2,249.5	2,249.5	2,250.0	2,249.8	4.9	4.6	33.81	111.7	74.8	134.4	124.8	9.54	14.085		
2,300.0	2,300.0	2,298.0	2,297.7	5.0	4.7	33.51	112.4	74.4	134.9	125.1	9.75	13.830		
2,400.0	2,400.0	2,396.0	2,395.7	5.3	4.9	32.97	115.4	74.9	137.6	127.5	10.18	13.521		
2,500.0	2,500.0	2,496.0	2,495.6	5.5	5.1	32.18	119.7	75.3	141.5	130.9	10.61	13.334		
2,600.0	2,600.0	2,598.6	2,598.2	5.7	5.3	32.07	121.4	76.0	143.2	132.2	11.05	12.966		
2,700.0	2,700.0	2,696.7	2,696.2	5.9	5.5	31.53	124.1	76.1	145.6	134.1	11.48	12.688		
2,800.0	2,800.0	2,798.5	2,798.0	6.2	5.7	30.87	127.2	76.0	148.2	136.3	11.91	12.440		
2,900.0	2,900.0	2,899.3	2,898.8	6.4	6.0	31.00	127.6	76.7	148.9	136.5	12.35	12.059		
3,000.0	3,000.0	2,998.5	2,997.9	6.6	6.2	31.02	128.9	77.5	150.4	137.6	12.78	11.769		
3,100.0	3,100.0	3,098.4	3,097.8	6.8	6.4	31.15	130.0	78.6	152.0	138.7	13.22	11.498		
3,200.0	3,200.0	3,198.3	3,197.8	7.1	6.6	31.18	131.4	79.5	153.7	140.0	13.65	11.255		
3,300.0	3,300.0	3,301.6	3,301.0	7.3	6.8	31.55	131.7	80.9	154.5	140.5	14.10	10.964		
3,400.0	3,400.0	3,402.6	3,401.9	7.5	7.0	32.18	129.9	81.8	153.5	139.0	14.53	10.565		
3,500.0	3,500.0	3,502.7	3,502.1	7.7	7.2	32.70	128.2	82.3	152.4	137.4	14.97	10.184		
3,600.0	3,600.0	3,603.3	3,602.6	8.0	7.4	33.34	126.2	83.0	151.1	135.7	15.40	9.807		
3,700.0	3,700.0	3,705.6	3,704.9	8.2	7.7	33.82	123.5	82.8	148.8	132.9	15.84	9.393		
3,800.0	3,800.0	3,808.0	3,807.2	8.4	7.9	33.40	120.7	79.6	144.7	128.5	16.27	8.895		
3,900.0	3,900.0	3,906.4	3,905.5	8.6	8.1	32.32	118.4	74.9	140.2	123.5	16.70	8.398		
3,982.6	3,982.6	3,983.7	3,982.7	8.8	8.2	31.43	118.4	72.4	138.8	121.7	17.04	8.143		
4,000.0	4,000.0	4,000.9	3,999.9	8.9	8.3	31.23	118.7	72.0	138.8	121.7	17.12	8.111		
4,100.0	4,100.0	4,102.9	4,101.9	9.1	8.5	30.41	119.3	70.1	138.4	120.8	17.55	7.883		
4,200.0	4,200.0	4,204.1	4,203.1	9.3	8.7	29.70	118.6	67.7	136.6	118.6	17.99	7.593		
4,300.0	4,300.0	4,302.8	4,301.8	9.5	8.9	28.80	118.2	65.0	134.9	116.5	18.42	7.326		
4,367.4	4,367.4	4,368.8	4,367.7	9.7	9.0	28.13	118.7	63.4	134.6	115.9	18.71	7.193		
4,400.0	4,400.0	4,400.8	4,399.7	9.8	9.1	27.78	119.1	62.8	134.6	115.8	18.85	7.144		
4,500.0	4,500.0	4,500.3	4,499.2	10.0	9.3	26.62	121.2	60.7	135.6	116.3	19.28	7.031		

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 Federal #12H-1314B
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 Federal #12H-1314B	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						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		
4,600.0	4,600.0	4,601.4	4,600.2	10.2	9.5	25.55	122.6	58.6	135.9	116.1	19.72	6.890		
4,700.0	4,700.0	4,701.5	4,700.3	10.4	9.7	24.63	123.5	56.6	135.9	115.7	20.15	6.742		
4,800.0	4,800.0	4,802.2	4,801.0	10.7	9.9	24.05	123.9	55.3	135.7	115.1	20.59	6.590		
4,900.0	4,900.0	4,903.0	4,901.8	10.9	10.2	23.77	123.4	54.3	134.8	113.8	21.03	6.412		
5,000.0	5,000.0	5,003.2	5,001.9	11.1	10.4	23.59	122.4	53.5	133.6	112.1	21.47	6.224		
5,100.0	5,100.0	5,102.9	5,101.6	11.3	10.6	23.84	121.2	53.5	132.5	110.6	21.90	6.048		
5,153.0	5,153.0	5,154.5	5,153.3	11.5	10.7	24.29	120.4	54.3	132.1	110.0	22.13	5.968 CC, ES		
5,200.0	5,200.0	5,199.5	5,198.2	11.6	10.8	24.96	120.1	55.9	132.5	110.1	22.33	5.931 SF		
5,300.0	5,300.0	5,296.1	5,294.6	11.8	11.0	26.75	120.8	60.9	135.4	112.7	22.76	5.951		
5,400.0	5,400.0	5,392.7	5,391.1	12.0	11.2	-152.51	124.5	64.6	141.3	118.1	23.16	6.099		
5,500.0	5,498.7	5,481.1	5,479.0	12.2	11.4	-154.70	133.8	66.0	164.6	141.6	23.01	7.154		
5,600.0	5,592.8	5,566.2	5,563.2	12.4	11.5	-157.54	145.9	67.6	208.4	186.3	22.14	9.417		
5,700.0	5,678.8	5,628.8	5,625.0	12.5	11.7	-157.60	155.3	71.7	270.5	249.8	20.65	13.097		
5,800.0	5,753.5	5,663.6	5,658.7	12.9	11.8	-154.36	163.2	74.0	350.6	331.6	19.02	18.438		
5,900.0	5,814.2	5,683.0	5,677.3	13.4	11.8	-143.68	168.7	75.2	442.6	423.6	18.94	23.366		
6,000.0	5,858.6	5,683.0	5,677.3	14.1	11.8	-97.74	168.7	75.2	540.4	514.7	25.71	21.017		
6,100.0	5,885.2	5,683.0	5,677.3	15.0	11.8	-36.59	168.7	75.2	639.2	621.8	17.45	36.631		
6,200.0	5,893.0	5,683.0	5,677.3	16.1	11.8	-19.25	168.7	75.2	735.7	723.9	11.78	62.467		
6,300.0	5,893.0	5,667.9	5,662.9	17.3	11.8	-17.92	164.4	74.3	830.9	818.9	11.96	69.453		
6,400.0	5,893.0	5,651.0	5,646.6	18.7	11.7	-16.57	160.1	73.2	927.0	914.8	12.19	76.058		
6,500.0	5,893.0	5,651.0	5,646.6	20.1	11.7	-16.57	160.1	73.2	1,023.4	1,010.5	12.90	79.313		
6,600.0	5,893.0	5,651.0	5,646.6	21.7	11.7	-16.57	160.1	73.2	1,120.5	1,106.9	13.65	82.081		
6,700.0	5,893.0	5,638.0	5,634.0	23.2	11.7	-15.62	157.2	72.3	1,217.8	1,203.7	14.08	86.509		
6,800.0	5,893.0	5,632.8	5,628.9	24.8	11.7	-15.26	156.1	72.0	1,315.5	1,300.7	14.72	89.355		
6,900.0	5,893.0	5,619.0	5,615.3	26.5	11.7	-14.36	153.6	71.0	1,413.5	1,398.3	15.18	93.140		
7,000.0	5,893.0	5,619.0	5,615.3	28.2	11.7	-14.36	153.6	71.0	1,511.6	1,495.6	15.97	94.677		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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	-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	177.522		
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		
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-33.2	33.2	30.8	2.43	13.635		
700.0	700.0	700.0	700.0	1.4	1.4	-90.00	0.0	-33.2	33.2	30.3	2.88	11.510		
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-33.2	33.2	29.9	3.33	9.958		
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-33.2	33.2	29.4	3.78	8.775		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00	0.0	-33.2	33.2	29.0	4.23	7.843		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-90.00	0.0	-33.2	33.2	28.5	4.68	7.090		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.00	0.0	-33.2	33.2	28.1	5.13	6.469		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-90.00	0.0	-33.2	33.2	27.6	5.58	5.948		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-90.00	0.0	-33.2	33.2	27.2	6.03	5.505		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-90.00	0.0	-33.2	33.2	26.7	6.48	5.123 CC, ES		
1,600.0	1,600.0	1,599.4	1,599.4	3.5	3.4	-90.01	0.0	-34.1	34.1	27.2	6.91	4.926		
1,700.0	1,700.0	1,698.8	1,698.7	3.7	3.6	-90.04	0.0	-36.6	36.7	29.3	7.34	4.997		
1,800.0	1,800.0	1,798.0	1,797.9	3.9	3.9	-90.09	-0.1	-40.9	41.0	33.2	7.77	5.280		
1,900.0	1,900.0	1,897.1	1,896.7	4.1	4.1	-90.14	-0.1	-46.9	47.1	38.9	8.20	5.742		
2,000.0	2,000.0	1,996.8	1,996.2	4.4	4.3	-90.18	-0.2	-53.9	54.1	45.4	8.63	6.264		
2,100.0	2,100.0	2,096.5	2,095.7	4.6	4.5	-90.21	-0.2	-60.9	61.1	52.0	9.07	6.735		
2,200.0	2,200.0	2,196.3	2,195.2	4.8	4.7	-90.24	-0.3	-67.9	68.1	58.6	9.51	7.161		
2,300.0	2,300.0	2,296.0	2,294.7	5.0	5.0	-90.26	-0.3	-74.9	75.1	65.1	9.95	7.549		
2,400.0	2,400.0	2,395.8	2,394.2	5.3	5.2	-90.28	-0.4	-81.9	82.1	71.7	10.39	7.902		
2,500.0	2,500.0	2,495.5	2,493.8	5.5	5.4	-90.29	-0.5	-88.9	89.1	78.3	10.83	8.225		
2,600.0	2,600.0	2,595.3	2,593.3	5.7	5.7	-90.30	-0.5	-95.9	96.1	84.8	11.28	8.521		
2,700.0	2,700.0	2,695.1	2,692.8	5.9	5.9	-90.32	-0.6	-102.9	103.1	91.4	11.72	8.794		
2,800.0	2,800.0	2,794.8	2,792.3	6.2	6.2	-90.32	-0.6	-109.8	110.1	97.9	12.17	9.047		
2,900.0	2,900.0	2,894.6	2,891.8	6.4	6.4	-90.33	-0.7	-116.8	117.1	104.5	12.62	9.280		
3,000.0	3,000.0	2,994.3	2,991.3	6.6	6.6	-90.34	-0.7	-123.8	124.1	111.1	13.07	9.497		
3,100.0	3,100.0	3,094.1	3,090.8	6.8	6.9	-90.35	-0.8	-130.8	131.1	117.6	13.52	9.699		
3,200.0	3,200.0	3,193.8	3,190.3	7.1	7.1	-90.35	-0.8	-137.8	138.1	124.2	13.97	9.887		
3,300.0	3,300.0	3,293.6	3,289.8	7.3	7.4	-90.36	-0.9	-144.8	145.1	130.7	14.42	10.063		
3,400.0	3,400.0	3,393.3	3,389.3	7.5	7.6	-90.36	-1.0	-151.8	152.2	137.3	14.88	10.228		
3,500.0	3,500.0	3,493.1	3,488.8	7.7	7.9	-90.37	-1.0	-158.8	159.2	143.8	15.33	10.383		
3,600.0	3,600.0	3,592.8	3,588.4	8.0	8.1	-90.37	-1.1	-165.8	166.2	150.4	15.78	10.528		
3,700.0	3,700.0	3,692.6	3,687.9	8.2	8.4	-90.38	-1.1	-172.7	173.2	156.9	16.24	10.665		
3,800.0	3,800.0	3,792.4	3,787.4	8.4	8.6	-90.38	-1.2	-179.7	180.2	163.5	16.69	10.794		
3,900.0	3,900.0	3,892.1	3,886.9	8.6	8.9	-90.38	-1.2	-186.7	187.2	170.0	17.15	10.916		
4,000.0	4,000.0	3,991.9	3,986.4	8.9	9.1	-90.39	-1.3	-193.7	194.2	176.6	17.60	11.031		
4,100.0	4,100.0	4,091.6	4,085.9	9.1	9.4	-90.39	-1.4	-200.7	201.2	183.1	18.06	11.141		
4,200.0	4,200.0	4,191.4	4,185.4	9.3	9.6	-90.39	-1.4	-207.7	208.2	189.7	18.52	11.244		
4,300.0	4,300.0	4,291.1	4,284.9	9.5	9.9	-90.39	-1.5	-214.7	215.2	196.2	18.97	11.342		
4,400.0	4,400.0	4,390.9	4,384.4	9.8	10.2	-90.40	-1.5	-221.7	222.2	202.8	19.43	11.436		
4,500.0	4,500.0	4,490.6	4,483.9	10.0	10.4	-90.40	-1.6	-228.6	229.2	209.3	19.89	11.525		
4,600.0	4,600.0	4,590.4	4,583.4	10.2	10.7	-90.40	-1.6	-235.6	236.2	215.9	20.35	11.609		
4,700.0	4,700.0	4,690.1	4,683.0	10.4	10.9	-90.40	-1.7	-242.6	243.2	222.4	20.81	11.690		
4,800.0	4,800.0	4,789.9	4,782.5	10.7	11.2	-90.40	-1.8	-249.6	250.2	229.0	21.27	11.767		
4,900.0	4,900.0	4,889.6	4,882.0	10.9	11.4	-90.41	-1.8	-256.6	257.2	235.5	21.72	11.841		
5,000.0	5,000.0	4,989.4	4,981.5	11.1	11.7	-90.41	-1.9	-263.6	264.2	242.1	22.18	11.911		
5,100.0	5,100.0	5,089.2	5,081.0	11.3	11.9	-90.41	-1.9	-270.6	271.3	248.6	22.64	11.979		

