

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Company:	Whiting Petroleum Corporation	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Project:	Weld County, CO	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	STK		
Design:	PLAN #2 STK		

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:	40.854456
From:	Lat/Long	Easting:	3,465,176.15 usft	Longitude:	-103.818397
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.09 °

Well	Razor Federal #12G-1311A					
Well Position	+N/-S	0.0 usft	Northing:	1,558,223.37 usft	Latitude:	40.853494
	+E/-W	0.0 usft	Easting:	3,467,052.89 usft	Longitude:	-103.811636
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,953.0 usft

Wellbore	STK				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	10/15/2015	7.62	67.35	52,945

Design	PLAN #2 STK				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	3,500.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	177.14	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
3,500.0	6.69	37.06	3,471.6	257.3	283.4	0.00	0.00	0.00	0.00	
3,619.0	6.69	90.00	3,589.9	262.8	294.5	5.00	0.00	44.48	116.29	
3,919.0	6.69	90.00	3,887.9	262.8	329.4	0.00	0.00	0.00	0.00	
4,253.5	0.00	0.00	4,221.6	262.8	348.9	2.00	-2.00	0.00	180.00	
5,286.1	0.00	0.00	5,254.1	262.8	348.9	0.00	0.00	0.00	0.00	
6,104.3	90.00	179.69	5,775.0	-258.0	351.8	11.00	11.00	0.00	179.69	
13,729.3	90.00	179.69	5,775.0	-7,882.9	393.6	0.00	0.00	0.00	0.00	Razor #12G-1311A PI

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Project:	Weld County, CO	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site:	S12-T10N-R58W	North Reference:	True
Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	STK		
Design:	PLAN #2 STK		

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
3,500.0	6.69	37.06	3,471.6	257.3	283.4	-242.9	0.00	0.00	STK POINT @ 3500'
3,600.0	6.33	82.23	3,571.0	262.7	292.3	-247.8	5.00	-0.36	
3,619.0	6.69	89.98	3,589.9	262.8	294.5	-247.8	5.00	1.92	END OF TURN @ 3619' MD
3,700.0	6.69	90.00	3,670.3	262.8	303.9	-247.4	0.00	0.00	
3,800.0	6.69	90.00	3,769.6	262.8	315.6	-246.8	0.00	0.00	
3,900.0	6.69	90.00	3,868.9	262.8	327.2	-246.2	0.00	0.00	
3,919.0	6.69	90.00	3,887.8	262.8	329.4	-246.1	0.00	0.00	Start Drop -2.00
4,000.0	5.07	90.00	3,968.4	262.8	337.7	-245.7	2.00	-2.00	
4,100.0	3.07	90.00	4,068.1	262.8	344.8	-245.3	2.00	-2.00	
4,200.0	1.07	90.00	4,168.1	262.8	348.4	-245.1	2.00	-2.00	
4,253.5	0.00	90.00	4,221.6	262.8	348.9	-245.1	2.00	-2.00	EOD; INC=0°
4,300.0	0.00	0.00	4,268.1	262.8	348.9	-245.1	0.00	0.00	
4,400.0	0.00	0.00	4,368.1	262.8	348.9	-245.1	0.00	0.00	
4,500.0	0.00	0.00	4,468.1	262.8	348.9	-245.1	0.00	0.00	
4,600.0	0.00	0.00	4,568.1	262.8	348.9	-245.1	0.00	0.00	
4,700.0	0.00	0.00	4,668.1	262.8	348.9	-245.1	0.00	0.00	
4,800.0	0.00	0.00	4,768.1	262.8	348.9	-245.1	0.00	0.00	
4,900.0	0.00	0.00	4,868.1	262.8	348.9	-245.1	0.00	0.00	
5,000.0	0.00	0.00	4,968.1	262.8	348.9	-245.1	0.00	0.00	
5,100.0	0.00	0.00	5,068.1	262.8	348.9	-245.1	0.00	0.00	
5,200.0	0.00	0.00	5,168.1	262.8	348.9	-245.1	0.00	0.00	
5,286.1	0.00	0.00	5,254.2	262.8	348.9	-245.1	0.00	0.00	Start Build 11.00
5,300.0	1.53	179.69	5,268.1	262.7	349.0	-244.9	11.02	11.02	
5,400.0	12.53	179.69	5,367.2	250.4	349.0	-232.7	11.00	11.00	
5,500.0	23.53	179.69	5,462.1	219.5	349.2	-201.8	11.00	11.00	
5,600.0	34.53	179.69	5,549.4	171.1	349.5	-153.4	11.00	11.00	
5,700.0	45.53	179.69	5,625.8	106.8	349.8	-89.3	11.00	11.00	
5,800.0	56.53	179.69	5,688.6	29.2	350.2	-11.7	11.00	11.00	
5,900.0	67.53	179.69	5,735.5	-59.0	350.7	76.4	11.00	11.00	
6,000.0	78.53	179.69	5,764.6	-154.5	351.2	171.8	11.00	11.00	
6,100.0	89.53	179.69	5,775.0	-253.8	351.8	271.0	11.00	11.00	
6,104.3	90.00	179.69	5,775.0	-258.1	351.8	275.3	10.88	10.88	LP @ 5775' TVD; 90°
6,200.0	90.00	179.69	5,775.0	-353.8	352.3	370.9	0.00	0.00	
6,300.0	90.00	179.69	5,775.0	-453.8	352.9	470.8	0.00	0.00	
6,400.0	90.00	179.69	5,775.0	-553.8	353.4	570.7	0.00	0.00	
6,500.0	90.00	179.69	5,775.0	-653.8	354.0	670.6	0.00	0.00	
6,600.0	90.00	179.69	5,775.0	-753.8	354.5	770.5	0.00	0.00	
6,700.0	90.00	179.69	5,775.0	-853.8	355.1	870.4	0.00	0.00	
6,800.0	90.00	179.69	5,775.0	-953.8	355.6	970.3	0.00	0.00	
6,900.0	90.00	179.69	5,775.0	-1,053.8	356.2	1,070.2	0.00	0.00	
7,000.0	90.00	179.69	5,775.0	-1,153.8	356.7	1,170.1	0.00	0.00	
7,100.0	90.00	179.69	5,775.0	-1,253.8	357.3	1,270.0	0.00	0.00	
7,200.0	90.00	179.69	5,775.0	-1,353.8	357.8	1,369.9	0.00	0.00	
7,300.0	90.00	179.69	5,775.0	-1,453.8	358.4	1,469.8	0.00	0.00	
7,400.0	90.00	179.69	5,775.0	-1,553.7	358.9	1,569.7	0.00	0.00	
7,500.0	90.00	179.69	5,775.0	-1,653.7	359.5	1,669.6	0.00	0.00	
7,600.0	90.00	179.69	5,775.0	-1,753.7	360.0	1,769.5	0.00	0.00	
7,700.0	90.00	179.69	5,775.0	-1,853.7	360.5	1,869.4	0.00	0.00	
7,800.0	90.00	179.69	5,775.0	-1,953.7	361.1	1,969.3	0.00	0.00	
7,900.0	90.00	179.69	5,775.0	-2,053.7	361.6	2,069.2	0.00	0.00	
8,000.0	90.00	179.69	5,775.0	-2,153.7	362.2	2,169.1	0.00	0.00	
8,100.0	90.00	179.69	5,775.0	-2,253.7	362.7	2,269.0	0.00	0.00	

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Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	STK		
Design:	PLAN #2 STK		

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
8,200.0	90.00	179.69	5,775.0	-2,353.7	363.3	2,368.9	0.00	0.00	
8,300.0	90.00	179.69	5,775.0	-2,453.7	363.8	2,468.8	0.00	0.00	
8,400.0	90.00	179.69	5,775.0	-2,553.7	364.4	2,568.7	0.00	0.00	
8,500.0	90.00	179.69	5,775.0	-2,653.7	364.9	2,668.6	0.00	0.00	
8,600.0	90.00	179.69	5,775.0	-2,753.7	365.5	2,768.5	0.00	0.00	
8,700.0	90.00	179.69	5,775.0	-2,853.7	366.0	2,868.4	0.00	0.00	
8,800.0	90.00	179.69	5,775.0	-2,953.7	366.6	2,968.3	0.00	0.00	
8,900.0	90.00	179.69	5,775.0	-3,053.7	367.1	3,068.2	0.00	0.00	
9,000.0	90.00	179.69	5,775.0	-3,153.7	367.7	3,168.1	0.00	0.00	
9,100.0	90.00	179.69	5,775.0	-3,253.7	368.2	3,268.0	0.00	0.00	
9,200.0	90.00	179.69	5,775.0	-3,353.7	368.8	3,367.9	0.00	0.00	
9,300.0	90.00	179.69	5,775.0	-3,453.7	369.3	3,467.8	0.00	0.00	
9,400.0	90.00	179.69	5,775.0	-3,553.7	369.9	3,567.7	0.00	0.00	
9,500.0	90.00	179.69	5,775.0	-3,653.7	370.4	3,667.6	0.00	0.00	
9,600.0	90.00	179.69	5,775.0	-3,753.7	371.0	3,767.5	0.00	0.00	
9,700.0	90.00	179.69	5,775.0	-3,853.7	371.5	3,867.4	0.00	0.00	
9,800.0	90.00	179.69	5,775.0	-3,953.7	372.1	3,967.3	0.00	0.00	
9,900.0	90.00	179.69	5,775.0	-4,053.7	372.6	4,067.2	0.00	0.00	
10,000.0	90.00	179.69	5,775.0	-4,153.7	373.1	4,167.1	0.00	0.00	
10,100.0	90.00	179.69	5,775.0	-4,253.7	373.7	4,267.1	0.00	0.00	
10,200.0	90.00	179.69	5,775.0	-4,353.7	374.2	4,367.0	0.00	0.00	
10,300.0	90.00	179.69	5,775.0	-4,453.7	374.8	4,466.9	0.00	0.00	
10,400.0	90.00	179.69	5,775.0	-4,553.7	375.3	4,566.8	0.00	0.00	
10,500.0	90.00	179.69	5,775.0	-4,653.7	375.9	4,666.7	0.00	0.00	
10,600.0	90.00	179.69	5,775.0	-4,753.7	376.4	4,766.6	0.00	0.00	
10,700.0	90.00	179.69	5,775.0	-4,853.7	377.0	4,866.5	0.00	0.00	
10,800.0	90.00	179.69	5,775.0	-4,953.7	377.5	4,966.4	0.00	0.00	
10,900.0	90.00	179.69	5,775.0	-5,053.7	378.1	5,066.3	0.00	0.00	
11,000.0	90.00	179.69	5,775.0	-5,153.7	378.6	5,166.2	0.00	0.00	
11,100.0	90.00	179.69	5,775.0	-5,253.7	379.2	5,266.1	0.00	0.00	
11,200.0	90.00	179.69	5,775.0	-5,353.7	379.7	5,366.0	0.00	0.00	
11,300.0	90.00	179.69	5,775.0	-5,453.7	380.3	5,465.9	0.00	0.00	
11,400.0	90.00	179.69	5,775.0	-5,553.7	380.8	5,565.8	0.00	0.00	
11,500.0	90.00	179.69	5,775.0	-5,653.7	381.4	5,665.7	0.00	0.00	
11,600.0	90.00	179.69	5,775.0	-5,753.7	381.9	5,765.6	0.00	0.00	
11,700.0	90.00	179.69	5,775.0	-5,853.7	382.5	5,865.5	0.00	0.00	
11,800.0	90.00	179.69	5,775.0	-5,953.7	383.0	5,965.4	0.00	0.00	
11,900.0	90.00	179.69	5,775.0	-6,053.7	383.6	6,065.3	0.00	0.00	
12,000.0	90.00	179.69	5,775.0	-6,153.7	384.1	6,165.2	0.00	0.00	
12,100.0	90.00	179.69	5,775.0	-6,253.7	384.7	6,265.1	0.00	0.00	
12,200.0	90.00	179.69	5,775.0	-6,353.7	385.2	6,365.0	0.00	0.00	
12,300.0	90.00	179.69	5,775.0	-6,453.7	385.7	6,464.9	0.00	0.00	
12,400.0	90.00	179.69	5,775.0	-6,553.7	386.3	6,564.8	0.00	0.00	
12,500.0	90.00	179.69	5,775.0	-6,653.7	386.8	6,664.7	0.00	0.00	
12,600.0	90.00	179.69	5,775.0	-6,753.7	387.4	6,764.6	0.00	0.00	
12,700.0	90.00	179.69	5,775.0	-6,853.7	387.9	6,864.5	0.00	0.00	
12,800.0	90.00	179.69	5,775.0	-6,953.7	388.5	6,964.4	0.00	0.00	
12,900.0	90.00	179.69	5,775.0	-7,053.7	389.0	7,064.3	0.00	0.00	
13,000.0	90.00	179.69	5,775.0	-7,153.7	389.6	7,164.2	0.00	0.00	
13,100.0	90.00	179.69	5,775.0	-7,253.7	390.1	7,264.1	0.00	0.00	
13,200.0	90.00	179.69	5,775.0	-7,353.7	390.7	7,364.0	0.00	0.00	
13,300.0	90.00	179.69	5,775.0	-7,453.7	391.2	7,463.9	0.00	0.00	

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Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	STK		
Design:	PLAN #2 STK		

