



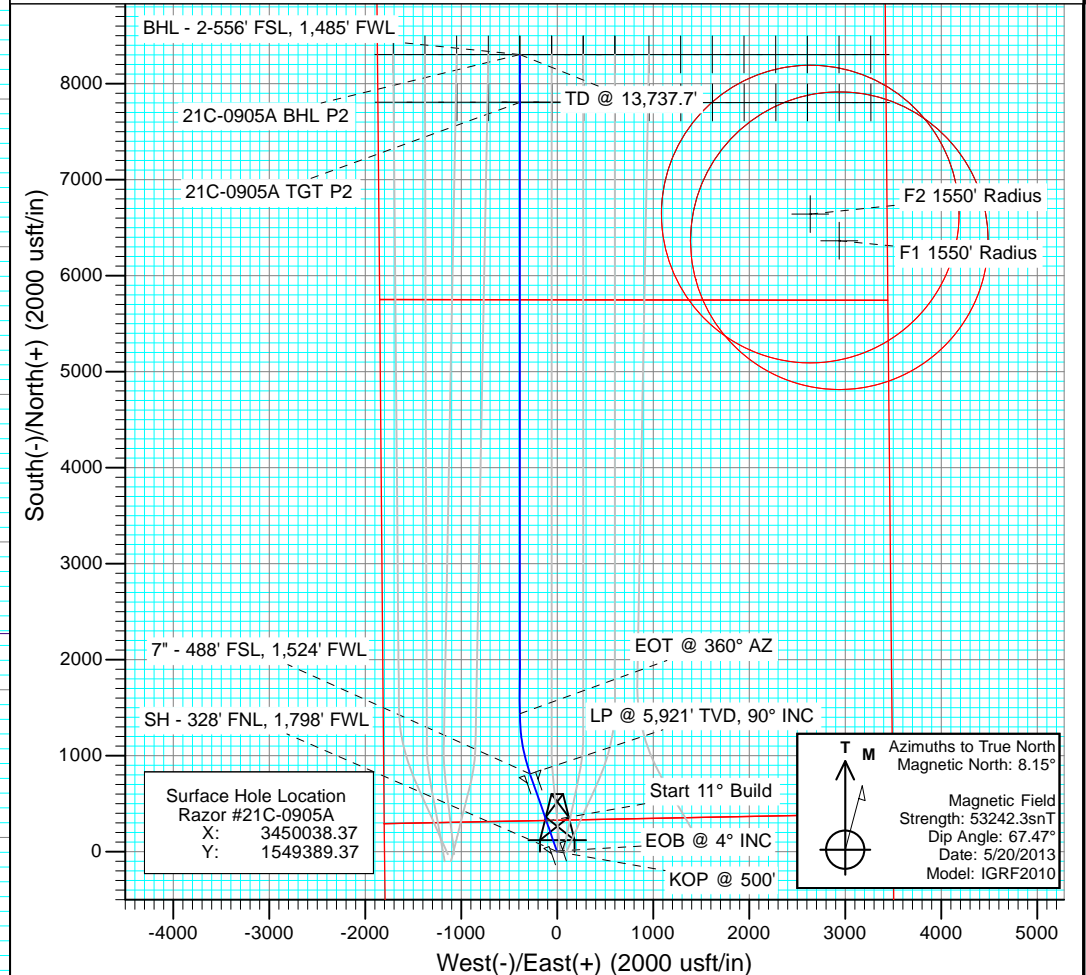
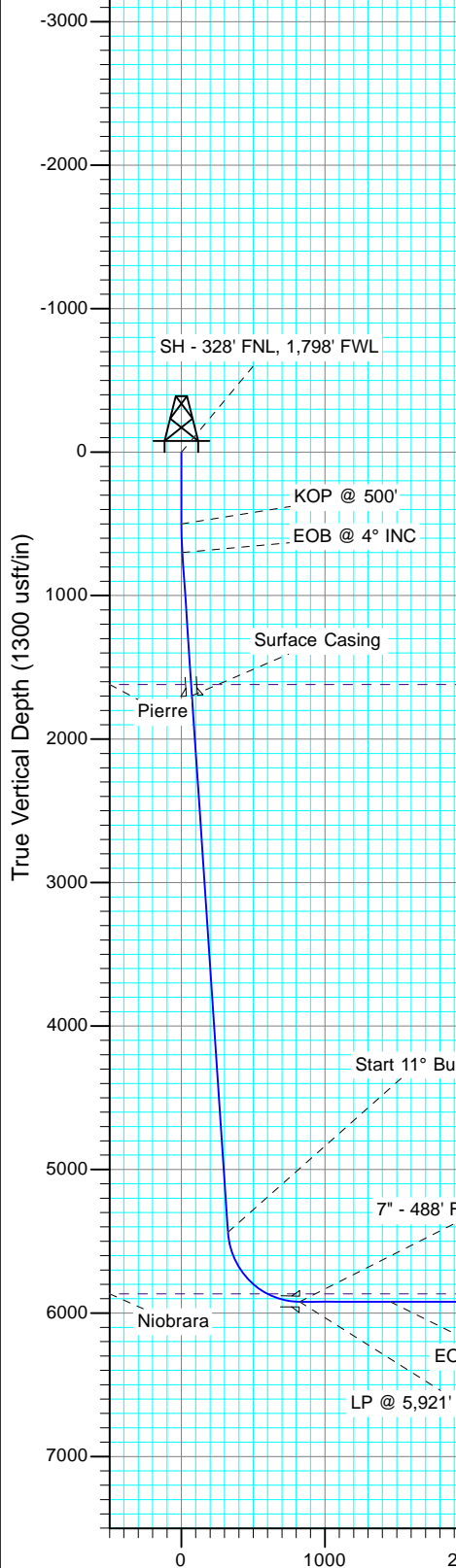
Project: Weld County, CO
Site: S21-T10N-R58W
Well: Razor #21C-0905A
Wellbore: HZ
Design: Plan #2



Plan #2
Razor #21C-0905A
KB=17' @ 4861.0usft
Ground Elevation @ 4844.0
North American Datum 1983
Well Razor #21C-0905A, True North

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	700.0	4.00	340.81	699.8	6.6	-2.3	2.00	340.81	6.7	
4	5448.2	4.00	340.81	5436.5	319.4	-111.2	0.00	0.00	324.2	
5	6230.0	90.00	340.81	5921.0	810.1	-282.0	11.00	0.00	822.4	
6	6869.7	90.00	360.00	5921.0	1437.9	-388.1	3.00	90.00	1454.4	
7	13737.7	90.00	360.00	5921.0	8305.9	-388.1	0.00	0.00	8315.0	21C-0905A BHL P2



DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
21C-0905A BHL P2	5921.0	8305.9	-388.1	1557686.80	3449497.97
21C-0905A TGT P2	5921.0	7806.1	-383.4	1557187.09	3449511.83

Vertical Section at 357.32° (1300 usft/in)

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0905A
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4861.0usft
Project:	Weld County, CO	MD Reference:	KB=17' @ 4861.0usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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

Site		S21-T10N-R58W			
Site Position:		Northing:	1,549,494.62 usft	Latitude:	40.830272
From:	Lat/Long	Easting:	3,452,846.68 usft	Longitude:	-103.863561
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.06 °

Well	Razor #21C-0905A					
Well Position	+N/-S	0.0 usft	Northing:	1,549,389.37 usft	Latitude:	40.830125
	+E/-W	0.0 usft	Easting:	3,450,038.37 usft	Longitude:	-103.873714
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,844.0 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/20/2013	8.15	67.47	53,242

Design	Plan #2			
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	357.32

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	4.00	340.81	699.8	6.6	-2.3	2.00	2.00	0.00	340.81	
5,448.2	4.00	340.81	5,436.5	319.4	-111.2	0.00	0.00	0.00	0.00	
6,230.0	90.00	340.81	5,921.0	810.1	-282.0	11.00	11.00	0.00	0.00	
6,869.7	90.00	360.00	5,921.0	1,437.9	-388.1	3.00	0.00	3.00	90.00	
13,737.7	90.00	360.00	5,921.0	8,305.9	-388.1	0.00	0.00	0.00	0.00	21C-0905A BHL P2

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0905A
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4861.0usft
Project:	Weld County, CO	MD Reference:	KB=17' @ 4861.0usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
0.5	0.00	0.00	0.5	0.0	0.0	0.0	0.00	0.00	SH - 328' FNL, 1,798' FWL
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500'
600.0	2.00	340.81	600.0	1.6	-0.6	1.7	2.00	2.00	
700.0	4.00	340.81	699.8	6.6	-2.3	6.7	2.00	2.00	EOB @ 4° INC
800.0	4.00	340.81	799.6	13.2	-4.6	13.4	0.00	0.00	
900.0	4.00	340.81	899.4	19.8	-6.9	20.1	0.00	0.00	
1,000.0	4.00	340.81	999.1	26.4	-9.2	26.8	0.00	0.00	
1,100.0	4.00	340.81	1,098.9	32.9	-11.5	33.4	0.00	0.00	
1,200.0	4.00	340.81	1,198.6	39.5	-13.8	40.1	0.00	0.00	
1,300.0	4.00	340.81	1,298.4	46.1	-16.1	46.8	0.00	0.00	
1,400.0	4.00	340.81	1,398.1	52.7	-18.3	53.5	0.00	0.00	
1,500.0	4.00	340.81	1,497.9	59.3	-20.6	60.2	0.00	0.00	
1,600.0	4.00	340.81	1,597.6	65.9	-22.9	66.9	0.00	0.00	
1,622.4	4.00	340.81	1,620.0	67.4	-23.4	68.4	0.00	0.00	Pierre
1,700.0	4.00	340.81	1,697.4	72.5	-25.2	73.6	0.00	0.00	Surface Casing
1,800.0	4.00	340.81	1,797.2	79.1	-27.5	80.3	0.00	0.00	
1,900.0	4.00	340.81	1,896.9	85.6	-29.8	86.9	0.00	0.00	
2,000.0	4.00	340.81	1,996.7	92.2	-32.1	93.6	0.00	0.00	
2,100.0	4.00	340.81	2,096.4	98.8	-34.4	100.3	0.00	0.00	
2,200.0	4.00	340.81	2,196.2	105.4	-36.7	107.0	0.00	0.00	
2,300.0	4.00	340.81	2,295.9	112.0	-39.0	113.7	0.00	0.00	
2,400.0	4.00	340.81	2,395.7	118.6	-41.3	120.4	0.00	0.00	
2,500.0	4.00	340.81	2,495.5	125.2	-43.6	127.1	0.00	0.00	
2,600.0	4.00	340.81	2,595.2	131.8	-45.9	133.8	0.00	0.00	
2,700.0	4.00	340.81	2,695.0	138.4	-48.2	140.4	0.00	0.00	
2,800.0	4.00	340.81	2,794.7	144.9	-50.4	147.1	0.00	0.00	
2,900.0	4.00	340.81	2,894.5	151.5	-52.7	153.8	0.00	0.00	
3,000.0	4.00	340.81	2,994.2	158.1	-55.0	160.5	0.00	0.00	
3,100.0	4.00	340.81	3,094.0	164.7	-57.3	167.2	0.00	0.00	
3,200.0	4.00	340.81	3,193.7	171.3	-59.6	173.9	0.00	0.00	
3,300.0	4.00	340.81	3,293.5	177.9	-61.9	180.6	0.00	0.00	
3,400.0	4.00	340.81	3,393.3	184.5	-64.2	187.3	0.00	0.00	
3,500.0	4.00	340.81	3,493.0	191.1	-66.5	194.0	0.00	0.00	
3,600.0	4.00	340.81	3,592.8	197.6	-68.8	200.6	0.00	0.00	
3,700.0	4.00	340.81	3,692.5	204.2	-71.1	207.3	0.00	0.00	
3,800.0	4.00	340.81	3,792.3	210.8	-73.4	214.0	0.00	0.00	
3,900.0	4.00	340.81	3,892.0	217.4	-75.7	220.7	0.00	0.00	
4,000.0	4.00	340.81	3,991.8	224.0	-78.0	227.4	0.00	0.00	
4,100.0	4.00	340.81	4,091.6	230.6	-80.3	234.1	0.00	0.00	
4,200.0	4.00	340.81	4,191.3	237.2	-82.5	240.8	0.00	0.00	
4,300.0	4.00	340.81	4,291.1	243.8	-84.8	247.5	0.00	0.00	
4,400.0	4.00	340.81	4,390.8	250.3	-87.1	254.1	0.00	0.00	
4,500.0	4.00	340.81	4,490.6	256.9	-89.4	260.8	0.00	0.00	
4,600.0	4.00	340.81	4,590.3	263.5	-91.7	267.5	0.00	0.00	
4,700.0	4.00	340.81	4,690.1	270.1	-94.0	274.2	0.00	0.00	
4,800.0	4.00	340.81	4,789.9	276.7	-96.3	280.9	0.00	0.00	
4,900.0	4.00	340.81	4,889.6	283.3	-98.6	287.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0905A
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4861.0usft
Project:	Weld County, CO	MD Reference:	KB=17' @ 4861.0usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,000.0	4.00	340.81	4,989.4	289.9	-100.9	294.3	0.00	0.00	
5,100.0	4.00	340.81	5,089.1	296.5	-103.2	301.0	0.00	0.00	
5,200.0	4.00	340.81	5,188.9	303.1	-105.5	307.6	0.00	0.00	
5,300.0	4.00	340.81	5,288.6	309.6	-107.8	314.3	0.00	0.00	
5,400.0	4.00	340.81	5,388.4	316.2	-110.1	321.0	0.00	0.00	
5,448.2	4.00	340.81	5,436.5	319.4	-111.2	324.2	0.00	0.00	Start 11° Build
5,450.0	4.20	340.81	5,438.3	319.5	-111.2	324.4	11.00	11.00	
5,500.0	9.70	340.81	5,487.9	325.2	-113.2	330.2	11.00	11.00	
5,550.0	15.20	340.81	5,536.7	335.4	-116.7	340.5	11.00	11.00	
5,600.0	20.70	340.81	5,584.2	350.0	-121.8	355.3	11.00	11.00	
5,650.0	26.20	340.81	5,630.1	368.7	-128.3	374.3	11.00	11.00	
5,700.0	31.70	340.81	5,673.8	391.6	-136.3	397.5	11.00	11.00	
5,750.0	37.20	340.81	5,715.0	418.3	-145.6	424.6	11.00	11.00	
5,800.0	42.70	340.81	5,753.4	448.6	-156.1	455.4	11.00	11.00	
5,850.0	48.20	340.81	5,788.4	482.2	-167.8	489.5	11.00	11.00	
5,900.0	53.70	340.81	5,819.9	518.9	-180.6	526.8	11.00	11.00	
5,950.0	59.20	340.81	5,847.5	558.2	-194.3	566.7	11.00	11.00	
5,990.7	63.68	340.81	5,867.0	592.0	-206.0	601.0	11.00	11.00	Niobrara
6,000.0	64.70	340.81	5,871.0	599.9	-208.8	609.0	11.00	11.00	
6,050.0	70.20	340.81	5,890.2	643.5	-224.0	653.2	11.00	11.00	
6,100.0	75.70	340.81	5,904.9	688.6	-239.7	699.0	11.00	11.00	
6,150.0	81.20	340.81	5,914.9	734.9	-255.8	746.0	11.00	11.00	
6,200.0	86.70	340.81	5,920.1	781.8	-272.1	793.6	11.00	11.00	
6,230.0	90.00	340.81	5,921.0	810.1	-282.0	822.4	11.00	11.00	LP @ 5,921' TVD, 90° INC - 7" - 488' FSL, 1,52
6,300.0	90.00	342.91	5,921.0	876.6	-303.7	889.9	3.00	0.00	
6,400.0	90.00	345.91	5,921.0	972.9	-330.6	987.3	3.00	0.00	
6,500.0	90.00	348.91	5,921.0	1,070.5	-352.4	1,085.8	3.00	0.00	
6,600.0	90.00	351.91	5,921.0	1,169.1	-369.1	1,185.1	3.00	0.00	
6,700.0	90.00	354.91	5,921.0	1,268.4	-380.6	1,284.8	3.00	0.00	
6,800.0	90.00	357.91	5,921.0	1,368.2	-386.8	1,384.8	3.00	0.00	
6,869.7	90.00	360.00	5,921.0	1,437.9	-388.1	1,454.4	3.00	0.00	EOT @ 360° AZ
6,900.0	90.00	360.00	5,921.0	1,468.2	-388.1	1,484.7	0.00	0.00	
7,000.0	90.00	360.00	5,921.0	1,568.2	-388.1	1,584.6	0.00	0.00	
7,100.0	90.00	360.00	5,921.0	1,668.2	-388.1	1,684.5	0.00	0.00	
7,200.0	90.00	360.00	5,921.0	1,768.2	-388.1	1,784.4	0.00	0.00	
7,300.0	90.00	360.00	5,921.0	1,868.2	-388.1	1,884.3	0.00	0.00	
7,400.0	90.00	360.00	5,921.0	1,968.2	-388.1	1,984.2	0.00	0.00	
7,500.0	90.00	360.00	5,921.0	2,068.2	-388.1	2,084.1	0.00	0.00	
7,600.0	90.00	360.00	5,921.0	2,168.2	-388.1	2,184.0	0.00	0.00	
7,700.0	90.00	360.00	5,921.0	2,268.2	-388.1	2,283.9	0.00	0.00	
7,800.0	90.00	360.00	5,921.0	2,368.2	-388.1	2,383.8	0.00	0.00	
7,900.0	90.00	360.00	5,921.0	2,468.2	-388.1	2,483.7	0.00	0.00	
8,000.0	90.00	360.00	5,921.0	2,568.2	-388.1	2,583.5	0.00	0.00	
8,100.0	90.00	360.00	5,921.0	2,668.2	-388.1	2,683.4	0.00	0.00	
8,200.0	90.00	360.00	5,921.0	2,768.2	-388.1	2,783.3	0.00	0.00	
8,300.0	90.00	360.00	5,921.0	2,868.2	-388.1	2,883.2	0.00	0.00	
8,400.0	90.00	360.00	5,921.0	2,968.2	-388.1	2,983.1	0.00	0.00	
8,500.0	90.00	360.00	5,921.0	3,068.2	-388.1	3,083.0	0.00	0.00	
8,600.0	90.00	360.00	5,921.0	3,168.2	-388.1	3,182.9	0.00	0.00	
8,700.0	90.00	360.00	5,921.0	3,268.2	-388.1	3,282.8	0.00	0.00	
8,800.0	90.00	360.00	5,921.0	3,368.2	-388.1	3,382.7	0.00	0.00	
8,900.0	90.00	360.00	5,921.0	3,468.2	-388.1	3,482.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0905A
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4861.0usft
Project:	Weld County, CO	MD Reference:	KB=17' @ 4861.0usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,000.0	90.00	360.00	5,921.0	3,568.2	-388.1	3,582.5	0.00	0.00	
9,100.0	90.00	360.00	5,921.0	3,668.2	-388.1	3,682.3	0.00	0.00	
9,200.0	90.00	360.00	5,921.0	3,768.2	-388.1	3,782.2	0.00	0.00	
9,300.0	90.00	360.00	5,921.0	3,868.2	-388.1	3,882.1	0.00	0.00	
9,400.0	90.00	360.00	5,921.0	3,968.2	-388.1	3,982.0	0.00	0.00	
9,500.0	90.00	360.00	5,921.0	4,068.2	-388.1	4,081.9	0.00	0.00	
9,600.0	90.00	360.00	5,921.0	4,168.2	-388.1	4,181.8	0.00	0.00	
9,700.0	90.00	360.00	5,921.0	4,268.2	-388.1	4,281.7	0.00	0.00	
9,800.0	90.00	360.00	5,921.0	4,368.2	-388.1	4,381.6	0.00	0.00	
9,900.0	90.00	360.00	5,921.0	4,468.2	-388.1	4,481.5	0.00	0.00	
10,000.0	90.00	360.00	5,921.0	4,568.2	-388.1	4,581.4	0.00	0.00	
10,100.0	90.00	360.00	5,921.0	4,668.2	-388.1	4,681.3	0.00	0.00	
10,200.0	90.00	360.00	5,921.0	4,768.2	-388.1	4,781.1	0.00	0.00	
10,300.0	90.00	360.00	5,921.0	4,868.2	-388.1	4,881.0	0.00	0.00	
10,400.0	90.00	360.00	5,921.0	4,968.2	-388.1	4,980.9	0.00	0.00	
10,500.0	90.00	360.00	5,921.0	5,068.2	-388.1	5,080.8	0.00	0.00	
10,600.0	90.00	360.00	5,921.0	5,168.2	-388.1	5,180.7	0.00	0.00	
10,700.0	90.00	360.00	5,921.0	5,268.2	-388.1	5,280.6	0.00	0.00	
10,800.0	90.00	360.00	5,921.0	5,368.2	-388.1	5,380.5	0.00	0.00	
10,900.0	90.00	360.00	5,921.0	5,468.2	-388.1	5,480.4	0.00	0.00	
11,000.0	90.00	360.00	5,921.0	5,568.2	-388.1	5,580.3	0.00	0.00	
11,100.0	90.00	360.00	5,921.0	5,668.2	-388.1	5,680.2	0.00	0.00	
11,200.0	90.00	360.00	5,921.0	5,768.2	-388.1	5,780.1	0.00	0.00	
11,300.0	90.00	360.00	5,921.0	5,868.2	-388.1	5,879.9	0.00	0.00	
11,400.0	90.00	360.00	5,921.0	5,968.2	-388.1	5,979.8	0.00	0.00	
11,500.0	90.00	360.00	5,921.0	6,068.2	-388.1	6,079.7	0.00	0.00	
11,600.0	90.00	360.00	5,921.0	6,168.2	-388.1	6,179.6	0.00	0.00	
11,700.0	90.00	360.00	5,921.0	6,268.2	-388.1	6,279.5	0.00	0.00	
11,800.0	90.00	360.00	5,921.0	6,368.2	-388.1	6,379.4	0.00	0.00	
11,900.0	90.00	360.00	5,921.0	6,468.2	-388.1	6,479.3	0.00	0.00	
12,000.0	90.00	360.00	5,921.0	6,568.2	-388.1	6,579.2	0.00	0.00	
12,100.0	90.00	360.00	5,921.0	6,668.2	-388.1	6,679.1	0.00	0.00	
12,200.0	90.00	360.00	5,921.0	6,768.2	-388.1	6,779.0	0.00	0.00	
12,300.0	90.00	360.00	5,921.0	6,868.2	-388.1	6,878.9	0.00	0.00	
12,400.0	90.00	360.00	5,921.0	6,968.2	-388.1	6,978.7	0.00	0.00	
12,500.0	90.00	360.00	5,921.0	7,068.2	-388.1	7,078.6	0.00	0.00	
12,600.0	90.00	360.00	5,921.0	7,168.2	-388.1	7,178.5	0.00	0.00	
12,700.0	90.00	360.00	5,921.0	7,268.2	-388.1	7,278.4	0.00	0.00	
12,800.0	90.00	360.00	5,921.0	7,368.2	-388.1	7,378.3	0.00	0.00	
12,900.0	90.00	360.00	5,921.0	7,468.2	-388.1	7,478.2	0.00	0.00	
13,000.0	90.00	360.00	5,921.0	7,568.2	-388.1	7,578.1	0.00	0.00	
13,100.0	90.00	360.00	5,921.0	7,668.2	-388.1	7,678.0	0.00	0.00	
13,200.0	90.00	360.00	5,921.0	7,768.2	-388.1	7,777.9	0.00	0.00	
13,300.0	90.00	360.00	5,921.0	7,868.2	-388.1	7,877.8	0.00	0.00	
13,400.0	90.00	360.00	5,921.0	7,968.2	-388.1	7,977.7	0.00	0.00	
13,500.0	90.00	360.00	5,921.0	8,068.2	-388.1	8,077.5	0.00	0.00	
13,600.0	90.00	360.00	5,921.0	8,168.2	-388.1	8,177.4	0.00	0.00	
13,700.0	90.00	360.00	5,921.0	8,268.2	-388.1	8,277.3	0.00	0.00	
13,737.7	90.00	360.00	5,921.0	8,305.9	-388.1	8,315.0	0.00	0.00	BHL - 2-556' FSL, 1,485' FWL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0905A
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4861.0usft
Project:	Weld County, CO	MD Reference:	KB=17' @ 4861.0usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
21C-0905A TGT P2	0.00	1.05	5,921.0	7,806.1	-383.4	1,557,187.09	3,449,511.83	40.851550	-103.875100
- plan misses target center by 4.7usft at 13237.8usft MD (5921.0 TVD, 7806.1 N, -388.1 E)									
- Point									
21C-0905A TGT	0.00	1.05	5,808.5	7,806.1	-383.4	1,557,187.09	3,449,511.83	40.851550	-103.875100
- plan misses target center by 112.6usft at 13237.8usft MD (5921.0 TVD, 7806.1 N, -388.1 E)									
- Point									
21C-0905A BHL	0.00	1.05	5,808.5	8,305.9	-388.1	1,557,686.80	3,449,497.97	40.852922	-103.875117
- plan misses target center by 112.5usft at 13737.7usft MD (5921.0 TVD, 8305.9 N, -388.1 E)									
- Point									
21C-0905A BHL P2	0.00	1.05	5,921.0	8,305.9	-388.1	1,557,686.80	3,449,497.97	40.852922	-103.875117
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
	(usft)	(usft)		(")	(")
	6,230.0	5,921.0	7" - 488' FSL, 1,524' FWL	0	0
	1,700.0	1,697.4	Surface Casing	0	0

Formations					
	Measured Depth	Vertical Depth	Name	Lithology	Dip
	(usft)	(usft)			(°)
	1,622.4	1,620.0	Pierre		0.00
	5,990.7	5,867.0	Niobrara		0.00

Plan Annotations					
	Measured Depth	Vertical Depth	Local Coordinates		
	(usft)	(usft)	+N/-S	+E/-W	Comment
	(usft)	(usft)	(usft)	(usft)	
	0.5	0.5	0.0	0.0	SH - 328' FNL, 1,798' FWL
	500.0	500.0	0.0	0.0	KOP @ 500'
	700.0	699.8	6.6	-2.3	EOB @ 4° INC
	5,448.2	5,436.5	319.4	-111.2	Start 11° Build
	6,230.0	5,921.0	810.1	-282.0	LP @ 5,921' TVD, 90° INC
	6,869.7	5,921.0	1,437.9	-388.1	EOT @ 360° AZ
	13,737.7	5,921.0	8,305.9	-388.1	BHL - 2-556' FSL, 1,485' FWL
	13,737.7	5,921.0	8,305.9	-388.1	TD @ 13,737.7'