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 Federal #12H-1314B
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 Federal #12H-1314B	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							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	5,200.0	5,188.9	5,180.5	11.6	12.2	-90.41	-2.0	-277.6	278.3	255.2	23.11	12.043		
5,300.0	5,300.0	5,288.6	5,280.0	11.8	12.5	-90.41	-2.1	-284.6	285.3	261.7	23.57	12.105		
5,400.0	5,400.0	5,386.8	5,377.2	12.0	12.7	87.59	-12.1	-291.4	292.5	268.8	23.74	12.323		
5,500.0	5,498.7	5,482.2	5,468.3	12.2	12.9	84.25	-39.3	-297.8	300.3	276.2	24.08	12.472		
5,600.0	5,592.8	5,575.4	5,551.1	12.4	13.2	81.26	-81.4	-303.6	308.2	283.8	24.42	12.621		
5,700.0	5,678.8	5,666.9	5,623.8	12.5	13.5	78.70	-136.5	-308.7	315.8	291.0	24.81	12.726		
5,800.0	5,753.5	5,756.9	5,684.9	12.9	13.9	76.60	-202.3	-313.0	322.6	297.3	25.36	12.724		
5,900.0	5,814.2	5,845.8	5,733.3	13.4	14.4	74.97	-276.7	-316.4	328.3	302.2	26.18	12.544		
6,000.0	5,858.6	5,933.9	5,768.1	14.1	15.1	73.84	-357.5	-318.8	332.6	305.2	27.39	12.143		
6,100.0	5,885.2	6,021.5	5,788.8	15.0	15.9	73.19	-442.5	-320.3	335.2	306.1	29.05	11.535		
6,200.0	5,893.0	6,109.9	5,795.0	16.1	16.9	73.04	-530.6	-320.7	335.9	304.8	31.15	10.784		
6,300.0	5,893.0	6,209.9	5,795.0	17.3	18.1	73.05	-630.6	-320.7	336.1	302.5	33.56	10.013		
6,400.0	5,893.0	6,309.9	5,795.0	18.7	19.4	73.05	-730.6	-320.7	336.2	300.0	36.19	9.289		
6,500.0	5,893.0	6,409.9	5,795.0	20.1	20.8	73.06	-830.6	-320.7	336.3	297.3	38.99	8.625		
6,600.0	5,893.0	6,509.9	5,795.0	21.7	22.3	73.06	-930.6	-320.7	336.4	294.5	41.93	8.022		
6,700.0	5,893.0	6,609.9	5,795.0	23.2	23.8	73.07	-1,030.6	-320.7	336.5	291.5	44.99	7.480		
6,800.0	5,893.0	6,709.9	5,795.0	24.8	25.5	73.07	-1,130.6	-320.7	336.6	288.5	48.13	6.993		
6,900.0	5,893.0	6,809.9	5,795.0	26.5	27.1	73.08	-1,230.6	-320.7	336.7	285.4	51.35	6.557		
7,000.0	5,893.0	6,909.9	5,795.0	28.2	28.8	73.09	-1,330.6	-320.7	336.8	282.2	54.63	6.165		
7,100.0	5,893.0	7,009.9	5,795.0	29.9	30.5	73.09	-1,430.6	-320.7	336.9	279.0	57.97	5.813		
7,200.0	5,893.0	7,109.9	5,795.0	31.7	32.2	73.10	-1,530.6	-320.7	337.0	275.7	61.34	5.495		
7,300.0	5,893.0	7,209.9	5,795.0	33.4	34.0	73.10	-1,630.6	-320.7	337.2	272.4	64.75	5.207		
7,400.0	5,893.0	7,309.9	5,795.0	35.2	35.7	73.11	-1,730.6	-320.7	337.3	269.1	68.19	4.946		
7,500.0	5,893.0	7,409.9	5,795.0	37.0	37.5	73.11	-1,830.6	-320.7	337.4	265.7	71.66	4.708		
7,600.0	5,893.0	7,509.9	5,795.0	38.8	39.3	73.12	-1,930.6	-320.7	337.5	262.3	75.15	4.491		
7,700.0	5,893.0	7,609.9	5,795.0	40.7	41.1	73.12	-2,030.6	-320.7	337.6	258.9	78.66	4.292		
7,800.0	5,893.0	7,709.9	5,795.0	42.5	43.0	73.13	-2,130.6	-320.7	337.7	255.5	82.19	4.109		
7,900.0	5,893.0	7,809.9	5,795.0	44.3	44.8	73.14	-2,230.6	-320.7	337.8	252.1	85.73	3.940		
8,000.0	5,893.0	7,909.9	5,795.0	46.2	46.6	73.14	-2,330.6	-320.7	337.9	248.6	89.29	3.785		
8,100.0	5,893.0	8,009.9	5,795.0	48.0	48.5	73.15	-2,430.6	-320.7	338.0	245.2	92.85	3.640		
8,200.0	5,893.0	8,109.9	5,795.0	49.9	50.3	73.15	-2,530.6	-320.7	338.1	241.7	96.43	3.507		
8,300.0	5,893.0	8,209.9	5,795.0	51.7	52.2	73.16	-2,630.6	-320.7	338.3	238.2	100.02	3.382		
8,400.0	5,893.0	8,309.9	5,795.0	53.6	54.0	73.16	-2,730.6	-320.7	338.4	234.7	103.62	3.266		
8,500.0	5,893.0	8,409.9	5,795.0	55.5	55.9	73.17	-2,830.6	-320.7	338.5	231.3	107.22	3.157		
8,600.0	5,893.0	8,509.9	5,795.0	57.3	57.7	73.18	-2,930.6	-320.7	338.6	227.8	110.83	3.055		
8,700.0	5,893.0	8,609.9	5,795.0	59.2	59.6	73.18	-3,030.6	-320.7	338.7	224.2	114.45	2.959		
8,800.0	5,893.0	8,709.9	5,795.0	61.1	61.5	73.19	-3,130.6	-320.7	338.8	220.7	118.07	2.870		
8,900.0	5,893.0	8,809.9	5,795.0	63.0	63.4	73.19	-3,230.6	-320.7	338.9	217.2	121.70	2.785		
9,000.0	5,893.0	8,909.9	5,795.0	64.8	65.2	73.20	-3,330.6	-320.7	339.0	213.7	125.33	2.705		
9,100.0	5,893.0	9,009.9	5,795.0	66.7	67.1	73.20	-3,430.6	-320.7	339.1	210.2	128.97	2.630		
9,200.0	5,893.0	9,109.9	5,795.0	68.6	69.0	73.21	-3,530.6	-320.7	339.2	206.6	132.61	2.558		
9,300.0	5,893.0	9,209.9	5,795.0	70.5	70.9	73.21	-3,630.6	-320.7	339.3	203.1	136.25	2.491		
9,400.0	5,893.0	9,309.9	5,795.0	72.4	72.8	73.22	-3,730.6	-320.7	339.5	199.6	139.90	2.426		
9,500.0	5,893.0	9,409.9	5,795.0	74.3	74.7	73.23	-3,830.6	-320.7	339.6	196.0	143.55	2.366		
9,600.0	5,893.0	9,509.9	5,795.0	76.2	76.6	73.23	-3,930.6	-320.7	339.7	192.5	147.20	2.308		
9,700.0	5,893.0	9,609.9	5,795.0	78.1	78.5	73.24	-4,030.6	-320.7	339.8	188.9	150.86	2.252		
9,800.0	5,893.0	9,709.9	5,795.0	80.0	80.3	73.24	-4,130.6	-320.7	339.9	185.4	154.52	2.200		
9,900.0	5,893.0	9,809.9	5,795.0	81.9	82.2	73.25	-4,230.6	-320.7	340.0	181.8	158.18	2.149		
10,000.0	5,893.0	9,909.9	5,795.0	83.8	84.1	73.25	-4,330.6	-320.7	340.1	178.3	161.85	2.101		
10,100.0	5,893.0	10,009.9	5,795.0	85.7	86.0	73.26	-4,430.6	-320.7	340.2	174.7	165.51	2.056		
10,200.0	5,893.0	10,109.9	5,795.0	87.6	87.9	73.26	-4,530.6	-320.7	340.3	171.2	169.18	2.012		
10,300.0	5,893.0	10,209.9	5,795.0	89.5	89.8	73.27	-4,630.6	-320.7	340.4	167.6	172.85	1.970		

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 Federal #12H-1314B
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 Federal #12H-1314B	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		
10,400.0	5,893.0	10,309.9	5,795.0	91.4	91.7	73.28	-4,730.6	-320.7	340.6	164.0	176.52	1.929		
10,500.0	5,893.0	10,409.9	5,795.0	93.3	93.6	73.28	-4,830.6	-320.7	340.7	160.5	180.20	1.891		
10,600.0	5,893.0	10,509.9	5,795.0	95.2	95.5	73.29	-4,930.6	-320.7	340.8	156.9	183.87	1.853		
10,700.0	5,893.0	10,609.9	5,795.0	97.1	97.4	73.29	-5,030.6	-320.7	340.9	153.3	187.55	1.818		
10,800.0	5,893.0	10,709.9	5,795.0	99.0	99.3	73.30	-5,130.6	-320.7	341.0	149.8	191.23	1.783		
10,900.0	5,893.0	10,809.9	5,795.0	100.9	101.2	73.30	-5,230.6	-320.7	341.1	146.2	194.91	1.750		
11,000.0	5,893.0	10,909.9	5,795.0	102.8	103.1	73.31	-5,330.6	-320.7	341.2	142.6	198.59	1.718		
11,100.0	5,893.0	11,009.9	5,795.0	104.7	105.1	73.31	-5,430.6	-320.7	341.3	139.1	202.27	1.687		
11,200.0	5,893.0	11,109.9	5,795.0	106.6	107.0	73.32	-5,530.6	-320.7	341.4	135.5	205.95	1.658		
11,300.0	5,893.0	11,209.9	5,795.0	108.5	108.9	73.33	-5,630.6	-320.7	341.5	131.9	209.64	1.629		
11,400.0	5,893.0	11,309.9	5,795.0	110.4	110.8	73.33	-5,730.6	-320.7	341.7	128.3	213.32	1.602		
11,500.0	5,893.0	11,409.9	5,795.0	112.3	112.7	73.34	-5,830.6	-320.7	341.8	124.8	217.01	1.575		
11,600.0	5,893.0	11,509.9	5,795.0	114.3	114.6	73.34	-5,930.6	-320.7	341.9	121.2	220.70	1.549		
11,700.0	5,893.0	11,609.9	5,795.0	116.2	116.5	73.35	-6,030.6	-320.7	342.0	117.6	224.38	1.524		
11,800.0	5,893.0	11,709.9	5,795.0	118.1	118.4	73.35	-6,130.6	-320.7	342.1	114.0	228.07	1.500 Level 3		
11,900.0	5,893.0	11,809.9	5,795.0	120.0	120.3	73.36	-6,230.6	-320.7	342.2	110.4	231.76	1.477 Level 3		
12,000.0	5,893.0	11,909.9	5,795.0	121.9	122.2	73.36	-6,330.6	-320.7	342.3	106.9	235.45	1.454 Level 3		
12,100.0	5,893.0	12,009.9	5,795.0	123.8	124.1	73.37	-6,430.6	-320.7	342.4	103.3	239.15	1.432 Level 3		
12,200.0	5,893.0	12,109.9	5,795.0	125.7	126.0	73.38	-6,530.6	-320.7	342.5	99.7	242.84	1.411 Level 3		
12,300.0	5,893.0	12,209.9	5,795.0	127.6	128.0	73.38	-6,630.6	-320.7	342.6	96.1	246.53	1.390 Level 3		
12,400.0	5,893.0	12,309.9	5,795.0	129.5	129.9	73.39	-6,730.6	-320.7	342.8	92.5	250.23	1.370 Level 3		
12,500.0	5,893.0	12,409.9	5,795.0	131.5	131.8	73.39	-6,830.6	-320.7	342.9	88.9	253.92	1.350 Level 3		
12,600.0	5,893.0	12,509.9	5,795.0	133.4	133.7	73.40	-6,930.6	-320.7	343.0	85.4	257.62	1.331 Level 3		
12,700.0	5,893.0	12,609.9	5,795.0	135.3	135.6	73.40	-7,030.6	-320.7	343.1	81.8	261.31	1.313 Level 3		
12,800.0	5,893.0	12,709.9	5,795.0	137.2	137.5	73.41	-7,130.6	-320.7	343.2	78.2	265.01	1.295 Level 3		
12,900.0	5,893.0	12,809.9	5,795.0	139.1	139.4	73.41	-7,230.6	-320.7	343.3	74.6	268.71	1.278 Level 3		
13,000.0	5,893.0	12,909.9	5,795.0	141.0	141.3	73.42	-7,330.6	-320.7	343.4	71.0	272.40	1.261 Level 3		
13,100.0	5,893.0	13,009.9	5,795.0	142.9	143.3	73.42	-7,430.6	-320.7	343.5	67.4	276.10	1.244 Level 2		
13,200.0	5,893.0	13,109.9	5,795.0	144.9	145.2	73.43	-7,530.6	-320.7	343.6	63.8	279.80	1.228 Level 2		
13,300.0	5,893.0	13,209.9	5,795.0	146.8	147.1	73.44	-7,630.6	-320.7	343.7	60.2	283.50	1.212 Level 2		
13,400.0	5,893.0	13,309.9	5,795.0	148.7	149.0	73.44	-7,730.6	-320.7	343.9	56.7	287.20	1.197 Level 2		
13,500.0	5,893.0	13,409.9	5,795.0	150.6	150.9	73.45	-7,830.6	-320.7	344.0	53.1	290.90	1.182 Level 2		
13,600.0	5,893.0	13,509.9	5,795.0	152.5	152.8	73.45	-7,930.6	-320.7	344.1	49.5	294.60	1.168 Level 2		
13,641.6	5,893.0	13,551.5	5,795.0	153.3	153.6	73.45	-7,972.2	-320.7	344.1	48.0	296.14	1.162 Level 2, SF		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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	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	32.7	0.19	176.043		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	32.9	32.9	32.3	0.64	51.719		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	32.9	32.9	31.8	1.09	30.312		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	32.9	32.9	31.4	1.54	21.438		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	32.9	32.9	30.9	1.99	16.584		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	32.9	32.9	30.5	2.43	13.522		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	32.9	32.9	30.0	2.88	11.414		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	32.9	32.9	29.6	3.33	9.875		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	32.9	32.9	29.1	3.78	8.702		
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	7.778		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	90.00	0.0	32.9	32.9	28.2	4.68	7.031		
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	6.415 CC, ES		
1,300.0	1,300.0	1,299.4	1,299.4	2.8	2.8	90.00	0.0	33.8	33.8	28.2	5.57	6.070		
1,400.0	1,400.0	1,398.8	1,398.7	3.0	3.0	90.00	0.0	36.4	36.4	30.4	5.99	6.074		
1,500.0	1,500.0	1,498.0	1,497.9	3.2	3.2	90.01	0.0	40.7	40.7	34.3	6.42	6.344		
1,600.0	1,600.0	1,597.1	1,596.8	3.5	3.4	90.01	0.0	46.7	46.8	39.9	6.85	6.828		
1,700.0	1,700.0	1,696.8	1,696.3	3.7	3.6	90.02	0.0	53.6	53.7	46.4	7.29	7.372		
1,800.0	1,800.0	1,796.6	1,795.8	3.9	3.8	90.02	0.0	60.5	60.7	53.0	7.73	7.853		
1,900.0	1,900.0	1,896.3	1,895.3	4.1	4.1	90.02	0.0	67.5	67.6	59.5	8.17	8.280		
2,000.0	2,000.0	1,996.1	1,994.8	4.4	4.3	90.03	0.0	74.4	74.6	66.0	8.61	8.661		
2,100.0	2,100.0	2,095.9	2,094.3	4.6	4.5	90.03	0.0	81.3	81.5	72.5	9.05	9.004		
2,200.0	2,200.0	2,195.6	2,193.9	4.8	4.8	90.03	0.0	88.2	88.5	79.0	9.50	9.313		
2,300.0	2,300.0	2,295.4	2,293.4	5.0	5.0	90.03	-0.1	95.2	95.4	85.5	9.95	9.593		
2,400.0	2,400.0	2,395.1	2,392.9	5.3	5.3	90.03	-0.1	102.1	102.4	92.0	10.39	9.848		
2,500.0	2,500.0	2,494.9	2,492.4	5.5	5.5	90.03	-0.1	109.0	109.3	98.5	10.84	10.080		
2,600.0	2,600.0	2,594.7	2,591.9	5.7	5.8	90.03	-0.1	116.0	116.2	105.0	11.29	10.294		
2,700.0	2,700.0	2,694.4	2,691.4	5.9	6.0	90.03	-0.1	122.9	123.2	111.4	11.74	10.490		
2,800.0	2,800.0	2,794.2	2,791.0	6.2	6.2	90.03	-0.1	129.8	130.1	117.9	12.20	10.671		
2,900.0	2,900.0	2,893.9	2,890.5	6.4	6.5	90.04	-0.1	136.8	137.1	124.4	12.65	10.839		
3,000.0	3,000.0	2,993.7	2,990.0	6.6	6.7	90.04	-0.1	143.7	144.0	130.9	13.10	10.994		
3,100.0	3,100.0	3,093.4	3,089.5	6.8	7.0	90.04	-0.1	150.6	151.0	137.4	13.55	11.139		
3,200.0	3,200.0	3,193.2	3,189.0	7.1	7.2	90.04	-0.1	157.5	157.9	143.9	14.01	11.273		
3,300.0	3,300.0	3,293.0	3,288.5	7.3	7.5	90.04	-0.1	164.5	164.9	150.4	14.46	11.399		
3,400.0	3,400.0	3,392.7	3,388.1	7.5	7.7	90.04	-0.1	171.4	171.8	156.9	14.92	11.517		
3,500.0	3,500.0	3,492.5	3,487.6	7.7	8.0	90.04	-0.1	178.3	178.8	163.4	15.37	11.627		
3,600.0	3,600.0	3,592.2	3,587.1	8.0	8.3	90.04	-0.1	185.3	185.7	169.9	15.83	11.731		
3,700.0	3,700.0	3,692.0	3,686.6	8.2	8.5	90.04	-0.1	192.2	192.7	176.4	16.29	11.829		
3,800.0	3,800.0	3,791.8	3,786.1	8.4	8.8	90.04	-0.1	199.1	199.6	182.9	16.74	11.921		
3,900.0	3,900.0	3,891.5	3,885.7	8.6	9.0	90.04	-0.1	206.0	206.5	189.3	17.20	12.008		
4,000.0	4,000.0	3,991.3	3,985.2	8.9	9.3	90.04	-0.1	213.0	213.5	195.8	17.66	12.090		
4,100.0	4,100.0	4,091.0	4,084.7	9.1	9.5	90.04	-0.2	219.9	220.4	202.3	18.12	12.167		
4,200.0	4,200.0	4,190.8	4,184.2	9.3	9.8	90.04	-0.2	226.8	227.4	208.8	18.58	12.241		
4,300.0	4,300.0	4,290.5	4,283.7	9.5	10.0	90.04	-0.2	233.8	234.3	215.3	19.03	12.311		
4,400.0	4,400.0	4,390.3	4,383.2	9.8	10.3	90.04	-0.2	240.7	241.3	221.8	19.49	12.377		
4,500.0	4,500.0	4,490.1	4,482.8	10.0	10.5	90.04	-0.2	247.6	248.2	228.3	19.95	12.441		
4,600.0	4,600.0	4,589.8	4,582.3	10.2	10.8	90.04	-0.2	254.6	255.2	234.8	20.41	12.501		
4,700.0	4,700.0	4,689.6	4,681.8	10.4	11.1	90.04	-0.2	261.5	262.1	241.2	20.87	12.558		
4,800.0	4,800.0	4,789.3	4,781.3	10.7	11.3	90.04	-0.2	268.4	269.1	247.7	21.33	12.613		
4,900.0	4,900.0	4,889.1	4,880.8	10.9	11.6	90.04	-0.2	275.3	276.0	254.2	21.79	12.665		
5,000.0	5,000.0	4,988.9	4,980.3	11.1	11.8	90.04	-0.2	282.3	283.0	260.7	22.25	12.715		
5,100.0	5,100.0	5,088.6	5,079.9	11.3	12.1	90.04	-0.2	289.2	289.9	267.2	22.72	12.762		

