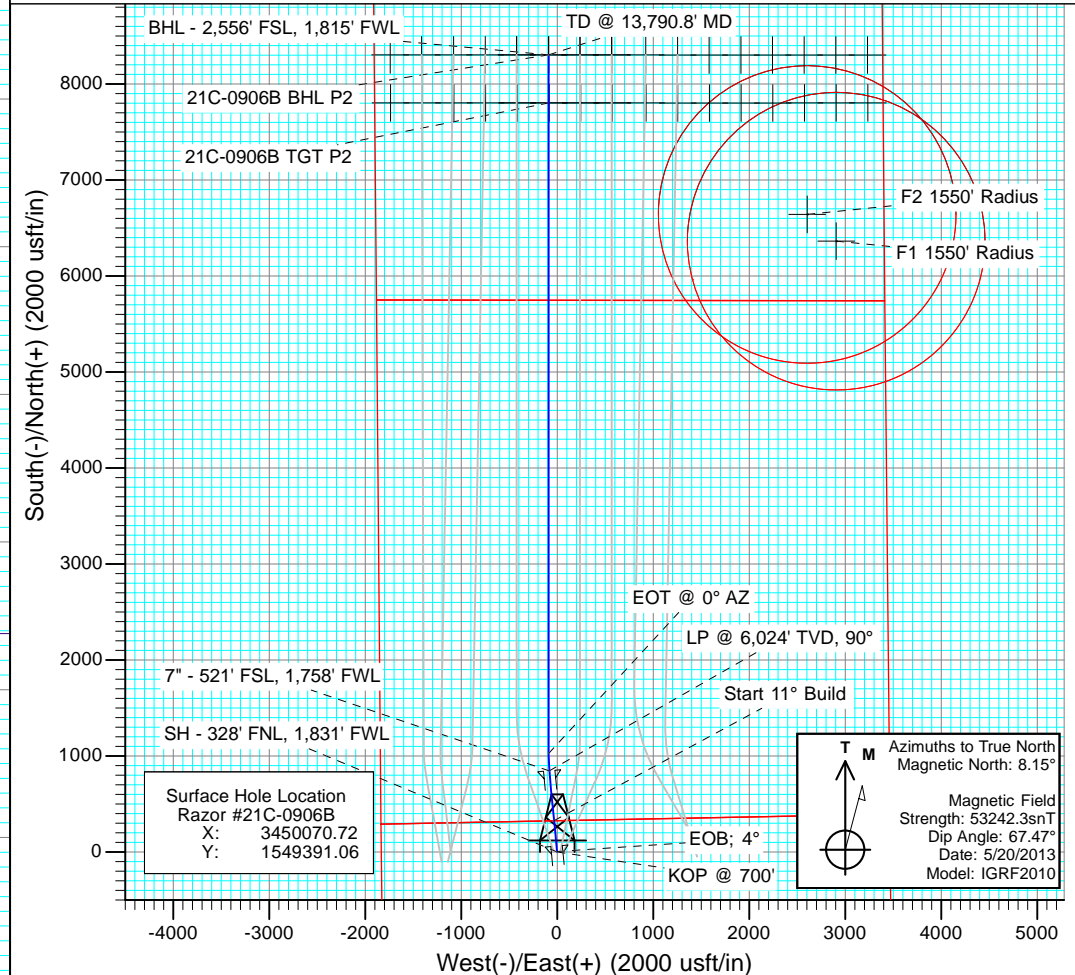
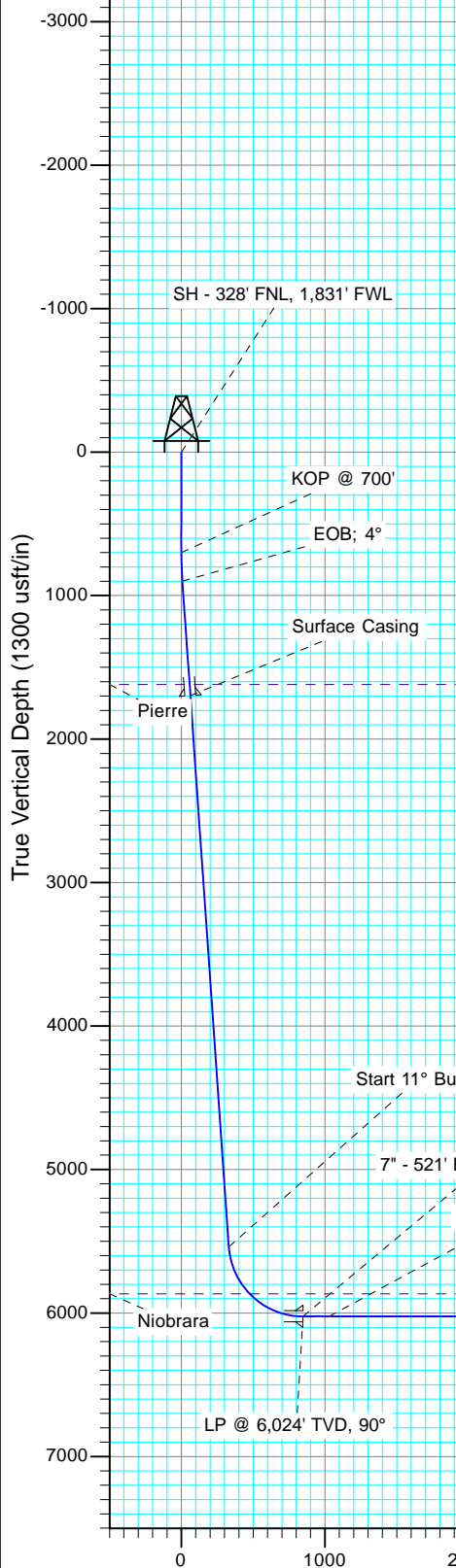


Plan #2
 Razor #21C-0906B
 KB=17' @ 4861.0usft
 Ground Elevation @ 4844.0
 North American Datum 1983
 Well Razor #21C-0906B, True North

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	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	900.0	4.00	354.52	899.8	6.9	-0.7	2.00	354.52	7.0	
4	5551.0	4.00	354.52	5539.5	329.9	-31.6	0.00	0.00	330.2	
5	6332.8	90.00	354.53	6024.0	847.1	-81.2	11.00	0.01	848.0	
6	6515.1	90.00	360.00	6024.0	1029.2	-89.9	3.00	90.00	1030.1	
7	13790.8	90.00	360.00	6024.0	8304.8	-89.9	0.00	0.00	8305.3	21C-0906B BHL P2



DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
21C-0906B BHL P2	6024.0	8304.8	-89.9	1557692.86	3449828.51
21C-0906B TGT P2	6024.0	7805.0	-85.5	1557193.14	3449842.10

Vertical Section at 359.38° (1300 usft/in)

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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-0906B					
Well Position	+N/-S	0.0 usft	Northing:	1,549,391.06 usft	Latitude:	40.830128
	+E/-W	0.0 usft	Easting:	3,450,070.72 usft	Longitude:	-103.873597
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	359.38

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	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	4.00	354.52	899.8	6.9	-0.7	2.00	2.00	0.00	354.52	
5,551.0	4.00	354.52	5,539.5	329.9	-31.6	0.00	0.00	0.00	0.00	
6,332.8	90.00	354.53	6,024.0	847.1	-81.2	11.00	11.00	0.00	0.01	
6,515.1	90.00	360.00	6,024.0	1,029.2	-89.9	3.00	0.00	3.00	90.00	
13,790.8	90.00	360.00	6,024.0	8,304.8	-89.9	0.00	0.00	0.00	0.00	21C-0906B BHL P2

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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, 1,831' 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	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	KOP @ 700'
800.0	2.00	354.52	800.0	1.7	-0.2	1.7	2.00	2.00	
900.0	4.00	354.52	899.8	6.9	-0.7	7.0	2.00	2.00	EOB; 4°
1,000.0	4.00	354.52	999.6	13.9	-1.3	13.9	0.00	0.00	
1,100.0	4.00	354.52	1,099.4	20.8	-2.0	20.9	0.00	0.00	
1,200.0	4.00	354.52	1,199.1	27.8	-2.7	27.8	0.00	0.00	
1,300.0	4.00	354.52	1,298.9	34.7	-3.3	34.8	0.00	0.00	
1,400.0	4.00	354.52	1,398.6	41.7	-4.0	41.7	0.00	0.00	
1,500.0	4.00	354.52	1,498.4	48.6	-4.7	48.7	0.00	0.00	
1,600.0	4.00	354.52	1,598.1	55.6	-5.3	55.6	0.00	0.00	
1,621.9	4.00	354.52	1,620.0	57.1	-5.5	57.1	0.00	0.00	Pierre
1,700.0	4.00	354.52	1,697.9	62.5	-6.0	62.6	0.00	0.00	Surface Casing
1,800.0	4.00	354.52	1,797.6	69.4	-6.7	69.5	0.00	0.00	
1,900.0	4.00	354.52	1,897.4	76.4	-7.3	76.5	0.00	0.00	
2,000.0	4.00	354.52	1,997.2	83.3	-8.0	83.4	0.00	0.00	
2,100.0	4.00	354.52	2,096.9	90.3	-8.7	90.4	0.00	0.00	
2,200.0	4.00	354.52	2,196.7	97.2	-9.3	97.3	0.00	0.00	
2,300.0	4.00	354.52	2,296.4	104.2	-10.0	104.3	0.00	0.00	
2,400.0	4.00	354.52	2,396.2	111.1	-10.7	111.2	0.00	0.00	
2,500.0	4.00	354.52	2,495.9	118.0	-11.3	118.2	0.00	0.00	
2,600.0	4.00	354.52	2,595.7	125.0	-12.0	125.1	0.00	0.00	
2,700.0	4.00	354.52	2,695.5	131.9	-12.7	132.1	0.00	0.00	
2,800.0	4.00	354.52	2,795.2	138.9	-13.3	139.0	0.00	0.00	
2,900.0	4.00	354.52	2,895.0	145.8	-14.0	146.0	0.00	0.00	
3,000.0	4.00	354.52	2,994.7	152.8	-14.7	152.9	0.00	0.00	
3,100.0	4.00	354.52	3,094.5	159.7	-15.3	159.9	0.00	0.00	
3,200.0	4.00	354.52	3,194.2	166.7	-16.0	166.8	0.00	0.00	
3,300.0	4.00	354.52	3,294.0	173.6	-16.7	173.8	0.00	0.00	
3,400.0	4.00	354.52	3,393.7	180.5	-17.3	180.7	0.00	0.00	
3,500.0	4.00	354.52	3,493.5	187.5	-18.0	187.7	0.00	0.00	
3,600.0	4.00	354.52	3,593.3	194.4	-18.7	194.6	0.00	0.00	
3,700.0	4.00	354.52	3,693.0	201.4	-19.3	201.6	0.00	0.00	
3,800.0	4.00	354.52	3,792.8	208.3	-20.0	208.5	0.00	0.00	
3,900.0	4.00	354.52	3,892.5	215.3	-20.7	215.5	0.00	0.00	
4,000.0	4.00	354.52	3,992.3	222.2	-21.3	222.4	0.00	0.00	
4,100.0	4.00	354.52	4,092.0	229.1	-22.0	229.4	0.00	0.00	
4,200.0	4.00	354.52	4,191.8	236.1	-22.6	236.3	0.00	0.00	
4,300.0	4.00	354.52	4,291.6	243.0	-23.3	243.3	0.00	0.00	
4,400.0	4.00	354.52	4,391.3	250.0	-24.0	250.2	0.00	0.00	
4,500.0	4.00	354.52	4,491.1	256.9	-24.6	257.2	0.00	0.00	
4,600.0	4.00	354.52	4,590.8	263.9	-25.3	264.1	0.00	0.00	
4,700.0	4.00	354.52	4,690.6	270.8	-26.0	271.1	0.00	0.00	
4,800.0	4.00	354.52	4,790.3	277.8	-26.6	278.0	0.00	0.00	
4,900.0	4.00	354.52	4,890.1	284.7	-27.3	285.0	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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	354.52	4,989.9	291.6	-28.0	291.9	0.00	0.00	
5,100.0	4.00	354.52	5,089.6	298.6	-28.6	298.9	0.00	0.00	
5,200.0	4.00	354.52	5,189.4	305.5	-29.3	305.8	0.00	0.00	
5,300.0	4.00	354.52	5,289.1	312.5	-30.0	312.8	0.00	0.00	
5,400.0	4.00	354.52	5,388.9	319.4	-30.6	319.7	0.00	0.00	
5,500.0	4.00	354.52	5,488.6	326.4	-31.3	326.7	0.00	0.00	
5,551.0	4.00	354.52	5,539.5	329.9	-31.6	330.2	0.00	0.00	Start 11° Build
5,600.0	9.39	354.53	5,588.2	335.6	-32.2	335.9	11.00	11.00	
5,650.0	14.89	354.53	5,637.0	346.0	-33.2	346.4	11.00	11.00	
5,700.0	20.39	354.53	5,684.6	361.1	-34.6	361.5	11.00	11.00	
5,750.0	25.89	354.53	5,730.6	380.7	-36.5	381.1	11.00	11.00	
5,800.0	31.39	354.53	5,774.5	404.5	-38.8	404.9	11.00	11.00	
5,850.0	36.89	354.53	5,815.8	432.4	-41.5	432.9	11.00	11.00	
5,900.0	42.39	354.53	5,854.3	464.2	-44.5	464.6	11.00	11.00	
5,917.4	44.31	354.53	5,867.0	476.1	-45.7	476.6	11.00	11.00	Niobrara
5,950.0	47.89	354.53	5,889.6	499.5	-47.9	499.9	11.00	11.00	
6,000.0	53.39	354.53	5,921.3	537.9	-51.6	538.5	11.00	11.00	
6,050.0	58.89	354.53	5,949.1	579.2	-55.5	579.8	11.00	11.00	
6,100.0	64.39	354.53	5,972.9	623.0	-59.7	623.6	11.00	11.00	
6,150.0	69.89	354.53	5,992.3	668.9	-64.1	669.5	11.00	11.00	
6,200.0	75.39	354.53	6,007.2	716.4	-68.7	717.1	11.00	11.00	
6,250.0	80.89	354.53	6,017.5	765.0	-73.3	765.8	11.00	11.00	
6,300.0	86.39	354.53	6,023.0	814.5	-78.1	815.3	11.00	11.00	
6,332.8	90.00	354.53	6,024.0	847.1	-81.2	847.9	11.00	11.00	LP @ 6,024' TVD, 90° - 7" - 521' FSL, 1,758' Fv
6,400.0	90.00	356.55	6,024.0	914.1	-86.4	915.0	3.00	0.00	
6,500.0	90.00	359.55	6,024.0	1,014.0	-89.8	1,015.0	3.00	0.00	
6,515.1	90.00	360.00	6,024.0	1,029.1	-89.9	1,030.1	3.00	0.00	EOT @ 0° AZ
6,600.0	90.00	360.00	6,024.0	1,114.0	-89.9	1,115.0	0.00	0.00	
6,700.0	90.00	360.00	6,024.0	1,214.0	-89.9	1,214.9	0.00	0.00	
6,800.0	90.00	360.00	6,024.0	1,314.0	-89.9	1,314.9	0.00	0.00	
6,900.0	90.00	360.00	6,024.0	1,414.0	-89.9	1,414.9	0.00	0.00	
7,000.0	90.00	360.00	6,024.0	1,514.0	-89.9	1,514.9	0.00	0.00	
7,100.0	90.00	360.00	6,024.0	1,614.0	-89.9	1,614.9	0.00	0.00	
7,200.0	90.00	360.00	6,024.0	1,714.0	-89.9	1,714.9	0.00	0.00	
7,300.0	90.00	360.00	6,024.0	1,814.0	-89.9	1,814.9	0.00	0.00	
7,400.0	90.00	360.00	6,024.0	1,914.0	-89.9	1,914.9	0.00	0.00	
7,500.0	90.00	360.00	6,024.0	2,014.0	-89.9	2,014.9	0.00	0.00	
7,600.0	90.00	360.00	6,024.0	2,114.0	-89.9	2,114.9	0.00	0.00	
7,700.0	90.00	360.00	6,024.0	2,214.0	-89.9	2,214.9	0.00	0.00	
7,800.0	90.00	360.00	6,024.0	2,314.0	-89.9	2,314.9	0.00	0.00	
7,900.0	90.00	360.00	6,024.0	2,414.0	-89.9	2,414.9	0.00	0.00	
8,000.0	90.00	360.00	6,024.0	2,514.0	-89.9	2,514.9	0.00	0.00	
8,100.0	90.00	360.00	6,024.0	2,614.0	-89.9	2,614.9	0.00	0.00	
8,200.0	90.00	360.00	6,024.0	2,714.0	-89.9	2,714.9	0.00	0.00	
8,300.0	90.00	360.00	6,024.0	2,814.0	-89.9	2,814.9	0.00	0.00	
8,400.0	90.00	360.00	6,024.0	2,914.0	-89.9	2,914.8	0.00	0.00	
8,500.0	90.00	360.00	6,024.0	3,014.0	-89.9	3,014.8	0.00	0.00	
8,600.0	90.00	360.00	6,024.0	3,114.0	-89.9	3,114.8	0.00	0.00	
8,700.0	90.00	360.00	6,024.0	3,214.0	-89.9	3,214.8	0.00	0.00	
8,800.0	90.00	360.00	6,024.0	3,314.0	-89.9	3,314.8	0.00	0.00	
8,900.0	90.00	360.00	6,024.0	3,414.0	-89.9	3,414.8	0.00	0.00	
9,000.0	90.00	360.00	6,024.0	3,514.0	-89.9	3,514.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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
9,100.0	90.00	360.00	6,024.0	3,614.0	-89.9	3,614.8	0.00	0.00	
9,200.0	90.00	360.00	6,024.0	3,714.0	-89.9	3,714.8	0.00	0.00	
9,300.0	90.00	360.00	6,024.0	3,814.0	-89.9	3,814.8	0.00	0.00	
9,400.0	90.00	360.00	6,024.0	3,914.0	-89.9	3,914.8	0.00	0.00	
9,500.0	90.00	360.00	6,024.0	4,014.0	-89.9	4,014.8	0.00	0.00	
9,600.0	90.00	360.00	6,024.0	4,114.0	-89.9	4,114.8	0.00	0.00	
9,700.0	90.00	360.00	6,024.0	4,214.0	-89.9	4,214.8	0.00	0.00	
9,800.0	90.00	360.00	6,024.0	4,314.0	-89.9	4,314.8	0.00	0.00	
9,900.0	90.00	360.00	6,024.0	4,414.0	-89.9	4,414.8	0.00	0.00	
10,000.0	90.00	360.00	6,024.0	4,514.0	-89.9	4,514.8	0.00	0.00	
10,100.0	90.00	360.00	6,024.0	4,614.0	-89.9	4,614.7	0.00	0.00	
10,200.0	90.00	360.00	6,024.0	4,714.0	-89.9	4,714.7	0.00	0.00	
10,300.0	90.00	360.00	6,024.0	4,814.0	-89.9	4,814.7	0.00	0.00	
10,400.0	90.00	360.00	6,024.0	4,914.0	-89.9	4,914.7	0.00	0.00	
10,500.0	90.00	360.00	6,024.0	5,014.0	-89.9	5,014.7	0.00	0.00	
10,600.0	90.00	360.00	6,024.0	5,114.0	-89.9	5,114.7	0.00	0.00	
10,700.0	90.00	360.00	6,024.0	5,214.0	-89.9	5,214.7	0.00	0.00	
10,800.0	90.00	360.00	6,024.0	5,314.0	-89.9	5,314.7	0.00	0.00	
10,900.0	90.00	360.00	6,024.0	5,414.0	-89.9	5,414.7	0.00	0.00	
11,000.0	90.00	360.00	6,024.0	5,514.0	-89.9	5,514.7	0.00	0.00	
11,100.0	90.00	360.00	6,024.0	5,614.0	-89.9	5,614.7	0.00	0.00	
11,200.0	90.00	360.00	6,024.0	5,714.0	-89.9	5,714.7	0.00	0.00	
11,300.0	90.00	360.00	6,024.0	5,814.0	-89.9	5,814.7	0.00	0.00	
11,400.0	90.00	360.00	6,024.0	5,914.0	-89.9	5,914.7	0.00	0.00	
11,500.0	90.00	360.00	6,024.0	6,014.0	-89.9	6,014.7	0.00	0.00	
11,600.0	90.00	360.00	6,024.0	6,114.0	-89.9	6,114.7	0.00	0.00	
11,700.0	90.00	360.00	6,024.0	6,214.0	-89.9	6,214.7	0.00	0.00	
11,800.0	90.00	360.00	6,024.0	6,314.0	-89.9	6,314.6	0.00	0.00	
11,900.0	90.00	360.00	6,024.0	6,414.0	-89.9	6,414.6	0.00	0.00	
12,000.0	90.00	360.00	6,024.0	6,514.0	-89.9	6,514.6	0.00	0.00	
12,100.0	90.00	360.00	6,024.0	6,614.0	-89.9	6,614.6	0.00	0.00	
12,200.0	90.00	360.00	6,024.0	6,714.0	-89.9	6,714.6	0.00	0.00	
12,300.0	90.00	360.00	6,024.0	6,814.0	-89.9	6,814.6	0.00	0.00	
12,400.0	90.00	360.00	6,024.0	6,914.0	-89.9	6,914.6	0.00	0.00	
12,500.0	90.00	360.00	6,024.0	7,014.0	-89.9	7,014.6	0.00	0.00	
12,600.0	90.00	360.00	6,024.0	7,114.0	-89.9	7,114.6	0.00	0.00	
12,700.0	90.00	360.00	6,024.0	7,214.0	-89.9	7,214.6	0.00	0.00	
12,800.0	90.00	360.00	6,024.0	7,314.0	-89.9	7,314.6	0.00	0.00	
12,900.0	90.00	360.00	6,024.0	7,414.0	-89.9	7,414.6	0.00	0.00	
13,000.0	90.00	360.00	6,024.0	7,514.0	-89.9	7,514.6	0.00	0.00	
13,100.0	90.00	360.00	6,024.0	7,614.0	-89.9	7,614.6	0.00	0.00	
13,200.0	90.00	360.00	6,024.0	7,714.0	-89.9	7,714.6	0.00	0.00	
13,300.0	90.00	360.00	6,024.0	7,814.0	-89.9	7,814.6	0.00	0.00	
13,400.0	90.00	360.00	6,024.0	7,914.0	-89.9	7,914.6	0.00	0.00	
13,500.0	90.00	360.00	6,024.0	8,014.0	-89.9	8,014.5	0.00	0.00	
13,600.0	90.00	360.00	6,024.0	8,114.0	-89.9	8,114.5	0.00	0.00	
13,700.0	90.00	360.00	6,024.0	8,214.0	-89.9	8,214.5	0.00	0.00	
13,790.8	90.00	360.00	6,024.0	8,304.8	-89.9	8,305.3	0.00	0.00	TD @ 13,790.8' MD - BHL - 2,556' FSL, 1,815' I

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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-0906B TGT P2	0.00	1.05	6,024.0	7,805.0	-85.5	1,557,193.14	3,449,842.10	40.851550	-103.873906
- plan misses target center by 4.4usft at 13290.9usft MD (6024.0 TVD, 7805.0 N, -89.9 E)									
- Point									
21C-0906B TGT	0.00	1.05	5,892.5	7,805.0	-85.5	1,557,193.14	3,449,842.10	40.851550	-103.873906
- plan misses target center by 131.6usft at 13290.9usft MD (6024.0 TVD, 7805.0 N, -89.9 E)									
- Point									
21C-0906B BHL P2	0.00	1.05	6,024.0	8,304.8	-89.9	1,557,692.86	3,449,828.51	40.852922	-103.873922
- plan hits target center									
- Point									
21C-0906B BHL	0.00	1.05	5,892.5	8,304.8	-89.9	1,557,692.86	3,449,828.51	40.852922	-103.873922
- plan misses target center by 131.5usft at 13790.8usft MD (6024.0 TVD, 8304.8 N, -89.9 E)									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(usft)	(usft)	Name	(")	(")
	6,332.8	6,024.0	7" - 521' FSL, 1,758' FWL	0	0
	1,700.0	1,697.9	Surface Casing	0	0

Formations					
	Measured Depth	Vertical Depth		Dip	Dip Direction
	(usft)	(usft)	Name	(°)	(°)
	1,621.9	1,620.0	Pierre	0.00	
	5,917.4	5,867.0	Niobrara		

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, 1,831' FWL
	700.0	700.0	0.0	0.0	KOP @ 700'
	900.0	899.8	6.9	-0.7	EOB; 4°
	5,551.0	5,539.5	329.9	-31.6	Start 11° Build
	6,332.8	6,024.0	847.1	-81.2	LP @ 6,024' TVD, 90°
	6,515.1	6,024.0	1,029.1	-89.9	EOT @ 0° AZ
	13,790.8	6,024.0	8,304.8	-89.9	TD @ 13,790.8' MD
	13,790.8	6,024.0	8,304.8	-89.9	BHL - 2,556' FSL, 1,815' FWL