Whiting Petroleum Corporation

Weld County, CO

S21-T10N-R58W

Razor #21C-0905A

HZ

Plan #2

Anticollision Report

31 March, 2014

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,550.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	3/31/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,737.7	Plan #2 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S21-T10N-R58W						
Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL						Out of range
Nelson Ranches E-1 (Existing) - Existing - ASSUMED VE						Out of range
Razor #21B-0909A - HZ - Plan #1	7,145.6	7,100.0	1,229.3	1,159.3	17.549	CC
Razor #21B-0909A - HZ - Plan #1	13,737.7	13,668.5	1,349.4	1,035.2	4.294	ES, SF
Razor #21C-0906B - HZ - Plan #2	500.0	500.0	32.4	30.4	16.324	CC, ES
Razor #21C-0906B - HZ - Plan #2	13,737.7	13,790.8	346.3	40.9	1.134	Level 2, SF
Razor #21C-0907A - HZ - Plan #2	500.0	500.0	65.3	63.3	32.913	CC, ES
Razor #21C-0907A - HZ - Plan #2	13,737.7	13,723.8	660.1	343.4	2.085	SF
Razor #21C-0908B - HZ - Plan #2	500.0	500.0	98.5	96.5	49.644	CC, ES
Razor #21C-0908B - HZ - Plan #2	13,737.7	13,909.0	995.2	681.7	3.174	SF
Razor #21D-0901A - HZ - Plan #2	511.6	508.2	1,138.8	1,136.8	561.060	CC
Razor #21D-0901A - HZ - Plan #2	13,737.7	13,682.1	1,323.9	1,007.7	4.186	ES, SF
Razor #21D-0902B - HZ - Plan #2	6,880.5	6,892.5	970.4	907.9	15.534	CC
Razor #21D-0902B - HZ - Plan #2	13,737.7	13,749.7	989.9	670.4	3.098	ES, SF
Razor #21D-0903A - HZ - Plan #1	13,737.7	13,631.8	668.5	352.6	2.116	CC, ES, SF
Razor #21D-0904B - HZ - Plan #1	13,737.7	13,821.2	330.6	9.6	1.030	Level 2, CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	88.93	28.5	1,522.9	1,523.2					
100.0	100.0	92.8	92.8	0.1	0.1	88.93	28.5	1,522.9	1,523.2	1,523.0	0.18	8,445.674		
200.0	200.0	192.8	192.8	0.3	0.3	88.93	28.5	1,522.9	1,523.2	1,522.6	0.62	2,454.939		
300.0	300.0	292.8	292.8	0.5	0.5	88.93	28.5	1,522.9	1,523.2	1,522.1	1.07	1,423.550		
400.0	400.0	392.8	392.8	0.8	0.8	88.93	28.5	1,522.9	1,523.2	1,521.7	1.52	1,002.410		
500.0	500.0	492.8	492.8	1.0	1.0	88.93	28.5	1,522.9	1,523.2	1,521.2	1.97	773.563		
600.0	600.0	625.3	625.2	1.2	1.3	108.12	30.8	1,521.5	1,522.7	1,520.2	2.49	612.025		
700.0	699.8	744.6	744.3	1.4	1.5	108.13	37.2	1,517.8	1,521.3	1,518.3	2.98	509.840		
800.0	799.6	844.6	844.1	1.7	1.8	108.15	43.2	1,514.3	1,520.1	1,516.6	3.45	440.617		
900.0	899.4	944.6	943.8	1.9	2.0	108.17	49.2	1,510.8	1,518.9	1,514.9	3.93	386.944		
1,000.0	999.1	1,044.6	1,043.6	2.2	2.3	108.19	55.3	1,507.3	1,517.6	1,513.2	4.41	344.359		
1,100.0	1,098.9	1,144.6	1,143.3	2.4	2.5	108.21	61.3	1,503.8	1,516.4	1,511.5	4.89	309.878		
1,200.0	1,198.6	1,244.6	1,243.1	2.7	2.8	108.23	67.3	1,500.3	1,515.2	1,509.8	5.38	281.459		
1,300.0	1,298.4	1,344.6	1,342.8	2.9	3.0	108.25	73.3	1,496.8	1,513.9	1,508.1	5.88	257.670		
1,400.0	1,398.1	1,444.5	1,442.6	3.2	3.3	108.27	79.4	1,493.2	1,512.7	1,506.3	6.37	237.490		
1,500.0	1,497.9	1,544.5	1,542.3	3.4	3.5	108.29	85.4	1,489.7	1,511.5	1,504.6	6.87	220.164		
1,600.0	1,597.6	1,644.5	1,642.1	3.7	3.8	108.31	91.4	1,486.2	1,510.2	1,502.9	7.36	205.140		
1,700.0	1,697.4	1,744.5	1,741.8	3.9	4.0	108.33	97.4	1,482.7	1,509.0	1,501.1	7.86	191.991		
1,800.0	1,797.2	1,844.5	1,841.6	4.2	4.3	108.35	103.5	1,479.2	1,507.8	1,499.4	8.36	180.391		
1,900.0	1,896.9	1,944.5	1,941.3	4.4	4.5	108.37	109.5	1,475.7	1,506.5	1,497.7	8.86	170.085		
2,000.0	1,996.7	2,044.5	2,041.1	4.7	4.8	108.39	115.5	1,472.2	1,505.3	1,496.0	9.36	160.869		
2,100.0	2,096.4	2,144.5	2,140.8	4.9	5.1	108.41	121.5	1,468.6	1,504.1	1,494.2	9.86	152.581		
2,200.0	2,196.2	2,244.5	2,240.5	5.2	5.3	108.43	127.6	1,465.1	1,502.9	1,492.5	10.36	145.087		
2,300.0	2,295.9	2,344.5	2,340.3	5.4	5.6	108.45	133.6	1,461.6	1,501.6	1,490.8	10.86	138.280		
2,400.0	2,395.7	2,444.5	2,440.0	5.7	5.8	108.48	139.6	1,458.1	1,500.4	1,489.0	11.36	132.070		
2,500.0	2,495.5	2,544.4	2,539.8	6.0	6.1	108.50	145.6	1,454.6	1,499.2	1,487.3	11.86	126.382		
2,600.0	2,595.2	2,644.4	2,639.5	6.2	6.3	108.52	151.7	1,451.1	1,497.9	1,485.6	12.36	121.153		
2,700.0	2,695.0	2,744.4	2,739.3	6.5	6.6	108.54	157.7	1,447.6	1,496.7	1,483.9	12.87	116.330		
2,800.0	2,794.7	2,844.4	2,839.0	6.7	6.8	108.56	163.7	1,444.0	1,495.5	1,482.1	13.37	111.868		
2,900.0	2,894.5	2,944.4	2,938.8	7.0	7.1	108.58	169.7	1,440.5	1,494.3	1,480.4	13.87	107.728		
3,000.0	2,994.2	3,044.4	3,038.5	7.2	7.4	108.60	175.8	1,437.0	1,493.0	1,478.7	14.37	103.876		
3,100.0	3,094.0	3,144.4	3,138.3	7.5	7.6	108.62	181.8	1,433.5	1,491.8	1,476.9	14.88	100.284		
3,200.0	3,193.7	3,244.4	3,238.0	7.7	7.9	108.64	187.8	1,430.0	1,490.6	1,475.2	15.38	96.925		
3,300.0	3,293.5	3,344.4	3,337.8	8.0	8.1	108.66	193.8	1,426.5	1,489.4	1,473.5	15.88	93.779		
3,400.0	3,393.3	3,444.4	3,437.5	8.3	8.4	108.69	199.9	1,423.0	1,488.1	1,471.7	16.38	90.825		
3,500.0	3,493.0	3,544.4	3,537.3	8.5	8.6	108.71	205.9	1,419.4	1,486.9	1,470.0	16.89	88.047		
3,600.0	3,592.8	3,644.3	3,637.0	8.8	8.9	108.73	211.9	1,415.9	1,485.7	1,468.3	17.39	85.429		
3,700.0	3,692.5	3,744.3	3,736.8	9.0	9.2	108.75	217.9	1,412.4	1,484.5	1,466.6	17.89	82.958		
3,800.0	3,792.3	3,844.3	3,836.5	9.3	9.4	108.77	224.0	1,408.9	1,483.2	1,464.8	18.40	80.622		
3,900.0	3,892.0	3,944.3	3,936.3	9.5	9.7	108.79	230.0	1,405.4	1,482.0	1,463.1	18.90	78.410		
4,000.0	3,991.8	4,044.3	4,036.0	9.8	9.9	108.81	236.0	1,401.9	1,480.8	1,461.4	19.40	76.313		
4,100.0	4,091.6	4,144.3	4,135.8	10.1	10.2	108.84	242.0	1,398.4	1,479.6	1,459.6	19.91	74.321		
4,200.0	4,191.3	4,244.3	4,235.5	10.3	10.4	108.86	248.1	1,394.9	1,478.3	1,457.9	20.41	72.428		
4,300.0	4,291.1	4,344.3	4,335.2	10.6	10.7	108.88	254.1	1,391.3	1,477.1	1,456.2	20.91	70.625		
4,400.0	4,390.8	4,444.3	4,435.0	10.8	11.0	108.90	260.1	1,387.8	1,475.9	1,454.5	21.42	68.908		
4,500.0	4,490.6	4,544.3	4,534.7	11.1	11.2	108.92	266.1	1,384.3	1,474.7	1,452.7	21.92	67.269		
4,600.0	4,590.3	4,644.3	4,634.5	11.3	11.5	108.94	272.2	1,380.8	1,473.4	1,451.0	22.43	65.703		
4,700.0	4,690.1	4,744.2	4,734.2	11.6	11.7	108.96	278.2	1,377.3	1,472.2	1,449.3	22.93	64.206		
4,800.0	4,789.9	4,844.2	4,834.0	11.9	12.0	108.99	284.2	1,373.8	1,471.0	1,447.6	23.43	62.774		
4,900.0	4,889.6	4,944.2	4,933.7	12.1	12.2	109.01	290.2	1,370.3	1,469.8	1,445.8	23.94	61.402		
5,000.0	4,989.4	5,044.2	5,033.5	12.4	12.5	109.03	296.3	1,366.7	1,468.5	1,444.1	24.44	60.086		
5,100.0	5,089.1	6,222.8	5,793.0	12.6	22.9	84.81	868.2	1,037.7	1,460.8	1,423.5	37.38	39.079		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: O-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	6,226.9	5,793.0	12.9	22.9	84.62	871.9	1,035.8	1,414.2	1,376.4	37.72	37.490		
5,300.0	5,288.6	6,231.1	5,793.0	13.1	23.0	84.44	875.6	1,034.0	1,373.2	1,335.1	38.06	36.079		
5,400.0	5,388.4	6,235.2	5,793.0	13.4	23.1	84.25	879.3	1,032.1	1,338.4	1,300.0	38.40	34.854		
5,500.0	5,487.9	6,240.9	5,793.0	13.7	23.1	85.58	884.4	1,029.6	1,310.1	1,271.3	38.75	33.808		
5,600.0	5,584.2	6,256.5	5,793.0	14.1	23.4	87.44	898.5	1,022.8	1,287.5	1,248.1	39.38	32.694		
5,700.0	5,673.8	6,300.0	5,793.0	14.7	24.1	87.56	937.9	1,004.5	1,271.1	1,230.4	40.73	31.208		
5,800.0	5,753.4	6,300.0	5,793.0	15.5	24.1	88.75	937.9	1,004.5	1,260.4	1,219.0	41.36	30.477		
5,900.0	5,819.9	6,363.9	5,793.0	16.4	25.1	87.38	996.5	979.2	1,254.4	1,211.0	43.43	28.884		
5,986.0	5,864.9	6,400.0	5,793.0	17.4	25.7	86.68	1,030.0	965.7	1,252.7	1,207.8	44.91	27.892		
6,000.0	5,871.0	6,400.0	5,793.0	17.6	25.7	86.68	1,030.0	965.7	1,252.8	1,207.7	45.07	27.795		
6,100.0	5,904.9	6,472.4	5,793.0	19.0	26.9	85.38	1,098.0	940.7	1,253.7	1,206.2	47.51	26.388		
6,200.0	5,920.1	6,532.0	5,793.0	20.5	27.9	84.64	1,154.6	922.0	1,256.7	1,206.9	49.79	25.242		
6,300.0	5,921.0	6,600.0	5,793.0	22.0	29.1	84.50	1,219.8	903.0	1,260.4	1,208.2	52.14	24.173		
6,400.0	5,921.0	6,652.7	5,793.0	23.4	29.9	84.51	1,270.9	889.7	1,262.0	1,208.0	54.03	23.356		
6,500.0	5,921.0	6,700.0	5,793.0	25.0	30.7	84.51	1,316.9	879.1	1,261.7	1,205.9	55.79	22.614		
6,600.0	5,921.0	6,773.4	5,793.0	26.5	31.9	84.49	1,388.9	864.9	1,259.2	1,201.2	57.98	21.717		
6,700.0	5,921.0	6,833.7	5,793.0	28.1	32.9	84.47	1,448.5	855.2	1,254.6	1,194.8	59.83	20.969		
6,800.0	5,921.0	6,900.0	5,793.0	29.7	34.0	84.43	1,514.2	846.8	1,248.1	1,186.4	61.69	20.231		
6,900.0	5,921.0	6,954.6	5,793.0	31.2	34.9	84.39	1,568.5	841.6	1,239.6	1,176.1	63.53	19.513		
7,000.0	5,921.0	7,000.0	5,793.0	32.9	35.6	84.38	1,613.9	838.4	1,233.3	1,167.3	65.95	18.701		
7,100.0	5,921.0	7,076.1	5,793.0	34.5	36.8	84.36	1,689.9	835.6	1,229.8	1,160.9	68.92	17.843		
7,145.6	5,921.0	7,100.0	5,793.0	35.3	37.2	84.36	1,713.8	835.3	1,229.3	1,159.3	70.05	17.549 CC		
7,200.0	5,921.0	7,145.2	5,793.0	36.2	37.9	84.36	1,759.0	835.6	1,229.6	1,157.9	71.78	17.131		
7,300.0	5,921.0	7,231.9	5,793.0	38.0	39.3	84.37	1,845.7	837.2	1,231.4	1,156.5	74.95	16.430		
7,400.0	5,921.0	7,331.9	5,793.0	39.7	40.9	84.38	1,945.6	839.0	1,233.2	1,154.9	78.37	15.736		
7,500.0	5,921.0	7,431.8	5,793.0	41.5	42.5	84.39	2,045.6	840.9	1,235.1	1,153.2	81.83	15.093		
7,600.0	5,921.0	7,531.8	5,793.0	43.2	44.1	84.40	2,145.6	842.7	1,236.9	1,151.6	85.32	14.498		
7,700.0	5,921.0	7,631.8	5,793.0	45.0	45.8	84.40	2,245.5	844.5	1,238.7	1,149.9	88.83	13.944		
7,800.0	5,921.0	7,731.8	5,793.0	46.8	47.4	84.41	2,345.5	846.4	1,240.6	1,148.2	92.38	13.430		
7,900.0	5,921.0	7,831.8	5,793.0	48.6	49.1	84.42	2,445.5	848.2	1,242.4	1,146.5	95.94	12.950		
8,000.0	5,921.0	7,931.7	5,793.0	50.4	50.8	84.43	2,545.4	850.1	1,244.2	1,144.7	99.52	12.503		
8,100.0	5,921.0	8,031.7	5,793.0	52.2	52.6	84.44	2,645.4	851.9	1,246.1	1,143.0	103.12	12.084		
8,200.0	5,921.0	8,131.7	5,793.0	54.0	54.3	84.44	2,745.4	853.7	1,247.9	1,141.2	106.73	11.692		
8,300.0	5,921.0	8,231.7	5,793.0	55.9	56.1	84.45	2,845.3	855.6	1,249.7	1,139.4	110.36	11.325		
8,400.0	5,921.0	8,331.7	5,793.0	57.7	57.8	84.46	2,945.3	857.4	1,251.6	1,137.6	114.00	10.979		
8,500.0	5,921.0	8,431.7	5,793.0	59.5	59.6	84.47	3,045.3	859.3	1,253.4	1,135.8	117.65	10.654		
8,600.0	5,921.0	8,531.6	5,793.0	61.4	61.4	84.48	3,145.2	861.1	1,255.2	1,133.9	121.31	10.348		
8,700.0	5,921.0	8,631.6	5,793.0	63.2	63.1	84.49	3,245.2	862.9	1,257.1	1,132.1	124.98	10.058		
8,800.0	5,921.0	8,731.6	5,793.0	65.1	64.9	84.49	3,345.2	864.8	1,258.9	1,130.2	128.66	9.785		
8,900.0	5,921.0	8,831.6	5,793.0	67.0	66.7	84.50	3,445.1	866.6	1,260.7	1,128.4	132.34	9.526		
9,000.0	5,921.0	8,931.6	5,793.0	68.8	68.5	84.51	3,545.1	868.5	1,262.6	1,126.5	136.04	9.281		
9,100.0	5,921.0	9,031.6	5,793.0	70.7	70.3	84.52	3,645.1	870.3	1,264.4	1,124.7	139.74	9.048		
9,200.0	5,921.0	9,131.5	5,793.0	72.6	72.2	84.53	3,745.0	872.1	1,266.2	1,122.8	143.44	8.827		
9,300.0	5,921.0	9,231.5	5,793.0	74.4	74.0	84.53	3,845.0	874.0	1,268.1	1,120.9	147.16	8.617		
9,400.0	5,921.0	9,331.5	5,793.0	76.3	75.8	84.54	3,945.0	875.8	1,269.9	1,119.0	150.87	8.417		
9,500.0	5,921.0	9,431.5	5,793.0	78.2	77.6	84.55	4,044.9	877.7	1,271.7	1,117.1	154.60	8.226		
9,600.0	5,921.0	9,531.5	5,793.0	80.1	79.5	84.56	4,144.9	879.5	1,273.6	1,115.2	158.32	8.044		
9,700.0	5,921.0	9,631.5	5,793.0	81.9	81.3	84.56	4,244.9	881.3	1,275.4	1,113.3	162.06	7.870		
9,800.0	5,921.0	9,731.4	5,793.0	83.8	83.2	84.57	4,344.8	883.2	1,277.2	1,111.4	165.79	7.704		
9,900.0	5,921.0	9,831.4	5,793.0	85.7	85.0	84.58	4,444.8	885.0	1,279.1	1,109.5	169.53	7.545		
10,000.0	5,921.0	9,931.4	5,793.0	87.6	86.9	84.59	4,544.8	886.9	1,280.9	1,107.6	173.27	7.392		
10,100.0	5,921.0	10,031.4	5,793.0	89.5	88.7	84.60	4,644.7	888.7	1,282.7	1,105.7	177.02	7.246		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21B-0909A - HZ - Plan #1													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		
10,200.0	5,921.0	10,131.4	5,793.0	91.4	90.6	84.60	4,744.7	890.5	1,284.6	1,103.8	180.77	7.106		
10,300.0	5,921.0	10,231.4	5,793.0	93.2	92.4	84.61	4,844.7	892.4	1,286.4	1,101.9	184.52	6.972		
10,400.0	5,921.0	10,331.3	5,793.0	95.1	94.3	84.62	4,944.6	894.2	1,288.2	1,100.0	188.27	6.842		
10,500.0	5,921.0	10,431.3	5,793.0	97.0	96.1	84.63	5,044.6	896.1	1,290.1	1,098.0	192.03	6.718		
10,600.0	5,921.0	10,531.3	5,793.0	98.9	98.0	84.63	5,144.6	897.9	1,291.9	1,096.1	195.79	6.598		
10,700.0	5,921.0	10,631.3	5,793.0	100.8	99.9	84.64	5,244.5	899.7	1,293.7	1,094.2	199.55	6.483		
10,800.0	5,921.0	10,731.3	5,793.0	102.7	101.7	84.65	5,344.5	901.6	1,295.6	1,092.3	203.31	6.372		
10,900.0	5,921.0	10,831.3	5,793.0	104.6	103.6	84.66	5,444.4	903.4	1,297.4	1,090.3	207.08	6.265		
11,000.0	5,921.0	10,931.2	5,793.0	106.5	105.5	84.66	5,544.4	905.3	1,299.2	1,088.4	210.84	6.162		
11,100.0	5,921.0	11,031.2	5,793.0	108.4	107.3	84.67	5,644.4	907.1	1,301.1	1,086.4	214.61	6.062		
11,200.0	5,921.0	11,131.2	5,793.0	110.3	109.2	84.68	5,744.3	908.9	1,302.9	1,084.5	218.38	5.966		
11,300.0	5,921.0	11,231.2	5,793.0	112.2	111.1	84.69	5,844.3	910.8	1,304.7	1,082.6	222.16	5.873		
11,400.0	5,921.0	11,331.2	5,793.0	114.1	113.0	84.69	5,944.3	912.6	1,306.6	1,080.6	225.93	5.783		
11,500.0	5,921.0	11,431.2	5,793.0	116.0	114.9	84.70	6,044.2	914.5	1,308.4	1,078.7	229.70	5.696		
11,600.0	5,921.0	11,531.1	5,793.0	117.9	116.7	84.71	6,144.2	916.3	1,310.2	1,076.7	233.48	5.612		
11,700.0	5,921.0	11,631.1	5,793.0	119.8	118.6	84.72	6,244.2	918.1	1,312.1	1,074.8	237.26	5.530		
11,800.0	5,921.0	11,731.1	5,793.0	121.7	120.5	84.72	6,344.1	920.0	1,313.9	1,072.9	241.04	5.451		
11,900.0	5,921.0	11,831.1	5,793.0	123.6	122.4	84.73	6,444.1	921.8	1,315.7	1,070.9	244.82	5.374		
12,000.0	5,921.0	11,931.1	5,793.0	125.5	124.3	84.74	6,544.1	923.7	1,317.6	1,069.0	248.60	5.300		
12,100.0	5,921.0	12,031.1	5,793.0	127.4	126.1	84.75	6,644.0	925.5	1,319.4	1,067.0	252.38	5.228		
12,200.0	5,921.0	12,131.0	5,793.0	129.3	128.0	84.75	6,744.0	927.3	1,321.2	1,065.1	256.17	5.158		
12,300.0	5,921.0	12,231.0	5,793.0	131.2	129.9	84.76	6,844.0	929.2	1,323.1	1,063.1	259.95	5.090		
12,400.0	5,921.0	12,331.0	5,793.0	133.1	131.8	84.77	6,943.9	931.0	1,324.9	1,061.2	263.74	5.024		
12,500.0	5,921.0	12,431.0	5,793.0	135.0	133.7	84.78	7,043.9	932.9	1,326.7	1,059.2	267.53	4.959		
12,600.0	5,921.0	12,531.0	5,793.0	137.0	135.6	84.78	7,143.9	934.7	1,328.6	1,057.3	271.31	4.897		
12,700.0	5,921.0	12,631.0	5,793.0	138.9	137.5	84.79	7,243.8	936.5	1,330.4	1,055.3	275.10	4.836		
12,800.0	5,921.0	12,730.9	5,793.0	140.8	139.4	84.80	7,343.8	938.4	1,332.2	1,053.3	278.89	4.777		
12,900.0	5,921.0	12,830.9	5,793.0	142.7	141.3	84.80	7,443.8	940.2	1,334.1	1,051.4	282.68	4.719		
13,000.0	5,921.0	12,930.9	5,793.0	144.6	143.2	84.81	7,543.7	942.1	1,335.9	1,049.4	286.47	4.663		
13,100.0	5,921.0	13,030.9	5,793.0	146.5	145.0	84.82	7,643.7	943.9	1,337.7	1,047.5	290.27	4.609		
13,200.0	5,921.0	13,130.9	5,793.0	148.4	146.9	84.83	7,743.7	945.7	1,339.6	1,045.5	294.06	4.555		
13,300.0	5,921.0	13,230.8	5,793.0	150.3	148.8	84.83	7,843.6	947.6	1,341.4	1,043.6	297.85	4.504		
13,400.0	5,921.0	13,330.8	5,793.0	152.2	150.7	84.84	7,943.6	949.4	1,343.2	1,041.6	301.65	4.453		
13,500.0	5,921.0	13,430.8	5,793.0	154.1	152.6	84.85	8,043.6	951.3	1,345.1	1,039.6	305.44	4.404		
13,600.0	5,921.0	13,530.8	5,793.0	156.0	154.5	84.85	8,143.5	953.1	1,346.9	1,037.7	309.24	4.356		
13,700.0	5,921.0	13,630.8	5,793.0	157.9	156.3	84.86	8,243.5	955.0	1,348.7	1,035.8	312.93	4.310		
13,737.7	5,921.0	13,668.5	5,793.0	158.7	156.9	84.86	8,281.2	955.6	1,349.4	1,035.2	314.23	4.294 ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0906B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	88.07	1.1	32.4	32.4					
100.0	100.0	100.0	100.0	0.1	0.1	88.07	1.1	32.4	32.4	32.2	0.19	173.681		
200.0	200.0	200.0	200.0	0.3	0.3	88.07	1.1	32.4	32.4	31.8	0.64	50.934		
300.0	300.0	300.0	300.0	0.5	0.5	88.07	1.1	32.4	32.4	31.3	1.09	29.843		
400.0	400.0	400.0	400.0	0.8	0.8	88.07	1.1	32.4	32.4	30.9	1.54	21.104		
500.0	500.0	500.0	500.0	1.0	1.0	88.07	1.1	32.4	32.4	30.4	1.98	16.324 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	110.14	1.1	32.4	33.0	30.5	2.43	13.546		
700.0	699.8	699.8	699.8	1.4	1.4	118.14	1.1	32.4	35.1	32.2	2.88	12.176		
800.0	799.6	800.1	800.1	1.7	1.7	124.87	2.8	32.2	38.2	34.9	3.34	11.456		
900.0	899.4	900.6	900.4	1.9	1.9	126.06	8.1	31.7	40.3	36.5	3.80	10.626		
1,000.0	999.1	1,000.6	1,000.2	2.2	2.1	124.94	15.0	31.0	41.8	37.5	4.26	9.803		
1,100.0	1,098.9	1,100.6	1,099.9	2.4	2.4	123.91	22.0	30.4	43.3	38.5	4.74	9.130		
1,200.0	1,198.6	1,200.5	1,199.6	2.7	2.6	122.94	28.9	29.7	44.8	39.5	5.22	8.573		
1,300.0	1,298.4	1,300.5	1,299.4	2.9	2.8	122.03	35.9	29.0	46.3	40.6	5.71	8.106		
1,400.0	1,398.1	1,400.5	1,399.1	3.2	3.1	121.18	42.8	28.4	47.8	41.6	6.20	7.709		
1,500.0	1,497.9	1,500.5	1,498.9	3.4	3.3	120.38	49.7	27.7	49.3	42.6	6.69	7.369		
1,600.0	1,597.6	1,600.5	1,598.6	3.7	3.6	119.63	56.7	27.0	50.8	43.6	7.18	7.074		
1,700.0	1,697.4	1,700.5	1,698.4	3.9	3.8	118.92	63.6	26.4	52.4	44.7	7.68	6.816		
1,800.0	1,797.2	1,800.5	1,798.1	4.2	4.1	118.26	70.6	25.7	53.9	45.7	8.18	6.589		
1,900.0	1,896.9	1,900.4	1,897.8	4.4	4.3	117.63	77.5	25.0	55.5	46.8	8.68	6.388		
2,000.0	1,996.7	2,000.4	1,997.6	4.7	4.6	117.04	84.5	24.4	57.0	47.8	9.18	6.209		
2,100.0	2,096.4	2,100.4	2,097.3	4.9	4.8	116.48	91.4	23.7	58.6	48.9	9.69	6.048		
2,200.0	2,196.2	2,200.4	2,197.1	5.2	5.1	115.94	98.3	23.0	60.2	50.0	10.19	5.903		
2,300.0	2,295.9	2,300.4	2,296.8	5.4	5.3	115.44	105.3	22.4	61.7	51.0	10.70	5.772		
2,400.0	2,395.7	2,400.4	2,396.6	5.7	5.6	114.96	112.2	21.7	63.3	52.1	11.20	5.652		
2,500.0	2,495.5	2,500.4	2,496.3	6.0	5.9	114.50	119.2	21.1	64.9	53.2	11.71	5.543		
2,600.0	2,595.2	2,600.3	2,596.0	6.2	6.1	114.06	126.1	20.4	66.5	54.3	12.22	5.443		
2,700.0	2,695.0	2,700.3	2,695.8	6.5	6.4	113.65	133.1	19.7	68.1	55.4	12.72	5.351		
2,800.0	2,794.7	2,800.3	2,795.5	6.7	6.6	113.25	140.0	19.1	69.7	56.4	13.23	5.266		
2,900.0	2,894.5	2,900.3	2,895.3	7.0	6.9	112.87	146.9	18.4	71.3	57.5	13.74	5.188		
3,000.0	2,994.2	3,000.3	2,995.0	7.2	7.1	112.51	153.9	17.7	72.9	58.6	14.25	5.115		
3,100.0	3,094.0	3,100.3	3,094.8	7.5	7.4	112.17	160.8	17.1	74.5	59.7	14.76	5.047		
3,200.0	3,193.7	3,200.3	3,194.5	7.7	7.6	111.84	167.8	16.4	76.1	60.8	15.27	4.984		
3,300.0	3,293.5	3,300.3	3,294.2	8.0	7.9	111.52	174.7	15.7	77.7	61.9	15.78	4.925		
3,400.0	3,393.3	3,400.2	3,394.0	8.3	8.1	111.21	181.7	15.1	79.3	63.0	16.29	4.870		
3,500.0	3,493.0	3,500.2	3,493.7	8.5	8.4	110.92	188.6	14.4	80.9	64.1	16.80	4.818		
3,600.0	3,592.8	3,600.2	3,593.5	8.8	8.7	110.64	195.5	13.7	82.5	65.2	17.31	4.769		
3,700.0	3,692.5	3,700.2	3,693.2	9.0	8.9	110.37	202.5	13.1	84.2	66.3	17.82	4.724		
3,800.0	3,792.3	3,800.2	3,793.0	9.3	9.2	110.11	209.4	12.4	85.8	67.5	18.33	4.680		
3,900.0	3,892.0	3,900.2	3,892.7	9.5	9.4	109.86	216.4	11.7	87.4	68.6	18.84	4.640		
4,000.0	3,991.8	4,000.2	3,992.4	9.8	9.7	109.62	223.3	11.1	89.0	69.7	19.35	4.601		
4,100.0	4,091.6	4,100.1	4,092.2	10.1	9.9	109.38	230.3	10.4	90.6	70.8	19.86	4.564		
4,200.0	4,191.3	4,200.1	4,191.9	10.3	10.2	109.16	237.2	9.7	92.3	71.9	20.37	4.530		
4,300.0	4,291.1	4,300.1	4,291.7	10.6	10.4	108.94	244.1	9.1	93.9	73.0	20.88	4.497		
4,400.0	4,390.8	4,400.1	4,391.4	10.8	10.7	108.73	251.1	8.4	95.5	74.1	21.39	4.465		
4,500.0	4,490.6	4,500.1	4,491.2	11.1	11.0	108.53	258.0	7.7	97.2	75.3	21.91	4.435		
4,600.0	4,590.3	4,600.1	4,590.9	11.3	11.2	108.33	265.0	7.1	98.8	76.4	22.42	4.407		
4,700.0	4,690.1	4,700.1	4,690.6	11.6	11.5	108.15	271.9	6.4	100.4	77.5	22.93	4.380		
4,800.0	4,789.9	4,800.0	4,790.4	11.9	11.7	107.96	278.8	5.7	102.1	78.6	23.44	4.354		
4,900.0	4,889.6	4,900.0	4,890.1	12.1	12.0	107.78	285.8	5.1	103.7	79.7	23.95	4.329		
5,000.0	4,989.4	5,000.0	4,989.9	12.4	12.2	107.61	292.7	4.4	105.3	80.9	24.47	4.305		
5,100.0	5,089.1	5,100.0	5,089.6	12.6	12.5	107.45	299.7	3.7	107.0	82.0	24.98	4.283		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0906B - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,200.0	5,189.4	12.9	12.7	107.28	306.6	3.1	108.6	83.1	25.49	4.261		
5,300.0	5,288.6	5,300.0	5,289.1	13.1	13.0	107.13	313.6	2.4	110.2	84.2	26.00	4.240		
5,400.0	5,388.4	5,400.0	5,388.8	13.4	13.3	106.97	320.5	1.7	111.9	85.4	26.51	4.220		
5,500.0	5,487.9	5,499.9	5,488.5	13.7	13.5	107.89	327.4	1.1	114.3	87.3	27.01	4.231		
5,600.0	5,584.2	5,600.2	5,588.3	14.1	13.8	114.56	336.7	0.2	122.8	95.4	27.36	4.487		
5,700.0	5,673.8	5,704.9	5,689.2	14.7	14.2	120.00	363.9	-2.4	137.6	109.9	27.64	4.977		
5,800.0	5,753.4	5,813.2	5,785.7	15.5	14.9	122.74	412.6	-7.1	156.7	128.7	28.01	5.594		
5,900.0	5,819.9	5,924.9	5,872.3	16.4	15.7	123.15	482.4	-13.8	178.6	149.8	28.82	6.199		
6,000.0	5,871.0	6,039.8	5,943.8	17.6	16.9	121.77	571.7	-22.3	202.1	171.7	30.40	6.648		
6,100.0	5,904.9	6,157.3	5,994.8	19.0	18.3	119.08	676.8	-32.4	226.2	193.3	32.95	6.867		
6,200.0	5,920.1	6,277.0	6,021.1	20.5	19.9	115.45	792.8	-43.5	250.1	213.8	36.35	6.881		
6,300.0	5,921.0	6,379.3	6,024.0	22.0	21.4	112.79	894.5	-52.7	272.0	232.2	39.82	6.830		
6,400.0	5,921.0	6,465.0	6,024.0	23.4	22.6	111.08	980.1	-56.8	292.6	249.8	42.86	6.827		
6,500.0	5,921.0	6,555.4	6,024.0	25.0	23.9	109.60	1,070.5	-57.5	312.4	266.4	45.96	6.796		
6,600.0	5,921.0	6,654.0	6,024.0	26.5	25.4	108.47	1,169.1	-57.5	328.2	279.0	49.20	6.670		
6,700.0	5,921.0	6,753.3	6,024.0	28.1	27.0	107.76	1,268.5	-57.5	339.1	286.7	52.37	6.475		
6,800.0	5,921.0	6,853.1	6,024.0	29.7	28.7	107.38	1,368.2	-57.5	345.0	289.6	55.42	6.226		
6,900.0	5,921.0	6,953.1	6,024.0	31.2	30.4	107.31	1,468.2	-57.5	346.3	287.8	58.45	5.924		
7,000.0	5,921.0	7,053.1	6,024.0	32.9	32.1	107.31	1,568.2	-57.5	346.3	284.5	61.73	5.610		
7,100.0	5,921.0	7,153.1	6,024.0	34.5	33.9	107.31	1,668.2	-57.5	346.3	281.2	65.05	5.323		
7,200.0	5,921.0	7,253.1	6,024.0	36.2	35.6	107.31	1,768.2	-57.5	346.3	277.8	68.41	5.061		
7,300.0	5,921.0	7,353.1	6,024.0	38.0	37.4	107.31	1,868.2	-57.5	346.3	274.5	71.81	4.822		
7,400.0	5,921.0	7,453.1	6,024.0	39.7	39.2	107.31	1,968.2	-57.5	346.3	271.0	75.23	4.603		
7,500.0	5,921.0	7,553.1	6,024.0	41.5	41.0	107.31	2,068.2	-57.5	346.3	267.6	78.68	4.401		
7,600.0	5,921.0	7,653.1	6,024.0	43.2	42.8	107.31	2,168.2	-57.5	346.3	264.1	82.15	4.215		
7,700.0	5,921.0	7,753.1	6,024.0	45.0	44.7	107.31	2,268.2	-57.5	346.3	260.6	85.64	4.043		
7,800.0	5,921.0	7,853.1	6,024.0	46.8	46.5	107.31	2,368.2	-57.5	346.3	257.1	89.14	3.884		
7,900.0	5,921.0	7,953.1	6,024.0	48.6	48.3	107.31	2,468.2	-57.5	346.3	253.6	92.66	3.737		
8,000.0	5,921.0	8,053.1	6,024.0	50.4	50.2	107.31	2,568.2	-57.5	346.3	250.1	96.19	3.600		
8,100.0	5,921.0	8,153.1	6,024.0	52.2	52.0	107.31	2,668.2	-57.5	346.3	246.5	99.74	3.472		
8,200.0	5,921.0	8,253.1	6,024.0	54.0	53.9	107.31	2,768.2	-57.5	346.3	243.0	103.29	3.352		
8,300.0	5,921.0	8,353.1	6,024.0	55.9	55.7	107.31	2,868.2	-57.5	346.3	239.4	106.86	3.240		
8,400.0	5,921.0	8,453.1	6,024.0	57.7	57.6	107.31	2,968.2	-57.5	346.3	235.8	110.43	3.136		
8,500.0	5,921.0	8,553.1	6,024.0	59.5	59.5	107.31	3,068.2	-57.5	346.3	232.3	114.01	3.037		