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
13,400.0	90.00	179.69	5,775.0	-7,553.7	391.8	7,563.8	0.00	0.00	
13,500.0	90.00	179.69	5,775.0	-7,653.7	392.3	7,663.7	0.00	0.00	
13,600.0	90.00	179.69	5,775.0	-7,753.7	392.9	7,763.6	0.00	0.00	
13,700.0	90.00	179.69	5,775.0	-7,853.7	393.4	7,863.5	0.00	0.00	
13,729.3	90.00	179.69	5,775.0	-7,882.9	393.6	7,892.8	0.00	0.00	TD at 13729.3

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Razor #12G-1311A PBH - plan hits target center - Point	0.00	0.00	5,775.0	-7,882.9	393.6	1,550,349.36	3,467,596.49	40.831858	-103.810214

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,500.0	3,471.6	257.3	283.4	STK POINT @ 3500'
3,619.0	3,589.9	257.3	283.4	END OF TURN @ 3619' MD
3,919.0	3,887.9	262.8	294.5	Start Drop -2.00
4,253.5	4,221.6	262.8	329.4	EOD; INC=0°
5,286.1	5,254.1	262.8	348.9	Start Build 11.00
6,104.3	5,775.0	262.8	348.9	LP @ 5775' TVD; 90°
13,729.3	5,775.0	262.7	349.0	TD at 13729.3

Whiting Petroleum Corporation

Weld County, CO

S12-T10N-R58W

Razor Federal #12G-1311A

STK

PLAN #2 STK

Anticollision Report

15 October, 2015

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Reference	PLAN #2 STK		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	3,500.0 to 999,999.0usft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,083.9usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	10/15/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
362.0	3,500.0	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM
3,500.0	13,729.3	PLAN #2 STK (STK)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S12-T10N-R58W						
ALLAN 1 (EXISTING) - DAVIS OIL WELL - NO SURVEY						Out of range
Razor #12G-0109A - HZ - FINAL	6,193.1	5,864.7	794.1	756.3	21.017	CC
Razor #12G-0109A - HZ - FINAL	6,200.0	5,859.8	794.1	756.3	20.993	ES
Razor #12G-0109A - HZ - FINAL	6,300.0	5,806.8	798.9	760.4	20.754	SF
Razor #12G-0110B - HZ - FINAL	6,200.0	5,805.6	453.1	415.6	12.090	CC, ES, SF
Razor #12G-0111A - HZ - FINAL	5,882.7	5,937.0	107.6	71.6	2.989	CC, ES, SF
Razor #12G-0112B - HZ - PLAN #4	6,093.3	5,902.0	206.7	175.5	6.620	CC
Razor #12G-0112B - HZ - PLAN #4	6,100.0	5,896.8	206.8	175.4	6.589	ES
Razor #12G-0112B - HZ - PLAN #4	6,200.0	5,826.7	218.4	185.2	6.586	SF
RAZOR 12-0141H (EXISTING) - WHTING WELL - SURV	5,088.6	5,048.3	1,078.7	1,054.4	44.441	CC
RAZOR 12-0141H (EXISTING) - WHTING WELL - SURV	5,100.0	5,057.8	1,078.7	1,054.4	44.362	ES
RAZOR 12-0141H (EXISTING) - WHTING WELL - SURV	5,300.0	5,208.0	1,083.0	1,057.9	43.125	SF
Razor Federal #12G-1309A - HZ - FINAL	3,500.0	3,459.8	467.8	443.2	19.021	CC, ES
Razor Federal #12G-1309A - HZ - FINAL	13,700.0	13,979.0	699.5	450.1	2.805	SF
Razor Federal #12G-1310B - HZ - SURVEYS	3,500.0	3,486.0	237.2	211.9	9.380	CC, ES
Razor Federal #12G-1310B - HZ - SURVEYS	13,700.0	14,043.8	453.5	243.3	2.158	SF
Razor Federal #12G-1311A - OH - SURVEYS	3,500.0	3,500.0	0.0	0.0	0.000	Level 1, CC, SF
Razor Federal #12G-1311A - OH - SURVEYS	3,510.1	3,510.1	0.0	0.0	0.671	Level 1, ES
Razor Federal #12G-1312B - HZ - PLAN #4	3,500.0	3,484.6	210.4	188.5	9.598	CC
Razor Federal #12G-1312B - HZ - PLAN #4	13,700.0	13,964.9	345.6	70.3	1.255	Level 3, ES, SF

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12G-0109A - HZ - FINAL													Offset Site Error:	0.0 usft
Survey Program: 353-MWD+HDGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
3,500.0	3,471.6	3,408.0	3,375.7	19.5	19.9	-166.82	-261.3	-334.0	812.0	788.2	23.79	34.130		
3,600.0	3,571.0	3,492.7	3,459.6	19.8	20.5	146.97	-271.1	-340.0	835.0	810.8	24.26	34.424		
3,700.0	3,670.3	3,588.4	3,554.4	19.9	21.1	139.24	-282.5	-346.7	856.8	832.2	24.62	34.798		
3,800.0	3,769.6	3,663.5	3,628.5	20.0	21.5	139.38	-292.6	-352.8	880.4	855.6	24.85	35.431		
3,900.0	3,868.9	3,761.4	3,725.1	20.1	22.2	139.52	-306.6	-361.5	905.1	879.9	25.26	35.830		
4,000.0	3,968.4	3,863.0	3,825.2	20.2	22.9	139.84	-321.3	-370.0	928.8	903.1	25.71	36.124		
4,100.0	4,068.1	3,976.3	3,937.1	20.3	23.6	139.99	-337.4	-378.2	948.9	922.6	26.25	36.153		
4,200.0	4,168.1	4,096.9	4,056.4	20.4	24.3	139.85	-353.7	-384.5	964.3	937.5	26.82	35.949		
4,300.0	4,268.1	4,202.7	4,161.2	20.5	25.0	-130.53	-367.4	-388.2	975.7	948.4	27.30	35.740		
4,400.0	4,368.1	4,281.7	4,239.4	20.6	25.5	-130.87	-377.8	-391.4	987.5	959.9	27.62	35.756		
4,500.0	4,468.1	4,374.2	4,330.9	20.8	26.1	-131.22	-390.7	-397.1	1,001.3	973.3	28.03	35.721		
4,600.0	4,568.1	4,481.3	4,436.9	20.9	26.7	-131.54	-404.3	-404.1	1,014.6	986.0	28.55	35.532		
4,700.0	4,668.1	4,580.0	4,534.6	21.0	27.3	-131.86	-417.0	-409.8	1,027.4	998.4	29.03	35.397		
4,800.0	4,768.1	4,703.6	4,657.2	21.2	28.1	-132.06	-429.6	-418.4	1,039.5	1,009.9	29.66	35.048		
4,900.0	4,868.1	4,804.3	4,757.4	21.4	28.7	-132.18	-438.3	-424.9	1,050.1	1,020.0	30.16	34.823		
5,000.0	4,968.1	4,900.6	4,853.1	21.6	29.3	-132.25	-446.2	-431.7	1,060.9	1,030.2	30.63	34.631		
5,100.0	5,068.1	5,008.1	4,960.0	21.8	29.9	-132.35	-455.2	-438.7	1,071.3	1,040.1	31.18	34.355		
5,200.0	5,168.1	5,148.5	5,099.7	22.0	30.7	-132.58	-466.8	-445.1	1,080.6	1,048.7	31.90	33.872		
5,300.0	5,268.1	5,251.3	5,200.9	22.2	31.7	89.45	231.4	-441.7	1,071.7	1,044.4	27.34	39.198		
5,400.0	5,367.2	5,350.7	5,299.5	22.4	32.6	97.90	219.9	-441.5	1,007.2	978.2	29.06	34.663		
5,500.0	5,462.1	5,449.4	5,399.4	22.5	33.4	103.06	185.5	-440.9	950.5	919.9	30.64	31.022		
5,600.0	5,549.4	5,537.5	5,488.0	22.6	34.2	106.22	143.7	-440.1	903.6	871.5	32.09	28.154		
5,700.0	5,625.8	5,613.6	5,565.5	22.7	34.0	107.57	91.8	-439.4	867.9	834.6	33.32	26.048		
5,800.0	5,688.6	5,676.1	5,628.6	22.8	33.8	107.27	22.3	-439.3	843.2	808.9	34.29	24.594		
5,900.0	5,735.5	5,723.6	5,677.9	23.0	33.6	100.11	-191.0	-439.4	827.0	791.8	35.15	23.526		
6,000.0	5,764.6	5,752.0	5,704.9	23.4	33.5	97.81	-255.8	-439.0	807.3	771.1	36.20	22.302		
6,100.0	5,775.0	5,762.7	5,715.3	24.0	33.4	95.11	-306.5	-440.4	797.1	760.0	37.07	21.503		
6,193.1	5,775.4	5,764.7	5,791.1	24.8	33.3	91.13	-351.2	-441.6	794.1	756.3	37.78	21.017 CC		
6,200.0	5,775.0	5,859.8	5,787.1	24.9	33.3	90.88	-354.1	-441.7	794.1	756.3	37.83	20.993 ES		
6,300.0	5,775.0	5,806.8	5,742.8	26.0	33.2	87.68	-382.9	-442.2	798.9	760.4	38.49	20.754 SF		
6,400.0	5,775.0	5,768.2	5,708.9	27.3	33.1	85.25	-401.4	-442.6	813.2	774.1	39.08	20.806		
6,500.0	5,775.0	5,740.0	5,683.4	28.7	33.1	83.44	-413.6	-443.0	837.4	797.8	39.59	21.150		
6,600.0	5,775.0	5,713.0	5,658.6	30.2	33.0	81.68	-424.1	-443.4	871.2	831.2	39.96	21.799		
6,700.0	5,775.0	5,692.7	5,639.6	31.9	32.9	80.35	-431.2	-443.8	913.8	873.6	40.24	22.706		
6,800.0	5,775.0	5,675.6	5,623.4	33.6	32.9	79.23	-436.7	-444.1	964.3	923.8	40.43	23.850		
6,900.0	5,775.0	5,645.0	5,594.1	35.4	32.8	77.22	-445.5	-444.7	1,021.9	981.4	40.43	25.273		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12G-0110B - HZ - FINAL													Offset Site Error:	0.0 usft
Survey Program: 344-MWD+HDGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
3,500.0	3,471.6	3,427.7	3,406.8	19.5	19.3	178.26	-272.8	-92.7	653.2	629.2	24.00	27.220		
3,600.0	3,571.0	3,530.1	3,508.6	19.8	19.9	132.43	-283.6	-94.1	672.0	647.5	24.59	27.333		
3,700.0	3,670.3	3,631.6	3,609.5	19.9	20.5	124.95	-294.2	-95.2	688.0	663.0	25.00	27.523		
3,800.0	3,769.6	3,722.1	3,699.5	20.0	21.0	125.24	-303.9	-95.7	703.7	678.4	25.34	27.766		
3,900.0	3,868.9	3,812.2	3,788.8	20.1	21.6	125.36	-315.9	-95.8	721.3	695.6	25.70	28.065		
4,000.0	3,968.4	3,916.2	3,891.8	20.2	22.2	125.66	-329.8	-95.9	738.3	712.1	26.18	28.205		
4,100.0	4,068.1	4,015.6	3,990.5	20.3	22.8	125.78	-342.2	-96.0	752.6	726.0	26.62	28.276		
4,200.0	4,168.1	4,123.4	4,097.5	20.4	23.5	125.66	-355.2	-96.4	764.7	737.6	27.12	28.203		
4,300.0	4,268.1	4,227.9	4,201.4	20.5	24.1	-144.70	-366.4	-96.5	773.8	746.3	27.59	28.048		
4,400.0	4,368.1	4,338.7	4,311.6	20.6	24.7	-145.21	-377.5	-96.0	781.7	753.6	28.11	27.812		
4,500.0	4,468.1	4,428.0	4,400.5	20.8	25.2	-145.61	-386.2	-95.3	789.4	760.9	28.50	27.699		
4,600.0	4,568.1	4,522.0	4,494.0	20.9	25.8	-145.93	-395.5	-96.3	798.3	769.3	28.93	27.596		
4,700.0	4,668.1	4,642.7	4,614.2	21.0	26.5	-146.31	-406.2	-97.0	805.8	776.3	29.53	27.288		
4,800.0	4,768.1	4,749.4	4,720.4	21.2	27.1	-146.89	-416.9	-94.3	812.9	782.8	30.05	27.049		
4,900.0	4,868.1	4,855.1	4,825.7	21.4	27.7	-147.39	-424.6	-90.8	817.2	786.6	30.57	26.730		
5,000.0	4,968.1	4,929.9	4,900.3	21.6	28.1	-147.68	-431.0	-90.1	823.9	793.0	30.92	26.641		
5,100.0	5,068.1	5,011.4	4,981.3	21.8	28.6	-147.86	-439.2	-92.1	833.6	802.3	31.31	26.625		
5,200.0	5,168.1	5,172.0	5,141.3	22.0	29.5	-148.22	-451.8	-93.9	841.2	809.0	32.16	26.153		
5,300.0	5,268.1	5,294.2	5,263.6	22.2	30.1	32.07	-453.7	-94.4	842.4	809.7	32.74	25.732		
5,400.0	5,367.2	5,399.8	5,369.1	22.4	30.6	33.17	-454.1	-94.8	832.7	799.5	33.26	25.040		
5,500.0	5,462.1	6,098.9	5,959.5	22.5	32.8	73.74	-145.9	-108.5	768.4	741.1	27.24	28.210		
5,600.0	5,549.4	6,163.7	5,995.7	22.6	33.1	94.77	-92.1	-108.0	691.2	663.4	27.77	24.886		
5,700.0	5,625.8	6,113.1	5,967.8	22.7	32.9	99.49	-134.3	-108.5	620.6	590.3	30.26	20.508		
5,800.0	5,688.6	6,063.7	5,938.2	22.8	32.7	101.99	-173.9	-108.2	560.1	527.6	32.52	17.225		
5,900.0	5,735.5	6,002.9	5,898.7	23.0	32.5	101.12	-220.0	-107.6	512.5	477.9	34.57	14.822		
6,000.0	5,764.6	5,941.7	5,856.4	23.4	32.3	98.53	-264.3	-106.0	479.2	443.1	36.09	13.278		
6,100.0	5,775.0	5,864.3	5,799.9	24.0	32.1	93.08	-317.0	-103.0	459.8	422.7	37.06	12.408		
6,196.1	5,775.4	5,807.9	5,755.7	24.8	32.0	87.51	-352.0	-100.3	453.1	415.6	37.47	12.093		
6,200.0	5,775.0	5,805.6	5,753.9	24.9	32.0	87.34	-353.3	-100.2	453.1	415.6	37.47	12.090 CC, ES, SF		
6,300.0	5,775.0	5,754.0	5,710.9	26.0	31.9	81.92	-381.8	-98.8	461.9	424.4	37.46	12.329		
6,400.0	5,775.0	5,724.5	5,685.2	27.3	31.8	78.74	-396.3	-98.3	486.8	449.5	37.29	13.052		
6,500.0	5,775.0	5,696.3	5,659.8	28.7	31.7	75.66	-408.5	-97.9	526.9	490.0	36.94	14.264		
6,600.0	5,775.0	5,659.0	5,625.2	30.2	31.6	71.60	-422.3	-97.6	580.2	543.9	36.34	15.966		
6,700.0	5,775.0	5,659.0	5,625.2	31.9	31.6	71.60	-422.3	-97.6	643.0	606.7	36.32	17.704		
6,800.0	5,775.0	5,659.0	5,625.2	33.6	31.6	71.60	-422.3	-97.6	714.3	678.1	36.27	19.697		
6,900.0	5,775.0	5,629.2	5,596.8	35.4	31.5	68.40	-431.3	-97.3	790.5	754.6	35.85	22.051		
7,000.0	5,775.0	5,619.0	5,586.9	37.3	31.5	67.32	-433.9	-97.2	871.5	835.8	35.71	24.405		
7,100.0	5,775.0	5,610.3	5,578.5	39.3	31.5	66.41	-436.0	-97.2	956.0	920.3	35.61	26.843		
7,200.0	5,775.0	5,602.9	5,571.2	41.2	31.4	65.63	-437.6	-97.1	1,042.9	1,007.4	35.54	29.346		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12G-0111A - HZ - FINAL													Offset Site Error:	0.0 usft
Survey Program: 365-MWD+HDGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
3,500.0	3,471.6	3,465.6	3,433.2	19.5	20.1	153.55	-309.3	173.7	578.5	553.7	24.79	23.331		
3,600.0	3,571.0	3,557.0	3,524.3	19.8	20.6	108.50	-316.2	176.4	592.3	567.0	25.31	23.401		
3,700.0	3,670.3	3,650.0	3,616.9	19.9	21.1	101.30	-324.5	179.4	602.9	577.2	25.68	23.476		
3,800.0	3,769.6	3,744.0	3,710.4	20.0	21.7	101.83	-334.1	182.6	614.6	588.5	26.07	23.572		
3,900.0	3,868.9	3,837.0	3,802.7	20.1	22.2	102.32	-344.9	185.6	627.6	601.2	26.47	23.714		
4,000.0	3,968.4	3,931.0	3,895.9	20.2	22.8	102.95	-356.8	188.2	641.7	614.8	26.88	23.876		
4,100.0	4,068.1	4,026.7	3,990.8	20.3	23.4	103.42	-368.7	189.7	655.0	627.7	27.29	24.003		
4,200.0	4,168.1	4,129.7	4,093.0	20.4	24.0	103.48	-381.8	192.5	667.6	639.8	27.76	24.047		
4,300.0	4,268.1	4,236.2	4,198.6	20.5	24.7	-167.00	-394.7	197.2	678.4	650.2	28.26	24.006		
4,400.0	4,368.1	4,342.8	4,304.3	20.6	25.3	-167.64	-407.0	202.2	688.8	660.0	28.76	23.947		
4,500.0	4,468.1	4,475.6	4,436.4	20.8	26.1	-168.49	-418.4	210.3	696.0	666.6	29.42	23.660		
4,600.0	4,568.1	4,569.9	4,530.3	20.9	26.6	-169.02	-424.0	215.7	700.7	670.9	29.85	23.478		
4,700.0	4,668.1	4,668.2	4,628.4	21.0	27.2	-169.42	-430.5	219.4	706.5	676.2	30.30	23.314		
4,800.0	4,768.1	4,786.6	4,746.5	21.2	27.8	-169.98	-436.5	225.4	710.5	679.7	30.86	23.023		
4,900.0	4,868.1	4,866.0	4,825.6	21.4	28.3	-170.43	-441.6	230.1	715.7	684.5	31.25	22.904		
5,000.0	4,968.1	4,963.9	4,923.0	21.6	28.8	-170.87	-449.3	234.5	722.8	691.0	31.73	22.777		
5,100.0	5,068.1	5,143.2	5,102.2	21.8	29.7	-171.04	-451.7	236.3	724.1	691.7	32.42	22.334		
5,200.0	5,168.1	6,218.8	5,804.6	22.0	33.6	-107.54	229.9	244.8	644.9	633.7	11.11	58.019		
5,300.0	5,268.1	6,225.4	5,804.9	22.2	33.6	83.83	236.5	244.8	546.5	534.6	11.92	45.834		
5,400.0	5,367.2	6,216.3	5,804.5	22.4	33.6	124.89	227.4	244.8	449.2	436.1	13.05	34.413		
5,500.0	5,462.1	6,186.2	5,802.7	22.5	33.4	137.88	197.3	244.6	356.0	341.2	14.74	24.149		
5,600.0	5,549.4	6,117.7	5,795.2	22.6	32.9	135.05	129.3	245.1	269.4	251.4	17.95	15.008		
5,700.0	5,625.8	6,049.3	5,780.7	22.7	32.5	127.38	62.4	246.5	190.6	167.3	23.30	8.181		
5,800.0	5,688.6	5,984.8	5,758.8	22.8	32.2	112.33	2.0	245.8	128.2	96.6	31.54	4.064		
5,882.7	5,728.6	5,937.0	5,736.8	23.0	32.0	94.22	-40.4	243.3	107.6	71.6	35.98	2.989	CC, ES, SF	
5,900.0	5,735.5	5,925.2	5,730.9	23.0	32.0	89.09	-50.6	242.8	108.4	72.7	35.70	3.036		
6,000.0	5,764.6	5,856.2	5,695.4	23.4	31.7	61.27	-109.8	242.0	137.3	107.9	29.42	4.667		
6,100.0	5,775.0	5,791.0	5,658.1	24.0	31.5	43.07	-163.2	241.8	185.0	159.3	25.65	7.210		
6,200.0	5,775.0	5,727.6	5,618.3	24.9	31.3	35.08	-212.6	240.8	239.3	214.5	24.78	9.657		
6,300.0	5,775.0	5,675.2	5,582.5	26.0	31.2	30.24	-250.7	239.0	302.7	277.4	25.33	11.951		
6,400.0	5,775.0	5,615.0	5,537.9	27.3	31.1	26.02	-291.0	235.7	373.6	348.2	25.39	14.716		
6,500.0	5,775.0	5,592.2	5,520.0	28.7	31.0	24.69	-305.1	234.4	448.8	421.5	27.21	16.490		
6,600.0	5,775.0	5,560.3	5,494.1	30.2	31.0	22.92	-323.6	233.0	528.5	500.4	28.11	18.801		
6,700.0	5,775.0	5,521.0	5,460.6	31.9	30.9	20.88	-344.2	232.0	611.8	583.3	28.52	21.449		
6,800.0	5,775.0	5,521.0	5,460.6	33.6	30.9	20.88	-344.2	232.0	697.4	667.6	29.82	23.389		
6,900.0	5,775.0	5,480.3	5,424.8	35.4	30.8	18.96	-363.4	231.7	784.5	754.6	29.91	26.231		
7,000.0	5,775.0	5,456.6	5,403.5	37.3	30.7	17.94	-373.9	231.8	873.2	842.9	30.29	28.825		
7,100.0	5,775.0	5,428.0	5,377.5	39.3	30.6	16.78	-385.8	232.3	963.2	932.7	30.53	31.554		
7,200.0	5,775.0	5,428.0	5,377.5	41.2	30.6	16.78	-385.8	232.3	1,054.3	1,023.2	31.11	33.885		