Whiting Petroleum Corporation

Weld County, CO

S21-T10N-R58W

Razor #21C-0906B

HZ

Plan #2

Anticollision Report

31 March, 2014

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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	13,790.8	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	7,198.6	7,100.0	920.4	850.8	13.217	CC
Razor #21B-0909A - HZ - Plan #1	13,790.8	13,674.6	1,037.9	727.1	3.340	ES, SF
Razor #21B-0910B - HZ - Plan #1	6,804.0	6,757.0	1,223.8	1,166.9	21.495	CC
Razor #21B-0910B - HZ - Plan #1	13,790.8	13,720.3	1,350.9	1,034.5	4.269	ES, SF
Razor #21C-0905A - HZ - Plan #2	466.7	466.7	32.4	30.6	17.657	CC
Razor #21C-0905A - HZ - Plan #2	500.0	500.0	32.4	30.4	16.324	ES
Razor #21C-0905A - HZ - Plan #2	13,790.8	13,737.7	346.3	40.9	1.134	Level 2, SF
Razor #21C-0907A - HZ - Plan #2	700.0	700.0	32.9	30.0	11.420	CC
Razor #21C-0907A - HZ - Plan #2	800.0	800.0	33.1	29.8	9.947	ES
Razor #21C-0907A - HZ - Plan #2	13,790.8	13,723.8	345.2	40.4	1.132	Level 2, SF
Razor #21C-0908B - HZ - Plan #2	700.0	700.0	66.1	63.3	22.936	CC
Razor #21C-0908B - HZ - Plan #2	800.0	800.0	66.3	63.0	19.906	ES
Razor #21C-0908B - HZ - Plan #2	13,790.8	13,909.0	659.3	343.6	2.089	SF
Razor #21D-0902B - HZ - Plan #2	300.0	297.9	1,208.0	1,206.9	1,117.038	CC
Razor #21D-0902B - HZ - Plan #2	13,790.8	13,748.8	1,326.5	1,008.3	4.168	ES, SF
Razor #21D-0903A - HZ - Plan #1	13,790.8	13,631.8	1,012.7	700.1	3.239	CC, ES, SF
Razor #21D-0904B - HZ - Plan #1	13,790.8	13,821.2	672.7	357.0	2.130	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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		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)				Measured Depth (usft)	Vertical Depth (usft)	Offset (usft)
0.0	0.0	0.0	0.0	0.0	0.0	88.95	27.4	1,490.5	1,490.8					
100.0	100.0	92.8	92.8	0.1	0.1	88.95	27.4	1,490.5	1,490.8	1,490.6	0.18	8,266.059		
200.0	200.0	192.8	192.8	0.3	0.3	88.95	27.4	1,490.5	1,490.8	1,490.2	0.62	2,402.729		
300.0	300.0	292.8	292.8	0.5	0.5	88.95	27.4	1,490.5	1,490.8	1,489.7	1.07	1,393.275		
400.0	400.0	392.8	392.8	0.8	0.8	88.95	27.4	1,490.5	1,490.8	1,489.3	1.52	981.091		
500.0	500.0	492.8	492.8	1.0	1.0	88.95	27.4	1,490.5	1,490.8	1,488.8	1.97	757.110		
600.0	600.0	624.3	624.3	1.2	1.3	88.86	29.7	1,489.2	1,489.8	1,487.3	2.49	598.807		
700.0	700.0	743.2	743.0	1.4	1.5	88.61	36.0	1,485.5	1,486.8	1,483.8	2.98	498.153		
800.0	800.0	843.1	842.6	1.7	1.8	93.99	42.0	1,482.0	1,483.5	1,480.1	3.44	430.949		
900.0	899.8	943.0	942.3	1.9	2.0	94.01	48.0	1,478.5	1,480.6	1,476.6	3.91	379.102		
1,000.0	999.6	1,043.0	1,042.0	2.1	2.3	94.05	54.1	1,475.0	1,477.7	1,473.3	4.38	337.558		
1,100.0	1,099.4	1,142.9	1,141.7	2.4	2.5	94.08	60.1	1,471.5	1,474.8	1,470.0	4.86	303.646		
1,200.0	1,199.1	1,242.9	1,241.4	2.6	2.8	94.11	66.1	1,467.9	1,471.9	1,466.6	5.34	275.552		
1,300.0	1,298.9	1,342.8	1,341.1	2.8	3.0	94.14	72.1	1,464.4	1,469.1	1,463.2	5.83	251.960		
1,400.0	1,398.6	1,442.8	1,440.8	3.1	3.3	94.18	78.2	1,460.9	1,466.2	1,459.9	6.32	231.905		
1,500.0	1,498.4	1,542.7	1,540.5	3.3	3.5	94.21	84.2	1,457.4	1,463.3	1,456.5	6.82	214.668		
1,600.0	1,598.1	1,642.7	1,640.2	3.6	3.8	94.24	90.2	1,453.9	1,460.5	1,453.2	7.31	199.709		
1,700.0	1,697.9	1,742.7	1,740.0	3.8	4.0	94.28	96.2	1,450.4	1,457.6	1,449.8	7.81	186.615		
1,800.0	1,797.6	1,842.6	1,839.7	4.1	4.3	94.31	102.2	1,446.9	1,454.7	1,446.4	8.31	175.062		
1,900.0	1,897.4	1,942.6	1,939.4	4.3	4.5	94.35	108.3	1,443.4	1,451.9	1,443.1	8.81	164.798		
2,000.0	1,997.2	2,042.5	2,039.1	4.6	4.8	94.38	114.3	1,439.8	1,449.0	1,439.7	9.31	155.622		
2,100.0	2,096.9	2,142.5	2,138.8	4.8	5.0	94.41	120.3	1,436.3	1,446.1	1,436.3	9.81	147.371		
2,200.0	2,196.7	2,242.4	2,238.5	5.1	5.3	94.45	126.3	1,432.8	1,443.3	1,433.0	10.32	139.914		
2,300.0	2,296.4	2,342.4	2,338.2	5.3	5.6	94.48	132.4	1,429.3	1,440.4	1,429.6	10.82	133.143		
2,400.0	2,396.2	2,442.3	2,437.9	5.6	5.8	94.52	138.4	1,425.8	1,437.5	1,426.2	11.32	126.968		
2,500.0	2,495.9	2,542.3	2,537.6	5.9	6.1	94.55	144.4	1,422.3	1,434.7	1,422.9	11.83	121.315		
2,600.0	2,595.7	2,642.3	2,637.4	6.1	6.3	94.59	150.4	1,418.8	1,431.8	1,419.5	12.33	116.120		
2,700.0	2,695.5	2,742.2	2,737.1	6.4	6.6	94.62	156.5	1,415.3	1,429.0	1,416.1	12.84	111.330		
2,800.0	2,795.2	2,842.2	2,836.8	6.6	6.8	94.66	162.5	1,411.7	1,426.1	1,412.8	13.34	106.900		
2,900.0	2,895.0	2,942.1	2,936.5	6.9	7.1	94.69	168.5	1,408.2	1,423.2	1,409.4	13.85	102.792		
3,000.0	2,994.7	3,042.1	3,036.2	7.1	7.4	94.73	174.5	1,404.7	1,420.4	1,406.0	14.35	98.971		
3,100.0	3,094.5	3,142.0	3,135.9	7.4	7.6	94.76	180.5	1,401.2	1,417.5	1,402.7	14.86	95.408		
3,200.0	3,194.2	3,242.0	3,235.6	7.6	7.9	94.80	186.6	1,397.7	1,414.7	1,399.3	15.36	92.079		
3,300.0	3,294.0	3,341.9	3,335.3	7.9	8.1	94.83	192.6	1,394.2	1,411.8	1,395.9	15.87	88.961		
3,400.0	3,393.7	3,441.9	3,435.1	8.1	8.4	94.87	198.6	1,390.7	1,408.9	1,392.6	16.38	86.035		
3,500.0	3,493.5	3,541.9	3,534.8	8.4	8.6	94.91	204.6	1,387.2	1,406.1	1,389.2	16.88	83.284		
3,600.0	3,593.3	3,641.8	3,634.5	8.7	8.9	94.94	210.7	1,383.6	1,403.2	1,385.8	17.39	80.693		
3,700.0	3,693.0	3,741.8	3,734.2	8.9	9.2	94.98	216.7	1,380.1	1,400.4	1,382.5	17.90	78.247		
3,800.0	3,792.8	3,841.7	3,833.9	9.2	9.4	95.02	222.7	1,376.6	1,397.5	1,379.1	18.40	75.936		
3,900.0	3,892.5	3,941.7	3,933.6	9.4	9.7	95.05	228.7	1,373.1	1,394.7	1,375.7	18.91	73.748		
4,000.0	3,992.3	4,041.6	4,033.3	9.7	9.9	95.09	234.8	1,369.6	1,391.8	1,372.4	19.42	71.675		
4,100.0	4,092.0	4,141.6	4,133.0	9.9	10.2	95.13	240.8	1,366.1	1,389.0	1,369.0	19.93	69.706		
4,200.0	4,191.8	4,241.5	4,232.7	10.2	10.4	95.16	246.8	1,362.6	1,386.1	1,365.7	20.43	67.835		
4,300.0	4,291.6	4,341.5	4,332.5	10.4	10.7	95.20	252.8	1,359.1	1,383.2	1,362.3	20.94	66.054		
4,400.0	4,391.3	4,441.4	4,432.2	10.7	11.0	95.24	258.8	1,355.5	1,380.4	1,358.9	21.45	64.357		
4,500.0	4,491.1	4,541.4	4,531.9	11.0	11.2	95.28	264.9	1,352.0	1,377.5	1,355.6	21.96	62.739		
4,600.0	4,590.8	4,641.4	4,631.6	11.2	11.5	95.31	270.9	1,348.5	1,374.7	1,352.2	22.46	61.193		
4,700.0	4,690.6	4,741.3	4,731.3	11.5	11.7	95.35	276.9	1,345.0	1,371.8	1,348.9	22.97	59.716		
4,800.0	4,790.3	4,841.3	4,831.0	11.7	12.0	95.39	282.9	1,341.5	1,369.0	1,345.5	23.48	58.302		
4,900.0	4,890.1	4,941.2	4,930.7	12.0	12.2	95.43	288.9	1,338.0	1,366.1	1,342.2	23.99	56.949		
5,000.0	4,989.9	5,041.2	5,030.4	12.2	12.5	95.47	295.0	1,334.5	1,363.3	1,338.8	24.50	55.651		
5,100.0	5,089.6	5,141.1	5,130.2	12.5	12.8	95.50	301.0	1,331.0	1,360.4	1,335.4	25.01	54.406		

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-0906B
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-0906B	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		
5,200.0	5,189.4	6,200.0	5,793.0	12.7	22.5	70.10	846.8	1,015.6	1,325.9	1,288.8	37.08	35.754		
5,300.0	5,289.1	6,200.0	5,793.0	13.0	22.5	70.10	846.8	1,015.6	1,280.6	1,243.3	37.34	34.300		
5,400.0	5,388.9	6,200.0	5,793.0	13.3	22.5	70.10	846.8	1,015.6	1,241.8	1,204.2	37.59	33.035		
5,500.0	5,488.6	6,200.0	5,793.0	13.5	22.5	70.10	846.8	1,015.6	1,209.9	1,172.1	37.84	31.974		
5,600.0	5,588.2	6,200.0	5,793.0	13.8	22.5	71.34	846.8	1,015.6	1,185.0	1,146.9	38.06	31.134		
5,700.0	5,684.6	6,231.2	5,793.0	14.2	23.0	72.23	874.7	1,001.5	1,162.2	1,123.3	38.85	29.911		
5,800.0	5,774.5	6,256.7	5,793.0	14.8	23.4	73.28	897.6	990.3	1,141.4	1,101.9	39.56	28.852		
5,900.0	5,854.3	6,300.0	5,793.0	15.5	24.1	73.54	936.8	972.1	1,122.4	1,081.7	40.65	27.611		
6,000.0	5,921.3	6,336.7	5,793.0	16.4	24.7	74.17	970.4	957.3	1,104.3	1,062.6	41.74	26.459		
6,100.0	5,972.9	6,400.0	5,793.0	17.6	25.7	74.26	1,029.0	933.4	1,086.6	1,043.2	43.40	25.040		
6,200.0	6,007.2	6,447.0	5,793.0	18.8	26.5	75.31	1,072.9	916.8	1,068.3	1,023.2	45.03	23.725		
6,300.0	6,023.0	6,500.0	5,793.0	20.2	27.4	76.76	1,123.0	899.5	1,049.0	1,002.0	47.03	22.307		
6,400.0	6,024.0	6,572.9	5,793.0	21.7	28.6	77.13	1,192.7	877.9	1,028.4	979.2	49.20	20.904		
6,500.0	6,024.0	6,637.0	5,793.0	23.0	29.7	76.78	1,254.5	861.2	1,006.1	955.2	50.89	19.771		
6,600.0	6,024.0	6,700.0	5,793.0	24.5	30.7	76.56	1,315.9	846.7	983.9	930.7	53.25	18.476		
6,700.0	6,024.0	6,767.1	5,793.0	26.2	31.8	76.38	1,381.7	833.6	964.9	909.0	55.92	17.254		
6,800.0	6,024.0	6,833.5	5,793.0	27.8	32.9	76.22	1,447.1	822.9	949.2	890.6	58.62	16.192		
6,900.0	6,024.0	6,900.0	5,793.0	29.5	34.0	76.10	1,513.1	814.4	936.8	875.5	61.35	15.271		
7,000.0	6,024.0	6,968.1	5,793.0	31.2	35.1	76.01	1,580.9	808.2	927.9	863.8	64.13	14.470		
7,100.0	6,024.0	7,036.0	5,793.0	32.9	36.2	75.95	1,648.7	804.3	922.4	855.5	66.92	13.785		
7,198.6	6,024.0	7,100.0	5,793.0	34.7	37.2	75.93	1,712.7	802.9	920.4	850.8	69.64	13.217 CC		
7,200.0	6,024.0	7,100.0	5,793.0	34.7	37.2	75.93	1,712.7	802.9	920.4	850.8	69.66	13.213		
7,300.0	6,024.0	7,184.9	5,793.0	36.5	38.5	75.94	1,797.6	803.9	921.6	848.8	72.77	12.665		
7,400.0	6,024.0	7,284.9	5,793.0	38.3	40.1	75.97	1,897.6	805.8	923.4	847.2	76.14	12.127		
7,500.0	6,024.0	7,384.8	5,793.0	40.1	41.7	76.00	1,997.5	807.6	925.1	845.6	79.55	11.630		
7,600.0	6,024.0	7,484.8	5,793.0	41.9	43.3	76.02	2,097.5	809.5	926.9	843.9	82.98	11.170		
7,700.0	6,024.0	7,584.8	5,793.0	43.7	45.0	76.05	2,197.5	811.3	928.7	842.3	86.45	10.743		
7,800.0	6,024.0	7,684.8	5,793.0	45.5	46.7	76.08	2,297.4	813.1	930.5	840.6	89.93	10.347		
7,900.0	6,024.0	7,784.8	5,793.0	47.4	48.3	76.11	2,397.4	815.0	932.3	838.8	93.44	9.977		
8,000.0	6,024.0	7,884.8	5,793.0	49.2	50.0	76.13	2,497.4	816.8	934.1	837.1	96.97	9.633		
8,100.0	6,024.0	7,984.7	5,793.0	51.0	51.8	76.16	2,597.3	818.7	935.9	835.3	100.51	9.311		
8,200.0	6,024.0	8,084.7	5,793.0	52.9	53.5	76.19	2,697.3	820.5	937.6	833.6	104.07	9.010		
8,300.0	6,024.0	8,184.7	5,793.0	54.8	55.2	76.21	2,797.2	822.3	939.4	831.8	107.64	8.728		
8,400.0	6,024.0	8,284.7	5,793.0	56.6	57.0	76.24	2,897.2	824.2	941.2	830.0	111.22	8.463		
8,500.0	6,024.0	8,384.7	5,793.0	58.5	58.7	76.27	2,997.2	826.0	943.0	828.2	114.82	8.213		
8,600.0	6,024.0	8,484.7	5,793.0	60.4	60.5	76.29	3,097.1	827.9	944.8	826.4	118.42	7.978		
8,700.0	6,024.0	8,584.6	5,793.0	62.2	62.3	76.32	3,197.1	829.7	946.6	824.6	122.04	7.757		
8,800.0	6,024.0	8,684.6	5,793.0	64.1	64.1	76.35	3,297.1	831.5	948.4	822.7	125.66	7.547		
8,900.0	6,024.0	8,784.6	5,793.0	66.0	65.9	76.37	3,397.0	833.4	950.2	820.9	129.29	7.349		
9,000.0	6,024.0	8,884.6	5,793.0	67.9	67.7	76.40	3,497.0	835.2	952.0	819.0	132.93	7.161		
9,100.0	6,024.0	8,984.6	5,793.0	69.7	69.5	76.43	3,597.0	837.1	953.7	817.2	136.57	6.983		
9,200.0	6,024.0	9,084.5	5,793.0	71.6	71.3	76.45	3,696.9	838.9	955.5	815.3	140.23	6.814		
9,300.0	6,024.0	9,184.5	5,793.0	73.5	73.1	76.48	3,796.9	840.7	957.3	813.4	143.88	6.653		
9,400.0	6,024.0	9,284.5	5,793.0	75.4	75.0	76.50	3,896.9	842.6	959.1	811.6	147.55	6.500		
9,500.0	6,024.0	9,384.5	5,793.0	77.3	76.8	76.53	3,996.8	844.4	960.9	809.7	151.21	6.355		
9,600.0	6,024.0	9,484.5	5,793.0	79.2	78.6	76.55	4,096.8	846.3	962.7	807.8	154.89	6.216		
9,700.0	6,024.0	9,584.5	5,793.0	81.1	80.5	76.58	4,196.8	848.1	964.5	805.9	158.56	6.083		
9,800.0	6,024.0	9,684.4	5,793.0	83.0	82.3	76.61	4,296.7	849.9	966.3	804.0	162.24	5.956		
9,900.0	6,024.0	9,784.4	5,793.0	84.9	84.1	76.63	4,396.7	851.8	968.1	802.1	165.93	5.834		
10,000.0	6,024.0	9,884.4	5,793.0	86.8	86.0	76.66	4,496.7	853.6	969.9	800.2	169.62	5.718		
10,100.0	6,024.0	9,984.4	5,793.0	88.7	87.8	76.68	4,596.6	855.5	971.6	798.3	173.31	5.606		
10,200.0	6,024.0	10,084.4	5,793.0	90.6	89.7	76.71	4,696.6	857.3	973.4	796.4	177.00	5.500		

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-0906B
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-0906B	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							
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
10,300.0	6,024.0	10,184.4	5,793.0	92.5	91.5	76.73	4,796.6	859.1	975.2	794.5	180.70	5.397	
10,400.0	6,024.0	10,284.3	5,793.0	94.4	93.4	76.76	4,896.5	861.0	977.0	792.6	184.40	5.298	
10,500.0	6,024.0	10,384.3	5,793.0	96.3	95.3	76.78	4,996.5	862.8	978.8	790.7	188.11	5.203	
10,600.0	6,024.0	10,484.3	5,793.0	98.2	97.1	76.80	5,096.5	864.7	980.6	788.8	191.81	5.112	
10,700.0	6,024.0	10,584.3	5,793.0	100.1	99.0	76.83	5,196.4	866.5	982.4	786.9	195.52	5.024	
10,800.0	6,024.0	10,684.3	5,793.0	102.0	100.9	76.85	5,296.4	868.3	984.2	785.0	199.24	4.940	
10,900.0	6,024.0	10,784.3	5,793.0	103.9	102.7	76.88	5,396.4	870.2	986.0	783.0	202.95	4.858	
11,000.0	6,024.0	10,884.2	5,793.0	105.8	104.6	76.90	5,496.3	872.0	987.8	781.1	206.67	4.780	
11,100.0	6,024.0	10,984.2	5,793.0	107.7	106.5	76.93	5,596.3	873.9	989.6	779.2	210.38	4.704	
11,200.0	6,024.0	11,084.2	5,793.0	109.6	108.3	76.95	5,696.3	875.7	991.4	777.3	214.11	4.630	
11,300.0	6,024.0	11,184.2	5,793.0	111.5	110.2	76.97	5,796.2	877.5	993.2	775.3	217.83	4.559	
11,400.0	6,024.0	11,284.2	5,793.0	113.4	112.1	77.00	5,896.2	879.4	995.0	773.4	221.55	4.491	
11,500.0	6,024.0	11,384.2	5,793.0	115.3	114.0	77.02	5,996.2	881.2	996.7	771.5	225.28	4.425	
11,600.0	6,024.0	11,484.1	5,793.0	117.2	115.8	77.05	6,096.1	883.1	998.5	769.5	229.01	4.360	
11,700.0	6,024.0	11,584.1	5,793.0	119.1	117.7	77.07	6,196.1	884.9	1,000.3	767.6	232.74	4.298	
11,800.0	6,024.0	11,684.1	5,793.0	121.0	119.6	77.09	6,296.1	886.8	1,002.1	765.7	236.47	4.238	
11,900.0	6,024.0	11,784.1	5,793.0	122.9	121.5	77.12	6,396.0	888.6	1,003.9	763.7	240.20	4.180	
12,000.0	6,024.0	11,884.1	5,793.0	124.9	123.4	77.14	6,496.0	890.4	1,005.7	761.8	243.93	4.123	
12,100.0	6,024.0	11,984.1	5,793.0	126.8	125.3	77.16	6,596.0	892.3	1,007.5	759.8	247.67	4.068	
12,200.0	6,024.0	12,084.0	5,793.0	128.7	127.1	77.19	6,695.9	894.1	1,009.3	757.9	251.41	4.015	
12,300.0	6,024.0	12,184.0	5,793.0	130.6	129.0	77.21	6,795.9	896.0	1,011.1	756.0	255.14	3.963	
12,400.0	6,024.0	12,284.0	5,793.0	132.5	130.9	77.23	6,895.9	897.8	1,012.9	754.0	258.88	3.913	
12,500.0	6,024.0	12,384.0	5,793.0	134.4	132.8	77.26	6,995.8	899.6	1,014.7	752.1	262.63	3.864	
12,600.0	6,024.0	12,484.0	5,793.0	136.3	134.7	77.28	7,095.8	901.5	1,016.5	750.1	266.37	3.816	
12,700.0	6,024.0	12,584.0	5,793.0	138.2	136.6	77.30	7,195.8	903.3	1,018.3	748.2	270.11	3.770	
12,800.0	6,024.0	12,683.9	5,793.0	140.1	138.5	77.32	7,295.7	905.2	1,020.1	746.2	273.86	3.725	
12,900.0	6,024.0	12,783.9	5,793.0	142.1	140.4	77.35	7,395.7	907.0	1,021.9	744.3	277.60	3.681	
13,000.0	6,024.0	12,883.9	5,793.0	144.0	142.3	77.37	7,495.7	908.8	1,023.7	742.3	281.35	3.638	
13,100.0	6,024.0	12,983.9	5,793.0	145.9	144.2	77.39	7,595.6	910.7	1,025.5	740.4	285.10	3.597	
13,200.0	6,024.0	13,083.9	5,793.0	147.8	146.1	77.41	7,695.6	912.5	1,027.3	738.4	288.85	3.556	
13,300.0	6,024.0	13,183.9	5,793.0	149.7	147.9	77.44	7,795.6	914.4	1,029.1	736.5	292.60	3.517	
13,400.0	6,024.0	13,283.8	5,793.0	151.6	149.8	77.46	7,895.5	916.2	1,030.9	734.5	296.35	3.479	
13,500.0	6,024.0	13,383.8	5,793.0	153.5	151.7	77.48	7,995.5	918.0	1,032.7	732.6	300.10	3.441	
13,600.0	6,024.0	13,483.8	5,793.0	155.4	153.6	77.50	8,095.5	919.9	1,034.5	730.6	303.85	3.404	
13,700.0	6,024.0	13,583.8	5,793.0	157.4	155.5	77.53	8,195.4	921.7	1,036.3	728.7	307.60	3.369	
13,790.8	6,024.0	13,674.6	5,793.0	159.1	157.0	77.55	8,286.2	923.4	1,037.9	727.1	310.76	3.340 ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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-0910B - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ICWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	91.87	-47.7	1,458.2	1,459.0					
100.0	100.0	92.8	92.8	0.1	0.1	91.87	-47.7	1,458.2	1,458.9	1,458.8	0.18	8,089.480		
200.0	200.0	192.8	192.8	0.3	0.3	91.87	-47.7	1,458.2	1,458.9	1,458.3	0.62	2,351.402		
300.0	300.0	292.8	292.8	0.5	0.5	91.87	-47.7	1,458.2	1,458.9	1,457.9	1.07	1,363.512		
400.0	400.0	392.8	392.8	0.8	0.8	91.87	-47.7	1,458.2	1,458.9	1,457.4	1.52	960.133		
500.0	500.0	492.8	492.8	1.0	1.0	91.87	-47.7	1,458.2	1,458.9	1,457.0	1.97	740.936		
600.0	600.0	592.8	592.8	1.2	1.2	91.87	-47.7	1,458.2	1,458.9	1,456.5	2.42	603.222		
700.0	700.0	692.8	692.8	1.4	1.4	91.87	-47.7	1,458.2	1,458.9	1,456.1	2.87	508.677		
800.0	800.0	811.2	811.2	1.7	1.7	97.36	-45.6	1,457.5	1,458.6	1,455.2	3.36	434.517		
900.0	899.8	925.9	925.7	1.9	2.0	97.37	-39.3	1,455.6	1,457.4	1,453.5	3.84	379.402		
1,000.0	999.6	1,025.9	1,025.4	2.1	2.2	97.38	-32.6	1,453.5	1,456.0	1,451.7	4.30	338.259		
1,100.0	1,099.4	1,125.9	1,125.2	2.4	2.4	97.40	-26.0	1,451.5	1,454.6	1,449.8	4.78	304.504		
1,200.0	1,199.1	1,225.9	1,224.9	2.6	2.7	97.41	-19.3	1,449.4	1,453.2	1,448.0	5.26	276.454		
1,300.0	1,298.9	1,325.9	1,324.7	2.8	2.9	97.42	-12.6	1,447.4	1,451.8	1,446.1	5.74	252.862		
1,400.0	1,398.6	1,425.9	1,424.4	3.1	3.2	97.43	-6.0	1,445.3	1,450.5	1,444.2	6.23	232.793		
1,500.0	1,498.4	1,525.9	1,524.2	3.3	3.4	97.45	0.7	1,443.3	1,449.1	1,442.4	6.72	215.543		
1,600.0	1,598.1	1,625.9	1,623.9	3.6	3.7	97.46	7.4	1,441.2	1,447.7	1,440.5	7.22	200.577		
1,700.0	1,697.9	1,725.8	1,723.7	3.8	3.9	97.47	14.0	1,439.2	1,446.3	1,438.6	7.71	187.480		
1,800.0	1,797.6	1,825.8	1,823.4	4.1	4.2	97.49	20.7	1,437.1	1,445.0	1,436.7	8.21	175.933		
1,900.0	1,897.4	1,925.8	1,923.2	4.3	4.4	97.50	27.4	1,435.0	1,443.6	1,434.9	8.71	165.680		
2,000.0	1,997.2	2,025.8	2,022.9	4.6	4.7	97.51	34.0	1,433.0	1,442.2	1,433.0	9.21	156.520		
2,100.0	2,096.9	2,125.8	2,122.7	4.8	4.9	97.52	40.7	1,430.9	1,440.8	1,431.1	9.72	148.290		
2,200.0	2,196.7	2,225.8	2,222.4	5.1	5.2	97.54	47.4	1,428.9	1,439.5	1,429.2	10.22	140.857		
2,300.0	2,296.4	2,325.8	2,322.2	5.3	5.4	97.55	54.0	1,426.8	1,438.1	1,427.4	10.72	134.112		
2,400.0	2,396.2	2,425.8	2,421.9	5.6	5.7	97.56	60.7	1,424.8	1,436.7	1,425.5	11.23	127.965		
2,500.0	2,495.9	2,525.8	2,521.6	5.9	5.9	97.58	67.4	1,422.7	1,435.3	1,423.6	11.73	122.340		
2,600.0	2,595.7	2,625.8	2,621.4	6.1	6.2	97.59	74.0	1,420.7	1,433.9	1,421.7	12.24	117.175		
2,700.0	2,695.5	2,725.7	2,721.1	6.4	6.4	97.60	80.7	1,418.6	1,432.6	1,419.8	12.74	112.416		
2,800.0	2,795.2	2,825.7	2,820.9	6.6	6.7	97.62	87.4	1,416.6	1,431.2	1,417.9	13.25	108.017		
2,900.0	2,895.0	2,925.7	2,920.6	6.9	6.9	97.63	94.0	1,414.5	1,429.8	1,416.1	13.76	103.939		
3,000.0	2,994.7	3,025.7	3,020.4	7.1	7.2	97.64	100.7	1,412.5	1,428.4	1,414.2	14.26	100.148		
3,100.0	3,094.5	3,125.7	3,120.1	7.4	7.5	97.66	107.4	1,410.4	1,427.1	1,412.3	14.77	96.616		
3,200.0	3,194.2	3,225.7	3,219.9	7.6	7.7	97.67	114.0	1,408.4	1,425.7	1,410.4	15.28	93.317		
3,300.0	3,294.0	3,325.7	3,319.6	7.9	8.0	97.68	120.7	1,406.3	1,424.3	1,408.5	15.79	90.228		
3,400.0	3,393.7	3,425.7	3,419.4	8.1	8.2	97.70	127.4	1,404.2	1,422.9	1,406.6	16.29	87.331		
3,500.0	3,493.5	3,525.7	3,519.1	8.4	8.5	97.71	134.0	1,402.2	1,421.6	1,404.8	16.80	84.608		
3,600.0	3,593.3	3,625.7	3,618.9	8.7	8.7	97.72	140.7	1,400.1	1,420.2	1,402.9	17.31	82.044		
3,700.0	3,693.0	3,725.6	3,718.6	8.9	9.0	97.74	147.4	1,398.1	1,418.8	1,401.0	17.82	79.625		
3,800.0	3,792.8	3,825.6	3,818.3	9.2	9.2	97.75	154.0	1,396.0	1,417.4	1,399.1	18.33	77.340		
3,900.0	3,892.5	3,925.6	3,918.1	9.4	9.5	97.76	160.7	1,394.0	1,416.1	1,397.2	18.84	75.178		
4,000.0	3,992.3	4,025.6	4,017.8	9.7	9.8	97.78	167.4	1,391.9	1,414.7	1,395.3	19.35	73.129		
4,100.0	4,092.0	4,125.6	4,117.6	9.9	10.0	97.79	174.0	1,389.9	1,413.3	1,393.5	19.85	71.185		
4,200.0	4,191.8	4,225.6	4,217.3	10.2	10.3	97.80	180.7	1,387.8	1,411.9	1,391.6	20.36	69.337		
4,300.0	4,291.6	4,325.6	4,317.1	10.4	10.5	97.82	187.4	1,385.8	1,410.6	1,389.7	20.87	67.579		
4,400.0	4,391.3	4,425.6	4,416.8	10.7	10.8	97.83	194.0	1,383.7	1,409.2	1,387.8	21.38	65.905		
4,500.0	4,491.1	4,525.6	4,516.6	11.0	11.0	97.84	200.7	1,381.7	1,407.8	1,385.9	21.89	64.308		
4,600.0	4,590.8	4,625.6	4,616.3	11.2	11.3	97.86	207.4	1,379.6	1,406.4	1,384.0	22.40	62.784		
4,700.0	4,690.6	4,725.5	4,716.1	11.5	11.5	97.87	214.0	1,377.6	1,405.1	1,382.2	22.91	61.327		
4,800.0	4,790.3	4,825.5	4,815.8	11.7	11.8	97.88	220.7	1,375.5	1,403.7	1,380.3	23.42	59.933		
4,900.0	4,890.1	4,925.5	4,915.6	12.0	12.1	97.90	227.4	1,373.5	1,402.3	1,378.4	23.93	58.599		
5,000.0	4,989.9	5,025.5	5,015.3	12.2	12.3	97.91	234.0	1,371.4	1,400.9	1,376.5	24.44	57.320		
5,100.0	5,089.6	5,125.5	5,115.1	12.5	12.6	97.93	240.7	1,369.3	1,399.6	1,374.6	24.95	56.093		