8,600.0	5,921.0	8,653.1	6,024.0	61.4	61.3	107.31	3,168.2	-57.5	346.3	228.7	117.60	2.945		
8,700.0	5,921.0	8,753.1	6,024.0	63.2	63.2	107.31	3,268.2	-57.5	346.3	225.1	121.19	2.857		
8,800.0	5,921.0	8,853.1	6,024.0	65.1	65.1	107.31	3,368.2	-57.5	346.3	221.5	124.79	2.775		
8,900.0	5,921.0	8,953.1	6,024.0	67.0	67.0	107.31	3,468.2	-57.5	346.3	217.9	128.39	2.697		
9,000.0	5,921.0	9,053.1	6,024.0	68.8	68.9	107.31	3,568.2	-57.5	346.3	214.3	132.00	2.623		
9,100.0	5,921.0	9,153.1	6,024.0	70.7	70.7	107.31	3,668.2	-57.5	346.3	210.6	135.62	2.553		
9,200.0	5,921.0	9,253.1	6,024.0	72.6	72.6	107.31	3,768.2	-57.5	346.3	207.0	139.24	2.487		
9,300.0	5,921.0	9,353.1	6,024.0	74.4	74.5	107.31	3,868.2	-57.5	346.3	203.4	142.86	2.424		
9,400.0	5,921.0	9,453.1	6,024.0	76.3	76.4	107.31	3,968.2	-57.5	346.3	199.8	146.49	2.364		
9,500.0	5,921.0	9,553.1	6,024.0	78.2	78.3	107.31	4,068.2	-57.5	346.3	196.1	150.12	2.307		
9,600.0	5,921.0	9,653.1	6,024.0	80.1	80.2	107.31	4,168.2	-57.5	346.3	192.5	153.75	2.252		
9,700.0	5,921.0	9,753.1	6,024.0	81.9	82.1	107.31	4,268.2	-57.5	346.3	188.9	157.38	2.200		
9,800.0	5,921.0	9,853.1	6,024.0	83.8	84.0	107.31	4,368.2	-57.5	346.3	185.2	161.02	2.150		
9,900.0	5,921.0	9,953.1	6,024.0	85.7	85.9	107.31	4,468.2	-57.5	346.3	181.6	164.66	2.103		
10,000.0	5,921.0	10,053.1	6,024.0	87.6	87.8	107.31	4,568.2	-57.5	346.3	178.0	168.30	2.057		
10,100.0	5,921.0	10,153.1	6,024.0	89.5	89.7	107.31	4,668.2	-57.5	346.3	174.3	171.95	2.014		
10,200.0	5,921.0	10,253.1	6,024.0	91.4	91.6	107.31	4,768.2	-57.5	346.3	170.7	175.60	1.972		
10,300.0	5,921.0	10,353.1	6,024.0	93.2	93.5	107.31	4,868.2	-57.5	346.3	167.0	179.24	1.932		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0906B - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	5,921.0	10,453.1	6,024.0	95.1	95.4	107.31	4,968.2	-57.5	346.3	163.4	182.90	1.893	
10,500.0	5,921.0	10,553.1	6,024.0	97.0	97.3	107.31	5,068.2	-57.5	346.3	159.7	186.55	1.856	
10,600.0	5,921.0	10,653.1	6,024.0	98.9	99.2	107.31	5,168.2	-57.5	346.3	156.1	190.20	1.821	
10,700.0	5,921.0	10,753.1	6,024.0	100.8	101.1	107.31	5,268.2	-57.5	346.3	152.4	193.86	1.786	
10,800.0	5,921.0	10,853.1	6,024.0	102.7	103.0	107.31	5,368.2	-57.5	346.3	148.8	197.51	1.753	
10,900.0	5,921.0	10,953.1	6,024.0	104.6	104.9	107.31	5,468.2	-57.5	346.3	145.1	201.17	1.721	
11,000.0	5,921.0	11,053.1	6,024.0	106.5	106.8	107.31	5,568.2	-57.5	346.3	141.4	204.83	1.690	
11,100.0	5,921.0	11,153.1	6,024.0	108.4	108.7	107.31	5,668.2	-57.5	346.3	137.8	208.49	1.661	
11,200.0	5,921.0	11,253.1	6,024.0	110.3	110.6	107.31	5,768.2	-57.5	346.3	134.1	212.15	1.632	
11,300.0	5,921.0	11,353.1	6,024.0	112.2	112.5	107.31	5,868.2	-57.5	346.3	130.4	215.82	1.604	
11,400.0	5,921.0	11,453.1	6,024.0	114.1	114.4	107.31	5,968.2	-57.5	346.3	126.8	219.48	1.578	
11,500.0	5,921.0	11,553.1	6,024.0	116.0	116.3	107.31	6,068.2	-57.5	346.3	123.1	223.15	1.552	
11,600.0	5,921.0	11,653.1	6,024.0	117.9	118.2	107.31	6,168.2	-57.5	346.3	119.5	226.81	1.527	
11,700.0	5,921.0	11,753.1	6,024.0	119.8	120.1	107.31	6,268.2	-57.5	346.3	115.8	230.48	1.502	
11,800.0	5,921.0	11,853.1	6,024.0	121.7	122.1	107.31	6,368.2	-57.5	346.3	112.1	234.15	1.479	Level 3
11,900.0	5,921.0	11,953.1	6,024.0	123.6	124.0	107.31	6,468.2	-57.5	346.3	108.5	237.82	1.456	Level 3
12,000.0	5,921.0	12,053.1	6,024.0	125.5	125.9	107.31	6,568.2	-57.5	346.3	104.8	241.49	1.434	Level 3
12,100.0	5,921.0	12,153.1	6,024.0	127.4	127.8	107.31	6,668.2	-57.5	346.3	101.1	245.16	1.412	Level 3
12,200.0	5,921.0	12,253.1	6,024.0	129.3	129.7	107.31	6,768.2	-57.5	346.3	97.4	248.83	1.392	Level 3
12,300.0	5,921.0	12,353.1	6,024.0	131.2	131.6	107.31	6,868.2	-57.5	346.3	93.8	252.50	1.371	Level 3
12,400.0	5,921.0	12,453.1	6,024.0	133.1	133.5	107.31	6,968.2	-57.5	346.3	90.1	256.17	1.352	Level 3
12,500.0	5,921.0	12,553.1	6,024.0	135.0	135.4	107.31	7,068.2	-57.5	346.3	86.4	259.84	1.333	Level 3
12,600.0	5,921.0	12,653.1	6,024.0	137.0	137.3	107.31	7,168.2	-57.5	346.3	82.8	263.52	1.314	Level 3
12,700.0	5,921.0	12,753.1	6,024.0	138.9	139.2	107.31	7,268.2	-57.5	346.3	79.1	267.19	1.296	Level 3
12,800.0	5,921.0	12,853.1	6,024.0	140.8	141.2	107.31	7,368.2	-57.5	346.3	75.4	270.86	1.278	Level 3
12,900.0	5,921.0	12,953.1	6,024.0	142.7	143.1	107.31	7,468.2	-57.5	346.3	71.7	274.54	1.261	Level 3
13,000.0	5,921.0	13,053.1	6,024.0	144.6	145.0	107.31	7,568.2	-57.5	346.3	68.1	278.22	1.245	Level 2
13,100.0	5,921.0	13,153.1	6,024.0	146.5	146.9	107.31	7,668.2	-57.5	346.3	64.4	281.89	1.228	Level 2
13,200.0	5,921.0	13,253.1	6,024.0	148.4	148.8	107.31	7,768.2	-57.5	346.3	60.7	285.57	1.213	Level 2
13,300.0	5,921.0	13,353.1	6,024.0	150.3	150.7	107.31	7,868.2	-57.5	346.3	57.0	289.24	1.197	Level 2
13,400.0	5,921.0	13,453.1	6,024.0	152.2	152.6	107.31	7,968.2	-57.5	346.3	53.3	292.92	1.182	Level 2
13,500.0	5,921.0	13,553.1	6,024.0	154.1	154.5	107.31	8,068.2	-57.5	346.3	49.7	296.60	1.167	Level 2
13,600.0	5,921.0	13,653.1	6,024.0	156.0	156.5	107.30	8,168.2	-57.5	346.3	46.0	300.28	1.153	Level 2
13,700.0	5,921.0	13,753.1	6,024.0	157.9	158.4	107.30	8,268.2	-57.5	346.3	42.3	303.96	1.139	Level 2
13,717.6	5,921.0	13,770.7	6,024.0	158.3	158.7	107.30	8,285.9	-57.5	346.3	41.7	304.61	1.137	Level 2
13,737.7	5,921.0	13,790.8	6,024.0	158.7	159.1	107.30	8,305.9	-57.5	346.3	40.9	305.34	1.134	Level 2, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0907A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	89.04	1.1	65.3	65.3					
100.0	100.0	100.0	100.0	0.1	0.1	89.04	1.1	65.3	65.3	65.1	0.19	350.180		
200.0	200.0	200.0	200.0	0.3	0.3	89.04	1.1	65.3	65.3	64.7	0.64	102.695		
300.0	300.0	300.0	300.0	0.5	0.5	89.04	1.1	65.3	65.3	64.2	1.09	60.170		
400.0	400.0	400.0	400.0	0.8	0.8	89.04	1.1	65.3	65.3	63.8	1.54	42.550		
500.0	500.0	500.0	500.0	1.0	1.0	89.04	1.1	65.3	65.3	63.3	1.98	32.913 CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	109.66	1.1	65.3	65.9	63.5	2.43	27.081		
700.0	699.8	699.8	699.8	1.4	1.4	113.79	1.1	65.3	67.8	64.9	2.88	23.526		
800.0	799.6	799.6	799.6	1.7	1.7	118.94	1.1	65.3	70.9	67.6	3.34	21.249		
900.0	899.4	899.4	899.4	1.9	1.9	123.63	1.1	65.3	74.6	70.8	3.80	19.642		
1,000.0	999.1	999.4	999.4	2.2	2.1	126.62	2.8	65.7	78.5	74.2	4.26	18.439		
1,100.0	1,098.9	1,099.6	1,099.5	2.4	2.3	126.91	7.9	66.7	82.1	77.4	4.72	17.402		
1,200.0	1,198.6	1,199.6	1,199.2	2.7	2.6	125.99	14.7	68.1	85.6	80.4	5.19	16.492		
1,300.0	1,298.4	1,299.5	1,298.9	2.9	2.8	125.15	21.6	69.5	89.0	83.4	5.66	15.719		
1,400.0	1,398.1	1,399.4	1,398.5	3.2	3.0	124.38	28.4	70.9	92.5	86.4	6.15	15.056		
1,500.0	1,497.9	1,499.4	1,498.2	3.4	3.3	123.66	35.2	72.3	96.0	89.4	6.63	14.483		
1,600.0	1,597.6	1,599.3	1,597.9	3.7	3.5	122.99	42.0	73.7	99.6	92.5	7.12	13.984		
1,700.0	1,697.4	1,699.2	1,697.6	3.9	3.8	122.37	48.9	75.2	103.1	95.5	7.61	13.547		
1,800.0	1,797.2	1,799.2	1,797.3	4.2	4.0	121.78	55.7	76.6	106.7	98.6	8.11	13.160		
1,900.0	1,896.9	1,899.1	1,897.0	4.4	4.3	121.24	62.5	78.0	110.2	101.6	8.60	12.816		
2,000.0	1,996.7	1,999.0	1,996.7	4.7	4.5	120.73	69.4	79.4	113.8	104.7	9.10	12.508		
2,100.0	2,096.4	2,098.9	2,096.4	4.9	4.8	120.25	76.2	80.8	117.4	107.8	9.60	12.232		
2,200.0	2,196.2	2,198.9	2,196.0	5.2	5.0	119.80	83.0	82.2	121.0	110.9	10.10	11.982		
2,300.0	2,295.9	2,298.8	2,295.7	5.4	5.3	119.37	89.8	83.6	124.6	114.0	10.60	11.755		
2,400.0	2,395.7	2,398.7	2,395.4	5.7	5.5	118.97	96.7	85.0	128.2	117.1	11.10	11.549		
2,500.0	2,495.5	2,498.7	2,495.1	6.0	5.8	118.60	103.5	86.4	131.8	120.2	11.60	11.360		
2,600.0	2,595.2	2,598.6	2,594.8	6.2	6.0	118.24	110.3	87.8	135.4	123.3	12.10	11.187		
2,700.0	2,695.0	2,698.5	2,694.5	6.5	6.3	117.90	117.1	89.2	139.0	126.4	12.60	11.027		
2,800.0	2,794.7	2,798.5	2,794.2	6.7	6.5	117.57	124.0	90.6	142.6	129.5	13.11	10.880		
2,900.0	2,894.5	2,898.4	2,893.9	7.0	6.8	117.27	130.8	92.0	146.2	132.6	13.61	10.743		
3,000.0	2,994.2	2,998.3	2,993.5	7.2	7.0	116.97	137.6	93.4	149.9	135.8	14.12	10.616		
3,100.0	3,094.0	3,098.3	3,093.2	7.5	7.3	116.70	144.5	94.8	153.5	138.9	14.62	10.498		
3,200.0	3,193.7	3,198.2	3,192.9	7.7	7.5	116.43	151.3	96.2	157.1	142.0	15.13	10.388		
3,300.0	3,293.5	3,298.1	3,292.6	8.0	7.8	116.18	158.1	97.7	160.8	145.2	15.63	10.285		
3,400.0	3,393.3	3,398.1	3,392.3	8.3	8.0	115.94	164.9	99.1	164.4	148.3	16.14	10.189		
3,500.0	3,493.0	3,498.0	3,492.0	8.5	8.3	115.70	171.8	100.5	168.1	151.4	16.64	10.098		
3,600.0	3,592.8	3,597.9	3,591.7	8.8	8.5	115.48	178.6	101.9	171.7	154.6	17.15	10.013		
3,700.0	3,692.5	3,697.8	3,691.4	9.0	8.8	115.27	185.4	103.3	175.4	157.7	17.66	9.933		
3,800.0	3,792.3	3,797.8	3,791.0	9.3	9.0	115.07	192.2	104.7	179.0	160.9	18.16	9.857		
3,900.0	3,892.0	3,897.7	3,890.7	9.5	9.3	114.87	199.1	106.1	182.7	164.0	18.67	9.785		
4,000.0	3,991.8	3,997.6	3,990.4	9.8	9.6	114.68	205.9	107.5	186.3	167.2	19.18	9.717		
4,100.0	4,091.6	4,097.6	4,090.1	10.1	9.8	114.50	212.7	108.9	190.0	170.3	19.68	9.653		
4,200.0	4,191.3	4,197.5	4,189.8	10.3	10.1	114.33	219.6	110.3	193.7	173.5	20.19	9.592		
4,300.0	4,291.1	4,297.4	4,289.5	10.6	10.3	114.16	226.4	111.7	197.3	176.6	20.70	9.534		
4,400.0	4,390.8	4,397.4	4,389.2	10.8	10.6	114.00	233.2	113.1	201.0	179.8	21.21	9.478		
4,500.0	4,490.6	4,497.3	4,488.9	11.1	10.8	113.84	240.0	114.5	204.7	183.0	21.71	9.426		
4,600.0	4,590.3	4,597.2	4,588.5	11.3	11.1	113.69	246.9	115.9	208.3	186.1	22.22	9.376		
4,700.0	4,690.1	4,697.2	4,688.2	11.6	11.3	113.55	253.7	117.3	212.0	189.3	22.73	9.328		
4,800.0	4,789.9	4,797.1	4,787.9	11.9	11.6	113.41	260.5	118.8	215.7	192.4	23.24	9.282		
4,900.0	4,889.6	4,897.0	4,887.6	12.1	11.8	113.27	267.3	120.2	219.3	195.6	23.74	9.238		
5,000.0	4,989.4	4,997.0	4,987.3	12.4	12.1	113.14	274.2	121.6	223.0	198.8	24.25	9.196		
5,100.0	5,089.1	5,096.9	5,087.0	12.6	12.4	113.02	281.0	123.0	226.7	201.9	24.76	9.156		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0907A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,196.8	5,186.7	12.9	12.6	112.89	287.8	124.4	230.4	205.1	25.27	9.117		
5,300.0	5,288.6	5,296.7	5,286.4	13.1	12.9	112.77	294.7	125.8	234.0	208.3	25.77	9.080		
5,400.0	5,388.4	5,396.7	5,386.1	13.4	13.1	112.66	301.5	127.2	237.7	211.4	26.28	9.045		
5,500.0	5,487.9	5,493.5	5,482.4	13.7	13.4	112.27	310.1	129.0	242.7	215.9	26.79	9.060		
5,600.0	5,584.2	5,586.3	5,572.2	14.1	13.8	110.89	332.4	133.5	256.2	228.8	27.42	9.345		
5,700.0	5,673.8	5,677.1	5,654.9	14.7	14.2	108.64	368.9	141.1	278.9	250.6	28.29	9.859		
5,800.0	5,753.4	5,765.4	5,727.9	15.5	14.8	105.69	417.4	151.1	309.8	280.3	29.50	10.502		
5,900.0	5,819.9	5,850.0	5,789.1	16.4	15.5	102.16	474.5	162.8	347.7	316.6	31.09	11.181		
6,000.0	5,871.0	5,934.6	5,840.0	17.6	16.4	98.26	540.6	176.5	391.0	357.9	33.08	11.820		
6,100.0	5,904.9	6,016.7	5,878.3	19.0	17.3	94.08	611.6	191.1	438.4	403.0	35.33	12.409		
6,200.0	5,920.1	6,098.4	5,904.7	20.5	18.4	89.83	687.2	206.7	488.2	450.5	37.73	12.941		
6,300.0	5,921.0	6,182.4	5,918.9	22.0	19.5	89.74	768.3	223.3	538.1	497.8	40.32	13.346		
6,400.0	5,921.0	6,289.7	5,921.0	23.4	21.0	90.00	873.5	244.0	583.2	539.9	43.26	13.482		
6,500.0	5,921.0	6,426.5	5,921.0	25.0	22.9	90.00	1,009.0	262.5	618.0	571.3	46.68	13.238		
6,600.0	5,921.0	6,571.8	5,921.0	26.5	25.0	90.00	1,153.9	271.5	640.7	590.3	50.43	12.705		
6,700.0	5,921.0	6,686.3	5,921.0	28.1	26.8	90.00	1,268.5	272.0	652.6	598.7	53.84	12.119		
6,800.0	5,921.0	6,786.1	5,921.0	29.7	28.4	90.00	1,368.2	272.0	658.8	601.8	57.05	11.548		
6,900.0	5,921.0	6,886.1	5,921.0	31.2	30.1	90.00	1,468.2	272.0	660.1	599.8	60.27	10.953		
7,000.0	5,921.0	6,986.1	5,921.0	32.9	31.8	90.00	1,568.2	272.0	660.1	596.4	63.65	10.371		
7,100.0	5,921.0	7,086.1	5,921.0	34.5	33.5	90.00	1,668.2	272.0	660.1	593.0	67.08	9.840		
7,200.0	5,921.0	7,186.1	5,921.0	36.2	35.2	90.00	1,768.2	272.0	660.1	589.5	70.56	9.356		
7,300.0	5,921.0	7,286.1	5,921.0	38.0	37.0	90.00	1,868.2	272.0	660.1	586.0	74.07	8.912		
7,400.0	5,921.0	7,386.1	5,921.0	39.7	38.7	90.00	1,968.2	272.0	660.1	582.5	77.61	8.505		
7,500.0	5,921.0	7,486.1	5,921.0	41.5	40.5	90.00	2,068.2	272.0	660.1	578.9	81.18	8.131		
7,600.0	5,921.0	7,586.1	5,921.0	43.2	42.3	90.00	2,168.2	272.0	660.1	575.3	84.77	7.787		
7,700.0	5,921.0	7,686.1	5,921.0	45.0	44.1	90.00	2,268.2	272.0	660.1	571.7	88.39	7.468		
7,800.0	5,921.0	7,786.1	5,921.0	46.8	45.9	90.00	2,368.2	272.0	660.1	568.1	92.02	7.173		
7,900.0	5,921.0	7,886.1	5,921.0	48.6	47.8	90.00	2,468.2	272.0	660.1	564.4	95.67	6.900		
8,000.0	5,921.0	7,986.1	5,921.0	50.4	49.6	90.00	2,568.2	272.0	660.1	560.8	99.33	6.645		
8,100.0	5,921.0	8,086.1	5,921.0	52.2	51.4	90.00	2,668.2	272.0	660.1	557.1	103.01	6.408		
8,200.0	5,921.0	8,186.1	5,921.0	54.0	53.3	90.00	2,768.2	272.0	660.1	553.4	106.70	6.187		
8,300.0	5,921.0	8,286.1	5,921.0	55.9	55.1	90.00	2,868.2	272.0	660.1	549.7	110.40	5.979		
8,400.0	5,921.0	8,386.1	5,921.0	57.7	57.0	90.00	2,968.2	272.0	660.1	546.0	114.11	5.785		
8,500.0	5,921.0	8,486.1	5,921.0	59.5	58.8	90.00	3,068.2	272.0	660.1	542.3	117.82	5.602		
8,600.0	5,921.0	8,586.1	5,921.0	61.4	60.7	90.00	3,168.2	272.0	660.1	538.5	121.55	5.431		
8,700.0	5,921.0	8,686.1	5,921.0	63.2	62.6	90.00	3,268.2	272.0	660.1	534.8	125.28	5.269		
8,800.0	5,921.0	8,786.1	5,921.0	65.1	64.4	90.00	3,368.2	272.0	660.1	531.1	129.02	5.116		
8,900.0	5,921.0	8,886.1	5,921.0	67.0	66.3	90.00	3,468.2	272.0	660.1	527.3	132.76	4.972		
9,000.0	5,921.0	8,986.1	5,921.0	68.8	68.2	90.00	3,568.2	272.0	660.1	523.6	136.51	4.835		
9,100.0	5,921.0	9,086.1	5,921.0	70.7	70.0	90.00	3,668.2	272.0	660.1	519.8	140.27	4.706		
9,200.0	5,921.0	9,186.1	5,921.0	72.6	71.9	90.00	3,768.2	272.0	660.1	516.1	144.03	4.583		
9,300.0	5,921.0	9,286.1	5,921.0	74.4	73.8	90.00	3,868.2	272.0	660.1	512.3	147.79	4.466		
9,400.0	5,921.0	9,386.1	5,921.0	76.3	75.7	90.00	3,968.2	272.0	660.1	508.5	151.56	4.355		
9,500.0	5,921.0	9,486.1	5,921.0	78.2	77.6	90.00	4,068.2	272.0	660.1	504.8	155.33	4.250		
9,600.0	5,921.0	9,586.1	5,921.0	80.1	79.5	90.00	4,168.2	272.0	660.1	501.0	159.11	4.149		
9,700.0	5,921.0	9,686.1	5,921.0	81.9	81.3	90.00	4,268.2	272.0	660.1	497.2	162.88	4.053		
9,800.0	5,921.0	9,786.1	5,921.0	83.8	83.2	90.00	4,368.2	272.0	660.1	493.4	166.66	3.961		
9,900.0	5,921.0	9,886.1	5,921.0	85.7	85.1	90.00	4,468.2	272.0	660.1	489.6	170.45	3.873		
10,000.0	5,921.0	9,986.1	5,921.0	87.6	87.0	90.00	4,568.2	272.0	660.1	485.9	174.23	3.789		
10,100.0	5,921.0	10,086.1	5,921.0	89.5	88.9	90.00	4,668.2	272.0	660.1	482.1	178.02	3.708		
10,200.0	5,921.0	10,186.1	5,921.0	91.4	90.8	90.00	4,768.2	272.0	660.1	478.3	181.81	3.631		
10,300.0	5,921.0	10,286.1	5,921.0	93.2	92.7	90.00	4,868.2	272.0	660.1	474.5	185.61	3.556		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0907A - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	5,921.0	10,386.1	5,921.0	95.1	94.6	90.00	4,968.2	272.0	660.1	470.7	189.40	3.485	
10,500.0	5,921.0	10,486.1	5,921.0	97.0	96.5	90.00	5,068.2	272.0	660.1	466.9	193.20	3.417	
10,600.0	5,921.0	10,586.1	5,921.0	98.9	98.4	90.00	5,168.2	272.0	660.1	463.1	197.00	3.351	
10,700.0	5,921.0	10,686.1	5,921.0	100.8	100.3	90.00	5,268.2	272.0	660.1	459.3	200.80	3.287	
10,800.0	5,921.0	10,786.1	5,921.0	102.7	102.2	90.00	5,368.2	272.0	660.1	455.5	204.60	3.226	
10,900.0	5,921.0	10,886.1	5,921.0	104.6	104.1	90.00	5,468.2	272.0	660.1	451.7	208.40	3.167	
11,000.0	5,921.0	10,986.1	5,921.0	106.5	106.0	90.00	5,568.2	272.0	660.1	447.9	212.21	3.111	
11,100.0	5,921.0	11,086.1	5,921.0	108.4	107.9	90.00	5,668.2	272.0	660.1	444.1	216.02	3.056	
11,200.0	5,921.0	11,186.1	5,921.0	110.3	109.8	90.00	5,768.2	272.0	660.1	440.3	219.82	3.003	
11,300.0	5,921.0	11,286.1	5,921.0	112.2	111.7	90.00	5,868.2	272.0	660.1	436.5	223.63	2.952	
11,400.0	5,921.0	11,386.1	5,921.0	114.1	113.6	90.00	5,968.2	272.0	660.1	432.6	227.44	2.902	
11,500.0	5,921.0	11,486.1	5,921.0	116.0	115.5	90.00	6,068.2	272.0	660.1	428.8	231.25	2.854	
11,600.0	5,921.0	11,586.1	5,921.0	117.9	117.4	90.00	6,168.2	272.0	660.1	425.0	235.07	2.808	
11,700.0	5,921.0	11,686.1	5,921.0	119.8	119.3	90.00	6,268.2	272.0	660.1	421.2	238.88	2.763	
11,800.0	5,921.0	11,786.1	5,921.0	121.7	121.2	90.00	6,368.2	272.0	660.1	417.4	242.69	2.720	
11,900.0	5,921.0	11,886.1	5,921.0	123.6	123.2	90.00	6,468.2	272.0	660.1	413.6	246.51	2.678	
12,000.0	5,921.0	11,986.1	5,921.0	125.5	125.1	90.00	6,568.2	272.0	660.1	409.8	250.32	2.637	
12,100.0	5,921.0	12,086.1	5,921.0	127.4	127.0	90.00	6,668.2	272.0	660.1	405.9	254.14	2.597	
12,200.0	5,921.0	12,186.1	5,921.0	129.3	128.9	90.00	6,768.2	272.0	660.1	402.1	257.96	2.559	
12,300.0	5,921.0	12,286.1	5,921.0	131.2	130.8	90.00	6,868.2	272.0	660.1	398.3	261.77	2.522	
12,400.0	5,921.0	12,386.1	5,921.0	133.1	132.7	90.00	6,968.2	272.0	660.1	394.5	265.59	2.485	
12,500.0	5,921.0	12,486.1	5,921.0	135.0	134.6	90.00	7,068.2	272.0	660.1	390.7	269.41	2.450	
12,600.0	5,921.0	12,586.1	5,921.0	137.0	136.5	90.00	7,168.2	272.0	660.1	386.9	273.23	2.416	
12,700.0	5,921.0	12,686.1	5,921.0	138.9	138.4	90.00	7,268.2	272.0	660.1	383.0	277.05	2.383	
12,800.0	5,921.0	12,786.1	5,921.0	140.8	140.3	90.00	7,368.2	272.0	660.1	379.2	280.87	2.350	
12,900.0	5,921.0	12,886.1	5,921.0	142.7	142.2	90.00	7,468.2	272.0	660.1	375.4	284.70	2.319	
13,000.0	5,921.0	12,986.1	5,921.0	144.6	144.2	90.00	7,568.2	272.0	660.1	371.6	288.52	2.288	
13,100.0	5,921.0	13,086.1	5,921.0	146.5	146.1	90.00	7,668.2	272.0	660.1	367.7	292.34	2.258	
13,200.0	5,921.0	13,186.1	5,921.0	148.4	148.0	90.00	7,768.2	272.0	660.1	363.9	296.16	2.229	
13,300.0	5,921.0	13,286.1	5,921.0	150.3	149.9	90.00	7,868.2	272.0	660.1	360.1	299.99	2.200	
13,400.0	5,921.0	13,386.1	5,921.0	152.2	151.8	90.00	7,968.2	271.9	660.1	356.3	303.81	2.173	
13,500.0	5,921.0	13,486.1	5,921.0	154.1	153.7	90.00	8,068.2	271.9	660.1	352.4	307.64	2.146	
13,600.0	5,921.0	13,586.1	5,921.0	156.0	155.6	90.00	8,168.2	271.9	660.1	348.6	311.46	2.119	
13,700.0	5,921.0	13,686.1	5,921.0	157.9	157.5	90.00	8,268.2	271.9	660.1	344.8	315.29	2.094	
13,726.7	5,921.0	13,712.7	5,921.0	158.5	158.0	90.00	8,294.9	271.9	660.1	343.8	316.27	2.087	
13,737.7	5,921.0	13,723.8	5,921.0	158.7	158.2	90.00	8,305.9	271.9	660.1	343.4	316.65	2.085 SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0908B - HZ - Plan #2														Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD														Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	89.36	1.1	98.5	98.5						
100.0	100.0	100.0	100.0	0.1	0.1	89.36	1.1	98.5	98.5	98.3	0.19	528.196			
200.0	200.0	200.0	200.0	0.3	0.3	89.36	1.1	98.5	98.5	97.9	0.64	154.900			
300.0	300.0	300.0	300.0	0.5	0.5	89.36	1.1	98.5	98.5	97.4	1.09	90.758			
400.0	400.0	400.0	400.0	0.8	0.8	89.36	1.1	98.5	98.5	97.0	1.54	64.181			
500.0	500.0	500.0	500.0	1.0	1.0	89.36	1.1	98.5	98.5	96.5	1.98	49.644	CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	109.50	1.1	98.5	99.1	96.7	2.43	40.730			
700.0	699.8	699.8	699.8	1.4	1.4	112.26	1.1	98.5	101.0	98.1	2.88	35.020			
800.0	799.6	799.6	799.6	1.7	1.7	115.82	1.1	98.5	103.8	100.5	3.34	31.093			
900.0	899.4	899.4	899.4	1.9	1.9	119.18	1.1	98.5	107.0	103.2	3.80	28.183			
1,000.0	999.1	999.1	999.1	2.2	2.1	122.33	1.1	98.5	110.6	106.4	4.26	25.973			
1,100.0	1,098.9	1,098.9	1,098.9	2.4	2.3	125.27	1.1	98.5	114.5	109.8	4.72	24.259			
1,200.0	1,198.6	1,198.2	1,198.2	2.7	2.6	127.20	2.6	99.2	118.8	113.7	5.18	22.946			
1,300.0	1,298.4	1,297.7	1,297.5	2.9	2.8	127.40	7.3	101.3	123.6	118.0	5.64	21.913			
1,400.0	1,398.1	1,397.5	1,397.1	3.2	3.0	126.77	13.7	104.2	128.6	122.5	6.11	21.042			
1,500.0	1,497.9	1,497.4	1,496.7	3.4	3.2	126.20	20.0	107.0	133.5	127.0	6.58	20.281			
1,600.0	1,597.6	1,597.3	1,596.4	3.7	3.5	125.66	26.4	109.8	138.5	131.5	7.06	19.612			
1,700.0	1,697.4	1,697.1	1,696.0	3.9	3.7	125.16	32.7	112.7	143.5	136.0	7.55	19.020			
1,800.0	1,797.2	1,797.0	1,795.6	4.2	4.0	124.70	39.1	115.5	148.5	140.5	8.03	18.495			
1,900.0	1,896.9	1,896.9	1,895.2	4.4	4.2	124.26	45.5	118.4	153.6	145.0	8.52	18.025			
2,000.0	1,996.7	1,996.7	1,994.9	4.7	4.4	123.85	51.8	121.2	158.6	149.6	9.01	17.603			
2,100.0	2,096.4	2,096.6	2,094.5	4.9	4.7	123.47	58.2	124.1	163.6	154.1	9.50	17.222			
2,200.0	2,196.2	2,196.5	2,194.1	5.2	4.9	123.11	64.5	126.9	168.7	158.7	9.99	16.877			
2,300.0	2,295.9	2,296.3	2,293.7	5.4	5.2	122.77	70.9	129.8	173.7	163.2	10.49	16.563			
2,400.0	2,395.7	2,396.2	2,393.4	5.7	5.4	122.45	77.3	132.6	178.8	167.8	10.98	16.277			
2,500.0	2,495.5	2,496.1	2,493.0	6.0	5.7	122.15	83.6	135.5	183.8	172.3	11.48	16.014			
2,600.0	2,595.2	2,595.9	2,592.6	6.2	5.9	121.87	90.0	138.3	188.9	176.9	11.98	15.772			
2,700.0	2,695.0	2,695.8	2,692.2	6.5	6.2	121.60	96.3	141.2	193.9	181.5	12.47	15.549			
2,800.0	2,794.7	2,795.7	2,791.9	6.7	6.4	121.34	102.7	144.0	199.0	186.0	12.97	15.343			
2,900.0	2,894.5	2,895.5	2,891.5	7.0	6.7	121.09	109.0	146.9	204.1	190.6	13.47	15.151			
3,000.0	2,994.2	2,995.4	2,991.1	7.2	6.9	120.86	115.4	149.7	209.2	195.2	13.97	14.973			
3,100.0	3,094.0	3,095.3	3,090.7	7.5	7.2	120.64	121.8	152.5	214.2	199.8	14.47	14.807			
3,200.0	3,193.7	3,195.1	3,190.4	7.7	7.4	120.43	128.1	155.4	219.3	204.4	14.97	14.652			
3,300.0	3,293.5	3,295.0	3,290.0	8.0	7.7	120.23	134.5	158.2	224.4	208.9	15.47	14.507			
3,400.0	3,393.3	3,394.9	3,389.6	8.3	7.9	120.04	140.8	161.1	229.5	213.5	15.97	14.371			
3,500.0	3,493.0	3,494.7	3,489.2	8.5	8.2	119.85	147.2	163.9	234.6	218.1	16.47	14.243			
3,600.0	3,592.8	3,594.6	3,588.9	8.8	8.4	119.67	153.6	166.8	239.7	222.7	16.97	14.122			
3,700.0	3,692.5	3,694.5	3,688.5	9.0	8.7	119.51	159.9	169.6	244.8	227.3	17.47	14.009			
3,800.0	3,792.3	3,794.3	3,788.1	9.3	8.9	119.34	166.3	172.5	249.9	231.9	17.98	13.901			
3,900.0	3,892.0	3,894.2	3,887.7	9.5	9.2	119.19	172.6	175.3	255.0	236.5	18.48	13.800			
4,000.0	3,991.8	3,994.1	3,987.4	9.8	9.4	119.04	179.0	178.2	260.1	241.1	18.98	13.703			
4,100.0	4,091.6	4,093.9	4,087.0	10.1	9.7	118.89	185.3	181.0	265.2	245.7	19.48	13.612			
4,200.0	4,191.3	4,193.8	4,186.6	10.3	10.0	118.76	191.7	183.9	270.3	250.3	19.98	13.525			
4,300.0	4,291.1	4,293.7	4,286.2	10.6	10.2	118.62	198.1	186.7	275.4	254.9	20.49	13.443			
4,400.0	4,390.8	4,393.5	4,385.8	10.8	10.5	118.49	204.4	189.6	280.5	259.5	20.99	13.364			
4,500.0	4,490.6	4,493.4	4,485.5	11.1	10.7	118.37	210.8	192.4	285.6	264.1	21.49	13.289			
4,600.0	4,590.3	4,593.3	4,585.1	11.3	11.0	118.25	217.1	195.2	290.7	268.7	22.00	13.218			
4,700.0	4,690.1	4,693.2	4,684.7	11.6	11.2	118.14	223.5	198.1	295.9	273.4	22.50	13.149			
4,800.0	4,789.9	4,793.0	4,784.3	11.9	11.5	118.02	229.8	200.9	301.0	278.0	23.00	13.084			
4,900.0	4,889.6	4,892.9	4,884.0	12.1	11.7	117.92	236.2	203.8	306.1	282.6	23.51	13.022			
5,000.0	4,989.4	4,992.8	4,983.6	12.4	12.0	117.81	242.6	206.6	311.2	287.2	24.01	12.962			
5,100.0	5,089.1	5,092.6	5,083.2	12.6	12.2	117.71	248.9	209.5	316.3	291.8	24.51	12.904			