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 Federal #12H-1314B
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 Federal #12H-1314B	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				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)				
5,200.0	5,200.0	5,188.4	5,179.4	11.6	12.3	90.04	-0.2	296.1	296.8	273.7	23.18	12.808		
5,300.0	5,300.0	5,288.1	5,278.9	11.8	12.6	90.04	-0.2	303.1	303.8	280.2	23.64	12.852		
5,400.0	5,400.0	5,386.7	5,376.5	12.0	12.8	-87.96	-10.2	309.9	310.9	287.1	23.80	13.060		
5,500.0	5,498.7	5,482.4	5,468.0	12.2	13.1	-84.78	-37.3	316.2	318.4	294.3	24.15	13.186		
5,600.0	5,592.8	5,576.0	5,551.2	12.4	13.3	-81.93	-79.6	322.0	326.1	301.6	24.50	13.307		
5,700.0	5,678.8	5,667.8	5,624.1	12.5	13.7	-79.45	-135.0	327.1	333.4	308.5	24.92	13.378		
5,800.0	5,753.5	5,758.2	5,685.4	12.9	14.1	-77.41	-201.1	331.4	339.9	314.4	25.49	13.333		
5,900.0	5,814.2	5,850.0	5,735.0	13.4	14.6	-75.79	-278.1	334.8	345.3	319.0	26.36	13.099		
6,000.0	5,858.6	5,935.7	5,768.5	14.1	15.3	-74.69	-356.9	337.1	349.3	321.7	27.60	12.655		
6,100.0	5,885.2	6,023.5	5,789.0	15.0	16.1	-74.03	-442.1	338.6	351.7	322.4	29.30	12.003		
6,200.0	5,893.0	6,112.3	5,795.0	16.1	17.1	-73.85	-530.6	339.0	352.3	320.9	31.42	11.213		
6,300.0	5,893.0	6,212.3	5,795.0	17.3	18.3	-73.84	-630.6	339.0	352.2	318.3	33.84	10.409		
6,400.0	5,893.0	6,312.3	5,795.0	18.7	19.6	-73.84	-730.6	339.0	352.1	315.6	36.47	9.653		
6,500.0	5,893.0	6,412.3	5,795.0	20.1	21.0	-73.83	-830.6	339.0	352.0	312.7	39.28	8.959		
6,600.0	5,893.0	6,512.3	5,795.0	21.7	22.5	-73.83	-930.6	339.0	351.9	309.6	42.23	8.331		
6,700.0	5,893.0	6,612.3	5,795.0	23.2	24.0	-73.82	-1,030.6	339.0	351.7	306.4	45.30	7.765		
6,800.0	5,893.0	6,712.3	5,795.0	24.8	25.6	-73.82	-1,130.6	339.0	351.6	303.2	48.45	7.257		
6,900.0	5,893.0	6,812.3	5,795.0	26.5	27.3	-73.81	-1,230.6	339.0	351.5	299.8	51.68	6.802		
7,000.0	5,893.0	6,912.3	5,795.0	28.2	29.0	-73.81	-1,330.6	339.0	351.4	296.4	54.97	6.393		
7,100.0	5,893.0	7,012.3	5,795.0	29.9	30.7	-73.80	-1,430.6	339.0	351.3	293.0	58.31	6.024		
7,200.0	5,893.0	7,112.3	5,795.0	31.7	32.4	-73.80	-1,530.6	339.0	351.2	289.5	61.70	5.692		
7,300.0	5,893.0	7,212.3	5,795.0	33.4	34.1	-73.79	-1,630.6	339.0	351.1	286.0	65.11	5.392		
7,400.0	5,893.0	7,312.3	5,795.0	35.2	35.9	-73.79	-1,730.6	339.0	351.0	282.4	68.56	5.119		
7,500.0	5,893.0	7,412.3	5,795.0	37.0	37.7	-73.78	-1,830.6	339.0	350.9	278.8	72.04	4.870		
7,600.0	5,893.0	7,512.3	5,795.0	38.8	39.5	-73.78	-1,930.6	339.0	350.8	275.2	75.54	4.643		
7,700.0	5,893.0	7,612.3	5,795.0	40.7	41.3	-73.77	-2,030.6	339.0	350.6	271.6	79.05	4.435		
7,800.0	5,893.0	7,712.3	5,795.0	42.5	43.1	-73.77	-2,130.6	339.0	350.5	267.9	82.59	4.244		
7,900.0	5,893.0	7,812.3	5,795.0	44.3	44.9	-73.76	-2,230.6	339.0	350.4	264.3	86.14	4.068		
8,000.0	5,893.0	7,912.3	5,795.0	46.2	46.8	-73.75	-2,330.6	339.0	350.3	260.6	89.70	3.905		
8,100.0	5,893.0	8,012.3	5,795.0	48.0	48.6	-73.75	-2,430.6	339.0	350.2	256.9	93.27	3.755		
8,200.0	5,893.0	8,112.3	5,795.0	49.9	50.5	-73.74	-2,530.6	339.0	350.1	253.2	96.86	3.614		
8,300.0	5,893.0	8,212.3	5,795.0	51.7	52.3	-73.74	-2,630.6	339.0	350.0	249.5	100.45	3.484		
8,400.0	5,893.0	8,312.3	5,795.0	53.6	54.2	-73.73	-2,730.6	339.0	349.9	245.8	104.05	3.362		
8,500.0	5,893.0	8,412.3	5,795.0	55.5	56.0	-73.73	-2,830.6	339.0	349.8	242.1	107.66	3.249		
8,600.0	5,893.0	8,512.3	5,795.0	57.3	57.9	-73.72	-2,930.6	339.0	349.7	238.4	111.28	3.142		
8,700.0	5,893.0	8,612.3	5,795.0	59.2	59.8	-73.72	-3,030.6	339.0	349.5	234.6	114.90	3.042		
8,800.0	5,893.0	8,712.3	5,795.0	61.1	61.6	-73.71	-3,130.6	339.0	349.4	230.9	118.52	2.948		
8,900.0	5,893.0	8,812.3	5,795.0	63.0	63.5	-73.71	-3,230.6	339.0	349.3	227.2	122.15	2.860		
9,000.0	5,893.0	8,912.3	5,795.0	64.8	65.4	-73.70	-3,330.6	339.0	349.2	223.4	125.79	2.776		
9,100.0	5,893.0	9,012.3	5,795.0	66.7	67.3	-73.70	-3,430.6	339.0	349.1	219.7	129.43	2.697		
9,200.0	5,893.0	9,112.3	5,795.0	68.6	69.1	-73.69	-3,530.6	339.0	349.0	215.9	133.07	2.623		
9,300.0	5,893.0	9,212.3	5,795.0	70.5	71.0	-73.69	-3,630.6	339.0	348.9	212.2	136.72	2.552		
9,400.0	5,893.0	9,312.3	5,795.0	72.4	72.9	-73.68	-3,730.6	339.0	348.8	208.4	140.37	2.485		
9,500.0	5,893.0	9,412.3	5,795.0	74.3	74.8	-73.68	-3,830.6	339.0	348.7	204.6	144.02	2.421		
9,600.0	5,893.0	9,512.3	5,795.0	76.2	76.7	-73.67	-3,930.6	339.0	348.6	200.9	147.68	2.360		
9,700.0	5,893.0	9,612.3	5,795.0	78.1	78.6	-73.67	-4,030.6	339.0	348.4	197.1	151.34	2.302		
9,800.0	5,893.0	9,712.3	5,795.0	80.0	80.5	-73.66	-4,130.6	339.0	348.3	193.3	155.00	2.247		
9,900.0	5,893.0	9,812.3	5,795.0	81.9	82.4	-73.65	-4,230.6	339.0	348.2	189.6	158.66	2.195		
10,000.0	5,893.0	9,912.3	5,795.0	83.8	84.3	-73.65	-4,330.6	339.0	348.1	185.8	162.32	2.145		
10,100.0	5,893.0	10,012.3	5,795.0	85.7	86.2	-73.64	-4,430.6	339.0	348.0	182.0	165.99	2.097		
10,200.0	5,893.0	10,112.3	5,795.0	87.6	88.1	-73.64	-4,530.6	339.0	347.9	178.2	169.66	2.051		
10,300.0	5,893.0	10,212.3	5,795.0	89.5	90.0	-73.63	-4,630.6	339.0	347.8	174.5	173.32	2.007		

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 Federal #12H-1314B
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 Federal #12H-1314B	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-ISCWSA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	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)						
10,400.0	5,893.0	10,312.3	5,795.0	91.4	91.9	-73.63	-4,730.6	339.0	347.7	170.7	177.00	1.964		
10,500.0	5,893.0	10,412.3	5,795.0	93.3	93.8	-73.62	-4,830.6	339.0	347.6	166.9	180.67	1.924		
10,600.0	5,893.0	10,512.3	5,795.0	95.2	95.7	-73.62	-4,930.6	339.0	347.5	163.1	184.34	1.885		
10,700.0	5,893.0	10,612.3	5,795.0	97.1	97.6	-73.61	-5,030.6	339.0	347.3	159.3	188.01	1.847		
10,800.0	5,893.0	10,712.3	5,795.0	99.0	99.5	-73.61	-5,130.6	339.0	347.2	155.5	191.69	1.811		
10,900.0	5,893.0	10,812.3	5,795.0	100.9	101.4	-73.60	-5,230.6	339.0	347.1	151.8	195.37	1.777		
11,000.0	5,893.0	10,912.3	5,795.0	102.8	103.3	-73.60	-5,330.6	339.0	347.0	148.0	199.04	1.743		
11,100.0	5,893.0	11,012.3	5,795.0	104.7	105.2	-73.59	-5,430.6	339.0	346.9	144.2	202.72	1.711		
11,200.0	5,893.0	11,112.3	5,795.0	106.6	107.1	-73.59	-5,530.6	339.0	346.8	140.4	206.40	1.680		
11,300.0	5,893.0	11,212.3	5,795.0	108.5	109.0	-73.58	-5,630.6	339.0	346.7	136.6	210.08	1.650		
11,400.0	5,893.0	11,312.3	5,795.0	110.4	110.9	-73.57	-5,730.6	339.0	346.6	132.8	213.76	1.621		
11,500.0	5,893.0	11,412.3	5,795.0	112.3	112.8	-73.57	-5,830.6	339.0	346.5	129.0	217.44	1.593		
11,600.0	5,893.0	11,512.3	5,795.0	114.3	114.7	-73.56	-5,930.6	339.0	346.4	125.2	221.13	1.566		
11,700.0	5,893.0	11,612.3	5,795.0	116.2	116.6	-73.56	-6,030.6	339.0	346.2	121.4	224.81	1.540		
11,800.0	5,893.0	11,712.3	5,795.0	118.1	118.5	-73.55	-6,130.6	339.0	346.1	117.6	228.49	1.515		
11,900.0	5,893.0	11,812.3	5,795.0	120.0	120.4	-73.55	-6,230.6	339.0	346.0	113.9	232.17	1.490 Level 3		
12,000.0	5,893.0	11,912.3	5,795.0	121.9	122.4	-73.54	-6,330.6	339.0	345.9	110.1	235.86	1.467 Level 3		
12,100.0	5,893.0	12,012.3	5,795.0	123.8	124.3	-73.54	-6,430.6	339.0	345.8	106.3	239.54	1.444 Level 3		
12,200.0	5,893.0	12,112.3	5,795.0	125.7	126.2	-73.53	-6,530.6	339.0	345.7	102.5	243.23	1.421 Level 3		
12,300.0	5,893.0	12,212.3	5,795.0	127.6	128.1	-73.53	-6,630.6	339.0	345.6	98.7	246.91	1.400 Level 3		
12,400.0	5,893.0	12,312.3	5,795.0	129.5	130.0	-73.52	-6,730.6	339.0	345.5	94.9	250.60	1.379 Level 3		
12,500.0	5,893.0	12,412.3	5,795.0	131.5	131.9	-73.52	-6,830.6	339.0	345.4	91.1	254.29	1.358 Level 3		
12,600.0	5,893.0	12,512.3	5,795.0	133.4	133.8	-73.51	-6,930.6	339.0	345.3	87.3	257.97	1.338 Level 3		
12,700.0	5,893.0	12,612.3	5,795.0	135.3	135.7	-73.50	-7,030.6	339.0	345.2	83.5	261.66	1.319 Level 3		
12,800.0	5,893.0	12,712.3	5,795.0	137.2	137.6	-73.50	-7,130.6	339.0	345.0	79.7	265.35	1.300 Level 3		
12,900.0	5,893.0	12,812.3	5,795.0	139.1	139.6	-73.49	-7,230.6	339.0	344.9	75.9	269.03	1.282 Level 3		
13,000.0	5,893.0	12,912.3	5,795.0	141.0	141.5	-73.49	-7,330.6	339.0	344.8	72.1	272.72	1.264 Level 3		
13,100.0	5,893.0	13,012.3	5,795.0	142.9	143.4	-73.48	-7,430.6	339.0	344.7	68.3	276.41	1.247 Level 2		
13,200.0	5,893.0	13,112.3	5,795.0	144.9	145.3	-73.48	-7,530.6	339.0	344.6	64.5	280.10	1.230 Level 2		
13,300.0	5,893.0	13,212.3	5,795.0	146.8	147.2	-73.47	-7,630.6	339.0	344.5	60.7	283.79	1.214 Level 2		
13,400.0	5,893.0	13,312.3	5,795.0	148.7	149.1	-73.47	-7,730.6	339.0	344.4	56.9	287.47	1.198 Level 2		
13,500.0	5,893.0	13,412.3	5,795.0	150.6	151.0	-73.46	-7,830.6	339.0	344.3	53.1	291.16	1.182 Level 2		
13,600.0	5,893.0	13,512.3	5,795.0	152.5	152.9	-73.46	-7,930.6	339.0	344.2	49.3	294.85	1.167 Level 2		
13,633.5	5,893.0	13,545.7	5,795.0	153.2	153.6	-73.45	-7,964.0	339.0	344.1	48.0	296.09	1.162 Level 2		
13,641.6	5,893.0	13,552.8	5,795.0	153.3	153.7	-73.45	-7,971.1	339.0	344.1	47.8	296.37	1.161 Level 2, SF		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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-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		
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	353.565			
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	89.99	0.0	67.0	67.0	64.6	2.42	27.689			
700.0	700.0	697.6	697.6	1.4	1.4	90.00	0.0	69.5	69.6	66.7	2.85	24.433			
800.0	800.0	796.3	796.2	1.7	1.6	90.02	0.0	73.8	73.9	70.6	3.28	22.511			
900.0	900.0	894.8	894.5	1.9	1.8	90.05	-0.1	79.7	79.9	76.2	3.72	21.473			
1,000.0	1,000.0	993.1	992.5	2.1	2.1	90.07	-0.1	87.3	87.6	83.5	4.16	21.047			
1,100.0	1,100.0	1,091.0	1,090.0	2.3	2.3	90.10	-0.2	96.6	97.1	92.5	4.61	21.058			
1,200.0	1,200.0	1,190.4	1,188.8	2.6	2.6	90.12	-0.2	106.9	107.5	102.4	5.06	21.240			
1,300.0	1,300.0	1,289.8	1,287.7	2.8	2.9	90.14	-0.3	117.3	117.9	112.4	5.51	21.392			
1,400.0	1,400.0	1,389.3	1,386.6	3.0	3.1	90.16	-0.4	127.7	128.4	122.4	5.97	21.513			
1,500.0	1,500.0	1,488.7	1,485.5	3.2	3.4	90.17	-0.4	138.0	138.8	132.4	6.42	21.612			
1,600.0	1,600.0	1,588.2	1,584.5	3.5	3.7	90.19	-0.5	148.4	149.2	142.3	6.88	21.693			
1,700.0	1,700.0	1,687.7	1,683.4	3.7	4.0	90.20	-0.5	158.8	159.6	152.3	7.34	21.761			
1,800.0	1,800.0	1,787.1	1,782.3	3.9	4.3	90.21	-0.6	169.1	170.0	162.2	7.79	21.818			
1,900.0	1,900.0	1,886.6	1,881.2	4.1	4.6	90.21	-0.7	179.5	180.5	172.2	8.25	21.867			
2,000.0	2,000.0	1,986.0	1,980.1	4.4	4.8	90.22	-0.7	189.8	190.9	182.2	8.71	21.908			
2,100.0	2,100.0	2,085.5	2,079.0	4.6	5.1	90.23	-0.8	200.2	201.3	192.1	9.17	21.943			
2,200.0	2,200.0	2,184.9	2,177.9	4.8	5.4	90.23	-0.9	210.6	211.7	202.1	9.64	21.974			
2,300.0	2,300.0	2,284.4	2,276.8	5.0	5.7	90.24	-0.9	220.9	222.2	212.1	10.10	22.001			
2,400.0	2,400.0	2,383.8	2,375.8	5.3	6.0	90.24	-1.0	231.3	232.6	222.0	10.56	22.024			
2,500.0	2,500.0	2,483.3	2,474.7	5.5	6.3	90.25	-1.0	241.7	243.0	232.0	11.02	22.044			
2,600.0	2,600.0	2,582.8	2,573.6	5.7	6.6	90.25	-1.1	252.0	253.4	241.9	11.49	22.062			
2,700.0	2,700.0	2,682.2	2,672.5	5.9	6.9	90.26	-1.2	262.4	263.8	251.9	11.95	22.077			
2,800.0	2,800.0	2,781.7	2,771.4	6.2	7.2	90.26	-1.2	272.8	274.3	261.8	12.42	22.090			
2,900.0	2,900.0	2,881.1	2,870.3	6.4	7.5	90.26	-1.3	283.1	284.7	271.8	12.88	22.102			
3,000.0	3,000.0	2,980.6	2,969.2	6.6	7.8	90.27	-1.4	293.5	295.1	281.8	13.35	22.112			
3,100.0	3,100.0	3,080.0	3,068.2	6.8	8.1	90.27	-1.4	303.9	305.5	291.7	13.81	22.121			
3,200.0	3,200.0	3,179.5	3,167.1	7.1	8.4	90.27	-1.5	314.2	316.0	301.7	14.28	22.129			
3,300.0	3,300.0	3,278.9	3,266.0	7.3	8.7	90.27	-1.6	324.6	326.4	311.6	14.74	22.136			
3,400.0	3,400.0	3,378.4	3,364.9	7.5	8.9	90.28	-1.6	335.0	336.8	321.6	15.21	22.142			
3,500.0	3,500.0	3,477.9	3,463.8	7.7	9.2	90.28	-1.7	345.3	347.2	331.5	15.68	22.147			
3,600.0	3,600.0	3,577.3	3,562.7	8.0	9.5	90.28	-1.7	355.7	357.6	341.5	16.15	22.151			
3,700.0	3,700.0	3,676.8	3,661.6	8.2	9.8	90.28	-1.8	366.1	368.1	351.4	16.61	22.154			
3,800.0	3,800.0	3,776.2	3,760.6	8.4	10.1	90.28	-1.9	376.4	378.5	361.4	17.08	22.157			
3,900.0	3,900.0	3,875.7	3,859.5	8.6	10.4	90.29	-1.9	386.8	388.9	371.4	17.55	22.159			
4,000.0	4,000.0	3,975.1	3,958.4	8.9	10.7	90.29	-2.0	397.2	399.3	381.3	18.02	22.161			
4,100.0	4,100.0	4,074.6	4,057.3	9.1	11.0	90.29	-2.1	407.5	409.8	391.3	18.49	22.163			
4,200.0	4,200.0	4,174.0	4,156.2	9.3	11.3	90.29	-2.1	417.9	420.2	401.2	18.96	22.163			
4,300.0	4,300.0	4,273.5	4,255.1	9.5	11.6	90.29	-2.2	428.2	430.6	411.2	19.43	22.164			
4,400.0	4,400.0	4,373.0	4,354.0	9.8	11.9	90.29	-2.2	438.6	441.0	421.1	19.90	22.164			
4,500.0	4,500.0	4,472.4	4,453.0	10.0	12.2	90.29	-2.3	449.0	451.4	431.1	20.37	22.164			
4,600.0	4,600.0	4,571.9	4,551.9	10.2	12.5	90.30	-2.4	459.3	461.9	441.0	20.84	22.163			
4,700.0	4,700.0	4,671.3	4,650.8	10.4	12.8	90.30	-2.4	469.7	472.3	451.0	21.31	22.162			
4,800.0	4,800.0	4,770.8	4,749.7	10.7	13.1	90.30	-2.5	480.1	482.7	460.9	21.78	22.161			
4,900.0	4,900.0	4,870.2	4,848.6	10.9	13.4	90.30	-2.6	490.4	493.1	470.9	22.25	22.160			
5,000.0	5,000.0	4,969.7	4,947.5	11.1	13.7	90.30	-2.6	500.8	503.6	480.8	22.73	22.158			
5,100.0	5,100.0	5,069.1	5,046.4	11.3	14.0	90.30	-2.7	511.2	514.0	490.8	23.20	22.156			