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-0906B
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-0906B	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-0910B - 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	5,189.4	5,225.5	5,214.8	12.7	12.8	97.94	247.4	1,367.3	1,398.2	1,372.7	25.46	54.915		
5,300.0	5,289.1	5,325.5	5,314.5	13.0	13.1	97.95	254.0	1,365.2	1,396.8	1,370.8	25.97	53.783		
5,400.0	5,388.9	5,599.0	5,580.4	13.3	14.1	96.59	306.1	1,349.2	1,394.1	1,366.9	27.27	51.125		
5,500.0	5,488.6	6,005.9	5,847.0	13.5	18.0	85.22	586.8	1,262.7	1,369.7	1,337.6	32.08	42.691		
5,600.0	5,588.2	6,103.8	5,871.5	13.8	19.3	82.56	677.2	1,234.9	1,344.1	1,310.1	33.99	39.547		
5,700.0	5,684.6	6,169.0	5,877.7	14.2	20.3	82.38	739.3	1,215.8	1,321.6	1,286.1	35.50	37.224		
5,800.0	5,774.5	6,200.0	5,878.0	14.8	20.8	83.26	768.9	1,206.7	1,302.4	1,265.9	36.54	35.648		
5,900.0	5,854.3	6,240.6	5,878.0	15.5	21.4	83.49	807.9	1,195.4	1,287.1	1,249.3	37.83	34.022		
6,000.0	5,921.3	6,300.0	5,878.0	16.4	22.2	83.05	865.3	1,180.5	1,275.3	1,235.8	39.56	32.237		
6,100.0	5,972.9	6,335.2	5,878.0	17.6	22.7	83.29	899.7	1,172.4	1,265.9	1,224.8	41.08	30.812		
6,200.0	6,007.2	6,400.0	5,878.0	18.8	23.7	83.11	963.1	1,159.3	1,258.5	1,215.2	43.22	29.121		
6,300.0	6,023.0	6,450.9	5,878.0	20.2	24.4	83.45	1,013.2	1,150.5	1,252.2	1,206.9	45.28	27.653		
6,400.0	6,024.0	6,500.0	5,878.0	21.7	25.2	83.59	1,061.8	1,143.3	1,246.3	1,199.1	47.22	26.392		
6,500.0	6,024.0	6,571.9	5,878.0	23.0	26.3	83.54	1,133.2	1,135.0	1,238.4	1,189.0	49.38	25.077		
6,600.0	6,024.0	6,632.6	5,878.0	24.5	27.3	83.51	1,193.7	1,130.1	1,230.4	1,178.7	51.76	23.774		
6,700.0	6,024.0	6,700.0	5,878.0	26.2	28.3	83.49	1,261.0	1,126.9	1,225.6	1,171.2	54.42	22.520		
6,800.0	6,024.0	6,754.6	5,878.0	27.8	29.2	83.49	1,315.6	1,126.0	1,223.8	1,166.9	56.91	21.505		
6,804.0	6,024.0	6,757.0	5,878.0	27.9	29.2	83.49	1,318.1	1,126.0	1,223.8	1,166.9	56.94	21.495 CC		
6,900.0	6,024.0	6,830.7	5,878.0	29.5	30.4	83.49	1,391.7	1,127.1	1,225.1	1,165.3	59.80	20.485		
7,000.0	6,024.0	6,930.7	5,878.0	31.2	32.0	83.50	1,491.7	1,128.9	1,226.9	1,163.7	63.16	19.424		
7,100.0	6,024.0	7,030.7	5,878.0	32.9	33.7	83.51	1,591.6	1,130.8	1,228.7	1,162.1	66.58	18.456		
7,200.0	6,024.0	7,130.6	5,878.0	34.7	35.4	83.52	1,691.6	1,132.6	1,230.5	1,160.5	70.03	17.572		
7,300.0	6,024.0	7,230.6	5,878.0	36.5	37.1	83.53	1,791.6	1,134.4	1,232.4	1,158.8	73.52	16.763		
7,400.0	6,024.0	7,330.6	5,878.0	38.3	38.8	83.54	1,891.5	1,136.3	1,234.2	1,157.2	77.03	16.021		
7,500.0	6,024.0	7,430.6	5,878.0	40.1	40.6	83.55	1,991.5	1,138.1	1,236.0	1,155.4	80.58	15.339		
7,600.0	6,024.0	7,530.6	5,878.0	41.9	42.3	83.56	2,091.5	1,139.9	1,237.8	1,153.7	84.15	14.710		
7,700.0	6,024.0	7,630.6	5,878.0	43.7	44.1	83.57	2,191.4	1,141.8	1,239.7	1,151.9	87.74	14.129		
7,800.0	6,024.0	7,730.5	5,878.0	45.5	45.9	83.58	2,291.4	1,143.6	1,241.5	1,150.1	91.35	13.591		
7,900.0	6,024.0	7,830.5	5,878.0	47.4	47.7	83.59	2,391.4	1,145.4	1,243.3	1,148.3	94.97	13.091		
8,000.0	6,024.0	7,930.5	5,878.0	49.2	49.5	83.60	2,491.3	1,147.3	1,245.1	1,146.5	98.61	12.627		
8,100.0	6,024.0	8,030.5	5,878.0	51.0	51.3	83.61	2,591.3	1,149.1	1,247.0	1,144.7	102.26	12.194		
8,200.0	6,024.0	8,130.5	5,878.0	52.9	53.1	83.62	2,691.2	1,151.0	1,248.8	1,142.9	105.92	11.790		
8,300.0	6,024.0	8,230.5	5,878.0	54.8	55.0	83.63	2,791.2	1,152.8	1,250.6	1,141.0	109.60	11.411		
8,400.0	6,024.0	8,330.4	5,878.0	56.6	56.8	83.63	2,891.2	1,154.6	1,252.4	1,139.2	113.28	11.056		
8,500.0	6,024.0	8,430.4	5,878.0	58.5	58.6	83.64	2,991.1	1,156.5	1,254.3	1,137.3	116.97	10.723		
8,600.0	6,024.0	8,530.4	5,878.0	60.4	60.5	83.65	3,091.1	1,158.3	1,256.1	1,135.4	120.67	10.410		
8,700.0	6,024.0	8,630.4	5,878.0	62.2	62.3	83.66	3,191.1	1,160.1	1,257.9	1,133.5	124.37	10.114		
8,800.0	6,024.0	8,730.4	5,878.0	64.1	64.2	83.67	3,291.0	1,162.0	1,259.7	1,131.7	128.08	9.835		
8,900.0	6,024.0	8,830.4	5,878.0	66.0	66.0	83.68	3,391.0	1,163.8	1,261.6	1,129.8	131.80	9.572		
9,000.0	6,024.0	8,930.3	5,878.0	67.9	67.9	83.69	3,491.0	1,165.6	1,263.4	1,127.9	135.52	9.322		
9,100.0	6,024.0	9,030.3	5,878.0	69.7	69.8	83.70	3,590.9	1,167.5	1,265.2	1,126.0	139.25	9.086		
9,200.0	6,024.0	9,130.3	5,878.0	71.6	71.6	83.71	3,690.9	1,169.3	1,267.0	1,124.1	142.98	8.862		
9,300.0	6,024.0	9,230.3	5,878.0	73.5	73.5	83.72	3,790.9	1,171.2	1,268.9	1,122.2	146.72	8.649		
9,400.0	6,024.0	9,330.3	5,878.0	75.4	75.4	83.73	3,890.8	1,173.0	1,270.7	1,120.2	150.46	8.446		
9,500.0	6,024.0	9,430.3	5,878.0	77.3	77.2	83.74	3,990.8	1,174.8	1,272.5	1,118.3	154.20	8.252		
9,600.0	6,024.0	9,530.2	5,878.0	79.2	79.1	83.74	4,090.8	1,176.7	1,274.4	1,116.4	157.95	8.068		
9,700.0	6,024.0	9,630.2	5,878.0	81.1	81.0	83.75	4,190.7	1,178.5	1,276.2	1,114.5	161.70	7.892		
9,800.0	6,024.0	9,730.2	5,878.0	83.0	82.9	83.76	4,290.7	1,180.3	1,278.0	1,112.6	165.45	7.725		
9,900.0	6,024.0	9,830.2	5,878.0	84.9	84.8	83.77	4,390.7	1,182.2	1,279.8	1,110.6	169.20	7.564		
10,000.0	6,024.0	9,930.2	5,878.0	86.8	86.6	83.78	4,490.6	1,184.0	1,281.7	1,108.7	172.96	7.410		
10,100.0	6,024.0	10,030.2	5,878.0	88.7	88.5	83.79	4,590.6	1,185.8	1,283.5	1,106.8	176.72	7.263		
10,200.0	6,024.0	10,130.1	5,878.0	90.6	90.4	83.80	4,690.6	1,187.7	1,285.3	1,104.8	180.48	7.121		

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-0906B
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-0906B	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-0910B - 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		
10,300.0	6,024.0	10,230.1	5,878.0	92.5	92.3	83.81	4,790.5	1,189.5	1,287.1	1,102.9	184.25	6.986		
10,400.0	6,024.0	10,330.1	5,878.0	94.4	94.2	83.82	4,890.5	1,191.4	1,289.0	1,100.9	188.02	6.856		
10,500.0	6,024.0	10,430.1	5,878.0	96.3	96.1	83.83	4,990.5	1,193.2	1,290.8	1,099.0	191.78	6.730		
10,600.0	6,024.0	10,530.1	5,878.0	98.2	98.0	83.83	5,090.4	1,195.0	1,292.6	1,097.1	195.56	6.610		
10,700.0	6,024.0	10,630.1	5,878.0	100.1	99.8	83.84	5,190.4	1,196.9	1,294.4	1,095.1	199.33	6.494		
10,800.0	6,024.0	10,730.0	5,878.0	102.0	101.7	83.85	5,290.4	1,198.7	1,296.3	1,093.2	203.10	6.382		
10,900.0	6,024.0	10,830.0	5,878.0	103.9	103.6	83.86	5,390.3	1,200.5	1,298.1	1,091.2	206.88	6.275		
11,000.0	6,024.0	10,930.0	5,878.0	105.8	105.5	83.87	5,490.3	1,202.4	1,299.9	1,089.3	210.65	6.171		
11,100.0	6,024.0	11,030.0	5,878.0	107.7	107.4	83.88	5,590.3	1,204.2	1,301.7	1,087.3	214.43	6.071		
11,200.0	6,024.0	11,130.0	5,878.0	109.6	109.3	83.89	5,690.2	1,206.0	1,303.6	1,085.4	218.21	5.974		
11,300.0	6,024.0	11,230.0	5,878.0	111.5	111.2	83.89	5,790.2	1,207.9	1,305.4	1,083.4	221.99	5.880		
11,400.0	6,024.0	11,329.9	5,878.0	113.4	113.1	83.90	5,890.2	1,209.7	1,307.2	1,081.5	225.77	5.790		
11,500.0	6,024.0	11,429.9	5,878.0	115.3	115.0	83.91	5,990.1	1,211.6	1,309.1	1,079.5	229.55	5.703		
11,600.0	6,024.0	11,529.9	5,878.0	117.2	116.9	83.92	6,090.1	1,213.4	1,310.9	1,077.5	233.34	5.618		
11,700.0	6,024.0	11,629.9	5,878.0	119.1	118.8	83.93	6,190.1	1,215.2	1,312.7	1,075.6	237.12	5.536		
11,800.0	6,024.0	11,729.9	5,878.0	121.0	120.7	83.94	6,290.0	1,217.1	1,314.5	1,073.6	240.91	5.457		
11,900.0	6,024.0	11,829.9	5,878.0	122.9	122.6	83.95	6,390.0	1,218.9	1,316.4	1,071.7	244.70	5.380		
12,000.0	6,024.0	11,929.8	5,878.0	124.9	124.5	83.95	6,490.0	1,220.7	1,318.2	1,069.7	248.48	5.305		
12,100.0	6,024.0	12,029.8	5,878.0	126.8	126.4	83.96	6,589.9	1,222.6	1,320.0	1,067.7	252.27	5.232		
12,200.0	6,024.0	12,129.8	5,878.0	128.7	128.3	83.97	6,689.9	1,224.4	1,321.8	1,065.8	256.06	5.162		
12,300.0	6,024.0	12,229.8	5,878.0	130.6	130.2	83.98	6,789.9	1,226.2	1,323.7	1,063.8	259.85	5.094		
12,400.0	6,024.0	12,329.8	5,878.0	132.5	132.1	83.99	6,889.8	1,228.1	1,325.5	1,061.9	263.64	5.028		
12,500.0	6,024.0	12,429.8	5,878.0	134.4	134.0	84.00	6,989.8	1,229.9	1,327.3	1,059.9	267.43	4.963		
12,600.0	6,024.0	12,529.7	5,878.0	136.3	135.9	84.00	7,089.8	1,231.8	1,329.1	1,057.9	271.23	4.901		
12,700.0	6,024.0	12,629.7	5,878.0	138.2	137.8	84.01	7,189.7	1,233.6	1,331.0	1,056.0	275.02	4.840		
12,800.0	6,024.0	12,729.7	5,878.0	140.1	139.7	84.02	7,289.7	1,235.4	1,332.8	1,054.0	278.81	4.780		
12,900.0	6,024.0	12,829.7	5,878.0	142.1	141.6	84.03	7,389.7	1,237.3	1,334.6	1,052.0	282.61	4.723		
13,000.0	6,024.0	12,929.7	5,878.0	144.0	143.5	84.04	7,489.6	1,239.1	1,336.5	1,050.1	286.40	4.666		
13,100.0	6,024.0	13,029.6	5,878.0	145.9	145.4	84.05	7,589.6	1,240.9	1,338.3	1,048.1	290.20	4.612		
13,200.0	6,024.0	13,129.6	5,878.0	147.8	147.3	84.05	7,689.6	1,242.8	1,340.1	1,046.1	293.99	4.558		
13,300.0	6,024.0	13,229.6	5,878.0	149.7	149.2	84.06	7,789.5	1,244.6	1,341.9	1,044.1	297.79	4.506		
13,400.0	6,024.0	13,329.6	5,878.0	151.6	151.1	84.07	7,889.5	1,246.4	1,343.8	1,042.2	301.59	4.456		
13,500.0	6,024.0	13,429.6	5,878.0	153.5	153.1	84.08	7,989.5	1,248.3	1,345.6	1,040.2	305.38	4.406		
13,600.0	6,024.0	13,529.6	5,878.0	155.4	155.0	84.09	8,089.4	1,250.1	1,347.4	1,038.2	309.18	4.358		
13,700.0	6,024.0	13,629.5	5,878.0	157.4	156.9	84.09	8,189.4	1,252.0	1,349.2	1,036.3	312.98	4.311		
13,790.8	6,024.0	13,720.3	5,878.0	159.1	158.6	84.10	8,280.2	1,253.6	1,350.9	1,034.5	316.43	4.269 ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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-0905A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-91.93	-1.1	-32.4	32.4					
100.0	100.0	100.0	100.0	0.1	0.1	-91.93	-1.1	-32.4	32.4	32.2	0.19	173.681		
200.0	200.0	200.0	200.0	0.3	0.3	-91.93	-1.1	-32.4	32.4	31.8	0.64	50.934		
300.0	300.0	300.0	300.0	0.5	0.5	-91.93	-1.1	-32.4	32.4	31.3	1.09	29.843		
400.0	400.0	400.0	400.0	0.8	0.8	-91.93	-1.1	-32.4	32.4	30.9	1.54	21.104		
466.7	466.7	466.7	466.7	0.9	0.9	-91.93	-1.1	-32.4	32.4	30.6	1.83	17.657 CC		
500.0	500.0	500.0	500.0	1.0	1.0	-91.93	-1.1	-32.4	32.4	30.4	1.98	16.324 ES		
600.0	600.0	599.6	599.6	1.2	1.2	-89.06	0.5	-32.9	33.0	30.5	2.43	13.550		
700.0	700.0	699.0	698.8	1.4	1.4	-81.09	5.4	-34.7	35.1	32.2	2.88	12.177		
800.0	800.0	798.9	798.5	1.7	1.7	-68.85	12.0	-36.9	38.2	34.9	3.34	11.457		
900.0	899.8	898.8	898.2	1.9	1.9	-67.61	18.6	-39.2	40.3	36.5	3.79	10.631		
1,000.0	999.6	998.8	997.9	2.1	2.2	-68.72	25.2	-41.5	41.8	37.5	4.26	9.806		
1,100.0	1,099.4	1,098.8	1,097.7	2.4	2.4	-69.76	31.8	-43.8	43.3	38.5	4.74	9.133		
1,200.0	1,199.1	1,198.8	1,197.4	2.6	2.7	-70.73	38.4	-46.1	44.7	39.5	5.22	8.576		
1,300.0	1,298.9	1,298.8	1,297.2	2.8	2.9	-71.64	44.9	-48.4	46.2	40.5	5.70	8.108		
1,400.0	1,398.6	1,398.8	1,396.9	3.1	3.2	-72.49	51.5	-50.7	47.8	41.6	6.19	7.711		
1,500.0	1,498.4	1,498.7	1,496.6	3.3	3.4	-73.29	58.1	-53.0	49.3	42.6	6.69	7.371		
1,600.0	1,598.1	1,598.7	1,596.4	3.6	3.7	-74.04	64.7	-55.3	50.8	43.6	7.18	7.075		
1,700.0	1,697.9	1,698.7	1,696.1	3.8	3.9	-74.75	71.3	-57.6	52.4	44.7	7.68	6.818		
1,800.0	1,797.6	1,798.7	1,795.9	4.1	4.2	-75.41	77.9	-59.9	53.9	45.7	8.18	6.591		
1,900.0	1,897.4	1,898.7	1,895.6	4.3	4.4	-76.04	84.5	-62.2	55.5	46.8	8.68	6.389		
2,000.0	1,997.2	1,998.7	1,995.4	4.6	4.7	-76.63	91.1	-64.5	57.0	47.8	9.18	6.210		
2,100.0	2,096.9	2,098.7	2,095.1	4.8	4.9	-77.20	97.6	-66.7	58.6	48.9	9.68	6.049		
2,200.0	2,196.7	2,198.6	2,194.8	5.1	5.2	-77.73	104.2	-69.0	60.1	50.0	10.19	5.904		
2,300.0	2,296.4	2,298.6	2,294.6	5.3	5.4	-78.24	110.8	-71.3	61.7	51.0	10.69	5.772		
2,400.0	2,396.2	2,398.6	2,394.3	5.6	5.7	-78.72	117.4	-73.6	63.3	52.1	11.20	5.653		
2,500.0	2,495.9	2,498.6	2,494.1	5.9	6.0	-79.17	124.0	-75.9	64.9	53.2	11.70	5.544		
2,600.0	2,595.7	2,598.6	2,593.8	6.1	6.2	-79.61	130.6	-78.2	66.5	54.3	12.21	5.444		
2,700.0	2,695.5	2,698.6	2,693.5	6.4	6.5	-80.02	137.2	-80.5	68.1	55.3	12.72	5.352		
2,800.0	2,795.2	2,798.6	2,793.3	6.6	6.7	-80.42	143.8	-82.8	69.7	56.4	13.23	5.267		
2,900.0	2,895.0	2,898.6	2,893.0	6.9	7.0	-80.80	150.3	-85.1	71.3	57.5	13.74	5.188		
3,000.0	2,994.7	2,998.5	2,992.8	7.1	7.2	-81.16	156.9	-87.4	72.9	58.6	14.24	5.115		
3,100.0	3,094.5	3,098.5	3,092.5	7.4	7.5	-81.51	163.5	-89.7	74.5	59.7	14.75	5.048		
3,200.0	3,194.2	3,198.5	3,192.3	7.6	7.7	-81.84	170.1	-92.0	76.1	60.8	15.26	4.984		
3,300.0	3,294.0	3,298.5	3,292.0	7.9	8.0	-82.16	176.7	-94.3	77.7	61.9	15.77	4.925		
3,400.0	3,393.7	3,398.5	3,391.7	8.1	8.3	-82.46	183.3	-96.5	79.3	63.0	16.28	4.870		
3,500.0	3,493.5	3,498.5	3,491.5	8.4	8.5	-82.75	189.9	-98.8	80.9	64.1	16.79	4.818		
3,600.0	3,593.3	3,598.5	3,591.2	8.7	8.8	-83.04	196.4	-101.1	82.5	65.2	17.30	4.770		
3,700.0	3,693.0	3,698.4	3,691.0	8.9	9.0	-83.31	203.0	-103.4	84.1	66.3	17.81	4.724		
3,800.0	3,792.8	3,798.4	3,790.7	9.2	9.3	-83.57	209.6	-105.7	85.8	67.4	18.32	4.681		
3,900.0	3,892.5	3,898.4	3,890.5	9.4	9.5	-83.82	216.2	-108.0	87.4	68.6	18.83	4.640		
4,000.0	3,992.3	3,998.4	3,990.2	9.7	9.8	-84.06	222.8	-110.3	89.0	69.7	19.35	4.601		
4,100.0	4,092.0	4,098.4	4,089.9	9.9	10.1	-84.29	229.4	-112.6	90.6	70.8	19.86	4.564		
4,200.0	4,191.8	4,198.4	4,189.7	10.2	10.3	-84.52	236.0	-114.9	92.3	71.9	20.37	4.530		
4,300.0	4,291.6	4,298.4	4,289.4	10.4	10.6	-84.73	242.6	-117.2	93.9	73.0	20.88	4.497		
4,400.0	4,391.3	4,398.3	4,389.2	10.7	10.8	-84.94	249.1	-119.5	95.5	74.1	21.39	4.465		
4,500.0	4,491.1	4,498.3	4,488.9	11.0	11.1	-85.14	255.7	-121.8	97.1	75.2	21.90	4.435		
4,600.0	4,590.8	4,598.3	4,588.7	11.2	11.3	-85.34	262.3	-124.1	98.8	76.4	22.41	4.407		
4,700.0	4,690.6	4,698.3	4,688.4	11.5	11.6	-85.53	268.9	-126.3	100.4	77.5	22.93	4.380		
4,800.0	4,790.3	4,798.3	4,788.1	11.7	11.9	-85.71	275.5	-128.6	102.0	78.6	23.44	4.354		
4,900.0	4,890.1	4,898.3	4,887.9	12.0	12.1	-85.89	282.1	-130.9	103.7	79.7	23.95	4.329		
5,000.0	4,989.9	4,998.3	4,987.6	12.2	12.4	-86.06	288.7	-133.2	105.3	80.9	24.46	4.305		

