

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-0911A
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17 @ 4854.3usft
Project:	Weld County, CO	MD Reference:	KB=17 @ 4854.3usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21B-0911A	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 #21B-0911A					
Well Position	+N/-S	0.0 usft	Northing:	1,549,442.54 usft	Latitude:	40.830200
	+E/-W	0.0 usft	Easting:	3,451,445.14 usft	Longitude:	-103.868628
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,837.3 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/20/2013	8.14	67.47	53,243

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	1.45	

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	4.00	11.75	1,099.8	6.8	1.4	2.00	2.00	0.00	11.75	
5,444.2	4.00	11.75	5,433.5	303.5	63.1	0.00	0.00	0.00	0.00	
6,226.0	90.00	11.75	5,918.0	812.2	168.9	11.00	11.00	0.00	0.00	
6,617.6	90.00	0.00	5,918.0	1,201.1	209.0	3.00	0.00	-3.00	-90.00	
13,694.0	90.00	0.00	5,918.0	8,277.5	209.1	0.00	0.00	0.00	0.00	21B-0911A BHL P2

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Project:	Weld County, CO	MD Reference:	KB=17 @ 4854.3usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21B-0911A	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, 2,095' FEL
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	KOP @ 900'
1,000.0	2.00	11.75	1,000.0	1.7	0.4	1.7	2.00	2.00	
1,100.0	4.00	11.75	1,099.8	6.8	1.4	6.9	2.00	2.00	EOB @ 4° INC
1,200.0	4.00	11.75	1,199.6	13.7	2.8	13.7	0.00	0.00	
1,300.0	4.00	11.75	1,299.4	20.5	4.3	20.6	0.00	0.00	
1,400.0	4.00	11.75	1,399.1	27.3	5.7	27.5	0.00	0.00	
1,500.0	4.00	11.75	1,498.9	34.2	7.1	34.3	0.00	0.00	
1,600.0	4.00	11.75	1,598.6	41.0	8.5	41.2	0.00	0.00	
1,620.4	4.00	11.75	1,619.0	42.4	8.8	42.6	0.00	0.00	Pierre
1,700.0	4.00	11.75	1,698.4	47.8	9.9	48.0	0.00	0.00	Surface Casing
1,800.0	4.00	11.75	1,798.1	54.6	11.4	54.9	0.00	0.00	
1,900.0	4.00	11.75	1,897.9	61.5	12.8	61.8	0.00	0.00	
2,000.0	4.00	11.75	1,997.6	68.3	14.2	68.6	0.00	0.00	
2,100.0	4.00	11.75	2,097.4	75.1	15.6	75.5	0.00	0.00	
2,200.0	4.00	11.75	2,197.2	82.0	17.0	82.4	0.00	0.00	
2,300.0	4.00	11.75	2,296.9	88.8	18.5	89.2	0.00	0.00	
2,400.0	4.00	11.75	2,396.7	95.6	19.9	96.1	0.00	0.00	
2,500.0	4.00	11.75	2,496.4	102.4	21.3	103.0	0.00	0.00	
2,600.0	4.00	11.75	2,596.2	109.3	22.7	109.8	0.00	0.00	
2,700.0	4.00	11.75	2,695.9	116.1	24.1	116.7	0.00	0.00	
2,800.0	4.00	11.75	2,795.7	122.9	25.6	123.5	0.00	0.00	
2,900.0	4.00	11.75	2,895.5	129.8	27.0	130.4	0.00	0.00	
3,000.0	4.00	11.75	2,995.2	136.6	28.4	137.3	0.00	0.00	
3,100.0	4.00	11.75	3,095.0	143.4	29.8	144.1	0.00	0.00	
3,200.0	4.00	11.75	3,194.7	150.3	31.3	151.0	0.00	0.00	
3,300.0	4.00	11.75	3,294.5	157.1	32.7	157.9	0.00	0.00	
3,400.0	4.00	11.75	3,394.2	163.9	34.1	164.7	0.00	0.00	
3,500.0	4.00	11.75	3,494.0	170.7	35.5	171.6	0.00	0.00	
3,600.0	4.00	11.75	3,593.7	177.6	36.9	178.4	0.00	0.00	
3,700.0	4.00	11.75	3,693.5	184.4	38.4	185.3	0.00	0.00	
3,800.0	4.00	11.75	3,793.3	191.2	39.8	192.2	0.00	0.00	
3,900.0	4.00	11.75	3,893.0	198.1	41.2	199.0	0.00	0.00	
4,000.0	4.00	11.75	3,992.8	204.9	42.6	205.9	0.00	0.00	
4,100.0	4.00	11.75	4,092.5	211.7	44.0	212.8	0.00	0.00	
4,200.0	4.00	11.75	4,192.3	218.5	45.5	219.6	0.00	0.00	
4,300.0	4.00	11.75	4,292.0	225.4	46.9	226.5	0.00	0.00	
4,400.0	4.00	11.75	4,391.8	232.2	48.3	233.4	0.00	0.00	
4,500.0	4.00	11.75	4,491.6	239.0	49.7	240.2	0.00	0.00	
4,600.0	4.00	11.75	4,591.3	245.9	51.1	247.1	0.00	0.00	
4,700.0	4.00	11.75	4,691.1	252.7	52.6	253.9	0.00	0.00	
4,800.0	4.00	11.75	4,790.8	259.5	54.0	260.8	0.00	0.00	
4,900.0	4.00	11.75	4,890.6	266.4	55.4	267.7	0.00	0.00	

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Well:	Razor #21B-0911A	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	11.75	4,990.3	273.2	56.8	274.5	0.00	0.00	
5,100.0	4.00	11.75	5,090.1	280.0	58.2	281.4	0.00	0.00	
5,200.0	4.00	11.75	5,189.9	286.8	59.7	288.3	0.00	0.00	
5,300.0	4.00	11.75	5,289.6	293.7	61.1	295.1	0.00	0.00	
5,400.0	4.00	11.75	5,389.4	300.5	62.5	302.0	0.00	0.00	
5,444.2	4.00	11.75	5,433.5	303.5	63.1	305.0	0.00	0.00	Start 11° Build
5,450.0	4.64	11.75	5,439.2	303.9	63.2	305.4	11.00	11.00	
5,500.0	10.14	11.75	5,488.8	310.2	64.5	311.8	11.00	11.00	
5,550.0	15.64	11.75	5,537.5	321.2	66.8	322.7	11.00	11.00	
5,600.0	21.14	11.75	5,585.0	336.6	70.0	338.2	11.00	11.00	
5,650.0	26.64	11.75	5,630.7	356.4	74.1	358.2	11.00	11.00	
5,700.0	32.14	11.75	5,674.2	380.4	79.1	382.3	11.00	11.00	
5,750.0	37.64	11.75	5,715.2	408.4	84.9	410.4	11.00	11.00	
5,800.0	43.14	11.75	5,753.3	440.1	91.5	442.3	11.00	11.00	
5,850.0	48.64	11.75	5,788.1	475.2	98.9	477.6	11.00	11.00	
5,900.0	54.14	11.75	5,819.3	513.5	106.8	516.0	11.00	11.00	
5,950.0	59.64	11.75	5,846.6	554.5	115.3	557.2	11.00	11.00	
6,000.0	65.14	11.75	5,869.7	597.8	124.3	600.8	11.00	11.00	
6,048.4	70.46	11.75	5,888.0	641.7	133.5	644.9	11.00	11.00	Niobrara
6,050.0	70.64	11.75	5,888.5	643.2	133.8	646.3	11.00	11.00	
6,100.0	76.14	11.75	5,902.8	690.1	143.5	693.5	11.00	11.00	
6,150.0	81.64	11.75	5,912.5	738.1	153.5	741.7	11.00	11.00	
6,200.0	87.14	11.75	5,917.3	786.8	163.6	790.7	11.00	11.00	
6,226.0	90.00	11.75	5,918.0	812.2	168.9	816.2	11.00	11.00	LP @ 5,918' TVD, 90° INC - 7" - 481' FSL, 1,91
6,300.0	90.00	9.53	5,918.0	884.9	182.6	889.3	3.00	0.00	
6,400.0	90.00	6.53	5,918.0	983.9	196.6	988.6	3.00	0.00	
6,500.0	90.00	3.53	5,918.0	1,083.5	205.3	1,088.4	3.00	0.00	
6,600.0	90.00	0.53	5,918.0	1,183.5	208.9	1,188.4	3.00	0.00	
6,617.6	90.00	0.00	5,918.0	1,201.1	209.0	1,206.0	3.00	0.00	EOT @ 0° AZ
6,700.0	90.00	0.00	5,918.0	1,283.5	209.0	1,288.3	0.00	0.00	
6,800.0	90.00	0.00	5,918.0	1,383.5	209.0	1,388.3	0.00	0.00	
6,900.0	90.00	0.00	5,918.0	1,483.5	209.0	1,488.3	0.00	0.00	
7,000.0	90.00	0.00	5,918.0	1,583.5	209.0	1,588.2	0.00	0.00	
7,100.0	90.00	0.00	5,918.0	1,683.5	209.0	1,688.2	0.00	0.00	
7,200.0	90.00	0.00	5,918.0	1,783.5	209.0	1,788.2	0.00	0.00	
7,300.0	90.00	0.00	5,918.0	1,883.5	209.0	1,888.2	0.00	0.00	
7,400.0	90.00	0.00	5,918.0	1,983.5	209.0	1,988.1	0.00	0.00	
7,500.0	90.00	0.00	5,918.0	2,083.5	209.0	2,088.1	0.00	0.00	
7,600.0	90.00	0.00	5,918.0	2,183.5	209.0	2,188.1	0.00	0.00	
7,700.0	90.00	0.00	5,918.0	2,283.5	209.0	2,288.0	0.00	0.00	
7,800.0	90.00	0.00	5,918.0	2,383.5	209.0	2,388.0	0.00	0.00	
7,900.0	90.00	0.00	5,918.0	2,483.5	209.0	2,488.0	0.00	0.00	
8,000.0	90.00	0.00	5,918.0	2,583.5	209.0	2,587.9	0.00	0.00	
8,100.0	90.00	0.00	5,918.0	2,683.5	209.0	2,687.9	0.00	0.00	
8,200.0	90.00	0.00	5,918.0	2,783.5	209.0	2,787.9	0.00	0.00	
8,300.0	90.00	0.00	5,918.0	2,883.5	209.0	2,887.8	0.00	0.00	
8,400.0	90.00	0.00	5,918.0	2,983.5	209.0	2,987.8	0.00	0.00	
8,500.0	90.00	0.00	5,918.0	3,083.5	209.0	3,087.8	0.00	0.00	
8,600.0	90.00	0.00	5,918.0	3,183.5	209.0	3,187.7	0.00	0.00	
8,700.0	90.00	0.00	5,918.0	3,283.5	209.0	3,287.7	0.00	0.00	
8,800.0	90.00	0.00	5,918.0	3,383.5	209.0	3,387.7	0.00	0.00	
8,900.0	90.00	0.00	5,918.0	3,483.5	209.0	3,487.6	0.00	0.00	

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Wellbore:	HZ		
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9,000.0	90.00	0.00	5,918.0	3,583.5	209.0	3,587.6	0.00	0.00	
9,100.0	90.00	0.00	5,918.0	3,683.5	209.0	3,687.6	0.00	0.00	
9,200.0	90.00	0.00	5,918.0	3,783.5	209.0	3,787.5	0.00	0.00	
9,300.0	90.00	0.00	5,918.0	3,883.5	209.0	3,887.5	0.00	0.00	
9,400.0	90.00	0.00	5,918.0	3,983.5	209.0	3,987.5	0.00	0.00	
9,500.0	90.00	0.00	5,918.0	4,083.5	209.0	4,087.5	0.00	0.00	
9,600.0	90.00	0.00	5,918.0	4,183.5	209.0	4,187.4	0.00	0.00	
9,700.0	90.00	0.00	5,918.0	4,283.5	209.0	4,287.4	0.00	0.00	
9,800.0	90.00	0.00	5,918.0	4,383.5	209.0	4,387.4	0.00	0.00	
9,900.0	90.00	0.00	5,918.0	4,483.5	209.0	4,487.3	0.00	0.00	
10,000.0	90.00	0.00	5,918.0	4,583.5	209.1	4,587.3	0.00	0.00	
10,100.0	90.00	0.00	5,918.0	4,683.5	209.1	4,687.3	0.00	0.00	
10,200.0	90.00	0.00	5,918.0	4,783.5	209.1	4,787.2	0.00	0.00	
10,300.0	90.00	0.00	5,918.0	4,883.5	209.1	4,887.2	0.00	0.00	
10,400.0	90.00	0.00	5,918.0	4,983.5	209.1	4,987.2	0.00	0.00	
10,500.0	90.00	0.00	5,918.0	5,083.5	209.1	5,087.1	0.00	0.00	
10,600.0	90.00	0.00	5,918.0	5,183.5	209.1	5,187.1	0.00	0.00	
10,700.0	90.00	0.00	5,918.0	5,283.5	209.1	5,287.1	0.00	0.00	
10,800.0	90.00	0.00	5,918.0	5,383.5	209.1	5,387.0	0.00	0.00	
10,866.5	90.00	0.00	5,918.0	5,450.0	209.1	5,453.5	0.00	0.00	IN - 1,550' Radius
10,900.0	90.00	0.00	5,918.0	5,483.5	209.1	5,487.0	0.00	0.00	
11,000.0	90.00	0.00	5,918.0	5,583.5	209.1	5,587.0	0.00	0.00	
11,100.0	90.00	0.00	5,918.0	5,683.5	209.1	5,686.9	0.00	0.00	
11,200.0	90.00	0.00	5,918.0	5,783.5	209.1	5,786.9	0.00	0.00	
11,300.0	90.00	0.00	5,918.0	5,883.5	209.1	5,886.9	0.00	0.00	
11,400.0	90.00	0.00	5,918.0	5,983.5	209.1	5,986.8	0.00	0.00	
11,500.0	90.00	0.00	5,918.0	6,083.5	209.1	6,086.8	0.00	0.00	
11,600.0	90.00	0.00	5,918.0	6,183.5	209.1	6,186.8	0.00	0.00	
11,700.0	90.00	0.00	5,918.0	6,283.5	209.1	6,286.8	0.00	0.00	
11,800.0	90.00	0.00	5,918.0	6,383.5	209.1	6,386.7	0.00	0.00	
11,900.0	90.00	0.00	5,918.0	6,483.5	209.1	6,486.7	0.00	0.00	
12,000.0	90.00	0.00	5,918.0	6,583.5	209.1	6,586.7	0.00	0.00	
12,100.0	90.00	0.00	5,918.0	6,683.5	209.1	6,686.6	0.00	0.00	
12,200.0	90.00	0.00	5,918.0	6,783.5	209.1	6,786.6	0.00	0.00	
12,300.0	90.00	0.00	5,918.0	6,883.5	209.1	6,886.6	0.00	0.00	
12,400.0	90.00	0.00	5,918.0	6,983.5	209.1	6,986.5	0.00	0.00	
12,500.0	90.00	0.00	5,918.0	7,083.5	209.1	7,086.5	0.00	0.00	
12,600.0	90.00	0.00	5,918.0	7,183.5	209.1	7,186.5	0.00	0.00	
12,700.0	90.00	0.00	5,918.0	7,283.5	209.1	7,286.4	0.00	0.00	
12,800.0	90.00	0.00	5,918.0	7,383.5	209.1	7,386.4	0.00	0.00	
12,900.0	90.00	0.00	5,918.0	7,483.5	209.1	7,486.4	0.00	0.00	
13,000.0	90.00	0.00	5,918.0	7,583.5	209.1	7,586.3	0.00	0.00	
13,100.0	90.00	0.00	5,918.0	7,683.5	209.1	7,686.3	0.00	0.00	
13,199.5	90.00	0.00	5,918.0	7,783.0	209.1	7,785.8	0.00	0.00	OUT - 1,550' Radius
13,200.0	90.00	0.00	5,918.0	7,783.5	209.1	7,786.3	0.00	0.00	
13,300.0	90.00	0.00	5,918.0	7,883.5	209.1	7,886.2	0.00	0.00	
13,400.0	90.00	0.00	5,918.0	7,983.5	209.1	7,986.2	0.00	0.00	
13,500.0	90.00	0.00	5,918.0	8,083.5	209.1	8,086.2	0.00	0.00	
13,600.0	90.00	0.00	5,918.0	8,183.5	209.1	8,186.1	0.00	0.00	
13,694.0	90.00	0.00	5,918.0	8,277.5	209.1	8,280.1	0.00	0.00	BHL - 2,559' FSL, 1,815' FEL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #21B-0911A
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17 @ 4854.3usft
Project:	Weld County, CO	MD Reference:	KB=17 @ 4854.3usft
Site:	S21-T10N-R58W	North Reference:	True
Well:	Razor #21B-0911A	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)		
21B-0911A BHL	0.00	1.05	5,793.5	8,277.5	209.1	1,557,722.51	3,451,501.98	40.852919	-103.867872
- plan misses target center by 124.5usft at 13694.0usft MD (5918.0 TVD, 8277.5 N, 209.1 E)									
- Point									
21B-0911A BHL P2	0.00	1.05	5,918.0	8,277.5	209.1	1,557,722.51	3,451,501.98	40.852919	-103.867872
- plan hits target center									
- Point									
21B-0911A TGT	0.00	1.05	5,793.5	7,777.6	212.2	1,557,222.77	3,451,514.22	40.851547	-103.867861
- plan misses target center by 124.5usft at 13194.2usft MD (5918.0 TVD, 7777.6 N, 209.1 E)									
- Point									
21B-0911A TGT P2	0.00	1.05	5,918.0	7,777.6	212.2	1,557,222.77	3,451,514.22	40.851547	-103.867861
- plan misses target center by 3.1usft at 13194.2usft MD (5918.0 TVD, 7777.6 N, 209.1 E)									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(usft)	(usft)	Name	(")	(")
	6,226.0	5,918.0	7" - 481' FSL, 1,919' FEL	0	0
	1,700.0	1,698.4	Surface Casing	0	0

Formations					
	Measured Depth	Vertical Depth		Dip	Dip Direction
	(usft)	(usft)	Name	(°)	(°)
	1,620.4	1,619.0	Pierre		
	6,048.4	5,888.0	Niobrara		

Plan Annotations					
	Measured Depth	Vertical Depth	Local Coordinates		
	(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment
	0.5	0.5	0.0	0.0	SH - 328' FNL, 2,095' FEL
	900.0	900.0	0.0	0.0	KOP @ 900'
	1,100.0	1,099.8	6.8	1.4	EOB @ 4° INC
	5,444.2	5,433.5	303.5	63.1	Start 11° Build
	6,226.0	5,918.0	812.2	168.9	LP @ 5,918' TVD, 90° INC
	6,617.6	5,918.0	1,201.1	209.0	EOT @ 0° AZ
	10,866.5	5,918.0	5,450.0	209.1	IN - 1,550' Radius
	13,199.5	5,918.0	7,783.0	209.1	OUT - 1,550' Radius
	13,694.0	5,918.0	8,277.5	209.1	BHL - 2,559' FSL, 1,815' FEL
	13,694.0	5,918.0	8,277.5	209.1	TD @ 13,694'