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0908B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
5,200.0	5,188.9	5,192.5	5,182.8	12.9	12.5	117.61	255.3	212.3	321.4	296.4	25.02	12.849		
5,300.0	5,288.6	5,292.4	5,282.5	13.1	12.8	117.52	261.6	215.2	326.6	301.0	25.52	12.796		
5,400.0	5,388.4	5,392.2	5,382.1	13.4	13.0	117.43	268.0	218.0	331.7	305.6	26.02	12.745		
5,500.0	5,487.9	5,492.0	5,481.6	13.7	13.3	117.35	274.3	220.9	338.0	311.5	26.49	12.758		
5,600.0	5,584.2	5,584.2	5,573.5	14.1	13.5	118.24	281.2	224.0	352.7	325.8	26.85	13.133		
5,700.0	5,673.8	5,667.1	5,654.4	14.7	13.8	118.03	297.4	231.2	379.8	352.6	27.25	13.939		
5,800.0	5,753.4	5,750.0	5,731.5	15.5	14.2	116.44	325.0	243.5	418.9	391.0	27.89	15.019		
5,900.0	5,819.9	5,825.4	5,796.6	16.4	14.7	113.25	359.5	259.0	468.2	439.2	29.00	16.142		
6,000.0	5,871.0	5,900.0	5,855.0	17.6	15.2	108.74	401.8	277.9	525.7	495.0	30.71	17.117		
6,100.0	5,904.9	5,970.7	5,903.8	19.0	15.9	102.94	448.5	298.8	589.6	556.7	32.96	17.889		
6,200.0	5,920.1	6,039.7	5,944.2	20.5	16.5	96.18	499.4	321.6	657.9	622.5	35.43	18.570		
6,300.0	5,921.0	6,111.3	5,978.0	22.0	17.4	96.16	556.9	347.4	727.6	690.1	37.55	19.377		
6,400.0	5,921.0	6,196.1	6,006.4	23.4	18.4	98.03	629.8	380.0	793.8	754.0	39.71	19.987		
6,500.0	5,921.0	6,292.9	6,022.6	25.0	19.8	98.39	716.8	419.0	854.7	812.4	42.30	20.203		
6,600.0	5,921.0	6,430.3	6,024.0	26.5	21.7	97.45	843.2	472.8	908.6	863.0	45.62	19.915		
6,700.0	5,921.0	6,605.8	6,024.0	28.1	24.2	96.66	1,009.5	528.5	950.8	901.2	49.59	19.174		
6,800.0	5,921.0	6,798.4	6,024.0	29.7	27.0	96.18	1,197.1	571.9	979.3	925.2	54.09	18.103		
6,900.0	5,921.0	7,002.1	6,024.0	31.2	30.2	95.97	1,399.2	596.9	992.8	933.8	58.94	16.845		
7,000.0	5,921.0	7,171.3	6,024.0	32.9	32.8	95.94	1,568.2	601.6	995.0	931.7	63.32	15.714		
7,100.0	5,921.0	7,271.3	6,024.0	34.5	34.4	95.94	1,668.2	601.6	995.0	928.4	66.65	14.930		
7,200.0	5,921.0	7,371.3	6,024.0	36.2	36.0	95.94	1,768.2	601.6	995.0	925.0	70.02	14.210		
7,300.0	5,921.0	7,471.3	6,024.0	38.0	37.6	95.94	1,868.2	601.6	995.0	921.6	73.44	13.549		
7,400.0	5,921.0	7,571.3	6,024.0	39.7	39.3	95.94	1,968.2	601.6	995.0	918.1	76.90	12.940		
7,500.0	5,921.0	7,671.3	6,024.0	41.5	40.9	95.94	2,068.2	601.6	995.0	914.7	80.39	12.378		
7,600.0	5,921.0	7,771.3	6,024.0	43.2	42.7	95.94	2,168.2	601.6	995.0	911.1	83.91	11.859		
7,700.0	5,921.0	7,871.3	6,024.0	45.0	44.4	95.94	2,268.2	601.6	995.0	907.6	87.45	11.378		
7,800.0	5,921.0	7,971.3	6,024.0	46.8	46.1	95.94	2,368.2	601.6	995.0	904.0	91.02	10.932		
7,900.0	5,921.0	8,071.3	6,024.0	48.6	47.9	95.94	2,468.2	601.6	995.1	900.4	94.61	10.518		
8,000.0	5,921.0	8,171.3	6,024.0	50.4	49.6	95.94	2,568.2	601.6	995.1	896.8	98.21	10.132		
8,100.0	5,921.0	8,271.3	6,024.0	52.2	51.4	95.94	2,668.2	601.6	995.1	893.2	101.83	9.771		
8,200.0	5,921.0	8,371.3	6,024.0	54.0	53.2	95.94	2,768.2	601.6	995.1	889.6	105.47	9.434		
8,300.0	5,921.0	8,471.3	6,024.0	55.9	55.0	95.94	2,868.2	601.6	995.1	885.9	109.12	9.119		
8,400.0	5,921.0	8,571.3	6,024.0	57.7	56.8	95.94	2,968.2	601.6	995.1	882.3	112.78	8.823		
8,500.0	5,921.0	8,671.3	6,024.0	59.5	58.6	95.94	3,068.2	601.6	995.1	878.6	116.45	8.545		
8,600.0	5,921.0	8,771.3	6,024.0	61.4	60.4	95.94	3,168.2	601.6	995.1	874.9	120.13	8.283		
8,700.0	5,921.0	8,871.3	6,024.0	63.2	62.2	95.94	3,268.2	601.6	995.1	871.2	123.82	8.036		
8,800.0	5,921.0	8,971.3	6,024.0	65.1	64.1	95.94	3,368.2	601.6	995.1	867.6	127.52	7.803		
8,900.0	5,921.0	9,071.3	6,024.0	67.0	65.9	95.94	3,468.2	601.6	995.1	863.9	131.22	7.583		
9,000.0	5,921.0	9,171.3	6,024.0	68.8	67.7	95.94	3,568.2	601.6	995.1	860.1	134.94	7.374		
9,100.0	5,921.0	9,271.3	6,024.0	70.7	69.6	95.94	3,668.2	601.6	995.1	856.4	138.65	7.177		
9,200.0	5,921.0	9,371.3	6,024.0	72.6	71.4	95.94	3,768.2	601.6	995.1	852.7	142.38	6.989		
9,300.0	5,921.0	9,471.3	6,024.0	74.4	73.3	95.94	3,868.2	601.6	995.1	849.0	146.11	6.811		
9,400.0	5,921.0	9,571.3	6,024.0	76.3	75.1	95.94	3,968.2	601.6	995.1	845.2	149.84	6.641		
9,500.0	5,921.0	9,671.3	6,024.0	78.2	77.0	95.94	4,068.2	601.6	995.1	841.5	153.58	6.479		
9,600.0	5,921.0	9,771.3	6,024.0	80.1	78.9	95.94	4,168.2	601.6	995.1	837.8	157.32	6.325		
9,700.0	5,921.0	9,871.3	6,024.0	81.9	80.7	95.94	4,268.2	601.6	995.1	834.0	161.07	6.178		
9,800.0	5,921.0	9,971.3	6,024.0	83.8	82.6	95.94	4,368.2	601.6	995.1	830.3	164.82	6.038		
9,900.0	5,921.0	10,071.3	6,024.0	85.7	84.5	95.94	4,468.2	601.6	995.1	826.5	168.57	5.903		
10,000.0	5,921.0	10,171.3	6,024.0	87.6	86.3	95.94	4,568.2	601.6	995.1	822.8	172.32	5.775		
10,100.0	5,921.0	10,271.3	6,024.0	89.5	88.2	95.94	4,668.2	601.7	995.1	819.0	176.08	5.651		
10,200.0	5,921.0	10,371.3	6,024.0	91.4	90.1	95.94	4,768.2	601.7	995.1	815.3	179.85	5.533		
10,300.0	5,921.0	10,471.3	6,024.0	93.2	91.9	95.94	4,868.2	601.7	995.1	811.5	183.61	5.420		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21C-0908B - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	5,921.0	10,571.3	6,024.0	95.1	93.8	95.94	4,968.2	601.7	995.1	807.7	187.38	5.311	
10,500.0	5,921.0	10,671.3	6,024.0	97.0	95.7	95.94	5,068.2	601.7	995.1	804.0	191.15	5.206	
10,600.0	5,921.0	10,771.3	6,024.0	98.9	97.6	95.94	5,168.2	601.7	995.1	800.2	194.92	5.105	
10,700.0	5,921.0	10,871.3	6,024.0	100.8	99.5	95.94	5,268.2	601.7	995.1	796.4	198.69	5.008	
10,800.0	5,921.0	10,971.3	6,024.0	102.7	101.4	95.94	5,368.2	601.7	995.1	792.7	202.47	4.915	
10,900.0	5,921.0	11,071.3	6,024.0	104.6	103.2	95.94	5,468.2	601.7	995.1	788.9	206.24	4.825	
11,000.0	5,921.0	11,171.3	6,024.0	106.5	105.1	95.94	5,568.2	601.7	995.1	785.1	210.02	4.738	
11,100.0	5,921.0	11,271.3	6,024.0	108.4	107.0	95.94	5,668.2	601.7	995.1	781.3	213.80	4.654	
11,200.0	5,921.0	11,371.3	6,024.0	110.3	108.9	95.94	5,768.2	601.7	995.1	777.5	217.59	4.574	
11,300.0	5,921.0	11,471.3	6,024.0	112.2	110.8	95.94	5,868.2	601.7	995.1	773.8	221.37	4.495	
11,400.0	5,921.0	11,571.3	6,024.0	114.1	112.7	95.94	5,968.2	601.7	995.1	770.0	225.15	4.420	
11,500.0	5,921.0	11,671.3	6,024.0	116.0	114.6	95.94	6,068.2	601.7	995.1	766.2	228.94	4.347	
11,600.0	5,921.0	11,771.3	6,024.0	117.9	116.5	95.94	6,168.2	601.7	995.1	762.4	232.73	4.276	
11,700.0	5,921.0	11,871.3	6,024.0	119.8	118.4	95.94	6,268.2	601.7	995.1	758.6	236.52	4.207	
11,800.0	5,921.0	11,971.3	6,024.0	121.7	120.3	95.94	6,368.2	601.7	995.1	754.8	240.31	4.141	
11,900.0	5,921.0	12,071.3	6,024.0	123.6	122.2	95.94	6,468.2	601.7	995.2	751.1	244.10	4.077	
12,000.0	5,921.0	12,171.3	6,024.0	125.5	124.1	95.94	6,568.2	601.7	995.2	747.3	247.89	4.014	
12,100.0	5,921.0	12,271.3	6,024.0	127.4	126.0	95.94	6,668.2	601.7	995.2	743.5	251.68	3.954	
12,200.0	5,921.0	12,371.3	6,024.0	129.3	127.9	95.94	6,768.2	601.7	995.2	739.7	255.48	3.895	
12,300.0	5,921.0	12,471.3	6,024.0	131.2	129.8	95.94	6,868.2	601.7	995.2	735.9	259.27	3.838	
12,400.0	5,921.0	12,571.3	6,024.0	133.1	131.7	95.94	6,968.2	601.7	995.2	732.1	263.07	3.783	
12,500.0	5,921.0	12,671.3	6,024.0	135.0	133.6	95.94	7,068.2	601.7	995.2	728.3	266.86	3.729	
12,600.0	5,921.0	12,771.3	6,024.0	137.0	135.5	95.94	7,168.2	601.7	995.2	724.5	270.66	3.677	
12,700.0	5,921.0	12,871.3	6,024.0	138.9	137.4	95.94	7,268.2	601.7	995.2	720.7	274.46	3.626	
12,800.0	5,921.0	12,971.3	6,024.0	140.8	139.3	95.94	7,368.2	601.7	995.2	716.9	278.26	3.576	
12,900.0	5,921.0	13,071.3	6,024.0	142.7	141.2	95.94	7,468.2	601.7	995.2	713.1	282.06	3.528	
13,000.0	5,921.0	13,171.3	6,024.0	144.6	143.1	95.94	7,568.2	601.7	995.2	709.3	285.86	3.481	
13,100.0	5,921.0	13,271.3	6,024.0	146.5	145.0	95.94	7,668.2	601.7	995.2	705.5	289.66	3.436	
13,200.0	5,921.0	13,371.3	6,024.0	148.4	146.9	95.94	7,768.2	601.7	995.2	701.7	293.46	3.391	
13,300.0	5,921.0	13,471.3	6,024.0	150.3	148.8	95.94	7,868.2	601.7	995.2	697.9	297.26	3.348	
13,400.0	5,921.0	13,571.3	6,024.0	152.2	150.7	95.94	7,968.2	601.7	995.2	694.1	301.07	3.306	
13,500.0	5,921.0	13,671.3	6,024.0	154.1	152.6	95.94	8,068.2	601.7	995.2	690.3	304.87	3.264	
13,600.0	5,921.0	13,771.3	6,024.0	156.0	154.5	95.94	8,168.2	601.7	995.2	686.5	308.67	3.224	
13,700.0	5,921.0	13,871.3	6,024.0	157.9	156.2	95.94	8,268.2	601.7	995.2	683.0	312.23	3.187	
13,737.7	5,921.0	13,909.0	6,024.0	158.7	156.8	95.94	8,305.9	601.7	995.2	681.7	313.54	3.174 SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0901A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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			
0.0	0.0	0.0	0.0	0.0	0.0	-91.23	-24.4	-1,138.5	1,138.8					
100.0	100.0	97.9	97.9	0.1	0.1	-91.23	-24.4	-1,138.5	1,138.8	1,138.6	0.19	6,151.357		
200.0	200.0	197.9	197.9	0.3	0.3	-91.23	-24.4	-1,138.5	1,138.8	1,138.2	0.63	1,802.166		
300.0	300.0	297.9	297.9	0.5	0.5	-91.23	-24.4	-1,138.5	1,138.8	1,137.7	1.08	1,053.036		
400.0	400.0	397.9	397.9	0.8	0.8	-91.23	-24.4	-1,138.5	1,138.8	1,137.3	1.53	743.836		
500.0	500.0	497.9	497.9	1.0	1.0	-91.23	-24.4	-1,138.5	1,138.8	1,136.8	1.98	575.001		
511.6	511.6	508.2	508.2	1.0	1.0	-72.04	-24.4	-1,138.5	1,138.8	1,136.8	2.03	561.060 CC		
600.0	600.0	584.9	584.9	1.2	1.2	-72.05	-23.2	-1,139.0	1,138.8	1,136.4	2.40	474.921		
700.0	699.8	671.6	671.5	1.4	1.4	-72.09	-19.7	-1,140.6	1,138.9	1,136.1	2.82	404.205		
800.0	799.6	767.2	766.9	1.7	1.6	-72.10	-13.7	-1,143.3	1,139.4	1,136.1	3.27	348.425		
900.0	899.4	867.2	866.6	1.9	1.8	-72.11	-7.4	-1,146.1	1,139.9	1,136.2	3.74	304.490		
1,000.0	999.1	967.2	966.4	2.2	2.1	-72.12	-1.0	-1,148.9	1,140.5	1,136.3	4.22	269.938		
1,100.0	1,098.9	1,067.2	1,066.1	2.4	2.3	-72.13	5.4	-1,151.8	1,141.0	1,136.3	4.71	242.179		
1,200.0	1,198.6	1,167.2	1,165.9	2.7	2.6	-72.14	11.8	-1,154.6	1,141.6	1,136.4	5.20	219.456		
1,300.0	1,298.4	1,267.2	1,265.7	2.9	2.8	-72.15	18.1	-1,157.4	1,142.1	1,136.4	5.70	200.547		
1,400.0	1,398.1	1,367.2	1,365.4	3.2	3.1	-72.16	24.5	-1,160.2	1,142.7	1,136.5	6.19	184.588		
1,500.0	1,497.9	1,467.2	1,465.2	3.4	3.3	-72.17	30.9	-1,163.1	1,143.2	1,136.5	6.69	170.953		
1,600.0	1,597.6	1,567.2	1,564.9	3.7	3.6	-72.18	37.3	-1,165.9	1,143.7	1,136.6	7.19	159.172		
1,700.0	1,697.4	1,667.2	1,664.7	3.9	3.8	-72.19	43.6	-1,168.7	1,144.3	1,136.6	7.68	148.900		
1,800.0	1,797.2	1,767.2	1,764.4	4.2	4.1	-72.20	50.0	-1,171.6	1,144.8	1,136.7	8.19	139.866		
1,900.0	1,896.9	1,867.2	1,864.2	4.4	4.3	-72.21	56.4	-1,174.4	1,145.4	1,136.7	8.69	131.861		
2,000.0	1,996.7	1,967.2	1,963.9	4.7	4.6	-72.22	62.8	-1,177.2	1,145.9	1,136.7	9.19	124.722		
2,100.0	2,096.4	2,067.2	2,063.7	4.9	4.9	-72.23	69.1	-1,180.1	1,146.5	1,136.8	9.69	118.315		
2,200.0	2,196.2	2,167.2	2,163.4	5.2	5.1	-72.24	75.5	-1,182.9	1,147.0	1,136.8	10.19	112.534		
2,300.0	2,295.9	2,267.2	2,263.2	5.4	5.4	-72.25	81.9	-1,185.7	1,147.6	1,136.9	10.70	107.293		
2,400.0	2,395.7	2,367.2	2,363.0	5.7	5.6	-72.26	88.3	-1,188.6	1,148.1	1,136.9	11.20	102.520		
2,500.0	2,495.5	2,467.2	2,462.7	6.0	5.9	-72.27	94.6	-1,191.4	1,148.6	1,136.9	11.70	98.155		
2,600.0	2,595.2	2,567.2	2,562.5	6.2	6.1	-72.28	101.0	-1,194.2	1,149.2	1,137.0	12.21	94.148		
2,700.0	2,695.0	2,667.2	2,662.2	6.5	6.4	-72.29	107.4	-1,197.1	1,149.7	1,137.0	12.71	90.457		
2,800.0	2,794.7	2,767.2	2,762.0	6.7	6.6	-72.30	113.8	-1,199.9	1,150.3	1,137.1	13.21	87.046		
2,900.0	2,894.5	2,867.2	2,861.7	7.0	6.9	-72.31	120.1	-1,202.7	1,150.8	1,137.1	13.72	83.885		
3,000.0	2,994.2	2,967.2	2,961.5	7.2	7.2	-72.32	126.5	-1,205.6	1,151.4	1,137.1	14.22	80.948		
3,100.0	3,094.0	3,067.2	3,061.2	7.5	7.4	-72.33	132.9	-1,208.4	1,151.9	1,137.2	14.73	78.210		
3,200.0	3,193.7	3,167.2	3,161.0	7.7	7.7	-72.34	139.3	-1,211.2	1,152.5	1,137.2	15.23	75.654		
3,300.0	3,293.5	3,267.2	3,260.8	8.0	7.9	-72.35	145.6	-1,214.0	1,153.0	1,137.3	15.74	73.261		
3,400.0	3,393.3	3,367.2	3,360.5	8.3	8.2	-72.36	152.0	-1,216.9	1,153.5	1,137.3	16.24	71.016		
3,500.0	3,493.0	3,467.2	3,460.3	8.5	8.4	-72.37	158.4	-1,219.7	1,154.1	1,137.3	16.75	68.906		
3,600.0	3,592.8	3,567.2	3,560.0	8.8	8.7	-72.38	164.8	-1,222.5	1,154.6	1,137.4	17.25	66.920		
3,700.0	3,692.5	3,667.2	3,659.8	9.0	9.0	-72.39	171.1	-1,225.4	1,155.2	1,137.4	17.76	65.046		
3,800.0	3,792.3	3,767.2	3,759.5	9.3	9.2	-72.40	177.5	-1,228.2	1,155.7	1,137.5	18.26	63.276		
3,900.0	3,892.0	3,867.2	3,859.3	9.5	9.5	-72.41	183.9	-1,231.0	1,156.3	1,137.5	18.77	61.600		
4,000.0	3,991.8	3,967.2	3,959.0	9.8	9.7	-72.42	190.3	-1,233.9	1,156.8	1,137.5	19.28	60.013		
4,100.0	4,091.6	4,067.2	4,058.8	10.1	10.0	-72.43	196.6	-1,236.7	1,157.4	1,137.6	19.78	58.506		
4,200.0	4,191.3	4,167.2	4,158.5	10.3	10.2	-72.44	203.0	-1,239.5	1,157.9	1,137.6	20.29	57.074		
4,300.0	4,291.1	4,267.2	4,258.3	10.6	10.5	-72.45	209.4	-1,242.4	1,158.4	1,137.6	20.79	55.712		
4,400.0	4,390.8	4,367.1	4,358.1	10.8	10.8	-72.46	215.8	-1,245.2	1,159.0	1,137.7	21.30	54.414		
4,500.0	4,490.6	4,467.1	4,457.8	11.1	11.0	-72.47	222.1	-1,248.0	1,159.5	1,137.7	21.81	53.177		
4,600.0	4,590.3	4,567.1	4,557.6	11.3	11.3	-72.48	228.5	-1,250.9	1,160.1	1,137.8	22.31	51.995		
4,700.0	4,690.1	4,667.1	4,657.3	11.6	11.5	-72.49	234.9	-1,253.7	1,160.6	1,137.8	22.82	50.866		
4,800.0	4,789.9	4,767.1	4,757.1	11.9	11.8	-72.50	241.3	-1,256.5	1,161.2	1,137.8	23.32	49.786		
4,900.0	4,889.6	4,867.1	4,856.8	12.1	12.0	-72.51	247.6	-1,259.4	1,161.7	1,137.9	23.83	48.751		
5,000.0	4,989.4	4,967.1	4,956.6	12.4	12.3	-72.52	254.0	-1,262.2	1,162.3	1,137.9	24.34	47.759		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0901A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: O-ISCWSA MWD													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		
5,100.0	5,089.1	5,067.1	5,056.3	12.6	12.6	-72.53	260.4	-1,265.0	1,162.8	1,138.0	24.84	46.808		
5,200.0	5,188.9	5,167.1	5,156.1	12.9	12.8	-72.54	266.8	-1,267.8	1,163.3	1,138.0	25.35	45.895		
5,300.0	5,288.6	5,267.1	5,255.8	13.1	13.1	-72.55	273.1	-1,270.7	1,163.9	1,138.0	25.85	45.017		
5,400.0	5,388.4	5,350.0	5,338.5	13.4	13.3	-72.55	278.6	-1,273.1	1,164.6	1,138.3	26.32	44.251		
5,500.0	5,487.9	5,400.0	5,387.9	13.7	13.4	-72.23	285.3	-1,276.1	1,167.7	1,140.9	26.73	43.686		
5,600.0	5,584.2	5,450.0	5,436.4	14.1	13.6	-72.04	296.3	-1,281.0	1,169.5	1,142.3	27.25	42.921		
5,700.0	5,673.8	5,513.9	5,496.4	14.7	14.0	-72.36	316.4	-1,289.9	1,169.3	1,141.3	28.00	41.761		
5,800.0	5,753.4	5,567.8	5,544.5	15.5	14.3	-73.06	338.5	-1,299.7	1,167.3	1,138.4	28.96	40.313		
5,900.0	5,819.9	5,621.8	5,590.1	16.4	14.7	-74.15	365.1	-1,311.5	1,163.8	1,133.6	30.29	38.429		
6,000.0	5,871.0	5,676.1	5,632.5	17.6	15.1	-75.58	396.0	-1,325.3	1,159.3	1,127.3	32.01	36.220		
6,100.0	5,904.9	5,730.8	5,671.4	19.0	15.6	-77.30	431.0	-1,340.8	1,154.3	1,120.2	34.11	33.845		
6,200.0	5,920.1	5,786.0	5,706.5	20.5	16.2	-79.22	470.0	-1,358.1	1,149.5	1,113.0	36.50	31.495		
6,276.2	5,922.9	5,829.9	5,731.0	21.6	16.7	-80.49	503.2	-1,372.9	1,148.3	1,109.8	38.43	29.883		
6,300.0	5,921.0	5,850.0	5,741.2	22.0	16.9	-81.09	519.1	-1,379.9	1,147.9	1,108.8	39.03	29.410		
6,400.0	5,921.0	5,908.9	5,767.1	23.4	17.7	-82.40	567.4	-1,401.4	1,155.0	1,113.7	41.35	27.930		
6,500.0	5,921.0	5,981.1	5,790.4	25.0	18.7	-83.58	629.8	-1,429.1	1,170.5	1,126.7	43.79	26.728		
6,600.0	5,921.0	6,058.0	5,804.7	26.5	19.9	-84.31	698.8	-1,459.8	1,193.2	1,147.0	46.20	25.825		
6,700.0	5,921.0	6,182.8	5,808.0	28.1	21.8	-84.56	813.2	-1,509.3	1,222.1	1,173.1	49.03	24.924		
6,800.0	5,921.0	6,455.0	5,808.0	29.7	26.0	-84.79	1,072.0	-1,592.8	1,246.8	1,193.2	53.61	23.257		
6,900.0	5,921.0	6,741.1	5,808.0	31.2	30.6	-84.94	1,353.9	-1,640.0	1,262.0	1,202.7	59.33	21.270		
7,000.0	5,921.0	6,944.6	5,808.0	32.9	33.9	-84.97	1,557.2	-1,648.3	1,265.1	1,200.7	64.37	19.653		
7,100.0	5,921.0	7,044.6	5,808.0	34.5	35.5	-84.97	1,657.2	-1,649.2	1,266.0	1,198.2	67.77	18.682		
7,200.0	5,921.0	7,144.6	5,808.0	36.2	37.2	-84.98	1,757.2	-1,650.0	1,266.9	1,195.7	71.20	17.793		
7,300.0	5,921.0	7,244.6	5,808.0	38.0	38.9	-84.98	1,857.1	-1,650.9	1,267.7	1,193.1	74.68	16.976		
7,400.0	5,921.0	7,344.6	5,808.0	39.7	40.6	-84.98	1,957.1	-1,651.8	1,268.6	1,190.4	78.18	16.226		