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-0906B
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-0906B	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-0905A - 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
5,100.0	5,089.6	5,098.2	5,087.4	12.5	12.6	-86.23	295.3	-135.5	107.0	82.0	24.97	4.283	
5,200.0	5,189.4	5,198.2	5,187.1	12.7	12.9	-86.39	301.8	-137.8	108.6	83.1	25.48	4.261	
5,300.0	5,289.1	5,298.2	5,286.9	13.0	13.1	-86.55	308.4	-140.1	110.2	84.2	26.00	4.240	
5,400.0	5,388.9	5,398.2	5,386.6	13.3	13.4	-86.70	315.0	-142.4	111.9	85.4	26.51	4.220	
5,500.0	5,488.6	5,495.1	5,483.0	13.5	13.7	-85.83	323.4	-145.3	114.2	87.2	27.01	4.226	
5,600.0	5,588.2	5,586.4	5,571.4	13.8	14.0	-79.16	344.5	-152.7	121.9	94.4	27.50	4.434	
5,700.0	5,684.6	5,674.7	5,652.0	14.2	14.5	-72.94	378.5	-164.5	135.0	106.9	28.08	4.807	
5,800.0	5,774.5	5,760.8	5,723.5	14.8	15.1	-68.72	423.4	-180.1	151.4	122.7	28.75	5.267	
5,900.0	5,854.3	5,844.8	5,784.9	15.5	15.9	-66.14	477.5	-198.9	169.8	140.3	29.54	5.750	
6,000.0	5,921.3	5,927.2	5,835.4	16.4	16.7	-64.78	538.9	-220.3	189.3	158.7	30.59	6.189	
6,100.0	5,972.9	6,008.5	5,874.6	17.6	17.7	-64.30	606.1	-243.7	209.3	177.2	32.05	6.530	
6,200.0	6,007.2	6,089.2	5,902.1	18.8	18.8	-64.47	677.6	-268.6	229.2	195.2	34.01	6.738	
6,300.0	6,023.0	6,169.6	5,917.5	20.2	20.0	-65.12	752.2	-294.5	248.8	212.3	36.49	6.816	
6,400.0	6,024.0	6,258.0	5,921.0	21.7	21.4	-66.87	835.5	-323.3	270.0	230.6	39.45	6.845	
6,500.0	6,024.0	6,370.1	5,921.0	23.0	23.0	-68.84	942.9	-355.5	293.7	251.1	42.58	6.898	
6,600.0	6,024.0	6,484.7	5,921.0	24.5	24.7	-70.56	1,054.4	-381.8	315.2	269.3	45.97	6.857	
6,700.0	6,024.0	6,602.0	5,921.0	26.2	26.5	-71.72	1,170.1	-401.7	331.4	281.8	49.52	6.692	
6,800.0	6,024.0	6,721.5	5,921.0	27.8	28.4	-72.40	1,288.8	-414.7	341.7	288.6	53.09	6.436	
6,900.0	6,024.0	6,842.1	5,921.0	29.5	30.3	-72.68	1,409.3	-420.3	346.1	289.4	56.66	6.109	
7,000.0	6,024.0	6,946.9	5,921.0	31.2	32.0	-72.69	1,514.0	-420.5	346.3	286.3	59.98	5.773	
7,100.0	6,024.0	7,046.9	5,921.0	32.9	33.7	-72.69	1,614.0	-420.5	346.3	283.0	63.28	5.472	
7,200.0	6,024.0	7,146.9	5,921.0	34.7	35.3	-72.69	1,714.0	-420.5	346.3	279.6	66.62	5.197	
7,300.0	6,024.0	7,246.9	5,921.0	36.5	37.1	-72.69	1,814.0	-420.5	346.3	276.3	70.00	4.946	
7,400.0	6,024.0	7,346.9	5,921.0	38.3	38.8	-72.69	1,914.0	-420.5	346.3	272.8	73.41	4.717	
7,500.0	6,024.0	7,446.9	5,921.0	40.1	40.5	-72.69	2,014.0	-420.5	346.3	269.4	76.85	4.506	
7,600.0	6,024.0	7,546.9	5,921.0	41.9	42.3	-72.69	2,114.0	-420.5	346.3	266.0	80.31	4.312	
7,700.0	6,024.0	7,646.9	5,921.0	43.7	44.1	-72.69	2,214.0	-420.5	346.3	262.5	83.78	4.133	
7,800.0	6,024.0	7,746.9	5,921.0	45.5	45.8	-72.69	2,314.0	-420.5	346.3	259.0	87.28	3.967	
7,900.0	6,024.0	7,846.9	5,921.0	47.4	47.6	-72.69	2,414.0	-420.5	346.3	255.5	90.79	3.814	
8,000.0	6,024.0	7,946.9	5,921.0	49.2	49.4	-72.69	2,514.0	-420.5	346.3	251.9	94.32	3.671	
8,100.0	6,024.0	8,046.9	5,921.0	51.0	51.2	-72.69	2,614.0	-420.5	346.3	248.4	97.85	3.539	
8,200.0	6,024.0	8,146.9	5,921.0	52.9	53.1	-72.69	2,714.0	-420.5	346.3	244.9	101.40	3.415	
8,300.0	6,024.0	8,246.9	5,921.0	54.8	54.9	-72.69	2,814.0	-420.5	346.3	241.3	104.96	3.299	
8,400.0	6,024.0	8,346.9	5,921.0	56.6	56.7	-72.69	2,914.0	-420.5	346.3	237.7	108.53	3.190	
8,500.0	6,024.0	8,446.9	5,921.0	58.5	58.6	-72.69	3,014.0	-420.5	346.3	234.2	112.11	3.089	
8,600.0	6,024.0	8,546.9	5,921.0	60.4	60.4	-72.69	3,114.0	-420.5	346.3	230.6	115.69	2.993	
8,700.0	6,024.0	8,646.9	5,921.0	62.2	62.3	-72.69	3,214.0	-420.5	346.3	227.0	119.28	2.903	
8,800.0	6,024.0	8,746.9	5,921.0	64.1	64.1	-72.69	3,314.0	-420.5	346.3	223.4	122.88	2.818	
8,900.0	6,024.0	8,846.9	5,921.0	66.0	66.0	-72.69	3,414.0	-420.5	346.3	219.8	126.48	2.738	
9,000.0	6,024.0	8,946.9	5,921.0	67.9	67.8	-72.69	3,514.0	-420.5	346.3	216.2	130.09	2.662	
9,100.0	6,024.0	9,046.9	5,921.0	69.7	69.7	-72.69	3,614.0	-420.5	346.3	212.6	133.70	2.590	
9,200.0	6,024.0	9,146.9	5,921.0	71.6	71.6	-72.69	3,714.0	-420.5	346.3	208.9	137.32	2.522	
9,300.0	6,024.0	9,246.9	5,921.0	73.5	73.4	-72.69	3,814.0	-420.5	346.3	205.3	140.94	2.457	
9,400.0	6,024.0	9,346.9	5,921.0	75.4	75.3	-72.69	3,914.0	-420.5	346.3	201.7	144.56	2.395	
9,500.0	6,024.0	9,446.9	5,921.0	77.3	77.2	-72.69	4,014.0	-420.5	346.3	198.1	148.19	2.337	
9,600.0	6,024.0	9,546.9	5,921.0	79.2	79.1	-72.69	4,114.0	-420.5	346.3	194.4	151.82	2.281	
9,700.0	6,024.0	9,646.9	5,921.0	81.1	80.9	-72.69	4,214.0	-420.5	346.3	190.8	155.45	2.227	
9,800.0	6,024.0	9,746.9	5,921.0	83.0	82.8	-72.69	4,314.0	-420.5	346.3	187.2	159.09	2.177	
9,900.0	6,024.0	9,846.9	5,921.0	84.9	84.7	-72.69	4,414.0	-420.5	346.3	183.5	162.73	2.128	
10,000.0	6,024.0	9,946.9	5,921.0	86.8	86.6	-72.69	4,514.0	-420.5	346.3	179.9	166.37	2.081	
10,100.0	6,024.0	10,046.9	5,921.0	88.7	88.5	-72.69	4,614.0	-420.5	346.3	176.3	170.01	2.037	
10,200.0	6,024.0	10,146.9	5,921.0	90.6	90.4	-72.69	4,714.0	-420.5	346.3	172.6	173.66	1.994	

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-0906B
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-0906B	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-0905A - 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)					
10,300.0	6,024.0	10,246.9	5,921.0	92.5	92.2	-72.69	4,814.0	-420.5	346.3	169.0	177.31	1.953	
10,400.0	6,024.0	10,346.9	5,921.0	94.4	94.1	-72.69	4,914.0	-420.5	346.3	165.3	180.96	1.914	
10,500.0	6,024.0	10,446.9	5,921.0	96.3	96.0	-72.69	5,014.0	-420.5	346.3	161.7	184.61	1.876	
10,600.0	6,024.0	10,546.9	5,921.0	98.2	97.9	-72.69	5,114.0	-420.5	346.3	158.0	188.26	1.839	
10,700.0	6,024.0	10,646.9	5,921.0	100.1	99.8	-72.69	5,214.0	-420.5	346.3	154.3	191.92	1.804	
10,800.0	6,024.0	10,746.9	5,921.0	102.0	101.7	-72.69	5,314.0	-420.5	346.3	150.7	195.57	1.771	
10,900.0	6,024.0	10,846.9	5,921.0	103.9	103.6	-72.69	5,414.0	-420.5	346.3	147.0	199.23	1.738	
11,000.0	6,024.0	10,946.9	5,921.0	105.8	105.5	-72.69	5,514.0	-420.5	346.3	143.4	202.89	1.707	
11,100.0	6,024.0	11,046.9	5,921.0	107.7	107.4	-72.69	5,614.0	-420.5	346.3	139.7	206.55	1.676	
11,200.0	6,024.0	11,146.9	5,921.0	109.6	109.3	-72.69	5,714.0	-420.5	346.3	136.1	210.21	1.647	
11,300.0	6,024.0	11,246.9	5,921.0	111.5	111.2	-72.69	5,814.0	-420.5	346.3	132.4	213.87	1.619	
11,400.0	6,024.0	11,346.9	5,921.0	113.4	113.1	-72.69	5,914.0	-420.5	346.3	128.7	217.54	1.592	
11,500.0	6,024.0	11,446.9	5,921.0	115.3	115.0	-72.69	6,014.0	-420.5	346.3	125.1	221.20	1.565	
11,600.0	6,024.0	11,546.9	5,921.0	117.2	116.9	-72.69	6,114.0	-420.5	346.3	121.4	224.87	1.540	
11,700.0	6,024.0	11,646.9	5,921.0	119.1	118.8	-72.69	6,214.0	-420.5	346.3	117.7	228.53	1.515	
11,800.0	6,024.0	11,746.9	5,921.0	121.0	120.7	-72.69	6,314.0	-420.5	346.3	114.1	232.20	1.491 Level 3	
11,900.0	6,024.0	11,846.9	5,921.0	122.9	122.6	-72.69	6,414.0	-420.5	346.3	110.4	235.87	1.468 Level 3	
12,000.0	6,024.0	11,946.9	5,921.0	124.9	124.5	-72.69	6,514.0	-420.5	346.3	106.7	239.54	1.446 Level 3	
12,100.0	6,024.0	12,046.9	5,921.0	126.8	126.4	-72.69	6,614.0	-420.5	346.3	103.1	243.21	1.424 Level 3	
12,200.0	6,024.0	12,146.9	5,921.0	128.7	128.3	-72.69	6,714.0	-420.5	346.3	99.4	246.88	1.403 Level 3	
12,300.0	6,024.0	12,246.9	5,921.0	130.6	130.2	-72.69	6,814.0	-420.5	346.3	95.7	250.55	1.382 Level 3	
12,400.0	6,024.0	12,346.9	5,921.0	132.5	132.1	-72.69	6,914.0	-420.5	346.3	92.0	254.22	1.362 Level 3	
12,500.0	6,024.0	12,446.9	5,921.0	134.4	134.0	-72.69	7,014.0	-420.5	346.3	88.4	257.89	1.343 Level 3	
12,600.0	6,024.0	12,546.9	5,921.0	136.3	135.9	-72.69	7,114.0	-420.5	346.3	84.7	261.57	1.324 Level 3	
12,700.0	6,024.0	12,646.9	5,921.0	138.2	137.8	-72.69	7,214.0	-420.5	346.3	81.0	265.24	1.305 Level 3	
12,800.0	6,024.0	12,746.9	5,921.0	140.1	139.8	-72.69	7,314.0	-420.5	346.3	77.4	268.91	1.288 Level 3	
12,900.0	6,024.0	12,846.9	5,921.0	142.1	141.7	-72.69	7,414.0	-420.5	346.3	73.7	272.59	1.270 Level 3	
13,000.0	6,024.0	12,946.9	5,921.0	144.0	143.6	-72.69	7,514.0	-420.5	346.3	70.0	276.26	1.253 Level 3	
13,100.0	6,024.0	13,046.9	5,921.0	145.9	145.5	-72.69	7,614.0	-420.5	346.3	66.3	279.94	1.237 Level 2	
13,200.0	6,024.0	13,146.9	5,921.0	147.8	147.4	-72.69	7,714.0	-420.5	346.3	62.7	283.62	1.221 Level 2	
13,300.0	6,024.0	13,246.9	5,921.0	149.7	149.3	-72.69	7,814.0	-420.5	346.3	59.0	287.29	1.205 Level 2	
13,400.0	6,024.0	13,346.9	5,921.0	151.6	151.2	-72.69	7,914.0	-420.5	346.3	55.3	290.97	1.190 Level 2	
13,500.0	6,024.0	13,446.9	5,921.0	153.5	153.1	-72.69	8,014.0	-420.5	346.3	51.6	294.65	1.175 Level 2	
13,600.0	6,024.0	13,546.9	5,921.0	155.4	155.0	-72.69	8,114.0	-420.5	346.3	47.9	298.32	1.161 Level 2	
13,700.0	6,024.0	13,646.9	5,921.0	157.4	156.9	-72.70	8,214.0	-420.5	346.3	44.3	302.00	1.147 Level 2	
13,790.8	6,024.0	13,737.7	5,921.0	159.1	158.7	-72.70	8,304.8	-420.5	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-0906B
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-0906B	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							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	32.9	32.9					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	32.9	32.9	32.7	0.19	176.549		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	32.9	32.9	32.3	0.64	51.775		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	32.9	32.9	31.8	1.09	30.336		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	32.9	32.9	31.4	1.54	21.453		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	32.9	32.9	30.9	1.98	16.593		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	32.9	32.9	30.5	2.43	13.529		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	32.9	32.9	30.0	2.88	11.420 CC		
800.0	800.0	800.0	800.0	1.7	1.7	98.48	0.0	32.9	33.1	29.8	3.33	9.947 ES		
900.0	899.8	899.8	899.8	1.9	1.9	107.12	0.0	32.9	34.3	30.5	3.78	9.073		
1,000.0	999.6	999.8	999.8	2.1	2.1	114.84	1.7	33.3	36.7	32.5	4.23	8.667		
1,100.0	1,099.4	1,100.0	1,099.8	2.4	2.3	116.54	6.8	34.3	38.9	34.3	4.69	8.300		
1,200.0	1,199.1	1,199.9	1,199.5	2.6	2.6	115.64	13.7	35.7	40.9	35.8	5.16	7.933		
1,300.0	1,298.9	1,299.9	1,299.3	2.8	2.8	114.82	20.5	37.2	42.9	37.3	5.63	7.619		
1,400.0	1,398.6	1,399.9	1,399.0	3.1	3.0	114.08	27.3	38.6	44.9	38.8	6.11	7.348		
1,500.0	1,498.4	1,499.9	1,498.7	3.3	3.3	113.40	34.2	40.0	46.9	40.3	6.60	7.112		
1,600.0	1,598.1	1,599.9	1,598.5	3.6	3.5	112.78	41.0	41.4	48.9	41.8	7.08	6.906		
1,700.0	1,697.9	1,699.8	1,698.2	3.8	3.8	112.20	47.8	42.8	50.9	43.4	7.58	6.724		
1,800.0	1,797.6	1,799.8	1,797.9	4.1	4.0	111.67	54.6	44.2	53.0	44.9	8.07	6.563		
1,900.0	1,897.4	1,899.8	1,897.7	4.3	4.3	111.18	61.5	45.6	55.0	46.4	8.57	6.419		
2,000.0	1,997.2	1,999.8	1,997.4	4.6	4.5	110.72	68.3	47.0	57.0	47.9	9.06	6.291		
2,100.0	2,096.9	2,099.7	2,097.1	4.8	4.8	110.30	75.1	48.4	59.0	49.5	9.56	6.175		
2,200.0	2,196.7	2,199.7	2,196.9	5.1	5.0	109.90	82.0	49.8	61.1	51.0	10.06	6.070		
2,300.0	2,296.4	2,299.7	2,296.6	5.3	5.3	109.53	88.8	51.2	63.1	52.6	10.56	5.975		
2,400.0	2,396.2	2,399.7	2,396.4	5.6	5.5	109.18	95.6	52.6	65.2	54.1	11.07	5.888		
2,500.0	2,495.9	2,499.7	2,496.1	5.9	5.8	108.86	102.5	54.0	67.2	55.6	11.57	5.808		
2,600.0	2,595.7	2,599.6	2,595.8	6.1	6.0	108.55	109.3	55.4	69.2	57.2	12.07	5.735		
2,700.0	2,695.5	2,699.6	2,695.6	6.4	6.3	108.26	116.1	56.9	71.3	58.7	12.58	5.668		
2,800.0	2,795.2	2,799.6	2,795.3	6.6	6.5	107.98	123.0	58.3	73.3	60.3	13.08	5.606		
2,900.0	2,895.0	2,899.6	2,895.0	6.9	6.8	107.73	129.8	59.7	75.4	61.8	13.59	5.548		
3,000.0	2,994.7	2,999.5	2,994.8	7.1	7.0	107.48	136.6	61.1	77.4	63.3	14.09	5.494		
3,100.0	3,094.5	3,099.5	3,094.5	7.4	7.3	107.25	143.4	62.5	79.5	64.9	14.60	5.444		
3,200.0	3,194.2	3,199.5	3,194.2	7.6	7.5	107.03	150.3	63.9	81.5	66.4	15.11	5.397		
3,300.0	3,294.0	3,299.5	3,294.0	7.9	7.8	106.82	157.1	65.3	83.6	68.0	15.61	5.354		
3,400.0	3,393.7	3,399.5	3,393.7	8.1	8.0	106.62	163.9	66.7	85.6	69.5	16.12	5.313		
3,500.0	3,493.5	3,499.4	3,493.4	8.4	8.3	106.43	170.8	68.1	87.7	71.1	16.63	5.274		
3,600.0	3,593.3	3,599.4	3,593.2	8.7	8.5	106.24	177.6	69.5	89.8	72.6	17.14	5.238		
3,700.0	3,693.0	3,699.4	3,692.9	8.9	8.8	106.07	184.4	70.9	91.8	74.2	17.65	5.204		
3,800.0	3,792.8	3,799.4	3,792.6	9.2	9.0	105.90	191.3	72.3	93.9	75.7	18.15	5.171		
3,900.0	3,892.5	3,899.4	3,892.4	9.4	9.3	105.75	198.1	73.7	95.9	77.3	18.66	5.141		
4,000.0	3,992.3	3,999.3	3,992.1	9.7	9.6	105.59	204.9	75.1	98.0	78.8	19.17	5.112		
4,100.0	4,092.0	4,099.3	4,091.8	9.9	9.8	105.45	211.8	76.6	100.1	80.4	19.68	5.084		
4,200.0	4,191.8	4,199.3	4,191.6	10.2	10.1	105.31	218.6	78.0	102.1	81.9	20.19	5.058		
4,300.0	4,291.6	4,299.3	4,291.3	10.4	10.3	105.17	225.4	79.4	104.2	83.5	20.70	5.034		
4,400.0	4,391.3	4,399.2	4,391.0	10.7	10.6	105.04	232.2	80.8	106.2	85.0	21.21	5.010		
4,500.0	4,491.1	4,499.2	4,490.8	11.0	10.8	104.92	239.1	82.2	108.3	86.6	21.72	4.987		
4,600.0	4,590.8	4,599.2	4,590.5	11.2	11.1	104.80	245.9	83.6	110.4	88.1	22.23	4.966		
4,700.0	4,690.6	4,699.2	4,690.3	11.5	11.3	104.68	252.7	85.0	112.4	89.7	22.74	4.946		
4,800.0	4,790.3	4,799.2	4,790.0	11.7	11.6	104.57	259.6	86.4	114.5	91.3	23.25	4.926		
4,900.0	4,890.1	4,899.1	4,889.7	12.0	11.9	104.46	266.4	87.8	116.6	92.8	23.75	4.907		
5,000.0	4,989.9	4,999.1	4,989.5	12.2	12.1	104.36	273.2	89.2	118.6	94.4	24.26	4.889		
5,100.0	5,089.6	5,099.1	5,089.2	12.5	12.4	104.26	280.1	90.6	120.7	95.9	24.77	4.872		

