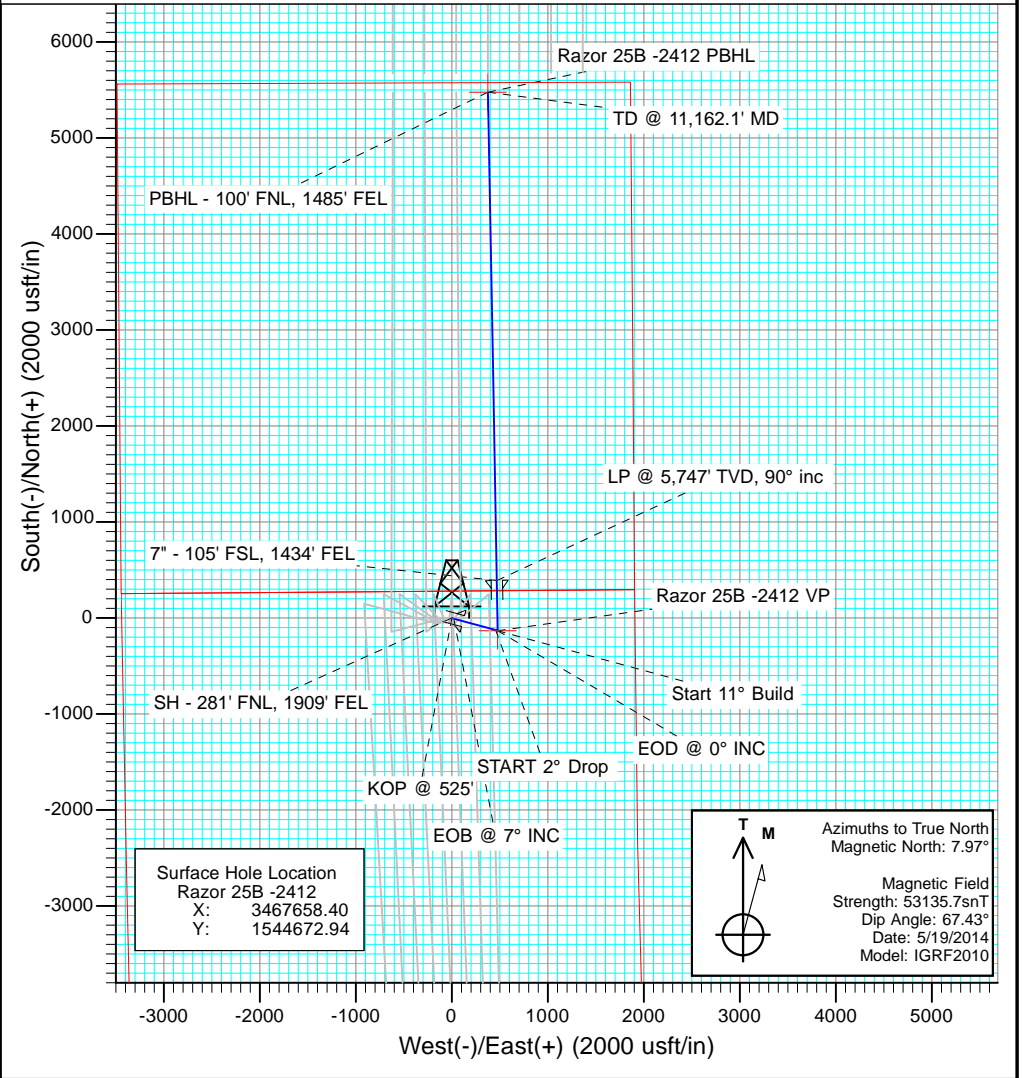
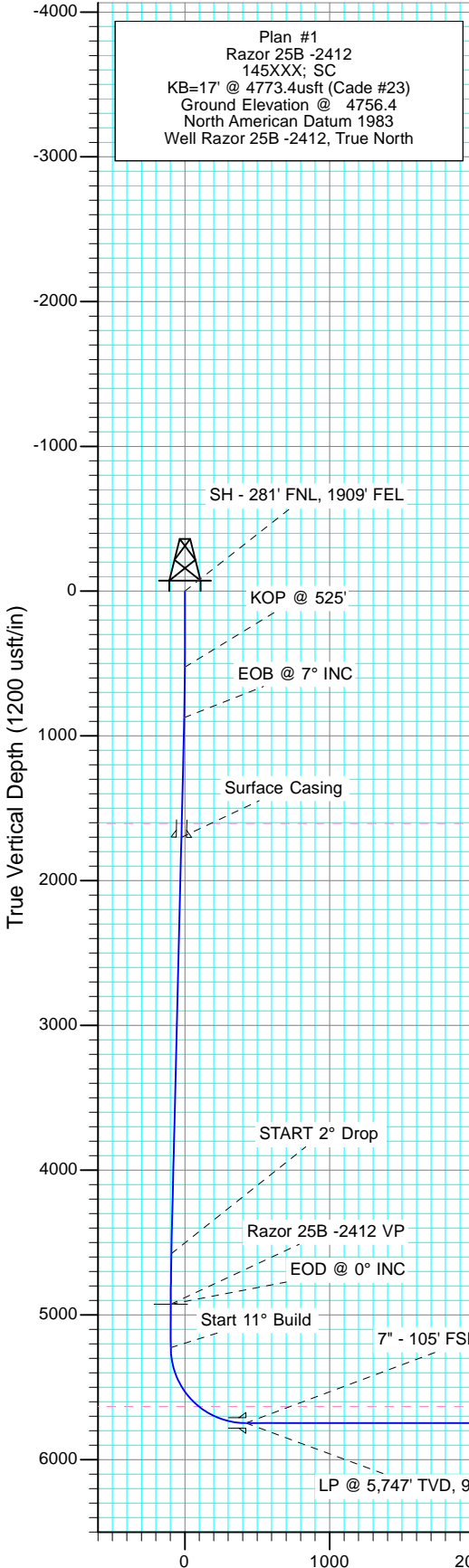