Whiting Petroleum Corporation

Weld County, CO

S21-T10N-R58W

Razor #21B-0911A

HZ

Plan #2

Anticollision Report

02 April, 2014

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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	4/2/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,694.0	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	11,754.2	6,016.7	1,323.7	1,189.7	9.877	CC
Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL	11,800.0	6,016.7	1,324.5	1,189.6	9.819	ES
Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL	12,000.0	6,016.7	1,346.4	1,207.7	9.706	SF
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL	12,032.3	6,013.7	1,020.4	881.1	7.324	CC, ES
Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL	12,200.0	6,013.7	1,034.1	891.6	7.256	SF
Razor #21A-0913A - HZ - Plan #2	13,695.0	13,663.2	660.2	342.5	2.078	CC, ES, SF
Razor #21A-0914B - HZ - Plan #2	13,695.0	13,722.9	994.5	678.7	3.149	CC, ES, SF
Razor #21A-0915A - HZ - Plan #2	6,300.0	6,004.2	1,289.7	1,251.1	33.385	CC
Razor #21A-0915A - HZ - Plan #2	13,695.0	13,652.9	1,320.2	1,005.3	4.193	ES, SF
Razor #21B-0909A - HZ - Plan #2	500.0	500.0	66.7	64.7	33.605	CC, ES
Razor #21B-0909A - HZ - Plan #2	13,695.0	13,706.4	660.1	344.4	2.091	SF
Razor #21B-0910B - HZ - Plan #2	700.0	700.0	32.1	29.2	11.132	CC
Razor #21B-0910B - HZ - Plan #2	800.0	799.9	32.3	29.0	9.698	ES
Razor #21B-0910B - HZ - Plan #2	13,695.0	13,751.2	342.6	36.5	1.119	Level 2, SF
Razor #21B-0912B - HZ - Plan #2	1,096.9	1,096.8	32.5	27.8	6.968	CC
Razor #21B-0912B - HZ - Plan #2	1,100.0	1,099.8	32.5	27.8	6.948	ES
Razor #21B-0912B - HZ - Plan #2	13,695.0	13,870.6	343.2	39.5	1.130	Level 2, SF
Razor #21B-2809A - HZ - Plan #1	1,255.3	1,254.3	80.2	74.9	14.901	CC
Razor #21B-2809A - HZ - Plan #1	1,300.0	1,298.9	80.3	74.7	14.366	ES
Razor #21B-2809A - HZ - Plan #1	1,700.0	1,695.8	88.4	81.0	12.008	SF
Razor #21B-2810B - HZ - Plan #1	700.0	699.5	137.7	134.8	47.746	CC, ES
Razor #21B-2810B - HZ - Plan #1	2,900.0	2,875.3	362.8	350.1	28.762	SF
Razor #21B-2811A - HZ - Plan #1	500.0	499.5	148.3	146.4	74.763	CC, ES
Razor #21B-2811A - HZ - Plan #1	2,700.0	2,680.1	304.1	292.1	25.533	SF
Razor #21B-2812B - HZ - Plan #1	900.0	899.5	196.4	192.7	51.939	CC, ES
Razor #21B-2812B - HZ - Plan #1	5,400.0	5,351.1	696.3	672.2	28.873	SF
Razor #21C-0907A - HZ - Plan #2	5,980.8	6,264.6	1,312.0	1,274.4	34.824	CC
Razor #21C-0907A - HZ - Plan #2	13,695.0	13,723.6	1,344.2	1,028.3	4.255	ES, SF
Razor #21C-0908B - HZ - Plan #2	13,695.0	13,908.9	1,019.3	704.5	3.238	CC, ES, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 - Fregeau 1 (Existing) - Existing - ASSUMED VERTICAL													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)		Offset Wellbore Centre +N/-S (usft)	Between Centres (usft)	Between Ellipses (usft)					
11,000.0	5,918.0	6,016.7	6,016.7	106.3	13.4	90.00	6,337.6	1,532.8	1,523.5	1,403.9	119.65	12.733		
11,100.0	5,918.0	6,016.7	6,016.7	108.2	13.4	90.00	6,337.6	1,532.8	1,476.6	1,355.0	121.55	12.148		
11,200.0	5,918.0	6,016.7	6,016.7	110.1	13.4	90.00	6,337.6	1,532.8	1,435.1	1,311.6	123.46	11.624		
11,300.0	5,918.0	6,016.7	6,016.7	112.0	13.4	90.00	6,337.6	1,532.8	1,399.5	1,274.1	125.36	11.164		
11,400.0	5,918.0	6,016.7	6,016.7	113.9	13.4	90.00	6,337.6	1,532.8	1,370.3	1,243.0	127.27	10.767		
11,500.0	5,918.0	6,016.7	6,016.7	115.8	13.4	90.00	6,337.6	1,532.8	1,347.9	1,218.8	129.18	10.435		
11,600.0	5,918.0	6,016.7	6,016.7	117.7	13.4	90.00	6,337.6	1,532.8	1,332.7	1,201.6	131.08	10.167		
11,700.0	5,918.0	6,016.7	6,016.7	119.6	13.4	90.00	6,337.6	1,532.8	1,324.9	1,191.9	132.99	9.962		
11,754.2	5,918.0	6,016.7	6,016.7	120.7	13.4	90.00	6,337.6	1,532.8	1,323.7	1,189.7	134.02	9.877 CC		
11,800.0	5,918.0	6,016.7	6,016.7	121.6	13.4	90.00	6,337.6	1,532.8	1,324.5	1,189.6	134.90	9.819 ES		
11,900.0	5,918.0	6,016.7	6,016.7	123.5	13.4	90.00	6,337.6	1,532.8	1,331.8	1,194.9	136.81	9.735		
12,000.0	5,918.0	6,016.7	6,016.7	125.4	13.4	90.00	6,337.6	1,532.8	1,346.4	1,207.7	138.71	9.706 SF		
12,100.0	5,918.0	6,016.7	6,016.7	127.3	13.4	90.00	6,337.6	1,532.8	1,368.2	1,227.5	140.62	9.729		
12,200.0	5,918.0	6,016.7	6,016.7	129.2	13.4	90.00	6,337.6	1,532.8	1,396.8	1,254.3	142.53	9.800		
12,300.0	5,918.0	6,016.7	6,016.7	131.1	13.4	90.00	6,337.6	1,532.8	1,431.8	1,287.4	144.44	9.913		
12,400.0	5,918.0	6,016.7	6,016.7	133.0	13.4	90.00	6,337.6	1,532.8	1,472.9	1,326.5	146.35	10.064		
12,500.0	5,918.0	6,016.7	6,016.7	134.9	13.4	90.00	6,337.6	1,532.8	1,519.4	1,371.1	148.26	10.248		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 - Fregeau 2 (Existing) - Existing - ASSUMED VERTICAL													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		
10,900.0	5,918.0	6,013.7	6,013.7	104.4	13.4	90.00	6,615.7	1,229.5	1,524.2	1,406.5	117.74	12.946		
11,000.0	5,918.0	6,013.7	6,013.7	106.3	13.4	90.00	6,615.7	1,229.5	1,451.5	1,331.9	119.64	12.132		
11,100.0	5,918.0	6,013.7	6,013.7	108.2	13.4	90.00	6,615.7	1,229.5	1,382.2	1,260.6	121.54	11.372		
11,200.0	5,918.0	6,013.7	6,013.7	110.1	13.4	90.00	6,615.7	1,229.5	1,316.8	1,193.3	123.45	10.667		
11,300.0	5,918.0	6,013.7	6,013.7	112.0	13.4	90.00	6,615.7	1,229.5	1,256.0	1,130.6	125.36	10.019		
11,400.0	5,918.0	6,013.7	6,013.7	113.9	13.4	90.00	6,615.7	1,229.5	1,200.4	1,073.2	127.26	9.433		
11,500.0	5,918.0	6,013.7	6,013.7	115.8	13.4	90.00	6,615.7	1,229.5	1,150.9	1,021.7	129.17	8.910		
11,600.0	5,918.0	6,013.7	6,013.7	117.7	13.4	90.00	6,615.7	1,229.5	1,108.2	977.1	131.07	8.455		
11,700.0	5,918.0	6,013.7	6,013.7	119.6	13.4	90.00	6,615.7	1,229.5	1,073.1	940.2	132.98	8.070		
11,800.0	5,918.0	6,013.7	6,013.7	121.6	13.4	90.00	6,615.7	1,229.5	1,046.5	911.6	134.89	7.758		
11,900.0	5,918.0	6,013.7	6,013.7	123.5	13.4	90.00	6,615.7	1,229.5	1,028.9	892.2	136.80	7.522		
12,000.0	5,918.0	6,013.7	6,013.7	125.4	13.4	90.00	6,615.7	1,229.5	1,020.9	882.2	138.71	7.360		
12,032.3	5,918.0	6,013.7	6,013.7	126.0	13.4	90.00	6,615.7	1,229.5	1,020.4	881.1	139.32	7.324 CC, ES		
12,100.0	5,918.0	6,013.7	6,013.7	127.3	13.4	90.00	6,615.7	1,229.5	1,022.7	882.0	140.61	7.273		
12,200.0	5,918.0	6,013.7	6,013.7	129.2	13.4	90.00	6,615.7	1,229.5	1,034.1	891.6	142.52	7.256 SF		
12,300.0	5,918.0	6,013.7	6,013.7	131.1	13.4	90.00	6,615.7	1,229.5	1,054.9	910.5	144.43	7.304		
12,400.0	5,918.0	6,013.7	6,013.7	133.0	13.4	90.00	6,615.7	1,229.5	1,084.6	938.3	146.34	7.412		
12,500.0	5,918.0	6,013.7	6,013.7	134.9	13.4	90.00	6,615.7	1,229.5	1,122.5	974.2	148.25	7.571		
12,600.0	5,918.0	6,013.7	6,013.7	136.8	13.4	90.00	6,615.7	1,229.5	1,167.7	1,017.5	150.16	7.776		
12,700.0	5,918.0	6,013.7	6,013.7	138.7	13.4	90.00	6,615.7	1,229.5	1,219.5	1,067.4	152.08	8.019		
12,800.0	5,918.0	6,013.7	6,013.7	140.6	13.4	90.00	6,615.7	1,229.5	1,277.0	1,123.0	153.99	8.293		
12,900.0	5,918.0	6,013.7	6,013.7	142.6	13.4	90.00	6,615.7	1,229.5	1,339.5	1,183.6	155.90	8.592		
13,000.0	5,918.0	6,013.7	6,013.7	144.5	13.4	90.00	6,615.7	1,229.5	1,406.3	1,248.5	157.81	8.911		
13,100.0	5,918.0	6,013.7	6,013.7	146.4	13.4	90.00	6,615.7	1,229.5	1,476.9	1,317.2	159.72	9.247		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0913A - 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)						
0.0	0.0	0.0	0.0	0.0	0.0	88.80	26.3	1,253.1	1,253.4					
100.0	100.0	94.6	94.6	0.1	0.1	88.80	26.3	1,253.1	1,253.4	1,253.2	0.18	6,904.872		
200.0	200.0	194.6	194.6	0.3	0.3	88.80	26.3	1,253.1	1,253.4	1,252.7	0.62	2,008.757		
300.0	300.0	294.6	294.6	0.5	0.5	88.80	26.3	1,253.1	1,253.4	1,252.3	1.07	1,167.569		
400.0	400.0	394.6	394.6	0.8	0.8	88.80	26.3	1,253.1	1,253.4	1,251.8	1.52	822.950		
500.0	500.0	494.6	494.6	1.0	1.0	88.80	26.3	1,253.1	1,253.4	1,251.4	1.97	635.405		
600.0	600.0	609.2	609.1	1.2	1.2	88.71	28.2	1,252.4	1,252.8	1,250.4	2.45	510.536		
700.0	700.0	721.0	720.8	1.4	1.5	88.43	34.2	1,250.3	1,251.1	1,248.1	2.93	426.363		
800.0	800.0	820.8	820.3	1.7	1.7	88.13	40.8	1,248.1	1,249.0	1,245.6	3.40	367.846		
900.0	900.0	920.6	919.9	1.9	2.0	87.82	47.4	1,245.8	1,247.0	1,243.1	3.86	322.881		
1,000.0	1,000.0	1,020.4	1,019.5	2.1	2.2	75.89	54.0	1,243.5	1,244.5	1,240.2	4.33	287.597		
1,100.0	1,099.8	1,120.3	1,119.1	2.3	2.5	75.88	60.6	1,241.3	1,241.2	1,236.4	4.80	258.700		
1,200.0	1,199.6	1,220.3	1,218.8	2.6	2.7	75.88	67.2	1,239.0	1,237.5	1,232.3	5.28	234.588		
1,300.0	1,299.4	1,320.2	1,318.5	2.8	3.0	75.89	73.7	1,236.7	1,233.8	1,228.1	5.76	214.256		
1,400.0	1,399.1	1,420.1	1,418.2	3.0	3.2	75.89	80.3	1,234.4	1,230.1	1,223.9	6.25	196.928		
1,500.0	1,498.9	1,520.1	1,517.9	3.3	3.5	75.89	86.9	1,232.2	1,226.4	1,219.7	6.74	182.012		
1,600.0	1,598.6	1,620.0	1,617.6	3.5	3.7	75.90	93.5	1,229.9	1,222.7	1,215.5	7.23	169.057		
1,700.0	1,698.4	1,719.9	1,717.3	3.8	4.0	75.90	100.1	1,227.6	1,219.0	1,211.3	7.73	157.711		
1,800.0	1,798.1	1,819.9	1,817.0	4.0	4.2	75.90	106.7	1,225.4	1,215.3	1,207.1	8.23	147.701		
1,900.0	1,897.9	1,919.8	1,916.6	4.3	4.5	75.91	113.3	1,223.1	1,211.6	1,202.9	8.73	138.809		
2,000.0	1,997.6	2,019.7	2,016.3	4.5	4.7	75.91	119.9	1,220.8	1,207.9	1,198.7	9.23	130.862		
2,100.0	2,097.4	2,119.6	2,116.0	4.8	5.0	75.92	126.5	1,218.5	1,204.2	1,194.5	9.73	123.719		
2,200.0	2,197.2	2,219.6	2,215.7	5.0	5.2	75.92	133.1	1,216.3	1,200.5	1,190.3	10.24	117.267		
2,300.0	2,296.9	2,319.5	2,315.4	5.3	5.5	75.92	139.7	1,214.0	1,196.8	1,186.1	10.74	111.410		
2,400.0	2,396.7	2,419.4	2,415.1	5.5	5.8	75.93	146.2	1,211.7	1,193.1	1,181.9	11.25	106.072		
2,500.0	2,496.4	2,519.4	2,514.8	5.8	6.0	75.93	152.8	1,209.4	1,189.4	1,177.7	11.75	101.188		
2,600.0	2,596.2	2,619.3	2,614.5	6.0	6.3	75.94	159.4	1,207.2	1,185.7	1,173.5	12.26	96.702		
2,700.0	2,695.9	2,719.2	2,714.2	6.3	6.5	75.94	166.0	1,204.9	1,182.0	1,169.3	12.77	92.568		
2,800.0	2,795.7	2,819.2	2,813.8	6.5	6.8	75.94	172.6	1,202.6	1,178.3	1,165.1	13.28	88.747		
2,900.0	2,895.5	2,919.1	2,913.5	6.8	7.0	75.95	179.2	1,200.4	1,174.6	1,160.9	13.79	85.205		
3,000.0	2,995.2	3,019.0	3,013.2	7.0	7.3	75.95	185.8	1,198.1	1,170.9	1,156.6	14.30	81.912		
3,100.0	3,095.0	3,119.0	3,112.9	7.3	7.5	75.96	192.4	1,195.8	1,167.2	1,152.4	14.80	78.844		
3,200.0	3,194.7	3,218.9	3,212.6	7.5	7.8	75.96	199.0	1,193.5	1,163.5	1,148.2	15.31	75.978		
3,300.0	3,294.5	3,318.8	3,312.3	7.8	8.1	75.96	205.6	1,191.3	1,159.8	1,144.0	15.82	73.295		
3,400.0	3,394.2	3,418.8	3,412.0	8.0	8.3	75.97	212.1	1,189.0	1,156.1	1,139.8	16.33	70.779		
3,500.0	3,494.0	3,518.7	3,511.7	8.3	8.6	75.97	218.7	1,186.7	1,152.4	1,135.6	16.85	68.413		
3,600.0	3,593.7	3,618.6	3,611.3	8.5	8.8	75.98	225.3	1,184.5	1,148.7	1,131.4	17.36	66.186		
3,700.0	3,693.5	3,718.5	3,711.0	8.8	9.1	75.98	231.9	1,182.2	1,145.0	1,127.2	17.87	64.085		
3,800.0	3,793.3	3,818.5	3,810.7	9.1	9.3	75.99	238.5	1,179.9	1,141.3	1,123.0	18.38	62.101		
3,900.0	3,893.0	3,918.4	3,910.4	9.3	9.6	75.99	245.1	1,177.6	1,137.6	1,118.8	18.89	60.223		
4,000.0	3,992.8	4,018.3	4,010.1	9.6	9.8	76.00	251.7	1,175.4	1,133.9	1,114.5	19.40	58.443		
4,100.0	4,092.5	4,118.3	4,109.8	9.8	10.1	76.00	258.3	1,173.1	1,130.2	1,110.3	19.91	56.754		
4,200.0	4,192.3	4,218.2	4,209.5	10.1	10.4	76.00	264.9	1,170.8	1,126.5	1,106.1	20.43	55.150		
4,300.0	4,292.0	4,318.1	4,309.2	10.3	10.6	76.01	271.5	1,168.6	1,122.8	1,101.9	20.94	53.623		
4,400.0	4,391.8	4,418.1	4,408.8	10.6	10.9	76.01	278.0	1,166.3	1,119.1	1,097.7	21.45	52.169		
4,500.0	4,491.6	4,518.0	4,508.5	10.8	11.1	76.02	284.6	1,164.0	1,115.4	1,093.5	21.97	50.782		
4,600.0	4,591.3	4,617.9	4,608.2	11.1	11.4	76.02	291.2	1,161.7	1,111.7	1,089.3	22.48	49.459		
4,700.0	4,691.1	4,717.9	4,707.9	11.3	11.6	76.03	297.8	1,159.5	1,108.0	1,085.1	22.99	48.194		
4,800.0	4,790.8	4,817.8	4,807.6	11.6	11.9	76.03	304.4	1,157.2	1,104.3	1,080.8	23.50	46.984		
4,900.0	4,890.6	4,917.7	4,907.3	11.9	12.2	76.04	311.0	1,154.9	1,100.6	1,076.6	24.02	45.825		
5,000.0	4,990.3	5,017.7	5,007.0	12.1	12.4	76.04	317.6	1,152.6	1,096.9	1,072.4	24.53	44.714		
5,100.0	5,090.1	5,117.6	5,106.7	12.4	12.7	76.05	324.2	1,150.4	1,093.2	1,068.2	25.05	43.649		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0913A - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: O-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.9	5,217.5	5,206.4	12.6	12.9	76.05	330.8	1,148.1	1,089.5	1,064.0	25.56	42.627		
5,300.0	5,289.6	5,317.5	5,306.0	12.9	13.2	76.05	337.4	1,145.8	1,085.8	1,059.8	26.07	41.644		
5,400.0	5,389.4	5,417.4	5,405.7	13.1	13.4	76.06	343.9	1,143.6	1,082.1	1,055.6	26.59	40.699		
5,500.0	5,488.8	5,639.6	5,618.7	13.4	14.4	74.99	398.1	1,124.9	1,072.5	1,044.7	27.83	38.535		
5,600.0	5,585.0	5,831.3	5,769.3	13.8	15.9	73.65	508.6	1,086.8	1,048.5	1,018.7	29.81	35.173		
5,700.0	5,674.2	5,976.3	5,849.4	14.4	17.5	73.19	622.4	1,047.6	1,014.4	982.4	31.98	31.722		
5,800.0	5,753.3	6,089.6	5,887.1	15.1	19.1	73.89	723.1	1,012.8	973.8	939.7	34.11	28.547		
5,900.0	5,819.3	6,183.3	5,900.3	16.1	20.5	75.58	810.8	982.6	928.9	892.7	36.25	25.622		
6,000.0	5,869.7	6,245.4	5,901.0	17.2	21.4	78.89	869.5	962.7	882.0	843.8	38.22	23.077		
6,100.0	5,902.8	6,300.0	5,901.0	18.4	22.2	83.05	921.7	946.6	835.8	795.5	40.37	20.706		
6,200.0	5,917.3	6,364.0	5,901.0	19.8	23.2	87.71	983.4	929.6	790.9	748.1	42.85	18.459		
6,300.0	5,918.0	6,428.9	5,901.0	21.2	24.2	89.04	1,046.6	914.6	749.7	704.1	45.61	16.437		
6,400.0	5,918.0	6,500.0	5,901.0	22.6	25.2	89.03	1,116.2	900.5	716.4	667.9	48.50	14.771		
6,500.0	5,918.0	6,567.8	5,901.0	24.0	26.3	89.02	1,183.2	889.6	691.6	640.2	51.37	13.463		
6,600.0	5,918.0	6,640.5	5,901.0	25.5	27.4	89.01	1,255.3	880.5	675.5	621.2	54.29	12.443		
6,700.0	5,918.0	6,714.3	5,901.0	27.0	28.6	89.00	1,328.7	874.1	666.7	609.6	57.08	11.680		
6,800.0	5,918.0	6,800.0	5,901.0	28.7	29.9	88.99	1,414.4	870.2	662.0	601.9	60.12	11.012		
6,870.6	5,918.0	6,843.9	5,901.0	29.9	30.6	88.99	1,458.3	869.7	660.8	598.8	61.97	10.663		
6,900.0	5,918.0	6,869.1	5,901.0	30.3	31.0	88.99	1,483.5	869.6	660.8	597.9	62.90	10.505		
7,000.0	5,918.0	6,969.1	5,901.0	32.0	32.7	88.99	1,583.5	869.6	660.8	594.5	66.28	9.969		
7,100.0	5,918.0	7,069.1	5,901.0	33.8	34.3	88.99	1,683.5	869.6	660.8	591.0	69.72	9.478		
7,200.0	5,918.0	7,169.1	5,901.0	35.5	36.0	88.99	1,783.5	869.6	660.8	587.6	73.19	9.028		
7,300.0	5,918.0	7,269.1	5,901.0	37.2	37.7	88.99	1,883.5	869.6	660.7	584.0	76.70	8.614		
7,400.0	5,918.0	7,369.1	5,901.0	39.0	39.5	88.99	1,983.5	869.6	660.7	580.5	80.25	8.234		
7,500.0	5,918.0	7,469.1	5,901.0	40.8	41.2	88.99	2,083.5	869.6	660.7	576.9	83.82	7.883		
7,600.0	5,918.0	7,569.1	5,901.0	42.6	43.0	88.99	2,183.5	869.6	660.7	573.3	87.41	7.559		
7,700.0	5,918.0	7,669.1	5,901.0	44.4	44.8	88.99	2,283.5	869.6	660.7	569.7	91.03	7.258		
7,800.0	5,918.0	7,769.1	5,901.0	46.2	46.6	88.99	2,383.5	869.6	660.7	566.0	94.66	6.980		
7,900.0	5,918.0	7,869.1	5,901.0	48.0	48.4	88.99	2,483.5	869.6	660.7	562.4	98.31	6.721		
8,000.0	5,918.0	7,969.1	5,901.0	49.9	50.2	88.99	2,583.5	869.6	660.7	558.7	101.97	6.479		
8,100.0	5,918.0	8,069.1	5,901.0	51.7	52.0	88.99	2,683.5	869.6	660.7	555.0	105.65	6.253		
8,200.0	5,918.0	8,169.1	5,901.0	53.6	53.8	88.99	2,783.5	869.6	660.7	551.3	109.34	6.042		
8,300.0	5,918.0	8,269.1	5,901.0	55.4	55.6	88.99	2,883.5	869.6	660.7	547.6	113.04	5.845		
8,400.0	5,918.0	8,369.1	5,901.0	57.3	57.5	88.99	2,983.5	869.6	660.6	543.9	116.75	5.659		
8,500.0	5,918.0	8,469.1	5,901.0	59.1	59.3	88.99	3,083.5	869.6	660.6	540.2	120.46	5.484		
8,600.0	5,918.0	8,569.1	5,901.0	61.0	61.2	88.99	3,183.5	869.5	660.6	536.4	124.19	5.320		
8,700.0	5,918.0	8,669.1	5,901.0	62.9	63.0	88.99	3,283.5	869.5	660.6	532.7	127.92	5.164		
8,800.0	5,918.0	8,769.1	5,901.0	64.7	64.9	88.99	3,383.5	869.5	660.6	529.0	131.66	5.018		
8,900.0	5,918.0	8,869.1	5,901.0	66.6	66.7	88.99	3,483.5	869.5	660.6	525.2	135.41	4.879		
9,000.0	5,918.0	8,969.1	5,901.0	68.5	68.6	88.99	3,583.5	869.5	660.6	521.4	139.15	4.747		
9,100.0	5,918.0	9,069.1	5,901.0	70.3	70.5	88.99	3,683.5	869.5	660.6	517.7	142.91	4.622		
9,200.0	5,918.0	9,169.1	5,901.0	72.2	72.3	88.99	3,783.5	869.5	660.6	513.9	146.67	4.504		
9,300.0	5,918.0	9,269.1	5,901.0	74.1	74.2	88.99	3,883.5	869.5	660.6	510.1	150.43	4.391		
9,400.0	5,918.0	9,369.1	5,901.0	76.0	76.1	88.99	3,983.5	869.5	660.6	506.4	154.20	4.284		
9,500.0	5,918.0	9,469.1	5,901.0	77.9	77.9	88.99	4,083.5	869.5	660.6	502.6	157.97	4.181		
9,600.0	5,918.0	9,569.1	5,901.0	79.8	79.8	88.99	4,183.5	869.5	660.5	498.8	161.75	4.084		
9,700.0	5,918.0	9,669.1	5,901.0	81.7	81.7	88.99	4,283.5	869.5	660.5	495.0	165.52	3.991		
9,800.0	5,918.0	9,769.1	5,901.0	83.5	83.6	88.99	4,383.5	869.5	660.5	491.2	169.31	3.901		
9,900.0	5,918.0	9,869.1	5,901.0	85.4	85.5	88.99	4,483.5	869.5	660.5	487.4	173.09	3.816		
10,000.0	5,918.0	9,969.1	5,901.0	87.3	87.4	88.99	4,583.5	869.5	660.5	483.6	176.88	3.734		
10,100.0	5,918.0	10,069.1	5,901.0	89.2	89.2	88.99	4,683.5	869.5	660.5	479.8	180.66	3.656		
10,200.0	5,918.0	10,169.1	5,901.0	91.1	91.1	88.99	4,783.5	869.4	660.5	476.0	184.45	3.581		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0913A - 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		
10,300.0	5,918.0	10,269.1	5,901.0	93.0	93.0	88.99	4,883.5	869.4	660.5	472.2	188.25	3.509		
10,400.0	5,918.0	10,369.1	5,901.0	94.9	94.9	88.99	4,983.5	869.4	660.5	468.4	192.04	3.439		
10,500.0	5,918.0	10,469.1	5,901.0	96.8	96.8	88.99	5,083.5	869.4	660.5	464.6	195.84	3.372		
10,600.0	5,918.0	10,569.1	5,901.0	98.7	98.7	88.99	5,183.5	869.4	660.5	460.8	199.64	3.308		
10,700.0	5,918.0	10,669.1	5,901.0	100.6	100.6	88.99	5,283.5	869.4	660.4	457.0	203.44	3.246		
10,800.0	5,918.0	10,769.1	5,901.0	102.5	102.5	88.99	5,383.5	869.4	660.4	453.2	207.24	3.187		
10,900.0	5,918.0	10,869.1	5,901.0	104.4	104.4	88.99	5,483.5	869.4	660.4	449.4	211.04	3.129		
11,000.0	5,918.0	10,969.1	5,901.0	106.3	106.3	88.99	5,583.5	869.4	660.4	445.6	214.85	3.074		
11,100.0	5,918.0	11,069.1	5,901.0	108.2	108.2	88.99	5,683.5	869.4	660.4	441.8	218.65	3.020		
11,200.0	5,918.0	11,169.1	5,901.0	110.1	110.1	88.99	5,783.5	869.4	660.4	437.9	222.46	2.969		
11,300.0	5,918.0	11,269.1	5,901.0	112.0	112.0	88.99	5,883.5	869.4	660.4	434.1	226.27	2.919		
11,400.0	5,918.0	11,369.1	5,901.0	113.9	113.9	88.99	5,983.5	869.4	660.4	430.3	230.08	2.870		
11,500.0	5,918.0	11,469.1	5,901.0	115.8	115.8	88.99	6,083.5	869.4	660.4	426.5	233.89	2.823		
11,600.0	5,918.0	11,569.1	5,901.0	117.7	117.7	88.99	6,183.5	869.4	660.4	422.7	237.70	2.778		
11,700.0	5,918.0	11,669.1	5,901.0	119.6	119.6	88.99	6,283.5	869.4	660.4	418.8	241.51	2.734		
11,800.0	5,918.0	11,769.1	5,901.0	121.6	121.5	88.99	6,383.5	869.3	660.4	415.0	245.33	2.692		
11,900.0	5,918.0	11,869.1	5,901.0	123.5	123.4	88.99	6,483.5	869.3	660.3	411.2	249.14	2.650		
12,000.0	5,918.0	11,969.1	5,901.0	125.4	125.3	88.99	6,583.5	869.3	660.3	407.4	252.96	2.610		
12,100.0	5,918.0	12,069.1	5,901.0	127.3	127.2	88.99	6,683.5	869.3	660.3	403.6	256.77	2.572		
12,200.0	5,918.0	12,169.1	5,901.0	129.2	129.1	88.99	6,783.5	869.3	660.3	399.7	260.59	2.534		
12,300.0	5,918.0	12,269.1	5,901.0	131.1	131.0	88.99	6,883.5	869.3	660.3	395.9	264.41	2.497		
12,400.0	5,918.0	12,369.1	5,901.0	133.0	132.9	88.99	6,983.5	869.3	660.3	392.1	268.23	2.462		
12,500.0	5,918.0	12,469.1	5,901.0	134.9	134.8	88.99	7,083.5	869.3	660.3	388.2	272.04	2.427		
12,600.0	5,918.0	12,569.1	5,901.0	136.8	136.7	88.99	7,183.5	869.3	660.3	384.4	275.86	2.394		
12,700.0	5,918.0	12,669.1	5,901.0	138.7	138.6	88.99	7,283.5	869.3	660.3	380.6	279.68	2.361		
12,800.0	5,918.0	12,769.1	5,901.0	140.6	140.5	88.99	7,383.5	869.3	660.3	376.8	283.51	2.329		
12,900.0	5,918.0	12,869.1	5,901.0	142.6	142.5	88.99	7,483.5	869.3	660.3	372.9	287.33	2.298		
13,000.0	5,918.0	12,969.1	5,901.0	144.5	144.4	88.99	7,583.5	869.3	660.2	369.1	291.15	2.268		
13,100.0	5,918.0	13,069.1	5,901.0	146.4	146.3	88.99	7,683.5	869.3	660.2	365.3	294.97	2.238		
13,200.0	5,918.0	13,169.1	5,901.0	148.3	148.2	88.99	7,783.5	869.3	660.2	361.4	298.79	2.210		
13,300.0	5,918.0	13,269.1	5,901.0	150.2	150.1	88.99	7,883.5	869.3	660.2	357.6	302.62	2.182		
13,400.0	5,918.0	13,369.1	5,901.0	152.1	152.0	88.99	7,983.5	869.3	660.2	353.8	306.44	2.154		
13,500.0	5,918.0	13,469.1	5,901.0	154.0	153.9	88.99	8,083.5	869.2	660.2	349.9	310.27	2.128		
13,600.0	5,918.0	13,569.1	5,901.0	155.9	155.8	88.99	8,183.5	869.2	660.2	346.1	314.09	2.102		
13,665.8	5,918.0	13,634.9	5,901.0	157.2	157.1	88.99	8,249.3	869.2	660.2	343.6	316.58	2.085		
13,695.0	5,918.0	13,663.2	5,901.0	157.8	157.6	88.99	8,277.5	869.2	660.2	342.5	317.70	2.078	CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0914B - 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)						
0.0	0.0	0.0	0.0	0.0	0.0	88.83	26.3	1,286.0	1,286.3					
100.0	100.0	94.6	94.6	0.1	0.1	88.83	26.3	1,286.0	1,286.3	1,286.1	0.18	7,086.261		
200.0	200.0	194.6	194.6	0.3	0.3	88.83	26.3	1,286.0	1,286.3	1,285.7	0.62	2,061.527		
300.0	300.0	294.6	294.6	0.5	0.5	88.83	26.3	1,286.0	1,286.3	1,285.2	1.07	1,198.241		
400.0	400.0	394.6	394.6	0.8	0.8	88.83	26.3	1,286.0	1,286.3	1,284.8	1.52	844.569		
500.0	500.0	494.6	494.6	1.0	1.0	88.83	26.3	1,286.0	1,286.3	1,284.3	1.97	652.097		
600.0	600.0	594.6	594.6	1.2	1.2	88.83	26.3	1,286.0	1,286.3	1,283.9	2.42	531.069		
700.0	700.0	694.6	694.6	1.4	1.4	88.83	26.3	1,286.0	1,286.3	1,283.4	2.87	447.934		
800.0	800.0	797.7	797.7	1.7	1.7	88.76	27.9	1,285.9	1,286.2	1,282.8	3.33	386.549		
900.0	900.0	900.8	900.6	1.9	1.9	88.52	33.3	1,285.4	1,285.8	1,282.0	3.78	339.756		
1,000.0	1,000.0	1,000.6	1,000.2	2.1	2.1	76.55	40.2	1,284.7	1,285.0	1,280.7	4.24	303.067		
1,100.0	1,099.8	1,100.6	1,099.9	2.3	2.4	76.50	47.2	1,284.1	1,283.3	1,278.6	4.70	272.983		
1,200.0	1,199.6	1,200.5	1,199.7	2.6	2.6	76.49	54.1	1,283.4	1,281.2	1,276.1	5.17	247.768		
1,300.0	1,299.4	1,300.5	1,299.4	2.8	2.8	76.48	61.0	1,282.8	1,279.2	1,273.5	5.65	226.458		
1,400.0	1,399.1	1,400.5	1,399.1	3.0	3.1	76.47	68.0	1,282.2	1,277.1	1,271.0	6.13	208.275		
1,500.0	1,498.9	1,500.5	1,498.9	3.3	3.3	76.47	74.9	1,281.5	1,275.1	1,268.4	6.62	192.619		
1,600.0	1,598.6	1,600.5	1,598.6	3.5	3.6	76.46	81.9	1,280.9	1,273.0	1,265.9	7.11	179.021		
1,700.0	1,698.4	1,700.4	1,698.3	3.8	3.8	76.45	88.8	1,280.2	1,270.9	1,263.3	7.61	167.118		
1,800.0	1,798.1	1,800.4	1,798.1	4.0	4.1	76.44	95.8	1,279.6	1,268.9	1,260.8	8.10	156.621		
1,900.0	1,897.9	1,900.4	1,897.8	4.3	4.3	76.43	102.7	1,278.9	1,266.8	1,258.2	8.60	147.302		
2,000.0	1,997.6	2,000.4	1,997.5	4.5	4.6	76.42	109.6	1,278.3	1,264.8	1,255.7	9.10	138.980		
2,100.0	2,097.4	2,100.4	2,097.3	4.8	4.8	76.42	116.6	1,277.6	1,262.7	1,253.1	9.60	131.505		
2,200.0	2,197.2	2,200.3	2,197.0	5.0	5.1	76.41	123.5	1,277.0	1,260.6	1,250.5	10.10	124.758		
2,300.0	2,296.9	2,300.3	2,296.7	5.3	5.3	76.40	130.5	1,276.3	1,258.6	1,248.0	10.61	118.638		
2,400.0	2,396.7	2,400.3	2,396.5	5.5	5.6	76.39	137.4	1,275.7	1,256.5	1,245.4	11.11	113.065		
2,500.0	2,496.4	2,500.3	2,496.2	5.8	5.9	76.38	144.4	1,275.1	1,254.5	1,242.8	11.62	107.968		
2,600.0	2,596.2	2,600.3	2,595.9	6.0	6.1	76.37	151.3	1,274.4	1,252.4	1,240.3	12.13	103.290		
2,700.0	2,695.9	2,700.2	2,695.7	6.3	6.4	76.37	158.3	1,273.8	1,250.3	1,237.7	12.63	98.982		
2,800.0	2,795.7	2,800.2	2,795.4	6.5	6.6	76.36	165.2	1,273.1	1,248.3	1,235.1	13.14	95.003		
2,900.0	2,895.5	2,900.2	2,895.2	6.8	6.9	76.35	172.1	1,272.5	1,246.2	1,232.6	13.65	91.316		
3,000.0	2,995.2	3,000.2	2,994.9	7.0	7.1	76.34	179.1	1,271.8	1,244.2	1,230.0	14.16	87.891		
3,100.0	3,095.0	3,100.1	3,094.6	7.3	7.4	76.33	186.0	1,271.2	1,242.1	1,227.4	14.66	84.701		
3,200.0	3,194.7	3,200.1	3,194.4	7.5	7.6	76.32	193.0	1,270.5	1,240.0	1,224.9	15.17	81.723		
3,300.0	3,294.5	3,300.1	3,294.1	7.8	7.9	76.31	199.9	1,269.9	1,238.0	1,222.3	15.68	78.937		
3,400.0	3,394.2	3,400.1	3,393.8	8.0	8.1	76.31	206.9	1,269.3	1,235.9	1,219.7	16.19	76.324		
3,500.0	3,494.0	3,500.1	3,493.6	8.3	8.4	76.30	213.8	1,268.6	1,233.9	1,217.2	16.70	73.870		
3,600.0	3,593.7	3,600.0	3,593.3	8.5	8.7	76.29	220.8	1,268.0	1,231.8	1,214.6	17.21	71.560		
3,700.0	3,693.5	3,700.0	3,693.0	8.8	8.9	76.28	227.7	1,267.3	1,229.7	1,212.0	17.72	69.382		
3,800.0	3,793.3	3,800.0	3,792.8	9.1	9.2	76.27	234.6	1,266.7	1,227.7	1,209.4	18.24	67.325		
3,900.0	3,893.0	3,900.0	3,892.5	9.3	9.4	76.26	241.6	1,266.0	1,225.6	1,206.9	18.75	65.380		
4,000.0	3,992.8	4,000.0	3,992.2	9.6	9.7	76.25	248.5	1,265.4	1,223.6	1,204.3	19.26	63.537		
4,100.0	4,092.5	4,099.9	4,092.0	9.8	9.9	76.24	255.5	1,264.7	1,221.5	1,201.7	19.77	61.789		
4,200.0	4,192.3	4,199.9	4,191.7	10.1	10.2	76.24	262.4	1,264.1	1,219.4	1,199.2	20.28	60.128		
4,300.0	4,292.0	4,299.9	4,291.4	10.3	10.4	76.23	269.4	1,263.5	1,217.4	1,196.6	20.79	58.549		
4,400.0	4,391.8	4,399.9	4,391.2	10.6	10.7	76.22	276.3	1,262.8	1,215.3	1,194.0	21.30	57.045		
4,500.0	4,491.6	4,499.8	4,490.9	10.8	11.0	76.21	283.3	1,262.2	1,213.3	1,191.4	21.82	55.611		
4,600.0	4,591.3	4,599.8	4,590.6	11.1	11.2	76.20	290.2	1,261.5	1,211.2	1,188.9	22.33	54.243		
4,700.0	4,691.1	4,699.8	4,690.4	11.3	11.5	76.19	297.1	1,260.9	1,209.1	1,186.3	22.84	52.936		
4,800.0	4,790.8	4,799.8	4,790.1	11.6	11.7	76.18	304.1	1,260.2	1,207.1	1,183.7	23.35	51.686		
4,900.0	4,890.6	4,899.8	4,889.9	11.9	12.0	76.17	311.0	1,259.6	1,205.0	1,181.2	23.87	50.489		
5,000.0	4,990.3	4,999.7	4,989.6	12.1	12.2	76.16	318.0	1,258.9	1,203.0	1,178.6	24.38	49.343		
5,100.0	5,090.1	5,099.7	5,089.3	12.4	12.5	76.15	324.9	1,258.3	1,200.9	1,176.0	24.89	48.243		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0914B - 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	5,189.9	5,199.7	5,189.1	12.6	12.7	76.15	331.9	1,257.7	1,198.8	1,173.4	25.41	47.188		
5,300.0	5,289.6	5,299.7	5,288.8	12.9	13.0	76.14	338.8	1,257.0	1,196.8	1,170.9	25.92	46.174		
5,400.0	5,389.4	5,399.7	5,388.5	13.1	13.3	76.13	345.8	1,256.4	1,194.7	1,168.3	26.43	45.199		
5,500.0	5,488.8	5,499.5	5,488.1	13.4	13.5	76.46	352.7	1,255.7	1,192.0	1,165.0	26.96	44.219		
5,600.0	5,585.0	5,609.0	5,596.8	13.8	13.8	78.01	365.4	1,254.5	1,185.0	1,157.4	27.66	42.847		
5,700.0	5,674.2	5,727.7	5,709.0	14.4	14.4	80.11	402.9	1,251.1	1,172.8	1,144.1	28.76	40.775		
5,800.0	5,753.3	5,848.8	5,811.8	15.1	15.2	82.58	466.3	1,245.2	1,155.7	1,125.4	30.35	38.083		
5,900.0	5,819.3	5,970.9	5,897.7	16.1	16.3	85.36	552.2	1,237.2	1,134.2	1,101.7	32.46	34.945		
6,000.0	5,869.7	6,092.7	5,961.1	17.2	17.6	88.37	655.4	1,227.6	1,109.0	1,074.0	35.02	31.664		
6,100.0	5,902.8	6,213.0	5,998.5	18.4	19.2	91.51	769.0	1,217.1	1,081.2	1,043.2	37.94	28.496		
6,200.0	5,917.3	6,317.7	6,009.0	19.8	20.7	94.67	872.6	1,207.5	1,051.8	1,011.0	40.84	25.757		
6,300.0	5,918.0	6,400.0	6,009.0	21.2	21.9	95.54	954.7	1,201.6	1,025.9	982.4	43.55	23.557		
6,400.0	5,918.0	6,451.8	6,009.0	22.6	22.6	95.54	1,006.4	1,199.8	1,008.1	962.3	45.78	22.022		
6,500.0	5,918.0	6,529.0	6,009.0	24.0	23.7	95.55	1,083.6	1,199.3	998.6	950.2	48.41	20.628		
6,600.0	5,918.0	6,628.9	6,009.0	25.5	25.3	95.56	1,183.5	1,199.3	995.1	943.6	51.47	19.332		
6,646.0	5,918.0	6,674.8	6,009.0	26.2	26.0	95.56	1,229.5	1,199.3	994.8	941.9	52.89	18.808		
6,700.0	5,918.0	6,728.9	6,009.0	27.0	26.9	95.56	1,283.5	1,199.3	995.0	940.3	54.66	18.204		
6,800.0	5,918.0	6,828.9	6,009.0	28.7	28.6	95.56	1,383.5	1,199.3	995.0	937.0	57.96	17.165		
6,900.0	5,918.0	6,928.9	6,009.0	30.3	30.3	95.56	1,483.5	1,199.3	995.0	933.6	61.33	16.223		
7,000.0	5,918.0	7,028.9	6,009.0	32.0	32.0	95.56	1,583.5	1,199.3	995.0	930.2	64.75	15.366		
7,100.0	5,918.0	7,128.9	6,009.0	33.8	33.8	95.56	1,683.5	1,199.3	995.0	926.8	68.22	14.585		
7,200.0	5,918.0	7,228.9	6,009.0	35.5	35.5	95.56	1,783.5	1,199.3	995.0	923.2	71.72	13.873		
7,300.0	5,918.0	7,328.9	6,009.0	37.2	37.3	95.56	1,883.5	1,199.3	995.0	919.7	75.25	13.221		
7,400.0	5,918.0	7,428.9	6,009.0	39.0	39.1	95.56	1,983.5	1,199.3	994.9	916.1	78.82	12.624		
7,500.0	5,918.0	7,528.9	6,009.0	40.8	40.9	95.56	2,083.5	1,199.3	994.9	912.5	82.40	12.074		
7,600.0	5,918.0	7,628.9	6,009.0	42.6	42.7	95.56	2,183.5	1,199.2	994.9	908.9	86.01	11.568		
7,700.0	5,918.0	7,728.9	6,009.0	44.4	44.6	95.56	2,283.5	1,199.2	994.9	905.3	89.63	11.100		
7,800.0	5,918.0	7,828.9	6,009.0	46.2	46.4	95.56	2,383.5	1,199.2	994.9	901.6	93.28	10.666		
7,900.0	5,918.0	7,928.9	6,009.0	48.0	48.2	95.56	2,483.5	1,199.2	994.9	898.0	96.93	10.264		
8,000.0	5,918.0	8,028.9	6,009.0	49.9	50.1	95.56	2,583.5	1,199.2	994.9	894.3	100.60	9.890		
8,100.0	5,918.0	8,128.9	6,009.0	51.7	51.9	95.56	2,683.5	1,199.2	994.9	890.6	104.28	9.540		
8,200.0	5,918.0	8,228.9	6,009.0	53.6	53.8	95.56	2,783.5	1,199.2	994.9	886.9	107.97	9.214		
8,300.0	5,918.0	8,328.9	6,009.0	55.4	55.7	95.56	2,883.5	1,199.2	994.9	883.2	111.67	8.909		
8,400.0	5,918.0	8,428.9	6,009.0	57.3	57.5	95.56	2,983.5	1,199.2	994.9	879.5	115.38	8.622		