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 #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor #12G-0112B - HZ - PLAN #4													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
3,500.0	3,471.6	3,437.5	3,397.3	19.5	18.2	132.10	-271.2	376.2	541.8	519.7	22.09	24.523		
3,600.0	3,571.0	3,535.9	3,494.4	19.8	18.8	86.97	-283.0	387.8	559.4	536.7	22.61	24.743		
3,700.0	3,670.3	3,635.2	3,592.2	19.9	19.4	79.41	-294.8	399.6	571.3	548.3	22.97	24.867		
3,800.0	3,769.6	3,734.5	3,690.1	20.0	20.0	79.60	-306.7	411.3	583.1	559.8	23.36	24.965		
3,900.0	3,868.9	3,833.7	3,787.9	20.1	20.5	79.78	-318.5	423.1	594.9	571.2	23.75	25.047		
4,000.0	3,968.4	3,933.0	3,885.8	20.2	21.1	80.04	-330.4	434.9	606.9	582.8	24.15	25.135		
4,100.0	4,068.1	4,032.2	3,983.5	20.3	21.7	80.04	-342.3	446.6	619.5	595.0	24.51	25.272		
4,200.0	4,168.1	4,131.1	4,081.1	20.4	22.3	79.75	-354.1	458.3	632.8	607.9	24.85	25.462		
4,300.0	4,268.1	4,229.7	4,178.3	20.5	22.9	169.10	-365.9	470.0	646.7	621.5	25.16	25.701		
4,400.0	4,368.1	4,328.3	4,275.5	20.6	23.5	168.29	-377.6	481.7	660.8	635.3	25.47	25.941		
4,500.0	4,468.1	4,426.9	4,372.6	20.8	24.1	167.51	-389.4	493.4	675.0	649.2	25.79	26.173		
4,600.0	4,568.1	4,525.4	4,469.8	20.9	24.7	166.77	-401.2	505.1	689.3	663.2	26.12	26.395		
4,700.0	4,668.1	4,624.0	4,567.0	21.0	25.3	166.06	-413.0	516.7	703.8	677.3	26.45	26.609		
4,800.0	4,768.1	4,722.6	4,664.1	21.2	25.9	165.37	-424.8	528.4	718.3	691.6	26.79	26.812		
4,900.0	4,868.1	4,846.3	4,786.5	21.4	26.4	164.64	-438.0	541.5	731.5	704.3	27.24	26.854		
5,000.0	4,968.1	4,974.6	4,914.0	21.6	26.8	164.11	-447.8	551.2	740.9	713.2	27.65	26.799		
5,100.0	5,068.1	5,103.9	5,043.0	21.8	27.2	163.81	-453.5	556.9	746.3	718.3	28.01	26.648		
5,200.0	5,168.1	6,433.3	5,878.0	22.0	24.3	90.00	262.8	558.5	739.3	729.9	9.32	79.315		
5,300.0	5,268.1	6,433.1	5,878.0	22.2	24.3	-94.13	262.7	558.5	644.0	633.9	10.13	63.596		
5,400.0	5,367.2	6,420.9	5,878.0	22.4	24.2	-117.60	250.4	558.5	551.2	540.0	11.21	49.184		
5,500.0	5,462.1	6,390.0	5,878.0	22.5	24.2	-128.19	219.5	558.5	464.7	452.0	12.66	36.696		
5,600.0	5,549.4	6,341.5	5,878.0	22.6	24.4	-131.48	171.1	558.5	388.6	373.9	14.69	26.461		
5,700.0	5,625.8	6,277.3	5,878.0	22.7	24.7	-130.53	106.8	558.5	326.5	309.2	17.29	18.886		
5,800.0	5,688.6	6,179.2	5,874.9	22.8	25.1	-124.43	8.8	558.5	279.5	259.2	20.28	13.779		
5,900.0	5,735.5	6,070.7	5,851.9	23.0	25.6	-113.85	-96.9	558.5	240.7	216.4	24.34	9.889		
6,000.0	5,764.6	5,978.7	5,815.6	23.4	26.1	-101.84	-181.4	558.5	214.9	186.5	28.39	7.568		
6,093.3	5,774.9	5,902.0	5,774.4	23.9	26.5	-89.59	-246.0	558.5	206.7	175.5	31.23	6.620 CC		
6,100.0	5,775.0	5,896.8	5,771.2	24.0	26.6	-88.69	-250.2	558.5	206.8	175.4	31.38	6.589 ES		
6,200.0	5,775.0	5,826.7	5,725.1	24.9	26.9	-76.16	-302.8	558.5	218.4	185.2	33.15	6.586 SF		
6,300.0	5,775.0	5,771.5	5,684.0	26.0	27.2	-65.97	-339.7	558.5	252.5	218.6	33.83	7.463		
6,400.0	5,775.0	5,727.7	5,648.9	27.3	27.3	-58.33	-365.7	558.5	305.9	272.0	33.90	9.024		
6,500.0	5,775.0	5,700.0	5,625.5	28.7	27.4	-53.85	-380.6	558.5	372.9	338.9	34.01	10.965		
6,600.0	5,775.0	5,664.2	5,594.2	30.2	27.6	-48.55	-398.0	558.5	448.6	414.8	33.72	13.303		
6,700.0	5,775.0	5,650.0	5,581.5	31.9	27.6	-46.62	-404.3	558.5	530.3	496.5	33.82	15.680		
6,800.0	5,775.0	5,621.1	5,555.1	33.6	27.7	-42.97	-416.0	558.5	615.7	582.1	33.61	18.320		
6,900.0	5,775.0	5,600.0	5,535.4	35.4	27.7	-40.54	-423.6	558.5	704.2	670.7	33.53	21.004		
7,000.0	5,775.0	5,600.0	5,535.4	37.3	27.7	-40.54	-423.6	558.5	794.8	761.1	33.66	23.611		
7,100.0	5,775.0	5,578.2	5,514.7	39.3	27.8	-38.22	-430.7	558.5	886.7	853.1	33.55	26.431		
7,200.0	5,775.0	5,567.5	5,504.5	41.2	27.8	-37.15	-433.8	558.5	979.9	946.4	33.54	29.218		
7,300.0	5,775.0	5,550.0	5,487.7	43.3	27.8	-35.50	-438.5	558.5	1,074.2	1,040.8	33.48	32.087		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - RAZOR 12-0141H (EXISTING) - WHITING WELL - SURVEYS													Offset Site Error: 0.0 usft
Survey Program: 109-ISCWSA MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
4,700.0	4,668.1	4,679.9	4,678.7	21.0	14.5	92.45	216.5	1,430.3	1,082.5	1,059.6	22.96	47.146	
4,800.0	4,768.1	4,772.6	4,771.3	21.2	14.8	92.43	217.1	1,428.9	1,081.0	1,057.8	23.28	46.441	
4,900.0	4,868.1	4,869.4	4,868.2	21.4	15.1	92.44	216.8	1,428.0	1,080.0	1,056.4	23.61	45.750	
5,000.0	4,968.1	4,968.1	4,966.9	21.6	15.4	92.49	216.0	1,427.0	1,079.1	1,055.2	23.95	45.061	
5,088.6	5,056.7	5,048.3	5,047.1	21.7	15.7	92.54	215.1	1,426.6	1,078.7	1,054.4	24.27	44.441 CC	
5,100.0	5,068.1	5,057.8	5,056.6	21.8	15.7	92.54	214.9	1,426.6	1,078.7	1,054.4	24.32	44.362 ES	
5,200.0	5,168.1	5,127.0	5,125.8	22.0	15.9	92.60	213.9	1,427.1	1,079.8	1,055.0	24.73	43.668	
5,300.0	5,268.1	5,208.0	5,206.7	22.2	16.2	-86.99	213.2	1,429.6	1,083.0	1,057.9	25.11	43.125 SF	