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 Federal #12H-1314B
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 Federal #12H-1314B	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-ISCWSA 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)	
5,200.0	5,200.0	5,168.6	5,145.3	11.6	14.3	90.30	-2.7	521.5	524.4	500.7	23.67	22.154		
5,300.0	5,300.0	5,268.1	5,244.3	11.8	14.6	90.30	-2.8	531.9	534.8	510.7	24.14	22.152		
5,400.0	5,400.0	5,367.5	5,343.2	12.0	14.9	-89.39	-2.9	542.3	545.2	521.0	24.22	22.516		
5,500.0	5,498.7	5,466.3	5,441.3	12.2	15.2	-89.34	-7.1	552.6	555.6	531.0	24.60	22.589		
5,600.0	5,592.8	5,567.0	5,538.7	12.4	15.4	-89.42	-29.5	563.0	565.9	540.9	24.98	22.651		
5,700.0	5,678.8	5,670.1	5,632.2	12.5	15.8	-89.50	-71.4	573.1	575.6	550.2	25.46	22.607		
5,800.0	5,753.5	5,775.8	5,717.5	12.9	16.1	-89.60	-132.7	582.6	584.5	558.3	26.16	22.346		
5,900.0	5,814.2	5,883.9	5,790.3	13.4	16.6	-89.71	-212.0	590.9	592.1	564.9	27.19	21.776		
6,000.0	5,858.6	5,994.3	5,846.1	14.1	17.3	-89.82	-306.8	597.6	598.0	569.4	28.65	20.871		
6,100.0	5,885.2	6,106.5	5,881.3	15.0	18.1	-89.92	-413.0	602.2	602.0	571.4	30.58	19.688		
6,200.0	5,893.0	6,219.7	5,893.0	16.1	19.2	-90.00	-525.3	604.4	603.9	571.0	32.89	18.361		
6,300.0	5,893.0	6,319.7	5,893.0	17.3	20.2	-90.00	-625.3	605.3	604.6	569.3	35.35	17.104		
6,400.0	5,893.0	6,419.7	5,893.0	18.7	21.4	-90.00	-725.3	606.2	605.4	567.3	38.03	15.917		
6,500.0	5,893.0	6,519.7	5,893.0	20.1	22.7	-90.00	-825.3	607.1	606.1	565.2	40.90	14.819		
6,600.0	5,893.0	6,619.7	5,893.0	21.7	24.1	-90.00	-925.3	607.9	606.9	563.0	43.92	13.817		
6,700.0	5,893.0	6,719.7	5,893.0	23.2	25.6	-90.00	-1,025.3	608.8	607.6	560.6	47.06	12.911		
6,800.0	5,893.0	6,819.7	5,893.0	24.8	27.1	-90.00	-1,125.2	609.7	608.4	558.1	50.30	12.095		
6,900.0	5,893.0	6,919.7	5,893.0	26.5	28.7	-90.00	-1,225.2	610.5	609.2	555.5	53.62	11.360		
7,000.0	5,893.0	7,019.7	5,893.0	28.2	30.3	-90.00	-1,325.2	611.4	609.9	552.9	57.01	10.699		
7,100.0	5,893.0	7,119.6	5,893.0	29.9	31.9	-90.00	-1,425.2	612.3	610.7	550.2	60.45	10.103		
7,200.0	5,893.0	7,219.6	5,893.0	31.7	33.6	-90.00	-1,525.2	613.2	611.4	547.5	63.93	9.564		
7,300.0	5,893.0	7,319.6	5,893.0	33.4	35.3	-90.00	-1,625.2	614.0	612.2	544.7	67.46	9.075		
7,400.0	5,893.0	7,419.6	5,893.0	35.2	37.0	-90.00	-1,725.2	614.9	613.0	541.9	71.02	8.631		
7,500.0	5,893.0	7,519.6	5,893.0	37.0	38.7	-90.00	-1,825.2	615.8	613.7	539.1	74.61	8.226		
7,600.0	5,893.0	7,619.6	5,893.0	38.8	40.5	-90.00	-1,925.2	616.7	614.5	536.3	78.22	7.856		
7,700.0	5,893.0	7,719.6	5,893.0	40.7	42.3	-90.00	-2,025.2	617.5	615.2	533.4	81.85	7.516		
7,800.0	5,893.0	7,819.6	5,893.0	42.5	44.0	-90.00	-2,125.2	618.4	616.0	530.5	85.50	7.204		
7,900.0	5,893.0	7,919.6	5,893.0	44.3	45.8	-90.00	-2,225.2	619.3	616.7	527.6	89.17	6.916		
8,000.0	5,893.0	8,019.6	5,893.0	46.2	47.6	-90.00	-2,325.2	620.1	617.5	524.6	92.85	6.650		
8,100.0	5,893.0	8,119.6	5,893.0	48.0	49.5	-90.00	-2,425.2	621.0	618.3	521.7	96.55	6.404		
8,200.0	5,893.0	8,219.6	5,893.0	49.9	51.3	-90.00	-2,525.2	621.9	619.0	518.8	100.25	6.174		
8,300.0	5,893.0	8,319.6	5,893.0	51.7	53.1	-90.00	-2,625.1	622.8	619.8	515.8	103.97	5.961		
8,400.0	5,893.0	8,419.6	5,893.0	53.6	54.9	-90.00	-2,725.1	623.6	620.5	512.8	107.70	5.762		
8,500.0	5,893.0	8,519.6	5,893.0	55.5	56.8	-90.00	-2,825.1	624.5	621.3	509.9	111.43	5.576		
8,600.0	5,893.0	8,619.6	5,893.0	57.3	58.6	-90.00	-2,925.1	625.4	622.1	506.9	115.17	5.401		
8,700.0	5,893.0	8,719.6	5,893.0	59.2	60.5	-90.00	-3,025.1	626.3	622.8	503.9	118.92	5.237		
8,800.0	5,893.0	8,819.6	5,893.0	61.1	62.3	-90.00	-3,125.1	627.1	623.6	500.9	122.67	5.083		
8,900.0	5,893.0	8,919.6	5,893.0	63.0	64.2	-90.00	-3,225.1	628.0	624.3	497.9	126.43	4.938		
9,000.0	5,893.0	9,019.6	5,893.0	64.8	66.1	-90.00	-3,325.1	628.9	625.1	494.9	130.20	4.801		
9,100.0	5,893.0	9,119.6	5,893.0	66.7	67.9	-90.00	-3,425.1	629.8	625.8	491.9	133.97	4.672		
9,200.0	5,893.0	9,219.6	5,893.0	68.6	69.8	-90.00	-3,525.1	630.6	626.6	488.9	137.74	4.549		
9,300.0	5,893.0	9,319.6	5,893.0	70.5	71.7	-90.00	-3,625.1	631.5	627.4	485.8	141.52	4.433		
9,400.0	5,893.0	9,419.6	5,893.0	72.4	73.5	-90.00	-3,725.1	632.4	628.1	482.8	145.30	4.323		
9,500.0	5,893.0	9,519.6	5,893.0	74.3	75.4	-90.00	-3,825.1	633.2	628.9	479.8	149.08	4.218		
9,600.0	5,893.0	9,619.6	5,893.0	76.2	77.3	-90.00	-3,925.1	634.1	629.6	476.8	152.87	4.119		
9,700.0	5,893.0	9,719.6	5,893.0	78.1	79.2	-90.00	-4,025.1	635.0	630.4	473.7	156.66	4.024		
9,800.0	5,893.0	9,819.6	5,893.0	80.0	81.1	-90.00	-4,125.0	635.9	631.2	470.7	160.45	3.934		
9,900.0	5,893.0	9,919.6	5,893.0	81.9	83.0	-90.00	-4,225.0	636.7	631.9	467.7	164.25	3.847		
10,000.0	5,893.0	10,019.6	5,893.0	83.8	84.8	-90.00	-4,325.0	637.6	632.7	464.6	168.04	3.765		
10,100.0	5,893.0	10,119.6	5,893.0	85.7	86.7	-90.00	-4,425.0	638.5	633.4	461.6	171.84	3.686		
10,200.0	5,893.0	10,219.6	5,893.0	87.6	88.6	-90.00	-4,525.0	639.4	634.2	458.5	175.65	3.611		
10,300.0	5,893.0	10,319.6	5,893.0	89.5	90.5	-90.00	-4,625.0	640.2	634.9	455.5	179.45	3.538		