8,500.0	5,918.0	8,528.9	6,009.0	59.1	59.4	95.56	3,083.5	1,199.2	994.9	875.8	119.10	8.353		
8,600.0	5,918.0	8,628.9	6,009.0	61.0	61.3	95.56	3,183.5	1,199.2	994.9	872.0	122.82	8.100		
8,700.0	5,918.0	8,728.9	6,009.0	62.9	63.1	95.56	3,283.5	1,199.2	994.9	868.3	126.55	7.861		
8,800.0	5,918.0	8,828.9	6,009.0	64.7	65.0	95.56	3,383.5	1,199.2	994.9	864.6	130.29	7.636		
8,900.0	5,918.0	8,928.9	6,009.0	66.6	66.9	95.56	3,483.5	1,199.2	994.9	860.8	134.03	7.423		
9,000.0	5,918.0	9,028.9	6,009.0	68.5	68.8	95.56	3,583.5	1,199.2	994.8	857.1	137.77	7.221		
9,100.0	5,918.0	9,128.9	6,009.0	70.3	70.7	95.56	3,683.5	1,199.2	994.8	853.3	141.52	7.030		
9,200.0	5,918.0	9,228.9	6,009.0	72.2	72.6	95.56	3,783.5	1,199.2	994.8	849.6	145.28	6.848		
9,300.0	5,918.0	9,328.9	6,009.0	74.1	74.4	95.56	3,883.5	1,199.2	994.8	845.8	149.03	6.675		
9,400.0	5,918.0	9,428.9	6,009.0	76.0	76.3	95.56	3,983.5	1,199.2	994.8	842.0	152.79	6.511		
9,500.0	5,918.0	9,528.9	6,009.0	77.9	78.2	95.56	4,083.5	1,199.2	994.8	838.3	156.56	6.354		
9,600.0	5,918.0	9,628.9	6,009.0	79.8	80.1	95.56	4,183.5	1,199.2	994.8	834.5	160.32	6.205		
9,700.0	5,918.0	9,728.9	6,009.0	81.7	82.0	95.56	4,283.5	1,199.2	994.8	830.7	164.09	6.062		
9,800.0	5,918.0	9,828.9	6,009.0	83.5	83.9	95.56	4,383.5	1,199.2	994.8	826.9	167.87	5.926		
9,900.0	5,918.0	9,928.9	6,009.0	85.4	85.8	95.56	4,483.5	1,199.2	994.8	823.1	171.64	5.796		
10,000.0	5,918.0	10,028.9	6,009.0	87.3	87.7	95.56	4,583.5	1,199.1	994.8	819.4	175.42	5.671		
10,100.0	5,918.0	10,128.9	6,009.0	89.2	89.6	95.56	4,683.5	1,199.1	994.8	815.6	179.20	5.551		
10,200.0	5,918.0	10,228.9	6,009.0	91.1	91.5	95.56	4,783.5	1,199.1	994.8	811.8	182.98	5.436		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0914B - 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
10,300.0	5,918.0	10,328.9	6,009.0	93.0	93.4	95.56	4,883.5	1,199.1	994.8	808.0	186.76	5.326	
10,400.0	5,918.0	10,428.9	6,009.0	94.9	95.3	95.56	4,983.5	1,199.1	994.8	804.2	190.55	5.220	
10,500.0	5,918.0	10,528.9	6,009.0	96.8	97.2	95.56	5,083.5	1,199.1	994.7	800.4	194.33	5.119	
10,600.0	5,918.0	10,628.9	6,009.0	98.7	99.1	95.56	5,183.5	1,199.1	994.7	796.6	198.12	5.021	
10,700.0	5,918.0	10,728.9	6,009.0	100.6	101.0	95.56	5,283.5	1,199.1	994.7	792.8	201.91	4.927	
10,800.0	5,918.0	10,828.9	6,009.0	102.5	102.9	95.56	5,383.5	1,199.1	994.7	789.0	205.70	4.836	
10,900.0	5,918.0	10,928.9	6,009.0	104.4	104.8	95.56	5,483.5	1,199.1	994.7	785.2	209.49	4.748	
11,000.0	5,918.0	11,028.9	6,009.0	106.3	106.7	95.56	5,583.5	1,199.1	994.7	781.4	213.29	4.664	
11,100.0	5,918.0	11,128.9	6,009.0	108.2	108.6	95.56	5,683.5	1,199.1	994.7	777.6	217.08	4.582	
11,200.0	5,918.0	11,228.9	6,009.0	110.1	110.5	95.56	5,783.5	1,199.1	994.7	773.8	220.88	4.503	
11,300.0	5,918.0	11,328.9	6,009.0	112.0	112.4	95.56	5,883.5	1,199.1	994.7	770.0	224.68	4.427	
11,400.0	5,918.0	11,428.9	6,009.0	113.9	114.3	95.56	5,983.5	1,199.1	994.7	766.2	228.47	4.354	
11,500.0	5,918.0	11,528.9	6,009.0	115.8	116.3	95.56	6,083.5	1,199.1	994.7	762.4	232.27	4.282	
11,600.0	5,918.0	11,628.9	6,009.0	117.7	118.2	95.56	6,183.5	1,199.1	994.7	758.6	236.07	4.213	
11,700.0	5,918.0	11,728.9	6,009.0	119.6	120.1	95.56	6,283.5	1,199.1	994.7	754.8	239.87	4.147	
11,800.0	5,918.0	11,828.9	6,009.0	121.6	122.0	95.56	6,383.5	1,199.1	994.7	751.0	243.67	4.082	
11,900.0	5,918.0	11,928.9	6,009.0	123.5	123.9	95.56	6,483.5	1,199.1	994.7	747.2	247.48	4.019	
12,000.0	5,918.0	12,028.9	6,009.0	125.4	125.8	95.56	6,583.5	1,199.1	994.6	743.4	251.28	3.958	
12,100.0	5,918.0	12,128.9	6,009.0	127.3	127.7	95.56	6,683.5	1,199.1	994.6	739.6	255.08	3.899	
12,200.0	5,918.0	12,228.9	6,009.0	129.2	129.6	95.56	6,783.5	1,199.1	994.6	735.7	258.89	3.842	
12,300.0	5,918.0	12,328.9	6,009.0	131.1	131.5	95.56	6,883.5	1,199.1	994.6	731.9	262.69	3.786	
12,400.0	5,918.0	12,428.9	6,009.0	133.0	133.4	95.56	6,983.5	1,199.1	994.6	728.1	266.50	3.732	
12,500.0	5,918.0	12,528.9	6,009.0	134.9	135.4	95.56	7,083.5	1,199.0	994.6	724.3	270.31	3.680	
12,600.0	5,918.0	12,628.9	6,009.0	136.8	137.3	95.56	7,183.5	1,199.0	994.6	720.5	274.11	3.628	
12,700.0	5,918.0	12,728.9	6,009.0	138.7	139.2	95.56	7,283.5	1,199.0	994.6	716.7	277.92	3.579	
12,800.0	5,918.0	12,828.9	6,009.0	140.6	141.1	95.56	7,383.5	1,199.0	994.6	712.9	281.73	3.530	
12,900.0	5,918.0	12,928.9	6,009.0	142.6	143.0	95.56	7,483.5	1,199.0	994.6	709.1	285.54	3.483	
13,000.0	5,918.0	13,028.9	6,009.0	144.5	144.9	95.56	7,583.5	1,199.0	994.6	705.2	289.34	3.437	
13,100.0	5,918.0	13,128.9	6,009.0	146.4	146.8	95.56	7,683.5	1,199.0	994.6	701.4	293.15	3.393	
13,200.0	5,918.0	13,228.9	6,009.0	148.3	148.7	95.56	7,783.5	1,199.0	994.6	697.6	296.96	3.349	
13,300.0	5,918.0	13,328.9	6,009.0	150.2	150.7	95.56	7,883.5	1,199.0	994.6	693.8	300.77	3.307	
13,400.0	5,918.0	13,428.9	6,009.0	152.1	152.6	95.56	7,983.5	1,199.0	994.6	690.0	304.59	3.265	
13,500.0	5,918.0	13,528.9	6,009.0	154.0	154.5	95.56	8,083.5	1,199.0	994.5	686.2	308.40	3.225	
13,600.0	5,918.0	13,628.9	6,009.0	155.9	156.4	95.56	8,183.5	1,199.0	994.5	682.3	312.21	3.186	
13,666.2	5,918.0	13,695.1	6,009.0	157.2	157.7	95.56	8,249.7	1,199.0	994.5	679.8	314.71	3.160	
13,695.0	5,918.0	13,722.9	6,009.0	157.8	158.2	95.56	8,277.6	1,199.0	994.5	678.7	315.81	3.149 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0915A - 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		
0.0	0.0	0.0	0.0	0.0	0.0	88.86	26.2	1,319.2	1,319.5					
100.0	100.0	94.6	94.6	0.1	0.1	88.86	26.2	1,319.2	1,319.5	1,319.3	0.18	7,269.172		
200.0	200.0	194.6	194.6	0.3	0.3	88.86	26.2	1,319.2	1,319.5	1,318.9	0.62	2,114.739		
300.0	300.0	294.6	294.6	0.5	0.5	88.86	26.2	1,319.2	1,319.5	1,318.4	1.07	1,229.170		
400.0	400.0	394.6	394.6	0.8	0.8	88.86	26.2	1,319.2	1,319.5	1,318.0	1.52	866.369		
500.0	500.0	494.6	494.6	1.0	1.0	88.86	26.2	1,319.2	1,319.5	1,317.5	1.97	668.929		
600.0	600.0	594.6	594.6	1.2	1.2	88.86	26.2	1,319.2	1,319.5	1,317.1	2.42	544.777		
700.0	700.0	694.6	694.6	1.4	1.4	88.86	26.2	1,319.2	1,319.5	1,316.6	2.87	459.496		
800.0	800.0	794.6	794.6	1.7	1.7	88.86	26.2	1,319.2	1,319.5	1,316.2	3.32	397.301		
900.0	900.0	894.6	894.6	1.9	1.9	88.86	26.2	1,319.2	1,319.5	1,315.7	3.77	349.935		
1,000.0	1,000.0	985.7	985.7	2.1	2.1	77.12	27.5	1,319.5	1,319.4	1,315.2	4.20	314.312		
1,100.0	1,099.8	1,076.4	1,076.3	2.3	2.3	77.15	31.6	1,320.3	1,319.3	1,314.7	4.62	285.315		
1,135.7	1,135.5	1,109.7	1,109.5	2.4	2.4	77.16	33.7	1,320.8	1,319.3	1,314.5	4.78	275.962		
1,200.0	1,199.6	1,174.0	1,173.6	2.6	2.5	77.16	38.1	1,321.7	1,319.3	1,314.2	5.07	259.989		
1,300.0	1,299.4	1,274.0	1,273.4	2.8	2.7	77.16	44.9	1,323.1	1,319.3	1,313.7	5.54	238.165		
1,400.0	1,399.1	1,374.0	1,373.1	3.0	3.0	77.16	51.8	1,324.6	1,319.3	1,313.3	6.01	219.454		
1,500.0	1,498.9	1,474.0	1,472.9	3.3	3.2	77.16	58.6	1,326.0	1,319.3	1,312.8	6.49	203.289		
1,600.0	1,598.6	1,574.0	1,572.6	3.5	3.5	77.16	65.4	1,327.4	1,319.3	1,312.3	6.97	189.220		
1,700.0	1,698.4	1,674.0	1,672.4	3.8	3.7	77.16	72.3	1,328.9	1,319.3	1,311.9	7.46	176.885		
1,800.0	1,798.1	1,774.0	1,772.2	4.0	3.9	77.16	79.1	1,330.3	1,319.3	1,311.4	7.95	165.998		
1,900.0	1,897.9	1,874.0	1,871.9	4.3	4.2	77.16	85.9	1,331.7	1,319.3	1,310.9	8.44	156.327		
2,000.0	1,997.6	1,974.0	1,971.7	4.5	4.4	77.16	92.7	1,333.2	1,319.3	1,310.4	8.93	147.688		
2,100.0	2,097.4	2,074.0	2,071.4	4.8	4.7	77.16	99.6	1,334.6	1,319.3	1,309.9	9.43	139.927		
2,200.0	2,197.2	2,174.0	2,171.2	5.0	4.9	77.16	106.4	1,336.0	1,319.4	1,309.4	9.93	132.922		
2,300.0	2,296.9	2,274.0	2,270.9	5.3	5.2	77.16	113.2	1,337.4	1,319.4	1,308.9	10.42	126.570		
2,400.0	2,396.7	2,374.0	2,370.7	5.5	5.4	77.16	120.0	1,338.9	1,319.4	1,308.5	10.92	120.785		
2,500.0	2,496.4	2,474.0	2,470.5	5.8	5.7	77.16	126.9	1,340.3	1,319.4	1,308.0	11.42	115.496		
2,600.0	2,596.2	2,574.0	2,570.2	6.0	5.9	77.16	133.7	1,341.7	1,319.4	1,307.5	11.92	110.644		
2,700.0	2,695.9	2,674.0	2,670.0	6.3	6.2	77.16	140.5	1,343.2	1,319.4	1,307.0	12.43	106.176		
2,800.0	2,795.7	2,774.0	2,769.7	6.5	6.4	77.16	147.4	1,344.6	1,319.4	1,306.5	12.93	102.051		
2,900.0	2,895.5	2,874.0	2,869.5	6.8	6.7	77.16	154.2	1,346.0	1,319.4	1,306.0	13.43	98.229		
3,000.0	2,995.2	2,974.0	2,969.2	7.0	7.0	77.16	161.0	1,347.5	1,319.4	1,305.5	13.94	94.681		
3,100.0	3,095.0	3,074.0	3,069.0	7.3	7.2	77.16	167.8	1,348.9	1,319.4	1,305.0	14.44	91.377		
3,200.0	3,194.7	3,174.0	3,168.7	7.5	7.5	77.16	174.7	1,350.3	1,319.4	1,304.5	14.94	88.293		
3,300.0	3,294.5	3,274.0	3,268.5	7.8	7.7	77.16	181.5	1,351.7	1,319.5	1,304.0	15.45	85.409		
3,400.0	3,394.2	3,374.0	3,368.3	8.0	8.0	77.16	188.3	1,353.2	1,319.5	1,303.5	15.95	82.705		
3,500.0	3,494.0	3,474.0	3,468.0	8.3	8.2	77.16	195.2	1,354.6	1,319.5	1,303.0	16.46	80.166		
3,600.0	3,593.7	3,574.0	3,567.8	8.5	8.5	77.16	202.0	1,356.0	1,319.5	1,302.5	16.96	77.777		
3,700.0	3,693.5	3,674.0	3,667.5	8.8	8.7	77.16	208.8	1,357.5	1,319.5	1,302.0	17.47	75.525		
3,800.0	3,793.3	3,774.0	3,767.3	9.1	9.0	77.16	215.6	1,358.9	1,319.5	1,301.5	17.98	73.399		
3,900.0	3,893.0	3,874.0	3,867.0	9.3	9.2	77.16	222.5	1,360.3	1,319.5	1,301.0	18.48	71.389		
4,000.0	3,992.8	3,974.0	3,966.8	9.6	9.5	77.16	229.3	1,361.8	1,319.5	1,300.5	18.99	69.485		
4,100.0	4,092.5	4,074.0	4,066.6	9.8	9.7	77.16	236.1	1,363.2	1,319.5	1,300.0	19.50	67.679		
4,200.0	4,192.3	4,174.0	4,166.3	10.1	10.0	77.16	242.9	1,364.6	1,319.5	1,299.5	20.00	65.965		
4,300.0	4,292.0	4,274.0	4,266.1	10.3	10.3	77.16	249.8	1,366.0	1,319.5	1,299.0	20.51	64.334		
4,400.0	4,391.8	4,374.0	4,365.8	10.6	10.5	77.16	256.6	1,367.5	1,319.6	1,298.5	21.02	62.782		
4,500.0	4,491.6	4,474.0	4,465.6	10.8	10.8	77.16	263.4	1,368.9	1,319.6	1,298.0	21.53	61.303		
4,600.0	4,591.3	4,574.0	4,565.3	11.1	11.0	77.16	270.3	1,370.3	1,319.6	1,297.5	22.03	59.891		
4,700.0	4,691.1	4,674.0	4,665.1	11.3	11.3	77.16	277.1	1,371.8	1,319.6	1,297.0	22.54	58.543		
4,800.0	4,790.8	4,774.0	4,764.8	11.6	11.5	77.16	283.9	1,373.2	1,319.6	1,296.5	23.05	57.254		
4,900.0	4,890.6	4,874.0	4,864.6	11.9	11.8	77.16	290.7	1,374.6	1,319.6	1,296.0	23.56	56.020		
5,000.0	4,990.3	4,974.0	4,964.4	12.1	12.0	77.16	297.6	1,376.0	1,319.6	1,295.5	24.06	54.838		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0915A - 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		
5,100.0	5,090.1	5,074.0	5,064.1	12.4	12.3	77.16	304.4	1,377.5	1,319.6	1,295.0	24.57	53.704		
5,200.0	5,189.9	5,174.0	5,163.9	12.6	12.6	77.16	311.2	1,378.9	1,319.6	1,294.6	25.08	52.617		
5,300.0	5,289.6	5,274.0	5,263.6	12.9	12.8	77.16	318.0	1,380.3	1,319.6	1,294.1	25.59	51.572		
5,400.0	5,389.4	5,374.0	5,363.4	13.1	13.1	77.16	324.9	1,381.8	1,319.6	1,293.6	26.10	50.568		
5,500.0	5,488.8	5,450.0	5,439.2	13.4	13.3	77.23	330.6	1,383.0	1,319.3	1,292.8	26.56	49.668		
5,600.0	5,585.0	5,521.1	5,509.1	13.8	13.5	77.67	343.1	1,385.6	1,317.5	1,290.3	27.18	48.476		
5,700.0	5,674.2	5,585.5	5,570.3	14.4	13.8	78.43	362.5	1,389.6	1,314.3	1,286.4	27.97	46.988		
5,800.0	5,753.3	5,650.0	5,628.8	15.1	14.1	79.49	389.1	1,395.2	1,310.1	1,281.1	29.02	45.148		
5,900.0	5,819.3	5,716.8	5,685.3	16.1	14.6	80.84	423.9	1,402.5	1,305.1	1,274.8	30.38	42.954		
6,000.0	5,869.7	5,784.4	5,737.3	17.2	15.1	82.42	466.0	1,411.3	1,299.9	1,267.9	32.06	40.541		
6,100.0	5,902.8	5,850.0	5,782.1	18.4	15.7	84.11	512.9	1,421.1	1,295.0	1,261.0	34.00	38.090		
6,200.0	5,917.3	5,926.2	5,826.1	19.8	16.5	86.08	573.7	1,433.9	1,290.8	1,254.6	36.27	35.587		
6,271.3	5,919.6	5,981.3	5,852.0	20.8	17.1	87.24	621.2	1,443.8	1,289.8	1,251.9	37.95	33.985		
6,300.0	5,918.0	6,004.2	5,861.3	21.2	17.4	87.72	641.7	1,448.1	1,289.7	1,251.1	38.63	33.385 CC		
6,400.0	5,918.0	6,092.5	5,888.0	22.6	18.5	88.91	724.0	1,465.3	1,295.4	1,254.3	41.07	31.543		
6,500.0	5,918.0	6,187.6	5,900.6	24.0	19.8	89.47	816.2	1,484.6	1,307.0	1,263.4	43.62	29.964		
6,600.0	5,918.0	6,457.5	5,901.0	25.5	23.6	89.50	1,082.9	1,524.0	1,319.0	1,270.4	48.62	27.128		
6,700.0	5,918.0	6,658.2	5,901.0	27.0	26.6	89.50	1,283.5	1,529.6	1,320.6	1,267.5	53.18	24.835		
6,800.0	5,918.0	6,758.2	5,901.0	28.7	28.2	89.50	1,383.5	1,529.6	1,320.6	1,264.2	56.44	23.398		
6,900.0	5,918.0	6,858.2	5,901.0	30.3	29.9	89.50	1,483.5	1,529.6	1,320.6	1,260.8	59.79	22.089		
7,000.0	5,918.0	6,958.2	5,901.0	32.0	31.6	89.50	1,583.5	1,529.6	1,320.6	1,257.4	63.19	20.900		
7,100.0	5,918.0	7,058.2	5,901.0	33.8	33.3	89.50	1,683.5	1,529.6	1,320.6	1,254.0	66.64	19.818		
7,200.0	5,918.0	7,158.2	5,901.0	35.5	35.0	89.50	1,783.5	1,529.5	1,320.6	1,250.5	70.13	18.832		
7,300.0	5,918.0	7,258.2	5,901.0	37.2	36.8	89.50	1,883.5	1,529.5	1,320.6	1,247.0	73.65	17.930		
7,400.0	5,918.0	7,358.2	5,901.0	39.0	38.5	89.50	1,983.5	1,529.5	1,320.6	1,243.4	77.21	17.104		
7,500.0	5,918.0	7,458.2	5,901.0	40.8	40.3	89.50	2,083.5	1,529.5	1,320.6	1,239.8	80.79	16.346		
7,600.0	5,918.0	7,558.2	5,901.0	42.6	42.1	89.50	2,183.5	1,529.5	1,320.6	1,236.2	84.39	15.648		
7,700.0	5,918.0	7,658.2	5,901.0	44.4	43.9	89.50	2,283.5	1,529.5	1,320.6	1,232.6	88.02	15.003		
7,800.0	5,918.0	7,758.2	5,901.0	46.2	45.7	89.50	2,383.5	1,529.5	1,320.6	1,228.9	91.66	14.407		
7,900.0	5,918.0	7,858.2	5,901.0	48.0	47.6	89.50	2,483.5	1,529.5	1,320.6	1,225.3	95.32	13.854		
8,000.0	5,918.0	7,958.2	5,901.0	49.9	49.4	89.50	2,583.5	1,529.5	1,320.6	1,221.6	98.99	13.340		
8,100.0	5,918.0	8,058.2	5,901.0	51.7	51.2	89.50	2,683.5	1,529.5	1,320.6	1,217.9	102.68	12.861		
8,200.0	5,918.0	8,158.2	5,901.0	53.6	53.1	89.50	2,783.5	1,529.5	1,320.6	1,214.2	106.37	12.414		
8,300.0	5,918.0	8,258.2	5,901.0	55.4	54.9	89.50	2,883.5	1,529.5	1,320.6	1,210.5	110.08	11.996		
8,400.0	5,918.0	8,358.2	5,901.0	57.3	56.8	89.50	2,983.5	1,529.5	1,320.5	1,206.8	113.79	11.605		
8,500.0	5,918.0	8,458.2	5,901.0	59.1	58.6	89.50	3,083.5	1,529.5	1,320.5	1,203.0	117.52	11.237		
8,600.0	5,918.0	8,558.2	5,901.0	61.0	60.5	89.50	3,183.5	1,529.5	1,320.5	1,199.3	121.25	10.891		
8,700.0	5,918.0	8,658.2	5,901.0	62.9	62.4	89.50	3,283.5	1,529.5	1,320.5	1,195.5	124.99	10.565		
8,800.0	5,918.0	8,758.2	5,901.0	64.7	64.2	89.50	3,383.5	1,529.5	1,320.5	1,191.8	128.73	10.258		
8,900.0	5,918.0	8,858.2	5,901.0	66.6	66.1	89.50	3,483.5	1,529.5	1,320.5	1,188.0	132.48	9.968		
9,000.0	5,918.0	8,958.2	5,901.0	68.5	68.0	89.50	3,583.5	1,529.5	1,320.5	1,184.3	136.23	9.693		
9,100.0	5,918.0	9,058.2	5,901.0	70.3	69.8	89.50	3,683.5	1,529.5	1,320.5	1,180.5	139.99	9.433		
9,200.0	5,918.0	9,158.2	5,901.0	72.2	71.7	89.50	3,783.5	1,529.5	1,320.5	1,176.7	143.76	9.186		
9,300.0	5,918.0	9,258.2	5,901.0	74.1	73.6	89.50	3,883.5	1,529.5	1,320.5	1,173.0	147.52	8.951		
9,400.0	5,918.0	9,358.2	5,901.0	76.0	75.5	89.50	3,983.5	1,529.5	1,320.5	1,169.2	151.30	8.728		
9,500.0	5,918.0	9,458.2	5,901.0	77.9	77.4	89.50	4,083.5	1,529.5	1,320.5	1,165.4	155.07	8.515		
9,600.0	5,918.0	9,558.2	5,901.0	79.8	79.3	89.50	4,183.5	1,529.5	1,320.5	1,161.6	158.85	8.313		
9,700.0	5,918.0	9,658.2	5,901.0	81.7	81.1	89.50	4,283.5	1,529.5	1,320.5	1,157.8	162.63	8.119		
9,800.0	5,918.0	9,758.2	5,901.0	83.5	83.0	89.50	4,383.5	1,529.5	1,320.5	1,154.0	166.41	7.935		
9,900.0	5,918.0	9,858.2	5,901.0	85.4	84.9	89.50	4,483.5	1,529.5	1,320.5	1,150.3	170.20	7.758		
10,000.0	5,918.0	9,958.2	5,901.0	87.3	86.8	89.50	4,583.5	1,529.4	1,320.4	1,146.5	173.99	7.589		
10,100.0	5,918.0	10,058.2	5,901.0	89.2	88.7	89.50	4,683.5	1,529.4	1,320.4	1,142.7	177.78	7.427		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #21A-0915A - 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		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor	
10,200.0	5,918.0	10,158.2	5,901.0	91.1	90.6	89.50	4,783.5	1,529.4	1,320.4	1,138.9	181.58	7.272	
10,300.0	5,918.0	10,258.2	5,901.0	93.0	92.5	89.50	4,883.5	1,529.4	1,320.4	1,135.1	185.37	7.123	
10,400.0	5,918.0	10,358.2	5,901.0	94.9	94.4	89.50	4,983.5	1,529.4	1,320.4	1,131.3	189.17	6.980	
10,500.0	5,918.0	10,458.2	5,901.0	96.8	96.3	89.50	5,083.5	1,529.4	1,320.4	1,127.4	192.97	6.843	
10,600.0	5,918.0	10,558.2	5,901.0	98.7	98.2	89.50	5,183.5	1,529.4	1,320.4	1,123.6	196.77	6.710	
10,700.0	5,918.0	10,658.2	5,901.0	100.6	100.1	89.50	5,283.5	1,529.4	1,320.4	1,119.8	200.57	6.583	
10,800.0	5,918.0	10,758.2	5,901.0	102.5	102.0	89.50	5,383.5	1,529.4	1,320.4	1,116.0	204.38	6.461	
10,900.0	5,918.0	10,858.2	5,901.0	104.4	103.9	89.50	5,483.5	1,529.4	1,320.4	1,112.2	208.18	6.343	
11,000.0	5,918.0	10,958.2	5,901.0	106.3	105.8	89.50	5,583.5	1,529.4	1,320.4	1,108.4	211.99	6.229	
11,100.0	5,918.0	11,058.2	5,901.0	108.2	107.7	89.50	5,683.5	1,529.4	1,320.4	1,104.6	215.80	6.119	
11,200.0	5,918.0	11,158.2	5,901.0	110.1	109.6	89.50	5,783.5	1,529.4	1,320.4	1,100.8	219.61	6.012	
11,300.0	5,918.0	11,258.2	5,901.0	112.0	111.5	89.50	5,883.5	1,529.4	1,320.4	1,097.0	223.42	5.910	
11,400.0	5,918.0	11,358.2	5,901.0	113.9	113.4	89.50	5,983.5	1,529.4	1,320.4	1,093.1	227.23	5.811	
11,500.0	5,918.0	11,458.2	5,901.0	115.8	115.3	89.50	6,083.5	1,529.4	1,320.4	1,089.3	231.04	5.715	
11,600.0	5,918.0	11,558.2	5,901.0	117.7	117.2	89.50	6,183.5	1,529.4	1,320.4	1,085.5	234.85	5.622	
11,700.0	5,918.0	11,658.2	5,901.0	119.6	119.1	89.50	6,283.5	1,529.4	1,320.3	1,081.7	238.67	5.532	
11,800.0	5,918.0	11,758.2	5,901.0	121.6	121.0	89.50	6,383.5	1,529.4	1,320.3	1,077.9	242.48	5.445	
11,900.0	5,918.0	11,858.2	5,901.0	123.5	123.0	89.50	6,483.5	1,529.4	1,320.3	1,074.0	246.30	5.361	
12,000.0	5,918.0	11,958.2	5,901.0	125.4	124.9	89.50	6,583.5	1,529.4	1,320.3	1,070.2	250.12	5.279	
12,100.0	5,918.0	12,058.2	5,901.0	127.3	126.8	89.50	6,683.5	1,529.4	1,320.3	1,066.4	253.93	5.199	
12,200.0	5,918.0	12,158.2	5,901.0	129.2	128.7	89.50	6,783.5	1,529.4	1,320.3	1,062.6	257.75	5.122	
12,300.0	5,918.0	12,258.2	5,901.0	131.1	130.6	89.50	6,883.5	1,529.4	1,320.3	1,058.7	261.57	5.048	
12,400.0	5,918.0	12,358.2	5,901.0	133.0	132.5	89.50	6,983.5	1,529.4	1,320.3	1,054.9	265.39	4.975	
12,500.0	5,918.0	12,458.2	5,901.0	134.9	134.4	89.50	7,083.5	1,529.4	1,320.3	1,051.1	269.21	4.904	
12,600.0	5,918.0	12,558.2	5,901.0	136.8	136.3	89.50	7,183.5	1,529.4	1,320.3	1,047.3	273.03	4.836	
12,700.0	5,918.0	12,658.2	5,901.0	138.7	138.2	89.50	7,283.5	1,529.4	1,320.3	1,043.4	276.85	4.769	
12,800.0	5,918.0	12,758.2	5,901.0	140.6	140.1	89.50	7,383.5	1,529.4	1,320.3	1,039.6	280.68	4.704	
12,900.0	5,918.0	12,858.2	5,901.0	142.6	142.0	89.50	7,483.5	1,529.3	1,320.3	1,035.8	284.50	4.641	
13,000.0	5,918.0	12,958.2	5,901.0	144.5	144.0	89.50	7,583.5	1,529.3	1,320.3	1,031.9	288.32	4.579	
13,100.0	5,918.0	13,058.2	5,901.0	146.4	145.9	89.50	7,683.5	1,529.3	1,320.3	1,028.1	292.15	4.519	
13,200.0	5,918.0	13,158.2	5,901.0	148.3	147.8	89.50	7,783.5	1,529.3	1,320.3	1,024.3	295.97	4.461	
13,300.0	5,918.0	13,258.2	5,901.0	150.2	149.7	89.50	7,883.5	1,529.3	1,320.2	1,020.5	299.80	4.404	
13,400.0	5,918.0	13,358.2	5,901.0	152.1	151.6	89.50	7,983.5	1,529.3	1,320.2	1,016.6	303.62	4.348	
13,500.0	5,918.0	13,458.2	5,901.0	154.0	153.5	89.50	8,083.5	1,529.3	1,320.2	1,012.8	307.45	4.294	
13,600.0	5,918.0	13,558.2	5,901.0	155.9	155.4	89.50	8,183.5	1,529.3	1,320.2	1,009.0	311.27	4.241	
13,674.4	5,918.0	13,632.7	5,901.0	157.4	156.9	89.50	8,258.0	1,529.3	1,320.2	1,006.1	314.12	4.203	
13,695.0	5,918.0	13,652.9	5,901.0	157.8	157.2	89.50	8,278.2	1,529.3	1,320.2	1,005.3	314.90	4.193 ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #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	-66.7	66.7					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-66.7	66.7	66.5	0.19	357.507		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-66.7	66.7	66.1	0.64	104.852		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-66.7	66.7	65.6	1.09	61.435		
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-66.7	66.7	65.2	1.54	43.445		
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-66.7	66.7	64.7	1.98	33.605	CC, ES	
600.0	600.0	599.2	599.2	1.2	1.2	-88.62	1.6	-67.3	67.3	64.8	2.43	27.674		
700.0	700.0	698.2	698.0	1.4	1.4	-84.63	6.5	-68.9	69.3	66.4	2.88	24.054		
800.0	800.0	797.9	797.5	1.7	1.7	-79.61	13.1	-71.2	72.4	69.1	3.34	21.707		
900.0	900.0	897.7	897.0	1.9	1.9	-75.04	19.6	-73.5	76.1	72.3	3.80	20.040		
1,000.0	1,000.0	997.5	996.6	2.1	2.2	-83.82	26.2	-75.7	80.0	75.8	4.25	18.818		
1,100.0	1,099.8	1,097.4	1,096.3	2.3	2.4	-83.49	32.8	-78.0	83.6	78.9	4.71	17.745		
1,200.0	1,199.6	1,197.4	1,196.0	2.6	2.7	-84.40	39.4	-80.3	87.1	81.9	5.18	16.801		
1,300.0	1,299.4	1,297.3	1,295.7	2.8	2.9	-85.24	46.0	-82.6	90.6	84.9	5.66	16.000		
1,400.0	1,399.1	1,397.2	1,395.4	3.0	3.2	-86.01	52.6	-84.8	94.1	87.9	6.14	15.314		
1,500.0	1,498.9	1,497.2	1,495.1	3.3	3.4	-86.73	59.2	-87.1	97.6	90.9	6.63	14.721		
1,600.0	1,598.6	1,597.1	1,594.7	3.5	3.7	-87.40	65.8	-89.4	101.1	94.0	7.12	14.204		
1,700.0	1,698.4	1,697.0	1,694.4	3.8	3.9	-88.03	72.3	-91.7	104.6	97.0	7.61	13.751		
1,800.0	1,798.1	1,797.0	1,794.1	4.0	4.2	-88.61	78.9	-93.9	108.1	100.0	8.10	13.350		
1,900.0	1,897.9	1,896.9	1,893.8	4.3	4.4	-89.16	85.5	-96.2	111.7	103.1	8.60	12.994		
2,000.0	1,997.6	1,996.8	1,993.5	4.5	4.7	-89.68	92.1	-98.5	115.3	106.2	9.09	12.676		
2,100.0	2,097.4	2,096.8	2,093.2	4.8	4.9	-90.16	98.7	-100.8	118.8	109.2	9.59	12.389		
2,200.0	2,197.2	2,196.7	2,192.9	5.0	5.2	-90.61	105.3	-103.0	122.4	112.3	10.09	12.131		
2,300.0	2,296.9	2,296.6	2,292.6	5.3	5.4	-91.04	111.9	-105.3	126.0	115.4	10.59	11.896		
2,400.0	2,396.7	2,396.5	2,392.3	5.5	5.7	-91.45	118.5	-107.6	129.6	118.5	11.09	11.683		
2,500.0	2,496.4	2,496.5	2,491.9	5.8	5.9	-91.83	125.1	-109.9	133.2	121.6	11.59	11.487		
2,600.0	2,596.2	2,596.4	2,591.6	6.0	6.2	-92.19	131.6	-112.1	136.8	124.7	12.10	11.308		
2,700.0	2,695.9	2,696.3	2,691.3	6.3	6.5	-92.54	138.2	-114.4	140.4	127.8	12.60	11.143		
2,800.0	2,795.7	2,796.3	2,791.0	6.5	6.7	-92.86	144.8	-116.7	144.0	130.9	13.10	10.990		
2,900.0	2,895.5	2,896.2	2,890.7	6.8	7.0	-93.17	151.4	-118.9	147.6	134.0	13.61	10.849		
3,000.0	2,995.2	2,996.1	2,990.4	7.0	7.2	-93.47	158.0	-121.2	151.2	137.1	14.11	10.718		
3,100.0	3,095.0	3,096.1	3,090.1	7.3	7.5	-93.75	164.6	-123.5	154.9	140.2	14.62	10.596		
3,200.0	3,194.7	3,196.0	3,189.8	7.5	7.7	-94.02	171.2	-125.8	158.5	143.4	15.12	10.482		
3,300.0	3,294.5	3,295.9	3,289.4	7.8	8.0	-94.28	177.8	-128.0	162.1	146.5	15.63	10.375		
3,400.0	3,394.2	3,395.9	3,389.1	8.0	8.3	-94.53	184.4	-130.3	165.8	149.6	16.13	10.275		
3,500.0	3,494.0	3,495.8	3,488.8	8.3	8.5	-94.76	191.0	-132.6	169.4	152.8	16.64	10.182		
3,600.0	3,593.7	3,595.7	3,588.5	8.5	8.8	-94.99	197.5	-134.9	173.0	155.9	17.14	10.093		
3,700.0	3,693.5	3,695.7	3,688.2	8.8	9.0	-95.20	204.1	-137.1	176.7	159.0	17.65	10.010		
3,800.0	3,793.3	3,795.6	3,787.9	9.1	9.3	-95.41	210.7	-139.4	180.3	162.2	18.16	9.932		
3,900.0	3,893.0	3,895.5	3,887.6	9.3	9.5	-95.61	217.3	-141.7	184.0	165.3	18.66	9.858		
4,000.0	3,992.8	3,995.5	3,987.3	9.6	9.8	-95.80	223.9	-144.0	187.6	168.5	19.17	9.788		
4,100.0	4,092.5	4,095.4	4,086.9	9.8	10.0	-95.98	230.5	-146.2	191.3	171.6	19.68	9.721		
4,200.0	4,192.3	4,195.3	4,186.6	10.1	10.3	-96.16	237.1	-148.5	194.9	174.8	20.18	9.658		
4,300.0	4,292.0	4,295.2	4,286.3	10.3	10.6	-96.33	243.7	-150.8	198.6	177.9	20.69	9.598		
4,400.0	4,391.8	4,395.2	4,386.0	10.6	10.8	-96.50	250.3	-153.1	202.2	181.1	21.20	9.541		
4,500.0	4,491.6	4,495.1	4,485.7	10.8	11.1	-96.66	256.8	-155.3	205.9	184.2	21.71	9.486		
4,600.0	4,591.3	4,595.0	4,585.4	11.1	11.3	-96.81	263.4	-157.6	209.6	187.4	22.21	9.434		
4,700.0	4,691.1	4,695.0	4,685.1	11.3	11.6	-96.96	270.0	-159.9	213.2	190.5	22.72	9.385		
4,800.0	4,790.8	4,794.9	4,784.8	11.6	11.8	-97.10	276.6	-162.2	216.9	193.7	23.23	9.338		
4,900.0	4,890.6	4,894.8	4,884.5	11.9	12.1	-97.24	283.2	-164.4	220.6	196.8	23.74	9.292		
5,000.0	4,990.3	4,994.8	4,984.1	12.1	12.4	-97.37	289.8	-166.7	224.2	200.0	24.24	9.249		
5,100.0	5,090.1	5,094.7	5,083.8	12.4	12.6	-97.50	296.4	-169.0	227.9	203.1	24.75	9.207		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.9	5,194.6	5,183.5	12.6	12.9	-97.63	303.0	-171.3	231.6	206.3	25.26	9.167	
5,300.0	5,289.6	5,294.6	5,283.2	12.9	13.1	-97.75	309.6	-173.5	235.2	209.5	25.77	9.129	
5,400.0	5,389.4	5,394.5	5,382.9	13.1	13.4	-97.87	316.2	-175.8	238.9	212.6	26.28	9.092	
5,500.0	5,488.8	5,486.9	5,474.9	13.4	13.6	-97.85	323.8	-178.4	243.8	217.0	26.79	9.098	
5,600.0	5,585.0	5,570.9	5,556.6	13.8	14.0	-97.57	341.9	-184.7	256.3	228.9	27.48	9.329	
5,700.0	5,674.2	5,650.0	5,629.8	14.4	14.4	-96.88	370.1	-194.4	277.3	249.0	28.37	9.776	
5,800.0	5,753.3	5,734.6	5,702.1	15.1	14.9	-95.96	411.5	-208.7	305.9	276.4	29.57	10.347	
5,900.0	5,819.3	5,813.8	5,762.5	16.1	15.6	-94.45	459.8	-225.4	341.2	310.2	31.02	11.001	
6,000.0	5,869.7	5,891.6	5,813.7	17.2	16.4	-92.46	515.1	-244.4	382.1	349.3	32.75	11.668	
6,100.0	5,902.8	5,968.5	5,855.2	18.4	17.2	-90.06	576.2	-265.5	427.3	392.6	34.73	12.305	
6,200.0	5,917.3	6,045.5	5,886.7	19.8	18.2	-87.37	642.5	-288.4	475.5	438.6	36.89	12.889	
6,300.0	5,918.0	6,125.9	5,908.2	21.2	19.4	-88.79	715.7	-313.7	524.4	485.0	39.40	13.312	
6,400.0	5,918.0	6,213.7	5,917.8	22.6	20.7	-89.98	798.0	-342.1	569.9	527.8	42.09	13.540	
6,500.0	5,918.0	6,341.4	5,918.0	24.0	22.6	-90.00	919.9	-380.5	608.3	562.9	45.42	13.392	
6,600.0	5,918.0	6,484.3	5,918.0	25.5	24.8	-90.00	1,058.8	-413.8	635.0	585.9	49.11	12.931	
6,700.0	5,918.0	6,633.2	5,918.0	27.0	27.1	-90.00	1,205.8	-437.3	650.9	597.9	52.98	12.285	
6,800.0	5,918.0	6,785.0	5,918.0	28.7	29.4	-90.00	1,357.0	-449.4	658.9	601.9	57.04	11.551	
6,900.0	5,918.0	6,911.4	5,918.0	30.3	31.5	-90.00	1,483.5	-450.9	659.9	599.1	60.78	10.857	
7,000.0	5,918.0	7,011.4	5,918.0	32.0	33.1	-90.00	1,583.5	-450.9	659.9	595.7	64.17	10.284	
7,100.0	5,918.0	7,111.4	5,918.0	33.8	34.8	-90.00	1,683.5	-450.9	659.9	592.3	67.61	9.760	
7,200.0	5,918.0	7,211.4	5,918.0	35.5	36.5	-90.00	1,783.5	-450.9	659.9	588.8	71.09	9.283	
7,300.0	5,918.0	7,311.4	5,918.0	37.2	38.2	-90.00	1,883.5	-450.9	659.9	585.3	74.61	8.845	
7,400.0	5,918.0	7,411.4	5,918.0	39.0	39.9	-90.00	1,983.5	-450.9	659.9	581.8	78.16	8.444	
7,500.0	5,918.0	7,511.4	5,918.0	40.8	41.7	-90.00	2,083.5	-450.9	659.9	578.2	81.73	8.075	
7,600.0	5,918.0	7,611.4	5,918.0	42.6	43.5	-90.00	2,183.5	-450.9	659.9	574.6	85.33	7.734	
7,700.0	5,918.0	7,711.4	5,918.0	44.4	45.2	-90.00	2,283.5	-450.9	659.9	571.0	88.95	7.420	
7,800.0	5,918.0	7,811.4	5,918.0	46.2	47.0	-90.00	2,383.5	-450.9	659.9	567.4	92.58	7.128	
7,900.0	5,918.0	7,911.4	5,918.0	48.0	48.8	-90.00	2,483.5	-450.9	659.9	563.7	96.23	6.858	
8,000.0	5,918.0	8,011.4	5,918.0	49.9	50.7	-90.00	2,583.5	-450.9	659.9	560.0	99.90	6.606	
8,100.0	5,918.0	8,111.4	5,918.0	51.7	52.5	-90.00	2,683.5	-450.9	659.9	556.4	103.58	6.372	
8,200.0	5,918.0	8,211.4	5,918.0	53.6	54.3	-90.00	2,783.5	-450.9	660.0	552.7	107.27	6.152	
8,300.0	5,918.0	8,311.4	5,918.0	55.4	56.1	-90.00	2,883.5	-450.9	660.0	549.0	110.97	5.947	
8,400.0	5,918.0	8,411.4	5,918.0	57.3	58.0	-90.00	2,983.5	-450.9	660.0	545.3	114.68	5.755	
8,500.0	5,918.0	8,511.4	5,918.0	59.1	59.8	-90.00	3,083.5	-450.9	660.0	541.6	118.40	5.574	
8,600.0	5,918.0	8,611.4	5,918.0	61.0	61.7	-90.00	3,183.5	-450.9	660.0	537.8	122.12	5.404	
8,700.0	5,918.0	8,711.4	5,918.0	62.9	63.5	-90.00	3,283.5	-450.9	660.0	534.1	125.86	5.244	
8,800.0	5,918.0	8,811.4	5,918.0	64.7	65.4	-90.00	3,383.5	-450.9	660.0	530.4	129.60	5.092	
8,900.0	5,918.0	8,911.4	5,918.0	66.6	67.2	-90.00	3,483.5	-450.9	660.0	526.6	133.34	4.949	
9,000.0	5,918.0	9,011.4	5,918.0	68.5	69.1	-90.00	3,583.5	-450.9	660.0	522.9	137.09	4.814	
9,100.0	5,918.0	9,111.4	5,918.0	70.3	71.0	-90.00	3,683.5	-450.9	660.0	519.1	140.85	4.686	
9,200.0	5,918.0	9,211.4	5,918.0	72.2	72.8	-90.00	3,783.5	-450.9	660.0	515.4	144.61	4.564	
9,300.0	5,918.0	9,311.4	5,918.0	74.1	74.7	-90.00	3,883.5	-450.9	660.0	511.6	148.37	4.448	
9,400.0	5,918.0	9,411.4	5,918.0	76.0	76.6	-90.00	3,983.5	-450.9	660.0	507.8	152.14	4.338	
9,500.0	5,918.0	9,511.4	5,918.0	77.9	78.4	-90.00	4,083.5	-450.9	660.0	504.1	155.92	4.233	
9,600.0	5,918.0	9,611.4	5,918.0	79.8	80.3	-90.00	4,183.5	-450.9	660.0	500.3	159.69	4.133	
9,700.0	5,918.0	9,711.4	5,918.0	81.7	82.2	-90.00	4,283.5	-450.9	660.0	496.5	163.47	4.037	
9,800.0	5,918.0	9,811.4	5,918.0	83.5	84.1	-90.00	4,383.5	-450.9	660.0	492.7	167.25	3.946	
9,900.0	5,918.0	9,911.4	5,918.0	85.4	86.0	-90.00	4,483.5	-450.9	660.0	489.0	171.04	3.859	
10,000.0	5,918.0	10,011.4	5,918.0	87.3	87.9	-90.00	4,583.5	-450.9	660.0	485.2	174.82	3.775	
10,100.0	5,918.0	10,111.4	5,918.0	89.2	89.7	-90.00	4,683.5	-450.9	660.0	481.4	178.61	3.695	
10,200.0	5,918.0	10,211.4	5,918.0	91.1	91.6	-90.00	4,783.5	-450.9	660.0	477.6	182.40	3.618	
10,300.0	5,918.0	10,311.4	5,918.0	93.0	93.5	-90.00	4,883.5	-450.9	660.0	473.8	186.20	3.545	