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-0906B
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-0906B	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						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	5,189.4	5,199.1	5,188.9	12.7	12.6	104.16	286.9	92.0	122.8	97.5	25.28	4.855		
5,300.0	5,289.1	5,299.1	5,288.7	13.0	12.9	104.07	293.7	93.4	124.8	99.0	25.79	4.840		
5,400.0	5,388.9	5,399.0	5,388.4	13.3	13.1	103.98	300.6	94.8	126.9	100.6	26.30	4.824		
5,500.0	5,488.6	5,498.1	5,487.0	13.5	13.4	102.79	309.8	96.7	129.1	102.3	26.84	4.811		
5,600.0	5,588.2	5,593.4	5,579.0	13.8	13.8	95.59	333.6	101.7	134.2	106.7	27.50	4.879		
5,700.0	5,684.6	5,685.0	5,661.8	14.2	14.3	88.06	371.6	109.5	146.3	118.0	28.33	5.164		
5,800.0	5,774.5	5,773.4	5,734.1	14.8	14.9	82.01	421.3	119.7	164.4	135.1	29.32	5.609		
5,900.0	5,854.3	5,858.9	5,795.0	15.5	15.6	77.50	480.0	131.8	186.7	156.3	30.42	6.138		
6,000.0	5,921.3	5,942.2	5,844.0	16.4	16.5	74.24	545.8	145.4	211.7	180.0	31.68	6.683		
6,100.0	5,972.9	6,023.6	5,881.0	17.6	17.4	71.95	616.8	160.0	238.2	205.1	33.17	7.182		
6,200.0	6,007.2	6,100.0	5,905.1	18.8	18.4	70.29	687.7	174.6	265.4	230.5	34.89	7.607		
6,300.0	6,023.0	6,183.6	5,919.0	20.2	19.5	69.36	768.3	191.2	292.3	255.3	37.07	7.887		
6,400.0	6,024.0	6,278.2	5,921.0	21.7	20.9	70.58	861.0	209.7	318.0	278.0	39.98	7.954		
6,500.0	6,024.0	6,395.6	5,921.0	23.0	22.5	71.95	977.2	226.8	335.0	291.9	43.15	7.763		
6,600.0	6,024.0	6,515.5	5,921.0	24.5	24.2	72.50	1,096.7	236.9	343.1	296.8	46.37	7.400		
6,700.0	6,024.0	6,633.0	5,921.0	26.2	26.0	72.63	1,214.0	239.6	345.3	295.6	49.67	6.952		
6,800.0	6,024.0	6,733.0	5,921.0	27.8	27.5	72.63	1,314.0	239.6	345.3	292.5	52.80	6.539		
6,900.0	6,024.0	6,833.0	5,921.0	29.5	29.2	72.63	1,414.0	239.6	345.3	289.2	56.01	6.164		
7,000.0	6,024.0	6,933.0	5,921.0	31.2	30.9	72.63	1,514.0	239.6	345.3	286.0	59.28	5.824		
7,100.0	6,024.0	7,033.0	5,921.0	32.9	32.6	72.63	1,614.0	239.6	345.3	282.7	62.60	5.515		
7,200.0	6,024.0	7,133.0	5,921.0	34.7	34.3	72.63	1,714.0	239.6	345.3	279.3	65.96	5.235		
7,300.0	6,024.0	7,233.0	5,921.0	36.5	36.0	72.63	1,814.0	239.6	345.3	275.9	69.35	4.978		
7,400.0	6,024.0	7,333.0	5,921.0	38.3	37.8	72.63	1,914.0	239.6	345.3	272.5	72.77	4.744		
7,500.0	6,024.0	7,433.0	5,921.0	40.1	39.6	72.63	2,014.0	239.6	345.3	269.0	76.22	4.530		
7,600.0	6,024.0	7,533.0	5,921.0	41.9	41.4	72.63	2,114.0	239.6	345.3	265.6	79.69	4.333		
7,700.0	6,024.0	7,633.0	5,921.0	43.7	43.2	72.63	2,214.0	239.6	345.3	262.1	83.17	4.151		
7,800.0	6,024.0	7,733.0	5,921.0	45.5	45.0	72.63	2,314.0	239.6	345.3	258.6	86.68	3.983		
7,900.0	6,024.0	7,833.0	5,921.0	47.4	46.8	72.63	2,414.0	239.6	345.3	255.1	90.20	3.828		
8,000.0	6,024.0	7,933.0	5,921.0	49.2	48.6	72.63	2,514.0	239.6	345.3	251.5	93.73	3.683		
8,100.0	6,024.0	8,033.0	5,921.0	51.0	50.4	72.63	2,614.0	239.6	345.2	248.0	97.28	3.549		
8,200.0	6,024.0	8,133.0	5,921.0	52.9	52.3	72.63	2,714.0	239.6	345.2	244.4	100.84	3.424		
8,300.0	6,024.0	8,233.0	5,921.0	54.8	54.1	72.63	2,814.0	239.6	345.2	240.8	104.40	3.307		
8,400.0	6,024.0	8,333.0	5,921.0	56.6	56.0	72.63	2,914.0	239.6	345.2	237.3	107.98	3.197		
8,500.0	6,024.0	8,433.0	5,921.0	58.5	57.8	72.63	3,014.0	239.6	345.2	233.7	111.56	3.095		
8,600.0	6,024.0	8,533.0	5,921.0	60.4	59.7	72.63	3,114.0	239.6	345.2	230.1	115.15	2.998		
8,700.0	6,024.0	8,633.0	5,921.0	62.2	61.6	72.63	3,214.0	239.6	345.2	226.5	118.75	2.907		
8,800.0	6,024.0	8,733.0	5,921.0	64.1	63.4	72.64	3,314.0	239.6	345.2	222.9	122.35	2.822		
8,900.0	6,024.0	8,833.0	5,921.0	66.0	65.3	72.64	3,414.0	239.6	345.2	219.3	125.96	2.741		
9,000.0	6,024.0	8,933.0	5,921.0	67.9	67.2	72.64	3,514.0	239.6	345.2	215.7	129.57	2.665		
9,100.0	6,024.0	9,033.0	5,921.0	69.7	69.0	72.64	3,614.0	239.6	345.2	212.1	133.18	2.592		
9,200.0	6,024.0	9,133.0	5,921.0	71.6	70.9	72.64	3,714.0	239.6	345.2	208.4	136.80	2.524		
9,300.0	6,024.0	9,233.0	5,921.0	73.5	72.8	72.64	3,814.0	239.6	345.2	204.8	140.43	2.458		
9,400.0	6,024.0	9,333.0	5,921.0	75.4	74.7	72.64	3,914.0	239.6	345.2	201.2	144.06	2.397		
9,500.0	6,024.0	9,433.0	5,921.0	77.3	76.6	72.64	4,014.0	239.6	345.2	197.6	147.69	2.338		
9,600.0	6,024.0	9,533.0	5,921.0	79.2	78.5	72.64	4,114.0	239.6	345.2	193.9	151.32	2.281		
9,700.0	6,024.0	9,633.0	5,921.0	81.1	80.3	72.64	4,214.0	239.6	345.2	190.3	154.96	2.228		
9,800.0	6,024.0	9,733.0	5,921.0	83.0	82.2	72.64	4,314.0	239.6	345.2	186.6	158.60	2.177		
9,900.0	6,024.0	9,833.0	5,921.0	84.9	84.1	72.64	4,414.0	239.6	345.2	183.0	162.24	2.128		
10,000.0	6,024.0	9,933.0	5,921.0	86.8	86.0	72.64	4,514.0	239.6	345.2	179.3	165.89	2.081		
10,100.0	6,024.0	10,033.0	5,921.0	88.7	87.9	72.64	4,614.0	239.6	345.2	175.7	169.54	2.036		
10,200.0	6,024.0	10,133.0	5,921.0	90.6	89.8	72.64	4,714.0	239.6	345.2	172.1	173.18	1.993		
10,300.0	6,024.0	10,233.0	5,921.0	92.5	91.7	72.64	4,814.0	239.6	345.2	168.4	176.84	1.952		

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-0906B
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-0906B	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		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)					
10,400.0	6,024.0	10,333.0	5,921.0	94.4	93.6	72.64	4,914.0	239.6	345.2	164.7	180.49	1.913	
10,500.0	6,024.0	10,433.0	5,921.0	96.3	95.5	72.64	5,014.0	239.6	345.2	161.1	184.14	1.875	
10,600.0	6,024.0	10,533.0	5,921.0	98.2	97.4	72.64	5,114.0	239.6	345.2	157.4	187.80	1.838	
10,700.0	6,024.0	10,633.0	5,921.0	100.1	99.3	72.64	5,214.0	239.6	345.2	153.8	191.46	1.803	
10,800.0	6,024.0	10,733.0	5,921.0	102.0	101.2	72.64	5,314.0	239.6	345.2	150.1	195.11	1.769	
10,900.0	6,024.0	10,833.0	5,921.0	103.9	103.1	72.64	5,414.0	239.6	345.2	146.5	198.77	1.737	
11,000.0	6,024.0	10,933.0	5,921.0	105.8	105.0	72.64	5,514.0	239.6	345.2	142.8	202.44	1.705	
11,100.0	6,024.0	11,033.0	5,921.0	107.7	106.9	72.64	5,614.0	239.6	345.2	139.1	206.10	1.675	
11,200.0	6,024.0	11,133.0	5,921.0	109.6	108.8	72.64	5,714.0	239.6	345.2	135.5	209.76	1.646	
11,300.0	6,024.0	11,233.0	5,921.0	111.5	110.7	72.64	5,814.0	239.6	345.2	131.8	213.43	1.618	
11,400.0	6,024.0	11,333.0	5,921.0	113.4	112.6	72.64	5,914.0	239.6	345.2	128.1	217.09	1.590	
11,500.0	6,024.0	11,433.0	5,921.0	115.3	114.5	72.64	6,014.0	239.6	345.2	124.5	220.76	1.564	
11,600.0	6,024.0	11,533.0	5,921.0	117.2	116.4	72.64	6,114.0	239.6	345.2	120.8	224.43	1.538	
11,700.0	6,024.0	11,633.0	5,921.0	119.1	118.3	72.64	6,214.0	239.6	345.2	117.1	228.09	1.514	
11,800.0	6,024.0	11,733.0	5,921.0	121.0	120.2	72.64	6,314.0	239.6	345.2	113.5	231.76	1.490 Level 3	
11,900.0	6,024.0	11,833.0	5,921.0	122.9	122.1	72.64	6,414.0	239.6	345.2	109.8	235.43	1.466 Level 3	
12,000.0	6,024.0	11,933.0	5,921.0	124.9	124.1	72.64	6,514.0	239.6	345.2	106.1	239.10	1.444 Level 3	
12,100.0	6,024.0	12,033.0	5,921.0	126.8	126.0	72.64	6,614.0	239.6	345.2	102.4	242.78	1.422 Level 3	
12,200.0	6,024.0	12,133.0	5,921.0	128.7	127.9	72.64	6,714.0	239.6	345.2	98.8	246.45	1.401 Level 3	
12,300.0	6,024.0	12,233.0	5,921.0	130.6	129.8	72.64	6,814.0	239.6	345.2	95.1	250.12	1.380 Level 3	
12,400.0	6,024.0	12,333.0	5,921.0	132.5	131.7	72.64	6,914.0	239.6	345.2	91.4	253.79	1.360 Level 3	
12,500.0	6,024.0	12,433.0	5,921.0	134.4	133.6	72.64	7,014.0	239.6	345.2	87.8	257.47	1.341 Level 3	
12,600.0	6,024.0	12,533.0	5,921.0	136.3	135.5	72.64	7,114.0	239.6	345.2	84.1	261.14	1.322 Level 3	
12,700.0	6,024.0	12,633.0	5,921.0	138.2	137.4	72.64	7,214.0	239.6	345.2	80.4	264.82	1.304 Level 3	
12,800.0	6,024.0	12,733.0	5,921.0	140.1	139.3	72.64	7,314.0	239.6	345.2	76.7	268.49	1.286 Level 3	
12,900.0	6,024.0	12,833.0	5,921.0	142.1	141.2	72.64	7,414.0	239.6	345.2	73.0	272.17	1.268 Level 3	
13,000.0	6,024.0	12,933.0	5,921.0	144.0	143.1	72.64	7,514.0	239.6	345.2	69.4	275.85	1.251 Level 3	
13,100.0	6,024.0	13,033.0	5,921.0	145.9	145.1	72.64	7,614.0	239.6	345.2	65.7	279.52	1.235 Level 2	
13,200.0	6,024.0	13,133.0	5,921.0	147.8	147.0	72.64	7,714.0	239.6	345.2	62.0	283.20	1.219 Level 2	
13,300.0	6,024.0	13,233.0	5,921.0	149.7	148.9	72.64	7,814.0	239.6	345.2	58.3	286.88	1.203 Level 2	
13,400.0	6,024.0	13,333.0	5,921.0	151.6	150.8	72.64	7,914.0	239.6	345.2	54.7	290.56	1.188 Level 2	
13,500.0	6,024.0	13,433.0	5,921.0	153.5	152.7	72.64	8,014.0	239.6	345.2	51.0	294.24	1.173 Level 2	
13,600.0	6,024.0	13,533.0	5,921.0	155.4	154.6	72.64	8,114.0	239.6	345.2	47.3	297.92	1.159 Level 2	
13,700.0	6,024.0	13,633.0	5,921.0	157.4	156.5	72.64	8,214.0	239.6	345.2	43.6	301.60	1.145 Level 2	
13,790.8	6,024.0	13,723.8	5,921.0	159.1	158.2	72.64	8,304.8	239.6	345.2	40.4	304.86	1.132 Level 2, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	66.1	66.1					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	66.1	66.1	66.0	0.19	354.582		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	66.1	66.1	65.5	0.64	103.985		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	66.1	66.1	65.1	1.09	60.926		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	66.1	66.1	64.6	1.54	43.085		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	66.1	66.1	64.2	1.98	33.326		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	66.1	66.1	63.7	2.43	27.172		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	66.1	66.1	63.3	2.88	22.936 CC		
800.0	800.0	800.0	800.0	1.7	1.7	96.98	0.0	66.1	66.3	63.0	3.33	19.906 ES		
900.0	899.8	899.8	899.8	1.9	1.9	101.39	0.0	66.1	67.2	63.4	3.78	17.762		
1,000.0	999.6	999.6	999.6	2.1	2.1	107.07	0.0	66.1	68.9	64.7	4.24	16.262		
1,100.0	1,099.4	1,099.4	1,099.4	2.4	2.3	112.43	0.0	66.1	71.3	66.6	4.69	15.179		
1,200.0	1,199.1	1,199.0	1,199.0	2.6	2.6	116.08	1.6	66.8	74.3	69.1	5.15	14.417		
1,300.0	1,298.9	1,298.8	1,298.6	2.8	2.8	116.88	6.3	69.0	77.7	72.1	5.61	13.839		
1,400.0	1,398.6	1,398.7	1,398.3	3.1	3.0	116.35	12.7	71.8	81.2	75.1	6.08	13.346		
1,500.0	1,498.4	1,498.6	1,498.0	3.3	3.2	115.87	19.0	74.7	84.7	78.1	6.56	12.914		
1,600.0	1,598.1	1,598.6	1,597.7	3.6	3.5	115.42	25.4	77.5	88.2	81.1	7.03	12.532		
1,700.0	1,697.9	1,698.5	1,697.4	3.8	3.7	115.01	31.7	80.4	91.7	84.1	7.52	12.193		
1,800.0	1,797.6	1,798.5	1,797.1	4.1	4.0	114.63	38.1	83.2	95.2	87.2	8.00	11.890		
1,900.0	1,897.4	1,898.4	1,896.8	4.3	4.2	114.28	44.5	86.1	98.7	90.2	8.49	11.619		
2,000.0	1,997.2	1,998.3	1,996.5	4.6	4.4	113.95	50.8	88.9	102.2	93.2	8.98	11.375		
2,100.0	2,096.9	2,098.3	2,096.2	4.8	4.7	113.64	57.2	91.7	105.7	96.2	9.48	11.155		
2,200.0	2,196.7	2,198.2	2,195.8	5.1	4.9	113.35	63.6	94.6	109.2	99.3	9.97	10.955		
2,300.0	2,296.4	2,298.1	2,295.5	5.3	5.2	113.08	69.9	97.4	112.8	102.3	10.47	10.772		
2,400.0	2,396.2	2,398.1	2,395.2	5.6	5.4	112.82	76.3	100.3	116.3	105.3	10.97	10.605		
2,500.0	2,495.9	2,498.0	2,494.9	5.9	5.7	112.59	82.6	103.1	119.8	108.4	11.46	10.452		
2,600.0	2,595.7	2,597.9	2,594.6	6.1	5.9	112.36	89.0	106.0	123.4	111.4	11.96	10.311		
2,700.0	2,695.5	2,697.9	2,694.3	6.4	6.2	112.15	95.4	108.8	126.9	114.4	12.46	10.181		
2,800.0	2,795.2	2,797.8	2,794.0	6.6	6.4	111.95	101.7	111.7	130.4	117.5	12.96	10.060		
2,900.0	2,895.0	2,897.8	2,893.7	6.9	6.7	111.76	108.1	114.5	134.0	120.5	13.47	9.948		
3,000.0	2,994.7	2,997.7	2,993.4	7.1	6.9	111.58	114.5	117.4	137.5	123.5	13.97	9.844		
3,100.0	3,094.5	3,097.6	3,093.1	7.4	7.2	111.40	120.8	120.2	141.0	126.6	14.47	9.746		
3,200.0	3,194.2	3,197.6	3,192.8	7.6	7.4	111.24	127.2	123.1	144.6	129.6	14.97	9.655		
3,300.0	3,294.0	3,297.5	3,292.5	7.9	7.7	111.09	133.5	125.9	148.1	132.6	15.48	9.570		
3,400.0	3,393.7	3,397.4	3,392.2	8.1	7.9	110.94	139.9	128.8	151.7	135.7	15.98	9.490		
3,500.0	3,493.5	3,497.4	3,491.9	8.4	8.2	110.80	146.3	131.6	155.2	138.7	16.48	9.415		
3,600.0	3,593.3	3,597.3	3,591.6	8.7	8.4	110.66	152.6	134.5	158.7	141.8	16.99	9.344		
3,700.0	3,693.0	3,697.2	3,691.2	8.9	8.7	110.53	159.0	137.3	162.3	144.8	17.49	9.277		
3,800.0	3,792.8	3,797.2	3,790.9	9.2	8.9	110.41	165.4	140.2	165.8	147.8	18.00	9.214		
3,900.0	3,892.5	3,897.1	3,890.6	9.4	9.2	110.29	171.7	143.0	169.4	150.9	18.50	9.154		
4,000.0	3,992.3	3,997.1	3,990.3	9.7	9.5	110.18	178.1	145.9	172.9	153.9	19.01	9.097		
4,100.0	4,092.0	4,097.0	4,090.0	9.9	9.7	110.07	184.4	148.7	176.5	157.0	19.52	9.043		
4,200.0	4,191.8	4,196.9	4,189.7	10.2	10.0	109.96	190.8	151.6	180.0	160.0	20.02	8.992		
4,300.0	4,291.6	4,296.9	4,289.4	10.4	10.2	109.86	197.2	154.4	183.6	163.0	20.53	8.943		
4,400.0	4,391.3	4,396.8	4,389.1	10.7	10.5	109.76	203.5	157.3	187.1	166.1	21.03	8.897		
4,500.0	4,491.1	4,496.7	4,488.8	11.0	10.7	109.67	209.9	160.1	190.7	169.1	21.54	8.852		
4,600.0	4,590.8	4,596.7	4,588.5	11.2	11.0	109.58	216.3	163.0	194.2	172.2	22.05	8.810		
4,700.0	4,690.6	4,696.6	4,688.2	11.5	11.2	109.49	222.6	165.8	197.8	175.2	22.55	8.770		
4,800.0	4,790.3	4,796.5	4,787.9	11.7	11.5	109.41	229.0	168.7	201.3	178.3	23.06	8.731		
4,900.0	4,890.1	4,896.5	4,887.6	12.0	11.7	109.33	235.3	171.5	204.9	181.3	23.57	8.694		
5,000.0	4,989.9	4,996.4	4,987.3	12.2	12.0	109.25	241.7	174.4	208.4	184.4	24.07	8.658		
5,100.0	5,089.6	5,096.4	5,086.9	12.5	12.3	109.18	248.1	177.2	212.0	187.4	24.58	8.624		

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-0906B
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-0906B	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							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	5,189.4	5,196.3	5,186.6	12.7	12.5	109.10	254.4	180.1	215.5	190.4	25.09	8.592		
5,300.0	5,289.1	5,296.2	5,286.3	13.0	12.8	109.03	260.8	182.9	219.1	193.5	25.59	8.560		
5,400.0	5,388.9	5,396.2	5,386.0	13.3	13.0	108.97	267.2	185.8	222.6	196.5	26.10	8.530		
5,500.0	5,488.6	5,496.1	5,485.7	13.5	13.3	108.90	273.5	188.6	226.2	199.6	26.61	8.501		
5,600.0	5,588.2	5,592.5	5,581.7	13.8	13.5	108.61	281.2	192.1	230.8	203.7	27.11	8.513		
5,700.0	5,684.6	5,684.1	5,670.6	14.2	13.9	107.52	301.0	200.9	243.5	215.8	27.75	8.774		
5,800.0	5,774.5	5,774.0	5,752.8	14.8	14.4	105.72	334.0	215.7	265.0	236.3	28.62	9.256		
5,900.0	5,854.3	5,861.9	5,826.0	15.5	14.9	103.29	378.1	235.4	294.3	264.5	29.80	9.873		
6,000.0	5,921.3	5,947.5	5,888.5	16.4	15.6	100.35	431.4	259.3	330.2	298.9	31.33	10.540		
6,100.0	5,972.9	6,031.2	5,939.6	17.6	16.5	97.00	491.8	286.3	371.6	338.4	33.20	11.191		
6,200.0	6,007.2	6,113.7	5,979.0	18.8	17.4	93.39	557.9	315.9	416.9	381.6	35.34	11.797		
6,300.0	6,023.0	6,196.1	6,006.4	20.2	18.4	89.67	628.7	347.6	464.8	427.1	37.65	12.345		
6,400.0	6,024.0	6,280.9	6,021.5	21.7	19.6	89.68	704.8	381.7	512.8	472.6	40.17	12.764		
6,500.0	6,024.0	6,386.5	6,024.0	23.0	21.1	90.00	801.4	424.1	556.2	513.1	43.03	12.926		
6,600.0	6,024.0	6,520.4	6,024.0	24.5	23.0	90.00	926.8	470.9	591.2	545.0	46.24	12.786		
6,700.0	6,024.0	6,660.9	6,024.0	26.2	25.0	90.00	1,061.6	510.5	619.4	569.6	49.78	12.443		
6,800.0	6,024.0	6,806.8	6,024.0	27.8	27.2	90.00	1,204.3	541.0	640.3	586.8	53.57	11.954		
6,900.0	6,024.0	6,956.8	6,024.0	29.5	29.5	90.00	1,352.9	560.8	653.6	596.0	57.56	11.354		
7,000.0	6,024.0	7,108.9	6,024.0	31.2	31.8	90.00	1,504.8	569.0	659.0	597.3	61.70	10.681		
7,100.0	6,024.0	7,218.2	6,024.0	32.9	33.5	90.00	1,614.0	569.2	659.1	593.9	65.21	10.107		
7,200.0	6,024.0	7,318.2	6,024.0	34.7	35.1	90.00	1,714.0	569.2	659.1	590.5	68.62	9.606		
7,300.0	6,024.0	7,418.2	6,024.0	36.5	36.7	90.00	1,814.0	569.2	659.1	587.0	72.06	9.146		
7,400.0	6,024.0	7,518.2	6,024.0	38.3	38.4	90.00	1,914.0	569.2	659.1	583.6	75.55	8.724		
7,500.0	6,024.0	7,618.2	6,024.0	40.1	40.1	90.00	2,014.0	569.2	659.1	580.0	79.07	8.336		
7,600.0	6,024.0	7,718.2	6,024.0	41.9	41.7	90.00	2,114.0	569.2	659.1	576.5	82.61	7.978		
7,700.0	6,024.0	7,818.2	6,024.0	43.7	43.5	90.00	2,214.0	569.2	659.1	572.9	86.19	7.648		
7,800.0	6,024.0	7,918.2	6,024.0	45.5	45.2	90.00	2,314.0	569.2	659.1	569.3	89.78	7.341		
7,900.0	6,024.0	8,018.2	6,024.0	47.4	46.9	90.00	2,414.0	569.2	659.1	565.7	93.40	7.057		
8,000.0	6,024.0	8,118.2	6,024.0	49.2	48.7	90.00	2,514.0	569.2	659.1	562.1	97.03	6.793		
8,100.0	6,024.0	8,218.2	6,024.0	51.0	50.5	90.00	2,614.0	569.2	659.1	558.5	100.68	6.547		
8,200.0	6,024.0	8,318.2	6,024.0	52.9	52.2	90.00	2,714.0	569.2	659.1	554.8	104.34	6.317		
8,300.0	6,024.0	8,418.2	6,024.0	54.8	54.0	90.00	2,814.0	569.2	659.1	551.1	108.01	6.102		
8,400.0	6,024.0	8,518.2	6,024.0	56.6	55.8	90.00	2,914.0	569.2	659.1	547.4	111.70	5.901		
8,500.0	6,024.0	8,618.2	6,024.0	58.5	57.6	90.00	3,014.0	569.2	659.1	543.7	115.40	5.712		
8,600.0	6,024.0	8,718.2	6,024.0	60.4	59.4	90.00	3,114.0	569.2	659.1	540.0	119.10	5.534		
8,700.0	6,024.0	8,818.2	6,024.0	62.2	61.3	90.00	3,214.0	569.3	659.1	536.3	122.82	5.367		
8,800.0	6,024.0	8,918.2	6,024.0	64.1	63.1	90.00	3,314.0	569.3	659.1	532.6	126.54	5.209		
8,900.0	6,024.0	9,018.2	6,024.0	66.0	64.9	90.00	3,414.0	569.3	659.1	528.9	130.27	5.060		
9,000.0	6,024.0	9,118.2	6,024.0	67.9	66.8	90.00	3,514.0	569.3	659.1	525.1	134.00	4.919		
9,100.0	6,024.0	9,218.2	6,024.0	69.7	68.6	90.00	3,614.0	569.3	659.2	521.4	137.74	4.785		
9,200.0	6,024.0	9,318.2	6,024.0	71.6	70.4	90.00	3,714.0	569.3	659.2	517.7	141.49	4.659		
9,300.0	6,024.0	9,418.2	6,024.0	73.5	72.3	90.00	3,814.0	569.3	659.2	513.9	145.24	4.538		
9,400.0	6,024.0	9,518.2	6,024.0	75.4	74.1	90.00	3,914.0	569.3	659.2	510.2	149.00	4.424		
9,500.0	6,024.0	9,618.2	6,024.0	77.3	76.0	90.00	4,014.0	569.3	659.2	506.4	152.76	4.315		
9,600.0	6,024.0	9,718.2	6,024.0	79.2	77.9	90.00	4,114.0	569.3	659.2	502.6	156.52	4.211		
9,700.0	6,024.0	9,818.2	6,024.0	81.1	79.7	90.00	4,214.0	569.3	659.2	498.9	160.29	4.112		
9,800.0	6,024.0	9,918.2	6,024.0	83.0	81.6	90.00	4,314.0	569.3	659.2	495.1	164.06	4.018		
9,900.0	6,024.0	10,018.2	6,024.0	84.9	83.5	90.00	4,414.0	569.3	659.2	491.3	167.84	3.927		
10,000.0	6,024.0	10,118.2	6,024.0	86.8	85.3	90.00	4,514.0	569.3	659.2	487.6	171.61	3.841		
10,100.0	6,024.0	10,218.2	6,024.0	88.7	87.2	90.00	4,614.0	569.3	659.2	483.8	175.40	3.758		
10,200.0	6,024.0	10,318.2	6,024.0	90.6	89.1	90.00	4,714.0	569.3	659.2	480.0	179.18	3.679		
10,300.0	6,024.0	10,418.2	6,024.0	92.5	91.0	90.00	4,814.0	569.3	659.2	476.2	182.96	3.603		