Plan #1
 Razor 25B -2412
 145XXX; SC
 KB=17' @ 4773.4usft (Cade #23)
 Ground Elevation @ 4756.4
 North American Datum 1983
 Well Razor 25B -2412, True North

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	525.0	0.00	0.00	525.0	0.0	0.0	0.00	0.00	0.0		
3	874.9	7.00	105.15	874.1	-5.6	20.6	2.00	105.15	-4.2		
4	4605.7	7.00	105.15	4577.0	-124.4	459.4	0.00	0.00	-92.5		
5	4955.6	0.00	0.00	4926.1	-130.0	480.0	2.00	180.00	-96.7		Razor 25B -2412 VP
6	5255.6	0.00	0.00	5226.1	-130.0	480.0	0.00	0.00	-96.7		
7	6073.8	90.00	358.95	5747.0	390.8	470.5	11.00	358.95	422.2		
8	11162.1	90.00	358.95	5747.0	5478.2	377.5	0.00	0.00	5491.2		Razor 25B -2412 PBHL



Surface Hole Location
 Razor 25B -2412
 X: 3467658.40
 Y: 1544672.94

Azimuths to True North
 Magnetic North: 7.97°
 Magnetic Field
 Strength: 53135.7snT
 Dip Angle: 67.43°
 Date: 5/19/2014
 Model: IGRF2010

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor 25B -2412 VP	4926.1	-130.0	480.0	1544552.11	3468140.79
Razor 25B -2412 PBHL	5747.0	5478.2	377.5	1550157.38	3467931.43

Vertical Section at 3.94° (1200 usft/in)

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2412
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2412	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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

Site	S25-T10N-R58W				
Site Position:		Northing:	1,544,670.15 usft	Latitude:	40.816275
From:	Lat/Long	Easting:	3,467,568.48 usft	Longitude:	-103.810706
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	1.09 °

Well	Razor 25B -2412					
Well Position	+N/-S	0.0 usft	Northing:	1,544,672.94 usft	Latitude:	40.816278
	+E/-W	0.0 usft	Easting:	3,467,658.40 usft	Longitude:	-103.810381
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,756.4 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/19/2014	7.97	67.43	53,136

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	3.94

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
525.0	0.00	0.00	525.0	0.0	0.0	0.00	0.00	0.00	0.00	
874.9	7.00	105.15	874.1	-5.6	20.6	2.00	2.00	0.00	105.15	
4,605.7	7.00	105.15	4,577.0	-124.4	459.4	0.00	0.00	0.00	0.00	
4,955.6	0.00	0.00	4,926.1	-130.0	480.0	2.00	-2.00	0.00	180.00	Razor 25B -2412 VP
5,255.6	0.00	0.00	5,226.1	-130.0	480.0	0.00	0.00	0.00	0.00	
6,073.8	90.00	358.95	5,747.0	390.8	470.5	11.00	11.00	-0.13	358.95	
11,162.1	90.00	358.95	5,747.0	5,478.2	377.5	0.00	0.00	0.00	0.00	Razor 25B -2412 PB