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #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		
10,400.0	5,918.0	10,411.4	5,918.0	94.9	95.4	-90.00	4,983.5	-450.9	660.0	470.0	189.99	3.474		
10,500.0	5,918.0	10,511.4	5,918.0	96.8	97.3	-90.00	5,083.5	-450.9	660.0	466.2	193.79	3.406		
10,600.0	5,918.0	10,611.4	5,918.0	98.7	99.2	-90.00	5,183.5	-450.9	660.0	462.4	197.59	3.340		
10,700.0	5,918.0	10,711.4	5,918.0	100.6	101.1	-90.00	5,283.5	-450.9	660.0	458.6	201.39	3.277		
10,800.0	5,918.0	10,811.4	5,918.0	102.5	103.0	-90.00	5,383.5	-450.9	660.0	454.8	205.19	3.217		
10,900.0	5,918.0	10,911.4	5,918.0	104.4	104.9	-90.00	5,483.5	-450.9	660.0	451.0	209.00	3.158		
11,000.0	5,918.0	11,011.4	5,918.0	106.3	106.8	-90.00	5,583.5	-450.9	660.0	447.2	212.80	3.102		
11,100.0	5,918.0	11,111.4	5,918.0	108.2	108.7	-90.00	5,683.5	-450.9	660.0	443.4	216.61	3.047		
11,200.0	5,918.0	11,211.4	5,918.0	110.1	110.6	-90.00	5,783.5	-450.9	660.0	439.6	220.41	2.994		
11,300.0	5,918.0	11,311.4	5,918.0	112.0	112.5	-90.00	5,883.5	-450.9	660.0	435.8	224.22	2.944		
11,400.0	5,918.0	11,411.4	5,918.0	113.9	114.4	-90.00	5,983.5	-450.9	660.0	432.0	228.03	2.894		
11,500.0	5,918.0	11,511.4	5,918.0	115.8	116.3	-90.00	6,083.5	-450.9	660.0	428.2	231.84	2.847		
11,600.0	5,918.0	11,611.4	5,918.0	117.7	118.2	-90.00	6,183.5	-450.9	660.0	424.4	235.66	2.801		
11,700.0	5,918.0	11,711.4	5,918.0	119.6	120.1	-90.00	6,283.5	-450.9	660.0	420.6	239.47	2.756		
11,800.0	5,918.0	11,811.4	5,918.0	121.6	122.0	-90.00	6,383.5	-450.9	660.0	416.8	243.28	2.713		
11,900.0	5,918.0	11,911.4	5,918.0	123.5	123.9	-90.00	6,483.5	-450.9	660.0	412.9	247.10	2.671		
12,000.0	5,918.0	12,011.4	5,918.0	125.4	125.8	-90.00	6,583.5	-450.9	660.0	409.1	250.92	2.631		
12,100.0	5,918.0	12,111.4	5,918.0	127.3	127.7	-90.00	6,683.5	-450.9	660.0	405.3	254.73	2.591		
12,200.0	5,918.0	12,211.4	5,918.0	129.2	129.6	-90.00	6,783.5	-450.9	660.0	401.5	258.55	2.553		
12,300.0	5,918.0	12,311.4	5,918.0	131.1	131.5	-90.00	6,883.5	-450.9	660.1	397.7	262.37	2.516		
12,400.0	5,918.0	12,411.4	5,918.0	133.0	133.4	-90.00	6,983.5	-450.9	660.1	393.9	266.19	2.480		
12,500.0	5,918.0	12,511.4	5,918.0	134.9	135.3	-90.00	7,083.5	-450.9	660.1	390.1	270.01	2.445		
12,600.0	5,918.0	12,611.4	5,918.0	136.8	137.2	-90.00	7,183.5	-450.9	660.1	386.2	273.83	2.411		
12,700.0	5,918.0	12,711.4	5,918.0	138.7	139.1	-90.00	7,283.5	-450.9	660.1	382.4	277.65	2.377		
12,800.0	5,918.0	12,811.4	5,918.0	140.6	141.1	-90.00	7,383.5	-450.9	660.1	378.6	281.47	2.345		
12,900.0	5,918.0	12,911.4	5,918.0	142.6	143.0	-90.00	7,483.5	-450.9	660.1	374.8	285.29	2.314		
13,000.0	5,918.0	13,011.4	5,918.0	144.5	144.9	-90.00	7,583.5	-450.9	660.1	371.0	289.11	2.283		
13,100.0	5,918.0	13,111.4	5,918.0	146.4	146.8	-90.00	7,683.5	-450.9	660.1	367.1	292.94	2.253		
13,200.0	5,918.0	13,211.4	5,918.0	148.3	148.7	-90.00	7,783.5	-450.9	660.1	363.3	296.76	2.224		
13,300.0	5,918.0	13,311.4	5,918.0	150.2	150.6	-90.00	7,883.5	-450.9	660.1	359.5	300.58	2.196		
13,400.0	5,918.0	13,411.4	5,918.0	152.1	152.5	-90.00	7,983.5	-450.9	660.1	355.7	304.41	2.168		
13,500.0	5,918.0	13,511.4	5,918.0	154.0	154.4	-90.00	8,083.5	-450.9	660.1	351.8	308.23	2.142		
13,600.0	5,918.0	13,611.4	5,918.0	155.9	156.3	-90.00	8,183.5	-450.9	660.1	348.0	312.06	2.115		
13,695.0	5,918.0	13,706.4	5,918.0	157.8	158.1	-90.00	8,278.4	-450.9	660.1	344.4	315.69	2.091 SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #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	-90.00	0.0	-32.1	32.1					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-32.1	32.1	31.9	0.19	172.078		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-32.1	32.1	31.5	0.64	50.468		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-32.1	32.1	31.0	1.09	29.570		
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-32.1	32.1	30.6	1.54	20.911		
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-32.1	32.1	30.1	1.98	16.175		
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-32.1	32.1	29.7	2.43	13.188		
700.0	700.0	700.0	700.0	1.4	1.4	-90.00	0.0	-32.1	32.1	29.2	2.88	11.132 CC		
800.0	800.0	799.9	799.8	1.7	1.7	-86.93	1.7	-32.3	32.3	29.0	3.33	9.698 ES		
900.0	900.0	899.5	899.3	1.9	1.9	-78.09	6.9	-32.8	33.5	29.7	3.78	8.856		
1,000.0	1,000.0	999.3	998.9	2.1	2.1	-81.93	13.8	-33.4	35.9	31.7	4.23	8.477		
1,100.0	1,099.8	1,099.3	1,098.6	2.3	2.4	-80.18	20.8	-34.1	38.2	33.5	4.69	8.132		
1,200.0	1,199.6	1,199.3	1,198.4	2.6	2.6	-81.12	27.7	-34.7	40.1	35.0	5.16	7.780		
1,300.0	1,299.4	1,299.2	1,298.1	2.8	2.8	-81.97	34.7	-35.4	42.1	36.5	5.63	7.479		
1,400.0	1,399.1	1,399.2	1,397.8	3.0	3.1	-82.74	41.6	-36.0	44.1	38.0	6.11	7.219		
1,500.0	1,498.9	1,499.2	1,497.6	3.3	3.3	-83.44	48.6	-36.7	46.1	39.5	6.60	6.993		
1,600.0	1,598.6	1,599.2	1,597.3	3.5	3.6	-84.09	55.5	-37.3	48.1	41.1	7.08	6.795		
1,700.0	1,698.4	1,699.2	1,697.0	3.8	3.8	-84.68	62.4	-38.0	50.2	42.6	7.57	6.621		
1,800.0	1,798.1	1,799.1	1,796.8	4.0	4.1	-85.23	69.4	-38.7	52.2	44.1	8.07	6.466		
1,900.0	1,897.9	1,899.1	1,896.5	4.3	4.3	-85.74	76.3	-39.3	54.2	45.6	8.56	6.329		
2,000.0	1,997.6	1,999.1	1,996.2	4.5	4.6	-86.21	83.3	-40.0	56.2	47.2	9.06	6.205		
2,100.0	2,097.4	2,099.1	2,096.0	4.8	4.8	-86.64	90.2	-40.6	58.3	48.7	9.56	6.094		
2,200.0	2,197.2	2,199.0	2,195.7	5.0	5.1	-87.05	97.2	-41.3	60.3	50.2	10.06	5.994		
2,300.0	2,296.9	2,299.0	2,295.5	5.3	5.3	-87.43	104.1	-41.9	62.3	51.8	10.56	5.902		
2,400.0	2,396.7	2,399.0	2,395.2	5.5	5.6	-87.79	111.0	-42.6	64.4	53.3	11.06	5.819		
2,500.0	2,496.4	2,499.0	2,494.9	5.8	5.8	-88.12	118.0	-43.3	66.4	54.9	11.57	5.743		
2,600.0	2,596.2	2,599.0	2,594.7	6.0	6.1	-88.44	124.9	-43.9	68.5	56.4	12.07	5.672		
2,700.0	2,695.9	2,698.9	2,694.4	6.3	6.4	-88.74	131.9	-44.6	70.5	57.9	12.58	5.608		
2,800.0	2,795.7	2,798.9	2,794.1	6.5	6.6	-89.02	138.8	-45.2	72.6	59.5	13.08	5.548		
2,900.0	2,895.5	2,898.9	2,893.9	6.8	6.9	-89.28	145.8	-45.9	74.6	61.0	13.59	5.493		
3,000.0	2,995.2	2,998.9	2,993.6	7.0	7.1	-89.53	152.7	-46.5	76.7	62.6	14.09	5.441		
3,100.0	3,095.0	3,098.8	3,093.3	7.3	7.4	-89.77	159.7	-47.2	78.7	64.1	14.60	5.393		
3,200.0	3,194.7	3,198.8	3,193.1	7.5	7.6	-89.99	166.6	-47.8	80.8	65.7	15.11	5.348		
3,300.0	3,294.5	3,298.8	3,292.8	7.8	7.9	-90.21	173.5	-48.5	82.8	67.2	15.61	5.306		
3,400.0	3,394.2	3,398.8	3,392.5	8.0	8.1	-90.41	180.5	-49.2	84.9	68.8	16.12	5.267		
3,500.0	3,494.0	3,498.8	3,492.3	8.3	8.4	-90.61	187.4	-49.8	87.0	70.3	16.63	5.230		
3,600.0	3,593.7	3,598.7	3,592.0	8.5	8.6	-90.79	194.4	-50.5	89.0	71.9	17.14	5.195		
3,700.0	3,693.5	3,698.7	3,691.7	8.8	8.9	-90.97	201.3	-51.1	91.1	73.4	17.64	5.163		
3,800.0	3,793.3	3,798.7	3,791.5	9.1	9.2	-91.14	208.3	-51.8	93.1	75.0	18.15	5.132		
3,900.0	3,893.0	3,898.7	3,891.2	9.3	9.4	-91.30	215.2	-52.4	95.2	76.6	18.66	5.102		
4,000.0	3,992.8	3,998.7	3,990.9	9.6	9.7	-91.45	222.1	-53.1	97.3	78.1	19.17	5.075		
4,100.0	4,092.5	4,098.6	4,090.7	9.8	9.9	-91.60	229.1	-53.8	99.3	79.7	19.68	5.048		
4,200.0	4,192.3	4,198.6	4,190.4	10.1	10.2	-91.74	236.0	-54.4	101.4	81.2	20.19	5.023		
4,300.0	4,292.0	4,298.6	4,290.1	10.3	10.4	-91.88	243.0	-55.1	103.5	82.8	20.70	5.000		
4,400.0	4,391.8	4,398.6	4,389.9	10.6	10.7	-92.01	249.9	-55.7	105.5	84.3	21.21	4.977		
4,500.0	4,491.6	4,498.5	4,489.6	10.8	10.9	-92.14	256.9	-56.4	107.6	85.9	21.71	4.955		
4,600.0	4,591.3	4,598.5	4,589.4	11.1	11.2	-92.26	263.8	-57.0	109.7	87.4	22.22	4.935		
4,700.0	4,691.1	4,698.5	4,689.1	11.3	11.5	-92.38	270.7	-57.7	111.7	89.0	22.73	4.915		
4,800.0	4,790.8	4,798.5	4,788.8	11.6	11.7	-92.49	277.7	-58.4	113.8	90.6	23.24	4.896		
4,900.0	4,890.6	4,898.5	4,888.6	11.9	12.0	-92.60	284.6	-59.0	115.9	92.1	23.75	4.878		
5,000.0	4,990.3	4,998.4	4,988.3	12.1	12.2	-92.70	291.6	-59.7	117.9	93.7	24.26	4.861		
5,100.0	5,090.1	5,098.4	5,088.0	12.4	12.5	-92.80	298.5	-60.3	120.0	95.2	24.77	4.845		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #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	5,189.9	5,198.4	5,187.8	12.6	12.7	-92.90	305.5	-61.0	122.1	96.8	25.28	4.829		
5,300.0	5,289.6	5,298.4	5,287.5	12.9	13.0	-93.00	312.4	-61.6	124.2	98.4	25.79	4.814		
5,400.0	5,389.4	5,398.4	5,387.2	13.1	13.2	-93.09	319.3	-62.3	126.2	99.9	26.30	4.799		
5,500.0	5,488.8	5,498.2	5,486.8	13.4	13.5	-94.35	326.3	-62.9	128.5	101.7	26.84	4.787		
5,600.0	5,585.0	5,594.7	5,582.8	13.8	13.8	-100.87	336.0	-63.9	133.9	106.4	27.48	4.873		
5,700.0	5,674.2	5,691.6	5,676.0	14.4	14.2	-106.62	361.9	-66.3	146.6	118.4	28.18	5.202		
5,800.0	5,753.3	5,791.1	5,765.0	15.1	14.8	-110.45	405.9	-70.5	166.0	137.0	28.98	5.729		
5,900.0	5,819.3	5,893.2	5,845.9	16.1	15.5	-112.32	467.6	-76.3	190.6	160.6	30.03	6.349		
6,000.0	5,869.7	5,998.0	5,914.7	17.2	16.5	-112.50	546.0	-83.7	219.1	187.5	31.56	6.942		
6,100.0	5,902.8	6,105.9	5,967.7	18.4	17.8	-111.37	639.4	-92.5	250.0	216.3	33.72	7.415		
6,200.0	5,917.3	6,217.1	6,000.9	19.8	19.2	-109.29	744.9	-102.5	282.1	245.6	36.48	7.732		
6,300.0	5,918.0	6,332.4	6,011.0	21.2	20.9	-107.92	859.0	-113.3	311.2	271.6	39.66	7.847		
6,400.0	5,918.0	6,449.2	6,011.0	22.6	22.5	-106.52	975.6	-119.9	330.0	287.0	42.95	7.682		
6,500.0	5,918.0	6,557.2	6,011.0	24.0	24.1	-105.95	1,083.5	-120.6	338.9	292.9	46.06	7.358		
6,600.0	5,918.0	6,657.1	6,011.0	25.5	25.6	-105.76	1,183.5	-120.6	342.3	293.2	49.10	6.973		
6,700.0	5,918.0	6,757.1	6,011.0	27.0	27.3	-105.76	1,283.5	-120.6	342.4	290.2	52.21	6.559		
6,800.0	5,918.0	6,857.1	6,011.0	28.7	29.0	-105.76	1,383.5	-120.6	342.4	287.0	55.43	6.178		
6,900.0	5,918.0	6,957.1	6,011.0	30.3	30.7	-105.76	1,483.5	-120.6	342.4	283.7	58.70	5.833		
7,000.0	5,918.0	7,057.1	6,011.0	32.0	32.4	-105.76	1,583.5	-120.6	342.4	280.4	62.03	5.520		
7,100.0	5,918.0	7,157.1	6,011.0	33.8	34.2	-105.76	1,683.5	-120.6	342.4	277.0	65.40	5.236		
7,200.0	5,918.0	7,257.1	6,011.0	35.5	35.9	-105.76	1,783.5	-120.6	342.4	273.6	68.81	4.977		
7,300.0	5,918.0	7,357.1	6,011.0	37.2	37.7	-105.76	1,883.5	-120.6	342.4	270.2	72.25	4.740		
7,400.0	5,918.0	7,457.1	6,011.0	39.0	39.5	-105.76	1,983.5	-120.6	342.4	266.7	75.71	4.523		
7,500.0	5,918.0	7,557.1	6,011.0	40.8	41.3	-105.76	2,083.5	-120.6	342.4	263.2	79.20	4.324		
7,600.0	5,918.0	7,657.1	6,011.0	42.6	43.1	-105.76	2,183.5	-120.6	342.4	259.7	82.70	4.141		
7,700.0	5,918.0	7,757.1	6,011.0	44.4	45.0	-105.76	2,283.5	-120.6	342.4	256.2	86.23	3.971		
7,800.0	5,918.0	7,857.1	6,011.0	46.2	46.8	-105.76	2,383.5	-120.6	342.4	252.7	89.77	3.815		
7,900.0	5,918.0	7,957.1	6,011.0	48.0	48.6	-105.76	2,483.5	-120.6	342.5	249.1	93.33	3.669		
8,000.0	5,918.0	8,057.1	6,011.0	49.9	50.5	-105.76	2,583.5	-120.6	342.5	245.6	96.89	3.534		
8,100.0	5,918.0	8,157.1	6,011.0	51.7	52.3	-105.76	2,683.5	-120.6	342.5	242.0	100.47	3.408		
8,200.0	5,918.0	8,257.1	6,011.0	53.6	54.2	-105.76	2,783.5	-120.6	342.5	238.4	104.06	3.291		
8,300.0	5,918.0	8,357.1	6,011.0	55.4	56.0	-105.76	2,883.5	-120.6	342.5	234.8	107.66	3.181		
8,400.0	5,918.0	8,457.1	6,011.0	57.3	57.9	-105.76	2,983.5	-120.6	342.5	231.2	111.26	3.078		
8,500.0	5,918.0	8,557.1	6,011.0	59.1	59.8	-105.76	3,083.5	-120.6	342.5	227.6	114.88	2.981		
8,600.0	5,918.0	8,657.1	6,011.0	61.0	61.6	-105.75	3,183.5	-120.6	342.5	224.0	118.50	2.890		
8,700.0	5,918.0	8,757.1	6,011.0	62.9	63.5	-105.75	3,283.5	-120.6	342.5	220.4	122.12	2.804		
8,800.0	5,918.0	8,857.1	6,011.0	64.7	65.4	-105.75	3,383.5	-120.6	342.5	216.7	125.75	2.723		
8,900.0	5,918.0	8,957.1	6,011.0	66.6	67.3	-105.75	3,483.5	-120.6	342.5	213.1	129.39	2.647		
9,000.0	5,918.0	9,057.1	6,011.0	68.5	69.2	-105.75	3,583.5	-120.6	342.5	209.5	133.03	2.574		
9,100.0	5,918.0	9,157.1	6,011.0	70.3	71.0	-105.75	3,683.5	-120.6	342.5	205.8	136.68	2.506		
9,200.0	5,918.0	9,257.1	6,011.0	72.2	72.9	-105.75	3,783.5	-120.6	342.5	202.2	140.32	2.441		
9,300.0	5,918.0	9,357.1	6,011.0	74.1	74.8	-105.75	3,883.5	-120.6	342.5	198.5	143.98	2.379		
9,400.0	5,918.0	9,457.1	6,011.0	76.0	76.7	-105.75	3,983.5	-120.6	342.5	194.9	147.63	2.320		
9,500.0	5,918.0	9,557.1	6,011.0	77.9	78.6	-105.75	4,083.5	-120.6	342.5	191.2	151.29	2.264		
9,600.0	5,918.0	9,657.1	6,011.0	79.8	80.5	-105.75	4,183.5	-120.6	342.5	187.5	154.95	2.210		
9,700.0	5,918.0	9,757.1	6,011.0	81.7	82.4	-105.75	4,283.5	-120.6	342.5	183.9	158.62	2.159		
9,800.0	5,918.0	9,857.1	6,011.0	83.5	84.3	-105.75	4,383.5	-120.6	342.5	180.2	162.29	2.111		
9,900.0	5,918.0	9,957.1	6,011.0	85.4	86.2	-105.75	4,483.5	-120.6	342.5	176.6	165.96	2.064		
10,000.0	5,918.0	10,057.1	6,011.0	87.3	88.1	-105.75	4,583.5	-120.6	342.5	172.9	169.63	2.019		
10,100.0	5,918.0	10,157.1	6,011.0	89.2	90.0	-105.75	4,683.5	-120.6	342.5	169.2	173.30	1.976		
10,200.0	5,918.0	10,257.1	6,011.0	91.1	91.9	-105.75	4,783.5	-120.6	342.5	165.5	176.98	1.935		
10,300.0	5,918.0	10,357.1	6,011.0	93.0	93.8	-105.75	4,883.5	-120.6	342.5	161.9	180.66	1.896		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 #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		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis		
10,400.0	5,918.0	10,457.1	6,011.0	94.9	95.7	-105.75	4,983.5	-120.6	342.5	158.2	184.34	1.858	
10,500.0	5,918.0	10,557.1	6,011.0	96.8	97.6	-105.75	5,083.5	-120.6	342.5	154.5	188.02	1.822	
10,600.0	5,918.0	10,657.1	6,011.0	98.7	99.5	-105.75	5,183.5	-120.6	342.5	150.8	191.70	1.787	
10,700.0	5,918.0	10,757.1	6,011.0	100.6	101.4	-105.75	5,283.5	-120.6	342.5	147.2	195.38	1.753	
10,800.0	5,918.0	10,857.1	6,011.0	102.5	103.3	-105.75	5,383.5	-120.6	342.5	143.5	199.07	1.721	
10,900.0	5,918.0	10,957.1	6,011.0	104.4	105.2	-105.75	5,483.5	-120.6	342.5	139.8	202.76	1.689	
11,000.0	5,918.0	11,057.1	6,011.0	106.3	107.1	-105.75	5,583.5	-120.6	342.5	136.1	206.45	1.659	
11,100.0	5,918.0	11,157.1	6,011.0	108.2	109.0	-105.75	5,683.5	-120.6	342.5	132.4	210.13	1.630	
11,200.0	5,918.0	11,257.1	6,011.0	110.1	110.9	-105.75	5,783.5	-120.6	342.6	128.7	213.82	1.602	
11,300.0	5,918.0	11,357.1	6,011.0	112.0	112.8	-105.75	5,883.5	-120.6	342.6	125.0	217.52	1.575	
11,400.0	5,918.0	11,457.1	6,011.0	113.9	114.7	-105.75	5,983.5	-120.6	342.6	121.4	221.21	1.549	
11,500.0	5,918.0	11,557.1	6,011.0	115.8	116.6	-105.75	6,083.5	-120.6	342.6	117.7	224.90	1.523	
11,600.0	5,918.0	11,657.1	6,011.0	117.7	118.5	-105.75	6,183.5	-120.6	342.6	114.0	228.60	1.499 Level 3	
11,700.0	5,918.0	11,757.1	6,011.0	119.6	120.5	-105.75	6,283.5	-120.6	342.6	110.3	232.29	1.475 Level 3	
11,800.0	5,918.0	11,857.1	6,011.0	121.6	122.4	-105.75	6,383.5	-120.6	342.6	106.6	235.99	1.452 Level 3	
11,900.0	5,918.0	11,957.1	6,011.0	123.5	124.3	-105.75	6,483.5	-120.6	342.6	102.9	239.68	1.429 Level 3	
12,000.0	5,918.0	12,057.1	6,011.0	125.4	126.2	-105.75	6,583.5	-120.6	342.6	99.2	243.38	1.408 Level 3	
12,100.0	5,918.0	12,157.1	6,011.0	127.3	128.1	-105.75	6,683.5	-120.6	342.6	95.5	247.08	1.387 Level 3	
12,200.0	5,918.0	12,257.1	6,011.0	129.2	130.0	-105.75	6,783.5	-120.6	342.6	91.8	250.78	1.366 Level 3	
12,300.0	5,918.0	12,357.1	6,011.0	131.1	131.9	-105.75	6,883.5	-120.6	342.6	88.1	254.48	1.346 Level 3	
12,400.0	5,918.0	12,457.1	6,011.0	133.0	133.8	-105.75	6,983.5	-120.6	342.6	84.4	258.17	1.327 Level 3	
12,500.0	5,918.0	12,557.1	6,011.0	134.9	135.7	-105.75	7,083.5	-120.6	342.6	80.7	261.88	1.308 Level 3	
12,600.0	5,918.0	12,657.1	6,011.0	136.8	137.6	-105.75	7,183.5	-120.6	342.6	77.0	265.58	1.290 Level 3	
12,700.0	5,918.0	12,757.1	6,011.0	138.7	139.6	-105.75	7,283.5	-120.6	342.6	73.3	269.28	1.272 Level 3	
12,800.0	5,918.0	12,857.1	6,011.0	140.6	141.5	-105.75	7,383.5	-120.6	342.6	69.6	272.98	1.255 Level 3	
12,900.0	5,918.0	12,957.1	6,011.0	142.6	143.4	-105.75	7,483.5	-120.6	342.6	65.9	276.68	1.238 Level 2	
13,000.0	5,918.0	13,057.1	6,011.0	144.5	145.3	-105.75	7,583.5	-120.6	342.6	62.2	280.39	1.222 Level 2	
13,100.0	5,918.0	13,157.1	6,011.0	146.4	147.2	-105.75	7,683.5	-120.6	342.6	58.5	284.09	1.206 Level 2	
13,200.0	5,918.0	13,257.1	6,011.0	148.3	149.1	-105.75	7,783.5	-120.6	342.6	54.8	287.79	1.190 Level 2	
13,300.0	5,918.0	13,357.1	6,011.0	150.2	151.0	-105.75	7,883.5	-120.6	342.6	51.1	291.50	1.175 Level 2	
13,400.0	5,918.0	13,457.1	6,011.0	152.1	152.9	-105.75	7,983.5	-120.6	342.6	47.4	295.20	1.161 Level 2	
13,500.0	5,918.0	13,557.1	6,011.0	154.0	154.9	-105.75	8,083.5	-120.6	342.6	43.7	298.91	1.146 Level 2	
13,600.0	5,918.0	13,657.1	6,011.0	155.9	156.8	-105.75	8,183.5	-120.6	342.6	40.0	302.61	1.132 Level 2	
13,656.9	5,918.0	13,714.0	6,011.0	157.0	157.9	-105.75	8,240.4	-120.6	342.6	37.9	304.72	1.124 Level 2	
13,695.0	5,918.0	13,751.2	6,011.0	157.8	158.6	-105.75	8,277.5	-120.6	342.6	36.5	306.11	1.119 Level 2, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-0912B - 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		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	89.99	0.0	33.2	33.2					
100.0	100.0	100.0	100.0	0.1	0.1	89.99	0.0	33.2	33.2	33.0	0.19	178.012		
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	33.2	33.2	32.6	0.64	52.208		
300.0	300.0	300.0	300.0	0.5	0.5	89.99	0.0	33.2	33.2	32.1	1.09	30.590		
400.0	400.0	400.0	400.0	0.8	0.8	89.99	0.0	33.2	33.2	31.7	1.54	21.632		
500.0	500.0	500.0	500.0	1.0	1.0	89.99	0.0	33.2	33.2	31.2	1.98	16.733		
600.0	600.0	600.0	600.0	1.2	1.2	89.99	0.0	33.2	33.2	30.8	2.43	13.643		
700.0	700.0	700.0	700.0	1.4	1.4	89.99	0.0	33.2	33.2	30.3	2.88	11.516		
800.0	800.0	800.0	800.0	1.7	1.7	89.99	0.0	33.2	33.2	29.9	3.33	9.963		
900.0	900.0	900.0	900.0	1.9	1.9	89.99	0.0	33.2	33.2	29.4	3.78	8.779		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	81.23	0.0	33.2	32.9	28.7	4.23	7.775		
1,096.9	1,096.8	1,096.8	1,096.8	2.3	2.3	90.00	0.0	33.2	32.5	27.8	4.67	6.968 CC		
1,100.0	1,099.8	1,099.8	1,099.8	2.3	2.3	90.37	0.0	33.2	32.5	27.8	4.68	6.948 ES		
1,200.0	1,199.6	1,199.6	1,199.5	2.6	2.6	99.46	1.6	33.9	33.3	28.2	5.13	6.499		
1,300.0	1,299.4	1,299.5	1,299.3	2.8	2.8	102.22	6.3	36.1	34.8	29.2	5.59	6.231		
1,400.0	1,399.1	1,399.5	1,399.1	3.0	3.0	101.97	12.7	38.9	36.3	30.3	6.05	6.003		
1,500.0	1,498.9	1,499.5	1,498.8	3.3	3.2	101.74	19.1	41.8	37.8	31.3	6.52	5.801		
1,600.0	1,598.6	1,599.5	1,598.6	3.5	3.5	101.53	25.4	44.7	39.3	32.3	7.00	5.622		
1,700.0	1,698.4	1,699.5	1,698.3	3.8	3.7	101.33	31.8	47.5	40.9	33.4	7.48	5.462		
1,800.0	1,798.1	1,799.4	1,798.1	4.0	4.0	101.15	38.1	50.4	42.4	34.4	7.96	5.320		
1,900.0	1,897.9	1,899.4	1,897.8	4.3	4.2	100.98	44.5	53.2	43.9	35.4	8.45	5.191		
2,000.0	1,997.6	1,999.4	1,997.6	4.5	4.4	100.82	50.9	56.1	45.4	36.5	8.94	5.075		
2,100.0	2,097.4	2,099.4	2,097.3	4.8	4.7	100.67	57.2	59.0	46.9	37.5	9.44	4.971		
2,200.0	2,197.2	2,199.4	2,197.0	5.0	4.9	100.53	63.6	61.8	48.4	38.5	9.93	4.875		
2,300.0	2,296.9	2,299.4	2,296.8	5.3	5.2	100.40	69.9	64.7	49.9	39.5	10.43	4.788		
2,400.0	2,396.7	2,399.4	2,396.5	5.5	5.4	100.28	76.3	67.6	51.5	40.5	10.93	4.709		
2,500.0	2,496.4	2,499.4	2,496.3	5.8	5.7	100.16	82.6	70.4	53.0	41.5	11.43	4.635		
2,600.0	2,596.2	2,599.4	2,596.0	6.0	5.9	100.05	89.0	73.3	54.5	42.6	11.93	4.568		
2,700.0	2,695.9	2,699.3	2,695.8	6.3	6.2	99.95	95.4	76.2	56.0	43.6	12.43	4.505		
2,800.0	2,795.7	2,799.3	2,795.5	6.5	6.4	99.85	101.7	79.0	57.5	44.6	12.93	4.448		
2,900.0	2,895.5	2,899.3	2,895.3	6.8	6.7	99.76	108.1	81.9	59.0	45.6	13.43	4.394		
3,000.0	2,995.2	2,999.3	2,995.0	7.0	6.9	99.67	114.4	84.8	60.5	46.6	13.94	4.344		
3,100.0	3,095.0	3,099.3	3,094.7	7.3	7.2	99.59	120.8	87.6	62.1	47.6	14.44	4.297		
3,200.0	3,194.7	3,199.3	3,194.5	7.5	7.4	99.51	127.2	90.5	63.6	48.6	14.95	4.253		
3,300.0	3,294.5	3,299.3	3,294.2	7.8	7.7	99.43	133.5	93.4	65.1	49.6	15.45	4.212		
3,400.0	3,394.2	3,399.3	3,394.0	8.0	7.9	99.36	139.9	96.2	66.6	50.7	15.96	4.174		
3,500.0	3,494.0	3,499.2	3,493.7	8.3	8.2	99.29	146.2	99.1	68.1	51.7	16.47	4.138		
3,600.0	3,593.7	3,599.2	3,593.5	8.5	8.4	99.22	152.6	101.9	69.6	52.7	16.97	4.104		
3,700.0	3,693.5	3,699.2	3,693.2	8.8	8.7	99.16	159.0	104.8	71.2	53.7	17.48	4.071		
3,800.0	3,793.3	3,799.2	3,793.0	9.1	9.0	99.10	165.3	107.7	72.7	54.7	17.99	4.041		
3,900.0	3,893.0	3,899.2	3,892.7	9.3	9.2	99.04	171.7	110.5	74.2	55.7	18.49	4.012		
4,000.0	3,992.8	3,999.2	3,992.5	9.6	9.5	98.98	178.0	113.4	75.7	56.7	19.00	3.985		
4,100.0	4,092.5	4,099.2	4,092.2	9.8	9.7	98.93	184.4	116.3	77.2	57.7	19.51	3.959		
4,200.0	4,192.3	4,199.2	4,191.9	10.1	10.0	98.88	190.8	119.1	78.7	58.7	20.02	3.934		
4,300.0	4,292.0	4,299.2	4,291.7	10.3	10.2	98.83	197.1	122.0	80.3	59.7	20.53	3.910		
4,400.0	4,391.8	4,399.1	4,391.4	10.6	10.5	98.78	203.5	124.9	81.8	60.7	21.03	3.888		
4,500.0	4,491.6	4,499.1	4,491.2	10.8	10.7	98.73	209.8	127.7	83.3	61.8	21.54	3.867		
4,600.0	4,591.3	4,599.1	4,590.9	11.1	11.0	98.69	216.2	130.6	84.8	62.8	22.05	3.846		
4,700.0	4,691.1	4,699.1	4,690.7	11.3	11.2	98.64	222.6	133.5	86.3	63.8	22.56	3.827		
4,800.0	4,790.8	4,799.1	4,790.4	11.6	11.5	98.60	228.9	136.3	87.9	64.8	23.07	3.808		
4,900.0	4,890.6	4,899.1	4,890.2	11.9	11.7	98.56	235.3	139.2	89.4	65.8	23.58	3.790		
5,000.0	4,990.3	4,999.1	4,989.9	12.1	12.0	98.52	241.6	142.1	90.9	66.8	24.09	3.773		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-0912B - 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	5,090.1	5,099.1	5,089.6	12.4	12.3	98.49	248.0	144.9	92.4	67.8	24.60	3.756	
5,200.0	5,189.9	5,199.1	5,189.4	12.6	12.5	98.45	254.4	147.8	93.9	68.8	25.11	3.741	
5,300.0	5,289.6	5,299.0	5,289.1	12.9	12.8	98.41	260.7	150.6	95.4	69.8	25.62	3.725	
5,400.0	5,389.4	5,399.0	5,388.9	13.1	13.0	98.38	267.1	153.5	97.0	70.8	26.13	3.711	
5,500.0	5,488.8	5,498.9	5,488.5	13.4	13.3	99.91	273.4	156.4	98.9	72.3	26.65	3.713	
5,600.0	5,585.0	5,598.2	5,587.2	13.8	13.6	108.06	283.0	160.7	105.4	78.2	27.16	3.879	
5,700.0	5,674.2	5,700.3	5,684.9	14.4	14.0	114.69	309.2	172.5	117.9	90.3	27.60	4.273	
5,800.0	5,753.3	5,805.5	5,777.9	15.1	14.6	118.60	353.8	192.6	135.2	107.1	28.06	4.817	
5,900.0	5,819.3	5,914.0	5,861.4	16.1	15.4	120.10	416.6	220.9	155.5	126.7	28.83	5.394	
6,000.0	5,869.7	6,025.4	5,930.5	17.2	16.5	119.70	496.1	256.7	177.7	147.4	30.22	5.878	
6,100.0	5,902.8	6,139.8	5,980.5	18.4	17.9	117.92	589.6	298.8	200.6	168.1	32.44	6.183	
6,200.0	5,917.3	6,256.6	6,007.3	19.8	19.4	115.15	693.1	345.4	223.4	187.9	35.45	6.302	
6,300.0	5,918.0	6,371.0	6,011.0	21.2	21.1	112.84	797.6	391.7	244.9	206.3	38.60	6.346	
6,400.0	5,918.0	6,482.3	6,011.0	22.6	22.6	110.94	901.4	431.6	265.9	224.4	41.51	6.404	
6,500.0	5,918.0	6,595.3	6,011.0	24.0	24.2	109.36	1,009.1	465.8	286.4	242.0	44.41	6.450	
6,600.0	5,918.0	6,709.9	6,011.0	25.5	25.9	108.02	1,120.2	494.0	306.5	259.2	47.29	6.481	
6,700.0	5,918.0	6,826.6	6,011.0	27.0	27.7	106.85	1,234.8	515.8	324.3	273.6	50.68	6.398	
6,800.0	5,918.0	6,945.6	6,011.0	28.7	29.5	106.11	1,352.8	530.8	336.4	282.1	54.24	6.202	
6,900.0	5,918.0	7,066.0	6,011.0	30.3	31.3	105.76	1,472.9	538.4	342.5	284.7	57.80	5.925	
7,000.0	5,918.0	7,176.5	6,011.0	32.0	33.0	105.71	1,583.5	539.4	343.2	282.1	61.19	5.609	
7,100.0	5,918.0	7,276.5	6,011.0	33.8	34.6	105.71	1,683.5	539.4	343.2	278.8	64.45	5.326	
7,200.0	5,918.0	7,376.5	6,011.0	35.5	36.2	105.71	1,783.5	539.4	343.2	275.5	67.75	5.066	
7,300.0	5,918.0	7,476.5	6,011.0	37.2	37.9	105.71	1,883.5	539.4	343.2	272.1	71.10	4.828	
7,400.0	5,918.0	7,576.5	6,011.0	39.0	39.5	105.71	1,983.5	539.4	343.2	268.8	74.48	4.609	
7,500.0	5,918.0	7,676.5	6,011.0	40.8	41.2	105.71	2,083.5	539.4	343.2	265.4	77.89	4.407	
7,600.0	5,918.0	7,776.5	6,011.0	42.6	42.9	105.71	2,183.5	539.4	343.2	261.9	81.33	4.220	
7,700.0	5,918.0	7,876.5	6,011.0	44.4	44.7	105.72	2,283.5	539.4	343.2	258.4	84.79	4.048	
7,800.0	5,918.0	7,976.5	6,011.0	46.2	46.4	105.72	2,383.5	539.4	343.2	255.0	88.27	3.888	
7,900.0	5,918.0	8,076.5	6,011.0	48.0	48.2	105.72	2,483.5	539.4	343.2	251.5	91.77	3.740	
8,000.0	5,918.0	8,176.5	6,011.0	49.9	49.9	105.72	2,583.5	539.4	343.2	247.9	95.29	3.602	
8,100.0	5,918.0	8,276.5	6,011.0	51.7	51.7	105.72	2,683.5	539.4	343.2	244.4	98.83	3.473	
8,200.0	5,918.0	8,376.5	6,011.0	53.6	53.5	105.72	2,783.5	539.4	343.2	240.9	102.37	3.353	
8,300.0	5,918.0	8,476.5	6,011.0	55.4	55.3	105.72	2,883.5	539.4	343.2	237.3	105.93	3.240	
8,400.0	5,918.0	8,576.5	6,011.0	57.3	57.1	105.72	2,983.5	539.4	343.2	233.7	109.50	3.135	
8,500.0	5,918.0	8,676.5	6,011.0	59.1	58.9	105.72	3,083.5	539.4	343.2	230.2	113.08	3.035	
8,600.0	5,918.0	8,776.5	6,011.0	61.0	60.7	105.72	3,183.5	539.4	343.2	226.6	116.66	2.942	
8,700.0	5,918.0	8,876.5	6,011.0	62.9	62.5	105.72	3,283.5	539.4	343.2	223.0	120.26	2.854	
8,800.0	5,918.0	8,976.5	6,011.0	64.7	64.4	105.72	3,383.5	539.4	343.2	219.4	123.86	2.771	
8,900.0	5,918.0	9,076.5	6,011.0	66.6	66.2	105.72	3,483.5	539.4	343.2	215.8	127.47	2.693	
9,000.0	5,918.0	9,176.5	6,011.0	68.5	68.0	105.72	3,583.5	539.4	343.2	212.1	131.09	2.618	
9,100.0	5,918.0	9,276.5	6,011.0	70.3	69.9	105.72	3,683.5	539.4	343.2	208.5	134.71	2.548	
9,200.0	5,918.0	9,376.5	6,011.0	72.2	71.7	105.72	3,783.5	539.4	343.2	204.9	138.33	2.481	
9,300.0	5,918.0	9,476.5	6,011.0	74.1	73.6	105.72	3,883.5	539.4	343.2	201.3	141.96	2.418	
9,400.0	5,918.0	9,576.5	6,011.0	76.0	75.4	105.72	3,983.5	539.4	343.2	197.6	145.60	2.357	
9,500.0	5,918.0	9,676.5	6,011.0	77.9	77.3	105.72	4,083.5	539.4	343.2	194.0	149.24	2.300	
9,600.0	5,918.0	9,776.5	6,011.0	79.8	79.2	105.72	4,183.5	539.4	343.2	190.3	152.88	2.245	
9,700.0	5,918.0	9,876.5	6,011.0	81.7	81.0	105.72	4,283.5	539.4	343.2	186.7	156.53	2.193	
9,800.0	5,918.0	9,976.5	6,011.0	83.5	82.9	105.72	4,383.5	539.4	343.2	183.0	160.18	2.143	
9,900.0	5,918.0	10,076.5	6,011.0	85.4	84.8	105.72	4,483.5	539.4	343.2	179.4	163.83	2.095	
10,000.0	5,918.0	10,176.5	6,011.0	87.3	86.6	105.72	4,583.5	539.4	343.2	175.7	167.49	2.049	
10,100.0	5,918.0	10,276.5	6,011.0	89.2	88.5	105.72	4,683.5	539.4	343.2	172.1	171.15	2.005	
10,200.0	5,918.0	10,376.5	6,011.0	91.1	90.4	105.72	4,783.5	539.4	343.2	168.4	174.81	1.963	