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1309A - HZ - FINAL												Offset Site Error:	0.0 usft
Survey Program: 365-MWD+HDGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
3,500.0	3,471.6	3,459.8	3,445.2	19.5	18.5	-125.19	268.4	-183.5	467.8	443.2	24.60	19.021	CC, ES
3,600.0	3,571.0	3,558.3	3,543.2	19.8	19.1	-170.40	277.0	-189.1	482.5	457.4	25.17	19.168	
3,700.0	3,670.3	3,655.8	3,640.2	19.9	19.6	-177.46	284.7	-194.8	500.1	474.6	25.56	19.570	
3,800.0	3,769.6	3,752.8	3,736.8	20.0	20.2	-176.73	291.9	-200.6	518.1	492.1	25.94	19.972	
3,900.0	3,868.9	3,852.2	3,835.7	20.1	20.8	-176.08	298.9	-206.6	536.1	509.8	26.35	20.344	
4,000.0	3,968.4	3,953.7	3,936.9	20.2	21.3	-175.59	304.9	-212.4	552.7	525.9	26.78	20.637	
4,100.0	4,068.1	4,056.6	4,039.5	20.3	21.9	-175.06	311.3	-217.6	565.3	538.1	27.23	20.762	
4,200.0	4,168.1	4,157.2	4,139.7	20.4	22.5	-174.38	318.9	-222.0	573.9	546.3	27.67	20.741	
4,300.0	4,268.1	4,255.0	4,236.9	20.5	23.0	-83.54	328.0	-226.3	579.8	551.7	28.11	20.628	
4,400.0	4,368.1	4,360.0	4,341.5	20.6	23.6	-82.76	336.5	-230.9	585.2	556.6	28.60	20.463	
4,500.0	4,468.1	4,460.6	4,441.9	20.8	24.2	-82.14	343.4	-234.4	589.5	560.5	29.06	20.286	
4,600.0	4,568.1	4,561.5	4,542.4	20.9	24.8	-81.49	350.7	-238.2	594.3	564.7	29.54	20.120	
4,700.0	4,668.1	4,653.8	4,634.4	21.0	25.3	-80.83	358.2	-241.6	599.2	569.2	29.97	19.994	
4,800.0	4,768.1	4,748.2	4,728.3	21.2	25.8	-80.18	365.8	-246.4	605.6	575.2	30.42	19.909	
4,900.0	4,868.1	4,854.5	4,834.2	21.4	26.4	-79.60	373.1	-252.0	612.0	581.0	30.95	19.772	
5,000.0	4,968.1	4,963.4	4,942.9	21.6	27.0	-79.20	378.4	-256.5	617.0	585.5	31.50	19.588	
5,100.0	5,068.1	5,069.9	5,049.3	21.8	27.6	-78.95	381.7	-259.9	620.7	588.7	32.02	19.384	
5,200.0	5,168.1	5,176.9	5,156.2	22.0	28.1	-78.77	384.2	-262.3	623.3	590.7	32.55	19.149	
5,300.0	5,268.1	5,281.9	5,261.2	22.2	28.7	101.67	386.0	-263.7	625.0	591.9	33.07	18.901	
5,400.0	5,367.2	5,398.2	5,377.4	22.4	29.3	102.51	384.3	-264.4	627.9	594.4	33.55	18.716	
5,500.0	5,462.1	5,568.8	5,544.4	22.5	29.9	104.55	352.5	-258.4	627.3	593.5	33.76	18.581	
5,600.0	5,549.4	5,693.7	5,660.8	22.6	30.3	106.58	308.3	-250.1	624.8	591.0	33.82	18.478	
5,700.0	5,625.8	5,825.7	5,771.1	22.7	30.7	108.35	236.7	-242.3	623.1	589.4	33.73	18.475	
5,719.9	5,639.5	5,847.3	5,787.0	22.7	30.7	108.53	222.3	-241.6	623.0	589.3	33.75	18.459	
5,800.0	5,688.6	5,936.9	5,845.4	22.8	30.9	108.77	154.5	-241.4	624.5	590.6	33.88	18.432	
5,900.0	5,735.5	6,066.9	5,914.1	23.0	31.3	109.07	44.2	-242.1	627.4	593.3	34.08	18.409	
6,000.0	5,764.6	6,210.9	5,970.0	23.4	32.0	109.78	-88.2	-244.8	633.6	599.1	34.49	18.368	
6,100.0	5,775.0	6,312.7	5,990.7	24.0	32.6	109.76	-187.7	-247.8	640.3	605.1	35.19	18.195	
6,200.0	5,775.0	6,431.6	6,003.3	24.9	33.4	110.52	-305.6	-255.3	650.5	614.3	36.19	17.976	
6,300.0	5,775.0	6,557.4	6,008.0	26.0	34.5	110.72	-431.2	-260.5	656.2	618.6	37.61	17.446	
6,400.0	5,775.0	6,669.8	6,008.9	27.3	35.7	110.70	-543.6	-263.1	659.1	619.9	39.22	16.806	
6,500.0	5,775.0	6,773.0	6,007.8	28.7	36.9	110.54	-646.7	-264.7	660.8	619.8	40.95	16.134	
6,600.0	5,775.0	6,874.0	6,007.7	30.2	38.2	110.48	-747.8	-266.1	662.5	619.7	42.80	15.478	
6,700.0	5,775.0	6,977.0	6,007.6	31.9	39.7	110.43	-850.8	-266.6	663.4	618.6	44.80	14.808	
6,800.0	5,775.0	7,077.8	6,007.7	33.6	41.2	110.41	-951.6	-267.2	664.5	617.6	46.89	14.172	
6,900.0	5,775.0	7,185.3	6,007.5	35.4	42.9	110.38	-1,059.1	-267.0	664.8	615.7	49.17	13.522	
6,952.1	5,775.0	7,235.5	6,007.7	36.4	43.7	110.40	-1,109.3	-266.5	664.6	614.3	50.31	13.211	
7,000.0	5,775.0	7,275.2	6,007.6	37.3	44.4	110.39	-1,149.0	-266.5	664.9	613.6	51.29	12.963	
7,100.0	5,775.0	7,361.6	6,006.7	39.3	45.8	110.23	-1,235.3	-268.6	667.3	613.8	53.47	12.480	
7,200.0	5,775.0	7,450.7	6,005.5	41.2	47.4	110.01	-1,324.3	-272.4	671.4	615.6	55.74	12.044	
7,300.0	5,775.0	7,543.8	6,004.6	43.3	49.0	109.77	-1,417.3	-277.8	676.9	618.8	58.13	11.646	
7,400.0	5,775.0	7,650.5	6,005.7	45.3	51.0	109.68	-1,523.9	-283.3	682.7	621.9	60.75	11.237	
7,500.0	5,775.0	7,776.1	6,008.2	47.4	53.3	109.79	-1,649.3	-285.9	685.9	622.2	63.67	10.773	
7,600.0	5,775.0	7,879.2	6,009.4	49.6	55.3	109.87	-1,752.5	-285.9	686.8	620.5	66.30	10.358	
7,700.0	5,775.0	7,984.1	6,009.6	51.7	57.4	109.88	-1,857.4	-285.5	687.0	618.0	69.01	9.955	
7,703.2	5,775.0	7,987.3	6,009.6	51.8	57.5	109.88	-1,860.5	-285.5	687.0	617.9	69.10	9.942	
7,800.0	5,775.0	8,084.0	6,008.9	53.9	59.4	109.82	-1,957.2	-285.4	687.2	615.5	71.71	9.583	
7,900.0	5,775.0	8,195.5	6,007.8	56.1	61.7	109.74	-2,068.7	-284.1	686.2	611.6	74.61	9.197	
8,000.0	5,775.0	8,300.8	6,006.0	58.3	63.9	109.65	-2,174.0	-281.8	684.1	606.7	77.46	8.832	
8,100.0	5,775.0	8,403.8	6,002.5	60.5	66.1	109.42	-2,276.9	-279.5	681.4	601.1	80.36	8.480	
8,200.0	5,775.0	8,495.8	5,998.8	62.7	68.0	109.16	-2,368.8	-277.8	678.8	595.7	83.14	8.165	
8,291.7	5,775.0	8,576.0	5,996.0	64.8	69.7	108.93	-2,449.0	-277.7	678.2	592.5	85.63	7.920	