7,500.0	5,921.0	7,444.6	5,808.0	41.5	42.3	-84.99	2,057.1	-1,652.7	1,269.5	1,187.8	81.72	15.534		
7,600.0	5,921.0	7,544.6	5,808.0	43.2	44.1	-84.99	2,157.1	-1,653.5	1,270.4	1,185.1	85.28	14.895		
7,700.0	5,921.0	7,644.6	5,808.0	45.0	45.8	-84.99	2,257.1	-1,654.4	1,271.2	1,182.4	88.87	14.304		
7,800.0	5,921.0	7,744.6	5,808.0	46.8	47.6	-85.00	2,357.1	-1,655.3	1,272.1	1,179.6	92.47	13.756		
7,900.0	5,921.0	7,844.6	5,808.0	48.6	49.4	-85.00	2,457.1	-1,656.2	1,273.0	1,176.9	96.10	13.247		
8,000.0	5,921.0	7,944.6	5,808.0	50.4	51.2	-85.00	2,557.1	-1,657.0	1,273.8	1,174.1	99.74	12.772		
8,100.0	5,921.0	8,044.6	5,808.0	52.2	53.0	-85.01	2,657.1	-1,657.9	1,274.7	1,171.3	103.39	12.330		
8,200.0	5,921.0	8,144.5	5,808.0	54.0	54.8	-85.01	2,757.1	-1,658.8	1,275.6	1,168.5	107.05	11.916		
8,300.0	5,921.0	8,244.5	5,808.0	55.9	56.6	-85.01	2,857.1	-1,659.7	1,276.5	1,165.7	110.73	11.528		
8,400.0	5,921.0	8,344.5	5,808.0	57.7	58.4	-85.02	2,957.1	-1,660.6	1,277.3	1,162.9	114.41	11.164		
8,500.0	5,921.0	8,444.5	5,808.0	59.5	60.3	-85.02	3,057.1	-1,661.4	1,278.2	1,160.1	118.11	10.822		
8,600.0	5,921.0	8,544.5	5,808.0	61.4	62.1	-85.03	3,157.0	-1,662.3	1,279.1	1,157.3	121.81	10.500		
8,700.0	5,921.0	8,644.5	5,808.0	63.2	63.9	-85.03	3,257.0	-1,663.2	1,280.0	1,154.4	125.53	10.197		
8,800.0	5,921.0	8,744.5	5,808.0	65.1	65.8	-85.03	3,357.0	-1,664.1	1,280.8	1,151.6	129.24	9.910		
8,900.0	5,921.0	8,844.5	5,808.0	67.0	67.6	-85.04	3,457.0	-1,664.9	1,281.7	1,148.7	132.97	9.639		
9,000.0	5,921.0	8,944.5	5,808.0	68.8	69.5	-85.04	3,557.0	-1,665.8	1,282.6	1,145.9	136.70	9.382		
9,100.0	5,921.0	9,044.5	5,808.0	70.7	71.3	-85.04	3,657.0	-1,666.7	1,283.4	1,143.0	140.44	9.139		
9,200.0	5,921.0	9,144.5	5,808.0	72.6	73.2	-85.05	3,757.0	-1,667.6	1,284.3	1,140.1	144.18	8.908		
9,300.0	5,921.0	9,244.5	5,808.0	74.4	75.1	-85.05	3,857.0	-1,668.5	1,285.2	1,137.3	147.93	8.688		
9,400.0	5,921.0	9,344.5	5,808.0	76.3	76.9	-85.05	3,957.0	-1,669.3	1,286.1	1,134.4	151.68	8.479		
9,500.0	5,921.0	9,444.5	5,808.0	78.2	78.8	-85.06	4,057.0	-1,670.2	1,286.9	1,131.5	155.43	8.280		
9,600.0	5,921.0	9,544.5	5,808.0	80.1	80.7	-85.06	4,157.0	-1,671.1	1,287.8	1,128.6	159.19	8.090		
9,700.0	5,921.0	9,644.5	5,808.0	81.9	82.6	-85.06	4,257.0	-1,672.0	1,288.7	1,125.7	162.95	7.908		
9,800.0	5,921.0	9,744.5	5,808.0	83.8	84.4	-85.07	4,357.0	-1,672.8	1,289.6	1,122.8	166.72	7.735		
9,900.0	5,921.0	9,844.5	5,808.0	85.7	86.3	-85.07	4,456.9	-1,673.7	1,290.4	1,119.9	170.48	7.569		
10,000.0	5,921.0	9,944.5	5,808.0	87.6	88.2	-85.07	4,556.9	-1,674.6	1,291.3	1,117.0	174.26	7.410		
10,100.0	5,921.0	10,044.5	5,808.0	89.5	90.1	-85.08	4,656.9	-1,675.5	1,292.2	1,114.1	178.03	7.258		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0901A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
10,200.0	5,921.0	10,144.5	5,808.0	91.4	92.0	-85.08	4,756.9	-1,676.3	1,293.1	1,111.2	181.81	7.112		
10,300.0	5,921.0	10,244.5	5,808.0	93.2	93.8	-85.08	4,856.9	-1,677.2	1,293.9	1,108.3	185.58	6.972		
10,400.0	5,921.0	10,344.5	5,808.0	95.1	95.7	-85.09	4,956.9	-1,678.1	1,294.8	1,105.4	189.36	6.838		
10,500.0	5,921.0	10,444.5	5,808.0	97.0	97.6	-85.09	5,056.9	-1,679.0	1,295.7	1,102.5	193.15	6.708		
10,600.0	5,921.0	10,544.5	5,808.0	98.9	99.5	-85.09	5,156.9	-1,679.9	1,296.5	1,099.6	196.93	6.584		
10,700.0	5,921.0	10,644.5	5,808.0	100.8	101.4	-85.10	5,256.9	-1,680.7	1,297.4	1,096.7	200.72	6.464		
10,800.0	5,921.0	10,744.5	5,808.0	102.7	103.3	-85.10	5,356.9	-1,681.6	1,298.3	1,093.8	204.51	6.348		
10,900.0	5,921.0	10,844.4	5,808.0	104.6	105.2	-85.10	5,456.9	-1,682.5	1,299.2	1,090.9	208.30	6.237		
11,000.0	5,921.0	10,944.4	5,808.0	106.5	107.1	-85.11	5,556.9	-1,683.4	1,300.0	1,087.9	212.09	6.130		
11,100.0	5,921.0	11,044.4	5,808.0	108.4	109.0	-85.11	5,656.9	-1,684.2	1,300.9	1,085.0	215.88	6.026		
11,200.0	5,921.0	11,144.4	5,808.0	110.3	110.9	-85.11	5,756.8	-1,685.1	1,301.8	1,082.1	219.68	5.926		
11,300.0	5,921.0	11,244.4	5,808.0	112.2	112.8	-85.12	5,856.8	-1,686.0	1,302.7	1,079.2	223.47	5.829		
11,400.0	5,921.0	11,344.4	5,808.0	114.1	114.7	-85.12	5,956.8	-1,686.9	1,303.5	1,076.3	227.27	5.736		
11,500.0	5,921.0	11,444.4	5,808.0	116.0	116.6	-85.12	6,056.8	-1,687.8	1,304.4	1,073.3	231.07	5.645		
11,600.0	5,921.0	11,544.4	5,808.0	117.9	118.5	-85.13	6,156.8	-1,688.6	1,305.3	1,070.4	234.87	5.558		
11,700.0	5,921.0	11,644.4	5,808.0	119.8	120.4	-85.13	6,256.8	-1,689.5	1,306.1	1,067.5	238.67	5.473		
11,800.0	5,921.0	11,744.4	5,808.0	121.7	122.3	-85.13	6,356.8	-1,690.4	1,307.0	1,064.6	242.47	5.391		
11,900.0	5,921.0	11,844.4	5,808.0	123.6	124.2	-85.14	6,456.8	-1,691.3	1,307.9	1,061.6	246.27	5.311		
12,000.0	5,921.0	11,944.4	5,808.0	125.5	126.1	-85.14	6,556.8	-1,692.1	1,308.8	1,058.7	250.07	5.234		
12,100.0	5,921.0	12,044.4	5,808.0	127.4	128.0	-85.14	6,656.8	-1,693.0	1,309.6	1,055.8	253.88	5.159		
12,200.0	5,921.0	12,144.4	5,808.0	129.3	129.9	-85.15	6,756.8	-1,693.9	1,310.5	1,052.8	257.68	5.086		
12,300.0	5,921.0	12,244.4	5,808.0	131.2	131.8	-85.15	6,856.8	-1,694.8	1,311.4	1,049.9	261.49	5.015		
12,400.0	5,921.0	12,344.4	5,808.0	133.1	133.7	-85.15	6,956.8	-1,695.6	1,312.3	1,047.0	265.30	4.946		
12,500.0	5,921.0	12,444.4	5,808.0	135.0	135.6	-85.15	7,056.7	-1,696.5	1,313.1	1,044.0	269.10	4.880		
12,600.0	5,921.0	12,544.4	5,808.0	137.0	137.5	-85.16	7,156.7	-1,697.4	1,314.0	1,041.1	272.91	4.815		
12,700.0	5,921.0	12,644.4	5,808.0	138.9	139.4	-85.16	7,256.7	-1,698.3	1,314.9	1,038.2	276.72	4.752		
12,800.0	5,921.0	12,744.4	5,808.0	140.8	141.3	-85.16	7,356.7	-1,699.2	1,315.8	1,035.2	280.53	4.690		
12,900.0	5,921.0	12,844.4	5,808.0	142.7	143.2	-85.17	7,456.7	-1,700.0	1,316.6	1,032.3	284.34	4.630		
13,000.0	5,921.0	12,944.4	5,808.0	144.6	145.1	-85.17	7,556.7	-1,700.9	1,317.5	1,029.3	288.15	4.572		
13,100.0	5,921.0	13,044.4	5,808.0	146.5	147.0	-85.17	7,656.7	-1,701.8	1,318.4	1,026.4	291.96	4.516		
13,200.0	5,921.0	13,144.4	5,808.0	148.4	149.0	-85.18	7,756.7	-1,702.7	1,319.2	1,023.5	295.78	4.460		
13,300.0	5,921.0	13,244.4	5,808.0	150.3	150.9	-85.18	7,856.7	-1,703.5	1,320.1	1,020.5	299.59	4.406		
13,400.0	5,921.0	13,344.4	5,808.0	152.2	152.8	-85.18	7,956.7	-1,704.4	1,321.0	1,017.6	303.40	4.354		
13,500.0	5,921.0	13,444.3	5,808.0	154.1	154.7	-85.19	8,056.7	-1,705.3	1,321.9	1,014.7	307.22	4.303		
13,600.0	5,921.0	13,544.3	5,808.0	156.0	156.6	-85.19	8,156.7	-1,706.2	1,322.7	1,011.7	311.03	4.253		
13,700.0	5,921.0	13,644.3	5,808.0	157.9	158.5	-85.19	8,256.7	-1,707.0	1,323.6	1,008.8	314.85	4.204		
13,737.7	5,921.0	13,682.1	5,808.0	158.7	159.2	-85.19	8,294.4	-1,707.4	1,323.9	1,007.7	316.28	4.186 ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0902B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: O-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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			
0.0	0.0	0.0	0.0	0.0	0.0	-94.83	-99.1	-1,171.5	1,175.6					
100.0	100.0	97.9	97.9	0.1	0.1	-94.83	-99.1	-1,171.5	1,175.6	1,175.5	0.19	6,350.445		
200.0	200.0	197.9	197.9	0.3	0.3	-94.83	-99.1	-1,171.5	1,175.6	1,175.0	0.63	1,860.493		
300.0	300.0	297.9	297.9	0.5	0.5	-94.83	-99.1	-1,171.5	1,175.6	1,174.6	1.08	1,087.117		
400.0	400.0	394.4	394.4	0.8	0.8	-94.76	-97.5	-1,171.7	1,175.8	1,174.3	1.52	772.171		
500.0	500.0	490.6	490.5	1.0	1.0	-94.53	-92.8	-1,172.6	1,176.2	1,174.3	1.97	597.728		
600.0	600.0	590.1	589.7	1.2	1.2	-75.08	-86.0	-1,173.8	1,176.5	1,174.0	2.43	484.683		
700.0	699.8	690.1	689.5	1.4	1.5	-75.00	-79.1	-1,175.0	1,175.8	1,172.9	2.90	405.869		
800.0	799.6	790.1	789.2	1.7	1.7	-74.99	-72.3	-1,176.2	1,174.7	1,171.3	3.38	347.746		
900.0	899.4	890.1	889.0	1.9	2.0	-74.98	-65.4	-1,177.4	1,173.6	1,169.7	3.87	303.510		
1,000.0	999.1	990.1	988.7	2.2	2.2	-74.97	-58.5	-1,178.6	1,172.5	1,168.1	4.36	268.864		
1,100.0	1,098.9	1,090.1	1,088.5	2.4	2.5	-74.96	-51.7	-1,179.8	1,171.4	1,166.5	4.86	241.080		
1,200.0	1,198.6	1,190.1	1,188.2	2.7	2.7	-74.95	-44.8	-1,181.0	1,170.3	1,164.9	5.36	218.356		
1,300.0	1,298.4	1,290.1	1,288.0	2.9	3.0	-74.94	-37.9	-1,182.2	1,169.2	1,163.3	5.86	199.449		
1,400.0	1,398.1	1,390.0	1,387.7	3.2	3.2	-74.93	-31.0	-1,183.4	1,168.1	1,161.7	6.37	183.486		
1,500.0	1,497.9	1,490.0	1,487.5	3.4	3.5	-74.92	-24.2	-1,184.6	1,167.0	1,160.1	6.87	169.835		
1,600.0	1,597.6	1,590.0	1,587.2	3.7	3.7	-74.91	-17.3	-1,185.8	1,165.9	1,158.5	7.38	158.035		
1,700.0	1,697.4	1,690.0	1,687.0	3.9	4.0	-74.90	-10.4	-1,187.0	1,164.8	1,156.9	7.88	147.736		
1,800.0	1,797.2	1,790.0	1,786.7	4.2	4.2	-74.89	-3.6	-1,188.2	1,163.7	1,155.3	8.39	138.671		
1,900.0	1,896.9	1,890.0	1,886.5	4.4	4.5	-74.88	3.3	-1,189.4	1,162.6	1,153.7	8.90	130.632		
2,000.0	1,896.7	1,890.0	1,886.2	4.7	4.8	-74.87	10.2	-1,190.6	1,161.5	1,152.0	9.41	123.455		
2,100.0	2,096.4	2,090.0	2,086.0	4.9	5.0	-74.86	17.0	-1,191.8	1,160.3	1,150.4	9.92	117.010		
2,200.0	2,196.2	2,190.0	2,185.7	5.2	5.3	-74.85	23.9	-1,193.0	1,159.2	1,148.8	10.43	111.191		
2,300.0	2,295.9	2,290.0	2,285.5	5.4	5.5	-74.84	30.8	-1,194.2	1,158.1	1,147.2	10.94	105.911		
2,400.0	2,395.7	2,390.0	2,385.2	5.7	5.8	-74.83	37.7	-1,195.4	1,157.0	1,145.6	11.44	101.099		
2,500.0	2,495.5	2,490.0	2,485.0	6.0	6.0	-74.82	44.5	-1,196.6	1,155.9	1,144.0	11.95	96.695		
2,600.0	2,595.2	2,590.0	2,584.7	6.2	6.3	-74.81	51.4	-1,197.9	1,154.8	1,142.4	12.46	92.650		
2,700.0	2,695.0	2,690.0	2,684.5	6.5	6.5	-74.80	58.3	-1,199.1	1,153.7	1,140.7	12.97	88.922		
2,800.0	2,794.7	2,790.0	2,784.2	6.7	6.8	-74.79	65.1	-1,200.3	1,152.6	1,139.1	13.48	85.475		
2,900.0	2,894.5	2,890.0	2,884.0	7.0	7.1	-74.78	72.0	-1,201.5	1,151.5	1,137.5	14.00	82.279		
3,000.0	2,994.2	2,989.9	2,983.7	7.2	7.3	-74.77	78.9	-1,202.7	1,150.4	1,135.9	14.51	79.307		
3,100.0	3,094.0	3,089.9	3,083.5	7.5	7.6	-74.76	85.7	-1,203.9	1,149.3	1,134.3	15.02	76.536		
3,200.0	3,193.7	3,189.9	3,183.2	7.7	7.8	-74.75	92.6	-1,205.1	1,148.2	1,132.7	15.53	73.947		
3,300.0	3,293.5	3,289.9	3,283.0	8.0	8.1	-74.74	99.5	-1,206.3	1,147.1	1,131.1	16.04	71.523		
3,400.0	3,393.3	3,389.9	3,382.7	8.3	8.3	-74.73	106.4	-1,207.5	1,146.0	1,129.4	16.55	69.248		
3,500.0	3,493.0	3,489.9	3,482.5	8.5	8.6	-74.72	113.2	-1,208.7	1,144.9	1,127.8	17.06	67.109		
3,600.0	3,592.8	3,589.9	3,582.2	8.8	8.9	-74.70	120.1	-1,209.9	1,143.8	1,126.2	17.57	65.094		
3,700.0	3,692.5	3,689.9	3,682.0	9.0	9.1	-74.69	127.0	-1,211.1	1,142.7	1,124.6	18.08	63.193		
3,800.0	3,792.3	3,789.9	3,781.7	9.3	9.4	-74.68	133.8	-1,212.3	1,141.6	1,123.0	18.59	61.396		
3,900.0	3,892.0	3,889.9	3,881.5	9.5	9.6	-74.67	140.7	-1,213.5	1,140.5	1,121.4	19.10	59.695		
4,000.0	3,991.8	3,989.9	3,981.2	9.8	9.9	-74.66	147.6	-1,214.7	1,139.4	1,119.7	19.62	58.082		
4,100.0	4,091.6	4,089.9	4,081.0	10.1	10.1	-74.65	154.5	-1,215.9	1,138.3	1,118.1	20.13	56.552		
4,200.0	4,191.3	4,189.9	4,180.7	10.3	10.4	-74.64	161.3	-1,217.1	1,137.2	1,116.5	20.64	55.097		
4,300.0	4,291.1	4,289.9	4,280.5	10.6	10.6	-74.63	168.2	-1,218.3	1,136.0	1,114.9	21.15	53.712		
4,400.0	4,390.8	4,389.9	4,380.2	10.8	10.9	-74.62	175.1	-1,219.5	1,134.9	1,113.3	21.66	52.393		
4,500.0	4,490.6	4,489.9	4,480.0	11.1	11.2	-74.61	181.9	-1,220.8	1,133.8	1,111.7	22.17	51.134		
4,600.0	4,590.3	4,589.8	4,579.7	11.3	11.4	-74.60	188.8	-1,222.0	1,132.7	1,110.1	22.69	49.932		
4,700.0	4,690.1	4,689.8	4,679.5	11.6	11.7	-74.59	195.7	-1,223.2	1,131.6	1,108.4	23.20	48.783		
4,800.0	4,789.9	4,789.8	4,779.2	11.9	11.9	-74.58	202.5	-1,224.4	1,130.5	1,106.8	23.71	47.683		
4,900.0	4,889.6	4,889.8	4,879.0	12.1	12.2	-74.57	209.4	-1,225.6	1,129.4	1,105.2	24.22	46.630		
5,000.0	4,989.4	4,989.8	4,978.7	12.4	12.4	-74.56	216.3	-1,226.8	1,128.3	1,103.6	24.73	45.621		
5,100.0	5,089.1	5,089.8	5,078.5	12.6	12.7	-74.55	223.2	-1,228.0	1,127.2	1,102.0	25.24	44.652		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0902B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: O-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,189.8	5,178.2	12.9	13.0	-74.53	230.0	-1,229.2	1,126.1	1,100.4	25.76	43.722		
5,300.0	5,288.6	5,289.8	5,278.0	13.1	13.2	-74.52	236.9	-1,230.4	1,125.0	1,098.7	26.27	42.828		
5,400.0	5,388.4	5,389.8	5,377.7	13.4	13.5	-74.51	243.8	-1,231.6	1,123.9	1,097.1	26.78	41.968		
5,500.0	5,487.9	5,475.5	5,462.9	13.7	13.7	-74.54	252.6	-1,233.2	1,122.6	1,095.3	27.29	41.128		
5,600.0	5,584.2	5,550.0	5,535.0	14.1	14.0	-74.99	270.6	-1,236.4	1,118.5	1,090.5	27.96	40.002		
5,700.0	5,673.8	5,634.6	5,612.9	14.7	14.5	-75.93	303.1	-1,242.4	1,111.2	1,082.2	28.95	38.379		
5,800.0	5,753.4	5,714.7	5,680.7	15.5	15.0	-77.32	344.9	-1,250.1	1,101.1	1,070.8	30.27	36.376		
5,900.0	5,819.9	5,795.6	5,741.7	16.4	15.7	-79.15	396.9	-1,259.6	1,088.6	1,056.5	32.00	34.013		
6,000.0	5,871.0	5,877.7	5,794.6	17.6	16.5	-81.36	458.6	-1,271.0	1,074.1	1,039.9	34.19	31.420		
6,100.0	5,904.9	5,961.5	5,837.7	19.0	17.5	-83.92	529.2	-1,283.9	1,058.4	1,021.6	36.76	28.791		
6,200.0	5,920.1	6,047.6	5,869.4	20.5	18.6	-86.74	607.8	-1,298.4	1,042.1	1,002.5	39.63	26.297		
6,300.0	5,921.0	6,137.5	5,888.1	22.0	19.9	-88.27	694.2	-1,314.4	1,027.4	984.8	42.61	24.112		
6,400.0	5,921.0	6,269.9	5,892.0	23.4	21.9	-88.48	824.4	-1,337.1	1,017.7	971.7	46.03	22.111		
6,500.0	5,921.0	6,480.7	5,892.0	25.0	24.9	-88.45	1,034.2	-1,356.3	1,004.9	954.5	50.46	19.916		
6,600.0	5,921.0	6,612.8	5,892.0	26.5	27.0	-88.43	1,166.4	-1,357.8	989.1	935.1	53.97	18.324		
6,700.0	5,921.0	6,712.2	5,892.0	28.1	28.6	-88.42	1,265.7	-1,358.0	977.9	920.8	57.04	17.144		
6,800.0	5,921.0	6,812.0	5,892.0	29.7	30.3	-88.41	1,365.5	-1,358.3	971.9	911.9	60.01	16.195		
6,880.5	5,921.0	6,892.5	5,892.0	30.9	31.7	-88.41	1,446.1	-1,358.5	970.4	907.9	62.47	15.534 CC		
6,900.0	5,921.0	6,912.0	5,892.0	31.2	32.0	-88.41	1,465.5	-1,358.6	970.9	907.9	63.03	15.403		
7,000.0	5,921.0	7,012.0	5,892.0	32.9	33.8	-88.41	1,565.5	-1,358.9	971.2	904.7	66.46	14.614		
7,100.0	5,921.0	7,112.0	5,892.0	34.5	35.5	-88.41	1,665.5	-1,359.2	971.4	901.5	69.92	13.893		
7,200.0	5,921.0	7,212.0	5,892.0	36.2	37.3	-88.41	1,765.5	-1,359.4	971.7	898.3	73.43	13.233		
7,300.0	5,921.0	7,312.0	5,892.0	38.0	39.1	-88.41	1,865.5	-1,359.7	972.0	895.0	76.97	12.629		
7,400.0	5,921.0	7,412.0	5,892.0	39.7	40.9	-88.41	1,965.5	-1,360.0	972.3	891.7	80.53	12.073		
7,500.0	5,921.0	7,512.0	5,892.0	41.5	42.7	-88.41	2,065.5	-1,360.3	972.6	888.4	84.12	11.561		
7,600.0	5,921.0	7,612.0	5,892.0	43.2	44.5	-88.41	2,165.5	-1,360.6	972.8	885.1	87.73	11.088		
7,700.0	5,921.0	7,712.0	5,892.0	45.0	46.3	-88.42	2,265.5	-1,360.8	973.1	881.8	91.36	10.651		
7,800.0	5,921.0	7,812.0	5,892.0	46.8	48.2	-88.42	2,365.5	-1,361.1	973.4	878.4	95.01	10.245		
7,900.0	5,921.0	7,912.0	5,892.0	48.6	50.0	-88.42	2,465.5	-1,361.4	973.7	875.0	98.67	9.868		
8,000.0	5,921.0	8,012.0	5,892.0	50.4	51.9	-88.42	2,565.5	-1,361.7	974.0	871.6	102.35	9.516		
8,100.0	5,921.0	8,112.0	5,892.0	52.2	53.7	-88.42	2,665.5	-1,361.9	974.2	868.2	106.03	9.188		
8,200.0	5,921.0	8,212.0	5,892.0	54.0	55.6	-88.42	2,765.5	-1,362.2	974.5	864.8	109.73	8.881		
8,300.0	5,921.0	8,312.0	5,892.0	55.9	57.4	-88.42	2,865.5	-1,362.5	974.8	861.4	113.44	8.593		
8,400.0	5,921.0	8,412.0	5,892.0	57.7	59.3	-88.42	2,965.5	-1,362.8	975.1	857.9	117.15	8.323		
8,500.0	5,921.0	8,512.0	5,892.0	59.5	61.2	-88.42	3,065.5	-1,363.1	975.3	854.5	120.87	8.069		
8,600.0	5,921.0	8,612.0	5,892.0	61.4	63.1	-88.42	3,165.5	-1,363.3	975.6	851.0	124.60	7.830		
8,700.0	5,921.0	8,712.0	5,892.0	63.2	64.9	-88.42	3,265.5	-1,363.6	975.9	847.6	128.34	7.604		
8,800.0	5,921.0	8,812.0	5,892.0	65.1	66.8	-88.42	3,365.5	-1,363.9	976.2	844.1	132.08	7.391		
8,900.0	5,921.0	8,912.0	5,892.0	67.0	68.7	-88.42	3,465.5	-1,364.2	976.5	840.6	135.83	7.189		
9,000.0	5,921.0	9,012.0	5,892.0	68.8	70.6	-88.42	3,565.5	-1,364.5	976.7	837.2	139.58	6.998		
9,100.0	5,921.0	9,112.0	5,892.0	70.7	72.5	-88.42	3,665.5	-1,364.7	977.0	833.7	143.34	6.816		
9,200.0	5,921.0	9,212.0	5,892.0	72.6	74.3	-88.42	3,765.5	-1,365.0	977.3	830.2	147.10	6.644		
9,300.0	5,921.0	9,312.0	5,892.0	74.4	76.2	-88.42	3,865.5	-1,365.3	977.6	826.7	150.86	6.480		