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 Federal #12H-1314B
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 Federal #12H-1314B	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-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		
10,400.0	5,893.0	10,419.6	5,893.0	91.4	92.4	-90.00	-4,725.0	641.1	635.7	452.4	183.25	3.469		
10,500.0	5,893.0	10,519.5	5,893.0	93.3	94.3	-90.00	-4,825.0	642.0	636.5	449.4	187.06	3.402		
10,600.0	5,893.0	10,619.5	5,893.0	95.2	96.2	-90.00	-4,925.0	642.8	637.2	446.4	190.87	3.339		
10,700.0	5,893.0	10,719.5	5,893.0	97.1	98.1	-90.00	-5,025.0	643.7	638.0	443.3	194.68	3.277		
10,800.0	5,893.0	10,819.5	5,893.0	99.0	100.0	-90.00	-5,125.0	644.6	638.7	440.2	198.49	3.218		
10,900.0	5,893.0	10,919.5	5,893.0	100.9	101.9	-90.00	-5,225.0	645.5	639.5	437.2	202.30	3.161		
11,000.0	5,893.0	11,019.5	5,893.0	102.8	103.8	-90.00	-5,325.0	646.3	640.3	434.1	206.12	3.106		
11,100.0	5,893.0	11,119.5	5,893.0	104.7	105.7	-90.00	-5,425.0	647.2	641.0	431.1	209.93	3.053		
11,200.0	5,893.0	11,219.5	5,893.0	106.6	107.6	-90.00	-5,525.0	648.1	641.8	428.0	213.75	3.002		
11,300.0	5,893.0	11,319.5	5,893.0	108.5	109.5	-90.00	-5,624.9	649.0	642.5	425.0	217.57	2.953		
11,400.0	5,893.0	11,419.5	5,893.0	110.4	111.4	-90.00	-5,724.9	649.8	643.3	421.9	221.38	2.906		
11,500.0	5,893.0	11,519.5	5,893.0	112.3	113.3	-90.00	-5,824.9	650.7	644.0	418.8	225.20	2.860		
11,600.0	5,893.0	11,619.5	5,893.0	114.3	115.2	-90.00	-5,924.9	651.6	644.8	415.8	229.02	2.815		
11,700.0	5,893.0	11,719.5	5,893.0	116.2	117.1	-90.00	-6,024.9	652.4	645.6	412.7	232.84	2.773		
11,800.0	5,893.0	11,819.5	5,893.0	118.1	119.0	-90.00	-6,124.9	653.3	646.3	409.7	236.66	2.731		
11,900.0	5,893.0	11,919.5	5,893.0	120.0	120.9	-90.00	-6,224.9	654.2	647.1	406.6	240.49	2.691		
12,000.0	5,893.0	12,019.5	5,893.0	121.9	122.8	-90.00	-6,324.9	655.1	647.8	403.5	244.31	2.652		
12,100.0	5,893.0	12,119.5	5,893.0	123.8	124.7	-90.00	-6,424.9	655.9	648.6	400.5	248.13	2.614		
12,200.0	5,893.0	12,219.5	5,893.0	125.7	126.6	-90.00	-6,524.9	656.8	649.4	397.4	251.96	2.577		
12,300.0	5,893.0	12,319.5	5,893.0	127.6	128.6	-90.00	-6,624.9	657.7	650.1	394.3	255.78	2.542		
12,400.0	5,893.0	12,419.5	5,893.0	129.5	130.5	-90.00	-6,724.9	658.6	650.9	391.3	259.61	2.507		
12,500.0	5,893.0	12,519.5	5,893.0	131.5	132.4	-90.00	-6,824.9	659.4	651.6	388.2	263.44	2.474		
12,600.0	5,893.0	12,619.5	5,893.0	133.4	134.3	-90.00	-6,924.9	660.3	652.4	385.1	267.26	2.441		
12,700.0	5,893.0	12,719.5	5,893.0	135.3	136.2	-90.00	-7,024.9	661.2	653.1	382.1	271.09	2.409		
12,800.0	5,893.0	12,819.5	5,893.0	137.2	138.1	-90.00	-7,124.8	662.0	653.9	379.0	274.92	2.379		
12,900.0	5,893.0	12,919.5	5,893.0	139.1	140.0	-90.00	-7,224.8	662.9	654.7	375.9	278.75	2.349		
13,000.0	5,893.0	13,019.5	5,893.0	141.0	141.9	-90.00	-7,324.8	663.8	655.4	372.8	282.57	2.319		
13,100.0	5,893.0	13,119.5	5,893.0	142.9	143.8	-90.00	-7,424.8	664.7	656.2	369.8	286.40	2.291		
13,200.0	5,893.0	13,219.5	5,893.0	144.9	145.7	-90.00	-7,524.8	665.5	656.9	366.7	290.23	2.263		
13,300.0	5,893.0	13,319.5	5,893.0	146.8	147.7	-90.00	-7,624.8	666.4	657.7	363.6	294.06	2.237		
13,400.0	5,893.0	13,419.5	5,893.0	148.7	149.6	-90.00	-7,724.8	667.3	658.5	360.6	297.89	2.210		
13,500.0	5,893.0	13,519.5	5,893.0	150.6	151.5	-90.00	-7,824.8	668.2	659.2	357.5	301.73	2.185		
13,600.0	5,893.0	13,619.5	5,893.0	152.5	153.4	-90.00	-7,924.8	669.0	660.0	354.4	305.56	2.160		
13,641.6	5,893.0	13,661.1	5,893.0	153.3	154.2	-90.00	-7,966.4	669.4	660.3	353.1	307.15	2.150 SF		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - HZ - FINAL													Offset Site Error:	0.0 ft
Survey Program: 158-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	
5,600.0	5,592.8	12,435.0	5,689.9	12.4	126.3	-67.89	-761.7	1,362.8	1,553.7	1,418.0	135.67	11.452		
5,700.0	5,678.8	12,435.0	5,689.9	12.5	126.3	-71.46	-761.7	1,362.8	1,521.0	1,382.3	138.69	10.967		
5,800.0	5,753.5	12,435.0	5,689.9	12.9	126.3	-75.09	-761.7	1,362.8	1,488.3	1,347.0	141.32	10.532		
5,900.0	5,814.2	12,435.0	5,689.9	13.4	126.3	-78.62	-761.7	1,362.8	1,457.1	1,313.6	143.53	10.152		
6,000.0	5,858.6	12,435.0	5,689.9	14.1	126.3	-81.86	-761.7	1,362.8	1,428.5	1,283.1	145.35	9.827		
6,100.0	5,885.2	12,435.0	5,689.9	15.0	126.3	-84.65	-761.7	1,362.8	1,403.7	1,256.8	146.90	9.556		
6,200.0	5,893.0	12,435.0	5,689.9	16.1	126.3	-86.68	-761.7	1,362.8	1,383.9	1,235.7	148.23	9.336		
6,300.0	5,893.0	12,435.0	5,689.9	17.3	126.3	-86.68	-761.7	1,362.8	1,370.7	1,221.3	149.38	9.176		
6,400.0	5,893.0	12,435.0	5,689.9	18.7	126.3	-86.68	-761.7	1,362.8	1,364.6	1,214.0	150.64	9.059		
6,432.7	5,893.0	12,435.0	5,689.9	19.2	126.3	-86.68	-761.7	1,362.8	1,364.2	1,213.2	151.03	9.033 CC, ES		
6,500.0	5,893.0	12,435.0	5,689.9	20.1	126.3	-86.68	-761.7	1,362.8	1,365.9	1,213.9	152.00	8.986 SF		
6,600.0	5,893.0	12,366.0	5,695.1	21.7	125.1	-86.91	-830.4	1,368.2	1,372.8	1,220.7	152.12	9.024		
6,700.0	5,893.0	12,251.8	5,704.1	23.2	123.0	-87.30	-943.9	1,376.5	1,379.6	1,228.1	151.48	9.107		
6,800.0	5,893.0	12,128.2	5,711.8	24.8	120.8	-87.63	-1,067.0	1,383.5	1,384.8	1,234.1	150.72	9.188		
6,900.0	5,893.0	12,030.2	5,716.3	26.5	119.1	-87.82	-1,164.9	1,388.0	1,389.1	1,238.7	150.44	9.234		
7,000.0	5,893.0	11,938.0	5,717.9	28.2	117.4	-87.90	-1,256.9	1,392.7	1,394.1	1,243.8	150.31	9.275		
7,100.0	5,893.0	11,830.1	5,717.2	29.9	115.5	-87.88	-1,364.7	1,398.2	1,399.1	1,249.2	149.90	9.334		
7,200.0	5,893.0	11,707.4	5,715.8	31.7	113.2	-87.83	-1,487.3	1,402.9	1,402.8	1,253.6	149.19	9.403		
7,300.0	5,893.0	11,597.8	5,716.0	33.4	111.2	-87.84	-1,596.8	1,406.0	1,405.5	1,256.7	148.78	9.447		
7,400.0	5,893.0	11,489.6	5,716.8	35.2	109.3	-87.87	-1,705.0	1,408.2	1,407.4	1,259.0	148.43	9.482		
7,500.0	5,893.0	11,381.4	5,716.1	37.0	107.3	-87.85	-1,813.2	1,409.9	1,408.9	1,260.8	148.09	9.514		
7,600.0	5,893.0	11,307.1	5,715.3	38.8	106.0	-87.82	-1,887.5	1,411.2	1,410.7	1,262.3	148.38	9.507		
7,700.0	5,893.0	11,224.7	5,713.2	40.7	104.5	-87.74	-1,969.7	1,414.5	1,414.6	1,266.0	148.53	9.524		
7,800.0	5,893.0	11,125.7	5,710.4	42.5	102.7	-87.63	-2,068.7	1,418.6	1,418.7	1,270.3	148.36	9.562		
7,900.0	5,893.0	11,005.1	5,706.1	44.3	100.5	-87.47	-2,189.1	1,423.2	1,422.6	1,274.8	147.79	9.626		
8,000.0	5,893.0	10,834.7	5,704.1	46.2	97.5	-87.38	-2,359.4	1,422.4	1,421.5	1,275.1	146.40	9.710		
8,100.0	5,893.0	10,735.3	5,704.4	48.0	95.7	-87.39	-2,458.9	1,420.4	1,419.3	1,273.0	146.35	9.698		
8,200.0	5,893.0	10,643.9	5,705.6	49.9	94.1	-87.43	-2,550.2	1,418.8	1,417.5	1,271.0	146.44	9.680		
8,300.0	5,893.0	10,543.6	5,706.5	51.7	92.4	-87.47	-2,650.5	1,417.5	1,416.0	1,269.6	146.42	9.671		
8,400.0	5,893.0	10,459.0	5,707.6	53.6	90.9	-87.51	-2,735.0	1,416.8	1,415.0	1,268.3	146.67	9.648		
8,447.9	5,893.0	10,417.2	5,708.6	54.5	90.2	-87.55	-2,776.9	1,416.8	1,414.9	1,268.2	146.71	9.645		
8,500.0	5,893.0	10,370.4	5,709.6	55.5	89.3	-87.59	-2,823.6	1,417.0	1,415.0	1,268.2	146.80	9.639		
8,600.0	5,893.0	10,291.0	5,710.9	57.3	87.9	-87.65	-2,903.0	1,417.9	1,416.0	1,268.9	147.12	9.625		
8,700.0	5,893.0	10,210.9	5,712.0	59.2	86.5	-87.70	-2,983.1	1,420.2	1,418.6	1,271.2	147.43	9.623		
8,800.0	5,893.0	10,110.0	5,713.2	61.1	84.7	-87.75	-3,083.9	1,423.9	1,422.1	1,274.8	147.33	9.653		
8,900.0	5,893.0	10,021.2	5,713.9	63.0	83.1	-87.78	-3,172.7	1,426.9	1,425.4	1,278.0	147.43	9.669		
9,000.0	5,893.0	9,932.9	5,713.2	64.8	81.5	-87.76	-3,260.8	1,431.0	1,429.9	1,282.4	147.53	9.692		
9,100.0	5,893.0	9,792.9	5,711.6	66.7	79.0	-87.70	-3,400.7	1,436.3	1,433.8	1,287.1	146.68	9.775		
9,200.0	5,893.0	9,670.2	5,710.5	68.6	76.8	-87.66	-3,523.4	1,437.7	1,434.8	1,288.6	146.19	9.814		
9,300.0	5,893.0	9,582.0	5,709.9	70.5	75.3	-87.64	-3,611.6	1,438.1	1,435.3	1,288.9	146.37	9.806		
9,400.0	5,893.0	9,505.5	5,709.5	72.4	73.9	-87.63	-3,688.1	1,439.9	1,437.4	1,290.7	146.77	9.794		
9,500.0	5,893.0	9,411.5	5,708.9	74.3	72.3	-87.61	-3,782.0	1,442.9	1,440.5	1,293.7	146.82	9.811		
9,600.0	5,893.0	9,302.4	5,706.3	76.2	70.3	-87.51	-3,891.1	1,446.3	1,443.7	1,297.2	146.54	9.852		
9,700.0	5,893.0	9,169.4	5,704.0	78.1	67.9	-87.42	-4,024.0	1,448.4	1,445.2	1,299.4	145.82	9.911		
9,800.0	5,893.0	9,048.4	5,704.2	80.0	65.8	-87.43	-4,145.0	1,447.9	1,444.7	1,299.1	145.59	9.923		
9,900.0	5,893.0	8,944.7	5,704.6	81.9	64.0	-87.44	-4,248.7	1,446.7	1,443.5	1,297.8	145.69	9.908		
10,000.0	5,893.0	8,843.3	5,706.7	83.8	62.2	-87.52	-4,350.1	1,445.5	1,442.0	1,296.2	145.81	9.890		
10,100.0	5,893.0	8,751.7	5,710.0	85.7	60.6	-87.65	-4,441.6	1,444.5	1,440.7	1,294.6	146.09	9.861		
10,158.3	5,893.0	8,709.0	5,710.8	86.8	59.8	-87.68	-4,484.3	1,444.4	1,440.4	1,294.0	146.44	9.836		
10,200.0	5,893.0	8,676.8	5,711.0	87.6	59.2	-87.69	-4,516.5	1,444.5	1,440.5	1,293.9	146.67	9.822		
10,300.0	5,893.0	8,608.0	5,710.8	89.5	58.0	-87.68	-4,585.3	1,446.0	1,442.6	1,295.2	147.36	9.790		
10,400.0	5,893.0	8,493.2	5,708.8	91.4	56.0	-87.61	-4,700.0	1,449.1	1,445.3	1,298.0	147.23	9.817		