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 #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1309A - HZ - FINAL												Offset Site Error:	0.0 usft
Survey Program: 365-MWD+HDGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,300.0	5,775.0	8,583.5	5,995.8	64.9	69.9	108.92	-2,456.5	-277.7	678.2	592.3	85.86	7.899	
8,400.0	5,775.0	8,682.3	5,994.3	67.2	72.0	108.76	-2,555.2	-278.3	678.7	590.0	88.72	7.650	
8,500.0	5,775.0	8,778.2	5,992.8	69.5	74.1	108.63	-2,651.2	-278.4	678.9	587.3	91.54	7.416	
8,600.0	5,775.0	8,870.6	5,991.6	71.7	76.0	108.47	-2,743.5	-280.0	680.6	586.3	94.31	7.216	
8,700.0	5,775.0	8,971.2	5,990.5	74.0	78.2	108.32	-2,844.1	-281.9	682.6	585.4	97.24	7.020	
8,800.0	5,775.0	9,064.8	5,991.2	76.3	80.3	108.32	-2,937.7	-283.3	684.8	584.8	99.99	6.849	
8,900.0	5,775.0	9,169.9	5,995.2	78.6	82.6	108.59	-3,042.7	-284.7	687.8	584.9	102.85	6.687	
9,000.0	5,775.0	9,280.4	5,996.9	80.9	85.0	108.70	-3,153.2	-285.0	689.0	583.2	105.88	6.508	
9,100.0	5,775.0	9,383.7	5,997.5	83.2	87.3	108.74	-3,256.5	-284.6	689.4	580.6	108.82	6.335	
9,200.0	5,775.0	9,504.5	5,997.1	85.5	90.0	108.75	-3,377.2	-282.1	687.8	575.8	112.03	6.139	
9,300.0	5,775.0	9,603.1	5,996.2	87.8	92.3	108.77	-3,475.8	-278.4	684.5	569.6	114.95	5.955	
9,400.0	5,775.0	9,691.5	5,994.7	90.1	94.3	108.68	-3,564.1	-277.1	683.0	565.2	117.78	5.799	
9,500.0	5,775.0	9,793.2	5,993.7	92.4	96.6	108.63	-3,665.8	-275.5	681.8	561.0	120.78	5.645	
9,600.0	5,775.0	9,893.0	5,993.7	94.8	98.8	108.66	-3,765.6	-273.7	680.6	556.9	123.71	5.501	
9,700.0	5,775.0	9,985.3	5,994.3	97.1	100.9	108.74	-3,857.9	-272.1	679.6	553.1	126.50	5.372	
9,703.9	5,775.0	9,988.6	5,994.3	97.2	101.0	108.74	-3,861.2	-272.0	679.6	553.0	126.61	5.368	
9,800.0	5,775.0	10,076.3	5,993.4	99.4	103.0	108.64	-3,948.8	-272.7	680.5	551.1	129.36	5.260	
9,900.0	5,775.0	10,183.7	5,992.7	101.8	105.5	108.54	-4,056.3	-273.4	681.4	548.9	132.50	5.143	
10,000.0	5,775.0	10,291.3	5,993.2	104.1	107.9	108.61	-4,163.8	-272.0	680.8	545.3	135.55	5.023	
10,087.5	5,775.0	10,372.2	5,992.4	106.2	109.8	108.55	-4,244.8	-271.2	680.2	542.1	138.08	4.926	
10,100.0	5,775.0	10,383.2	5,992.0	106.4	110.0	108.52	-4,255.7	-271.3	680.2	541.8	138.45	4.913	
10,200.0	5,775.0	10,468.1	5,988.7	108.8	111.9	108.20	-4,340.5	-273.1	681.5	540.2	141.32	4.822	
10,300.0	5,775.0	10,583.8	5,986.8	111.1	114.6	107.95	-4,456.2	-275.7	683.8	539.1	144.73	4.725	
10,400.0	5,775.0	10,676.7	5,986.2	113.5	116.7	107.90	-4,549.1	-275.7	684.2	536.5	147.62	4.634	
10,500.0	5,775.0	10,785.0	5,985.9	115.8	119.2	107.84	-4,657.4	-276.1	684.9	534.1	150.80	4.542	
10,514.5	5,775.0	10,799.4	5,985.7	116.2	119.5	107.83	-4,671.7	-276.1	684.9	533.7	151.24	4.529	
10,600.0	5,775.0	10,879.0	5,984.6	118.2	121.4	107.72	-4,751.4	-276.3	685.3	531.5	153.76	4.457	
10,700.0	5,775.0	10,972.0	5,982.8	120.5	123.5	107.53	-4,844.3	-277.5	686.5	529.7	156.74	4.380	
10,800.0	5,775.0	11,066.0	5,981.4	122.9	125.6	107.36	-4,938.3	-279.7	688.7	529.0	159.72	4.312	
10,900.0	5,775.0	11,159.0	5,980.8	125.2	127.8	107.23	-5,031.2	-282.6	692.1	529.5	162.63	4.256	
11,000.0	5,775.0	11,258.4	5,980.6	127.6	130.0	107.11	-5,130.6	-286.2	695.9	530.2	165.68	4.200	
11,100.0	5,775.0	11,360.9	5,980.9	130.0	132.4	107.03	-5,233.0	-289.6	699.8	531.0	168.79	4.146	
11,200.0	5,775.0	11,475.6	5,980.1	132.3	135.0	106.91	-5,347.7	-291.6	701.6	529.4	172.20	4.074	
11,300.0	5,775.0	11,572.5	5,979.2	134.7	137.3	106.79	-5,444.5	-293.1	703.4	528.2	175.24	4.014	
11,400.0	5,775.0	11,683.1	5,979.7	137.0	139.8	106.80	-5,555.2	-293.8	704.7	526.3	178.45	3.949	
11,500.0	5,775.0	11,787.4	5,980.2	139.4	142.3	106.85	-5,659.5	-292.8	704.4	522.9	181.53	3.881	
11,571.2	5,775.0	11,856.5	5,980.7	141.1	143.9	106.89	-5,728.5	-292.2	704.3	520.7	183.62	3.836	
11,600.0	5,775.0	11,884.4	5,980.5	141.8	144.5	106.88	-5,756.4	-292.1	704.3	519.8	184.49	3.818	
11,700.0	5,775.0	11,978.8	5,978.8	144.1	146.7	106.72	-5,850.8	-292.5	704.8	517.3	187.54	3.758	
11,800.0	5,775.0	12,075.5	5,977.6	146.5	149.0	106.59	-5,947.5	-293.6	706.0	515.4	190.60	3.704	
11,900.0	5,775.0	12,172.1	5,976.3	148.9	151.2	106.44	-6,044.1	-295.1	707.7	514.0	193.68	3.654	
12,000.0	5,775.0	12,272.6	5,975.4	151.2	153.5	106.32	-6,144.6	-296.8	709.6	512.7	196.81	3.605	
12,100.0	5,775.0	12,391.2	5,975.8	153.6	156.3	106.35	-6,263.2	-296.5	710.0	509.8	200.16	3.547	
12,200.0	5,775.0	12,492.6	5,977.2	156.0	158.7	106.49	-6,364.6	-294.7	709.2	506.0	203.13	3.491	
12,300.0	5,775.0	12,599.7	5,977.7	158.4	161.2	106.57	-6,471.6	-292.2	707.5	501.3	206.22	3.431	
12,400.0	5,775.0	12,701.7	5,976.9	160.7	163.7	106.55	-6,573.6	-289.6	705.4	496.1	209.32	3.370	
12,500.0	5,775.0	12,795.9	5,977.1	163.1	165.9	106.62	-6,667.7	-286.9	703.2	491.0	212.26	3.313	
12,600.0	5,775.0	12,888.4	5,975.7	165.5	168.1	106.51	-6,760.2	-286.1	702.5	487.2	215.30	3.263	
12,700.0	5,775.0	12,988.1	5,973.6	167.9	170.4	106.34	-6,859.9	-285.8	702.2	483.7	218.49	3.214	
12,774.7	5,775.0	13,060.3	5,972.0	169.6	172.1	106.21	-6,932.0	-285.6	701.9	481.1	220.85	3.178	
12,800.0	5,775.0	13,083.3	5,971.5	170.2	172.6	106.17	-6,955.1	-285.7	702.0	480.3	221.62	3.167	
12,900.0	5,775.0	13,183.4	5,970.1	172.6	175.0	106.04	-7,055.2	-286.2	702.6	477.8	224.78	3.126	

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 #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1309A - HZ - FINAL												Offset Site Error:	0.0 usft
Survey Program: 365-MWD+HDGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
13,000.0	5,775.0	13,292.6	5,971.9	175.0	177.6	106.19	-7,164.3	-284.7	702.3	474.4	227.86	3.082	
13,083.8	5,775.0	13,369.4	5,972.5	177.0	179.4	106.26	-7,241.2	-283.6	701.7	471.4	230.27	3.047	
13,100.0	5,775.0	13,383.5	5,972.5	177.4	179.7	106.26	-7,255.3	-283.5	701.7	471.0	230.73	3.041	
13,200.0	5,775.0	13,490.8	5,971.7	179.7	182.3	106.19	-7,362.6	-283.2	701.8	467.9	233.97	3.000	
13,300.0	5,775.0	13,601.6	5,970.3	182.1	184.9	106.11	-7,473.3	-281.2	700.2	462.9	237.24	2.951	
13,400.0	5,775.0	13,693.2	5,969.2	184.5	187.1	106.06	-7,564.8	-279.4	698.5	458.2	240.27	2.907	
13,475.7	5,775.0	13,761.4	5,968.2	186.3	188.7	105.98	-7,633.0	-278.9	698.1	455.5	242.55	2.878	
13,500.0	5,775.0	13,783.6	5,967.9	186.9	189.2	105.96	-7,655.3	-278.9	698.1	454.8	243.29	2.870	
13,600.0	5,775.0	13,880.6	5,967.0	189.2	191.5	105.87	-7,752.2	-279.1	698.6	452.3	246.38	2.836	
13,700.0	5,775.0	13,979.0	5,967.0	191.6	193.8	105.85	-7,850.6	-279.5	699.5	450.1	249.43	2.805 SF	

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1310B - HZ - SURVEYS													Offset Site Error:	0.0 usft
Survey Program: 269-MWD+HDGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Separation Factor		
3,500.0	3,471.6	3,486.0	3,469.0	19.5	19.0	-114.58	307.7	51.6	237.2	211.9	25.29	9.380	CC, ES	
3,600.0	3,571.0	3,585.6	3,567.8	19.8	19.6	-158.73	319.5	53.1	245.9	220.0	25.90	9.494		
3,700.0	3,670.3	3,683.7	3,665.3	19.9	20.2	-164.71	330.5	54.3	258.7	232.3	26.33	9.823		
3,800.0	3,769.6	3,781.5	3,762.5	20.0	20.7	-163.06	341.4	55.1	272.1	245.4	26.76	10.168		
3,900.0	3,868.9	3,882.3	3,862.7	20.1	21.3	-161.62	352.2	55.7	285.9	258.7	27.23	10.500		
4,000.0	3,968.4	3,984.9	3,964.9	20.2	21.9	-160.46	361.8	57.4	297.3	269.6	27.70	10.731		
4,100.0	4,068.1	4,085.2	4,064.8	20.3	22.5	-159.44	369.8	59.1	305.1	276.9	28.15	10.836		
4,200.0	4,168.1	4,184.0	4,163.3	20.4	23.0	-158.39	376.8	60.6	309.7	281.1	28.60	10.828		
4,300.0	4,268.1	4,280.5	4,259.4	20.5	23.6	-66.89	385.3	61.9	312.2	283.2	29.04	10.751		
4,400.0	4,368.1	4,386.4	4,364.9	20.6	24.2	-65.19	394.9	63.3	314.7	285.1	29.55	10.649		
4,500.0	4,468.1	4,492.1	4,470.4	20.8	24.7	-63.89	401.3	66.4	314.6	284.6	30.04	10.473		
4,600.0	4,568.1	4,592.3	4,570.6	20.9	25.3	-63.36	403.5	68.5	313.8	283.3	30.48	10.294		
4,700.0	4,668.1	4,693.2	4,671.5	21.0	25.8	-63.27	403.6	69.6	312.8	281.9	30.91	10.121		
4,800.0	4,768.1	4,796.2	4,774.4	21.2	26.2	-63.27	402.8	71.0	311.3	279.9	31.34	9.931		
4,900.0	4,868.1	4,896.3	4,874.5	21.4	26.7	-63.30	401.7	72.8	309.1	277.3	31.78	9.728		
5,000.0	4,968.1	4,992.6	4,970.8	21.6	27.2	-63.60	399.7	73.3	307.7	275.5	32.20	9.557		
5,100.0	5,068.1	5,093.1	5,071.3	21.8	27.6	-64.02	397.2	73.2	306.7	274.1	32.64	9.399		
5,200.0	5,168.1	5,193.3	5,171.4	22.0	28.1	-64.36	395.1	73.3	305.7	272.6	33.08	9.241		
5,295.9	5,264.0	5,288.9	5,267.0	22.2	28.5	115.92	393.4	73.9	305.0	271.5	33.52	9.099		
5,300.0	5,268.1	5,292.8	5,270.9	22.2	28.6	115.74	393.4	73.9	304.5	271.0	33.54	9.080		
5,400.0	5,367.2	5,388.4	5,366.4	22.4	29.0	116.90	392.0	73.4	309.9	275.9	33.96	9.125		
5,500.0	5,462.1	5,491.1	5,469.2	22.5	29.5	120.13	389.6	72.3	325.0	290.6	34.35	9.461		
5,600.0	5,549.4	5,642.9	5,615.2	22.6	30.1	123.70	353.7	65.1	344.3	310.2	34.13	10.089		
5,700.0	5,625.8	5,795.2	5,745.1	22.7	30.5	125.40	274.6	62.2	353.6	320.6	33.07	10.692		
5,800.0	5,688.6	5,929.4	5,850.6	22.8	30.9	128.42	191.9	64.8	366.3	334.4	31.91	11.479		
5,900.0	5,735.5	6,067.1	5,941.6	23.0	31.4	131.26	88.9	67.7	380.1	349.6	30.48	12.469		
6,000.0	5,764.6	6,217.6	6,017.0	23.4	32.1	133.74	-41.0	68.2	395.9	366.9	28.95	13.675		
6,100.0	5,775.0	6,380.2	6,070.9	24.0	33.1	136.46	-194.0	69.8	413.1	385.3	27.78	14.871		
6,200.0	5,775.0	6,534.5	6,083.8	24.9	34.4	137.68	-347.6	71.1	417.7	389.3	28.44	14.689		
6,300.0	5,775.0	6,639.4	6,087.5	26.0	35.4	138.25	-452.4	73.9	418.9	389.5	29.42	14.239		
6,400.0	5,775.0	6,740.4	6,089.0	27.3	36.5	138.46	-553.4	75.2	419.5	388.8	30.67	13.678		
6,500.0	5,775.0	6,844.3	6,088.9	28.7	37.8	138.45	-657.3	75.8	419.4	387.2	32.18	13.032		
6,600.0	5,775.0	6,945.0	6,087.1	30.2	39.1	138.16	-757.9	75.1	418.9	385.0	33.91	12.355		
6,700.0	5,775.0	7,047.4	6,085.6	31.9	40.6	138.00	-860.3	75.5	418.0	382.3	35.69	11.711		
6,800.0	5,775.0	7,150.7	6,084.0	33.6	42.2	137.90	-963.6	76.5	416.5	379.0	37.56	11.090		
6,900.0	5,775.0	7,251.8	6,082.5	35.4	43.8	137.98	-1,064.6	79.1	414.1	374.7	39.38	10.515		
7,000.0	5,775.0	7,348.8	6,080.5	37.3	45.4	137.84	-1,161.7	80.1	412.3	370.9	41.32	9.978		
7,100.0	5,775.0	7,443.8	6,079.7	39.3	47.1	137.84	-1,256.7	81.3	411.1	367.9	43.20	9.517		
7,117.1	5,775.0	7,459.5	6,079.6	39.6	47.4	137.81	-1,272.3	81.3	411.1	367.5	43.52	9.444		
7,200.0	5,775.0	7,540.0	6,079.0	41.2	48.8	137.63	-1,352.8	80.5	411.5	366.2	45.25	9.094		
7,300.0	5,775.0	7,639.3	6,078.8	43.3	50.6	137.49	-1,452.1	79.9	412.1	364.7	47.36	8.702		
7,400.0	5,775.0	7,738.9	6,077.0	45.3	52.5	137.00	-1,551.6	77.2	413.0	363.3	49.72	8.307		
7,500.0	5,775.0	7,841.7	6,075.3	47.4	54.4	136.55	-1,654.5	75.0	413.6	361.5	52.16	7.930		
7,600.0	5,775.0	7,944.0	6,074.5	49.6	56.4	136.41	-1,756.7	74.9	413.5	359.0	54.46	7.593		
7,700.0	5,775.0	8,044.0	6,075.0	51.7	58.4	136.57	-1,856.7	76.5	413.1	356.6	56.55	7.306		
7,800.0	5,775.0	8,143.1	6,075.2	53.9	60.4	136.64	-1,955.8	77.6	412.9	354.2	58.70	7.034		
7,847.3	5,775.0	8,189.9	6,074.9	54.9	61.4	136.58	-2,002.6	77.6	412.9	353.1	59.79	6.905		
7,900.0	5,775.0	8,242.1	6,074.8	56.1	62.5	136.56	-2,054.8	77.7	412.9	351.9	60.97	6.772		
8,000.0	5,775.0	8,344.9	6,073.0	58.3	64.6	136.23	-2,157.6	76.7	412.7	349.2	63.50	6.499		
8,100.0	5,775.0	8,448.1	6,068.3	60.5	66.7	135.45	-2,260.6	74.1	411.6	345.2	66.40	6.198		
8,153.8	5,775.0	8,496.7	6,066.0	61.7	67.7	135.05	-2,309.1	72.5	411.2	343.4	67.84	6.061		
8,200.0	5,775.0	8,539.4	6,064.3	62.7	68.6	134.69	-2,351.8	70.7	411.5	342.4	69.12	5.953		