9,400.0	5,921.0	9,412.0	5,892.0	76.3	78.1	-88.42	3,965.5	-1,365.6	977.9	823.2	154.63	6.324		
9,500.0	5,921.0	9,512.0	5,892.0	78.2	80.0	-88.42	4,065.5	-1,365.9	978.1	819.7	158.40	6.175		
9,600.0	5,921.0	9,612.0	5,892.0	80.1	81.9	-88.42	4,165.5	-1,366.1	978.4	816.2	162.18	6.033		
9,700.0	5,921.0	9,712.0	5,892.0	81.9	83.8	-88.42	4,265.5	-1,366.4	978.7	812.7	165.96	5.897		
9,800.0	5,921.0	9,812.0	5,892.0	83.8	85.7	-88.42	4,365.5	-1,366.7	979.0	809.2	169.74	5.767		
9,900.0	5,921.0	9,912.0	5,892.0	85.7	87.6	-88.43	4,465.5	-1,367.0	979.2	805.7	173.52	5.643		
10,000.0	5,921.0	10,012.0	5,892.0	87.6	89.5	-88.43	4,565.5	-1,367.3	979.5	802.2	177.31	5.524		
10,100.0	5,921.0	10,112.0	5,892.0	89.5	91.4	-88.43	4,665.5	-1,367.5	979.8	798.7	181.10	5.410		
10,200.0	5,921.0	10,212.0	5,892.0	91.4	93.3	-88.43	4,765.5	-1,367.8	980.1	795.2	184.89	5.301		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0902B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				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		
10,300.0	5,921.0	10,312.0	5,892.0	93.2	95.2	-88.43	4,865.5	-1,368.1	980.4	791.7	188.68	5.196		
10,400.0	5,921.0	10,412.0	5,892.0	95.1	97.1	-88.43	4,965.5	-1,368.4	980.6	788.2	192.47	5.095		
10,500.0	5,921.0	10,512.0	5,892.0	97.0	99.0	-88.43	5,065.5	-1,368.7	980.9	784.6	196.27	4.998		
10,600.0	5,921.0	10,612.0	5,892.0	98.9	100.9	-88.43	5,165.5	-1,368.9	981.2	781.1	200.07	4.904		
10,700.0	5,921.0	10,712.0	5,892.0	100.8	102.8	-88.43	5,265.5	-1,369.2	981.5	777.6	203.86	4.814		
10,800.0	5,921.0	10,812.0	5,892.0	102.7	104.7	-88.43	5,365.5	-1,369.5	981.8	774.1	207.66	4.728		
10,900.0	5,921.0	10,912.0	5,892.0	104.6	106.6	-88.43	5,465.5	-1,369.8	982.0	770.6	211.47	4.644		
11,000.0	5,921.0	11,012.0	5,892.0	106.5	108.5	-88.43	5,565.5	-1,370.1	982.3	767.0	215.27	4.563		
11,100.0	5,921.0	11,112.0	5,892.0	108.4	110.4	-88.43	5,665.5	-1,370.3	982.6	763.5	219.07	4.485		
11,200.0	5,921.0	11,212.0	5,892.0	110.3	112.3	-88.43	5,765.5	-1,370.6	982.9	760.0	222.88	4.410		
11,300.0	5,921.0	11,312.0	5,892.0	112.2	114.2	-88.43	5,865.5	-1,370.9	983.1	756.5	226.69	4.337		
11,400.0	5,921.0	11,412.0	5,892.0	114.1	116.1	-88.43	5,965.5	-1,371.2	983.4	752.9	230.49	4.267		
11,500.0	5,921.0	11,512.0	5,892.0	116.0	118.0	-88.43	6,065.5	-1,371.5	983.7	749.4	234.30	4.198		
11,600.0	5,921.0	11,612.0	5,892.0	117.9	120.0	-88.43	6,165.5	-1,371.7	984.0	745.9	238.11	4.132		
11,700.0	5,921.0	11,712.0	5,892.0	119.8	121.9	-88.43	6,265.5	-1,372.0	984.3	742.3	241.92	4.069		
11,800.0	5,921.0	11,812.0	5,892.0	121.7	123.8	-88.43	6,365.5	-1,372.3	984.5	738.8	245.73	4.007		
11,900.0	5,921.0	11,912.0	5,892.0	123.6	125.7	-88.43	6,465.5	-1,372.6	984.8	735.3	249.55	3.946		
12,000.0	5,921.0	12,012.0	5,892.0	125.5	127.6	-88.43	6,565.5	-1,372.8	985.1	731.7	253.36	3.888		
12,100.0	5,921.0	12,112.0	5,892.0	127.4	129.5	-88.44	6,665.5	-1,373.1	985.4	728.2	257.17	3.832		
12,200.0	5,921.0	12,212.0	5,892.0	129.3	131.4	-88.44	6,765.5	-1,373.4	985.7	724.7	260.99	3.777		
12,300.0	5,921.0	12,312.0	5,892.0	131.2	133.3	-88.44	6,865.5	-1,373.7	985.9	721.1	264.80	3.723		
12,400.0	5,921.0	12,412.0	5,892.0	133.1	135.2	-88.44	6,965.5	-1,374.0	986.2	717.6	268.62	3.671		
12,500.0	5,921.0	12,512.0	5,892.0	135.0	137.1	-88.44	7,065.5	-1,374.2	986.5	714.1	272.43	3.621		
12,600.0	5,921.0	12,612.0	5,892.0	137.0	139.1	-88.44	7,165.5	-1,374.5	986.8	710.5	276.25	3.572		
12,700.0	5,921.0	12,712.0	5,892.0	138.9	141.0	-88.44	7,265.5	-1,374.8	987.0	707.0	280.07	3.524		
12,800.0	5,921.0	12,812.0	5,892.0	140.8	142.9	-88.44	7,365.5	-1,375.1	987.3	703.4	283.89	3.478		
12,900.0	5,921.0	12,912.0	5,892.0	142.7	144.8	-88.44	7,465.5	-1,375.4	987.6	699.9	287.71	3.433		
13,000.0	5,921.0	13,012.0	5,892.0	144.6	146.7	-88.44	7,565.5	-1,375.6	987.9	696.4	291.53	3.389		
13,100.0	5,921.0	13,112.0	5,892.0	146.5	148.6	-88.44	7,665.5	-1,375.9	988.2	692.8	295.35	3.346		
13,200.0	5,921.0	13,212.0	5,892.0	148.4	150.5	-88.44	7,765.5	-1,376.2	988.4	689.3	299.17	3.304		
13,300.0	5,921.0	13,312.0	5,892.0	150.3	152.4	-88.44	7,865.5	-1,376.5	988.7	685.7	302.99	3.263		
13,400.0	5,921.0	13,412.0	5,892.0	152.2	154.4	-88.44	7,965.5	-1,376.8	989.0	682.2	306.81	3.224		
13,500.0	5,921.0	13,512.0	5,892.0	154.1	156.3	-88.44	8,065.5	-1,377.0	989.3	678.6	310.63	3.185		
13,600.0	5,921.0	13,612.0	5,892.0	156.0	158.2	-88.44	8,165.5	-1,377.3	989.6	675.1	314.45	3.147		
13,700.0	5,921.0	13,712.0	5,892.0	157.9	160.1	-88.44	8,265.5	-1,377.6	989.8	671.6	318.23	3.110		
13,737.7	5,921.0	13,749.7	5,892.0	158.7	160.7	-88.44	8,303.2	-1,377.7	989.9	670.4	319.54	3.098 ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0903A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: O-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-91.30	-24.4	-1,072.4	1,072.7					
100.0	100.0	97.9	97.9	0.1	0.1	-91.30	-24.4	-1,072.4	1,072.7	1,072.5	0.19	5,794.171		
200.0	200.0	197.9	197.9	0.3	0.3	-91.30	-24.4	-1,072.4	1,072.7	1,072.0	0.63	1,697.521		
300.0	300.0	297.9	297.9	0.5	0.5	-91.30	-24.4	-1,072.4	1,072.7	1,071.6	1.08	991.890		
400.0	400.0	397.9	397.9	0.8	0.8	-91.30	-24.4	-1,072.4	1,072.7	1,071.1	1.53	700.644		
500.0	500.0	497.9	497.9	1.0	1.0	-91.30	-24.4	-1,072.4	1,072.7	1,070.7	1.98	541.613		
600.0	600.0	597.9	597.9	1.2	1.2	-72.21	-24.4	-1,072.4	1,072.1	1,069.7	2.43	441.384		
700.0	699.8	697.7	697.7	1.4	1.4	-72.51	-24.4	-1,072.4	1,070.5	1,067.7	2.88	371.696		
800.0	799.6	797.5	797.5	1.7	1.7	-72.87	-24.4	-1,072.4	1,068.5	1,065.1	3.34	320.005		
900.0	899.4	897.2	897.2	1.9	1.9	-73.22	-24.4	-1,072.4	1,066.4	1,062.6	3.80	280.399		
1,000.0	999.1	994.5	994.5	2.2	2.1	-73.49	-22.9	-1,072.6	1,064.5	1,060.3	4.26	249.624		
1,100.0	1,098.9	1,092.0	1,091.8	2.4	2.3	-73.58	-18.0	-1,073.1	1,062.9	1,058.2	4.73	224.771		
1,200.0	1,198.6	1,191.8	1,191.4	2.7	2.6	-73.57	-11.1	-1,073.9	1,061.4	1,056.2	5.20	203.938		
1,300.0	1,298.4	1,291.8	1,291.1	2.9	2.8	-73.55	-4.2	-1,074.8	1,059.9	1,054.2	5.69	186.377		
1,400.0	1,398.1	1,391.7	1,390.9	3.2	3.0	-73.54	2.7	-1,075.6	1,058.4	1,052.2	6.17	171.430		
1,500.0	1,497.9	1,491.7	1,490.6	3.4	3.3	-73.52	9.6	-1,076.4	1,056.9	1,050.3	6.66	158.581		
1,600.0	1,597.6	1,591.7	1,590.4	3.7	3.5	-73.51	16.6	-1,077.2	1,055.4	1,048.3	7.16	147.433		
1,700.0	1,697.4	1,691.7	1,690.1	3.9	3.7	-73.49	23.5	-1,078.0	1,053.9	1,046.3	7.65	137.681		
1,800.0	1,797.2	1,791.7	1,789.8	4.2	4.0	-73.48	30.4	-1,078.8	1,052.4	1,044.3	8.15	129.085		
1,900.0	1,896.9	1,891.7	1,889.6	4.4	4.2	-73.46	37.4	-1,079.6	1,051.0	1,042.3	8.65	121.456		
2,000.0	1,896.7	1,891.7	1,889.3	4.7	4.5	-73.45	44.3	-1,080.5	1,049.5	1,040.3	9.15	114.643		
2,100.0	2,096.4	2,091.7	2,089.1	4.9	4.7	-73.43	51.2	-1,081.3	1,048.0	1,038.3	9.66	108.525		
2,200.0	2,196.2	2,191.7	2,188.8	5.2	5.0	-73.42	58.1	-1,082.1	1,046.5	1,036.3	10.16	103.002		
2,300.0	2,295.9	2,291.6	2,288.6	5.4	5.2	-73.40	65.1	-1,082.9	1,045.0	1,034.3	10.66	97.992		
2,400.0	2,395.7	2,391.6	2,388.3	5.7	5.5	-73.39	72.0	-1,083.7	1,043.5	1,032.3	11.17	93.429		
2,500.0	2,495.5	2,491.6	2,488.1	6.0	5.7	-73.37	78.9	-1,084.5	1,042.0	1,030.3	11.67	89.255		
2,600.0	2,595.2	2,591.6	2,587.8	6.2	6.0	-73.36	85.8	-1,085.3	1,040.5	1,028.3	12.18	85.424		
2,700.0	2,695.0	2,691.6	2,687.6	6.5	6.2	-73.34	92.8	-1,086.1	1,039.0	1,026.3	12.69	81.895		
2,800.0	2,794.7	2,791.6	2,787.3	6.7	6.5	-73.33	99.7	-1,087.0	1,037.5	1,024.3	13.19	78.635		
2,900.0	2,894.5	2,891.6	2,887.0	7.0	6.8	-73.31	106.6	-1,087.8	1,036.0	1,022.3	13.70	75.614		
3,000.0	2,994.2	2,991.6	2,986.8	7.2	7.0	-73.30	113.6	-1,088.6	1,034.5	1,020.3	14.21	72.807		
3,100.0	3,094.0	3,091.5	3,086.5	7.5	7.3	-73.28	120.5	-1,089.4	1,033.0	1,018.3	14.72	70.192		
3,200.0	3,193.7	3,191.5	3,186.3	7.7	7.5	-73.27	127.4	-1,090.2	1,031.5	1,016.3	15.23	67.750		
3,300.0	3,293.5	3,291.5	3,286.0	8.0	7.8	-73.25	134.3	-1,091.0	1,030.1	1,014.3	15.73	65.465		
3,400.0	3,393.3	3,391.5	3,385.8	8.3	8.0	-73.24	141.3	-1,091.8	1,028.6	1,012.3	16.24	63.322		
3,500.0	3,493.0	3,491.5	3,485.5	8.5	8.3	-73.22	148.2	-1,092.7	1,027.1	1,010.3	16.75	61.308		
3,600.0	3,592.8	3,591.5	3,585.3	8.8	8.5	-73.21	155.1	-1,093.5	1,025.6	1,008.3	17.26	59.413		
3,700.0	3,692.5	3,691.5	3,685.0	9.0	8.8	-73.19	162.0	-1,094.3	1,024.1	1,006.3	17.77	57.625		
3,800.0	3,792.3	3,791.5	3,784.7	9.3	9.0	-73.17	169.0	-1,095.1	1,022.6	1,004.3	18.28	55.937		
3,900.0	3,892.0	3,891.5	3,884.5	9.5	9.3	-73.16	175.9	-1,095.9	1,021.1	1,002.3	18.79	54.340		
4,000.0	3,991.8	3,991.4	3,984.2	9.8	9.5	-73.14	182.8	-1,096.7	1,019.6	1,000.3	19.30	52.827		
4,100.0	4,091.6	4,091.4	4,084.0	10.1	9.8	-73.13	189.8	-1,097.5	1,018.1	998.3	19.81	51.391		
4,200.0	4,191.3	4,191.4	4,183.7	10.3	10.1	-73.11	196.7	-1,098.4	1,016.6	996.3	20.32	50.027		
4,300.0	4,291.1	4,291.4	4,283.5	10.6	10.3	-73.10	203.6	-1,099.2	1,015.1	994.3	20.83	48.730		
4,400.0	4,390.8	4,391.4	4,383.2	10.8	10.6	-73.08	210.5	-1,100.0	1,013.6	992.3	21.34	47.494		
4,500.0	4,490.6	4,491.4	4,483.0	11.1	10.8	-73.06	217.5	-1,100.8	1,012.2	990.3	21.85	46.316		
4,600.0	4,590.3	4,591.4	4,582.7	11.3	11.1	-73.05	224.4	-1,101.6	1,010.7	988.3	22.36	45.192		
4,700.0	4,690.1	4,691.4	4,682.5	11.6	11.3	-73.03	231.3	-1,102.4	1,009.2	986.3	22.87	44.117		
4,800.0	4,789.9	4,791.4	4,782.2	11.9	11.6	-73.02	238.2	-1,103.2	1,007.7	984.3	23.39	43.089		
4,900.0	4,889.6	4,891.3	4,881.9	12.1	11.8	-73.00	245.2	-1,104.0	1,006.2	982.3	23.90	42.106		
5,000.0	4,989.4	4,991.3	4,981.7	12.4	12.1	-72.98	252.1	-1,104.9	1,004.7	980.3	24.41	41.163		
5,100.0	5,089.1	5,091.3	5,081.4	12.6	12.4	-72.97	259.0	-1,105.7	1,003.2	978.3	24.92	40.258		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0903A - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.0	5,188.9	5,191.3	5,181.2	12.9	12.6	-72.95	266.0	-1,106.5	1,001.7	976.3	25.43	39.390	
5,300.0	5,288.6	5,291.3	5,280.9	13.1	12.9	-72.93	272.9	-1,107.3	1,000.2	974.3	25.94	38.557	
5,400.0	5,388.4	5,383.5	5,372.6	13.4	13.1	-72.78	281.6	-1,108.3	999.0	972.5	26.45	37.766	
5,500.0	5,487.9	5,467.7	5,454.2	13.7	13.5	-72.10	301.9	-1,110.7	998.3	971.3	27.02	36.951	
5,600.0	5,584.2	5,550.0	5,529.8	14.1	13.9	-71.81	334.2	-1,114.5	994.2	966.5	27.74	35.840	
5,700.0	5,673.8	5,630.2	5,597.6	14.7	14.4	-72.08	376.6	-1,119.5	986.1	957.4	28.70	34.364	
5,800.0	5,753.4	5,709.5	5,657.4	15.5	15.0	-72.91	428.1	-1,125.5	974.2	944.2	29.96	32.515	
5,900.0	5,819.9	5,788.0	5,708.2	16.4	15.8	-74.28	487.4	-1,132.5	958.7	927.1	31.63	30.308	
6,000.0	5,871.0	5,865.9	5,749.2	17.6	16.6	-76.18	553.2	-1,140.2	940.3	906.5	33.76	27.848	
6,100.0	5,904.9	5,943.8	5,779.8	19.0	17.6	-78.57	624.2	-1,148.6	919.4	883.1	36.33	25.308	
6,200.0	5,920.1	6,022.2	5,799.6	20.5	18.7	-81.40	699.5	-1,157.4	897.0	857.8	39.24	22.862	
6,300.0	5,921.0	6,102.0	5,807.8	22.0	19.8	-82.58	778.2	-1,166.7	875.6	833.4	42.17	20.764	
6,400.0	5,921.0	6,263.8	5,807.9	23.4	22.1	-82.40	939.5	-1,179.8	857.1	811.1	45.93	18.662	
6,500.0	5,921.0	6,410.1	5,807.9	25.0	24.2	-82.20	1,085.8	-1,180.3	835.4	785.9	49.59	16.849	
6,600.0	5,921.0	6,508.4	5,808.0	26.5	25.8	-82.10	1,184.0	-1,178.5	817.1	764.4	52.73	15.498	
6,700.0	5,921.0	6,607.5	5,808.0	28.1	27.5	-82.02	1,283.1	-1,176.7	804.0	748.1	55.83	14.400	
6,800.0	5,921.0	6,707.1	5,808.0	29.7	29.1	-81.98	1,382.7	-1,174.9	795.9	737.1	58.86	13.523	
6,900.0	5,921.0	6,807.1	5,808.0	31.2	30.9	-81.95	1,482.7	-1,173.0	792.9	730.9	61.93	12.804	
7,000.0	5,921.0	6,907.1	5,808.0	32.9	32.6	-81.94	1,582.6	-1,171.2	791.0	725.7	65.33	12.109	
7,100.0	5,921.0	7,007.0	5,808.0	34.5	34.4	-81.92	1,682.6	-1,169.3	789.2	720.4	68.78	11.475	
7,200.0	5,921.0	7,107.0	5,808.0	36.2	36.1	-81.90	1,782.6	-1,167.5	787.4	715.1	72.26	10.897	
7,300.0	5,921.0	7,207.0	5,808.0	38.0	37.9	-81.88	1,882.5	-1,165.7	785.6	709.8	75.78	10.367	
7,400.0	5,921.0	7,307.0	5,808.0	39.7	39.7	-81.86	1,982.5	-1,163.8	783.7	704.4	79.32	9.881	
7,500.0	5,921.0	7,407.0	5,808.0	41.5	41.5	-81.84	2,082.5	-1,162.0	781.9	699.0	82.89	9.434	
7,600.0	5,921.0	7,507.0	5,808.0	43.2	43.3	-81.82	2,182.4	-1,160.1	780.1	693.6	86.47	9.021	
7,700.0	5,921.0	7,606.9	5,808.0	45.0	45.2	-81.80	2,282.4	-1,158.3	778.3	688.2	90.08	8.640	
7,800.0	5,921.0	7,706.9	5,808.0	46.8	47.0	-81.78	2,382.4	-1,156.4	776.5	682.8	93.70	8.286	
7,900.0	5,921.0	7,806.9	5,808.0	48.6	48.8	-81.76	2,482.3	-1,154.6	774.6	677.3	97.34	7.958	
8,000.0	5,921.0	7,906.9	5,808.0	50.4	50.7	-81.75	2,582.3	-1,152.8	772.8	671.8	100.99	7.652	
8,100.0	5,921.0	8,006.9	5,808.0	52.2	52.5	-81.73	2,682.3	-1,150.9	771.0	666.3	104.65	7.367	
8,200.0	5,921.0	8,106.9	5,808.0	54.0	54.4	-81.71	2,782.2	-1,149.1	769.2	660.8	108.32	7.101	
8,300.0	5,921.0	8,206.8	5,808.0	55.9	56.2	-81.69	2,882.2	-1,147.2	767.3	655.3	112.00	6.851	
8,400.0	5,921.0	8,306.8	5,808.0	57.7	58.1	-81.67	2,982.2	-1,145.4	765.5	649.8	115.69	6.617	
8,500.0	5,921.0	8,406.8	5,808.0	59.5	60.0	-81.65	3,082.1	-1,143.6	763.7	644.3	119.38	6.397	
8,600.0	5,921.0	8,506.8	5,808.0	61.4	61.8	-81.63	3,182.1	-1,141.7	761.9	638.8	123.09	6.190	
8,700.0	5,921.0	8,606.8	5,808.0	63.2	63.7	-81.61	3,282.1	-1,139.9	760.1	633.3	126.79	5.994	
8,800.0	5,921.0	8,706.8	5,808.0	65.1	65.6	-81.59	3,382.0	-1,138.0	758.2	627.7	130.51	5.810	
8,900.0	5,921.0	8,806.7	5,808.0	67.0	67.5	-81.57	3,482.0	-1,136.2	756.4	622.2	134.22	5.635	
9,000.0	5,921.0	8,906.7	5,808.0	68.8	69.4	-81.54	3,582.0	-1,134.4	754.6	616.6	137.95	5.470	
9,100.0	5,921.0	9,006.7	5,808.0	70.7	71.2	-81.52	3,681.9	-1,132.5	752.8	611.1	141.67	5.313	
9,200.0	5,921.0	9,106.7	5,808.0	72.6	73.1	-81.50	3,781.9	-1,130.7	750.9	605.5	145.40	5.165	
9,300.0	5,921.0	9,206.7	5,808.0	74.4	75.0	-81.48	3,881.9	-1,128.8	749.1	600.0	149.14	5.023	
9,400.0	5,921.0	9,306.7	5,808.0	76.3	76.9	-81.46	3,981.8	-1,127.0	747.3	594.4	152.88	4.888	
9,500.0	5,921.0	9,406.6	5,808.0	78.2	78.8	-81.44	4,081.8	-1,125.2	745.5	588.9	156.62	4.760	
9,600.0	5,921.0	9,506.6	5,808.0	80.1	80.7	-81.42	4,181.8	-1,123.3	743.7	583.3	160.36	4.637	
9,700.0	5,921.0	9,606.6	5,808.0	81.9	82.6	-81.40	4,281.7	-1,121.5	741.8	577.7	164.10	4.521	
9,800.0	5,921.0	9,706.6	5,808.0	83.8	84.4	-81.38	4,381.7	-1,119.6	740.0	572.2	167.85	4.409	
9,900.0	5,921.0	9,806.6	5,808.0	85.7	86.3	-81.36	4,481.7	-1,117.8	738.2	566.6	171.60	4.302	
10,000.0	5,921.0	9,906.6	5,808.0	87.6	88.2	-81.33	4,581.6	-1,116.0	736.4	561.0	175.35	4.199	
10,100.0	5,921.0	10,006.5	5,808.0	89.5	90.1	-81.31	4,681.6	-1,114.1	734.6	555.5	179.11	4.101	
10,200.0	5,921.0	10,106.5	5,808.0	91.4	92.0	-81.29	4,781.6	-1,112.3	732.7	549.9	182.86	4.007	
10,300.0	5,921.0	10,206.5	5,808.0	93.2	93.9	-81.27	4,881.5	-1,110.4	730.9	544.3	186.62	3.917	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0903A - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,400.0	5,921.0	10,306.5	5,808.0	95.1	95.8	-81.25	4,981.5	-1,108.6	729.1	538.7	190.37	3.830	
10,500.0	5,921.0	10,406.5	5,808.0	97.0	97.7	-81.23	5,081.5	-1,106.8	727.3	533.1	194.13	3.746	
10,600.0	5,921.0	10,506.5	5,808.0	98.9	99.6	-81.20	5,181.4	-1,104.9	725.5	527.6	197.89	3.666	
10,700.0	5,921.0	10,606.4	5,808.0	100.8	101.5	-81.18	5,281.4	-1,103.1	723.6	522.0	201.65	3.589	
10,800.0	5,921.0	10,706.4	5,808.0	102.7	103.4	-81.16	5,381.4	-1,101.2	721.8	516.4	205.42	3.514	
10,900.0	5,921.0	10,806.4	5,808.0	104.6	105.3	-81.14	5,481.3	-1,099.4	720.0	510.8	209.18	3.442	
11,000.0	5,921.0	10,906.4	5,808.0	106.5	107.2	-81.11	5,581.3	-1,097.6	718.2	505.2	212.94	3.373	
11,100.0	5,921.0	11,006.4	5,808.0	108.4	109.1	-81.09	5,681.3	-1,095.7	716.4	499.7	216.71	3.306	
11,200.0	5,921.0	11,106.4	5,808.0	110.3	111.0	-81.07	5,781.2	-1,093.9	714.5	494.1	220.47	3.241	
11,300.0	5,921.0	11,206.3	5,808.0	112.2	112.9	-81.05	5,881.2	-1,092.0	712.7	488.5	224.24	3.178	
11,400.0	5,921.0	11,306.3	5,808.0	114.1	114.8	-81.02	5,981.2	-1,090.2	710.9	482.9	228.00	3.118	
11,500.0	5,921.0	11,406.3	5,808.0	116.0	116.7	-81.00	6,081.1	-1,088.4	709.1	477.3	231.77	3.059	
11,600.0	5,921.0	11,506.3	5,808.0	117.9	118.6	-80.98	6,181.1	-1,086.5	707.3	471.7	235.54	3.003	