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-0912B - 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		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Uncertainty Axis		
10,300.0	5,918.0	10,476.5	6,011.0	93.0	92.2	105.72	4,883.5	539.4	343.2	164.7	178.48	1.923	
10,400.0	5,918.0	10,576.5	6,011.0	94.9	94.1	105.72	4,983.5	539.4	343.2	161.1	182.14	1.884	
10,500.0	5,918.0	10,676.5	6,011.0	96.8	96.0	105.72	5,083.5	539.4	343.2	157.4	185.81	1.847	
10,600.0	5,918.0	10,776.5	6,011.0	98.7	97.9	105.72	5,183.5	539.4	343.2	153.7	189.48	1.811	
10,700.0	5,918.0	10,876.5	6,011.0	100.6	99.8	105.72	5,283.5	539.4	343.2	150.0	193.15	1.777	
10,800.0	5,918.0	10,976.5	6,011.0	102.5	101.7	105.72	5,383.5	539.4	343.2	146.4	196.83	1.744	
10,900.0	5,918.0	11,076.5	6,011.0	104.4	103.5	105.72	5,483.5	539.4	343.2	142.7	200.50	1.712	
11,000.0	5,918.0	11,176.5	6,011.0	106.3	105.4	105.72	5,583.5	539.4	343.2	139.0	204.18	1.681	
11,100.0	5,918.0	11,276.5	6,011.0	108.2	107.3	105.72	5,683.5	539.4	343.2	135.3	207.86	1.651	
11,200.0	5,918.0	11,376.5	6,011.0	110.1	109.2	105.72	5,783.5	539.4	343.2	131.7	211.54	1.622	
11,300.0	5,918.0	11,476.5	6,011.0	112.0	111.1	105.72	5,883.5	539.4	343.2	128.0	215.22	1.595	
11,400.0	5,918.0	11,576.5	6,011.0	113.9	113.0	105.72	5,983.5	539.4	343.2	124.3	218.91	1.568	
11,500.0	5,918.0	11,676.5	6,011.0	115.8	114.9	105.72	6,083.5	539.4	343.2	120.6	222.59	1.542	
11,600.0	5,918.0	11,776.5	6,011.0	117.7	116.8	105.72	6,183.5	539.4	343.2	116.9	226.27	1.517	
11,700.0	5,918.0	11,876.5	6,011.0	119.6	118.7	105.72	6,283.5	539.4	343.2	113.2	229.96	1.492 Level 3	
11,800.0	5,918.0	11,976.5	6,011.0	121.6	120.6	105.72	6,383.5	539.4	343.2	109.5	233.65	1.469 Level 3	
11,900.0	5,918.0	12,076.5	6,011.0	123.5	122.5	105.72	6,483.5	539.4	343.2	105.8	237.34	1.446 Level 3	
12,000.0	5,918.0	12,176.5	6,011.0	125.4	124.4	105.72	6,583.5	539.4	343.2	102.2	241.03	1.424 Level 3	
12,100.0	5,918.0	12,276.5	6,011.0	127.3	126.3	105.72	6,683.5	539.4	343.2	98.5	244.72	1.402 Level 3	
12,200.0	5,918.0	12,376.5	6,011.0	129.2	128.2	105.72	6,783.5	539.5	343.2	94.8	248.41	1.382 Level 3	
12,300.0	5,918.0	12,476.5	6,011.0	131.1	130.1	105.72	6,883.5	539.5	343.2	91.1	252.10	1.361 Level 3	
12,400.0	5,918.0	12,576.5	6,011.0	133.0	132.0	105.72	6,983.5	539.5	343.2	87.4	255.79	1.342 Level 3	
12,500.0	5,918.0	12,676.5	6,011.0	134.9	133.9	105.72	7,083.5	539.5	343.2	83.7	259.49	1.323 Level 3	
12,600.0	5,918.0	12,776.5	6,011.0	136.8	135.8	105.72	7,183.5	539.5	343.2	80.0	263.18	1.304 Level 3	
12,700.0	5,918.0	12,876.5	6,011.0	138.7	137.7	105.72	7,283.5	539.5	343.2	76.3	266.87	1.286 Level 3	
12,800.0	5,918.0	12,976.5	6,011.0	140.6	139.6	105.72	7,383.5	539.5	343.2	72.6	270.57	1.268 Level 3	
12,900.0	5,918.0	13,076.5	6,011.0	142.6	141.5	105.72	7,483.5	539.5	343.2	68.9	274.27	1.251 Level 3	
13,000.0	5,918.0	13,176.5	6,011.0	144.5	143.4	105.72	7,583.5	539.5	343.2	65.2	277.96	1.235 Level 2	
13,100.0	5,918.0	13,276.5	6,011.0	146.4	145.3	105.72	7,683.5	539.5	343.2	61.5	281.66	1.218 Level 2	
13,200.0	5,918.0	13,376.5	6,011.0	148.3	147.2	105.72	7,783.5	539.5	343.2	57.8	285.36	1.203 Level 2	
13,300.0	5,918.0	13,476.5	6,011.0	150.2	149.1	105.72	7,883.5	539.5	343.2	54.1	289.06	1.187 Level 2	
13,400.0	5,918.0	13,576.5	6,011.0	152.1	151.0	105.72	7,983.5	539.5	343.2	50.4	292.76	1.172 Level 2	
13,500.0	5,918.0	13,676.5	6,011.0	154.0	152.9	105.72	8,083.5	539.5	343.2	46.7	296.46	1.158 Level 2	
13,600.0	5,918.0	13,776.5	6,011.0	155.9	154.8	105.72	8,183.5	539.5	343.2	43.0	300.16	1.143 Level 2	
13,668.2	5,918.0	13,844.8	6,011.0	157.2	156.1	105.72	8,251.7	539.5	343.2	40.5	302.68	1.134 Level 2	
13,695.0	5,918.0	13,870.6	6,011.0	157.8	156.6	105.72	8,277.5	539.5	343.2	39.5	303.65	1.130 Level 2, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2809A - 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	89.24	1.1	82.2	82.2					
100.0	100.0	99.5	99.5	0.1	0.1	89.24	1.1	82.2	82.2	82.0	0.19	440.399		
200.0	200.0	199.5	199.5	0.3	0.3	89.24	1.1	82.2	82.2	81.6	0.64	129.342		
300.0	300.0	299.5	299.5	0.5	0.5	89.24	1.1	82.2	82.2	81.1	1.09	75.756		
400.0	400.0	399.5	399.5	0.8	0.8	89.24	1.1	82.2	82.2	80.7	1.53	53.565		
500.0	500.0	499.5	499.5	1.0	1.0	89.24	1.1	82.2	82.2	80.2	1.98	41.429		
600.0	600.0	599.5	599.5	1.2	1.2	89.24	1.1	82.2	82.2	79.8	2.43	33.776		
700.0	700.0	699.5	699.5	1.4	1.4	89.24	1.1	82.2	82.2	79.3	2.88	28.510		
800.0	800.0	799.5	799.5	1.7	1.7	89.24	1.1	82.2	82.2	78.9	3.33	24.665		
900.0	900.0	899.5	899.5	1.9	1.9	89.24	1.1	82.2	82.2	78.4	3.78	21.733		
1,000.0	1,000.0	999.5	999.5	2.1	2.1	78.68	1.1	82.2	81.8	77.6	4.23	19.345		
1,100.0	1,099.8	1,099.3	1,099.3	2.3	2.3	82.33	1.1	82.2	81.0	76.3	4.68	17.306		
1,200.0	1,199.6	1,199.1	1,199.1	2.6	2.6	87.25	1.1	82.2	80.3	75.2	5.13	15.654		
1,255.3	1,254.8	1,254.3	1,254.3	2.7	2.7	90.00	1.1	82.2	80.2	74.9	5.39	14.901 CC		
1,300.0	1,299.4	1,298.9	1,298.9	2.8	2.8	92.22	1.1	82.2	80.3	74.7	5.59	14.366 ES		
1,400.0	1,399.1	1,398.6	1,398.6	3.0	3.0	97.15	1.1	82.2	80.9	74.8	6.05	13.365		
1,500.0	1,498.9	1,498.4	1,498.4	3.3	3.2	101.98	1.1	82.2	82.0	75.5	6.51	12.593		
1,600.0	1,598.6	1,597.4	1,597.4	3.5	3.4	107.70	-0.5	81.8	84.2	77.2	6.95	12.113		
1,700.0	1,698.4	1,695.8	1,695.6	3.8	3.6	115.12	-5.4	80.5	88.4	81.0	7.36	12.008 SF		
1,800.0	1,798.1	1,794.7	1,794.3	4.0	3.8	122.79	-12.0	78.7	94.8	87.0	7.77	12.199		
1,900.0	1,897.9	1,893.8	1,893.1	4.3	4.0	129.40	-18.7	76.9	102.7	94.6	8.19	12.548		
2,000.0	1,997.6	1,992.8	1,991.9	4.5	4.2	135.01	-25.4	75.1	111.9	103.3	8.61	12.995		
2,100.0	2,097.4	2,091.8	2,090.7	4.8	4.4	139.75	-32.1	73.3	121.9	112.9	9.03	13.499		
2,200.0	2,197.2	2,190.8	2,189.5	5.0	4.6	143.75	-38.7	71.6	132.6	123.2	9.45	14.030		
2,300.0	2,296.9	2,289.9	2,288.3	5.3	4.8	147.14	-45.4	69.8	143.9	134.0	9.88	14.568		
2,400.0	2,396.7	2,388.9	2,387.1	5.5	5.0	150.03	-52.1	68.0	155.6	145.3	10.30	15.101		
2,500.0	2,496.4	2,487.9	2,485.8	5.8	5.2	152.52	-58.7	66.2	167.6	156.9	10.73	15.621		
2,600.0	2,596.2	2,587.0	2,584.6	6.0	5.5	154.67	-65.4	64.4	179.9	168.8	11.16	16.122		
2,700.0	2,695.9	2,686.0	2,683.4	6.3	5.7	156.54	-72.1	62.6	192.5	180.9	11.59	16.603		
2,800.0	2,795.7	2,785.0	2,782.2	6.5	5.9	158.18	-78.8	60.9	205.2	193.2	12.03	17.062		
2,900.0	2,895.5	2,884.0	2,881.0	6.8	6.2	159.63	-85.4	59.1	218.0	205.6	12.46	17.499		
3,000.0	2,995.2	2,983.1	2,979.8	7.0	6.4	160.92	-92.1	57.3	231.0	218.1	12.90	17.914		
3,100.0	3,095.0	3,082.1	3,078.6	7.3	6.6	162.08	-98.8	55.5	244.1	230.8	13.33	18.308		
3,200.0	3,194.7	3,181.1	3,177.4	7.5	6.9	163.11	-105.5	53.7	257.3	243.5	13.77	18.682		
3,300.0	3,294.5	3,280.1	3,276.1	7.8	7.1	164.05	-112.1	51.9	270.5	256.3	14.21	19.037		
3,400.0	3,394.2	3,379.2	3,374.9	8.0	7.4	164.89	-118.8	50.2	283.8	269.2	14.65	19.373		
3,500.0	3,494.0	3,478.2	3,473.7	8.3	7.6	165.66	-125.5	48.4	297.2	282.1	15.09	19.693		
3,600.0	3,593.7	3,577.2	3,572.5	8.5	7.9	166.37	-132.2	46.6	310.6	295.0	15.53	19.996		
3,700.0	3,693.5	3,676.3	3,671.3	8.8	8.1	167.01	-138.8	44.8	324.0	308.1	15.97	20.284		
3,800.0	3,793.3	3,775.3	3,770.1	9.1	8.3	167.61	-145.5	43.0	337.5	321.1	16.42	20.558		
3,900.0	3,893.0	3,874.3	3,868.9	9.3	8.6	168.16	-152.2	41.3	351.0	334.2	16.86	20.819		
4,000.0	3,992.8	3,973.3	3,967.6	9.6	8.8	168.67	-158.9	39.5	364.6	347.3	17.31	21.067		
4,100.0	4,092.5	4,072.4	4,066.4	9.8	9.1	169.14	-165.5	37.7	378.2	360.4	17.75	21.304		
4,200.0	4,192.3	4,171.4	4,165.2	10.1	9.3	169.58	-172.2	35.9	391.8	373.6	18.20	21.530		
4,300.0	4,292.0	4,270.4	4,264.0	10.3	9.6	169.99	-178.9	34.1	405.4	386.7	18.64	21.745		
4,400.0	4,391.8	4,369.5	4,362.8	10.6	9.8	170.37	-185.6	32.3	419.0	399.9	19.09	21.951		
4,500.0	4,491.6	4,468.5	4,461.6	10.8	10.1	170.73	-192.2	30.6	432.7	413.2	19.54	22.148		
4,600.0	4,591.3	4,567.5	4,560.4	11.1	10.4	171.06	-198.9	28.8	446.4	426.4	19.98	22.336		
4,700.0	4,691.1	4,666.5	4,659.1	11.3	10.6	171.38	-205.6	27.0	460.1	439.6	20.43	22.517		
4,800.0	4,790.8	4,765.6	4,757.9	11.6	10.9	171.68	-212.2	25.2	473.8	452.9	20.88	22.690		
4,900.0	4,890.6	4,864.6	4,856.7	11.9	11.1	171.96	-218.9	23.4	487.5	466.1	21.33	22.855		
5,000.0	4,990.3	4,963.6	4,955.5	12.1	11.4	172.23	-225.6	21.6	501.2	479.4	21.78	23.015		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2809A - 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	
5,100.0	5,090.1	5,062.6	5,054.3	12.4	11.6	172.48	-232.3	19.9	514.9	492.7	22.23	23.167	
5,200.0	5,189.9	5,161.7	5,153.1	12.6	11.9	172.72	-238.9	18.1	528.7	506.0	22.68	23.314	
5,300.0	5,289.6	5,260.7	5,251.9	12.9	12.1	172.95	-245.6	16.3	542.4	519.3	23.13	23.456	
5,400.0	5,389.4	5,338.0	5,329.0	13.1	12.3	173.12	-251.2	14.8	557.0	533.5	23.53	23.673	
5,500.0	5,488.8	5,384.6	5,375.0	13.4	12.5	173.09	-258.1	13.0	581.8	558.2	23.61	24.644	
5,600.0	5,585.0	5,425.2	5,414.4	13.8	12.7	172.65	-267.4	10.5	630.2	607.4	22.88	27.545	
5,700.0	5,674.2	5,450.0	5,438.1	14.4	12.8	171.49	-274.5	8.6	699.5	678.1	21.41	32.675	
5,800.0	5,753.3	5,478.7	5,465.0	15.1	12.9	169.17	-284.0	6.0	783.9	764.5	19.42	40.364	
5,900.0	5,819.3	5,500.0	5,484.7	16.1	13.0	162.73	-292.0	3.9	878.1	860.3	17.75	49.456	
6,000.0	5,869.7	5,500.0	5,484.7	17.2	13.0	113.61	-292.0	3.9	976.8	948.6	28.25	34.575	
6,100.0	5,902.8	5,500.0	5,484.7	18.4	13.0	20.61	-292.0	3.9	1,076.3	1,061.8	14.49	74.285	
6,200.0	5,917.3	5,500.0	5,484.7	19.8	13.0	9.52	-292.0	3.9	1,173.1	1,163.4	9.67	121.356	
6,300.0	5,918.0	5,474.3	5,461.0	21.2	12.9	2.46	-282.5	6.5	1,265.8	1,257.3	8.48	149.278	
6,400.0	5,918.0	5,450.0	5,438.1	22.6	12.8	-5.20	-274.5	8.6	1,359.7	1,350.2	9.44	144.109	
6,500.0	5,918.0	5,450.0	5,438.1	24.0	12.8	-13.23	-274.5	8.6	1,453.5	1,441.1	12.43	116.977	
6,600.0	5,918.0	5,450.0	5,438.1	25.5	12.8	-21.29	-274.5	8.6	1,547.7	1,531.2	16.57	93.394	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2810B - 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	123.04	-75.1	115.4	137.7					
100.0	100.0	99.5	99.5	0.1	0.1	123.04	-75.1	115.4	137.7	137.5	0.19	737.533		
200.0	200.0	199.5	199.5	0.3	0.3	123.04	-75.1	115.4	137.7	137.0	0.64	216.607		
300.0	300.0	299.5	299.5	0.5	0.5	123.04	-75.1	115.4	137.7	136.6	1.09	126.868		
400.0	400.0	399.5	399.5	0.8	0.8	123.04	-75.1	115.4	137.7	136.1	1.53	89.704		
500.0	500.0	499.5	499.5	1.0	1.0	123.04	-75.1	115.4	137.7	135.7	1.98	69.381		
600.0	600.0	599.5	599.5	1.2	1.2	123.04	-75.1	115.4	137.7	135.2	2.43	56.565		
700.0	700.0	699.5	699.5	1.4	1.4	123.04	-75.1	115.4	137.7	134.8	2.88	47.746	CC, ES	
800.0	800.0	796.8	796.8	1.7	1.6	123.59	-76.7	115.5	138.6	135.3	3.30	42.023		
900.0	900.0	893.8	893.7	1.9	1.8	125.20	-81.6	115.7	141.7	138.0	3.70	38.291		
1,000.0	1,000.0	993.2	992.9	2.1	2.0	116.13	-88.5	115.9	146.8	142.7	4.12	35.632		
1,100.0	1,099.8	1,092.5	1,091.9	2.3	2.2	119.72	-95.4	116.2	153.9	149.4	4.55	33.855		
1,200.0	1,199.6	1,191.5	1,190.7	2.6	2.4	123.61	-102.3	116.5	162.6	157.6	4.98	32.645		
1,300.0	1,299.4	1,290.6	1,289.5	2.8	2.7	127.08	-109.2	116.7	172.0	166.5	5.42	31.717		
1,400.0	1,399.1	1,389.6	1,388.3	3.0	2.9	130.20	-116.2	117.0	181.9	176.0	5.87	31.006		
1,500.0	1,498.9	1,488.7	1,487.1	3.3	3.1	132.98	-123.1	117.3	192.3	186.0	6.31	30.461		
1,600.0	1,598.6	1,587.7	1,585.9	3.5	3.4	135.48	-130.0	117.6	203.1	196.4	6.76	30.043		
1,700.0	1,698.4	1,686.8	1,684.7	3.8	3.6	137.72	-136.9	117.8	214.3	207.1	7.21	29.721		
1,800.0	1,798.1	1,785.8	1,783.5	4.0	3.9	139.74	-143.8	118.1	225.7	218.1	7.66	29.474		
1,900.0	1,897.9	1,884.8	1,882.3	4.3	4.1	141.56	-150.7	118.4	237.4	229.3	8.11	29.285		
2,000.0	1,997.6	1,983.9	1,981.1	4.5	4.4	143.21	-157.6	118.6	249.4	240.8	8.56	29.139		
2,100.0	2,097.4	2,082.9	2,079.9	4.8	4.6	144.71	-164.5	118.9	261.5	252.5	9.01	29.029		
2,200.0	2,197.2	2,182.0	2,178.7	5.0	4.9	146.08	-171.4	119.2	273.7	264.3	9.46	28.945		
2,300.0	2,296.9	2,281.0	2,277.5	5.3	5.1	147.33	-178.3	119.5	286.2	276.2	9.91	28.883		
2,400.0	2,396.7	2,380.0	2,376.3	5.5	5.4	148.48	-185.2	119.7	298.7	288.3	10.36	28.837		
2,500.0	2,496.4	2,479.1	2,475.1	5.8	5.6	149.53	-192.1	120.0	311.3	300.5	10.81	28.805		
2,600.0	2,596.2	2,578.1	2,573.9	6.0	5.9	150.50	-199.0	120.3	324.1	312.8	11.26	28.783		
2,700.0	2,695.9	2,677.2	2,672.7	6.3	6.1	151.40	-205.9	120.5	336.9	325.2	11.71	28.769		
2,800.0	2,795.7	2,776.2	2,771.5	6.5	6.4	152.23	-212.8	120.8	349.8	337.6	12.16	28.763		
2,900.0	2,895.5	2,875.3	2,870.3	6.8	6.7	153.00	-219.7	121.1	362.8	350.1	12.61	28.762	SF	
3,000.0	2,995.2	2,974.3	2,969.1	7.0	6.9	153.72	-226.6	121.3	375.8	362.7	13.06	28.765		
3,100.0	3,095.0	3,073.3	3,067.9	7.3	7.2	154.39	-233.5	121.6	388.9	375.3	13.52	28.771		
3,200.0	3,194.7	3,172.4	3,166.7	7.5	7.4	155.02	-240.4	121.9	402.0	388.0	13.97	28.780		
3,300.0	3,294.5	3,271.4	3,265.5	7.8	7.7	155.61	-247.3	122.2	415.2	400.7	14.42	28.791		
3,400.0	3,394.2	3,370.5	3,364.3	8.0	7.9	156.16	-254.2	122.4	428.4	413.5	14.87	28.804		
3,500.0	3,494.0	3,469.5	3,463.1	8.3	8.2	156.68	-261.1	122.7	441.6	426.3	15.32	28.818		
3,600.0	3,593.7	3,568.5	3,561.9	8.5	8.5	157.16	-268.0	123.0	454.9	439.1	15.78	28.833		
3,700.0	3,693.5	3,667.6	3,660.7	8.8	8.7	157.63	-274.9	123.2	468.2	452.0	16.23	28.849		
3,800.0	3,793.3	3,766.6	3,759.5	9.1	9.0	158.06	-281.8	123.5	481.6	464.9	16.68	28.866		
3,900.0	3,893.0	3,865.7	3,858.3	9.3	9.2	158.47	-288.7	123.8	494.9	477.8	17.14	28.883		
4,000.0	3,992.8	3,964.7	3,957.1	9.6	9.5	158.86	-295.6	124.1	508.3	490.7	17.59	28.900		
4,100.0	4,092.5	4,063.7	4,055.9	9.8	9.8	159.23	-302.5	124.3	521.7	503.7	18.04	28.917		
4,200.0	4,192.3	4,162.8	4,154.7	10.1	10.0	159.58	-309.4	124.6	535.2	516.7	18.50	28.934		
4,300.0	4,292.0	4,261.8	4,253.5	10.3	10.3	159.92	-316.4	124.9	548.6	529.7	18.95	28.952		
4,400.0	4,391.8	4,360.9	4,352.3	10.6	10.5	160.24	-323.3	125.1	562.1	542.7	19.40	28.969		
4,500.0	4,491.6	4,459.9	4,451.1	10.8	10.8	160.54	-330.2	125.4	575.6	555.7	19.86	28.986		
4,600.0	4,591.3	4,559.0	4,549.9	11.1	11.1	160.83	-337.1	125.7	589.1	568.8	20.31	29.003		
4,700.0	4,691.1	4,658.0	4,648.7	11.3	11.3	161.10	-344.0	125.9	602.6	581.8	20.77	29.019		
4,800.0	4,790.8	4,757.0	4,747.5	11.6	11.6	161.37	-350.9	126.2	616.1	594.9	21.22	29.036		
4,900.0	4,890.6	4,856.1	4,846.3	11.9	11.9	161.62	-357.8	126.5	629.7	608.0	21.67	29.052		
5,000.0	4,990.3	4,955.1	4,945.1	12.1	12.1	161.86	-364.7	126.8	643.2	621.1	22.13	29.068		
5,100.0	5,090.1	5,054.2	5,043.9	12.4	12.4	162.10	-371.6	127.0	656.8	634.2	22.58	29.084		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2810B - 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	5,189.9	5,153.2	5,142.7	12.6	12.6	162.32	-378.5	127.3	670.4	647.3	23.04	29.099		
5,300.0	5,289.6	5,252.2	5,241.5	12.9	12.9	162.53	-385.4	127.6	684.0	660.5	23.49	29.114		
5,400.0	5,389.4	5,351.3	5,340.3	13.1	13.2	162.74	-392.3	127.8	697.6	673.6	23.95	29.129		
5,500.0	5,488.8	5,423.7	5,412.5	13.4	13.4	162.54	-397.7	128.1	714.8	690.7	24.08	29.680		
5,600.0	5,585.0	5,450.0	5,438.5	13.8	13.4	161.24	-401.1	128.2	754.3	730.9	23.40	32.233		
5,700.0	5,674.2	5,500.0	5,487.5	14.4	13.6	159.09	-411.3	128.6	814.8	792.6	22.26	36.612		
5,800.0	5,753.3	5,516.1	5,503.0	15.1	13.7	154.16	-415.6	128.8	892.2	871.1	21.08	42.319		
5,900.0	5,819.3	5,531.0	5,517.2	16.1	13.8	143.71	-419.9	128.9	981.2	959.5	21.65	45.309		
6,000.0	5,869.7	5,550.0	5,535.2	17.2	13.9	118.96	-426.1	129.2	1,077.0	1,049.4	27.62	38.999		
6,100.0	5,902.8	5,550.0	5,535.2	18.4	13.9	66.23	-426.1	129.2	1,175.1	1,145.2	29.87	39.346		
6,200.0	5,917.3	5,550.0	5,535.2	19.8	13.9	33.55	-426.1	129.2	1,272.0	1,252.0	19.91	63.874		
6,300.0	5,918.0	5,525.6	5,512.2	21.2	13.7	21.88	-418.3	128.9	1,365.9	1,350.6	15.32	89.171		
6,400.0	5,918.0	5,500.0	5,487.5	22.6	13.6	11.97	-411.3	128.6	1,461.6	1,449.9	11.72	124.757		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2811A - 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	89.59	1.1	148.3	148.3					
100.0	100.0	99.5	99.5	0.1	0.1	89.59	1.1	148.3	148.3	148.2	0.19	794.745		
200.0	200.0	199.5	199.5	0.3	0.3	89.59	1.1	148.3	148.3	147.7	0.64	233.410		
300.0	300.0	299.5	299.5	0.5	0.5	89.59	1.1	148.3	148.3	147.3	1.09	136.710		
400.0	400.0	399.5	399.5	0.8	0.8	89.59	1.1	148.3	148.3	146.8	1.53	96.663		
500.0	500.0	499.5	499.5	1.0	1.0	89.59	1.1	148.3	148.3	146.4	1.98	74.763 CC, ES		
600.0	600.0	598.0	598.0	1.2	1.2	90.21	-0.5	148.8	148.8	146.4	2.40	61.904		
700.0	700.0	696.3	696.2	1.4	1.4	92.05	-5.4	150.3	150.4	147.6	2.81	53.444		
800.0	800.0	796.0	795.6	1.7	1.6	94.52	-12.0	152.3	152.8	149.5	3.25	47.050		
900.0	900.0	895.8	895.1	1.9	1.8	96.91	-18.7	154.3	155.5	151.8	3.69	42.077		
1,000.0	1,000.0	995.4	994.5	2.1	2.0	88.03	-25.3	156.3	158.3	154.2	4.14	38.248		
1,100.0	1,099.8	1,094.7	1,093.6	2.3	2.3	92.00	-32.0	158.2	161.7	157.1	4.59	35.213		
1,200.0	1,199.6	1,193.8	1,192.4	2.6	2.5	96.44	-38.6	160.2	166.0	160.9	5.05	32.885		
1,300.0	1,299.4	1,292.9	1,291.3	2.8	2.8	100.64	-45.2	162.2	171.3	165.7	5.51	31.093		
1,400.0	1,399.1	1,392.0	1,390.1	3.0	3.0	104.57	-51.8	164.2	177.4	171.4	5.97	29.717		
1,500.0	1,498.9	1,491.1	1,489.0	3.3	3.3	108.22	-58.5	166.2	184.3	177.9	6.43	28.660		
1,600.0	1,598.6	1,590.1	1,587.8	3.5	3.5	111.60	-65.1	168.2	192.0	185.1	6.89	27.849		
1,700.0	1,698.4	1,689.2	1,686.7	3.8	3.8	114.71	-71.7	170.2	200.2	192.8	7.35	27.228		
1,800.0	1,798.1	1,788.3	1,785.5	4.0	4.0	117.58	-78.3	172.1	209.0	201.2	7.81	26.754		
1,900.0	1,897.9	1,887.4	1,884.3	4.3	4.3	120.20	-84.9	174.1	218.3	210.0	8.27	26.395		
2,000.0	1,997.6	1,986.5	1,983.2	4.5	4.5	122.61	-91.6	176.1	228.0	219.2	8.73	26.124		
2,100.0	2,097.4	2,085.6	2,082.0	4.8	4.8	124.83	-98.2	178.1	238.0	228.8	9.18	25.923		
2,200.0	2,197.2	2,184.7	2,180.9	5.0	5.1	126.86	-104.8	180.1	248.4	238.8	9.64	25.777		
2,300.0	2,296.9	2,283.7	2,279.7	5.3	5.3	128.73	-111.4	182.1	259.1	249.0	10.09	25.674		
2,400.0	2,396.7	2,382.8	2,378.6	5.5	5.6	130.44	-118.0	184.1	270.0	259.5	10.55	25.604		
2,500.0	2,496.4	2,481.9	2,477.4	5.8	5.8	132.03	-124.7	186.0	281.2	270.2	11.00	25.561		
2,600.0	2,596.2	2,581.0	2,576.2	6.0	6.1	133.49	-131.3	188.0	292.5	281.1	11.45	25.539		
2,700.0	2,695.9	2,680.1	2,675.1	6.3	6.4	134.85	-137.9	190.0	304.1	292.1	11.91	25.533 SF		
2,800.0	2,795.7	2,779.2	2,773.9	6.5	6.6	136.10	-144.5	192.0	315.7	303.4	12.36	25.540		
2,900.0	2,895.5	2,878.3	2,872.8	6.8	6.9	137.27	-151.2	194.0	327.6	314.7	12.82	25.558		
3,000.0	2,995.2	2,977.3	2,971.6	7.0	7.1	138.35	-157.8	196.0	339.5	326.2	13.27	25.584		
3,100.0	3,095.0	3,076.4	3,070.5	7.3	7.4	139.36	-164.4	198.0	351.6	337.8	13.72	25.616		
3,200.0	3,194.7	3,175.5	3,169.3	7.5	7.7	140.30	-171.0	199.9	363.7	349.5	14.18	25.653		
3,300.0	3,294.5	3,274.6	3,268.2	7.8	7.9	141.18	-177.6	201.9	376.0	361.3	14.63	25.693		
3,400.0	3,394.2	3,373.7	3,367.0	8.0	8.2	142.01	-184.3	203.9	388.3	373.2	15.09	25.736		
3,500.0	3,494.0	3,472.8	3,465.8	8.3	8.4	142.79	-190.9	205.9	400.7	385.2	15.54	25.782		
3,600.0	3,593.7	3,571.8	3,564.7	8.5	8.7	143.51	-197.5	207.9	413.2	397.2	16.00	25.828		
3,700.0	3,693.5	3,670.9	3,663.5	8.8	9.0	144.20	-204.1	209.9	425.7	409.3	16.45	25.876		
3,800.0	3,793.3	3,770.0	3,762.4	9.1	9.2	144.85	-210.7	211.9	438.3	421.4	16.91	25.924		
3,900.0	3,893.0	3,869.1	3,861.2	9.3	9.5	145.46	-217.4	213.8	451.0	433.6	17.36	25.973		
4,000.0	3,992.8	3,968.2	3,960.1	9.6	9.7	146.04	-224.0	215.8	463.6	445.8	17.82	26.021		
4,100.0	4,092.5	4,067.3	4,058.9	9.8	10.0	146.58	-230.6	217.8	476.4	458.1	18.27	26.069		
4,200.0	4,192.3	4,166.4	4,157.8	10.1	10.3	147.10	-237.2	219.8	489.2	470.4	18.73	26.117		
4,300.0	4,292.0	4,265.4	4,256.6	10.3	10.5	147.59	-243.8	221.8	502.0	482.8	19.19	26.164		
4,400.0	4,391.8	4,364.5	4,355.4	10.6	10.8	148.06	-250.5	223.8	514.8	495.2	19.64	26.211		
4,500.0	4,491.6	4,463.6	4,454.3	10.8	11.0	148.50	-257.1	225.8	527.7	507.6	20.10	26.257		
4,600.0	4,591.3	4,562.7	4,553.1	11.1	11.3	148.93	-263.7	227.7	540.6	520.1	20.55	26.302		
4,700.0	4,691.1	4,661.8	4,652.0	11.3	11.6	149.33	-270.3	229.7	553.6	532.5	21.01	26.346		
4,800.0	4,790.8	4,760.9	4,750.8	11.6	11.8	149.72	-276.9	231.7	566.5	545.1	21.47	26.390		
4,900.0	4,890.6	4,860.0	4,849.7	11.9	12.1	150.09	-283.6	233.7	579.5	557.6	21.92	26.433		
5,000.0	4,990.3	4,959.0	4,948.5	12.1	12.4	150.44	-290.2	235.7	592.5	570.1	22.38	26.474		
5,100.0	5,090.1	5,058.1	5,047.4	12.4	12.6	150.77	-296.8	237.7	605.6	582.7	22.84	26.515		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2811A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA 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	5,189.9	5,157.2	5,146.2	12.6	12.9	151.10	-303.4	239.7	618.6	595.3	23.29	26.556		
5,300.0	5,289.6	5,256.3	5,245.0	12.9	13.1	151.41	-310.0	241.6	631.7	607.9	23.75	26.595		
5,400.0	5,389.4	5,335.8	5,324.3	13.1	13.4	151.64	-315.6	243.3	645.3	621.1	24.17	26.702		
5,500.0	5,488.8	5,378.8	5,366.9	13.4	13.5	151.01	-321.4	245.1	668.1	643.8	24.29	27.498		
5,600.0	5,585.0	5,416.9	5,404.1	13.8	13.7	148.73	-329.3	247.4	712.4	688.5	23.89	29.816		
5,700.0	5,674.2	5,450.0	5,435.8	14.4	13.8	144.49	-338.3	250.1	776.2	752.8	23.35	33.245		
5,800.0	5,753.3	5,469.9	5,454.5	15.1	13.9	136.41	-344.7	252.0	854.7	831.2	23.58	36.247		
5,900.0	5,819.3	5,483.7	5,467.4	16.1	14.0	121.11	-349.5	253.5	943.2	916.9	26.27	35.907		
6,000.0	5,869.7	5,500.0	5,482.4	17.2	14.1	95.36	-355.5	255.3	1,037.1	1,006.5	30.65	33.837		
6,100.0	5,902.8	5,500.0	5,482.4	18.4	14.1	62.49	-355.5	255.3	1,132.3	1,103.1	29.15	38.839		
6,200.0	5,917.3	5,500.0	5,482.4	19.8	14.1	40.38	-355.5	255.3	1,225.6	1,202.7	22.85	53.647		
6,300.0	5,918.0	5,474.0	5,458.4	21.2	13.9	30.71	-346.1	252.5	1,315.7	1,296.2	19.45	67.630		
6,400.0	5,918.0	5,450.0	5,435.8	22.6	13.8	22.91	-338.3	250.1	1,408.3	1,391.7	16.61	84.799		
6,500.0	5,918.0	5,450.0	5,435.8	24.0	13.8	15.35	-338.3	250.1	1,501.9	1,488.1	13.88	108.208		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2812B - 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		
0.0	0.0	0.0	0.0	0.0	0.0	112.46	-75.0	181.5	196.4					
100.0	100.0	99.5	99.5	0.1	0.1	112.46	-75.0	181.5	196.4	196.3	0.19	1,052.485		
200.0	200.0	199.5	199.5	0.3	0.3	112.46	-75.0	181.5	196.4	195.8	0.64	309.106		
300.0	300.0	299.5	299.5	0.5	0.5	112.46	-75.0	181.5	196.4	195.4	1.09	181.046		
400.0	400.0	399.5	399.5	0.8	0.8	112.46	-75.0	181.5	196.4	194.9	1.53	128.011		
500.0	500.0	499.5	499.5	1.0	1.0	112.46	-75.0	181.5	196.4	194.5	1.98	99.009		
600.0	600.0	599.5	599.5	1.2	1.2	112.46	-75.0	181.5	196.4	194.0	2.43	80.720		
700.0	700.0	699.5	699.5	1.4	1.4	112.46	-75.0	181.5	196.4	193.6	2.88	68.135		
800.0	800.0	799.5	799.5	1.7	1.7	112.46	-75.0	181.5	196.4	193.1	3.33	58.944		
900.0	900.0	899.5	899.5	1.9	1.9	112.46	-75.0	181.5	196.4	192.7	3.78	51.939 CC, ES		
1,000.0	1,000.0	994.4	994.4	2.1	2.1	101.43	-76.4	182.3	198.1	193.9	4.19	47.221		
1,100.0	1,099.8	1,088.7	1,088.6	2.3	2.3	103.52	-80.5	184.5	203.1	198.5	4.59	44.239		
1,200.0	1,199.6	1,187.2	1,186.8	2.6	2.4	106.45	-86.6	187.7	210.6	205.6	5.01	42.063		
1,300.0	1,299.4	1,286.3	1,285.7	2.8	2.6	109.20	-92.7	191.0	218.7	213.3	5.43	40.246		
1,400.0	1,399.1	1,385.5	1,384.6	3.0	2.9	111.75	-98.8	194.2	227.2	221.4	5.87	38.720		
1,500.0	1,498.9	1,484.6	1,483.5	3.3	3.1	114.11	-104.9	197.5	236.2	229.9	6.31	37.436		
1,600.0	1,598.6	1,583.8	1,582.4	3.5	3.3	116.29	-111.0	200.7	245.5	238.8	6.75	36.352		
1,700.0	1,698.4	1,682.9	1,681.3	3.8	3.5	118.32	-117.1	204.0	255.2	248.0	7.20	35.434		
1,800.0	1,798.1	1,782.0	1,780.2	4.0	3.8	120.19	-123.2	207.3	265.1	257.5	7.65	34.651		
1,900.0	1,897.9	1,881.2	1,879.1	4.3	4.0	121.93	-129.3	210.5	275.3	267.2	8.10	33.983		
2,000.0	1,997.6	1,980.3	1,978.0	4.5	4.3	123.54	-135.4	213.8	285.8	277.2	8.55	33.407		
2,100.0	2,097.4	2,079.5	2,076.9	4.8	4.5	125.04	-141.5	217.0	296.4	287.4	9.01	32.910		
2,200.0	2,197.2	2,178.6	2,175.8	5.0	4.8	126.44	-147.6	220.3	307.3	297.8	9.46	32.478		
2,300.0	2,296.9	2,277.7	2,274.7	5.3	5.0	127.74	-153.7	223.5	318.3	308.4	9.92	32.100		
2,400.0	2,396.7	2,376.9	2,373.6	5.5	5.2	128.95	-159.8	226.8	329.5	319.1	10.37	31.769		
2,500.0	2,496.4	2,476.0	2,472.5	5.8	5.5	130.09	-165.9	230.1	340.8	329.9	10.83	31.477		
2,600.0	2,596.2	2,575.2	2,571.4	6.0	5.8	131.15	-172.0	233.3	352.2	340.9	11.28	31.219		
2,700.0	2,695.9	2,674.3	2,670.3	6.3	6.0	132.14	-178.1	236.6	363.7	352.0	11.74	30.990		
2,800.0	2,795.7	2,773.4	2,769.2	6.5	6.3	133.07	-184.2	239.8	375.4	363.2	12.19	30.785		
2,900.0	2,895.5	2,872.6	2,868.1	6.8	6.5	133.95	-190.3	243.1	387.1	374.4	12.65	30.602		
3,000.0	2,995.2	2,971.7	2,967.0	7.0	6.8	134.77	-196.4	246.4	398.9	385.8	13.11	30.438		
3,100.0	3,095.0	3,070.9	3,065.9	7.3	7.0	135.55	-202.5	249.6	410.8	397.2	13.56	30.289		
3,200.0	3,194.7	3,170.0	3,164.8	7.5	7.3	136.28	-208.6	252.9	422.8	408.7	14.02	30.155		
3,300.0	3,294.5	3,269.1	3,263.7	7.8	7.5	136.98	-214.7	256.1	434.8	420.3	14.48	30.034		
3,400.0	3,394.2	3,368.3	3,362.6	8.0	7.8	137.63	-220.8	259.4	446.9	431.9	14.93	29.923		
3,500.0	3,494.0	3,467.4	3,461.5	8.3	8.0	138.26	-226.9	262.7	459.0	443.6	15.39	29.823		
3,600.0	3,593.7	3,566.6	3,560.4	8.5	8.3	138.85	-233.0	265.9	471.2	455.4	15.85	29.731		
3,700.0	3,693.5	3,665.7	3,659.3	8.8	8.6	139.40	-239.1	269.2	483.5	467.2	16.31	29.646		
3,800.0	3,793.3	3,764.8	3,758.2	9.1	8.8	139.94	-245.2	272.4	495.7	479.0	16.77	29.569		
3,900.0	3,893.0	3,864.0	3,857.1	9.3	9.1	140.44	-251.3	275.7	508.1	490.8	17.22	29.498		
4,000.0	3,992.8	3,963.1	3,956.0	9.6	9.3	140.93	-257.4	279.0	520.4	502.7	17.68	29.432		
4,100.0	4,092.5	4,062.3	4,054.9	9.8	9.6	141.39	-263.5	282.2	532.8	514.7	18.14	29.371		
4,200.0	4,192.3	4,161.4	4,153.8	10.1	9.9	141.82	-269.6	285.5	545.2	526.6	18.60	29.315		
4,300.0	4,292.0	4,260.5	4,252.7	10.3	10.1	142.24	-275.7	288.7	557.7	538.6	19.06	29.262		
4,400.0	4,391.8	4,359.7	4,351.6	10.6	10.4	142.65	-281.8	292.0	570.2	550.7	19.52	29.214		
4,500.0	4,491.6	4,458.8	4,450.5	10.8	10.6	143.03	-287.9	295.2	582.7	562.7	19.98	29.169		
4,600.0	4,591.3	4,558.0	4,549.4	11.1	10.9	143.40	-294.0	298.5	595.2	574.8	20.44	29.127		
4,700.0	4,691.1	4,657.1	4,648.3	11.3	11.2	143.75	-300.1	301.8	607.8	586.9	20.90	29.087		
4,800.0	4,790.8	4,756.2	4,747.2	11.6	11.4	144.09	-306.2	305.0	620.4	599.0	21.36	29.051		
4,900.0	4,890.6	4,855.4	4,846.1	11.9	11.7	144.41	-312.3	308.3	633.0	611.2	21.81	29.016		
5,000.0	4,990.3	4,954.5	4,945.0	12.1	11.9	144.73	-318.4	311.5	645.6	623.3	22.27	28.984		
5,100.0	5,090.1	5,053.7	5,043.9	12.4	12.2	145.03	-324.5	314.8	658.2	635.5	22.73	28.954		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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-2812B - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISWWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,189.9	5,152.8	5,142.8	12.6	12.5	145.32	-330.6	318.1	670.9	647.7	23.19	28.925	
5,300.0	5,289.6	5,251.9	5,241.7	12.9	12.7	145.59	-336.7	321.3	683.6	659.9	23.65	28.898	
5,400.0	5,389.4	5,351.1	5,340.6	13.1	13.0	145.86	-342.8	324.6	696.3	672.2	24.11	28.873 SF	
5,500.0	5,488.8	5,423.4	5,412.7	13.4	13.2	145.45	-347.5	327.1	712.3	687.9	24.33	29.277	
5,600.0	5,585.0	5,450.0	5,439.0	13.8	13.3	143.21	-350.6	328.8	748.6	724.6	24.00	31.187	
5,700.0	5,674.2	5,500.0	5,488.0	14.4	13.4	139.66	-359.6	333.6	804.3	780.7	23.63	34.044	
5,800.0	5,753.3	5,519.0	5,506.3	15.1	13.5	132.53	-364.1	336.0	876.0	852.1	23.88	36.688	
5,900.0	5,819.3	5,550.0	5,535.7	16.1	13.7	121.51	-372.7	340.6	959.3	933.5	25.76	37.239	
6,000.0	5,869.7	5,550.0	5,535.7	17.2	13.7	100.84	-372.7	340.6	1,048.8	1,019.2	29.63	35.402	
6,100.0	5,902.8	5,550.0	5,535.7	18.4	13.7	74.14	-372.7	340.6	1,141.4	1,110.8	30.63	37.264	
6,200.0	5,917.3	5,550.0	5,535.7	19.8	13.7	51.48	-372.7	340.6	1,233.3	1,206.8	26.51	46.516	
6,300.0	5,918.0	5,550.0	5,535.7	21.2	13.7	43.64	-372.7	340.6	1,323.8	1,299.1	24.76	53.464	
6,400.0	5,918.0	5,528.8	5,515.7	22.6	13.6	36.14	-366.7	337.4	1,416.2	1,393.6	22.61	62.627	
6,500.0	5,918.0	5,521.9	5,509.1	24.0	13.5	28.31	-364.9	336.4	1,510.6	1,490.7	19.93	75.808	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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		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	6.7	6.7	0.0	0.0	-91.12	-26.2	-1,342.2	1,342.5					
100.0	100.0	106.7	106.7	0.1	0.1	-91.12	-26.2	-1,342.2	1,342.5	1,342.3	0.20	6,658.881		
200.0	200.0	206.7	206.7	0.3	0.3	-91.12	-26.2	-1,342.2	1,342.5	1,341.8	0.65	2,061.718		
300.0	300.0	306.7	306.7	0.5	0.6	-91.12	-26.2	-1,342.2	1,342.5	1,341.4	1.10	1,219.677		
400.0	400.0	406.7	406.7	0.8	0.8	-91.12	-26.2	-1,342.2	1,342.5	1,340.9	1.55	865.991		
500.0	500.0	506.7	506.7	1.0	1.0	-91.12	-26.2	-1,342.2	1,342.5	1,340.5	2.00	671.320		
600.0	600.0	606.7	606.7	1.2	1.2	-91.12	-26.2	-1,342.2	1,342.5	1,340.0	2.45	548.107		
700.0	700.0	706.7	706.7	1.4	1.5	-91.12	-26.2	-1,342.2	1,342.5	1,339.6	2.90	463.109		
800.0	800.0	806.7	806.7	1.7	1.7	-91.12	-26.2	-1,342.2	1,342.5	1,339.1	3.35	400.934		
900.0	900.0	907.5	907.5	1.9	1.9	-91.12	-26.2	-1,342.2	1,342.5	1,338.7	3.80	353.323		
1,000.0	1,000.0	1,019.0	1,019.0	2.1	2.2	-102.85	-23.8	-1,341.7	1,342.4	1,338.1	4.27	314.207		
1,098.4	1,098.2	1,125.7	1,125.5	2.3	2.4	-102.82	-17.6	-1,340.4	1,342.2	1,337.5	4.73	283.651		
1,100.0	1,099.8	1,127.4	1,127.1	2.3	2.4	-102.82	-17.5	-1,340.4	1,342.2	1,337.5	4.74	283.208		
1,200.0	1,199.6	1,227.4	1,226.9	2.6	2.6	-102.82	-10.7	-1,339.0	1,342.2	1,337.0	5.20	258.236		
1,300.0	1,299.4	1,327.4	1,326.7	2.8	2.9	-102.82	-3.8	-1,337.6	1,342.2	1,336.6	5.66	236.941		
1,400.0	1,399.1	1,427.4	1,426.4	3.0	3.1	-102.82	3.0	-1,336.2	1,342.2	1,336.1	6.14	218.646		
1,500.0	1,498.9	1,527.4	1,526.2	3.3	3.3	-102.82	9.8	-1,334.8	1,342.3	1,335.6	6.62	202.810		
1,600.0	1,598.6	1,627.4	1,625.9	3.5	3.6	-102.82	16.7	-1,333.4	1,342.3	1,335.2	7.10	188.999		
1,700.0	1,698.4	1,727.4	1,725.7	3.8	3.8	-102.82	23.5	-1,332.0	1,342.3	1,334.7	7.59	176.869		
1,800.0	1,798.1	1,827.4	1,825.4	4.0	4.1	-102.82	30.3	-1,330.6	1,342.3	1,334.2	8.08	166.144		
1,900.0	1,897.9	1,927.4	1,925.2	4.3	4.3	-102.82	37.2	-1,329.1	1,342.3	1,333.7	8.57	156.602		
2,000.0	1,997.6	2,027.4	2,024.9	4.5	4.6	-102.82	44.0	-1,327.7	1,342.3	1,333.3	9.07	148.065		
2,100.0	2,097.4	2,127.4	2,124.7	4.8	4.8	-102.82	50.8	-1,326.3	1,342.3	1,332.8	9.56	140.386		
2,200.0	2,197.2	2,227.4	2,224.5	5.0	5.1	-102.82	57.7	-1,324.9	1,342.3	1,332.3	10.06	133.446		
2,300.0	2,296.9	2,327.4	2,324.2	5.3	5.3	-102.82	64.5	-1,323.5	1,342.4	1,331.8	10.56	127.145		
2,400.0	2,396.7	2,427.4	2,424.0	5.5	5.6	-102.82	71.3	-1,322.1	1,342.4	1,331.3	11.06	121.401		
2,500.0	2,496.4	2,527.4	2,523.7	5.8	5.8	-102.82	78.2	-1,320.7	1,342.4	1,330.8	11.56	116.145		
2,600.0	2,596.2	2,627.4	2,623.5	6.0	6.1	-102.82	85.0	-1,319.3	1,342.4	1,330.3	12.06	111.317		
2,700.0	2,695.9	2,727.4	2,723.2	6.3	6.3	-102.82	91.8	-1,317.9	1,342.4	1,329.9	12.56	106.869		
2,800.0	2,795.7	2,827.4	2,823.0	6.5	6.6	-102.82	98.7	-1,316.5	1,342.4	1,329.4	13.06	102.758		
2,900.0	2,895.5	2,927.4	2,922.8	6.8	6.8	-102.82	105.5	-1,315.1	1,342.4	1,328.9	13.57	98.948		
3,000.0	2,995.2	3,027.4	3,022.5	7.0	7.1	-102.82	112.3	-1,313.7	1,342.5	1,328.4	14.07	95.406		
3,100.0	3,095.0	3,127.4	3,122.3	7.3	7.3	-102.82	119.2	-1,312.3	1,342.5	1,327.9	14.58	92.107		
3,200.0	3,194.7	3,227.4	3,222.0	7.5	7.6	-102.82	126.0	-1,310.8	1,342.5	1,327.4	15.08	89.026		
3,300.0	3,294.5	3,327.4	3,321.8	7.8	7.8	-102.82	132.8	-1,309.4	1,342.5	1,326.9	15.58	86.142		
3,400.0	3,394.2	3,427.4	3,421.5	8.0	8.1	-102.82	139.7	-1,308.0	1,342.5	1,326.4	16.09	83.438		
3,500.0	3,494.0	3,527.4	3,521.3	8.3	8.4	-102.82	146.5	-1,306.6	1,342.5	1,325.9	16.60	80.897		
3,600.0	3,593.7	3,627.4	3,621.0	8.5	8.6	-102.81	153.3	-1,305.2	1,342.5	1,325.4	17.10	78.505		
3,700.0	3,693.5	3,727.4	3,720.8	8.8	8.9	-102.81	160.1	-1,303.8	1,342.5	1,324.9	17.61	76.250		
3,800.0	3,793.3	3,827.4	3,820.6	9.1	9.1	-102.81	167.0	-1,302.4	1,342.6	1,324.4	18.11	74.119		
3,900.0	3,893.0	3,927.4	3,920.3	9.3	9.4	-102.81	173.8	-1,301.0	1,342.6	1,323.9	18.62	72.104		
4,000.0	3,992.8	4,027.4	4,020.1	9.6	9.6	-102.81	180.6	-1,299.6	1,342.6	1,323.5	19.13	70.194		
4,100.0	4,092.5	4,127.4	4,119.8	9.8	9.9	-102.81	187.5	-1,298.2	1,342.6	1,323.0	19.63	68.383		
4,200.0	4,192.3	4,227.4	4,219.6	10.1	10.1	-102.81	194.3	-1,296.8	1,342.6	1,322.5	20.14	66.662		
4,300.0	4,292.0	4,327.4	4,319.3	10.3	10.4	-102.81	201.1	-1,295.4	1,342.6	1,322.0	20.65	65.025		
4,400.0	4,391.8	4,427.4	4,419.1	10.6	10.6	-102.81	208.0	-1,294.0	1,342.6	1,321.5	21.15	63.466		
4,500.0	4,491.6	4,527.4	4,518.9	10.8	10.9	-102.81	214.8	-1,292.5	1,342.6	1,321.0	21.66	61.980		
4,600.0	4,591.3	4,627.4	4,618.6	11.1	11.2	-102.81	221.6	-1,291.1	1,342.7	1,320.5	22.17	60.562		
4,700.0	4,691.1	4,727.4	4,718.4	11.3	11.4	-102.81	228.5	-1,289.7	1,342.7	1,320.0	22.68	59.207		
4,800.0	4,790.8	4,827.4	4,818.1	11.6	11.7	-102.81	235.3	-1,288.3	1,342.7	1,319.5	23.19	57.911		
4,900.0	4,890.6	4,927.4	4,917.9	11.9	11.9	-102.81	242.1	-1,286.9	1,342.7	1,319.0	23.69	56.670		
5,000.0	4,990.3	5,027.4	5,017.6	12.1	12.2	-102.81	249.0	-1,285.5	1,342.7	1,318.5	24.20	55.481		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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: O-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	5,090.1	5,127.4	5,117.4	12.4	12.4	-102.81	255.8	-1,284.1	1,342.7	1,318.0	24.71	54.341	
5,200.0	5,189.9	5,227.4	5,217.2	12.6	12.7	-102.81	262.6	-1,282.7	1,342.7	1,317.5	25.22	53.246	
5,300.0	5,289.6	5,327.4	5,316.9	12.9	12.9	-102.81	269.5	-1,281.3	1,342.7	1,317.0	25.73	52.195	
5,400.0	5,389.4	5,427.4	5,416.7	13.1	13.2	-102.81	276.3	-1,279.9	1,342.8	1,316.5	26.23	51.184	
5,500.0	5,488.8	5,627.1	5,610.2	13.4	14.0	-102.02	319.7	-1,270.9	1,340.4	1,313.1	27.27	49.161	
5,600.0	5,585.0	5,822.7	5,770.4	13.8	15.3	-100.03	427.8	-1,248.7	1,333.9	1,304.8	29.03	45.943	
5,700.0	5,674.2	5,981.1	5,863.1	14.4	16.9	-97.76	552.8	-1,222.9	1,326.0	1,294.7	31.24	42.450	
5,800.0	5,753.3	6,109.9	5,907.4	15.1	18.5	-95.57	670.9	-1,198.6	1,318.9	1,285.2	33.64	39.202	
5,900.0	5,819.3	6,218.2	5,920.9	16.1	20.0	-93.47	776.0	-1,176.9	1,313.7	1,277.6	36.14	36.355	
5,980.8	5,861.3	6,264.6	5,921.0	16.9	20.7	-92.59	821.5	-1,167.9	1,312.0	1,274.4	37.68	34.824 CC	
6,000.0	5,869.7	6,274.9	5,921.0	17.2	20.8	-92.39	831.6	-1,166.0	1,312.1	1,274.1	38.04	34.496	
6,100.0	5,902.8	6,330.6	5,921.0	18.4	21.6	-91.24	886.6	-1,156.9	1,315.2	1,275.2	40.06	32.833	
6,200.0	5,917.3	6,400.0	5,921.0	19.8	22.5	-90.09	955.3	-1,147.8	1,322.2	1,279.8	42.36	31.214	
6,300.0	5,918.0	6,447.7	5,921.0	21.2	23.2	-89.84	1,002.8	-1,142.9	1,330.8	1,286.4	44.41	29.963	
6,400.0	5,918.0	6,500.0	5,921.0	22.6	24.0	-89.84	1,055.0	-1,139.0	1,337.5	1,291.0	46.45	28.791	
6,500.0	5,918.0	6,565.2	5,921.0	24.0	24.9	-89.84	1,120.0	-1,136.1	1,342.0	1,293.3	48.71	27.551	
6,600.0	5,918.0	6,628.7	5,921.0	25.5	25.9	-89.84	1,183.5	-1,135.4	1,344.3	1,293.4	50.92	26.400	
6,700.0	5,918.0	6,728.7	5,921.0	27.0	27.5	-89.84	1,283.5	-1,135.4	1,344.4	1,290.4	54.04	24.880	
6,800.0	5,918.0	6,828.7	5,921.0	28.7	29.1	-89.84	1,383.5	-1,135.4	1,344.4	1,287.1	57.33	23.450	
6,900.0	5,918.0	6,928.7	5,921.0	30.3	30.8	-89.84	1,483.5	-1,135.4	1,344.4	1,283.7	60.69	22.152	
7,000.0	5,918.0	7,028.7	5,921.0	32.0	32.5	-89.84	1,583.5	-1,135.4	1,344.4	1,280.3	64.10	20.972	
7,100.0	5,918.0	7,128.7	5,921.0	33.8	34.2	-89.84	1,683.5	-1,135.4	1,344.4	1,276.8	67.57	19.898	
7,200.0	5,918.0	7,228.7	5,921.0	35.5	36.0	-89.84	1,783.5	-1,135.4	1,344.4	1,273.3	71.06	18.918	
7,300.0	5,918.0	7,328.7	5,921.0	37.2	37.7	-89.84	1,883.5	-1,135.4	1,344.4	1,269.8	74.60	18.022	
7,400.0	5,918.0	7,428.7	5,921.0	39.0	39.5	-89.84	1,983.5	-1,135.4	1,344.4	1,266.2	78.16	17.200	
7,500.0	5,918.0	7,528.7	5,921.0	40.8	41.3	-89.84	2,083.5	-1,135.4	1,344.4	1,262.6	81.75	16.445	
7,600.0	5,918.0	7,628.7	5,921.0	42.6	43.1	-89.84	2,183.5	-1,135.4	1,344.4	1,259.0	85.36	15.750	
7,700.0	5,918.0	7,728.7	5,921.0	44.4	44.9	-89.84	2,283.5	-1,135.4	1,344.4	1,255.4	88.99	15.107	
7,800.0	5,918.0	7,828.7	5,921.0	46.2	46.7	-89.84	2,383.5	-1,135.4	1,344.4	1,251.7	92.64	14.513	
7,900.0	5,918.0	7,928.7	5,921.0	48.0	48.5	-89.84	2,483.5	-1,135.4	1,344.4	1,248.1	96.30	13.961	
8,000.0	5,918.0	8,028.7	5,921.0	49.9	50.4	-89.84	2,583.5	-1,135.4	1,344.4	1,244.4	99.97	13.447	
8,100.0	5,918.0	8,128.7	5,921.0	51.7	52.2	-89.84	2,683.5	-1,135.4	1,344.4	1,240.7	103.66	12.969	
8,200.0	5,918.0	8,228.7	5,921.0	53.6	54.1	-89.84	2,783.5	-1,135.4	1,344.4	1,237.0	107.36	12.522	
8,300.0	5,918.0	8,328.7	5,921.0	55.4	55.9	-89.84	2,883.5	-1,135.4	1,344.4	1,233.3	111.07	12.104	
8,400.0	5,918.0	8,428.7	5,921.0	57.3	57.8	-89.84	2,983.5	-1,135.3	1,344.4	1,229.6	114.78	11.712	
8,500.0	5,918.0	8,528.7	5,921.0	59.1	59.6	-89.84	3,083.5	-1,135.3	1,344.4	1,225.9	118.51	11.344	
8,600.0	5,918.0	8,628.7	5,921.0	61.0	61.5	-89.84	3,183.5	-1,135.3	1,344.4	1,222.1	122.24	10.997	
8,700.0	5,918.0	8,728.7	5,921.0	62.9	63.3	-89.84	3,283.5	-1,135.3	1,344.4	1,218.4	125.98	10.671	
8,800.0	5,918.0	8,828.7	5,921.0	64.7	65.2	-89.84	3,383.5	-1,135.3	1,344.4	1,214.6	129.73	10.363	
8,900.0	5,918.0	8,928.7	5,921.0	66.6	67.1	-89.84	3,483.5	-1,135.3	1,344.4	1,210.9	133.48	10.072	
9,000.0	5,918.0	9,028.7	5,921.0	68.5	69.0	-89.84	3,583.5	-1,135.3	1,344.4	1,207.1	137.23	9.796	
9,100.0	5,918.0	9,128.7	5,921.0	70.3	70.8	-89.84	3,683.5	-1,135.3	1,344.3	1,203.4	140.99	9.535	
9,200.0	5,918.0	9,228.7	5,921.0	72.2	72.7	-89.84	3,783.5	-1,135.3	1,344.3	1,199.6	144.76	9.287	
9,300.0	5,918.0	9,328.7	5,921.0	74.1	74.6	-89.84	3,883.5	-1,135.3	1,344.3	1,195.8	148.53	9.051	
9,400.0	5,918.0	9,428.7	5,921.0	76.0	76.5	-89.84	3,983.5	-1,135.3	1,344.3	1,192.0	152.30	8.827	
9,500.0	5,918.0	9,528.7	5,921.0	77.9	78.4	-89.84	4,083.5	-1,135.3	1,344.3	1,188.3	156.08	8.613	
9,600.0	5,918.0	9,628.7	5,921.0	79.8	80.3	-89.84	4,183.5	-1,135.3	1,344.3	1,184.5	159.85	8.410	
9,700.0	5,918.0	9,728.7	5,921.0	81.7	82.2	-89.84	4,283.5	-1,135.3	1,344.3	1,180.7	163.64	8.215	
9,800.0	5,918.0	9,828.7	5,921.0	83.5	84.0	-89.84	4,383.5	-1,135.3	1,344.3	1,176.9	167.42	8.030	
9,900.0	5,918.0	9,928.7	5,921.0	85.4	85.9	-89.84	4,483.5	-1,135.3	1,344.3	1,173.1	171.21	7.852	
10,000.0	5,918.0	10,028.7	5,921.0	87.3	87.8	-89.84	4,583.5	-1,135.3	1,344.3	1,169.3	175.00	7.682	
10,100.0	5,918.0	10,128.7	5,921.0	89.2	89.7	-89.84	4,683.5	-1,135.3	1,344.3	1,165.5	178.79	7.519	