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 Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - HZ - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 158-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		
10,500.0	5,893.0	8,376.5	5,708.1	93.3	53.9	-87.59	-4,816.8	1,450.6	1,446.4	1,299.4	147.06	9.835		
10,600.0	5,893.0	8,284.9	5,707.2	95.2	52.3	-87.55	-4,908.3	1,451.6	1,447.4	1,300.1	147.34	9.824		
10,700.0	5,893.0	8,211.2	5,704.5	97.1	51.0	-87.45	-4,981.9	1,453.1	1,449.6	1,301.7	147.92	9.800		
10,800.0	5,893.0	8,130.1	5,700.3	99.0	49.5	-87.29	-5,062.9	1,456.6	1,453.9	1,305.5	148.37	9.799		
10,900.0	5,893.0	8,014.4	5,695.2	100.9	47.5	-87.09	-5,178.4	1,460.8	1,457.7	1,309.4	148.23	9.834		
11,000.0	5,893.0	7,864.7	5,692.7	102.8	45.0	-87.00	-5,328.0	1,463.7	1,459.6	1,312.0	147.59	9.890		
11,100.0	5,893.0	7,767.1	5,693.8	104.7	43.4	-87.05	-5,425.6	1,464.0	1,459.7	1,311.8	147.91	9.869		
11,200.0	5,893.0	7,668.7	5,695.1	106.6	41.8	-87.10	-5,524.0	1,464.5	1,460.0	1,311.8	148.20	9.852		
11,300.0	5,893.0	7,579.4	5,696.6	108.5	40.2	-87.16	-5,613.2	1,465.1	1,460.5	1,311.9	148.58	9.830		
11,400.0	5,893.0	7,493.5	5,697.1	110.4	38.7	-87.18	-5,699.1	1,466.8	1,462.3	1,313.3	149.00	9.815		
11,500.0	5,893.0	7,392.4	5,697.7	112.3	37.0	-87.21	-5,800.2	1,468.7	1,464.1	1,314.9	149.16	9.816		
11,600.0	5,893.0	7,310.8	5,697.2	114.3	35.6	-87.19	-5,881.8	1,470.8	1,466.6	1,316.9	149.68	9.798		
11,700.0	5,893.0	7,231.7	5,696.4	116.2	34.3	-87.17	-5,960.8	1,474.0	1,470.5	1,320.2	150.27	9.786		
11,800.0	5,893.0	7,156.0	5,695.1	118.1	33.0	-87.12	-6,036.4	1,478.1	1,476.0	1,325.1	150.88	9.782		
11,900.0	5,893.0	7,024.8	5,692.8	120.0	30.8	-87.05	-6,167.4	1,484.8	1,481.0	1,330.4	150.60	9.834		
12,000.0	5,893.0	6,902.2	5,692.0	121.9	28.8	-87.03	-6,289.9	1,489.2	1,484.5	1,334.0	150.51	9.863		
12,100.0	5,893.0	6,788.4	5,692.0	123.8	27.0	-87.03	-6,403.7	1,491.7	1,486.5	1,335.9	150.61	9.870		
12,200.0	5,893.0	6,626.8	5,693.2	125.7	24.6	-87.08	-6,565.3	1,491.6	1,486.5	1,336.3	150.15	9.900		
12,300.0	5,893.0	6,503.9	5,698.6	127.6	23.0	-87.27	-6,687.9	1,487.6	1,482.8	1,332.4	150.44	9.857		
12,400.0	5,893.0	6,414.6	5,704.4	129.5	21.7	-87.49	-6,777.0	1,484.7	1,479.1	1,328.0	151.11	9.788		
12,500.0	5,893.0	6,335.8	5,709.8	131.5	20.5	-87.70	-6,855.6	1,483.0	1,476.6	1,324.7	151.87	9.723		
12,600.0	5,893.0	6,260.7	5,712.7	133.4	19.4	-87.81	-6,930.6	1,482.4	1,475.6	1,322.9	152.68	9.664		
12,606.7	5,893.0	6,255.8	5,712.8	133.5	19.3	-87.82	-6,935.5	1,482.4	1,475.6	1,322.8	152.74	9.661		
12,700.0	5,893.0	6,186.7	5,714.7	135.3	18.3	-87.89	-7,004.7	1,483.2	1,476.3	1,322.8	153.53	9.616		
12,800.0	5,893.0	6,111.3	5,714.2	137.2	17.3	-87.87	-7,080.0	1,485.1	1,478.8	1,324.5	154.36	9.580		
12,900.0	5,893.0	5,987.4	5,706.8	139.1	15.6	-87.59	-7,203.6	1,488.0	1,481.3	1,326.7	154.60	9.582		
13,000.0	5,893.0	5,828.7	5,666.2	141.0	13.8	-86.02	-7,356.0	1,485.5	1,480.9	1,326.4	154.50	9.585		
13,093.8	5,893.0	5,753.5	5,631.5	142.8	13.1	-84.67	-7,422.6	1,481.8	1,479.7	1,324.3	155.34	9.525		
13,100.0	5,893.0	5,750.2	5,629.9	142.9	13.1	-84.61	-7,425.5	1,481.6	1,479.7	1,324.2	155.42	9.521		
13,200.0	5,893.0	5,701.0	5,604.8	144.9	12.7	-83.63	-7,467.8	1,479.9	1,481.8	1,325.1	156.69	9.457		
13,300.0	5,893.0	5,669.0	5,586.9	146.8	12.4	-82.94	-7,494.3	1,479.5	1,488.2	1,330.1	158.17	9.409		
13,400.0	5,893.0	5,638.0	5,568.1	148.7	12.2	-82.22	-7,518.9	1,479.5	1,499.3	1,339.7	159.65	9.392		
13,500.0	5,893.0	5,606.0	5,547.0	150.6	12.0	-81.42	-7,543.0	1,480.1	1,515.3	1,354.3	161.08	9.407		
13,600.0	5,893.0	5,574.0	5,524.9	152.5	11.9	-80.59	-7,566.1	1,481.5	1,536.3	1,373.9	162.49	9.455		
13,641.6	5,893.0	5,554.9	5,511.4	153.3	11.8	-80.08	-7,579.6	1,482.5	1,546.4	1,383.5	162.97	9.489		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - 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				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)				
5,700.0	5,678.8	12,479.0	5,739.0	12.5	134.1	-72.55	-776.4	1,399.7	1,565.4	1,418.6	146.82	10.663		
5,800.0	5,753.5	12,479.0	5,739.0	12.9	134.1	-76.47	-776.4	1,399.7	1,530.7	1,381.2	149.54	10.237		
5,900.0	5,814.2	12,479.0	5,739.0	13.4	134.1	-80.25	-776.4	1,399.7	1,497.6	1,345.9	151.72	9.871		
6,000.0	5,858.6	12,479.0	5,739.0	14.1	134.1	-83.71	-776.4	1,399.7	1,467.4	1,313.9	153.44	9.563		
6,100.0	5,885.2	12,479.0	5,739.0	15.0	134.1	-86.66	-776.4	1,399.7	1,441.4	1,286.6	154.83	9.310		
6,200.0	5,893.0	12,479.0	5,739.0	16.1	134.1	-88.77	-776.4	1,399.7	1,420.9	1,264.9	156.03	9.107		
6,300.0	5,893.0	12,479.0	5,739.0	17.3	134.1	-88.77	-776.4	1,399.7	1,406.9	1,249.7	157.17	8.951		
6,400.0	5,893.0	12,479.0	5,739.0	18.7	134.1	-88.77	-776.4	1,399.7	1,400.0	1,241.5	158.44	8.836		
6,447.4	5,893.0	12,479.0	5,739.0	19.4	134.1	-88.77	-776.4	1,399.7	1,399.2	1,240.1	159.04	8.798	CC, ES, SF	
6,500.0	5,893.0	12,443.3	5,739.0	20.1	133.4	-88.77	-812.0	1,400.2	1,399.7	1,240.6	159.08	8.799		
6,600.0	5,893.0	12,343.3	5,739.0	21.7	131.5	-88.77	-912.0	1,401.5	1,400.9	1,242.4	158.51	8.838		
6,700.0	5,893.0	12,243.3	5,739.0	23.2	129.6	-88.77	-1,012.0	1,402.9	1,402.1	1,244.1	158.00	8.874		
6,800.0	5,893.0	12,143.4	5,739.0	24.8	127.7	-88.77	-1,112.0	1,404.2	1,403.3	1,245.8	157.54	8.908		
6,900.0	5,893.0	12,043.4	5,739.0	26.5	125.8	-88.78	-1,212.0	1,405.5	1,404.5	1,247.4	157.11	8.940		
7,000.0	5,893.0	11,943.4	5,739.0	28.2	123.9	-88.78	-1,312.0	1,406.8	1,405.8	1,249.0	156.72	8.970		
7,100.0	5,893.0	11,843.4	5,739.0	29.9	121.9	-88.78	-1,411.9	1,408.2	1,407.0	1,250.6	156.36	8.998		
7,200.0	5,893.0	11,743.4	5,739.0	31.7	120.0	-88.78	-1,511.9	1,409.5	1,408.2	1,252.1	156.03	9.025		
7,300.0	5,893.0	11,643.4	5,739.0	33.4	118.1	-88.78	-1,611.9	1,410.8	1,409.4	1,253.7	155.71	9.051		
7,400.0	5,893.0	11,543.4	5,739.0	35.2	116.2	-88.78	-1,711.9	1,412.1	1,410.6	1,255.2	155.40	9.077		
7,500.0	5,893.0	11,443.4	5,739.0	37.0	114.3	-88.78	-1,811.9	1,413.4	1,411.8	1,256.7	155.12	9.101		
7,600.0	5,893.0	11,343.4	5,739.0	38.8	112.4	-88.78	-1,911.9	1,414.8	1,413.0	1,258.2	154.84	9.125		
7,700.0	5,893.0	11,243.4	5,739.0	40.7	110.5	-88.78	-2,011.9	1,416.1	1,414.2	1,259.6	154.58	9.149		
7,800.0	5,893.0	11,143.4	5,739.0	42.5	108.5	-88.79	-2,111.8	1,417.4	1,415.4	1,261.1	154.32	9.172		
7,900.0	5,893.0	11,043.4	5,739.0	44.3	106.6	-88.79	-2,211.8	1,418.7	1,416.6	1,262.6	154.08	9.194		
8,000.0	5,893.0	10,943.4	5,739.0	46.2	104.7	-88.79	-2,311.8	1,420.1	1,417.8	1,264.0	153.84	9.217		
8,100.0	5,893.0	10,843.4	5,739.0	48.0	102.8	-88.79	-2,411.8	1,421.4	1,419.0	1,265.4	153.60	9.238		
8,200.0	5,893.0	10,743.5	5,739.0	49.9	100.9	-88.79	-2,511.8	1,422.7	1,420.3	1,266.9	153.38	9.260		
8,300.0	5,893.0	10,643.5	5,739.0	51.7	99.0	-88.79	-2,611.8	1,424.0	1,421.5	1,268.3	153.16	9.281		
8,400.0	5,893.0	10,543.5	5,739.0	53.6	97.1	-88.79	-2,711.7	1,425.4	1,422.7	1,269.7	152.94	9.302		
8,500.0	5,893.0	10,443.5	5,739.0	55.5	95.2	-88.79	-2,811.7	1,426.7	1,423.9	1,271.1	152.73	9.323		
8,600.0	5,893.0	10,343.5	5,739.0	57.3	93.3	-88.79	-2,911.7	1,428.0	1,425.1	1,272.6	152.52	9.343		
8,700.0	5,893.0	10,243.5	5,739.0	59.2	91.4	-88.79	-3,011.7	1,429.3	1,426.3	1,274.0	152.32	9.364		
8,800.0	5,893.0	10,143.5	5,739.0	61.1	89.5	-88.80	-3,111.7	1,430.6	1,427.5	1,275.4	152.12	9.384		
8,900.0	5,893.0	10,043.5	5,739.0	63.0	87.6	-88.80	-3,211.7	1,432.0	1,428.7	1,276.8	151.93	9.404		
9,000.0	5,893.0	9,943.5	5,739.0	64.8	85.7	-88.80	-3,311.6	1,433.3	1,429.9	1,278.2	151.73	9.424		
9,100.0	5,893.0	9,843.5	5,739.0	66.7	83.8	-88.80	-3,411.6	1,434.6	1,431.1	1,279.6	151.54	9.444		
9,200.0	5,893.0	9,743.5	5,739.0	68.6	81.9	-88.80	-3,511.6	1,435.9	1,432.3	1,281.0	151.36	9.463		
9,300.0	5,893.0	9,643.5	5,739.0	70.5	80.0	-88.80	-3,611.6	1,437.3	1,433.5	1,282.4	151.18	9.483		
9,400.0	5,893.0	9,543.5	5,739.0	72.4	78.1	-88.80	-3,711.6	1,438.6	1,434.7	1,283.8	151.00	9.502		
9,500.0	5,893.0	9,443.5	5,739.0	74.3	76.2	-88.80	-3,811.6	1,439.9	1,436.0	1,285.1	150.82	9.521		
9,600.0	5,893.0	9,343.6	5,739.0	76.2	74.3	-88.80	-3,911.5	1,441.2	1,437.2	1,286.5	150.64	9.540		
9,700.0	5,893.0	9,243.6	5,739.0	78.1	72.4	-88.80	-4,011.5	1,442.6	1,438.4	1,287.9	150.47	9.559		
9,800.0	5,893.0	9,143.6	5,739.0	80.0	70.5	-88.81	-4,111.5	1,443.9	1,439.6	1,289.2	150.38	9.573		
9,900.0	5,893.0	9,043.6	5,739.0	81.9	68.6	-88.81	-4,211.5	1,445.2	1,440.8	1,290.4	150.39	9.580		
10,000.0	5,893.0	8,943.6	5,739.0	83.8	66.7	-88.81	-4,311.5	1,446.5	1,442.0	1,291.6	150.40	9.588		
10,100.0	5,893.0	8,843.6	5,739.0	85.7	64.8	-88.81	-4,411.5	1,447.8	1,443.2	1,292.8	150.41	9.595		
10,200.0	5,893.0	8,743.6	5,739.0	87.6	62.9	-88.81	-4,511.5	1,449.2	1,444.4	1,294.0	150.43	9.602		
10,300.0	5,893.0	8,643.6	5,739.0	89.5	61.0	-88.81	-4,611.4	1,450.5	1,445.6	1,295.2	150.45	9.609		
10,400.0	5,893.0	8,543.6	5,739.0	91.4	59.2	-88.81	-4,711.4	1,451.8	1,446.8	1,296.4	150.47	9.615		
10,500.0	5,893.0	8,443.6	5,739.0	93.3	57.3	-88.81	-4,811.4	1,453.1	1,448.0	1,297.5	150.50	9.622		
10,600.0	5,893.0	8,343.6	5,739.0	95.2	55.4	-88.81	-4,911.4	1,454.5	1,449.2	1,298.7	150.53	9.628		
10,700.0	5,893.0	8,243.6	5,739.0	97.1	53.5	-88.81	-5,011.4	1,455.8	1,450.5	1,299.9	150.56	9.633		