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 #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1310B - HZ - SURVEYS												Offset Site Error:	0.0 usft
Survey Program: 269-MWD+HDGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,300.0	5,775.0	8,638.8	6,060.9	64.9	70.7	133.94	-2,451.1	67.1	412.1	340.1	72.00	5.724	
8,400.0	5,775.0	8,720.0	6,061.3	67.2	72.4	133.66	-2,532.2	64.3	415.3	341.2	74.13	5.602	
8,500.0	5,775.0	8,818.9	6,065.4	69.5	74.5	133.70	-2,630.9	60.9	421.0	344.6	76.44	5.508	
8,600.0	5,775.0	8,939.9	6,069.4	71.7	77.1	134.00	-2,751.8	60.6	423.8	344.8	79.07	5.360	
8,700.0	5,775.0	9,043.1	6,069.5	74.0	79.4	133.99	-2,855.0	60.9	424.1	342.5	81.55	5.201	
8,800.0	5,775.0	9,143.4	6,069.9	76.3	81.6	134.04	-2,955.3	61.6	424.2	340.3	83.92	5.055	
8,900.0	5,775.0	9,245.0	6,067.6	78.6	83.9	133.64	-3,056.9	60.2	424.1	337.3	86.72	4.890	
8,950.3	5,775.0	9,293.8	6,066.2	79.7	84.9	133.40	-3,105.7	59.4	423.9	335.7	88.13	4.810	
9,000.0	5,775.0	9,337.2	6,065.9	80.9	85.9	133.30	-3,149.0	58.9	424.3	334.9	89.31	4.751	
9,100.0	5,775.0	9,428.6	6,068.3	83.2	87.9	133.41	-3,240.4	58.2	427.0	335.5	91.43	4.670	
9,200.0	5,775.0	9,533.8	6,070.5	85.5	90.3	133.38	-3,345.6	56.0	430.4	336.3	94.03	4.577	
9,300.0	5,775.0	9,644.5	6,070.3	87.8	92.7	133.20	-3,456.3	54.9	431.4	334.5	96.88	4.453	
9,336.0	5,775.0	9,679.7	6,069.8	88.6	93.5	133.12	-3,491.5	54.7	431.3	333.4	97.84	4.408	
9,400.0	5,775.0	9,739.7	6,068.5	90.1	94.9	132.85	-3,551.4	53.4	431.6	332.0	99.60	4.333	
9,500.0	5,775.0	9,834.6	6,066.2	92.4	97.0	132.26	-3,646.2	49.9	433.1	330.6	102.56	4.223	
9,600.0	5,775.0	9,945.1	6,066.4	94.8	99.5	132.16	-3,756.8	49.1	434.2	328.8	105.38	4.120	
9,700.0	5,775.0	10,051.5	6,067.4	97.1	101.9	132.54	-3,863.1	52.9	432.5	325.0	107.59	4.020	
9,757.0	5,775.0	10,101.0	6,066.9	98.4	103.0	132.50	-3,912.5	53.3	432.0	323.1	108.94	3.966	
9,800.0	5,775.0	10,141.1	6,066.0	99.4	104.0	132.31	-3,952.6	52.4	432.3	322.1	110.16	3.924	
9,900.0	5,775.0	10,241.7	6,063.9	101.8	106.2	131.89	-4,053.2	50.5	432.7	319.6	113.14	3.825	
10,000.0	5,775.0	10,338.6	6,061.0	104.1	108.4	131.26	-4,149.9	47.1	433.7	317.4	116.30	3.729	
10,100.0	5,775.0	10,437.3	6,058.1	106.4	110.6	130.60	-4,248.5	43.3	435.1	315.6	119.55	3.639	
10,200.0	5,775.0	10,533.2	6,058.9	108.8	112.8	130.52	-4,344.4	42.1	437.1	315.0	122.10	3.579	
10,300.0	5,775.0	10,625.3	6,060.2	111.1	114.9	130.40	-4,436.5	39.6	440.4	315.9	124.58	3.535	
10,400.0	5,775.0	10,717.6	6,060.8	113.5	117.0	129.97	-4,528.7	34.2	445.7	318.4	127.39	3.499	
10,500.0	5,775.0	10,824.0	6,059.9	115.8	119.4	129.14	-4,634.7	25.7	451.9	320.7	131.16	3.445	
10,600.0	5,775.0	10,947.9	6,061.2	118.2	122.2	129.11	-4,758.5	24.3	453.8	319.4	134.37	3.377	
10,700.0	5,775.0	11,059.7	6,064.9	120.5	124.9	129.96	-4,870.1	31.0	451.7	315.6	136.09	3.319	
10,800.0	5,775.0	11,155.3	6,067.1	122.9	127.1	130.59	-4,965.4	36.7	449.0	311.2	137.82	3.258	
10,900.0	5,775.0	11,256.8	6,069.0	125.2	129.5	131.18	-5,066.8	42.1	446.6	307.0	139.65	3.198	
11,000.0	5,775.0	11,356.6	6,070.5	127.6	131.9	131.74	-5,166.4	47.5	444.0	302.6	141.47	3.139	
11,100.0	5,775.0	11,452.2	6,071.7	130.0	134.2	132.15	-5,261.9	51.5	442.1	298.7	143.39	3.083	
11,200.0	5,775.0	11,548.1	6,072.0	132.3	136.5	132.31	-5,357.8	53.5	441.1	295.5	145.65	3.029	
11,288.7	5,775.0	11,634.5	6,071.8	134.4	138.5	132.31	-5,444.2	54.2	440.9	293.0	147.88	2.981	
11,300.0	5,775.0	11,645.3	6,071.8	134.7	138.7	132.31	-5,455.0	54.2	440.9	292.7	148.16	2.976	
11,400.0	5,775.0	11,743.2	6,072.8	137.0	141.0	132.43	-5,552.9	55.0	441.4	290.9	150.49	2.933	
11,500.0	5,775.0	11,844.0	6,074.6	139.4	143.4	132.70	-5,653.6	56.7	441.8	289.2	152.63	2.895	
11,600.0	5,775.0	11,946.8	6,076.7	141.8	145.8	133.02	-5,756.4	58.7	442.1	287.4	154.73	2.857	
11,700.0	5,775.0	12,049.6	6,076.2	144.1	148.2	133.04	-5,859.2	59.9	441.4	284.1	157.29	2.806	
11,800.0	5,775.0	12,146.6	6,075.3	146.5	150.5	132.94	-5,956.2	60.4	440.8	280.8	159.93	2.756	
11,816.2	5,775.0	12,162.1	6,075.1	146.9	150.9	132.92	-5,971.7	60.3	440.8	280.4	160.37	2.748	
11,900.0	5,775.0	12,245.5	6,074.4	148.9	152.8	132.77	-6,055.1	59.9	440.9	278.1	162.72	2.709	
12,000.0	5,775.0	12,345.2	6,073.6	151.2	155.2	132.62	-6,154.8	59.6	441.0	275.4	165.52	2.664	
12,100.0	5,775.0	12,444.8	6,073.2	153.6	157.5	132.53	-6,254.4	59.6	441.2	273.0	168.20	2.623	
12,200.0	5,775.0	12,546.9	6,072.7	156.0	159.9	132.43	-6,356.4	59.6	441.2	270.2	170.96	2.581	
12,300.0	5,775.0	12,645.8	6,071.6	158.4	162.2	132.25	-6,455.4	59.3	441.1	267.3	173.80	2.538	
12,346.3	5,775.0	12,693.2	6,071.0	159.5	163.4	132.15	-6,502.7	59.1	441.0	265.9	175.18	2.518	
12,400.0	5,775.0	12,748.3	6,070.3	160.7	164.6	132.05	-6,557.9	59.0	440.8	264.1	176.76	2.494	
12,500.0	5,775.0	12,851.7	6,067.9	163.1	167.1	131.78	-6,661.2	59.0	439.7	259.9	179.87	2.445	
12,590.1	5,775.0	12,936.1	6,066.2	165.2	169.1	131.54	-6,745.6	58.7	439.1	256.6	182.51	2.406	
12,600.0	5,775.0	12,945.2	6,066.1	165.5	169.3	131.52	-6,754.7	58.6	439.1	256.3	182.78	2.402	
12,700.0	5,775.0	13,037.9	6,066.3	167.9	171.5	131.44	-6,847.4	58.0	440.2	254.9	185.34	2.375	