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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)						
10,200.0	5,918.0	10,228.7	5,921.0	91.1	91.6	-89.84	4,783.5	-1,135.3	1,344.3	1,161.7	182.58	7.363		
10,300.0	5,918.0	10,328.7	5,921.0	93.0	93.5	-89.84	4,883.5	-1,135.3	1,344.3	1,157.9	186.38	7.213		
10,400.0	5,918.0	10,428.7	5,921.0	94.9	95.4	-89.84	4,983.5	-1,135.3	1,344.3	1,154.1	190.18	7.069		
10,500.0	5,918.0	10,528.7	5,921.0	96.8	97.3	-89.84	5,083.5	-1,135.2	1,344.3	1,150.3	193.98	6.930		
10,600.0	5,918.0	10,628.7	5,921.0	98.7	99.2	-89.84	5,183.5	-1,135.2	1,344.3	1,146.5	197.78	6.797		
10,700.0	5,918.0	10,728.7	5,921.0	100.6	101.1	-89.84	5,283.5	-1,135.2	1,344.3	1,142.7	201.58	6.669		
10,800.0	5,918.0	10,828.7	5,921.0	102.5	103.0	-89.84	5,383.5	-1,135.2	1,344.3	1,138.9	205.39	6.545		
10,900.0	5,918.0	10,928.7	5,921.0	104.4	104.9	-89.84	5,483.5	-1,135.2	1,344.3	1,135.1	209.19	6.426		
11,000.0	5,918.0	11,028.7	5,921.0	106.3	106.8	-89.84	5,583.5	-1,135.2	1,344.3	1,131.3	213.00	6.311		
11,100.0	5,918.0	11,128.7	5,921.0	108.2	108.7	-89.84	5,683.5	-1,135.2	1,344.3	1,127.5	216.81	6.200		
11,200.0	5,918.0	11,228.7	5,921.0	110.1	110.6	-89.84	5,783.5	-1,135.2	1,344.3	1,123.7	220.62	6.093		
11,300.0	5,918.0	11,328.7	5,921.0	112.0	112.5	-89.84	5,883.5	-1,135.2	1,344.3	1,119.9	224.43	5.990		
11,400.0	5,918.0	11,428.7	5,921.0	113.9	114.4	-89.84	5,983.5	-1,135.2	1,344.3	1,116.1	228.24	5.890		
11,500.0	5,918.0	11,528.7	5,921.0	115.8	116.3	-89.84	6,083.5	-1,135.2	1,344.3	1,112.2	232.05	5.793		
11,600.0	5,918.0	11,628.7	5,921.0	117.7	118.2	-89.84	6,183.5	-1,135.2	1,344.3	1,108.4	235.87	5.699		
11,700.0	5,918.0	11,728.7	5,921.0	119.6	120.2	-89.84	6,283.5	-1,135.2	1,344.3	1,104.6	239.68	5.609		
11,800.0	5,918.0	11,828.7	5,921.0	121.6	122.1	-89.84	6,383.5	-1,135.2	1,344.3	1,100.8	243.50	5.521		
11,900.0	5,918.0	11,928.7	5,921.0	123.5	124.0	-89.84	6,483.5	-1,135.2	1,344.3	1,097.0	247.31	5.436		
12,000.0	5,918.0	12,028.7	5,921.0	125.4	125.9	-89.84	6,583.5	-1,135.2	1,344.3	1,093.2	251.13	5.353		
12,100.0	5,918.0	12,128.7	5,921.0	127.3	127.8	-89.84	6,683.5	-1,135.2	1,344.3	1,089.3	254.95	5.273		
12,200.0	5,918.0	12,228.7	5,921.0	129.2	129.7	-89.84	6,783.5	-1,135.2	1,344.3	1,085.5	258.77	5.195		
12,300.0	5,918.0	12,328.7	5,921.0	131.1	131.6	-89.84	6,883.5	-1,135.2	1,344.3	1,081.7	262.59	5.119		
12,400.0	5,918.0	12,428.7	5,921.0	133.0	133.5	-89.84	6,983.5	-1,135.2	1,344.3	1,077.9	266.41	5.046		
12,500.0	5,918.0	12,528.7	5,921.0	134.9	135.4	-89.84	7,083.5	-1,135.2	1,344.3	1,074.0	270.23	4.975		
12,600.0	5,918.0	12,628.7	5,921.0	136.8	137.3	-89.84	7,183.5	-1,135.1	1,344.3	1,070.2	274.05	4.905		
12,700.0	5,918.0	12,728.7	5,921.0	138.7	139.2	-89.84	7,283.5	-1,135.1	1,344.3	1,066.4	277.87	4.838		
12,800.0	5,918.0	12,828.7	5,921.0	140.6	141.2	-89.84	7,383.5	-1,135.1	1,344.3	1,062.6	281.69	4.772		
12,900.0	5,918.0	12,928.7	5,921.0	142.6	143.1	-89.84	7,483.5	-1,135.1	1,344.3	1,058.7	285.52	4.708		
13,000.0	5,918.0	13,028.7	5,921.0	144.5	145.0	-89.84	7,583.5	-1,135.1	1,344.3	1,054.9	289.34	4.646		
13,100.0	5,918.0	13,128.7	5,921.0	146.4	146.9	-89.84	7,683.5	-1,135.1	1,344.3	1,051.1	293.16	4.585		
13,200.0	5,918.0	13,228.7	5,921.0	148.3	148.8	-89.84	7,783.5	-1,135.1	1,344.3	1,047.3	296.99	4.526		
13,300.0	5,918.0	13,328.7	5,921.0	150.2	150.7	-89.84	7,883.5	-1,135.1	1,344.3	1,043.4	300.81	4.469		
13,400.0	5,918.0	13,428.7	5,921.0	152.1	152.6	-89.84	7,983.5	-1,135.1	1,344.3	1,039.6	304.64	4.413		
13,500.0	5,918.0	13,528.7	5,921.0	154.0	154.5	-89.84	8,083.5	-1,135.1	1,344.2	1,035.8	308.47	4.358		
13,600.0	5,918.0	13,628.7	5,921.0	155.9	156.4	-89.84	8,183.5	-1,135.1	1,344.2	1,032.0	312.29	4.304		
13,695.0	5,918.0	13,723.6	5,921.0	157.8	158.3	-89.84	8,278.5	-1,135.1	1,344.2	1,028.3	315.92	4.255 ES, SF		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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		
0.0	0.0	6.7	6.7	0.0	0.0	-91.15	-26.2	-1,309.0	1,309.3					
100.0	100.0	106.7	106.7	0.1	0.1	-91.15	-26.2	-1,309.0	1,309.3	1,309.1	0.20	6,494.188		
200.0	200.0	206.7	206.7	0.3	0.3	-91.15	-26.2	-1,309.0	1,309.3	1,308.6	0.65	2,010.726		
300.0	300.0	306.7	306.7	0.5	0.6	-91.15	-26.2	-1,309.0	1,309.3	1,308.2	1.10	1,189.511		
400.0	400.0	406.7	406.7	0.8	0.8	-91.15	-26.2	-1,309.0	1,309.3	1,307.7	1.55	844.573		
500.0	500.0	506.7	506.7	1.0	1.0	-91.15	-26.2	-1,309.0	1,309.3	1,307.3	2.00	654.716		
600.0	600.0	606.7	606.7	1.2	1.2	-91.15	-26.2	-1,309.0	1,309.3	1,306.8	2.45	534.551		
700.0	700.0	706.7	706.7	1.4	1.5	-91.15	-26.2	-1,309.0	1,309.3	1,306.4	2.90	451.655		
800.0	800.0	806.7	806.7	1.7	1.7	-91.15	-26.2	-1,309.0	1,309.3	1,305.9	3.35	391.018		
900.0	900.0	906.7	906.7	1.9	1.9	-91.15	-26.2	-1,309.0	1,309.3	1,305.5	3.80	344.735		
1,000.0	1,000.0	1,006.7	1,006.7	2.1	2.1	-102.96	-26.2	-1,309.0	1,309.6	1,305.4	4.25	308.442		
1,100.0	1,099.8	1,108.1	1,108.1	2.3	2.4	-103.17	-26.2	-1,309.0	1,310.8	1,306.1	4.70	279.053		
1,200.0	1,199.6	1,232.7	1,232.7	2.6	2.6	-103.42	-23.4	-1,307.7	1,311.4	1,306.2	5.20	252.052		
1,300.0	1,299.4	1,346.1	1,345.8	2.8	2.9	-103.47	-16.9	-1,304.8	1,310.2	1,304.5	5.69	230.313		
1,400.0	1,399.1	1,446.1	1,445.6	3.0	3.1	-103.49	-10.5	-1,302.0	1,308.8	1,302.7	6.15	212.692		
1,500.0	1,498.9	1,546.1	1,545.3	3.3	3.4	-103.52	-4.2	-1,299.1	1,307.4	1,300.8	6.62	197.363		
1,600.0	1,598.6	1,646.1	1,645.1	3.5	3.6	-103.54	2.2	-1,296.3	1,306.0	1,298.9	7.10	183.937		
1,700.0	1,698.4	1,746.1	1,744.8	3.8	3.8	-103.56	8.6	-1,293.4	1,304.6	1,297.0	7.58	172.105		
1,800.0	1,798.1	1,846.1	1,844.6	4.0	4.1	-103.58	14.9	-1,290.6	1,303.2	1,295.1	8.06	161.615		
1,900.0	1,897.9	1,946.1	1,944.3	4.3	4.3	-103.61	21.3	-1,287.7	1,301.7	1,293.2	8.55	152.261		
2,000.0	1,997.6	2,046.0	2,044.1	4.5	4.6	-103.63	27.7	-1,284.9	1,300.3	1,291.3	9.04	143.877		
2,100.0	2,097.4	2,146.0	2,143.8	4.8	4.8	-103.65	34.0	-1,282.0	1,298.9	1,289.4	9.53	136.323		
2,200.0	2,197.2	2,246.0	2,243.6	5.0	5.0	-103.67	40.4	-1,279.2	1,297.5	1,287.5	10.02	129.487		
2,300.0	2,296.9	2,346.0	2,343.3	5.3	5.3	-103.70	46.8	-1,276.3	1,296.1	1,285.6	10.51	123.274		
2,400.0	2,396.7	2,446.0	2,443.0	5.5	5.5	-103.72	53.1	-1,273.5	1,294.7	1,283.7	11.01	117.605		
2,500.0	2,496.4	2,546.0	2,542.8	5.8	5.8	-103.74	59.5	-1,270.6	1,293.3	1,281.7	11.50	112.412		
2,600.0	2,596.2	2,646.0	2,642.5	6.0	6.0	-103.76	65.9	-1,267.8	1,291.8	1,279.8	12.00	107.640		
2,700.0	2,695.9	2,746.0	2,742.3	6.3	6.3	-103.79	72.2	-1,264.9	1,290.4	1,277.9	12.50	103.241		
2,800.0	2,795.7	2,846.0	2,842.0	6.5	6.5	-103.81	78.6	-1,262.1	1,289.0	1,276.0	13.00	99.173		
2,900.0	2,895.5	2,945.9	2,941.8	6.8	6.8	-103.83	85.0	-1,259.2	1,287.6	1,274.1	13.50	95.400		
3,000.0	2,995.2	3,045.9	3,041.5	7.0	7.0	-103.85	91.3	-1,256.4	1,286.2	1,272.2	14.00	91.893		
3,100.0	3,095.0	3,145.9	3,141.3	7.3	7.3	-103.88	97.7	-1,253.5	1,284.8	1,270.3	14.50	88.624		
3,200.0	3,194.7	3,245.9	3,241.0	7.5	7.6	-103.90	104.1	-1,250.7	1,283.4	1,268.4	15.00	85.570		
3,300.0	3,294.5	3,345.9	3,340.8	7.8	7.8	-103.92	110.4	-1,247.8	1,281.9	1,266.5	15.50	82.712		
3,400.0	3,394.2	3,445.9	3,440.5	8.0	8.1	-103.95	116.8	-1,245.0	1,280.5	1,264.5	16.00	80.030		
3,500.0	3,494.0	3,545.9	3,540.2	8.3	8.3	-103.97	123.2	-1,242.1	1,279.1	1,262.6	16.50	77.510		
3,600.0	3,593.7	3,645.9	3,640.0	8.5	8.6	-103.99	129.5	-1,239.3	1,277.7	1,260.7	17.01	75.137		
3,700.0	3,693.5	3,745.9	3,739.7	8.8	8.8	-104.02	135.9	-1,236.4	1,276.3	1,258.8	17.51	72.899		
3,800.0	3,793.3	3,845.8	3,839.5	9.1	9.1	-104.04	142.3	-1,233.6	1,274.9	1,256.9	18.01	70.785		
3,900.0	3,893.0	3,945.8	3,939.2	9.3	9.3	-104.06	148.6	-1,230.7	1,273.5	1,255.0	18.51	68.785		
4,000.0	3,992.8	4,045.8	4,039.0	9.6	9.6	-104.09	155.0	-1,227.9	1,272.1	1,253.1	19.02	66.890		
4,100.0	4,092.5	4,145.8	4,138.7	9.8	9.8	-104.11	161.4	-1,225.0	1,270.7	1,251.1	19.52	65.092		
4,200.0	4,192.3	4,245.8	4,238.5	10.1	10.1	-104.13	167.7	-1,222.2	1,269.3	1,249.2	20.02	63.384		
4,300.0	4,292.0	4,345.8	4,338.2	10.3	10.3	-104.16	174.1	-1,219.3	1,267.8	1,247.3	20.53	61.759		
4,400.0	4,391.8	4,445.8	4,437.9	10.6	10.6	-104.18	180.4	-1,216.5	1,266.4	1,245.4	21.03	60.211		
4,500.0	4,491.6	4,545.8	4,537.7	10.8	10.8	-104.20	186.8	-1,213.6	1,265.0	1,243.5	21.54	58.735		
4,600.0	4,591.3	4,645.8	4,637.4	11.1	11.1	-104.23	193.2	-1,210.8	1,263.6	1,241.6	22.04	57.327		
4,700.0	4,691.1	4,745.7	4,737.2	11.3	11.4	-104.25	199.5	-1,207.9	1,262.2	1,239.7	22.55	55.981		
4,800.0	4,790.8	4,845.7	4,836.9	11.6	11.6	-104.28	205.9	-1,205.1	1,260.8	1,237.7	23.05	54.694		
4,900.0	4,890.6	4,945.7	4,936.7	11.9	11.9	-104.30	212.3	-1,202.2	1,259.4	1,235.8	23.56	53.462		
5,000.0	4,990.3	5,045.7	5,036.4	12.1	12.1	-104.32	218.6	-1,199.4	1,258.0	1,233.9	24.06	52.281		
5,100.0	5,090.1	5,145.7	5,136.2	12.4	12.4	-104.35	225.0	-1,196.5	1,256.6	1,232.0	24.57	51.149		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,200.0	5,189.9	5,245.7	5,235.9	12.6	12.6	-104.37	231.4	-1,193.7	1,255.2	1,230.1	25.07	50.062		
5,300.0	5,289.6	5,345.7	5,335.7	12.9	12.9	-104.40	237.7	-1,190.8	1,253.8	1,228.2	25.58	49.017		
5,400.0	5,389.4	5,445.7	5,435.4	13.1	13.1	-104.42	244.1	-1,188.0	1,252.3	1,226.3	26.08	48.013		
5,500.0	5,488.8	6,360.4	6,024.0	13.4	20.8	-83.41	751.2	-961.1	1,235.2	1,200.3	34.93	35.360		
5,600.0	5,585.0	6,377.1	6,024.0	13.8	21.0	-87.79	766.5	-954.6	1,192.3	1,156.8	35.51	33.575		
5,700.0	5,674.2	6,400.0	6,024.0	14.4	21.3	-91.14	787.7	-945.9	1,155.1	1,118.8	36.31	31.816		
5,800.0	5,753.3	6,443.1	6,024.0	15.1	21.9	-92.94	827.9	-930.1	1,124.2	1,086.6	37.59	29.908		
5,900.0	5,819.3	6,500.0	6,024.0	16.1	22.7	-93.79	881.3	-910.7	1,099.9	1,060.7	39.29	27.993		
6,000.0	5,869.7	6,545.1	6,024.0	17.2	23.3	-94.67	924.1	-896.5	1,081.8	1,040.8	41.02	26.372		
6,100.0	5,902.8	6,600.0	6,024.0	18.4	24.1	-95.06	976.6	-880.5	1,069.5	1,026.5	43.09	24.820		
6,200.0	5,917.3	6,668.7	6,024.0	19.8	25.1	-95.28	1,043.0	-862.7	1,062.5	1,017.0	45.53	23.337		
6,300.0	5,918.0	6,733.1	6,024.0	21.2	26.1	-95.39	1,105.6	-848.2	1,058.8	1,011.0	47.76	22.168		
6,400.0	5,918.0	6,800.0	6,024.0	22.6	27.1	-95.42	1,171.3	-835.3	1,053.4	1,003.5	49.90	21.112		
6,500.0	5,918.0	6,861.9	6,024.0	24.0	28.0	-95.47	1,232.5	-825.5	1,046.2	994.3	51.96	20.136		
6,600.0	5,918.0	6,926.4	6,024.0	25.5	29.0	-95.52	1,296.5	-817.3	1,037.2	983.1	54.03	19.195		
6,700.0	5,918.0	7,000.0	6,024.0	27.0	30.1	-95.56	1,369.7	-810.7	1,028.1	971.4	56.72	18.127		
6,800.0	5,918.0	7,056.3	6,024.0	28.7	31.0	-95.58	1,425.9	-807.5	1,022.2	962.9	59.30	17.238		
6,900.0	5,918.0	7,121.5	6,024.0	30.3	32.0	-95.59	1,491.1	-805.9	1,019.7	957.7	62.05	16.433		
6,943.1	5,918.0	7,157.1	6,024.0	31.1	32.6	-95.59	1,526.7	-805.8	1,019.7	956.2	63.41	16.080		
7,000.0	5,918.0	7,213.9	6,024.0	32.0	33.4	-95.59	1,583.6	-805.8	1,019.6	954.4	65.25	15.626		
7,100.0	5,918.0	7,313.9	6,024.0	33.8	35.0	-95.59	1,683.6	-805.8	1,019.6	951.0	68.61	14.861		
7,200.0	5,918.0	7,413.9	6,024.0	35.5	36.7	-95.59	1,783.6	-805.8	1,019.6	947.6	72.02	14.158		
7,300.0	5,918.0	7,513.9	6,024.0	37.2	38.3	-95.59	1,883.6	-805.8	1,019.6	944.2	75.46	13.512		
7,400.0	5,918.0	7,613.9	6,024.0	39.0	40.0	-95.59	1,983.6	-805.8	1,019.6	940.7	78.95	12.916		
7,500.0	5,918.0	7,713.9	6,024.0	40.8	41.7	-95.59	2,083.6	-805.8	1,019.6	937.2	82.46	12.365		
7,600.0	5,918.0	7,813.9	6,024.0	42.6	43.4	-95.59	2,183.6	-805.8	1,019.6	933.6	86.00	11.856		
7,700.0	5,918.0	7,913.9	6,024.0	44.4	45.1	-95.59	2,283.6	-805.8	1,019.6	930.1	89.56	11.384		
7,800.0	5,918.0	8,013.9	6,024.0	46.2	46.9	-95.59	2,383.6	-805.8	1,019.6	926.5	93.15	10.946		
7,900.0	5,918.0	8,113.9	6,024.0	48.0	48.6	-95.59	2,483.6	-805.8	1,019.6	922.9	96.75	10.538		
8,000.0	5,918.0	8,213.9	6,024.0	49.9	50.4	-95.59	2,583.6	-805.8	1,019.6	919.2	100.37	10.158		
8,100.0	5,918.0	8,313.9	6,024.0	51.7	52.2	-95.59	2,683.6	-805.7	1,019.6	915.6	104.01	9.803		
8,200.0	5,918.0	8,413.9	6,024.0	53.6	53.9	-95.59	2,783.6	-805.7	1,019.6	911.9	107.66	9.470		
8,300.0	5,918.0	8,513.9	6,024.0	55.4	55.7	-95.59	2,883.6	-805.7	1,019.6	908.3	111.32	9.159		
8,400.0	5,918.0	8,613.9	6,024.0	57.3	57.6	-95.59	2,983.6	-805.7	1,019.6	904.6	114.99	8.866		
8,500.0	5,918.0	8,713.9	6,024.0	59.1	59.4	-95.59	3,083.6	-805.7	1,019.6	900.9	118.68	8.591		
8,600.0	5,918.0	8,813.9	6,024.0	61.0	61.2	-95.59	3,183.6	-805.7	1,019.6	897.2	122.37	8.332		
8,700.0	5,918.0	8,913.9	6,024.0	62.9	63.0	-95.59	3,283.6	-805.7	1,019.6	893.5	126.07	8.087		
8,800.0	5,918.0	9,013.9	6,024.0	64.7	64.8	-95.59	3,383.6	-805.7	1,019.6	889.8	129.77	7.856		
8,900.0	5,918.0	9,113.9	6,024.0	66.6	66.7	-95.59	3,483.6	-805.7	1,019.6	886.1	133.49	7.638		
9,000.0	5,918.0	9,213.9	6,024.0	68.5	68.5	-95.59	3,583.6	-805.7	1,019.6	882.3	137.21	7.431		
9,100.0	5,918.0	9,313.9	6,024.0	70.3	70.4	-95.59	3,683.6	-805.7	1,019.5	878.6	140.93	7.234		
9,200.0	5,918.0	9,413.9	6,024.0	72.2	72.2	-95.59	3,783.6	-805.7	1,019.5	874.9	144.67	7.048		
9,300.0	5,918.0	9,513.9	6,024.0	74.1	74.1	-95.59	3,883.6	-805.7	1,019.5	871.1	148.40	6.870		
9,400.0	5,918.0	9,613.9	6,024.0	76.0	75.9	-95.59	3,983.6	-805.6	1,019.5	867.4	152.14	6.701		
9,500.0	5,918.0	9,713.9	6,024.0	77.9	77.8	-95.59	4,083.6	-805.6	1,019.5	863.6	155.89	6.540		
9,600.0	5,918.0	9,813.9	6,024.0	79.8	79.6	-95.59	4,183.6	-805.6	1,019.5	859.9	159.64	6.387		
9,700.0	5,918.0	9,913.9	6,024.0	81.7	81.5	-95.59	4,283.6	-805.6	1,019.5	856.1	163.39	6.240		
9,800.0	5,918.0	10,013.9	6,024.0	83.5	83.4	-95.59	4,383.6	-805.6	1,019.5	852.4	167.14	6.100		
9,900.0	5,918.0	10,113.9	6,024.0	85.4	85.2	-95.59	4,483.6	-805.6	1,019.5	848.6	170.90	5.965		
10,000.0	5,918.0	10,213.9	6,024.0	87.3	87.1	-95.59	4,583.6	-805.6	1,019.5	844.8	174.67	5.837		
10,100.0	5,918.0	10,313.9	6,024.0	89.2	89.0	-95.59	4,683.6	-805.6	1,019.5	841.1	178.43	5.714		
10,200.0	5,918.0	10,413.9	6,024.0	91.1	90.9	-95.59	4,783.6	-805.6	1,019.5	837.3	182.20	5.596		