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-0906B
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-0906B	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	6,024.0	10,518.2	6,024.0	94.4	92.8	90.00	4,914.0	569.3	659.2	472.4	186.75	3.530	
10,500.0	6,024.0	10,618.2	6,024.0	96.3	94.7	90.00	5,014.0	569.3	659.2	468.6	190.54	3.459	
10,600.0	6,024.0	10,718.2	6,024.0	98.2	96.6	90.00	5,114.0	569.3	659.2	464.8	194.34	3.392	
10,700.0	6,024.0	10,818.2	6,024.0	100.1	98.5	90.00	5,214.0	569.3	659.2	461.1	198.13	3.327	
10,800.0	6,024.0	10,918.2	6,024.0	102.0	100.4	90.00	5,314.0	569.3	659.2	457.3	201.93	3.265	
10,900.0	6,024.0	11,018.2	6,024.0	103.9	102.2	90.00	5,414.0	569.3	659.2	453.5	205.72	3.204	
11,000.0	6,024.0	11,118.2	6,024.0	105.8	104.1	90.00	5,514.0	569.3	659.2	449.7	209.52	3.146	
11,100.0	6,024.0	11,218.2	6,024.0	107.7	106.0	90.00	5,614.0	569.3	659.2	445.9	213.32	3.090	
11,200.0	6,024.0	11,318.2	6,024.0	109.6	107.9	90.00	5,714.0	569.3	659.2	442.1	217.13	3.036	
11,300.0	6,024.0	11,418.2	6,024.0	111.5	109.8	90.00	5,814.0	569.3	659.2	438.3	220.93	2.984	
11,400.0	6,024.0	11,518.2	6,024.0	113.4	111.7	90.00	5,914.0	569.3	659.2	434.5	224.74	2.933	
11,500.0	6,024.0	11,618.2	6,024.0	115.3	113.6	90.00	6,014.0	569.3	659.2	430.7	228.54	2.884	
11,600.0	6,024.0	11,718.2	6,024.0	117.2	115.5	90.00	6,114.0	569.3	659.2	426.9	232.35	2.837	
11,700.0	6,024.0	11,818.2	6,024.0	119.1	117.4	90.00	6,214.0	569.3	659.2	423.1	236.16	2.791	
11,800.0	6,024.0	11,918.2	6,024.0	121.0	119.3	90.00	6,314.0	569.3	659.2	419.2	239.97	2.747	
11,900.0	6,024.0	12,018.2	6,024.0	122.9	121.2	90.00	6,414.0	569.3	659.2	415.4	243.78	2.704	
12,000.0	6,024.0	12,118.2	6,024.0	124.9	123.1	90.00	6,514.0	569.3	659.2	411.6	247.59	2.663	
12,100.0	6,024.0	12,218.2	6,024.0	126.8	125.0	90.00	6,614.0	569.3	659.2	407.8	251.40	2.622	
12,200.0	6,024.0	12,318.2	6,024.0	128.7	126.9	90.00	6,714.0	569.3	659.2	404.0	255.22	2.583	
12,300.0	6,024.0	12,418.2	6,024.0	130.6	128.8	90.00	6,814.0	569.3	659.2	400.2	259.03	2.545	
12,400.0	6,024.0	12,518.2	6,024.0	132.5	130.7	90.00	6,914.0	569.3	659.2	396.4	262.85	2.508	
12,500.0	6,024.0	12,618.2	6,024.0	134.4	132.6	90.00	7,014.0	569.3	659.2	392.6	266.66	2.472	
12,600.0	6,024.0	12,718.2	6,024.0	136.3	134.5	90.00	7,114.0	569.3	659.2	388.7	270.48	2.437	
12,700.0	6,024.0	12,818.2	6,024.0	138.2	136.4	90.00	7,214.0	569.3	659.2	384.9	274.30	2.403	
12,800.0	6,024.0	12,918.2	6,024.0	140.1	138.3	90.00	7,314.0	569.3	659.2	381.1	278.12	2.370	
12,900.0	6,024.0	13,018.2	6,024.0	142.1	140.2	90.00	7,414.0	569.3	659.2	377.3	281.94	2.338	
13,000.0	6,024.0	13,118.2	6,024.0	144.0	142.1	90.00	7,514.0	569.3	659.2	373.5	285.76	2.307	
13,100.0	6,024.0	13,218.2	6,024.0	145.9	144.0	90.00	7,614.0	569.3	659.2	369.7	289.58	2.277	
13,200.0	6,024.0	13,318.2	6,024.0	147.8	145.9	90.00	7,714.0	569.3	659.2	365.8	293.40	2.247	
13,300.0	6,024.0	13,418.2	6,024.0	149.7	147.8	90.00	7,814.0	569.3	659.2	362.0	297.22	2.218	
13,400.0	6,024.0	13,518.2	6,024.0	151.6	149.7	90.00	7,914.0	569.3	659.2	358.2	301.04	2.190	
13,500.0	6,024.0	13,618.2	6,024.0	153.5	151.6	90.00	8,014.0	569.3	659.2	354.4	304.86	2.162	
13,600.0	6,024.0	13,718.2	6,024.0	155.4	153.5	90.00	8,114.0	569.3	659.3	350.6	308.69	2.136	
13,700.0	6,024.0	13,818.2	6,024.0	157.4	155.3	90.00	8,214.0	569.3	659.3	346.8	312.45	2.110	
13,790.8	6,024.0	13,909.0	6,024.0	159.1	156.8	90.00	8,304.8	569.3	659.3	343.6	315.61	2.089 SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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-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		
0.0	0.0	0.0	0.0	0.0	0.0	-94.76	-100.2	-1,203.8	1,208.0						
100.0	100.0	97.9	97.9	0.1	0.1	-94.76	-100.2	-1,203.8	1,208.0	1,207.8	0.19	6,525.227			
200.0	200.0	197.9	197.9	0.3	0.3	-94.76	-100.2	-1,203.8	1,208.0	1,207.4	0.63	1,911.699			
300.0	300.0	297.9	297.9	0.5	0.5	-94.76	-100.2	-1,203.8	1,208.0	1,206.9	1.08	1,117.038 CC			
400.0	400.0	394.3	394.2	0.8	0.8	-94.68	-98.6	-1,204.1	1,208.1	1,206.6	1.52	793.712			
500.0	500.0	490.3	490.2	1.0	1.0	-94.46	-93.9	-1,204.9	1,208.6	1,206.6	1.97	614.594			
600.0	600.0	589.7	589.3	1.2	1.2	-94.13	-87.1	-1,206.1	1,209.3	1,206.9	2.43	498.161			
700.0	700.0	689.5	688.8	1.4	1.5	-93.80	-80.3	-1,207.3	1,210.0	1,207.1	2.90	417.962			
800.0	800.0	789.3	788.4	1.7	1.7	-88.06	-73.4	-1,208.5	1,210.7	1,207.4	3.37	359.566			
900.0	899.8	889.3	888.2	1.9	2.0	-87.97	-66.5	-1,209.7	1,211.3	1,207.5	3.84	315.287			
1,000.0	999.6	989.3	987.9	2.1	2.2	-87.97	-59.7	-1,210.9	1,211.9	1,207.6	4.32	280.225			
1,100.0	1,099.4	1,089.3	1,087.7	2.4	2.5	-87.98	-52.8	-1,212.1	1,212.4	1,207.6	4.81	251.880			
1,200.0	1,199.1	1,189.3	1,187.4	2.6	2.7	-87.98	-45.9	-1,213.4	1,213.0	1,207.7	5.31	228.568			
1,300.0	1,298.9	1,289.3	1,287.2	2.8	3.0	-87.98	-39.1	-1,214.6	1,213.5	1,207.7	5.80	209.101			
1,400.0	1,398.6	1,389.3	1,387.0	3.1	3.2	-87.98	-32.2	-1,215.8	1,214.1	1,207.7	6.30	192.625			
1,500.0	1,498.4	1,489.3	1,486.7	3.3	3.5	-87.98	-25.3	-1,217.0	1,214.6	1,207.8	6.80	178.515			
1,600.0	1,598.1	1,589.3	1,586.5	3.6	3.7	-87.99	-18.4	-1,218.2	1,215.1	1,207.8	7.31	166.305			
1,700.0	1,697.9	1,689.3	1,686.2	3.8	4.0	-87.99	-11.6	-1,219.4	1,215.7	1,207.9	7.81	155.642			
1,800.0	1,797.6	1,789.3	1,786.0	4.1	4.2	-87.99	-4.7	-1,220.6	1,216.2	1,207.9	8.32	146.254			
1,900.0	1,897.4	1,889.3	1,885.7	4.3	4.5	-87.99	2.2	-1,221.8	1,216.8	1,207.9	8.82	137.927			
2,000.0	1,997.2	1,989.3	1,985.5	4.6	4.8	-87.99	9.0	-1,223.0	1,217.3	1,208.0	9.33	130.493			
2,100.0	2,096.9	2,089.3	2,085.2	4.8	5.0	-87.99	15.9	-1,224.2	1,217.8	1,208.0	9.84	123.818			
2,200.0	2,196.7	2,189.3	2,185.0	5.1	5.3	-88.00	22.8	-1,225.4	1,218.4	1,208.0	10.34	117.792			
2,300.0	2,296.4	2,289.3	2,284.8	5.3	5.5	-88.00	29.6	-1,226.6	1,218.9	1,208.1	10.85	112.325			
2,400.0	2,396.2	2,389.3	2,384.5	5.6	5.8	-88.00	36.5	-1,227.8	1,219.5	1,208.1	11.36	107.344			
2,500.0	2,495.9	2,489.3	2,484.3	5.9	6.0	-88.00	43.4	-1,229.0	1,220.0	1,208.1	11.87	102.786			
2,600.0	2,595.7	2,589.3	2,584.0	6.1	6.3	-88.00	50.3	-1,230.2	1,220.6	1,208.2	12.38	98.601			
2,700.0	2,695.5	2,689.3	2,683.8	6.4	6.5	-88.01	57.1	-1,231.4	1,221.1	1,208.2	12.89	94.745			
2,800.0	2,795.2	2,789.3	2,783.5	6.6	6.8	-88.01	64.0	-1,232.6	1,221.6	1,208.2	13.40	91.181			
2,900.0	2,895.0	2,889.3	2,883.3	6.9	7.1	-88.01	70.9	-1,233.8	1,222.2	1,208.3	13.91	87.877			
3,000.0	2,994.7	2,989.3	2,983.0	7.1	7.3	-88.01	77.7	-1,235.0	1,222.7	1,208.3	14.42	84.805			
3,100.0	3,094.5	3,089.3	3,082.8	7.4	7.6	-88.01	84.6	-1,236.2	1,223.3	1,208.3	14.93	81.942			
3,200.0	3,194.2	3,189.3	3,182.5	7.6	7.8	-88.02	91.5	-1,237.5	1,223.8	1,208.4	15.44	79.268			
3,300.0	3,294.0	3,289.3	3,282.3	7.9	8.1	-88.02	98.4	-1,238.7	1,224.4	1,208.4	15.95	76.765			
3,400.0	3,393.7	3,389.3	3,382.1	8.1	8.3	-88.02	105.2	-1,239.9	1,224.9	1,208.4	16.46	74.416			
3,500.0	3,493.5	3,489.3	3,481.8	8.4	8.6	-88.02	112.1	-1,241.1	1,225.4	1,208.5	16.97	72.208			
3,600.0	3,593.3	3,589.3	3,581.6	8.7	8.9	-88.02	119.0	-1,242.3	1,226.0	1,208.5	17.48	70.129			
3,700.0	3,693.0	3,689.3	3,681.3	8.9	9.1	-88.02	125.8	-1,243.5	1,226.5	1,208.5	17.99	68.167			
3,800.0	3,792.8	3,789.2	3,781.1	9.2	9.4	-88.03	132.7	-1,244.7	1,227.1	1,208.6	18.50	66.314			
3,900.0	3,892.5	3,889.2	3,880.8	9.4	9.6	-88.03	139.6	-1,245.9	1,227.6	1,208.6	19.02	64.559			
4,000.0	3,992.3	3,989.2	3,980.6	9.7	9.9	-88.03	146.4	-1,247.1	1,228.2	1,208.6	19.53	62.897			
4,100.0	4,092.0	4,089.2	4,080.3	9.9	10.1	-88.03	153.3	-1,248.3	1,228.7	1,208.7	20.04	61.319			
4,200.0	4,191.8	4,189.2	4,180.1	10.2	10.4	-88.03	160.2	-1,249.5	1,229.2	1,208.7	20.55	59.820			
4,300.0	4,291.6	4,289.2	4,279.8	10.4	10.6	-88.04	167.1	-1,250.7	1,229.8	1,208.7	21.06	58.393			
4,400.0	4,391.3	4,389.2	4,379.6	10.7	10.9	-88.04	173.9	-1,251.9	1,230.3	1,208.8	21.57	57.033			
4,500.0	4,491.1	4,489.2	4,479.4	11.0	11.2	-88.04	180.8	-1,253.1	1,230.9	1,208.8	22.08	55.737			
4,600.0	4,590.8	4,589.2	4,579.1	11.2	11.4	-88.04	187.7	-1,254.3	1,231.4	1,208.8	22.60	54.499			
4,700.0	4,690.6	4,689.2	4,678.9	11.5	11.7	-88.04	194.5	-1,255.5	1,232.0	1,208.8	23.11	53.316			
4,800.0	4,790.3	4,789.2	4,778.6	11.7	11.9	-88.04	201.4	-1,256.7	1,232.5	1,208.9	23.62	52.184			
4,900.0	4,890.1	4,889.2	4,878.4	12.0	12.2	-88.05	208.3	-1,257.9	1,233.0	1,208.9	24.13	51.100			
5,000.0	4,989.9	4,989.2	4,978.1	12.2	12.4	-88.05	215.2	-1,259.1	1,233.6	1,208.9	24.64	50.060			
5,100.0	5,089.6	5,089.2	5,077.9	12.5	12.7	-88.05	222.0	-1,260.4	1,234.1	1,209.0	25.15	49.063			

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-0906B
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-0906B	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-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	5,189.4	5,189.2	5,177.6	12.7	13.0	-88.05	228.9	-1,261.6	1,234.7	1,209.0	25.67	48.106		
5,300.0	5,289.1	5,289.2	5,277.4	13.0	13.2	-88.05	235.8	-1,262.8	1,235.2	1,209.0	26.18	47.186		
5,400.0	5,388.9	5,389.2	5,377.2	13.3	13.5	-88.06	242.6	-1,264.0	1,235.8	1,209.1	26.69	46.302		
5,500.0	5,488.6	5,473.6	5,461.0	13.5	13.7	-87.93	251.2	-1,265.5	1,236.7	1,209.5	27.19	45.487		
5,600.0	5,588.2	5,550.0	5,535.0	13.8	14.0	-87.23	269.5	-1,268.8	1,239.4	1,211.7	27.76	44.648		
5,700.0	5,684.6	5,623.5	5,602.9	14.2	14.4	-86.37	297.0	-1,273.9	1,243.4	1,214.9	28.55	43.554		
5,800.0	5,774.5	5,700.0	5,668.7	14.8	14.9	-85.57	335.3	-1,280.9	1,248.3	1,218.7	29.59	42.181		
5,900.0	5,854.3	5,770.0	5,723.3	15.5	15.5	-84.89	378.4	-1,288.8	1,253.9	1,223.0	30.87	40.619		
6,000.0	5,921.3	5,843.0	5,773.5	16.4	16.2	-84.34	430.4	-1,298.4	1,259.9	1,227.4	32.44	38.837		
6,100.0	5,972.9	5,916.2	5,815.8	17.6	17.0	-83.93	489.1	-1,309.2	1,266.1	1,231.8	34.31	36.903		
6,200.0	6,007.2	5,990.1	5,849.7	18.8	17.9	-83.69	553.6	-1,321.0	1,272.4	1,236.0	36.46	34.901		
6,300.0	6,023.0	6,065.0	5,874.2	20.2	18.9	-83.61	623.1	-1,333.8	1,278.7	1,239.9	38.86	32.907		
6,400.0	6,024.0	6,141.8	5,888.6	21.7	20.0	-84.01	697.2	-1,347.5	1,286.5	1,245.2	41.36	31.106		
6,500.0	6,024.0	6,275.7	5,892.0	23.0	22.0	-84.21	829.0	-1,370.3	1,300.3	1,255.8	44.55	29.187		
6,600.0	6,024.0	6,558.0	5,892.0	24.5	26.1	-84.29	1,110.4	-1,390.0	1,306.6	1,256.5	50.13	26.066		
6,700.0	6,024.0	6,658.0	5,892.0	26.2	27.7	-84.29	1,210.4	-1,390.3	1,306.9	1,253.5	53.36	24.490		
6,800.0	6,024.0	6,758.0	5,892.0	27.8	29.4	-84.29	1,310.4	-1,390.5	1,307.1	1,250.4	56.69	23.058		
6,900.0	6,024.0	6,858.0	5,892.0	29.5	31.1	-84.30	1,410.4	-1,390.8	1,307.4	1,247.3	60.08	21.763		
7,000.0	6,024.0	6,958.0	5,892.0	31.2	32.8	-84.30	1,510.4	-1,391.1	1,307.7	1,244.2	63.51	20.590		
7,100.0	6,024.0	7,058.0	5,892.0	32.9	34.6	-84.30	1,610.4	-1,391.4	1,308.0	1,241.0	66.99	19.525		
7,200.0	6,024.0	7,158.0	5,892.0	34.7	36.3	-84.30	1,710.4	-1,391.7	1,308.2	1,237.7	70.51	18.555		
7,300.0	6,024.0	7,258.0	5,892.0	36.5	38.1	-84.30	1,810.4	-1,391.9	1,308.5	1,234.5	74.05	17.670		
7,400.0	6,024.0	7,358.0	5,892.0	38.3	39.9	-84.30	1,910.4	-1,392.2	1,308.8	1,231.2	77.62	16.861		
7,500.0	6,024.0	7,458.0	5,892.0	40.1	41.7	-84.30	2,010.4	-1,392.5	1,309.1	1,227.9	81.22	16.118		
7,600.0	6,024.0	7,558.0	5,892.0	41.9	43.5	-84.30	2,110.4	-1,392.8	1,309.4	1,224.5	84.84	15.434		
7,700.0	6,024.0	7,658.0	5,892.0	43.7	45.4	-84.31	2,210.4	-1,393.1	1,309.6	1,221.2	88.47	14.803		
7,800.0	6,024.0	7,758.0	5,892.0	45.5	47.2	-84.31	2,310.4	-1,393.3	1,309.9	1,217.8	92.12	14.220		
7,900.0	6,024.0	7,858.0	5,892.0	47.4	49.0	-84.31	2,410.4	-1,393.6	1,310.2	1,214.4	95.78	13.679		
8,000.0	6,024.0	7,958.0	5,892.0	49.2	50.9	-84.31	2,510.4	-1,393.9	1,310.5	1,211.0	99.46	13.176		
8,100.0	6,024.0	8,058.0	5,892.0	51.0	52.7	-84.31	2,610.4	-1,394.2	1,310.7	1,207.6	103.14	12.708		
8,200.0	6,024.0	8,158.0	5,892.0	52.9	54.6	-84.31	2,710.4	-1,394.5	1,311.0	1,204.2	106.84	12.271		
8,300.0	6,024.0	8,258.0	5,892.0	54.8	56.4	-84.31	2,810.4	-1,394.7	1,311.3	1,200.8	110.55	11.862		
8,400.0	6,024.0	8,358.0	5,892.0	56.6	58.3	-84.31	2,910.4	-1,395.0	1,311.6	1,197.3	114.26	11.479		
8,500.0	6,024.0	8,458.0	5,892.0	58.5	60.2	-84.32	3,010.4	-1,395.3	1,311.9	1,193.9	117.98	11.119		
8,600.0	6,024.0	8,558.0	5,892.0	60.4	62.0	-84.32	3,110.4	-1,395.6	1,312.1	1,190.4	121.71	10.781		
8,700.0	6,024.0	8,658.0	5,892.0	62.2	63.9	-84.32	3,210.4	-1,395.8	1,312.4	1,187.0	125.44	10.462		
8,800.0	6,024.0	8,758.0	5,892.0	64.1	65.8	-84.32	3,310.4	-1,396.1	1,312.7	1,183.5	129.18	10.162		
8,900.0	6,024.0	8,858.0	5,892.0	66.0	67.7	-84.32	3,410.4	-1,396.4	1,313.0	1,180.0	132.92	9.878		
9,000.0	6,024.0	8,958.0	5,892.0	67.9	69.6	-84.32	3,510.4	-1,396.7	1,313.2	1,176.6	136.67	9.609		
9,100.0	6,024.0	9,058.0	5,892.0	69.7	71.4	-84.32	3,610.4	-1,397.0	1,313.5	1,173.1	140.42	9.354		
9,200.0	6,024.0	9,158.0	5,892.0	71.6	73.3	-84.32	3,710.4	-1,397.2	1,313.8	1,169.6	144.18	9.112		
9,300.0	6,024.0	9,258.0	5,892.0	73.5	75.2	-84.33	3,810.4	-1,397.5	1,314.1	1,166.1	147.94	8.882		
9,400.0	6,024.0	9,358.0	5,892.0	75.4	77.1	-84.33	3,910.4	-1,397.8	1,314.4	1,162.6	151.70	8.664		
9,500.0	6,024.0	9,458.0	5,892.0	77.3	79.0	-84.33	4,010.4	-1,398.1	1,314.6	1,159.2	155.47	8.456		
9,600.0	6,024.0	9,558.0	5,892.0	79.2	80.9	-84.33	4,110.4	-1,398.4	1,314.9	1,155.7	159.24	8.257		
9,700.0	6,024.0	9,658.0	5,892.0	81.1	82.8	-84.33	4,210.4	-1,398.6	1,315.2	1,152.2	163.01	8.068		
9,800.0	6,024.0	9,758.0	5,892.0	83.0	84.7	-84.33	4,310.4	-1,398.9	1,315.5	1,148.7	166.79	7.887		
9,900.0	6,024.0	9,858.0	5,892.0	84.9	86.6	-84.33	4,410.4	-1,399.2	1,315.7	1,145.2	170.56	7.714		
10,000.0	6,024.0	9,958.0	5,892.0	86.8	88.5	-84.33	4,510.4	-1,399.5	1,316.0	1,141.7	174.34	7.548		
10,100.0	6,024.0	10,058.0	5,892.0	88.7	90.4	-84.34	4,610.4	-1,399.8	1,316.3	1,138.2	178.13	7.390		
10,200.0	6,024.0	10,158.0	5,892.0	90.6	92.3	-84.34	4,710.4	-1,400.0	1,316.6	1,134.7	181.91	7.238		
10,300.0	6,024.0	10,258.0	5,892.0	92.5	94.2	-84.34	4,810.4	-1,400.3	1,316.9	1,131.2	185.69	7.092		