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 #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1310B - HZ - SURVEYS													Offset Site Error: 0.0 usft	
Survey Program: 269-MWD+HDGM													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
12,800.0	5,775.0	13,135.4	6,067.4	170.2	173.7	131.39	-6,944.9	56.6	442.4	254.5	187.94	2.354		
12,900.0	5,775.0	13,236.9	6,068.8	172.6	176.1	131.38	-7,046.3	55.4	444.6	254.0	190.58	2.333		
13,000.0	5,775.0	13,337.0	6,070.8	175.0	178.5	131.49	-7,146.4	55.1	446.6	253.7	192.96	2.315		
13,100.0	5,775.0	13,436.4	6,073.2	177.4	180.8	131.65	-7,245.8	54.9	448.7	253.5	195.21	2.299		
13,200.0	5,775.0	13,540.5	6,075.8	179.7	183.3	131.87	-7,349.9	55.1	450.7	253.2	197.48	2.282		
13,300.0	5,775.0	13,641.8	6,076.6	182.1	185.7	131.93	-7,451.2	55.4	451.4	251.5	199.98	2.257		
13,400.0	5,775.0	13,744.1	6,077.4	184.5	188.1	131.95	-7,553.5	55.4	452.4	249.8	202.55	2.233		
13,500.0	5,775.0	13,844.6	6,077.9	186.9	190.5	132.00	-7,654.0	56.0	452.6	247.6	205.04	2.207		
13,600.0	5,775.0	13,944.0	6,078.3	189.2	192.9	132.02	-7,753.4	56.3	453.0	245.5	207.57	2.183		
13,700.0	5,775.0	14,043.8	6,078.5	191.6	195.2	132.00	-7,853.2	56.4	453.5	243.3	210.19	2.158 SF		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1311A - OH - SURVEYS													Offset Site Error:	0.0 usft
Survey Program: 362-MWD+HDGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
3,500.0	3,471.6	3,500.0	3,471.6	0.0	0.0	0.00	257.3	283.4	0.0	0.0	0.00	0.000	Level 1, CC, SF	
3,510.1	3,481.6	3,510.1	3,481.6	0.0	0.1	-72.76	258.2	284.1	0.0	0.0	0.06	0.671	Level 1, ES	
3,600.0	3,571.0	3,599.9	3,570.8	0.3	0.6	-104.60	266.2	290.9	3.8	3.2	0.61	6.191		
3,700.0	3,670.3	3,699.6	3,669.5	0.4	1.2	-96.99	274.6	302.4	11.9	10.9	1.06	11.282		
3,800.0	3,769.6	3,799.1	3,767.9	0.6	1.8	-95.65	283.6	313.3	21.0	19.4	1.53	13.749		
3,900.0	3,868.9	3,898.6	3,866.5	0.7	2.4	-96.67	292.8	323.4	30.3	28.3	2.00	15.120		
4,000.0	3,968.4	3,998.8	3,966.1	0.8	3.0	-100.60	301.2	330.3	39.1	36.6	2.49	15.683		
4,100.0	4,068.1	4,098.8	4,065.7	1.0	3.6	-100.77	307.7	336.2	45.7	42.8	2.95	15.516		
4,200.0	4,168.1	4,197.4	4,163.8	1.1	4.1	-96.80	315.0	342.1	52.7	49.4	3.36	15.685		
4,300.0	4,268.1	4,297.5	4,263.4	1.1	4.7	-0.36	323.5	348.6	60.9	57.1	3.76	16.194		
4,400.0	4,368.1	4,396.0	4,361.3	1.2	5.3	5.15	332.0	355.2	69.8	65.6	4.16	16.785		
4,500.0	4,468.1	4,491.4	4,455.7	1.4	5.9	9.63	343.2	362.6	82.4	77.9	4.55	18.102		
4,600.0	4,568.1	4,592.1	4,555.3	1.5	6.5	13.71	355.8	371.6	96.6	91.6	5.00	19.310		
4,700.0	4,668.1	4,694.9	4,657.1	1.6	7.1	17.16	365.9	380.8	108.4	103.0	5.47	19.833		
4,800.0	4,768.1	4,799.4	4,761.2	1.8	7.7	19.53	372.0	387.7	116.0	110.1	5.94	19.524		
4,900.0	4,868.1	4,901.2	4,862.8	2.0	8.2	20.93	376.0	392.2	121.3	114.9	6.41	18.921		
5,000.0	4,968.1	5,010.2	4,971.7	2.1	8.8	20.76	378.0	392.6	123.2	116.3	6.87	17.939		
5,100.0	5,068.1	5,113.7	5,075.0	2.3	9.2	22.55	370.7	393.7	117.0	109.7	7.29	16.055		
5,200.0	5,168.1	5,227.3	5,187.6	2.6	9.7	26.89	356.8	396.6	107.1	99.5	7.56	14.162		
5,300.0	5,268.1	5,340.6	5,294.5	2.8	10.0	-139.63	320.3	398.0	80.2	72.7	7.52	10.666		
5,400.0	5,367.2	5,437.1	5,381.3	3.0	10.3	-121.10	278.1	398.3	58.3	50.2	8.07	7.214		
5,500.0	5,462.1	5,538.2	5,469.3	3.2	10.6	-102.75	228.3	396.4	48.5	39.9	8.58	5.653		
5,600.0	5,549.4	5,637.5	5,551.0	3.5	10.8	-92.05	172.2	394.4	45.0	36.0	9.02	4.994		
5,700.0	5,625.8	5,736.7	5,621.5	3.8	11.1	-81.57	102.4	393.0	43.7	34.3	9.33	4.682		
5,723.8	5,642.1	5,759.9	5,637.0	4.0	11.2	-80.95	85.2	392.9	43.5	34.2	9.39	4.640		
5,800.0	5,688.6	5,833.4	5,679.9	4.8	11.5	-78.13	25.7	394.9	45.6	36.1	9.54	4.780		
5,900.0	5,735.5	5,931.2	5,726.6	8.7	12.1	-79.81	-60.1	399.1	49.1	39.1	10.01	4.908		
6,000.0	5,764.6	6,033.0	5,760.6	10.4	14.1	-85.21	-155.9	401.7	50.6	40.0	10.62	4.770		
6,100.0	5,775.0	6,132.5	5,775.4	11.7	15.6	-90.44	-254.1	400.4	48.6	36.7	11.92	4.079		
6,200.0	5,775.0	6,232.6	5,772.1	12.9	16.9	-86.45	-354.0	398.8	46.5	33.4	13.14	3.541		
6,227.8	5,775.0	6,260.0	5,771.1	13.2	17.2	-85.15	-381.4	398.6	46.3	32.6	13.72	3.378		
6,300.0	5,775.0	6,260.0	5,771.1	14.0	17.2	-85.15	-381.4	398.6	85.7	66.2	19.49	4.396		
6,400.0	5,775.0	6,260.0	5,771.1	15.1	17.2	-85.15	-381.4	398.6	178.2	161.9	16.32	10.921		
6,500.0	5,775.0	6,260.0	5,771.1	16.3	17.2	-85.15	-381.4	398.6	276.0	261.1	14.88	18.550		
6,600.0	5,775.0	6,260.0	5,771.1	17.4	17.2	-85.15	-381.4	398.6	375.0	360.9	14.10	26.585		
6,700.0	5,775.0	6,260.0	5,771.1	18.7	17.2	-85.15	-381.4	398.6	474.4	460.7	13.62	34.823		
6,800.0	5,775.0	6,260.0	5,771.1	20.0	17.2	-85.15	-381.4	398.6	574.0	560.7	13.29	43.178		
6,900.0	5,775.0	6,260.0	5,771.1	21.4	17.2	-85.15	-381.4	398.6	673.7	660.6	13.05	51.608		
7,000.0	5,775.0	6,260.0	5,771.1	22.8	17.2	-85.15	-381.4	398.6	773.5	760.6	12.87	60.084		
7,100.0	5,775.0	6,260.0	5,771.1	24.4	17.2	-85.15	-381.4	398.6	873.3	860.6	12.73	68.592		
7,200.0	5,775.0	6,260.0	5,771.1	26.0	17.2	-85.15	-381.4	398.6	973.2	960.6	12.62	77.117		
7,300.0	5,775.0	6,260.0	5,771.1	27.7	17.2	-85.15	-381.4	398.6	1,073.1	1,060.6	12.53	85.652		

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1312B - HZ - PLAN #4													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
3,500.0	3,471.6	3,484.6	3,438.5	19.5	18.8	52.24	257.5	491.2	210.4	188.5	21.92	9.598	CC	
3,600.0	3,571.0	3,584.3	3,536.5	19.8	19.4	6.74	266.3	506.8	217.2	194.9	22.33	9.725		
3,700.0	3,670.3	3,683.9	3,634.5	19.9	20.0	-3.15	275.0	522.3	221.7	199.2	22.46	9.871		
3,800.0	3,769.6	3,783.4	3,732.4	20.0	20.6	-5.31	283.8	537.9	226.4	203.8	22.59	10.023		
3,900.0	3,868.9	3,882.9	3,830.3	20.1	21.2	-7.38	292.5	553.5	231.5	208.7	22.74	10.178		
4,000.0	3,968.4	3,982.4	3,928.1	20.2	21.8	-9.33	301.3	569.1	237.9	215.0	22.91	10.384		
4,100.0	4,068.1	4,081.6	4,025.8	20.3	22.4	-11.04	310.0	584.6	248.0	224.9	23.12	10.728		
4,200.0	4,168.1	4,180.5	4,123.0	20.4	23.0	-12.48	318.7	600.1	261.7	238.3	23.36	11.203		
4,300.0	4,268.1	4,278.9	4,219.9	20.5	23.6	76.39	327.4	615.5	278.4	254.8	23.62	11.788		
4,400.0	4,368.1	4,377.3	4,316.7	20.6	24.2	75.45	336.0	630.9	295.8	271.9	23.90	12.375		
4,500.0	4,468.1	4,475.7	4,413.4	20.8	24.8	74.61	344.7	646.3	313.2	289.0	24.20	12.942		
4,600.0	4,568.1	4,574.1	4,510.2	20.9	25.4	73.86	353.3	661.7	330.7	306.2	24.51	13.490		
4,700.0	4,668.1	4,672.4	4,607.0	21.0	26.0	73.19	362.0	677.1	348.2	323.4	24.84	14.018		
4,800.0	4,768.1	4,779.7	4,712.6	21.2	26.6	72.55	371.0	693.1	365.0	339.8	25.20	14.484		
4,900.0	4,868.1	4,893.2	4,825.1	21.4	27.1	72.07	378.5	706.5	378.3	352.7	25.54	14.813		
5,000.0	4,968.1	5,007.8	4,939.1	21.6	27.5	71.75	383.9	716.1	387.7	361.9	25.83	15.008		
5,100.0	5,068.1	5,123.0	5,054.2	21.8	27.8	71.57	387.1	721.7	393.2	367.1	26.09	15.069		
5,200.0	5,168.1	5,236.9	5,168.1	22.0	28.0	71.52	388.0	723.3	394.8	368.4	26.33	14.994		
5,205.7	5,173.8	5,242.6	5,173.8	22.0	28.0	-108.17	388.0	723.3	394.8	368.4	26.35	14.984		
5,300.0	5,268.1	5,336.9	5,268.1	22.2	28.2	-108.19	388.0	723.3	394.8	368.2	26.66	14.810		
5,400.0	5,367.2	5,439.6	5,370.7	22.4	28.4	-109.51	387.8	723.3	398.8	371.9	26.87	14.839		
5,500.0	5,462.1	5,576.8	5,505.8	22.5	28.4	-111.83	366.3	723.3	404.3	377.7	26.63	15.184		
5,600.0	5,549.4	5,719.8	5,635.6	22.6	28.2	-113.05	307.3	723.3	407.2	381.1	26.08	15.610		
5,700.0	5,625.8	5,864.7	5,745.8	22.7	27.8	-113.04	213.9	723.3	406.7	381.1	25.52	15.938		
5,800.0	5,688.6	6,007.3	5,825.1	22.8	27.4	-111.81	95.9	723.3	402.8	377.4	25.39	15.863		
5,900.0	5,735.5	6,143.7	5,868.3	23.0	27.3	-109.49	-33.0	723.3	396.5	370.4	26.05	15.218		
6,000.0	5,764.6	6,265.8	5,878.0	23.4	27.4	-106.57	-154.5	723.3	389.0	361.6	27.43	14.181		
6,100.0	5,775.0	6,365.1	5,878.0	24.0	27.9	-105.49	-253.8	723.3	385.6	356.7	28.87	13.356		
6,200.0	5,775.0	6,465.1	5,878.0	24.9	28.8	-105.52	-353.8	723.3	385.0	354.7	30.33	12.697		
6,300.0	5,775.0	6,565.1	5,878.0	26.0	30.0	-105.54	-453.8	723.3	384.5	352.4	32.11	11.975		
6,400.0	5,775.0	6,665.1	5,878.0	27.3	31.5	-105.56	-553.8	723.3	384.0	349.8	34.20	11.229		
6,500.0	5,775.0	6,765.1	5,878.0	28.7	33.2	-105.58	-653.8	723.3	383.5	347.0	36.49	10.508		
6,600.0	5,775.0	6,865.1	5,878.0	30.2	35.1	-105.60	-753.8	723.3	382.9	344.0	38.96	9.828		
6,700.0	5,775.0	6,965.0	5,878.0	31.9	37.1	-105.63	-853.8	723.3	382.4	340.8	41.58	9.198		
6,800.0	5,775.0	7,065.0	5,878.0	33.6	39.2	-105.65	-953.8	723.3	381.9	337.6	44.31	8.619		
6,900.0	5,775.0	7,165.0	5,878.0	35.4	41.4	-105.67	-1,053.8	723.3	381.4	334.2	47.13	8.091		
7,000.0	5,775.0	7,265.0	5,878.0	37.3	43.8	-105.69	-1,153.8	723.3	380.8	330.8	50.04	7.610		
7,100.0	5,775.0	7,365.0	5,878.0	39.3	46.1	-105.71	-1,253.8	723.3	380.3	327.3	53.02	7.173		
7,200.0	5,775.0	7,465.0	5,878.0	41.2	48.6	-105.74	-1,353.8	723.3	379.8	323.7	56.05	6.775		
7,300.0	5,775.0	7,565.0	5,878.0	43.3	51.0	-105.76	-1,453.7	723.3	379.2	320.1	59.13	6.413		
7,400.0	5,775.0	7,665.0	5,878.0	45.3	53.6	-105.78	-1,553.7	723.3	378.7	316.5	62.26	6.083		
7,500.0	5,775.0	7,765.0	5,878.0	47.4	56.1	-105.80	-1,653.7	723.3	378.2	312.8	65.42	5.781		
7,600.0	5,775.0	7,865.0	5,878.0	49.6	58.7	-105.83	-1,753.7	723.3	377.7	309.1	68.61	5.505		
7,700.0	5,775.0	7,965.0	5,878.0	51.7	61.3	-105.85	-1,853.7	723.3	377.1	305.3	71.82	5.251		
7,800.0	5,775.0	8,065.0	5,878.0	53.9	63.9	-105.87	-1,953.7	723.3	376.6	301.6	75.06	5.018		
7,900.0	5,775.0	8,165.0	5,878.0	56.1	66.6	-105.90	-2,053.7	723.3	376.1	297.8	78.32	4.802		
8,000.0	5,775.0	8,265.0	5,878.0	58.3	69.2	-105.92	-2,153.7	723.3	375.6	294.0	81.59	4.603		
8,100.0	5,775.0	8,365.0	5,878.0	60.5	71.9	-105.94	-2,253.7	723.3	375.0	290.1	84.88	4.418		
8,200.0	5,775.0	8,465.0	5,878.0	62.7	74.6	-105.96	-2,353.7	723.3	374.5	286.3	88.19	4.247		
8,300.0	5,775.0	8,565.0	5,878.0	64.9	77.3	-105.99	-2,453.7	723.3	374.0	282.5	91.50	4.087		
8,400.0	5,775.0	8,665.0	5,878.0	67.2	80.1	-106.01	-2,553.7	723.3	373.5	278.6	94.83	3.938		
8,500.0	5,775.0	8,765.0	5,878.0	69.5	82.8	-106.03	-2,653.7	723.3	372.9	274.8	98.17	3.799		