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 #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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		
10,300.0	5,918.0	10,513.9	6,024.0	93.0	92.7	-95.59	4,883.6	-805.6	1,019.5	833.5	185.97	5.482		
10,400.0	5,918.0	10,613.9	6,024.0	94.9	94.6	-95.59	4,983.6	-805.6	1,019.5	829.7	189.74	5.373		
10,500.0	5,918.0	10,713.9	6,024.0	96.8	96.5	-95.59	5,083.6	-805.6	1,019.5	826.0	193.52	5.268		
10,600.0	5,918.0	10,813.9	6,024.0	98.7	98.4	-95.59	5,183.6	-805.6	1,019.5	822.2	197.29	5.167		
10,700.0	5,918.0	10,913.9	6,024.0	100.6	100.3	-95.59	5,283.6	-805.5	1,019.5	818.4	201.07	5.070		
10,800.0	5,918.0	11,013.9	6,024.0	102.5	102.2	-95.59	5,383.6	-805.5	1,019.5	814.6	204.85	4.977		
10,900.0	5,918.0	11,113.9	6,024.0	104.4	104.1	-95.59	5,483.6	-805.5	1,019.5	810.8	208.63	4.886		
11,000.0	5,918.0	11,213.9	6,024.0	106.3	105.9	-95.59	5,583.6	-805.5	1,019.5	807.0	212.42	4.799		
11,100.0	5,918.0	11,313.9	6,024.0	108.2	107.8	-95.59	5,683.6	-805.5	1,019.4	803.2	216.20	4.715		
11,200.0	5,918.0	11,413.9	6,024.0	110.1	109.7	-95.59	5,783.6	-805.5	1,019.4	799.5	219.99	4.634		
11,300.0	5,918.0	11,513.9	6,024.0	112.0	111.6	-95.59	5,883.6	-805.5	1,019.4	795.7	223.78	4.556		
11,400.0	5,918.0	11,613.9	6,024.0	113.9	113.5	-95.59	5,983.6	-805.5	1,019.4	791.9	227.57	4.480		
11,500.0	5,918.0	11,713.9	6,024.0	115.8	115.4	-95.59	6,083.6	-805.5	1,019.4	788.1	231.36	4.406		
11,600.0	5,918.0	11,813.9	6,024.0	117.7	117.3	-95.59	6,183.6	-805.5	1,019.4	784.3	235.15	4.335		
11,700.0	5,918.0	11,913.9	6,024.0	119.6	119.2	-95.59	6,283.6	-805.5	1,019.4	780.5	238.94	4.266		
11,800.0	5,918.0	12,013.9	6,024.0	121.6	121.1	-95.59	6,383.6	-805.5	1,019.4	776.7	242.74	4.200		
11,900.0	5,918.0	12,113.9	6,024.0	123.5	123.0	-95.59	6,483.6	-805.5	1,019.4	772.9	246.53	4.135		
12,000.0	5,918.0	12,213.9	6,024.0	125.4	124.9	-95.59	6,583.6	-805.5	1,019.4	769.1	250.33	4.072		
12,100.0	5,918.0	12,313.9	6,024.0	127.3	126.8	-95.59	6,683.6	-805.4	1,019.4	765.3	254.12	4.011		
12,200.0	5,918.0	12,413.9	6,024.0	129.2	128.7	-95.59	6,783.6	-805.4	1,019.4	761.5	257.92	3.952		
12,300.0	5,918.0	12,513.9	6,024.0	131.1	130.6	-95.59	6,883.6	-805.4	1,019.4	757.7	261.72	3.895		
12,400.0	5,918.0	12,613.9	6,024.0	133.0	132.5	-95.59	6,983.6	-805.4	1,019.4	753.9	265.52	3.839		
12,500.0	5,918.0	12,713.9	6,024.0	134.9	134.4	-95.59	7,083.6	-805.4	1,019.4	750.1	269.32	3.785		
12,600.0	5,918.0	12,813.9	6,024.0	136.8	136.3	-95.59	7,183.6	-805.4	1,019.4	746.3	273.12	3.732		
12,700.0	5,918.0	12,913.9	6,024.0	138.7	138.2	-95.59	7,283.6	-805.4	1,019.4	742.4	276.92	3.681		
12,800.0	5,918.0	13,013.9	6,024.0	140.6	140.1	-95.59	7,383.6	-805.4	1,019.4	738.6	280.73	3.631		
12,900.0	5,918.0	13,113.9	6,024.0	142.6	142.0	-95.59	7,483.6	-805.4	1,019.4	734.8	284.53	3.583		
13,000.0	5,918.0	13,213.9	6,024.0	144.5	143.9	-95.59	7,583.6	-805.4	1,019.4	731.0	288.33	3.535		
13,100.0	5,918.0	13,313.9	6,024.0	146.4	145.8	-95.59	7,683.6	-805.4	1,019.4	727.2	292.14	3.489		
13,200.0	5,918.0	13,413.9	6,024.0	148.3	147.7	-95.59	7,783.6	-805.4	1,019.3	723.4	295.94	3.444		
13,300.0	5,918.0	13,513.9	6,024.0	150.2	149.6	-95.59	7,883.6	-805.4	1,019.3	719.6	299.75	3.401		
13,400.0	5,918.0	13,613.9	6,024.0	152.1	151.5	-95.59	7,983.6	-805.3	1,019.3	715.8	303.55	3.358		
13,500.0	5,918.0	13,713.9	6,024.0	154.0	153.4	-95.59	8,083.6	-805.3	1,019.3	712.0	307.36	3.316		
13,600.0	5,918.0	13,813.9	6,024.0	155.9	155.3	-95.59	8,183.6	-805.3	1,019.3	708.2	311.17	3.276		
13,695.0	5,918.0	13,908.9	6,024.0	157.8	157.1	-95.59	8,278.5	-805.3	1,019.3	704.5	314.78	3.238	CC, ES, SF	