11,700.0	5,921.0	11,606.3	5,808.0	119.8	120.5	-80.95	6,281.0	-1,084.7	705.4	466.1	239.30	2.948	
11,800.0	5,921.0	11,706.3	5,808.0	121.7	122.5	-80.93	6,381.0	-1,082.8	703.6	460.6	243.07	2.895	
11,900.0	5,921.0	11,806.2	5,808.0	123.6	124.4	-80.91	6,481.0	-1,081.0	701.8	455.0	246.84	2.843	
12,000.0	5,921.0	11,906.2	5,808.0	125.5	126.3	-80.88	6,580.9	-1,079.2	700.0	449.4	250.61	2.793	
12,100.0	5,921.0	12,006.2	5,808.0	127.4	128.2	-80.86	6,680.9	-1,077.3	698.2	443.8	254.38	2.745	
12,200.0	5,921.0	12,106.2	5,808.0	129.3	130.1	-80.83	6,780.9	-1,075.5	696.4	438.2	258.15	2.698	
12,300.0	5,921.0	12,206.2	5,808.0	131.2	132.0	-80.81	6,880.8	-1,073.6	694.5	432.6	261.91	2.652	
12,400.0	5,921.0	12,306.2	5,808.0	133.1	133.9	-80.79	6,980.8	-1,071.8	692.7	427.0	265.68	2.607	
12,500.0	5,921.0	12,406.1	5,808.0	135.0	135.8	-80.76	7,080.8	-1,070.0	690.9	421.4	269.45	2.564	
12,600.0	5,921.0	12,506.1	5,808.0	137.0	137.7	-80.74	7,180.7	-1,068.1	689.1	415.9	273.22	2.522	
12,700.0	5,921.0	12,606.1	5,808.0	138.9	139.6	-80.71	7,280.7	-1,066.3	687.3	410.3	276.99	2.481	
12,800.0	5,921.0	12,706.1	5,808.0	140.8	141.5	-80.69	7,380.7	-1,064.4	685.4	404.7	280.76	2.441	
12,900.0	5,921.0	12,806.1	5,808.0	142.7	143.4	-80.66	7,480.6	-1,062.6	683.6	399.1	284.53	2.403	
13,000.0	5,921.0	12,906.0	5,808.0	144.6	145.3	-80.64	7,580.6	-1,060.7	681.8	393.5	288.30	2.365	
13,100.0	5,921.0	13,006.0	5,808.0	146.5	147.2	-80.61	7,680.6	-1,058.9	680.0	387.9	292.06	2.328	
13,200.0	5,921.0	13,106.0	5,808.0	148.4	149.2	-80.59	7,780.5	-1,057.1	678.2	382.3	295.83	2.292	
13,300.0	5,921.0	13,206.0	5,808.0	150.3	151.1	-80.56	7,880.5	-1,055.2	676.4	376.8	299.60	2.258	
13,400.0	5,921.0	13,306.0	5,808.0	152.2	153.0	-80.54	7,980.5	-1,053.4	674.5	371.2	303.37	2.224	
13,500.0	5,921.0	13,406.0	5,808.0	154.1	154.9	-80.51	8,080.4	-1,051.5	672.7	365.6	307.14	2.190	
13,600.0	5,921.0	13,505.9	5,808.0	156.0	156.8	-80.48	8,180.4	-1,049.7	670.9	360.0	310.90	2.158	
13,700.0	5,921.0	13,605.9	5,808.0	157.9	158.7	-80.46	8,280.4	-1,047.9	669.1	354.4	314.67	2.126	
13,737.7	5,921.0	13,631.8	5,808.0	158.7	159.2	-80.45	8,306.3	-1,047.4	668.5	352.6	315.88	2.116 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0904B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	-95.12	-99.1	-1,105.3	1,109.8					
100.0	100.0	97.9	97.9	0.1	0.1	-95.12	-99.1	-1,105.3	1,109.8	1,109.6	0.19	5,994.526		
200.0	200.0	197.9	197.9	0.3	0.3	-95.12	-99.1	-1,105.3	1,109.8	1,109.1	0.63	1,756.219		
300.0	300.0	297.9	297.9	0.5	0.5	-95.12	-99.1	-1,105.3	1,109.8	1,108.7	1.08	1,026.188		
400.0	400.0	397.9	397.9	0.8	0.8	-95.12	-99.1	-1,105.3	1,109.8	1,108.2	1.53	724.872		
500.0	500.0	497.9	497.9	1.0	1.0	-95.12	-99.1	-1,105.3	1,109.8	1,107.8	1.98	560.342		
600.0	600.0	597.9	597.9	1.2	1.2	-76.03	-99.1	-1,105.3	1,109.3	1,106.9	2.43	456.714		
700.0	699.8	697.7	697.7	1.4	1.4	-76.32	-99.1	-1,105.3	1,108.1	1,105.2	2.88	384.733		
800.0	799.6	797.5	797.5	1.7	1.7	-76.67	-99.1	-1,105.3	1,106.4	1,103.1	3.34	331.337		
900.0	899.4	897.2	897.2	1.9	1.9	-77.02	-99.1	-1,105.3	1,104.8	1,101.0	3.80	290.426		
1,000.0	999.1	997.0	997.0	2.2	2.1	-77.37	-99.1	-1,105.3	1,103.3	1,099.0	4.27	258.200		
1,100.0	1,098.9	1,096.8	1,096.8	2.4	2.3	-77.72	-99.1	-1,105.3	1,101.8	1,097.0	4.74	232.221		
1,200.0	1,198.6	1,212.1	1,212.1	2.7	2.6	-78.03	-97.0	-1,104.8	1,099.6	1,094.4	5.25	209.364		
1,300.0	1,298.4	1,324.3	1,324.1	2.9	2.8	-78.11	-90.7	-1,103.2	1,096.1	1,090.3	5.76	190.440		
1,400.0	1,398.1	1,424.2	1,423.7	3.2	3.1	-78.13	-83.9	-1,101.5	1,092.1	1,085.9	6.24	175.125		
1,500.0	1,497.9	1,524.1	1,523.4	3.4	3.3	-78.14	-77.2	-1,099.8	1,088.1	1,081.4	6.72	161.900		
1,600.0	1,597.6	1,624.0	1,623.1	3.7	3.5	-78.16	-70.4	-1,098.1	1,084.1	1,076.9	7.21	150.376		
1,700.0	1,697.4	1,724.0	1,722.8	3.9	3.8	-78.18	-63.6	-1,096.4	1,080.2	1,072.5	7.70	140.258		
1,800.0	1,797.2	1,823.9	1,822.4	4.2	4.0	-78.20	-56.9	-1,094.7	1,076.2	1,068.0	8.20	131.314		
1,900.0	1,896.9	1,923.8	1,922.1	4.4	4.3	-78.22	-50.1	-1,093.0	1,072.2	1,063.5	8.69	123.357		
2,000.0	1,996.7	2,023.7	2,021.8	4.7	4.5	-78.23	-43.4	-1,091.3	1,068.2	1,059.0	9.19	116.237		
2,100.0	2,096.4	2,123.6	2,121.5	4.9	4.8	-78.25	-36.6	-1,089.6	1,064.2	1,054.5	9.69	109.832		
2,200.0	2,196.2	2,223.6	2,221.1	5.2	5.0	-78.27	-29.8	-1,087.9	1,060.3	1,050.1	10.19	104.041		
2,300.0	2,295.9	2,323.5	2,320.8	5.4	5.2	-78.29	-23.1	-1,086.2	1,056.3	1,045.6	10.69	98.783		
2,400.0	2,395.7	2,423.4	2,420.5	5.7	5.5	-78.31	-16.3	-1,084.5	1,052.3	1,041.1	11.20	93.987		
2,500.0	2,495.5	2,523.3	2,520.2	6.0	5.7	-78.33	-9.6	-1,082.8	1,048.3	1,036.6	11.70	89.598		
2,600.0	2,595.2	2,623.2	2,619.9	6.2	6.0	-78.34	-2.8	-1,081.1	1,044.3	1,032.1	12.21	85.565		
2,700.0	2,695.0	2,723.2	2,719.5	6.5	6.2	-78.36	4.0	-1,079.4	1,040.4	1,027.6	12.71	81.848		
2,800.0	2,794.7	2,823.1	2,819.2	6.7	6.5	-78.38	10.7	-1,077.8	1,036.4	1,023.2	13.22	78.412		
2,900.0	2,894.5	2,923.0	2,918.9	7.0	6.7	-78.40	17.5	-1,076.1	1,032.4	1,018.7	13.72	75.226		
3,000.0	2,994.2	3,022.9	3,018.6	7.2	7.0	-78.42	24.2	-1,074.4	1,028.4	1,014.2	14.23	72.264		
3,100.0	3,094.0	3,122.8	3,118.2	7.5	7.2	-78.44	31.0	-1,072.7	1,024.4	1,009.7	14.74	69.504		
3,200.0	3,193.7	3,222.8	3,217.9	7.7	7.5	-78.46	37.8	-1,071.0	1,020.5	1,005.2	15.25	66.926		
3,300.0	3,293.5	3,322.7	3,317.6	8.0	7.7	-78.48	44.5	-1,069.3	1,016.5	1,000.7	15.76	64.513		
3,400.0	3,393.3	3,422.6	3,417.3	8.3	8.0	-78.50	51.3	-1,067.6	1,012.5	996.2	16.27	62.249		
3,500.0	3,493.0	3,522.5	3,516.9	8.5	8.3	-78.52	58.0	-1,065.9	1,008.5	991.8	16.78	60.121		
3,600.0	3,592.8	3,622.4	3,616.6	8.8	8.5	-78.54	64.8	-1,064.2	1,004.5	987.3	17.28	58.117		
3,700.0	3,692.5	3,722.4	3,716.3	9.0	8.8	-78.56	71.6	-1,062.5	1,000.6	982.8	17.80	56.228		
3,800.0	3,792.3	3,822.3	3,816.0	9.3	9.0	-78.58	78.3	-1,060.8	996.6	978.3	18.31	54.442		
3,900.0	3,892.0	3,922.2	3,915.6	9.5	9.3	-78.60	85.1	-1,059.1	992.6	973.8	18.82	52.753		
4,000.0	3,991.8	4,022.1	4,015.3	9.8	9.5	-78.62	91.8	-1,057.4	988.6	969.3	19.33	51.153		
4,100.0	4,091.6	4,122.0	4,115.0	10.1	9.8	-78.64	98.6	-1,055.7	984.7	964.8	19.84	49.634		
4,200.0	4,191.3	4,222.0	4,214.7	10.3	10.0	-78.67	105.4	-1,054.0	980.7	960.3	20.35	48.191		
4,300.0	4,291.1	4,321.9	4,314.4	10.6	10.3	-78.69	112.1	-1,052.3	976.7	955.8	20.86	46.818		
4,400.0	4,390.8	4,421.8	4,414.0	10.8	10.5	-78.71	118.9	-1,050.6	972.7	951.4	21.37	45.511		
4,500.0	4,490.6	4,521.7	4,513.7	11.1	10.8	-78.73	125.6	-1,048.9	968.7	946.9	21.89	44.264		
4,600.0	4,590.3	4,621.6	4,613.4	11.3	11.0	-78.75	132.4	-1,047.2	964.8	942.4	22.40	43.074		
4,700.0	4,690.1	4,721.6	4,713.1	11.6	11.3	-78.78	139.2	-1,045.5	960.8	937.9	22.91	41.936		
4,800.0	4,789.9	4,821.5	4,812.7	11.9	11.6	-78.80	145.9	-1,043.8	956.8	933.4	23.42	40.849		
4,900.0	4,889.6	4,921.4	4,912.4	12.1	11.8	-78.82	152.7	-1,042.1	952.8	928.9	23.94	39.807		
5,000.0	4,989.4	5,021.3	5,012.1	12.4	12.1	-78.84	159.4	-1,040.4	948.9	924.4	24.45	38.809		
5,100.0	5,089.1	5,121.2	5,111.8	12.6	12.3	-78.87	166.2	-1,038.7	944.9	919.9	24.96	37.852		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0904B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,188.9	5,221.2	5,211.4	12.9	12.6	-78.89	173.0	-1,037.0	940.9	915.4	25.48	36.933		
5,300.0	5,288.6	5,321.1	5,311.1	13.1	12.8	-78.91	179.7	-1,035.3	936.9	910.9	25.99	36.050		
5,400.0	5,388.4	5,427.9	5,417.7	13.4	13.1	-78.93	187.0	-1,033.5	932.9	906.4	26.52	35.174		
5,500.0	5,487.9	5,520.4	5,510.2	13.7	13.4	-78.95	194.1	-1,031.7	928.9	902.4	27.04	34.309		
5,600.0	5,584.2	5,616.4	5,603.6	14.1	13.7	-78.97	201.2	-1,029.9	924.9	897.9	27.56	33.444		
5,700.0	5,673.8	5,705.9	5,690.1	14.7	14.1	-78.99	208.3	-1,028.1	920.9	893.9	28.08	32.579		
5,800.0	5,753.4	5,785.9	5,767.1	15.5	14.7	-79.01	215.4	-1,026.3	916.9	889.9	28.60	31.714		
5,900.0	5,819.9	5,852.4	5,831.1	16.4	15.5	-79.03	222.5	-1,024.5	912.9	885.9	29.12	30.849		
6,000.0	5,871.0	5,903.9	5,880.1	17.6	16.7	-79.05	229.6	-1,022.7	908.9	881.9	29.64	30.000		
6,100.0	5,904.9	5,937.4	5,912.1	19.0	18.1	-79.07	236.7	-1,020.9	904.9	877.9	30.16	29.151		
6,200.0	5,920.1	5,952.9	5,924.1	20.5	19.6	-79.09	243.8	-1,019.1	900.9	873.9	30.68	28.302		
6,300.0	5,921.0	5,953.5	5,924.0	22.0	21.1	-79.11	250.9	-1,017.3	896.9	869.9	31.20	27.453		
6,400.0	5,921.0	5,952.2	5,922.0	23.4	22.5	-79.12	257.0	-1,015.5	892.9	865.9	31.72	26.604		
6,500.0	5,921.0	5,950.0	5,920.0	25.0	24.1	-79.14	264.1	-1,013.7	888.9	861.9	32.24	25.755		
6,600.0	5,921.0	5,947.8	5,918.0	26.5	25.6	-79.15	270.2	-1,011.9	884.9	857.9	32.76	24.906		
6,700.0	5,921.0	5,945.6	5,916.0	28.1	27.1	-79.17	277.3	-1,010.1	880.9	853.9	33.28	24.057		
6,800.0	5,921.0	5,943.4	5,914.0	29.7	28.7	-79.18	284.4	-1,008.3	876.9	849.9	33.80	23.208		
6,900.0	5,921.0	5,941.2	5,912.0	31.2	30.2	-79.20	291.5	-1,006.5	872.9	845.9	34.32	22.359		
7,000.0	5,921.0	5,939.0	5,910.0	32.9	31.7	-79.21	298.6	-1,004.7	868.9	841.9	34.84	21.510		
7,100.0	5,921.0	5,936.8	5,908.0	34.5	33.3	-79.23	305.7	-1,002.9	864.9	837.9	35.36	20.661		
7,200.0	5,921.0	5,934.6	5,906.0	36.2	35.0	-79.24	312.8	-1,001.1	860.9	833.9	35.88	19.812		
7,300.0	5,921.0	5,932.4	5,904.0	38.0	36.8	-79.26	320.0	-999.3	856.9	829.9	36.40	18.963		
7,400.0	5,921.0	5,930.2	5,902.0	39.7	38.5	-79.27	327.1	-997.5	852.9	825.9	36.92	18.114		
7,500.0	5,921.0	5,928.0	5,900.0	41.5	40.3	-79.29	334.2	-995.7	848.9	821.9	37.44	17.265		
7,600.0	5,921.0	5,925.8	5,898.0	43.2	42.1	-79.30	341.3	-993.9	844.9	817.9	37.96	16.416		
7,700.0	5,921.0	5,923.6	5,896.0	45.0	43.9	-79.32	348.4	-992.1	840.9	813.9	38.48	15.567		
7,800.0	5,921.0	5,921.4	5,894.0	46.8	45.7	-79.33	355.5	-990.3	836.9	809.9	39.00	14.718		
7,900.0	5,921.0	5,919.2	5,892.0	48.6	47.5	-79.35	362.6	-988.5	832.9	805.9	39.52	13.869		
8,000.0	5,921.0	5,917.0	5,890.0	50.4	49.3	-79.36	369.7	-986.7	828.9	801.9	40.04	13.020		
8,100.0	5,921.0	5,914.8	5,888.0	52.2	51.1	-79.38	376.8	-984.9	824.9	797.9	40.56	12.171		
8,200.0	5,921.0	5,912.6	5,886.0	54.0	52.9	-79.39	383.9	-983.1	820.9	793.9	41.08	11.322		
8,300.0	5,921.0	5,910.4	5,884.0	55.9	54.7	-79.41	391.0	-981.3	816.9	789.9	41.60	10.473		
8,400.0	5,921.0	5,908.2	5,882.0	57.7	56.5	-79.42	398.1	-979.5	812.9	785.9	42.12	9.624		
8,500.0	5,921.0	5,906.0	5,880.0	59.5	58.3	-79.44	405.2	-977.7	808.9	781.9	42.64	8.775		
8,600.0	5,921.0	5,903.8	5,878.0	61.4	60.2	-79.45	412.3	-975.9	804.9	777.9	43.16	7.926		
8,700.0	5,921.0	5,901.6	5,876.0	63.2	62.0	-79.47	419.4	-974.1	800.9	773.9	43.68	7.077		
8,800.0	5,921.0	5,899.4	5,874.0	65.1	63.9	-79.48	426.5	-972.3	796.9	769.9	44.20	6.228		
8,900.0	5,921.0	5,897.2	5,872.0	67.0	65.7	-79.50	433.6	-970.5	792.9	765.9	44.72	5.379		
9,000.0	5,921.0	5,895.0	5,870.0	68.8	67.5	-79.51	440.7	-968.7	788.9	761.9	45.24	4.530		
9,100.0	5,921.0	5,892.8	5,868.0	70.7	69.4	-79.53	447.8	-966.9	784.9	757.9	45.76	3.681		
9,200.0	5,921.0	5,890.6	5,866.0	72.6	71.3	-79.54	454.9	-965.1	780.9	753.9	46.28	2.832		
9,300.0	5,921.0	5,888.4	5,864.0	74.4	73.1	-79.56	462.0	-963.3	776.9	749.9	46.80	1.983		
9,400.0	5,921.0	5,886.2	5,862.0	76.3	75.0	-79.57	469.1	-961.5	772.9	745.9	47.32	1.134		
9,500.0	5,921.0	5,884.0	5,860.0	78.2	76.8	-79.59	476.2	-959.7	768.9	741.9	47.84	0.285		
9,600.0	5,921.0	5,881.8	5,858.0	80.1	78.7	-79.60	483.3	-957.9	764.9	737.9	48.36	-0.564		
9,700.0	5,921.0	5,879.6	5,856.0	81.9	80.5	-79.62	490.4	-956.1	760.9	733.9	48.88	-1.415		
9,800.0	5,921.0	5,877.4	5,854.0	83.8	82.4	-79.63	497.5	-954.3	756.9	729.9	49.40	-2.266		
9,900.0	5,921.0	5,875.2	5,852.0	85.7	84.3	-79.65	504.6	-952.5	752.9	725.9	49.92	-3.117		
10,000.0	5,921.0	5,873.0	5,850.0	87.6	86.2	-79.66	511.7	-950.7	748.9	721.9	50.44	-3.968		
10,100.0	5,921.0	5,870.8	5,848.0	89.5	88.1	-79.68	518.8	-948.9	744.9	717.9	50.96	-4.819		
10,200.0	5,921.0	5,868.6	5,846.0	91.4	90.0	-79.69	525.9	-947.1	740.9	713.9	51.48	-5.670		
10,300.0	5,921.0	5,866.4	5,844.0	93.2	91.9	-79.71	533.0	-945.3	736.9	709.9	52.00	-6.521		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0905A
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4861.0usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17' @ 4861.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21C-0905A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S21-T10N-R58W - Razor #21D-0904B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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			
10,400.0	5,921.0	10,490.1	5,892.0	95.1	96.5	-86.07	4,975.4	-779.0	391.9	197.8	194.05	2.019		
10,500.0	5,921.0	10,590.1	5,892.0	97.0	98.4	-86.05	5,075.4	-777.2	390.0	192.2	197.84	1.971		
10,600.0	5,921.0	10,690.0	5,892.0	98.9	100.3	-86.03	5,175.4	-775.3	388.2	186.6	201.63	1.925		
10,700.0	5,921.0	10,790.0	5,892.0	100.8	102.2	-86.01	5,275.3	-773.5	386.4	180.9	205.43	1.881		
10,800.0	5,921.0	10,890.0	5,892.0	102.7	104.1	-85.99	5,375.3	-771.6	384.5	175.3	209.23	1.838		
10,900.0	5,921.0	10,990.0	5,892.0	104.6	106.0	-85.97	5,475.3	-769.8	382.7	169.7	213.02	1.796		
11,000.0	5,921.0	11,090.0	5,892.0	106.5	107.9	-85.95	5,575.2	-767.9	380.8	164.0	216.82	1.756		
11,100.0	5,921.0	11,190.0	5,892.0	108.4	109.8	-85.93	5,675.2	-766.1	379.0	158.4	220.62	1.718		
11,200.0	5,921.0	11,289.9	5,892.0	110.3	111.7	-85.91	5,775.2	-764.3	377.2	152.7	224.42	1.681		
11,300.0	5,921.0	11,389.9	5,892.0	112.2	113.6	-85.89	5,875.1	-762.4	375.3	147.1	228.23	1.645		
11,400.0	5,921.0	11,489.9	5,892.0	114.1	115.5	-85.87	5,975.1	-760.6	373.5	141.5	232.03	1.610		
11,500.0	5,921.0	11,589.9	5,892.0	116.0	117.4	-85.85	6,075.1	-758.7	371.7	135.8	235.83	1.576		
11,600.0	5,921.0	11,689.9	5,892.0	117.9	119.3	-85.83	6,175.0	-756.9	369.8	130.2	239.64	1.543		
11,700.0	5,921.0	11,789.9	5,892.0	119.8	121.2	-85.81	6,275.0	-755.1	368.0	124.5	243.44	1.512		
11,800.0	5,921.0	11,889.8	5,892.0	121.7	123.1	-85.79	6,375.0	-753.2	366.1	118.9	247.25	1.481 Level 3		
11,900.0	5,921.0	11,989.8	5,892.0	123.6	125.0	-85.77	6,474.9	-751.4	364.3	113.2	251.05	1.451 Level 3		
12,000.0	5,921.0	12,089.8	5,892.0	125.5	126.9	-85.74	6,574.9	-749.5	362.5	107.6	254.86	1.422 Level 3		
12,100.0	5,921.0	12,189.8	5,892.0	127.4	128.8	-85.72	6,674.9	-747.7	360.6	102.0	258.67	1.394 Level 3		
12,200.0	5,921.0	12,289.8	5,892.0	129.3	130.7	-85.70	6,774.8	-745.8	358.8	96.3	262.48	1.367 Level 3		
12,300.0	5,921.0	12,389.8	5,892.0	131.2	132.6	-85.68	6,874.8	-744.0	356.9	90.7	266.28	1.340 Level 3		
12,400.0	5,921.0	12,489.7	5,892.0	133.1	134.5	-85.66	6,974.7	-742.2	355.1	85.0	270.09	1.315 Level 3		
12,500.0	5,921.0	12,589.7	5,892.0	135.0	136.4	-85.63	7,074.7	-740.3	353.3	79.4	273.90	1.290 Level 3		
12,600.0	5,921.0	12,689.7	5,892.0	137.0	138.3	-85.61	7,174.7	-738.5	351.4	73.7	277.71	1.265 Level 3		
12,700.0	5,921.0	12,789.7	5,892.0	138.9	140.2	-85.59	7,274.6	-736.6	349.6	68.1	281.52	1.242 Level 2		
12,800.0	5,921.0	12,889.7	5,892.0	140.8	142.2	-85.56	7,374.6	-734.8	347.8	62.4	285.33	1.219 Level 2		
12,900.0	5,921.0	12,989.7	5,892.0	142.7	144.1	-85.54	7,474.6	-732.9	345.9	56.8	289.14	1.196 Level 2		
13,000.0	5,921.0	13,089.6	5,892.0	144.6	146.0	-85.52	7,574.5	-731.1	344.1	51.1	292.95	1.175 Level 2		
13,100.0	5,921.0	13,189.6	5,892.0	146.5	147.9	-85.49	7,674.5	-729.3	342.2	45.5	296.76	1.153 Level 2		
13,200.0	5,921.0	13,289.6	5,892.0	148.4	149.8	-85.47	7,774.5	-727.4	340.4	39.8	300.57	1.133 Level 2		
13,300.0	5,921.0	13,389.6	5,892.0	150.3	151.7	-85.44	7,874.4	-725.6	338.6	34.2	304.38	1.112 Level 2		
13,400.0	5,921.0	13,489.6	5,892.0	152.2	153.6	-85.42	7,974.4	-723.7	336.7	28.5	308.19	1.093 Level 2		
13,500.0	5,921.0	13,589.6	5,892.0	154.1	155.5	-85.39	8,074.4	-721.9	334.9	22.9	312.00	1.073 Level 2		
13,600.0	5,921.0	13,689.5	5,892.0	156.0	157.4	-85.37	8,174.3	-720.1	333.1	17.2	315.82	1.055 Level 2		
13,700.0	5,921.0	13,789.5	5,892.0	157.9	159.3	-85.34	8,274.3	-718.2	331.2	11.6	319.63	1.036 Level 2		
13,737.7	5,921.0	13,821.2	5,892.0	158.7	159.9	-85.33	8,305.9	-717.6	330.6	9.6	320.95	1.030 Level 2, CC, ES, SF		