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 #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1312B - HZ - PLAN #4													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,600.0	5,775.0	8,865.0	5,878.0	71.7	85.5	-106.06	-2,753.7	723.3	372.4	270.9	101.51	3.668		
8,700.0	5,775.0	8,965.0	5,878.0	74.0	88.3	-106.08	-2,853.7	723.3	371.9	267.0	104.87	3.546		
8,800.0	5,775.0	9,065.0	5,878.0	76.3	91.1	-106.10	-2,953.7	723.3	371.3	263.1	108.23	3.431		
8,900.0	5,775.0	9,165.0	5,878.0	78.6	93.8	-106.13	-3,053.7	723.3	370.8	259.2	111.59	3.323		
9,000.0	5,775.0	9,265.0	5,878.0	80.9	96.6	-106.15	-3,153.7	723.3	370.3	255.3	114.97	3.221		
9,100.0	5,775.0	9,365.0	5,878.0	83.2	99.4	-106.17	-3,253.7	723.3	369.8	251.4	118.34	3.125		
9,200.0	5,775.0	9,465.0	5,878.0	85.5	102.2	-106.20	-3,353.7	723.3	369.2	247.5	121.72	3.033		
9,300.0	5,775.0	9,565.0	5,878.0	87.8	105.0	-106.22	-3,453.7	723.3	368.7	243.6	125.11	2.947		
9,400.0	5,775.0	9,665.0	5,878.0	90.1	107.8	-106.25	-3,553.7	723.4	368.2	239.7	128.50	2.865		
9,500.0	5,775.0	9,765.0	5,878.0	92.4	110.6	-106.27	-3,653.7	723.4	367.7	235.8	131.89	2.788		
9,600.0	5,775.0	9,865.0	5,878.0	94.8	113.4	-106.29	-3,753.7	723.4	367.1	231.9	135.29	2.714		
9,700.0	5,775.0	9,965.0	5,878.0	97.1	116.2	-106.32	-3,853.7	723.4	366.6	227.9	138.69	2.643		
9,800.0	5,775.0	10,065.0	5,878.0	99.4	119.0	-106.34	-3,953.7	723.4	366.1	224.0	142.09	2.576		
9,900.0	5,775.0	10,165.0	5,878.0	101.8	121.8	-106.37	-4,053.7	723.4	365.6	220.1	145.49	2.513		
10,000.0	5,775.0	10,265.0	5,878.0	104.1	124.6	-106.39	-4,153.7	723.4	365.0	216.1	148.90	2.452		
10,100.0	5,775.0	10,365.0	5,878.0	106.4	127.4	-106.41	-4,253.7	723.4	364.5	212.2	152.31	2.393		
10,200.0	5,775.0	10,465.0	5,878.0	108.8	130.3	-106.44	-4,353.7	723.4	364.0	208.3	155.72	2.337		
10,300.0	5,775.0	10,565.0	5,878.0	111.1	133.1	-106.46	-4,453.7	723.4	363.5	204.3	159.13	2.284		
10,400.0	5,775.0	10,665.0	5,878.0	113.5	135.9	-106.49	-4,553.7	723.4	362.9	200.4	162.54	2.233		
10,500.0	5,775.0	10,765.0	5,878.0	115.8	138.7	-106.51	-4,653.7	723.4	362.4	196.5	165.95	2.184		
10,600.0	5,775.0	10,865.0	5,878.0	118.2	141.6	-106.54	-4,753.7	723.4	361.9	192.5	169.37	2.137		
10,700.0	5,775.0	10,965.0	5,878.0	120.5	144.4	-106.56	-4,853.7	723.4	361.4	188.6	172.78	2.091		
10,800.0	5,775.0	11,065.0	5,878.0	122.9	147.2	-106.59	-4,953.7	723.4	360.8	184.6	176.20	2.048		
10,900.0	5,775.0	11,165.0	5,878.0	125.2	150.1	-106.61	-5,053.7	723.4	360.3	180.7	179.62	2.006		
11,000.0	5,775.0	11,265.0	5,878.0	127.6	152.9	-106.64	-5,153.7	723.4	359.8	176.7	183.04	1.966		
11,100.0	5,775.0	11,365.0	5,878.0	130.0	155.8	-106.66	-5,253.7	723.4	359.3	172.8	186.46	1.927		
11,200.0	5,775.0	11,465.0	5,878.0	132.3	158.6	-106.69	-5,353.7	723.4	358.7	168.9	189.88	1.889		
11,300.0	5,775.0	11,565.0	5,878.0	134.7	161.5	-106.71	-5,453.7	723.4	358.2	164.9	193.30	1.853		
11,400.0	5,775.0	11,665.0	5,878.0	137.0	164.3	-106.74	-5,553.7	723.4	357.7	161.0	196.72	1.818		
11,500.0	5,775.0	11,765.0	5,878.0	139.4	167.1	-106.76	-5,653.7	723.4	357.2	157.0	200.14	1.785		
11,600.0	5,775.0	11,865.0	5,878.0	141.8	170.0	-106.79	-5,753.7	723.4	356.6	153.1	203.56	1.752		
11,700.0	5,775.0	11,965.0	5,878.0	144.1	172.8	-106.81	-5,853.7	723.4	356.1	149.1	206.98	1.721		
11,800.0	5,775.0	12,065.0	5,878.0	146.5	175.7	-106.84	-5,953.7	723.4	355.6	145.2	210.40	1.690		
11,900.0	5,775.0	12,165.0	5,878.0	148.9	178.5	-106.86	-6,053.7	723.4	355.1	141.2	213.82	1.661		
12,000.0	5,775.0	12,265.0	5,878.0	151.2	181.4	-106.89	-6,153.7	723.4	354.5	137.3	217.24	1.632		
12,100.0	5,775.0	12,365.0	5,878.0	153.6	184.3	-106.91	-6,253.7	723.4	354.0	133.3	220.67	1.604		
12,200.0	5,775.0	12,465.0	5,878.0	156.0	187.1	-106.94	-6,353.7	723.4	353.5	129.4	224.09	1.577		
12,300.0	5,775.0	12,565.0	5,878.0	158.4	190.0	-106.97	-6,453.7	723.4	353.0	125.5	227.51	1.551		
12,400.0	5,775.0	12,665.0	5,878.0	160.7	192.8	-106.99	-6,553.7	723.4	352.4	121.5	230.93	1.526		
12,500.0	5,775.0	12,765.0	5,878.0	163.1	195.7	-107.02	-6,653.7	723.4	351.9	117.6	234.35	1.502		
12,600.0	5,775.0	12,865.0	5,878.0	165.5	198.5	-107.04	-6,753.7	723.4	351.4	113.6	237.77	1.478 Level 3		
12,700.0	5,775.0	12,965.0	5,878.0	167.9	201.4	-107.07	-6,853.7	723.4	350.9	109.7	241.19	1.455 Level 3		
12,800.0	5,775.0	13,065.0	5,878.0	170.2	204.2	-107.10	-6,953.7	723.4	350.3	105.7	244.61	1.432 Level 3		
12,900.0	5,775.0	13,165.0	5,878.0	172.6	207.1	-107.12	-7,053.7	723.4	349.8	101.8	248.03	1.410 Level 3		
13,000.0	5,775.0	13,265.0	5,878.0	175.0	210.0	-107.15	-7,153.7	723.4	349.3	97.8	251.45	1.389 Level 3		
13,100.0	5,775.0	13,365.0	5,878.0	177.4	212.8	-107.18	-7,253.7	723.4	348.8	93.9	254.87	1.368 Level 3		
13,200.0	5,775.0	13,465.0	5,878.0	179.7	215.7	-107.20	-7,353.7	723.4	348.3	90.0	258.29	1.348 Level 3		
13,300.0	5,775.0	13,565.0	5,878.0	182.1	218.5	-107.23	-7,453.7	723.4	347.7	86.0	261.71	1.329 Level 3		
13,400.0	5,775.0	13,664.9	5,878.0	184.5	221.4	-107.26	-7,553.7	723.4	347.2	82.1	265.13	1.310 Level 3		
13,500.0	5,775.0	13,764.9	5,878.0	186.9	224.3	-107.28	-7,653.7	723.4	346.7	78.1	268.55	1.291 Level 3		
13,600.0	5,775.0	13,864.9	5,878.0	189.2	227.1	-107.31	-7,753.7	723.4	346.2	74.2	271.96	1.273 Level 3		
13,700.0	5,775.0	13,964.9	5,878.0	191.6	230.0	-107.34	-7,853.7	723.4	345.6	70.3	275.38	1.255 Level 3, ES, SF		

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

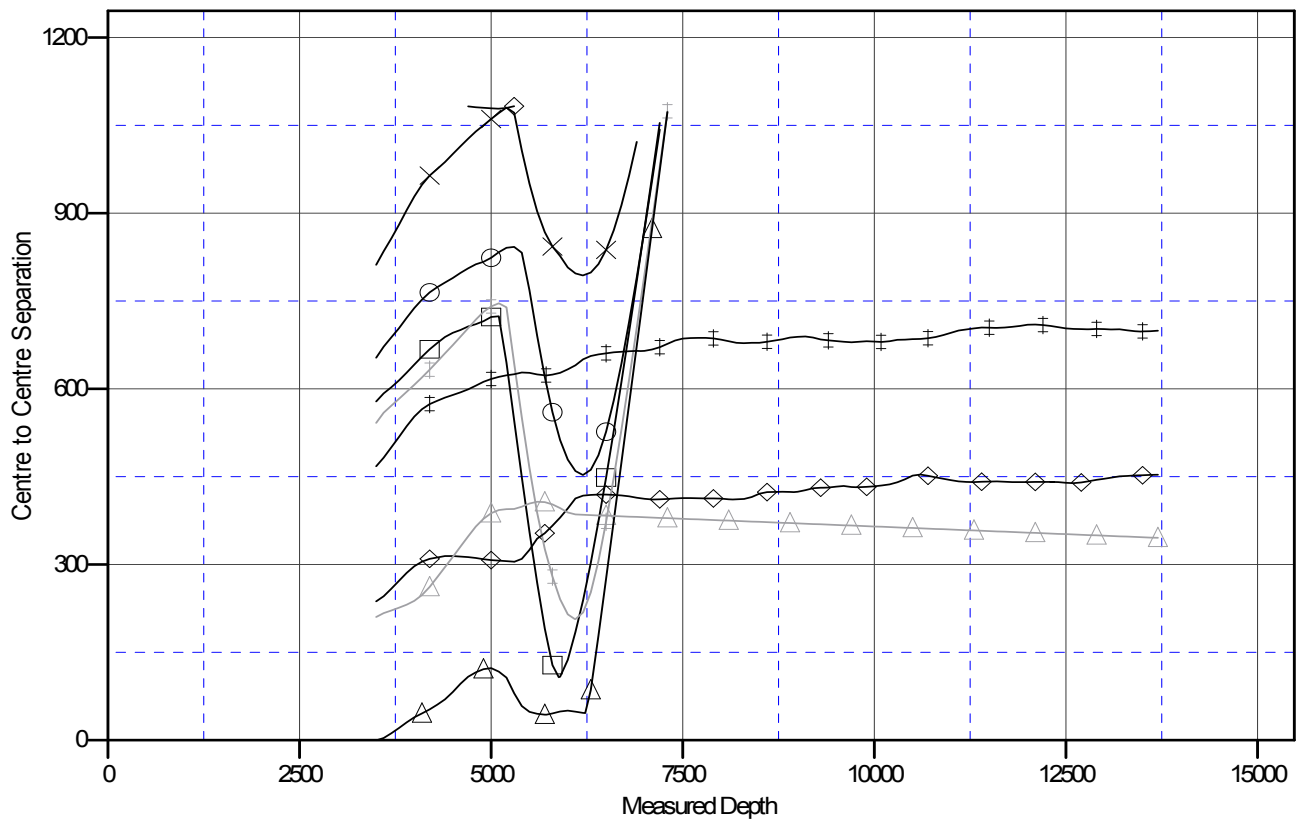
Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #12G-1311A
Project:	Weld County, CO	TVD Reference:	21' KB @ 4974.0usft (UNITY 406)
Reference Site:	S12-T10N-R58W	MD Reference:	21' KB @ 4974.0usft (UNITY 406)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor Federal #12G-1311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	3.00 sigma
Reference Wellbore	STK	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2 STK	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 21' KB @ 4974.0usft (UNITY 406)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Razor Federal #12G-1311A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.09°

Ladder Plot



LEGEND

1H (EXISTING), WHITINGWELL, SURVEYS V0	Razor#12G-0111A, HZ, FINAL V0	Razor Federal#12G-1310B, HZ, SURVEY
09A, HZ, FINAL V0	Razor#12G-0112B, HZ, PLAN#4 V0	Razor Federal#12G-1311A, OH, SURVEY
10B, HZ, FINAL V0	Razor Federal#12G-1309A, HZ, FINAL V0	Razor Federal#12G-1312B, HZ, PLAN#