Cathedral Energy Services

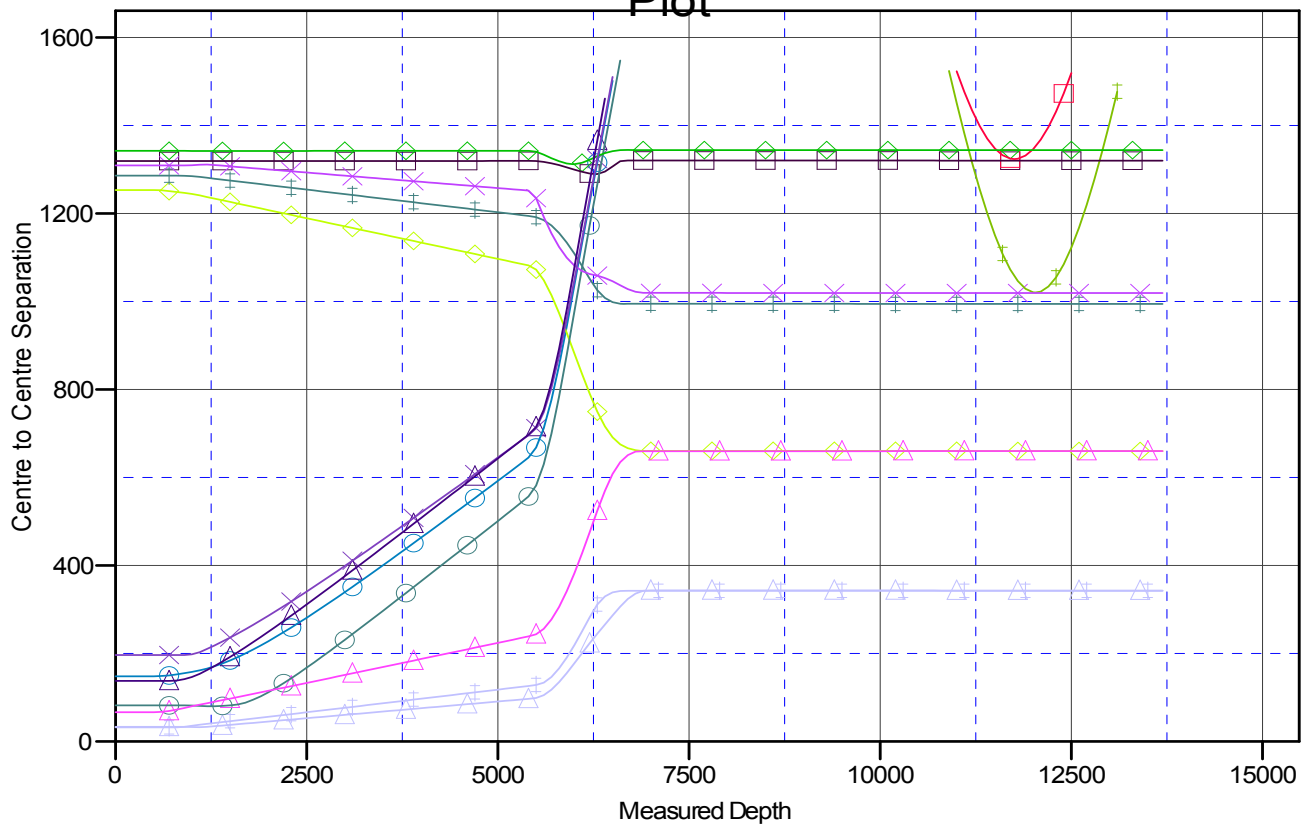
Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #21B-0911A
Project:	Weld County, CO	TVD Reference:	KB=17 @ 4854.3usft
Reference Site:	S21-T10N-R58W	MD Reference:	KB=17 @ 4854.3usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #21B-0911A	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 @ 4854.3usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Razor #21B-0911A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.05°

Ladder Plot



LEGEND

Razor #21B-0912B, HZ, Plan #2 V0	Razor #21A-0913A, HZ, Plan #2 V0	Razor #21B-0909A, HZ, Plan #2 V0
u 2 (Existing), Existing, ASSUMED VERTICAL V0	Razor #21B-0910B, HZ, Plan #2 V0	Razor #21C-0907A, HZ, Plan #2 V0
Razor #21A-0915A, HZ, Plan #2 V0	Razor #21A-0914B, HZ, Plan #2 V0	Razor #21B-2812B, HZ, Plan #1 V0
u 1 (Existing), Existing, ASSUMED VERTICAL V0	Razor #21B-2809A, HZ, Plan #1 V0	Razor #21B-2810B, HZ, Plan #1 V0
Razor #21B-2811A, HZ, Plan #1 V0	Razor #21C-0908B, HZ, Plan #2 V0	