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2412
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2412	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
0.5	0.00	0.00	0.5	0.0	0.0	0.0	0.00	0.00	SH - 281' FNL, 1909' 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	
525.0	0.00	0.00	525.0	0.0	0.0	0.0	0.00	0.00	KOP @ 525'
600.0	1.50	105.15	600.0	-0.3	0.9	-0.2	2.00	2.00	
700.0	3.50	105.15	699.9	-1.4	5.2	-1.0	2.00	2.00	
800.0	5.50	105.15	799.6	-3.4	12.7	-2.6	2.00	2.00	
874.9	7.00	105.15	874.1	-5.6	20.6	-4.2	2.00	2.00	EOB @ 7° INC
900.0	7.00	105.15	898.9	-6.4	23.6	-4.7	0.00	0.00	
1,000.0	7.00	105.15	998.2	-9.6	35.3	-7.1	0.00	0.00	
1,100.0	7.00	105.15	1,097.5	-12.7	47.1	-9.5	0.00	0.00	
1,200.0	7.00	105.15	1,196.7	-15.9	58.8	-11.9	0.00	0.00	
1,300.0	7.00	105.15	1,296.0	-19.1	70.6	-14.2	0.00	0.00	
1,400.0	7.00	105.15	1,395.2	-22.3	82.4	-16.6	0.00	0.00	
1,500.0	7.00	105.15	1,494.5	-25.5	94.1	-19.0	0.00	0.00	
1,600.0	7.00	105.15	1,593.7	-28.7	105.9	-21.3	0.00	0.00	
1,610.3	7.00	105.15	1,604.0	-29.0	107.1	-21.6	0.00	0.00	Pierre
1,700.0	7.00	105.15	1,693.0	-31.9	117.6	-23.7	0.00	0.00	
1,707.1	7.00	105.15	1,700.0	-32.1	118.5	-23.9	0.00	0.00	Surface Casing
1,800.0	7.00	105.15	1,792.2	-35.0	129.4	-26.1	0.00	0.00	
1,900.0	7.00	105.15	1,891.5	-38.2	141.2	-28.4	0.00	0.00	
2,000.0	7.00	105.15	1,990.7	-41.4	152.9	-30.8	0.00	0.00	
2,100.0	7.00	105.15	2,090.0	-44.6	164.7	-33.2	0.00	0.00	
2,200.0	7.00	105.15	2,189.3	-47.8	176.5	-35.5	0.00	0.00	
2,300.0	7.00	105.15	2,288.5	-51.0	188.2	-37.9	0.00	0.00	
2,400.0	7.00	105.15	2,387.8	-54.2	200.0	-40.3	0.00	0.00	
2,500.0	7.00	105.15	2,487.0	-57.3	211.7	-42.7	0.00	0.00	
2,600.0	7.00	105.15	2,586.3	-60.5	223.5	-45.0	0.00	0.00	
2,700.0	7.00	105.15	2,685.5	-63.7	235.3	-47.4	0.00	0.00	
2,800.0	7.00	105.15	2,784.8	-66.9	247.0	-49.8	0.00	0.00	
2,900.0	7.00	105.15	2,884.0	-70.1	258.8	-52.1	0.00	0.00	
3,000.0	7.00	105.15	2,983.3	-73.3	270.5	-54.5	0.00	0.00	
3,100.0	7.00	105.15	3,082.5	-76.5	282.3	-56.9	0.00	0.00	
3,200.0	7.00	105.15	3,181.8	-79.6	294.1	-59.2	0.00	0.00	
3,300.0	7.00	105.15	3,281.1	-82.8	305.8	-61.6	0.00	0.00	
3,400.0	7.00	105.15	3,380.3	-86.0	317.6	-64.0	0.00	0.00	
3,500.0	7.00	105.15	3,479.6	-89.2	329.3	-66.3	0.00	0.00	
3,600.0	7.00	105.15	3,578.8	-92.4	341.1	-68.7	0.00	0.00	
3,700.0	7.00	105.15	3,678.1	-95.6	352.9	-71.1	0.00	0.00	
3,800.0	7.00	105.15	3,777.3	-98.8	364.6	-73.5	0.00	0.00	
3,900.0	7.00	105.15	3,876.6	-101.9	376.4	-75.8	0.00	0.00	
4,000.0	7.00	105.15	3,975.8	-105.1	388.2	-78.2	0.00	0.00	
4,100.0	7.00	105.15	4,075.1	-108.3	399.9	-80.6	0.00	0.00	
4,200.0	7.00	105.15	4,174.4	-111.5	411.7	-82.9	0.00	0.00	
4,300.0	7.00	105.15	4,273.6	-114.7	423.4	-85.3	0.00	0.00	
4,400.0	7.00	105.15	4,372.9	-117.9	435.2	-87.7	0.00	0.00	
4,500.0	7.00	105.15	4,472.1	-121.1	447.0	-90.0	0.00	0.00	
4,605.7	7.00	105.15	4,577.0	-124.4	459.4	-92.5	0.00	0.00	START 2° Drop