Cathedral Energy Services

Anticollision Report

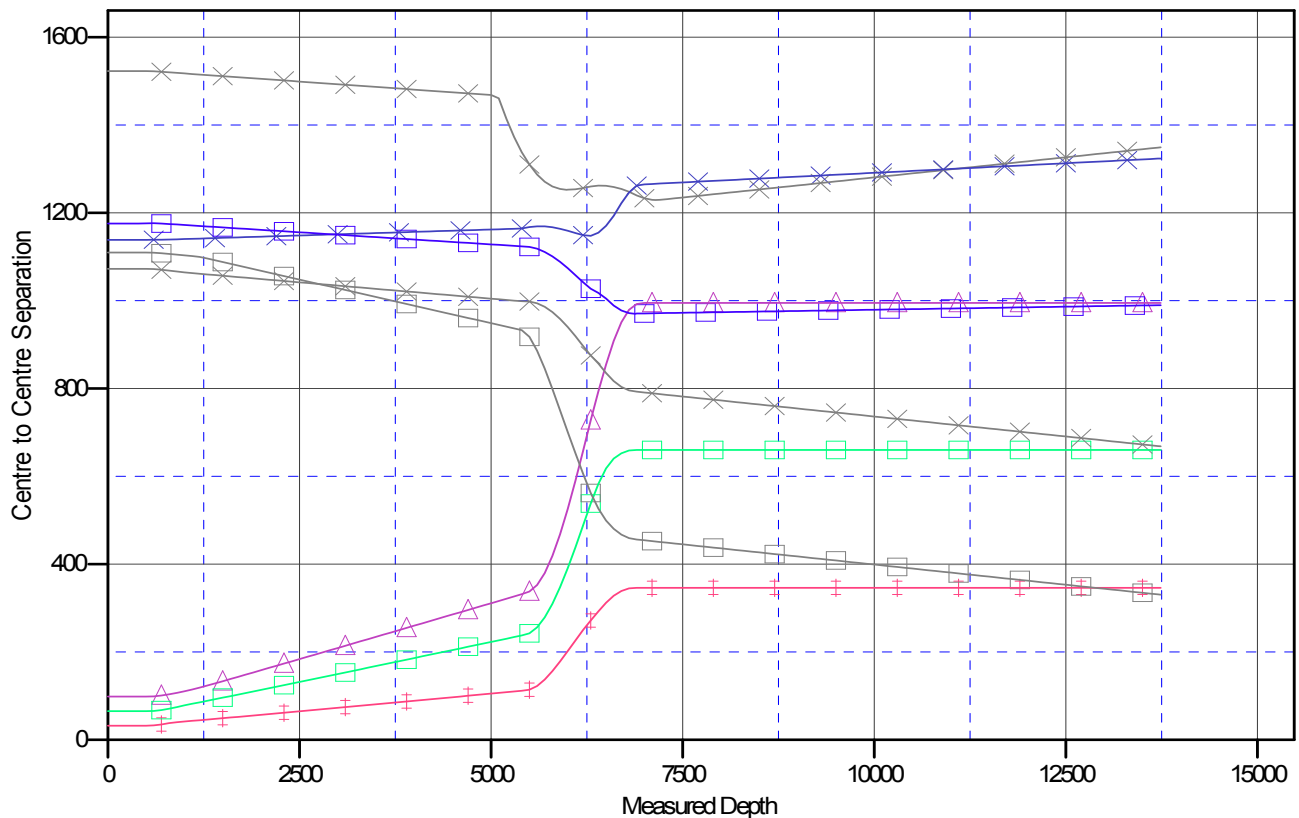
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Reference Site: S21-T10N-R58W
Site Error: 0.0usft
Reference Well: Razor #21C-0905A
Well Error: 0.0usft
Reference Wellbore: HZ
Reference Design: Plan #2

Local Co-ordinate Reference: Well Razor #21C-0905A
TVD Reference: KB=17' @ 4861.0usft
MD Reference: KB=17' @ 4861.0usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=17' @ 4861.0usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Razor #21C-0905A
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.05°

Ladder Plot



LEGEND

+ Razor #21C-0906B, HZ, Plan #2 V0 x Razor #21B-0909A, HZ, Plan #1 V0 x Razor #21D-0903A, HZ, Plan #1 V0
 + Razor #21C-0908B, HZ, Plan #2 V0 x Razor #21D-0901A, HZ, Plan #2 V0 x Razor #21D-0904B, HZ, Plan #1 V0
 + Razor #21C-0907A, HZ, Plan #2 V0 x Razor #21D-0902B, HZ, Plan #2 V0