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 Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - 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 Depth (ft)	Vertical Depth (ft)	Measured Depth 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		
10,800.0	5,893.0	8,143.6	5,739.0	99.0	51.7	-88.82	-5,111.4	1,457.1	1,451.7	1,301.1	150.60	9.639		
10,900.0	5,893.0	8,043.7	5,739.0	100.9	49.8	-88.82	-5,211.3	1,458.4	1,452.9	1,302.2	150.65	9.644		
11,000.0	5,893.0	7,943.7	5,739.0	102.8	47.9	-88.82	-5,311.3	1,459.7	1,454.1	1,303.4	150.70	9.649		
11,100.0	5,893.0	7,843.7	5,739.0	104.7	46.1	-88.82	-5,411.3	1,461.1	1,455.3	1,304.5	150.75	9.653		
11,200.0	5,893.0	7,743.7	5,739.0	106.6	44.2	-88.82	-5,511.3	1,462.4	1,456.5	1,305.7	150.82	9.657		
11,300.0	5,893.0	7,643.7	5,739.0	108.5	42.4	-88.82	-5,611.3	1,463.7	1,457.7	1,306.8	150.89	9.661		
11,400.0	5,893.0	7,543.7	5,739.0	110.4	40.6	-88.82	-5,711.3	1,465.0	1,458.9	1,307.9	150.97	9.664		
11,500.0	5,893.0	7,443.7	5,739.0	112.3	38.8	-88.82	-5,811.2	1,466.4	1,460.1	1,309.1	151.05	9.666		
11,600.0	5,893.0	7,343.7	5,739.0	114.3	36.9	-88.82	-5,911.2	1,467.7	1,461.3	1,310.2	151.15	9.668		
11,700.0	5,893.0	7,243.7	5,739.0	116.2	35.1	-88.82	-6,011.2	1,469.0	1,462.5	1,311.3	151.26	9.669		
11,800.0	5,893.0	7,143.7	5,739.0	118.1	33.4	-88.83	-6,111.2	1,470.3	1,463.7	1,312.4	151.39	9.669		
11,900.0	5,893.0	7,043.7	5,739.0	120.0	31.6	-88.83	-6,211.2	1,471.7	1,465.0	1,313.4	151.53	9.668		
12,000.0	5,893.0	6,943.7	5,739.0	121.9	29.8	-88.83	-6,311.2	1,473.0	1,466.2	1,314.5	151.70	9.665		
12,100.0	5,893.0	6,843.7	5,739.0	123.8	28.1	-88.83	-6,411.1	1,474.3	1,467.4	1,315.5	151.88	9.661		
12,200.0	5,893.0	6,743.7	5,739.0	125.7	26.4	-88.83	-6,511.1	1,475.6	1,468.6	1,316.5	152.09	9.656		
12,300.0	5,893.0	6,643.8	5,739.0	127.6	24.7	-88.83	-6,611.1	1,476.9	1,469.8	1,317.4	152.34	9.648		
12,400.0	5,893.0	6,543.8	5,739.0	129.5	23.1	-88.83	-6,711.1	1,478.3	1,471.0	1,318.4	152.63	9.638		
12,500.0	5,893.0	6,443.8	5,739.0	131.5	21.5	-88.83	-6,811.1	1,479.6	1,472.2	1,319.2	152.97	9.624		
12,600.0	5,893.0	6,343.8	5,739.0	133.4	20.0	-88.83	-6,911.1	1,480.9	1,473.4	1,320.0	153.36	9.607		
12,700.0	5,893.0	6,243.8	5,739.0	135.3	18.6	-88.83	-7,011.1	1,482.2	1,474.6	1,320.8	153.84	9.585		
12,800.0	5,893.0	6,143.8	5,739.0	137.2	17.2	-88.84	-7,111.0	1,483.6	1,475.8	1,321.4	154.41	9.558		
12,900.0	5,893.0	6,043.8	5,739.0	139.1	16.0	-88.84	-7,211.0	1,484.9	1,477.0	1,322.0	155.08	9.524		
13,000.0	5,893.0	5,950.0	5,731.9	141.0	15.0	-88.56	-7,304.4	1,486.1	1,478.4	1,322.5	155.95	9.480		
13,100.0	5,893.0	5,861.2	5,709.8	142.9	14.1	-87.71	-7,390.3	1,487.3	1,480.5	1,323.5	156.97	9.432		
13,200.0	5,893.0	5,782.1	5,678.2	144.9	13.5	-86.49	-7,462.7	1,488.2	1,483.9	1,325.8	158.12	9.385		
13,300.0	5,893.0	5,713.9	5,642.3	146.8	13.1	-85.11	-7,520.7	1,489.0	1,489.7	1,330.3	159.35	9.348		
13,400.0	5,893.0	5,650.0	5,602.2	148.7	12.8	-83.57	-7,570.3	1,489.6	1,498.7	1,338.2	160.57	9.334		
13,500.0	5,893.0	5,600.0	5,566.7	150.6	12.5	-82.22	-7,605.5	1,490.1	1,511.7	1,349.9	161.86	9.340		
13,600.0	5,893.0	5,568.2	5,542.4	152.5	12.4	-81.30	-7,626.1	1,490.4	1,529.1	1,365.8	163.33	9.363		
13,641.6	5,893.0	5,550.0	5,528.0	153.3	12.4	-80.76	-7,637.1	1,490.5	1,537.8	1,374.0	163.84	9.386		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - HZ - Plan #2												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)			
5,700.0	5,678.8	12,455.0	5,715.0	12.5	134.1	-72.03	-776.4	1,399.7	1,562.8	1,416.4	146.43	10.673	
5,800.0	5,753.5	12,455.0	5,715.0	12.9	134.1	-75.79	-776.4	1,399.7	1,529.2	1,380.1	149.15	10.253	
5,900.0	5,814.2	12,455.0	5,715.0	13.4	134.1	-79.45	-776.4	1,399.7	1,497.0	1,345.6	151.38	9.889	
6,000.0	5,858.6	12,455.0	5,715.0	14.1	134.1	-82.80	-776.4	1,399.7	1,467.5	1,314.3	153.19	9.580	
6,100.0	5,885.2	12,455.0	5,715.0	15.0	134.1	-85.69	-776.4	1,399.7	1,442.0	1,287.3	154.67	9.323	
6,200.0	5,893.0	12,455.0	5,715.0	16.1	134.1	-87.79	-776.4	1,399.7	1,421.6	1,265.6	155.95	9.116	
6,300.0	5,893.0	12,455.0	5,715.0	17.3	134.1	-87.79	-776.4	1,399.7	1,407.6	1,250.5	157.10	8.960	
6,400.0	5,893.0	12,455.0	5,715.0	18.7	134.1	-87.79	-776.4	1,399.7	1,400.7	1,242.3	158.36	8.845	
6,447.4	5,893.0	12,455.0	5,715.0	19.4	134.1	-87.79	-776.4	1,399.7	1,399.9	1,240.9	158.96	8.807	CC, ES, SF
6,500.0	5,893.0	12,419.3	5,715.0	20.1	133.4	-87.79	-812.0	1,400.2	1,400.4	1,241.4	159.00	8.808	
6,600.0	5,893.0	12,319.3	5,715.0	21.7	131.5	-87.79	-912.0	1,401.5	1,401.6	1,243.2	158.43	8.847	
6,700.0	5,893.0	12,219.4	5,715.0	23.2	129.6	-87.79	-1,012.0	1,402.9	1,402.8	1,244.9	157.92	8.883	
6,800.0	5,893.0	12,119.4	5,715.0	24.8	127.7	-87.80	-1,112.0	1,404.2	1,404.1	1,246.6	157.46	8.917	
6,900.0	5,893.0	12,019.4	5,715.0	26.5	125.8	-87.80	-1,212.0	1,405.5	1,405.3	1,248.2	157.04	8.949	
7,000.0	5,893.0	11,919.4	5,715.0	28.2	123.8	-87.80	-1,312.0	1,406.8	1,406.5	1,249.8	156.65	8.979	
7,100.0	5,893.0	11,819.4	5,715.0	29.9	121.9	-87.80	-1,411.9	1,408.2	1,407.7	1,251.4	156.29	9.007	
7,200.0	5,893.0	11,719.4	5,715.0	31.7	120.0	-87.80	-1,511.9	1,409.5	1,408.9	1,252.9	155.95	9.034	
7,300.0	5,893.0	11,619.4	5,715.0	33.4	118.1	-87.81	-1,611.9	1,410.8	1,410.1	1,254.5	155.63	9.061	
7,400.0	5,893.0	11,519.4	5,715.0	35.2	116.2	-87.81	-1,711.9	1,412.1	1,411.3	1,256.0	155.33	9.086	
7,500.0	5,893.0	11,419.4	5,715.0	37.0	114.3	-87.81	-1,811.9	1,413.4	1,412.5	1,257.5	155.04	9.111	
7,600.0	5,893.0	11,319.4	5,715.0	38.8	112.4	-87.81	-1,911.9	1,414.8	1,413.7	1,258.9	154.76	9.135	
7,700.0	5,893.0	11,219.4	5,715.0	40.7	110.5	-87.81	-2,011.9	1,416.1	1,414.9	1,260.4	154.50	9.158	
7,800.0	5,893.0	11,119.4	5,715.0	42.5	108.5	-87.81	-2,111.8	1,417.4	1,416.1	1,261.9	154.25	9.181	
7,900.0	5,893.0	11,019.4	5,715.0	44.3	106.6	-87.82	-2,211.8	1,418.7	1,417.3	1,263.3	154.00	9.204	
8,000.0	5,893.0	10,919.4	5,715.0	46.2	104.7	-87.82	-2,311.8	1,420.1	1,418.5	1,264.8	153.76	9.226	
8,100.0	5,893.0	10,819.5	5,715.0	48.0	102.8	-87.82	-2,411.8	1,421.4	1,419.8	1,266.2	153.53	9.248	
8,200.0	5,893.0	10,719.5	5,715.0	49.9	100.9	-87.82	-2,511.8	1,422.7	1,421.0	1,267.7	153.30	9.269	
8,300.0	5,893.0	10,619.5	5,715.0	51.7	99.0	-87.82	-2,611.8	1,424.0	1,422.2	1,269.1	153.08	9.290	
8,400.0	5,893.0	10,519.5	5,715.0	53.6	97.1	-87.83	-2,711.7	1,425.4	1,423.4	1,270.5	152.87	9.311	
8,500.0	5,893.0	10,419.5	5,715.0	55.5	95.2	-87.83	-2,811.7	1,426.7	1,424.6	1,271.9	152.65	9.332	
8,600.0	5,893.0	10,319.5	5,715.0	57.3	93.3	-87.83	-2,911.7	1,428.0	1,425.8	1,273.3	152.45	9.353	
8,700.0	5,893.0	10,219.5	5,715.0	59.2	91.4	-87.83	-3,011.7	1,429.3	1,427.0	1,274.8	152.25	9.373	
8,800.0	5,893.0	10,119.5	5,715.0	61.1	89.5	-87.83	-3,111.7	1,430.6	1,428.2	1,276.2	152.05	9.393	
8,900.0	5,893.0	10,019.5	5,715.0	63.0	87.6	-87.84	-3,211.7	1,432.0	1,429.4	1,277.6	151.85	9.413	
9,000.0	5,893.0	9,919.5	5,715.0	64.8	85.7	-87.84	-3,311.6	1,433.3	1,430.6	1,279.0	151.66	9.433	
9,100.0	5,893.0	9,819.5	5,715.0	66.7	83.8	-87.84	-3,411.6	1,434.6	1,431.8	1,280.4	151.47	9.453	
9,200.0	5,893.0	9,719.5	5,715.0	68.6	81.8	-87.84	-3,511.6	1,435.9	1,433.0	1,281.8	151.28	9.473	
9,300.0	5,893.0	9,619.5	5,715.0	70.5	79.9	-87.84	-3,611.6	1,437.3	1,434.2	1,283.1	151.10	9.492	
9,400.0	5,893.0	9,519.6	5,715.0	72.4	78.0	-87.84	-3,711.6	1,438.6	1,435.4	1,284.5	150.92	9.511	
9,500.0	5,893.0	9,419.6	5,715.0	74.3	76.2	-87.85	-3,811.6	1,439.9	1,436.7	1,285.9	150.74	9.531	
9,600.0	5,893.0	9,319.6	5,715.0	76.2	74.3	-87.85	-3,911.5	1,441.2	1,437.9	1,287.3	150.57	9.550	
9,700.0	5,893.0	9,219.6	5,715.0	78.1	72.4	-87.85	-4,011.5	1,442.6	1,439.1	1,288.7	150.40	9.568	
9,800.0	5,893.0	9,119.6	5,715.0	80.0	70.5	-87.85	-4,111.5	1,443.9	1,440.3	1,290.0	150.31	9.582	
9,900.0	5,893.0	9,019.6	5,715.0	81.9	68.6	-87.85	-4,211.5	1,445.2	1,441.5	1,291.2	150.32	9.589	
10,000.0	5,893.0	8,919.6	5,715.0	83.8	66.7	-87.86	-4,311.5	1,446.5	1,442.7	1,292.4	150.33	9.597	
10,100.0	5,893.0	8,819.6	5,715.0	85.7	64.8	-87.86	-4,411.5	1,447.8	1,443.9	1,293.6	150.34	9.604	
10,200.0	5,893.0	8,719.6	5,715.0	87.6	62.9	-87.86	-4,511.5	1,449.2	1,445.1	1,294.8	150.36	9.611	
10,300.0	5,893.0	8,619.6	5,715.0	89.5	61.0	-87.86	-4,611.4	1,450.5	1,446.3	1,295.9	150.38	9.618	
10,400.0	5,893.0	8,519.6	5,715.0	91.4	59.1	-87.86	-4,711.4	1,451.8	1,447.5	1,297.1	150.40	9.625	
10,500.0	5,893.0	8,419.6	5,715.0	93.3	57.3	-87.86	-4,811.4	1,453.1	1,448.7	1,298.3	150.43	9.631	
10,600.0	5,893.0	8,319.6	5,715.0	95.2	55.4	-87.87	-4,911.4	1,454.5	1,449.9	1,299.5	150.46	9.637	
10,700.0	5,893.0	8,219.6	5,715.0	97.1	53.5	-87.87	-5,011.4	1,455.8	1,451.1	1,300.7	150.49	9.643	

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 Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - HZ - Plan #2													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)	
10,800.0	5,893.0	8,119.7	5,715.0	99.0	51.7	-87.87	-5,111.4	1,457.1	1,452.4	1,301.8	150.53	9.648		
10,900.0	5,893.0	8,019.7	5,715.0	100.9	49.8	-87.87	-5,211.3	1,458.4	1,453.6	1,303.0	150.57	9.653		
11,000.0	5,893.0	7,919.7	5,715.0	102.8	47.9	-87.87	-5,311.3	1,459.7	1,454.8	1,304.1	150.62	9.658		
11,100.0	5,893.0	7,819.7	5,715.0	104.7	46.1	-87.87	-5,411.3	1,461.1	1,456.0	1,305.3	150.68	9.663		
11,200.0	5,893.0	7,719.7	5,715.0	106.6	44.2	-87.88	-5,511.3	1,462.4	1,457.2	1,306.4	150.74	9.667		
11,300.0	5,893.0	7,619.7	5,715.0	108.5	42.4	-87.88	-5,611.3	1,463.7	1,458.4	1,307.6	150.81	9.670		
11,400.0	5,893.0	7,519.7	5,715.0	110.4	40.6	-87.88	-5,711.3	1,465.0	1,459.6	1,308.7	150.89	9.673		
11,500.0	5,893.0	7,419.7	5,715.0	112.3	38.7	-87.88	-5,811.2	1,466.4	1,460.8	1,309.8	150.98	9.676		
11,600.0	5,893.0	7,319.7	5,715.0	114.3	36.9	-87.88	-5,911.2	1,467.7	1,462.0	1,310.9	151.08	9.677		
11,700.0	5,893.0	7,219.7	5,715.0	116.2	35.1	-87.89	-6,011.2	1,469.0	1,463.2	1,312.0	151.19	9.678		
11,800.0	5,893.0	7,119.7	5,715.0	118.1	33.3	-87.89	-6,111.2	1,470.3	1,464.4	1,313.1	151.31	9.678		
11,900.0	5,893.0	7,019.7	5,715.0	120.0	31.6	-87.89	-6,211.2	1,471.7	1,465.6	1,314.2	151.45	9.677		
12,000.0	5,893.0	6,919.7	5,715.0	121.9	29.8	-87.89	-6,311.2	1,473.0	1,466.8	1,315.2	151.61	9.675		
12,100.0	5,893.0	6,819.7	5,715.0	123.8	28.1	-87.89	-6,411.1	1,474.3	1,468.1	1,316.3	151.80	9.671		
12,200.0	5,893.0	6,719.8	5,715.0	125.7	26.4	-87.89	-6,511.1	1,475.6	1,469.3	1,317.3	152.01	9.666		
12,300.0	5,893.0	6,619.8	5,715.0	127.6	24.7	-87.90	-6,611.1	1,476.9	1,470.5	1,318.2	152.25	9.658		
12,400.0	5,893.0	6,519.8	5,715.0	129.5	23.1	-87.90	-6,711.1	1,478.3	1,471.7	1,319.1	152.54	9.648		
12,500.0	5,893.0	6,419.8	5,715.0	131.5	21.5	-87.90	-6,811.1	1,479.6	1,472.9	1,320.0	152.87	9.635		
12,600.0	5,893.0	6,319.8	5,715.0	133.4	20.0	-87.90	-6,911.1	1,480.9	1,474.1	1,320.8	153.27	9.618		
12,700.0	5,893.0	6,219.8	5,715.0	135.3	18.5	-87.90	-7,011.1	1,482.2	1,475.3	1,321.6	153.74	9.596		
12,800.0	5,893.0	6,119.8	5,715.0	137.2	17.2	-87.90	-7,111.0	1,483.6	1,476.5	1,322.2	154.30	9.569		
12,900.0	5,893.0	6,019.8	5,715.0	139.1	16.0	-87.91	-7,211.0	1,484.9	1,477.7	1,322.7	154.98	9.535		
13,000.0	5,893.0	5,929.2	5,708.4	141.0	15.0	-87.65	-7,301.3	1,486.1	1,479.2	1,323.3	155.88	9.490		
13,100.0	5,893.0	5,844.0	5,688.1	142.9	14.1	-86.87	-7,383.9	1,487.2	1,481.6	1,324.7	156.88	9.444		
13,200.0	5,893.0	5,767.2	5,658.4	144.9	13.5	-85.72	-7,454.7	1,488.1	1,485.5	1,327.5	158.01	9.402		
13,300.0	5,893.0	5,700.0	5,624.2	146.8	13.1	-84.41	-7,512.4	1,488.9	1,491.9	1,332.7	159.20	9.371		
13,400.0	5,893.0	5,650.0	5,594.0	148.7	12.8	-83.26	-7,552.3	1,489.4	1,501.5	1,340.9	160.54	9.353		
13,500.0	5,893.0	5,600.0	5,560.2	150.6	12.6	-81.97	-7,589.1	1,489.9	1,514.9	1,353.1	161.82	9.362		
13,600.0	5,893.0	5,550.0	5,523.0	152.5	12.4	-80.57	-7,622.4	1,490.3	1,532.8	1,369.8	163.00	9.404		
13,641.6	5,893.0	5,550.0	5,523.0	153.3	12.4	-80.57	-7,622.4	1,490.3	1,541.7	1,377.9	163.79	9.412		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - HZ - Plan #3												Offset Site Error:	0.0 ft
Survey Program: 158-ISCWSA MWD, 5973-ISCWSA 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)		Between Centres (ft)	Between Ellipses (ft)					
5,700.0	5,678.8	12,416.7	5,693.0	12.5	133.3	-71.55	-776.4	1,399.7	1,560.7	1,415.4	145.30	10.742	
5,800.0	5,753.5	12,416.7	5,693.0	12.9	133.3	-75.17	-776.4	1,399.7	1,528.1	1,380.2	147.99	10.326	
5,900.0	5,814.2	12,416.7	5,693.0	13.4	133.3	-78.71	-776.4	1,399.7	1,496.8	1,346.6	150.25	9.962	
6,000.0	5,858.6	12,416.7	5,693.0	14.1	133.3	-81.98	-776.4	1,399.7	1,468.0	1,315.9	152.11	9.650	
6,100.0	5,885.2	12,416.7	5,693.0	15.0	133.3	-84.81	-776.4	1,399.7	1,442.8	1,289.2	153.68	9.389	
6,200.0	5,893.0	12,416.7	5,693.0	16.1	133.3	-86.89	-776.4	1,399.7	1,422.6	1,267.6	155.02	9.177	
6,300.0	5,893.0	12,416.7	5,693.0	17.3	133.3	-86.89	-776.4	1,399.7	1,408.7	1,252.5	156.17	9.020	
6,400.0	5,893.0	12,416.7	5,693.0	18.7	133.3	-86.89	-776.4	1,399.7	1,401.7	1,244.3	157.43	8.904	
6,447.4	5,893.0	12,416.7	5,693.0	19.4	133.3	-86.89	-776.4	1,399.7	1,400.9	1,242.9	158.03	8.865 CC, ES	
6,500.0	5,893.0	12,381.0	5,693.0	20.1	132.7	-86.89	-812.1	1,400.2	1,401.5	1,243.3	158.13	8.863 SF	
6,600.0	5,893.0	12,281.0	5,693.0	21.7	130.8	-86.89	-912.0	1,401.5	1,402.7	1,245.1	157.56	8.902	
6,700.0	5,893.0	12,181.0	5,693.0	23.2	128.9	-86.90	-1,012.0	1,402.9	1,403.9	1,246.8	157.05	8.939	
6,800.0	5,893.0	12,081.0	5,693.0	24.8	126.9	-86.90	-1,112.0	1,404.2	1,405.1	1,248.5	156.59	8.973	
6,900.0	5,893.0	11,981.1	5,693.0	26.5	125.0	-86.90	-1,212.0	1,405.5	1,406.3	1,250.1	156.17	9.005	
7,000.0	5,893.0	11,881.1	5,693.0	28.2	123.1	-86.90	-1,312.0	1,406.8	1,407.5	1,251.7	155.78	9.035	
7,100.0	5,893.0	11,781.1	5,693.0	29.9	121.2	-86.91	-1,412.0	1,408.2	1,408.7	1,253.3	155.41	9.064	
7,200.0	5,893.0	11,681.1	5,693.0	31.7	119.3	-86.91	-1,511.9	1,409.5	1,409.9	1,254.8	155.08	9.092	
7,300.0	5,893.0	11,581.1	5,693.0	33.4	117.4	-86.91	-1,611.9	1,410.8	1,411.1	1,256.3	154.76	9.118	
7,400.0	5,893.0	11,481.1	5,693.0	35.2	115.5	-86.92	-1,711.9	1,412.1	1,412.3	1,257.8	154.46	9.144	
7,500.0	5,893.0	11,381.1	5,693.0	37.0	113.5	-86.92	-1,811.9	1,413.4	1,413.5	1,259.3	154.17	9.169	
7,600.0	5,893.0	11,281.1	5,693.0	38.8	111.6	-86.92	-1,911.9	1,414.8	1,414.7	1,260.8	153.89	9.193	
7,700.0	5,893.0	11,181.1	5,693.0	40.7	109.7	-86.92	-2,011.9	1,416.1	1,415.9	1,262.3	153.63	9.217	
7,800.0	5,893.0	11,081.1	5,693.0	42.5	107.8	-86.93	-2,111.8	1,417.4	1,417.1	1,263.8	153.37	9.240	
7,900.0	5,893.0	10,981.1	5,693.0	44.3	105.9	-86.93	-2,211.8	1,418.7	1,418.3	1,265.2	153.12	9.263	
8,000.0	5,893.0	10,881.1	5,693.0	46.2	104.0	-86.93	-2,311.8	1,420.1	1,419.5	1,266.7	152.89	9.285	
8,100.0	5,893.0	10,781.1	5,693.0	48.0	102.1	-86.93	-2,411.8	1,421.4	1,420.7	1,268.1	152.65	9.307	
8,200.0	5,893.0	10,681.1	5,693.0	49.9	100.2	-86.94	-2,511.8	1,422.7	1,422.0	1,269.5	152.43	9.329	
8,300.0	5,893.0	10,581.2	5,693.0	51.7	98.3	-86.94	-2,611.8	1,424.0	1,423.2	1,271.0	152.20	9.350	
8,400.0	5,893.0	10,481.2	5,693.0	53.6	96.3	-86.94	-2,711.8	1,425.3	1,424.4	1,272.4	151.99	9.372	
8,500.0	5,893.0	10,381.2	5,693.0	55.5	94.4	-86.94	-2,811.7	1,426.7	1,425.6	1,273.8	151.78	9.393	
8,600.0	5,893.0	10,281.2	5,693.0	57.3	92.5	-86.95	-2,911.7	1,428.0	1,426.8	1,275.2	151.57	9.413	
8,700.0	5,893.0	10,181.2	5,693.0	59.2	90.6	-86.95	-3,011.7	1,429.3	1,428.0	1,276.6	151.36	9.434	
8,800.0	5,893.0	10,081.2	5,693.0	61.1	88.7	-86.95	-3,111.7	1,430.6	1,429.2	1,278.0	151.17	9.454	
8,900.0	5,893.0	9,981.2	5,693.0	63.0	86.8	-86.95	-3,211.7	1,431.9	1,430.4	1,279.4	150.97	9.475	
9,000.0	5,893.0	9,881.2	5,693.0	64.8	84.9	-86.96	-3,311.7	1,433.3	1,431.6	1,280.8	150.78	9.495	
9,100.0	5,893.0	9,781.2	5,693.0	66.7	83.0	-86.96	-3,411.6	1,434.6	1,432.8	1,282.2	150.59	9.515	
9,200.0	5,893.0	9,681.2	5,693.0	68.6	81.1	-86.96	-3,511.6	1,435.9	1,434.0	1,283.6	150.40	9.535	
9,300.0	5,893.0	9,581.2	5,693.0	70.5	79.2	-86.96	-3,611.6	1,437.2	1,435.2	1,285.0	150.21	9.554	
9,400.0	5,893.0	9,481.2	5,693.0	72.4	77.3	-86.97	-3,711.6	1,438.6	1,436.4	1,286.4	150.03	9.574	
9,500.0	5,893.0	9,381.2	5,693.0	74.3	75.4	-86.97	-3,811.6	1,439.9	1,437.6	1,287.8	149.85	9.594	
9,600.0	5,893.0	9,281.2	5,693.0	76.2	73.5	-86.97	-3,911.6	1,441.2	1,438.8	1,289.2	149.68	9.613	
9,700.0	5,893.0	9,181.3	5,693.0	78.1	71.6	-86.97	-4,011.5	1,442.5	1,440.0	1,290.5	149.51	9.632	
9,800.0	5,893.0	9,081.3	5,693.0	80.0	69.7	-86.98	-4,111.5	1,443.8	1,441.2	1,291.8	149.46	9.643	
9,900.0	5,893.0	8,981.3	5,693.0	81.9	67.8	-86.98	-4,211.5	1,445.2	1,442.5	1,293.0	149.47	9.651	
10,000.0	5,893.0	8,881.3	5,693.0	83.8	65.9	-86.98	-4,311.5	1,446.5	1,443.7	1,294.2	149.47	9.658	
10,100.0	5,893.0	8,781.3	5,693.0	85.7	64.0	-86.99	-4,411.5	1,447.8	1,444.9	1,295.4	149.49	9.666	
10,200.0	5,893.0	8,681.3	5,693.0	87.6	62.1	-86.99	-4,511.5	1,449.1	1,446.1	1,296.6	149.50	9.673	
10,300.0	5,893.0	8,581.3	5,693.0	89.5	60.2	-86.99	-4,611.4	1,450.5	1,447.3	1,297.8	149.52	9.680	
10,400.0	5,893.0	8,481.3	5,693.0	91.4	58.4	-86.99	-4,711.4	1,451.8	1,448.5	1,298.9	149.54	9.686	
10,500.0	5,893.0	8,381.3	5,693.0	93.3	56.5	-87.00	-4,811.4	1,453.1	1,449.7	1,300.1	149.56	9.693	
10,600.0	5,893.0	8,281.3	5,693.0	95.2	54.6	-87.00	-4,911.4	1,454.4	1,450.9	1,301.3	149.59	9.699	
10,700.0	5,893.0	8,181.3	5,693.0	97.1	52.7	-87.00	-5,011.4	1,455.7	1,452.1	1,302.5	149.62	9.705	