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-0906B
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-0906B	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-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		
10,400.0	6,024.0	10,358.0	5,892.0	94.4	96.1	-84.34	4,910.4	-1,400.6	1,317.1	1,127.7	189.48	6.951		
10,500.0	6,024.0	10,458.0	5,892.0	96.3	98.0	-84.34	5,010.4	-1,400.9	1,317.4	1,124.1	193.27	6.816		
10,600.0	6,024.0	10,558.0	5,892.0	98.2	99.9	-84.34	5,110.4	-1,401.2	1,317.7	1,120.6	197.06	6.687		
10,700.0	6,024.0	10,658.0	5,892.0	100.1	101.8	-84.34	5,210.4	-1,401.4	1,318.0	1,117.1	200.85	6.562		
10,800.0	6,024.0	10,758.0	5,892.0	102.0	103.7	-84.34	5,310.4	-1,401.7	1,318.2	1,113.6	204.64	6.442		
10,900.0	6,024.0	10,858.0	5,892.0	103.9	105.6	-84.35	5,410.4	-1,402.0	1,318.5	1,110.1	208.44	6.326		
11,000.0	6,024.0	10,958.0	5,892.0	105.8	107.5	-84.35	5,510.4	-1,402.3	1,318.8	1,106.6	212.23	6.214		
11,100.0	6,024.0	11,058.0	5,892.0	107.7	109.4	-84.35	5,610.4	-1,402.6	1,319.1	1,103.0	216.03	6.106		
11,200.0	6,024.0	11,158.0	5,892.0	109.6	111.3	-84.35	5,710.4	-1,402.8	1,319.4	1,099.5	219.82	6.002		
11,300.0	6,024.0	11,258.0	5,892.0	111.5	113.2	-84.35	5,810.4	-1,403.1	1,319.6	1,096.0	223.62	5.901		
11,400.0	6,024.0	11,358.0	5,892.0	113.4	115.1	-84.35	5,910.4	-1,403.4	1,319.9	1,092.5	227.42	5.804		
11,500.0	6,024.0	11,458.0	5,892.0	115.3	117.0	-84.35	6,010.4	-1,403.7	1,320.2	1,089.0	231.22	5.710		
11,600.0	6,024.0	11,558.0	5,892.0	117.2	118.9	-84.35	6,110.4	-1,404.0	1,320.5	1,085.4	235.02	5.618		
11,700.0	6,024.0	11,658.0	5,892.0	119.1	120.8	-84.35	6,210.4	-1,404.2	1,320.7	1,081.9	238.82	5.530		
11,800.0	6,024.0	11,758.0	5,892.0	121.0	122.7	-84.36	6,310.4	-1,404.5	1,321.0	1,078.4	242.63	5.445		
11,900.0	6,024.0	11,858.0	5,892.0	122.9	124.6	-84.36	6,410.4	-1,404.8	1,321.3	1,074.9	246.43	5.362		
12,000.0	6,024.0	11,958.0	5,892.0	124.9	126.6	-84.36	6,510.4	-1,405.1	1,321.6	1,071.3	250.24	5.281		
12,100.0	6,024.0	12,058.0	5,892.0	126.8	128.5	-84.36	6,610.4	-1,405.3	1,321.8	1,067.8	254.04	5.203		
12,200.0	6,024.0	12,158.0	5,892.0	128.7	130.4	-84.36	6,710.4	-1,405.6	1,322.1	1,064.3	257.85	5.128		
12,300.0	6,024.0	12,258.0	5,892.0	130.6	132.3	-84.36	6,810.4	-1,405.9	1,322.4	1,060.8	261.65	5.054		
12,400.0	6,024.0	12,358.0	5,892.0	132.5	134.2	-84.36	6,910.4	-1,406.2	1,322.7	1,057.2	265.46	4.983		
12,500.0	6,024.0	12,458.0	5,892.0	134.4	136.1	-84.36	7,010.4	-1,406.5	1,323.0	1,053.7	269.27	4.913		
12,600.0	6,024.0	12,558.0	5,892.0	136.3	138.0	-84.37	7,110.4	-1,406.7	1,323.2	1,050.2	273.07	4.846		
12,700.0	6,024.0	12,658.0	5,892.0	138.2	139.9	-84.37	7,210.4	-1,407.0	1,323.5	1,046.6	276.88	4.780		
12,800.0	6,024.0	12,758.0	5,892.0	140.1	141.9	-84.37	7,310.4	-1,407.3	1,323.8	1,043.1	280.69	4.716		
12,900.0	6,024.0	12,858.0	5,892.0	142.1	143.8	-84.37	7,410.4	-1,407.6	1,324.1	1,039.6	284.50	4.654		
13,000.0	6,024.0	12,958.0	5,892.0	144.0	145.7	-84.37	7,510.4	-1,407.9	1,324.3	1,036.0	288.31	4.593		
13,100.0	6,024.0	13,058.0	5,892.0	145.9	147.6	-84.37	7,610.4	-1,408.1	1,324.6	1,032.5	292.12	4.534		
13,200.0	6,024.0	13,158.0	5,892.0	147.8	149.5	-84.37	7,710.4	-1,408.4	1,324.9	1,029.0	295.93	4.477		
13,300.0	6,024.0	13,258.0	5,892.0	149.7	151.4	-84.37	7,810.4	-1,408.7	1,325.2	1,025.4	299.74	4.421		
13,400.0	6,024.0	13,358.0	5,892.0	151.6	153.3	-84.38	7,910.4	-1,409.0	1,325.5	1,021.9	303.56	4.366		
13,500.0	6,024.0	13,458.0	5,892.0	153.5	155.2	-84.38	8,010.4	-1,409.3	1,325.7	1,018.4	307.37	4.313		
13,600.0	6,024.0	13,558.0	5,892.0	155.4	157.2	-84.38	8,110.4	-1,409.5	1,326.0	1,014.8	311.18	4.261		
13,700.0	6,024.0	13,658.0	5,892.0	157.4	159.1	-84.38	8,210.4	-1,409.8	1,326.3	1,011.3	314.99	4.211		
13,790.8	6,024.0	13,748.8	5,892.0	159.1	160.6	-84.38	8,301.2	-1,410.1	1,326.5	1,008.3	318.28	4.168 ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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		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	-91.32	-25.5	-1,104.8	1,105.1					
100.0	100.0	97.9	97.9	0.1	0.1	-91.32	-25.5	-1,104.8	1,105.1	1,104.9	0.19	5,969.161		
200.0	200.0	197.9	197.9	0.3	0.3	-91.32	-25.5	-1,104.8	1,105.1	1,104.4	0.63	1,748.788		
300.0	300.0	297.9	297.9	0.5	0.5	-91.32	-25.5	-1,104.8	1,105.1	1,104.0	1.08	1,021.846		
400.0	400.0	397.9	397.9	0.8	0.8	-91.32	-25.5	-1,104.8	1,105.1	1,103.5	1.53	721.804		
500.0	500.0	497.9	497.9	1.0	1.0	-91.32	-25.5	-1,104.8	1,105.1	1,103.1	1.98	557.969		
600.0	600.0	597.9	597.9	1.2	1.2	-91.32	-25.5	-1,104.8	1,105.1	1,102.6	2.43	454.750		
700.0	700.0	697.9	697.9	1.4	1.4	-91.32	-25.5	-1,104.8	1,105.1	1,102.2	2.88	383.759		
800.0	800.0	797.9	797.9	1.7	1.7	-85.94	-25.5	-1,104.8	1,104.9	1,101.6	3.33	331.995		
900.0	899.8	897.7	897.7	1.9	1.9	-86.21	-25.5	-1,104.8	1,104.6	1,100.8	3.78	292.360		
1,000.0	999.6	994.5	994.5	2.1	2.1	-86.48	-24.0	-1,104.9	1,104.3	1,100.0	4.23	261.271		
1,055.0	1,054.4	1,047.8	1,047.7	2.3	2.2	-86.56	-21.7	-1,105.2	1,104.2	1,099.7	4.48	246.680		
1,100.0	1,099.4	1,091.4	1,091.3	2.4	2.3	-86.58	-19.2	-1,105.5	1,104.2	1,099.6	4.68	235.927		
1,200.0	1,199.1	1,191.2	1,190.8	2.6	2.6	-86.58	-12.3	-1,106.3	1,104.4	1,099.2	5.15	214.497		
1,300.0	1,298.9	1,291.2	1,290.5	2.8	2.8	-86.58	-5.3	-1,107.1	1,104.5	1,098.9	5.63	196.358		
1,400.0	1,398.6	1,391.2	1,390.3	3.1	3.0	-86.59	1.6	-1,107.9	1,104.7	1,098.6	6.11	180.878		
1,500.0	1,498.4	1,491.2	1,490.0	3.3	3.3	-86.59	8.5	-1,108.8	1,104.8	1,098.2	6.59	167.548		
1,600.0	1,598.1	1,591.2	1,589.8	3.6	3.5	-86.59	15.4	-1,109.6	1,105.0	1,097.9	7.08	155.971		
1,700.0	1,697.9	1,691.2	1,689.6	3.8	3.7	-86.59	22.4	-1,110.4	1,105.1	1,097.6	7.58	145.837		
1,800.0	1,797.6	1,791.2	1,789.3	4.1	4.0	-86.59	29.3	-1,111.2	1,105.3	1,097.2	8.07	136.902		
1,900.0	1,897.4	1,891.2	1,889.1	4.3	4.2	-86.59	36.2	-1,112.0	1,105.4	1,096.9	8.57	128.970		
2,000.0	1,997.2	1,991.2	1,988.8	4.6	4.5	-86.59	43.2	-1,112.8	1,105.6	1,096.5	9.07	121.887		
2,100.0	2,096.9	2,091.2	2,088.6	4.8	4.7	-86.59	50.1	-1,113.6	1,105.7	1,096.2	9.57	115.524		
2,200.0	2,196.7	2,191.2	2,188.3	5.1	5.0	-86.59	57.0	-1,114.5	1,105.9	1,095.8	10.07	109.781		
2,300.0	2,296.4	2,291.2	2,288.1	5.3	5.2	-86.59	63.9	-1,115.3	1,106.0	1,095.4	10.58	104.574		
2,400.0	2,396.2	2,391.2	2,387.9	5.6	5.5	-86.59	70.9	-1,116.1	1,106.2	1,095.1	11.08	99.831		
2,500.0	2,495.9	2,491.2	2,487.6	5.9	5.7	-86.59	77.8	-1,116.9	1,106.3	1,094.7	11.59	95.495		
2,600.0	2,595.7	2,591.2	2,587.4	6.1	6.0	-86.59	84.7	-1,117.7	1,106.5	1,094.4	12.09	91.516		
2,700.0	2,695.5	2,691.2	2,687.1	6.4	6.2	-86.59	91.6	-1,118.5	1,106.6	1,094.0	12.60	87.852		
2,800.0	2,795.2	2,791.2	2,786.9	6.6	6.5	-86.59	98.6	-1,119.3	1,106.8	1,093.7	13.10	84.468		
2,900.0	2,895.0	2,891.2	2,886.6	6.9	6.8	-86.59	105.5	-1,120.1	1,106.9	1,093.3	13.61	81.332		
3,000.0	2,994.7	2,991.2	2,986.4	7.1	7.0	-86.59	112.4	-1,121.0	1,107.1	1,092.9	14.12	78.420		
3,100.0	3,094.5	3,091.2	3,086.1	7.4	7.3	-86.59	119.4	-1,121.8	1,107.2	1,092.6	14.62	75.708		
3,200.0	3,194.2	3,191.2	3,185.9	7.6	7.5	-86.59	126.3	-1,122.6	1,107.4	1,092.2	15.13	73.176		
3,300.0	3,294.0	3,291.2	3,285.7	7.9	7.8	-86.60	133.2	-1,123.4	1,107.5	1,091.9	15.64	70.807		
3,400.0	3,393.7	3,391.2	3,385.4	8.1	8.0	-86.60	140.1	-1,124.2	1,107.7	1,091.5	16.15	68.587		
3,500.0	3,493.5	3,491.2	3,485.2	8.4	8.3	-86.60	147.1	-1,125.0	1,107.8	1,091.1	16.66	66.501		
3,600.0	3,593.3	3,591.2	3,584.9	8.7	8.5	-86.60	154.0	-1,125.8	1,107.9	1,090.8	17.17	64.538		
3,700.0	3,693.0	3,691.2	3,684.7	8.9	8.8	-86.60	160.9	-1,126.7	1,108.1	1,090.4	17.68	62.687		
3,800.0	3,792.8	3,791.2	3,784.4	9.2	9.0	-86.60	167.9	-1,127.5	1,108.2	1,090.1	18.19	60.939		
3,900.0	3,892.5	3,891.2	3,884.2	9.4	9.3	-86.60	174.8	-1,128.3	1,108.4	1,089.7	18.70	59.286		
4,000.0	3,992.3	3,991.2	3,984.0	9.7	9.5	-86.60	181.7	-1,129.1	1,108.5	1,089.3	19.21	57.720		
4,100.0	4,092.0	4,091.2	4,083.7	9.9	9.8	-86.60	188.6	-1,129.9	1,108.7	1,089.0	19.72	56.234		
4,200.0	4,191.8	4,191.2	4,183.5	10.2	10.1	-86.60	195.6	-1,130.7	1,108.8	1,088.6	20.23	54.824		
4,300.0	4,291.6	4,291.2	4,283.2	10.4	10.3	-86.60	202.5	-1,131.5	1,109.0	1,088.2	20.74	53.482		
4,400.0	4,391.3	4,391.2	4,383.0	10.7	10.6	-86.60	209.4	-1,132.4	1,109.1	1,087.9	21.25	52.204		
4,500.0	4,491.1	4,491.2	4,482.7	11.0	10.8	-86.60	216.4	-1,133.2	1,109.3	1,087.5	21.76	50.987		
4,600.0	4,590.8	4,591.2	4,582.5	11.2	11.1	-86.60	223.3	-1,134.0	1,109.4	1,087.2	22.27	49.824		
4,700.0	4,690.6	4,691.2	4,682.2	11.5	11.3	-86.60	230.2	-1,134.8	1,109.6	1,086.8	22.78	48.714		
4,800.0	4,790.3	4,791.2	4,782.0	11.7	11.6	-86.60	237.1	-1,135.6	1,109.7	1,086.4	23.29	47.652		
4,900.0	4,890.1	4,891.2	4,881.8	12.0	11.8	-86.60	244.1	-1,136.4	1,109.9	1,086.1	23.80	46.636		
5,000.0	4,989.9	4,991.2	4,981.5	12.2	12.1	-86.60	251.0	-1,137.2	1,110.0	1,085.7	24.31	45.662		

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-0906B
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-0906B	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							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
5,100.0	5,089.6	5,091.2	5,081.3	12.5	12.4	-86.61	257.9	-1,138.1	1,110.2	1,085.3	24.82	44.728		
5,200.0	5,189.4	5,191.2	5,181.0	12.7	12.6	-86.61	264.8	-1,138.9	1,110.3	1,085.0	25.33	43.831		
5,300.0	5,289.1	5,291.2	5,280.8	13.0	12.9	-86.61	271.8	-1,139.7	1,110.5	1,084.6	25.84	42.970		
5,400.0	5,388.9	5,382.6	5,371.8	13.3	13.1	-86.49	280.4	-1,140.7	1,110.8	1,084.5	26.35	42.153		
5,500.0	5,488.6	5,465.3	5,452.0	13.5	13.4	-85.76	300.1	-1,143.0	1,112.5	1,085.6	26.92	41.325		
5,600.0	5,588.2	5,542.4	5,523.0	13.8	13.8	-84.38	329.6	-1,146.5	1,116.1	1,088.5	27.57	40.482		
5,700.0	5,684.6	5,616.6	5,586.6	14.2	14.3	-82.86	367.5	-1,150.9	1,120.4	1,092.0	28.41	39.435		
5,800.0	5,774.5	5,689.1	5,642.8	14.8	14.9	-81.53	412.9	-1,156.3	1,125.0	1,095.5	29.46	38.182		
5,900.0	5,854.3	5,760.3	5,691.3	15.5	15.5	-80.44	464.5	-1,162.3	1,129.3	1,098.6	30.74	36.734		
6,000.0	5,921.3	5,830.6	5,731.9	16.4	16.2	-79.61	521.6	-1,169.0	1,133.2	1,100.9	32.28	35.109		
6,100.0	5,972.9	5,900.0	5,763.9	17.6	17.1	-79.08	582.6	-1,176.2	1,136.2	1,102.1	34.07	33.353		
6,200.0	6,007.2	5,970.2	5,787.8	18.8	18.0	-78.85	648.1	-1,183.9	1,138.2	1,102.1	36.15	31.484		
6,300.0	6,023.0	6,040.0	5,802.5	20.2	18.9	-78.94	715.9	-1,191.8	1,139.3	1,100.8	38.48	29.609		
6,400.0	6,024.0	6,110.4	5,807.9	21.7	19.9	-79.18	785.5	-1,200.0	1,141.3	1,100.4	40.90	27.904		
6,500.0	6,024.0	6,340.1	5,807.9	23.0	23.2	-79.22	1,014.7	-1,213.7	1,144.0	1,098.7	45.37	25.215		
6,600.0	6,024.0	6,460.1	5,808.0	24.5	25.0	-79.20	1,134.7	-1,211.8	1,142.3	1,093.6	48.66	23.476		
6,700.0	6,024.0	6,560.1	5,808.0	26.2	26.7	-79.18	1,234.7	-1,209.9	1,140.5	1,088.6	51.87	21.988		
6,800.0	6,024.0	6,660.1	5,808.0	27.8	28.4	-79.17	1,334.6	-1,208.1	1,138.7	1,083.5	55.15	20.646		
6,900.0	6,024.0	6,760.1	5,808.0	29.5	30.1	-79.15	1,434.6	-1,206.3	1,136.9	1,078.4	58.49	19.436		
7,000.0	6,024.0	6,860.1	5,808.0	31.2	31.8	-79.13	1,534.6	-1,204.4	1,135.1	1,073.2	61.89	18.341		
7,100.0	6,024.0	6,960.1	5,808.0	32.9	33.5	-79.11	1,634.5	-1,202.6	1,133.3	1,067.9	65.32	17.350		
7,200.0	6,024.0	7,060.0	5,808.0	34.7	35.3	-79.10	1,734.5	-1,200.7	1,131.5	1,062.7	68.79	16.448		
7,300.0	6,024.0	7,160.0	5,808.0	36.5	37.1	-79.08	1,834.5	-1,198.9	1,129.6	1,057.4	72.29	15.627		
7,400.0	6,024.0	7,260.0	5,808.0	38.3	38.9	-79.06	1,934.4	-1,197.1	1,127.8	1,052.0	75.81	14.877		
7,500.0	6,024.0	7,360.0	5,808.0	40.1	40.7	-79.04	2,034.4	-1,195.2	1,126.0	1,046.7	79.36	14.189		
7,600.0	6,024.0	7,460.0	5,808.0	41.9	42.5	-79.03	2,134.4	-1,193.4	1,124.2	1,041.3	82.93	13.556		
7,700.0	6,024.0	7,560.0	5,808.0	43.7	44.3	-79.01	2,234.3	-1,191.5	1,122.4	1,035.9	86.51	12.974		
7,800.0	6,024.0	7,659.9	5,808.0	45.5	46.1	-78.99	2,334.3	-1,189.7	1,120.6	1,030.5	90.11	12.435		
7,900.0	6,024.0	7,759.9	5,808.0	47.4	48.0	-78.97	2,434.3	-1,187.8	1,118.8	1,025.1	93.73	11.937		
8,000.0	6,024.0	7,859.9	5,808.0	49.2	49.8	-78.95	2,534.2	-1,186.0	1,117.0	1,019.6	97.35	11.474		
8,100.0	6,024.0	7,959.9	5,808.0	51.0	51.7	-78.94	2,634.2	-1,184.2	1,115.2	1,014.2	100.99	11.043		
8,200.0	6,024.0	8,059.9	5,808.0	52.9	53.5	-78.92	2,734.2	-1,182.3	1,113.4	1,008.7	104.63	10.641		
8,300.0	6,024.0	8,159.9	5,808.0	54.8	55.4	-78.90	2,834.1	-1,180.5	1,111.6	1,003.3	108.28	10.265		
8,400.0	6,024.0	8,259.8	5,808.0	56.6	57.2	-78.88	2,934.1	-1,178.6	1,109.8	997.8	111.94	9.913		
8,500.0	6,024.0	8,359.8	5,808.0	58.5	59.1	-78.86	3,034.1	-1,176.8	1,108.0	992.3	115.61	9.583		
8,600.0	6,024.0	8,459.8	5,808.0	60.4	61.0	-78.85	3,134.0	-1,175.0	1,106.1	986.9	119.28	9.273		
8,700.0	6,024.0	8,559.8	5,808.0	62.2	62.8	-78.83	3,234.0	-1,173.1	1,104.3	981.4	122.96	8.981		
8,800.0	6,024.0	8,659.8	5,808.0	64.1	64.7	-78.81	3,334.0	-1,171.3	1,102.5	975.9	126.65	8.705		
8,900.0	6,024.0	8,759.8	5,808.0	66.0	66.6	-78.79	3,433.9	-1,169.4	1,100.7	970.4	130.35	8.444		
9,000.0	6,024.0	8,859.7	5,808.0	67.9	68.5	-78.77	3,533.9	-1,167.6	1,098.9	964.9	134.05	8.198		
9,100.0	6,024.0	8,959.7	5,808.0	69.7	70.3	-78.75	3,633.9	-1,165.8	1,097.1	959.4	137.76	7.964		
9,200.0	6,024.0	9,059.7	5,808.0	71.6	72.2	-78.73	3,733.8	-1,163.9	1,095.3	953.8	141.47	7.742		
9,300.0	6,024.0	9,159.7	5,808.0	73.5	74.1	-78.72	3,833.8	-1,162.1	1,093.5	948.3	145.18	7.532		
9,400.0	6,024.0	9,259.7	5,808.0	75.4	76.0	-78.70	3,933.8	-1,160.2	1,091.7	942.8	148.90	7.332		
9,500.0	6,024.0	9,359.6	5,808.0	77.3	77.9	-78.68	4,033.7	-1,158.4	1,089.9	937.3	152.61	7.142		
9,600.0	6,024.0	9,459.6	5,808.0	79.2	79.8	-78.66	4,133.7	-1,156.6	1,088.1	931.8	156.33	6.960		
9,700.0	6,024.0	9,559.6	5,808.0	81.1	81.7	-78.64	4,233.6	-1,154.7	1,086.3	926.2	160.06	6.787		
9,800.0	6,024.0	9,659.6	5,808.0	83.0	83.6	-78.62	4,333.6	-1,152.9	1,084.5	920.7	163.78	6.622		
9,900.0	6,024.0	9,759.6	5,808.0	84.9	85.5	-78.60	4,433.6	-1,151.0	1,082.7	915.2	167.51	6.464		
10,000.0	6,024.0	9,859.6	5,808.0	86.8	87.3	-78.58	4,533.5	-1,149.2	1,080.9	909.6	171.23	6.312		
10,100.0	6,024.0	9,959.5	5,808.0	88.7	89.2	-78.56	4,633.5	-1,147.4	1,079.1	904.1	174.96	6.167		
10,200.0	6,024.0	10,059.5	5,808.0	90.6	91.1	-78.54	4,733.5	-1,145.5	1,077.3	898.6	178.69	6.029		