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 Federal #12H-1314B
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 Federal #12H-1314B	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 S18-T10N-R57W - HORSETAIL #18-0713H - HZ - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 158-ISCWSA MWD, 5973-ISCWSA 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)						
10,800.0	5,893.0	8,081.3	5,693.0	99.0	50.9	-87.00	-5,111.4	1,457.1	1,453.3	1,303.6	149.66	9.711		
10,900.0	5,893.0	7,981.3	5,693.0	100.9	49.0	-87.01	-5,211.4	1,458.4	1,454.5	1,304.8	149.70	9.716		
11,000.0	5,893.0	7,881.3	5,693.0	102.8	47.1	-87.01	-5,311.3	1,459.7	1,455.7	1,306.0	149.74	9.721		
11,100.0	5,893.0	7,781.4	5,693.0	104.7	45.3	-87.01	-5,411.3	1,461.0	1,456.9	1,307.1	149.80	9.726		
11,200.0	5,893.0	7,681.4	5,693.0	106.6	43.4	-87.01	-5,511.3	1,462.4	1,458.1	1,308.3	149.86	9.730		
11,300.0	5,893.0	7,581.4	5,693.0	108.5	41.6	-87.02	-5,611.3	1,463.7	1,459.3	1,309.4	149.92	9.734		
11,400.0	5,893.0	7,481.4	5,693.0	110.4	39.8	-87.02	-5,711.3	1,465.0	1,460.5	1,310.5	150.00	9.737		
11,500.0	5,893.0	7,381.4	5,693.0	112.3	37.9	-87.02	-5,811.3	1,466.3	1,461.7	1,311.7	150.08	9.740		
11,600.0	5,893.0	7,281.4	5,693.0	114.3	36.1	-87.02	-5,911.2	1,467.6	1,463.0	1,312.8	150.17	9.742		
11,700.0	5,893.0	7,181.4	5,693.0	116.2	34.3	-87.02	-6,011.2	1,469.0	1,464.2	1,313.9	150.28	9.743		
11,800.0	5,893.0	7,081.4	5,693.0	118.1	32.5	-87.03	-6,111.2	1,470.3	1,465.4	1,315.0	150.40	9.743		
11,900.0	5,893.0	6,981.4	5,693.0	120.0	30.7	-87.03	-6,211.2	1,471.6	1,466.6	1,316.0	150.54	9.742		
12,000.0	5,893.0	6,881.4	5,693.0	121.9	29.0	-87.03	-6,311.2	1,472.9	1,467.8	1,317.1	150.69	9.740		
12,100.0	5,893.0	6,781.4	5,693.0	123.8	27.2	-87.03	-6,411.2	1,474.3	1,469.0	1,318.1	150.87	9.737		
12,200.0	5,893.0	6,681.4	5,693.0	125.7	25.6	-87.04	-6,511.1	1,475.6	1,470.2	1,319.1	151.11	9.729		
12,300.0	5,893.0	6,583.8	5,694.2	127.6	24.2	-87.08	-6,608.8	1,477.0	1,471.5	1,319.8	151.67	9.702		
12,400.0	5,893.0	6,487.4	5,699.6	129.5	23.0	-87.30	-6,705.0	1,478.8	1,472.9	1,320.6	152.34	9.669		
12,500.0	5,893.0	6,390.2	5,709.3	131.5	21.5	-87.68	-6,801.7	1,481.0	1,474.7	1,321.9	152.85	9.648		
12,600.0	5,893.0	6,288.8	5,716.9	133.4	19.9	-87.98	-6,902.7	1,483.3	1,476.5	1,323.3	153.18	9.639		
12,700.0	5,893.0	6,187.0	5,718.9	135.3	18.4	-88.06	-7,004.5	1,485.2	1,478.2	1,324.7	153.56	9.626		
12,800.0	5,893.0	6,085.2	5,715.3	137.2	16.9	-87.92	-7,106.2	1,486.8	1,479.8	1,325.8	154.01	9.609		
12,900.0	5,893.0	5,984.6	5,706.6	139.1	15.6	-87.59	-7,206.4	1,488.1	1,481.3	1,326.8	154.55	9.585		
13,000.0	5,893.0	5,828.7	5,666.2	141.0	13.8	-86.02	-7,356.0	1,485.5	1,480.9	1,326.4	154.50	9.585		
13,093.8	5,893.0	5,753.5	5,631.5	142.8	13.1	-84.67	-7,422.6	1,481.8	1,479.7	1,324.3	155.34	9.525		
13,100.0	5,893.0	5,750.2	5,629.9	142.9	13.1	-84.61	-7,425.5	1,481.6	1,479.7	1,324.2	155.42	9.521		
13,200.0	5,893.0	5,701.0	5,604.8	144.9	12.7	-83.63	-7,467.8	1,479.9	1,481.8	1,325.1	156.69	9.457		
13,300.0	5,893.0	5,669.0	5,586.9	146.8	12.4	-82.94	-7,494.3	1,479.5	1,488.2	1,330.1	158.17	9.409		
13,400.0	5,893.0	5,638.0	5,568.1	148.7	12.2	-82.22	-7,518.9	1,479.5	1,499.3	1,339.7	159.65	9.392		
13,500.0	5,893.0	5,606.0	5,547.0	150.6	12.0	-81.42	-7,543.0	1,480.1	1,515.3	1,354.3	161.08	9.407		
13,600.0	5,893.0	5,574.0	5,524.9	152.5	11.9	-80.59	-7,566.1	1,481.5	1,536.3	1,373.9	162.49	9.455		
13,641.6	5,893.0	5,554.9	5,511.4	153.3	11.8	-80.08	-7,579.6	1,482.5	1,546.4	1,383.5	162.97	9.489		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12H-1314B
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 Federal #12H-1314B	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 Depths are relative to WELL @ 4964.1ft (Original Well Elev)

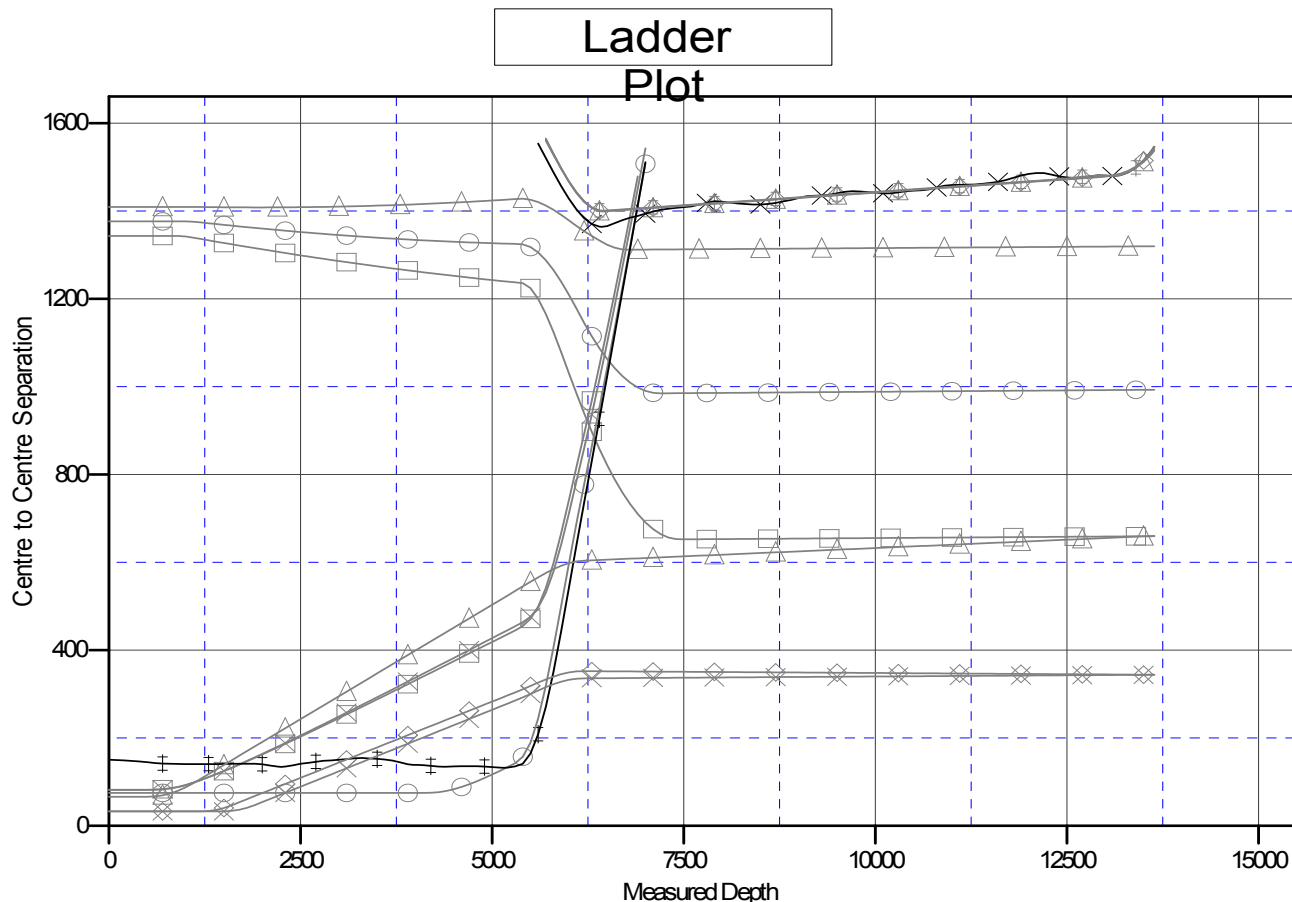
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Razor Federal #12H-1314B

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 1.09°



LEGEND

10B, HZ, Plan #1 V0
11A, HZ, Plan #1 V0
12B, HZ, Plan #1 V0
13A, HZ, Plan #1 V0
15A, HZ, Plan #1 V0

✕ Razor #12H-0116B, Hz, Plan #1 V0
✕ RAZOR 12-0141H (EXISTING), WHITINGWELL, SURVEYS V0
✕ Razor Federal #12H-1313A, Hz, Plan #1 V0
✕ Razor Federal #12H-1315A, Hz, Plan #1 V0
✕ Razor Federal #12H-1316B, Hz, Plan #1 V0

✕ HORSETAIL #18-0713H, HZ, FINAL V0
✕ HORSETAIL #18-0713H, HZ, Plan #1 V0
✕ HORSETAIL #18-0713H, HZ, Plan #2 V0
✕ HORSETAIL #18-0713H, HZ, Plan #3 V0