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-0906B
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-0906B	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							
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
10,300.0	6,024.0	10,159.5	5,808.0	92.5	93.0	-78.52	4,833.4	-1,143.7	1,075.5	893.0	182.42	5.895	
10,400.0	6,024.0	10,259.5	5,808.0	94.4	94.9	-78.50	4,933.4	-1,141.8	1,073.6	887.5	186.16	5.767	
10,500.0	6,024.0	10,359.5	5,808.0	96.3	96.8	-78.48	5,033.4	-1,140.0	1,071.8	882.0	189.89	5.645	
10,600.0	6,024.0	10,459.5	5,808.0	98.2	98.7	-78.47	5,133.3	-1,138.2	1,070.0	876.4	193.62	5.526	
10,700.0	6,024.0	10,559.4	5,808.0	100.1	100.6	-78.45	5,233.3	-1,136.3	1,068.2	870.9	197.36	5.413	
10,800.0	6,024.0	10,659.4	5,808.0	102.0	102.5	-78.43	5,333.3	-1,134.5	1,066.4	865.3	201.10	5.303	
10,900.0	6,024.0	10,759.4	5,808.0	103.9	104.4	-78.41	5,433.2	-1,132.6	1,064.6	859.8	204.83	5.198	
11,000.0	6,024.0	10,859.4	5,808.0	105.8	106.3	-78.39	5,533.2	-1,130.8	1,062.8	854.3	208.57	5.096	
11,100.0	6,024.0	10,959.4	5,808.0	107.7	108.2	-78.37	5,633.2	-1,129.0	1,061.0	848.7	212.31	4.998	
11,200.0	6,024.0	11,059.4	5,808.0	109.6	110.1	-78.35	5,733.1	-1,127.1	1,059.2	843.2	216.05	4.903	
11,300.0	6,024.0	11,159.3	5,808.0	111.5	112.0	-78.33	5,833.1	-1,125.3	1,057.4	837.6	219.79	4.811	
11,400.0	6,024.0	11,259.3	5,808.0	113.4	113.9	-78.31	5,933.1	-1,123.4	1,055.6	832.1	223.52	4.723	
11,500.0	6,024.0	11,359.3	5,808.0	115.3	115.8	-78.29	6,033.0	-1,121.6	1,053.8	826.5	227.26	4.637	
11,600.0	6,024.0	11,459.3	5,808.0	117.2	117.7	-78.27	6,133.0	-1,119.7	1,052.0	821.0	231.00	4.554	
11,700.0	6,024.0	11,559.3	5,808.0	119.1	119.7	-78.24	6,233.0	-1,117.9	1,050.2	815.5	234.75	4.474	
11,800.0	6,024.0	11,659.3	5,808.0	121.0	121.6	-78.22	6,332.9	-1,116.1	1,048.4	809.9	238.49	4.396	
11,900.0	6,024.0	11,759.2	5,808.0	122.9	123.5	-78.20	6,432.9	-1,114.2	1,046.6	804.4	242.23	4.321	
12,000.0	6,024.0	11,859.2	5,808.0	124.9	125.4	-78.18	6,532.9	-1,112.4	1,044.8	798.8	245.97	4.248	
12,100.0	6,024.0	11,959.2	5,808.0	126.8	127.3	-78.16	6,632.8	-1,110.5	1,043.0	793.3	249.71	4.177	
12,200.0	6,024.0	12,059.2	5,808.0	128.7	129.2	-78.14	6,732.8	-1,108.7	1,041.2	787.7	253.45	4.108	
12,300.0	6,024.0	12,159.2	5,808.0	130.6	131.1	-78.12	6,832.8	-1,106.9	1,039.4	782.2	257.19	4.041	
12,400.0	6,024.0	12,259.2	5,808.0	132.5	133.0	-78.10	6,932.7	-1,105.0	1,037.6	776.7	260.93	3.976	
12,500.0	6,024.0	12,359.1	5,808.0	134.4	134.9	-78.08	7,032.7	-1,103.2	1,035.8	771.1	264.67	3.913	
12,600.0	6,024.0	12,459.1	5,808.0	136.3	136.8	-78.06	7,132.7	-1,101.3	1,034.0	765.6	268.41	3.852	
12,700.0	6,024.0	12,559.1	5,808.0	138.2	138.7	-78.04	7,232.6	-1,099.5	1,032.2	760.0	272.15	3.793	
12,800.0	6,024.0	12,659.1	5,808.0	140.1	140.6	-78.02	7,332.6	-1,097.7	1,030.4	754.5	275.90	3.735	
12,900.0	6,024.0	12,759.1	5,808.0	142.1	142.5	-77.99	7,432.6	-1,095.8	1,028.6	748.9	279.64	3.678	
13,000.0	6,024.0	12,859.1	5,808.0	144.0	144.4	-77.97	7,532.5	-1,094.0	1,026.8	743.4	283.38	3.623	
13,100.0	6,024.0	12,959.0	5,808.0	145.9	146.3	-77.95	7,632.5	-1,092.1	1,025.0	737.9	287.12	3.570	
13,200.0	6,024.0	13,059.0	5,808.0	147.8	148.3	-77.93	7,732.5	-1,090.3	1,023.2	732.3	290.86	3.518	
13,300.0	6,024.0	13,159.0	5,808.0	149.7	150.2	-77.91	7,832.4	-1,088.5	1,021.4	726.8	294.60	3.467	
13,400.0	6,024.0	13,259.0	5,808.0	151.6	152.1	-77.89	7,932.4	-1,086.6	1,019.6	721.2	298.34	3.418	
13,500.0	6,024.0	13,359.0	5,808.0	153.5	154.0	-77.87	8,032.4	-1,084.8	1,017.8	715.7	302.08	3.369	
13,600.0	6,024.0	13,459.0	5,808.0	155.4	155.9	-77.84	8,132.3	-1,082.9	1,016.0	710.2	305.82	3.322	
13,700.0	6,024.0	13,558.9	5,808.0	157.4	157.8	-77.82	8,232.3	-1,081.1	1,014.2	704.6	309.55	3.276	
13,790.8	6,024.0	13,631.8	5,808.0	159.1	159.2	-77.81	8,305.2	-1,079.8	1,012.7	700.1	312.63	3.239 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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-ISCSWA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-95.03	-100.2	-1,137.7	1,142.1					
100.0	100.0	97.9	97.9	0.1	0.1	-95.03	-100.2	-1,137.7	1,142.1	1,141.9	0.19	6,169.264		
200.0	200.0	197.9	197.9	0.3	0.3	-95.03	-100.2	-1,137.7	1,142.1	1,141.5	0.63	1,807.412		
300.0	300.0	297.9	297.9	0.5	0.5	-95.03	-100.2	-1,137.7	1,142.1	1,141.0	1.08	1,056.101		
400.0	400.0	397.9	397.9	0.8	0.8	-95.03	-100.2	-1,137.7	1,142.1	1,140.6	1.53	746.001		
500.0	500.0	497.9	497.9	1.0	1.0	-95.03	-100.2	-1,137.7	1,142.1	1,140.1	1.98	576.674		
600.0	600.0	597.9	597.9	1.2	1.2	-95.03	-100.2	-1,137.7	1,142.1	1,139.7	2.43	469.995		
700.0	700.0	697.9	697.9	1.4	1.4	-95.03	-100.2	-1,137.7	1,142.1	1,139.2	2.88	396.624		
800.0	800.0	797.9	797.9	1.7	1.7	-89.64	-100.2	-1,137.7	1,142.1	1,138.8	3.33	343.160		
900.0	899.8	897.7	897.7	1.9	1.9	-89.90	-100.2	-1,137.7	1,142.1	1,138.3	3.78	302.284		
927.8	927.5	925.4	925.4	2.0	1.9	-90.00	-100.2	-1,137.7	1,142.1	1,138.2	3.91	292.444		
1,000.0	999.6	997.5	997.5	2.1	2.1	-90.25	-100.2	-1,137.7	1,142.1	1,137.8	4.23	269.712		
1,100.0	1,099.4	1,097.2	1,097.2	2.4	2.3	-90.60	-100.2	-1,137.7	1,142.1	1,137.4	4.70	243.217		
1,200.0	1,199.1	1,212.7	1,212.7	2.6	2.6	-90.90	-98.0	-1,137.2	1,141.6	1,136.4	5.20	219.732		
1,300.0	1,298.9	1,324.8	1,324.6	2.8	2.9	-90.99	-91.7	-1,135.6	1,139.6	1,133.9	5.69	200.243		
1,400.0	1,398.6	1,424.8	1,424.3	3.1	3.1	-91.01	-85.0	-1,133.9	1,137.3	1,131.1	6.17	184.441		
1,500.0	1,498.4	1,524.8	1,524.1	3.3	3.3	-91.03	-78.2	-1,132.2	1,135.0	1,128.3	6.65	170.765		
1,600.0	1,598.1	1,624.7	1,623.8	3.6	3.5	-91.06	-71.5	-1,130.5	1,132.6	1,125.5	7.13	158.834		
1,700.0	1,697.9	1,724.7	1,723.5	3.8	3.8	-91.08	-64.7	-1,128.8	1,130.3	1,122.7	7.62	148.352		
1,800.0	1,797.6	1,824.7	1,823.2	4.1	4.0	-91.10	-57.9	-1,127.1	1,128.0	1,119.9	8.11	139.082		
1,900.0	1,897.4	1,924.7	1,923.0	4.3	4.3	-91.12	-51.2	-1,125.4	1,125.7	1,117.0	8.60	130.833		
2,000.0	1,997.2	2,024.6	2,022.7	4.6	4.5	-91.15	-44.4	-1,123.7	1,123.3	1,114.2	9.10	123.451		
2,100.0	2,096.9	2,124.6	2,122.4	4.8	4.8	-91.17	-37.6	-1,122.0	1,121.0	1,111.4	9.60	116.810		
2,200.0	2,196.7	2,224.6	2,222.2	5.1	5.0	-91.19	-30.9	-1,120.3	1,118.7	1,108.6	10.10	110.807		
2,300.0	2,296.4	2,324.5	2,321.9	5.3	5.2	-91.22	-24.1	-1,118.6	1,116.3	1,105.7	10.60	105.357		
2,400.0	2,396.2	2,424.5	2,421.6	5.6	5.5	-91.24	-17.3	-1,116.9	1,114.0	1,102.9	11.10	100.388		
2,500.0	2,495.9	2,524.5	2,521.3	5.9	5.7	-91.26	-10.6	-1,115.2	1,111.7	1,100.1	11.60	95.840		
2,600.0	2,595.7	2,624.5	2,621.1	6.1	6.0	-91.29	-3.8	-1,113.5	1,109.4	1,097.3	12.10	91.664		
2,700.0	2,695.5	2,724.4	2,720.8	6.4	6.2	-91.31	3.0	-1,111.8	1,107.0	1,094.4	12.61	87.815		
2,800.0	2,795.2	2,824.4	2,820.5	6.6	6.5	-91.33	9.7	-1,110.1	1,104.7	1,091.6	13.11	84.258		
2,900.0	2,895.0	2,924.4	2,920.3	6.9	6.7	-91.36	16.5	-1,108.4	1,102.4	1,088.8	13.62	80.961		
3,000.0	2,994.7	3,024.4	3,020.0	7.1	7.0	-91.38	23.2	-1,106.7	1,100.1	1,085.9	14.12	77.896		
3,100.0	3,094.5	3,124.3	3,119.7	7.4	7.2	-91.40	30.0	-1,105.0	1,097.7	1,083.1	14.63	75.041		
3,200.0	3,194.2	3,224.3	3,219.4	7.6	7.5	-91.43	36.8	-1,103.3	1,095.4	1,080.3	15.13	72.375		
3,300.0	3,294.0	3,324.3	3,319.2	7.9	7.8	-91.45	43.5	-1,101.6	1,093.1	1,077.4	15.64	69.880		
3,400.0	3,393.7	3,424.2	3,418.9	8.1	8.0	-91.48	50.3	-1,099.9	1,090.7	1,074.6	16.15	67.540		
3,500.0	3,493.5	3,524.2	3,518.6	8.4	8.3	-91.50	57.1	-1,098.2	1,088.4	1,071.8	16.66	65.341		
3,600.0	3,593.3	3,624.2	3,618.4	8.7	8.5	-91.53	63.8	-1,096.5	1,086.1	1,068.9	17.17	63.271		
3,700.0	3,693.0	3,724.2	3,718.1	8.9	8.8	-91.55	70.6	-1,094.8	1,083.8	1,066.1	17.67	61.319		
3,800.0	3,792.8	3,824.1	3,817.8	9.2	9.0	-91.57	77.4	-1,093.1	1,081.4	1,063.3	18.18	59.476		
3,900.0	3,892.5	3,924.1	3,917.5	9.4	9.3	-91.60	84.1	-1,091.4	1,079.1	1,060.4	18.69	57.732		
4,000.0	3,992.3	4,024.1	4,017.3	9.7	9.5	-91.62	90.9	-1,089.7	1,076.8	1,057.6	19.20	56.080		
4,100.0	4,092.0	4,124.0	4,117.0	9.9	9.8	-91.65	97.6	-1,088.0	1,074.5	1,054.8	19.71	54.512		
4,200.0	4,191.8	4,224.0	4,216.7	10.2	10.0	-91.67	104.4	-1,086.3	1,072.1	1,051.9	20.22	53.023		
4,300.0	4,291.6	4,324.0	4,316.5	10.4	10.3	-91.70	111.2	-1,084.6	1,069.8	1,049.1	20.73	51.607		
4,400.0	4,391.3	4,424.0	4,416.2	10.7	10.5	-91.72	117.9	-1,082.9	1,067.5	1,046.3	21.24	50.258		
4,500.0	4,491.1	4,523.9	4,515.9	11.0	10.8	-91.75	124.7	-1,081.2	1,065.2	1,043.4	21.75	48.972		
4,600.0	4,590.8	4,623.9	4,615.6	11.2	11.0	-91.78	131.5	-1,079.5	1,062.9	1,040.6	22.26	47.745		
4,700.0	4,690.6	4,723.9	4,715.4	11.5	11.3	-91.80	138.2	-1,077.8	1,060.5	1,037.8	22.77	46.572		
4,800.0	4,790.3	4,823.8	4,815.1	11.7	11.6	-91.83	145.0	-1,076.2	1,058.2	1,034.9	23.28	45.451		
4,900.0	4,890.1	4,923.8	4,914.8	12.0	11.8	-91.85	151.8	-1,074.5	1,055.9	1,032.1	23.79	44.377		
5,000.0	4,989.9	5,023.8	5,014.6	12.2	12.1	-91.88	158.5	-1,072.8	1,053.6	1,029.3	24.30	43.349		

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-0906B
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-0906B	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		
5,100.0	5,089.6	5,123.8	5,114.3	12.5	12.3	-91.90	165.3	-1,071.1	1,051.2	1,026.4	24.82	42.362		
5,200.0	5,189.4	5,223.7	5,214.0	12.7	12.6	-91.93	172.0	-1,069.4	1,048.9	1,023.6	25.33	41.416		
5,300.0	5,289.1	5,323.7	5,313.7	13.0	12.8	-91.96	178.8	-1,067.7	1,046.6	1,020.8	25.84	40.506		
5,400.0	5,388.9	5,440.3	5,430.0	13.3	13.1	-91.96	187.2	-1,065.6	1,044.2	1,017.8	26.40	39.558		
5,500.0	5,488.6	5,575.9	5,715.8	13.5	14.8	-86.36	310.3	-1,034.7	1,029.3	1,000.9	28.39	36.253		
5,600.0	5,588.2	5,930.5	5,824.1	13.8	16.4	-80.80	439.7	-1,002.2	1,004.2	973.8	30.39	33.045		
5,700.0	5,684.6	6,040.9	5,868.1	14.2	17.8	-78.69	537.7	-977.6	977.1	945.0	32.13	30.414		
5,800.0	5,774.5	6,126.3	5,886.9	14.8	18.9	-77.58	618.4	-957.3	950.0	916.3	33.77	28.132		
5,900.0	5,854.3	6,199.2	5,892.0	15.5	19.9	-76.96	688.9	-939.6	923.7	888.3	35.41	26.089		
6,000.0	5,921.3	6,246.8	5,892.0	16.4	20.6	-77.54	735.1	-928.6	899.4	862.5	36.88	24.383		
6,100.0	5,972.9	6,300.0	5,892.0	17.6	21.3	-78.08	787.2	-917.7	877.1	838.4	38.64	22.697		
6,200.0	6,007.2	6,364.8	5,892.0	18.8	22.2	-78.75	851.0	-906.3	855.9	815.1	40.76	21.000		
6,300.0	6,023.0	6,431.4	5,892.0	20.2	23.1	-80.14	917.0	-896.9	835.2	792.0	43.17	19.346		
6,400.0	6,024.0	6,500.0	5,892.0	21.7	24.1	-80.75	985.1	-889.6	816.7	770.9	45.85	17.814		
6,500.0	6,024.0	6,570.3	5,892.0	23.0	25.2	-80.71	1,055.2	-884.7	806.4	757.9	48.49	16.632		
6,600.0	6,024.0	6,643.7	5,892.0	24.5	26.3	-80.69	1,128.6	-882.2	803.1	751.9	51.13	15.707		
6,700.0	6,024.0	6,743.7	5,892.0	26.2	27.9	-80.67	1,228.6	-880.4	801.3	746.9	54.32	14.749		
6,800.0	6,024.0	6,843.7	5,892.0	27.8	29.5	-80.65	1,328.6	-878.6	799.4	741.8	57.60	13.878		
6,900.0	6,024.0	6,943.7	5,892.0	29.5	31.2	-80.63	1,428.5	-876.7	797.6	736.7	60.95	13.087		
7,000.0	6,024.0	7,043.7	5,892.0	31.2	32.9	-80.60	1,528.5	-874.9	795.8	731.5	64.34	12.369		
7,100.0	6,024.0	7,143.6	5,892.0	32.9	34.6	-80.58	1,628.5	-873.0	794.0	726.2	67.78	11.715		
7,200.0	6,024.0	7,243.6	5,892.0	34.7	36.3	-80.56	1,728.4	-871.2	792.2	720.9	71.25	11.118		
7,300.0	6,024.0	7,343.6	5,892.0	36.5	38.1	-80.54	1,828.4	-869.3	790.3	715.6	74.76	10.572		
7,400.0	6,024.0	7,443.6	5,892.0	38.3	39.9	-80.52	1,928.4	-867.5	788.5	710.2	78.29	10.072		
7,500.0	6,024.0	7,543.6	5,892.0	40.1	41.6	-80.49	2,028.3	-865.7	786.7	704.9	81.85	9.612		
7,600.0	6,024.0	7,643.6	5,892.0	41.9	43.4	-80.47	2,128.3	-863.8	784.9	699.5	85.42	9.188		
7,700.0	6,024.0	7,743.5	5,892.0	43.7	45.2	-80.45	2,228.3	-862.0	783.1	694.1	89.02	8.797		
7,800.0	6,024.0	7,843.5	5,892.0	45.5	47.1	-80.43	2,328.2	-860.1	781.3	688.6	92.63	8.434		
7,900.0	6,024.0	7,943.5	5,892.0	47.4	48.9	-80.40	2,428.2	-858.3	779.4	683.2	96.26	8.097		
8,000.0	6,024.0	8,043.5	5,892.0	49.2	50.7	-80.38	2,528.2	-856.5	777.6	677.7	99.90	7.784		
8,100.0	6,024.0	8,143.5	5,892.0	51.0	52.5	-80.36	2,628.1	-854.6	775.8	672.3	103.55	7.492		
8,200.0	6,024.0	8,243.5	5,892.0	52.9	54.4	-80.34	2,728.1	-852.8	774.0	666.8	107.21	7.220		
8,300.0	6,024.0	8,343.4	5,892.0	54.8	56.2	-80.31	2,828.1	-850.9	772.2	661.3	110.87	6.964		
8,400.0	6,024.0	8,443.4	5,892.0	56.6	58.1	-80.29	2,928.0	-849.1	770.4	655.8	114.55	6.725		
8,500.0	6,024.0	8,543.4	5,892.0	58.5	59.9	-80.27	3,028.0	-847.2	768.5	650.3	118.23	6.500		
8,600.0	6,024.0	8,643.4	5,892.0	60.4	61.8	-80.24	3,128.0	-845.4	766.7	644.8	121.92	6.289		
8,700.0	6,024.0	8,743.4	5,892.0	62.2	63.6	-80.22	3,227.9	-843.6	764.9	639.3	125.62	6.089		
8,800.0	6,024.0	8,843.4	5,892.0	64.1	65.5	-80.20	3,327.9	-841.7	763.1	633.8	129.32	5.901		
8,900.0	6,024.0	8,943.3	5,892.0	66.0	67.4	-80.17	3,427.9	-839.9	761.3	628.2	133.02	5.723		
9,000.0	6,024.0	9,043.3	5,892.0	67.9	69.3	-80.15	3,527.8	-838.0	759.5	622.7	136.73	5.554		
9,100.0	6,024.0	9,143.3	5,892.0	69.7	71.1	-80.13	3,627.8	-836.2	757.6	617.2	140.45	5.395		
9,200.0	6,024.0	9,243.3	5,892.0	71.6	73.0	-80.10	3,727.8	-834.3	755.8	611.7	144.16	5.243		
9,300.0	6,024.0	9,343.3	5,892.0	73.5	74.9	-80.08	3,827.7	-832.5	754.0	606.1	147.88	5.099		
9,400.0	6,024.0	9,443.3	5,892.0	75.4	76.8	-80.05	3,927.7	-830.7	752.2	600.6	151.61	4.962		
9,500.0	6,024.0	9,543.2	5,892.0	77.3	78.6	-80.03	4,027.7	-828.8	750.4	595.0	155.33	4.831		
9,600.0	6,024.0	9,643.2	5,892.0	79.2	80.5	-80.00	4,127.6	-827.0	748.6	589.5	159.06	4.706		
9,700.0	6,024.0	9,743.2	5,892.0	81.1	82.4	-79.98	4,227.6	-825.1	746.7	584.0	162.79	4.587		
9,800.0	6,024.0	9,843.2	5,892.0	83.0	84.3	-79.96	4,327.6	-823.3	744.9	578.4	166.52	4.473		
9,900.0	6,024.0	9,943.2	5,892.0	84.9	86.2	-79.93	4,427.5	-821.4	743.1	572.9	170.26	4.365		
10,000.0	6,024.0	10,043.2	5,892.0	86.8	88.1	-79.91	4,527.5	-819.6	741.3	567.3	173.99	4.261		
10,100.0	6,024.0	10,143.1	5,892.0	88.7	90.0	-79.88	4,627.5	-817.8	739.5	561.8	177.73	4.161		
10,200.0	6,024.0	10,243.1	5,892.0	90.6	91.8	-79.86	4,727.4	-815.9	737.7	556.2	181.47	4.065		

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-0906B
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-0906B	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							
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
10,300.0	6,024.0	10,343.1	5,892.0	92.5	93.7	-79.83	4,827.4	-814.1	735.9	550.7	185.21	3.973	
10,400.0	6,024.0	10,443.1	5,892.0	94.4	95.6	-79.81	4,927.4	-812.2	734.0	545.1	188.95	3.885	
10,500.0	6,024.0	10,543.1	5,892.0	96.3	97.5	-79.78	5,027.3	-810.4	732.2	539.5	192.69	3.800	
10,600.0	6,024.0	10,643.1	5,892.0	98.2	99.4	-79.75	5,127.3	-808.6	730.4	534.0	196.44	3.718	
10,700.0	6,024.0	10,743.0	5,892.0	100.1	101.3	-79.73	5,227.3	-806.7	728.6	528.4	200.18	3.640	
10,800.0	6,024.0	10,843.0	5,892.0	102.0	103.2	-79.70	5,327.2	-804.9	726.8	522.9	203.93	3.564	
10,900.0	6,024.0	10,943.0	5,892.0	103.9	105.1	-79.68	5,427.2	-803.0	725.0	517.3	207.67	3.491	
11,000.0	6,024.0	11,043.0	5,892.0	105.8	107.0	-79.65	5,527.2	-801.2	723.2	511.8	211.42	3.421	
11,100.0	6,024.0	11,143.0	5,892.0	107.7	108.9	-79.62	5,627.1	-799.3	721.4	506.2	215.17	3.353	
11,200.0	6,024.0	11,243.0	5,892.0	109.6	110.8	-79.60	5,727.1	-797.5	719.5	500.6	218.91	3.287	
11,300.0	6,024.0	11,342.9	5,892.0	111.5	112.7	-79.57	5,827.0	-795.7	717.7	495.1	222.66	3.223	
11,400.0	6,024.0	11,442.9	5,892.0	113.4	114.6	-79.54	5,927.0	-793.8	715.9	489.5	226.41	3.162	
11,500.0	6,024.0	11,542.9	5,892.0	115.3	116.5	-79.52	6,027.0	-792.0	714.1	483.9	230.16	3.103	
11,600.0	6,024.0	11,642.9	5,892.0	117.2	118.4	-79.49	6,126.9	-790.1	712.3	478.4	233.90	3.045	
11,700.0	6,024.0	11,742.9	5,892.0	119.1	120.3	-79.46	6,226.9	-788.3	710.5	472.8	237.65	2.990	
11,800.0	6,024.0	11,842.9	5,892.0	121.0	122.2	-79.44	6,326.9	-786.4	708.7	467.3	241.40	2.936	
11,900.0	6,024.0	11,942.8	5,892.0	122.9	124.1	-79.41	6,426.8	-784.6	706.9	461.7	245.15	2.883	
12,000.0	6,024.0	12,042.8	5,892.0	124.9	126.0	-79.38	6,526.8	-782.8	705.0	456.1	248.90	2.833	
12,100.0	6,024.0	12,142.8	5,892.0	126.8	127.9	-79.35	6,626.8	-780.9	703.2	450.6	252.65	2.783	
12,200.0	6,024.0	12,242.8	5,892.0	128.7	129.8	-79.33	6,726.7	-779.1	701.4	445.0	256.40	2.736	
12,300.0	6,024.0	12,342.8	5,892.0	130.6	131.7	-79.30	6,826.7	-777.2	699.6	439.5	260.15	2.689	
12,400.0	6,024.0	12,442.7	5,892.0	132.5	133.6	-79.27	6,926.7	-775.4	697.8	433.9	263.89	2.644	
12,500.0	6,024.0	12,542.7	5,892.0	134.4	135.5	-79.24	7,026.6	-773.6	696.0	428.3	267.64	2.600	
12,600.0	6,024.0	12,642.7	5,892.0	136.3	137.4	-79.21	7,126.6	-771.7	694.2	422.8	271.39	2.558	
12,700.0	6,024.0	12,742.7	5,892.0	138.2	139.3	-79.18	7,226.6	-769.9	692.4	417.2	275.14	2.516	
12,800.0	6,024.0	12,842.7	5,892.0	140.1	141.3	-79.16	7,326.5	-768.0	690.6	411.7	278.89	2.476	
12,900.0	6,024.0	12,942.7	5,892.0	142.1	143.2	-79.13	7,426.5	-766.2	688.8	406.1	282.63	2.437	
13,000.0	6,024.0	13,042.6	5,892.0	144.0	145.1	-79.10	7,526.5	-764.3	686.9	400.6	286.38	2.399	
13,100.0	6,024.0	13,142.6	5,892.0	145.9	147.0	-79.07	7,626.4	-762.5	685.1	395.0	290.13	2.361	
13,200.0	6,024.0	13,242.6	5,892.0	147.8	148.9	-79.04	7,726.4	-760.7	683.3	389.4	293.88	2.325	
13,300.0	6,024.0	13,342.6	5,892.0	149.7	150.8	-79.01	7,826.4	-758.8	681.5	383.9	297.62	2.290	
13,400.0	6,024.0	13,442.6	5,892.0	151.6	152.7	-78.98	7,926.3	-757.0	679.7	378.3	301.37	2.255	
13,500.0	6,024.0	13,542.6	5,892.0	153.5	154.6	-78.95	8,026.3	-755.1	677.9	372.8	305.11	2.222	
13,600.0	6,024.0	13,642.5	5,892.0	155.4	156.5	-78.92	8,126.3	-753.3	676.1	367.2	308.86	2.189	
13,700.0	6,024.0	13,742.5	5,892.0	157.4	158.4	-78.89	8,226.2	-751.4	674.3	361.7	312.60	2.157	
13,790.8	6,024.0	13,821.2	5,892.0	159.1	159.9	-78.87	8,304.9	-750.0	672.7	357.0	315.78	2.130 CC, ES, SF	

Cathedral Energy Services

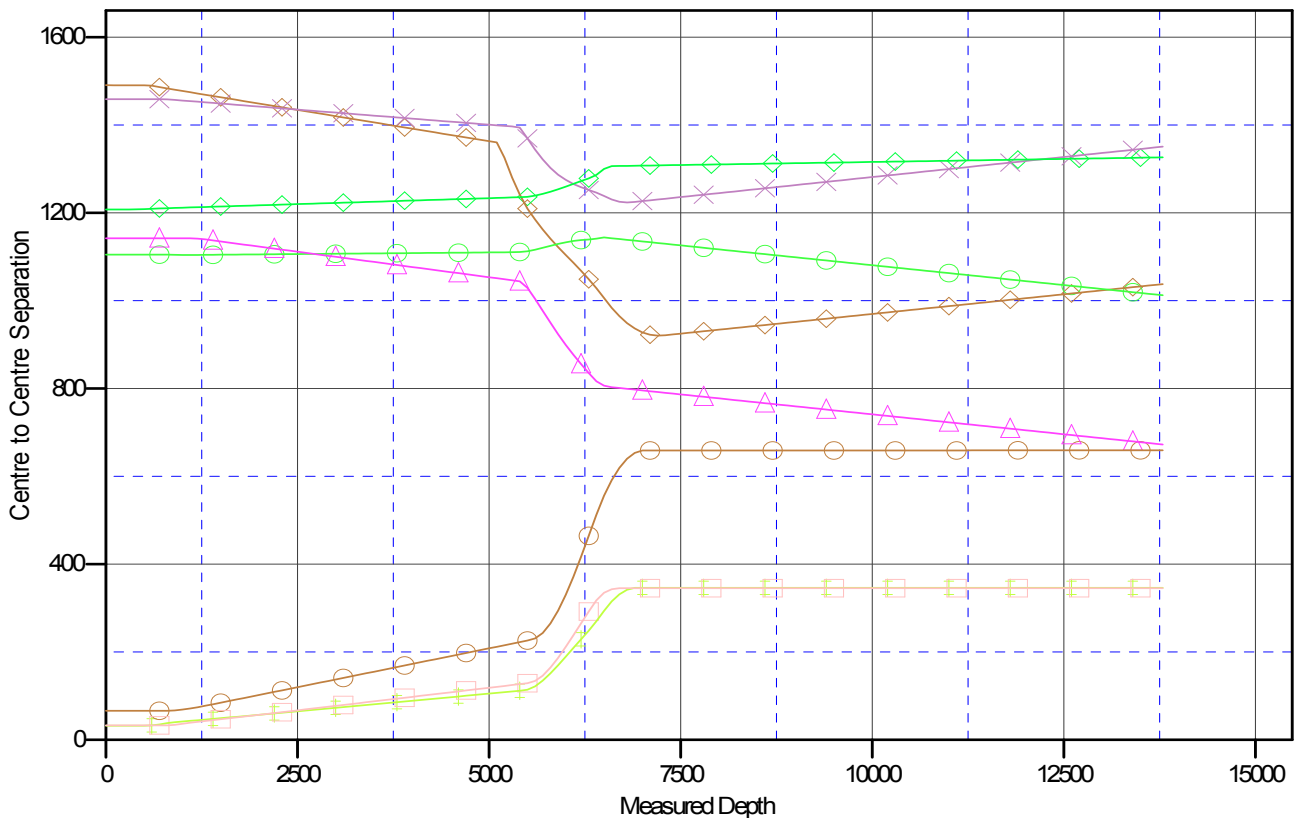
Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21C-0906B
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-0906B	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 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-0906B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.05°

Ladder Plot



LEGEND

- Razor#21C-0905A, HZ, Plan #2 V0
- Razor#21B-0909A, HZ, Plan #1 V0
- Razor#21D-0903A, HZ, Plan #1 V0
- Razor#21C-0908B, HZ, Plan #2 V0
- Razor#21B-0910B, HZ, Plan #1 V0
- Razor#21D-0904B, HZ, Plan #1 V0
- Razor#21C-0907A, HZ, Plan #2 V0
- Razor#21D-0902B, HZ, Plan #2 V0