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2412
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2412	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,700.0	5.11	105.15	4,670.8	-127.0	469.0	-94.5	2.00	-2.00	
4,800.0	3.11	105.15	4,770.5	-128.9	475.9	-95.9	2.00	-2.00	
4,900.0	1.11	105.15	4,870.5	-129.9	479.5	-96.6	2.00	-2.00	
4,955.6	0.00	0.00	4,926.1	-130.0	480.0	-96.7	2.00	-2.00	EOD @ 0° INC
5,000.0	0.00	0.00	4,970.5	-130.0	480.0	-96.7	0.00	0.00	
5,100.0	0.00	0.00	5,070.5	-130.0	480.0	-96.7	0.00	0.00	
5,200.0	0.00	0.00	5,170.5	-130.0	480.0	-96.7	0.00	0.00	
5,255.6	0.00	0.00	5,226.1	-130.0	480.0	-96.7	0.00	0.00	Start 11° Build
5,300.0	4.88	358.95	5,270.4	-128.1	480.0	-94.8	11.00	11.00	
5,350.0	10.38	358.95	5,319.9	-121.5	479.8	-88.2	11.00	11.00	
5,400.0	15.88	358.95	5,368.6	-110.1	479.6	-76.9	11.00	11.00	
5,450.0	21.38	358.95	5,416.0	-94.2	479.3	-61.0	11.00	11.00	
5,500.0	26.88	358.95	5,461.6	-73.7	479.0	-40.6	11.00	11.00	
5,550.0	32.38	358.95	5,505.0	-49.0	478.5	-16.0	11.00	11.00	
5,600.0	37.88	358.95	5,545.9	-20.3	478.0	12.6	11.00	11.00	
5,650.0	43.38	358.95	5,583.8	12.3	477.4	45.1	11.00	11.00	
5,700.0	48.88	358.95	5,618.5	48.3	476.7	81.0	11.00	11.00	
5,722.6	51.37	358.95	5,633.0	65.7	476.4	98.3	11.00	11.00	Niobrara
5,750.0	54.38	358.95	5,649.5	87.5	476.0	120.0	11.00	11.00	
5,800.0	59.88	358.95	5,676.6	129.4	475.3	161.8	11.00	11.00	
5,850.0	65.38	358.95	5,699.6	173.8	474.4	206.0	11.00	11.00	
5,900.0	70.88	358.95	5,718.2	220.2	473.6	252.2	11.00	11.00	
5,950.0	76.38	358.95	5,732.3	268.1	472.7	300.0	11.00	11.00	
6,000.0	81.88	358.95	5,741.7	317.2	471.8	348.9	11.00	11.00	
6,050.0	87.38	358.95	5,746.4	367.0	470.9	398.5	11.00	11.00	
6,073.8	90.00	358.95	5,747.0	390.8	470.5	422.2	11.00	11.00	LP @ 5,747' TVD, 90° inc - 7" - 105' FSL, 1434'
6,100.0	90.00	358.95	5,747.0	417.0	470.0	448.3	0.01	0.01	
6,200.0	90.00	358.95	5,747.0	516.9	468.2	547.9	0.00	0.00	
6,300.0	90.00	358.95	5,747.0	616.9	466.3	647.5	0.00	0.00	
6,400.0	90.00	358.95	5,747.0	716.9	464.5	747.1	0.00	0.00	
6,500.0	90.00	358.95	5,747.0	816.9	462.7	846.8	0.00	0.00	
6,600.0	90.00	358.95	5,747.0	916.9	460.9	946.4	0.00	0.00	
6,700.0	90.00	358.95	5,747.0	1,016.9	459.0	1,046.0	0.00	0.00	
6,800.0	90.00	358.95	5,747.0	1,116.8	457.2	1,145.6	0.00	0.00	
6,900.0	90.00	358.95	5,747.0	1,216.8	455.4	1,245.2	0.00	0.00	
7,000.0	90.00	358.95	5,747.0	1,316.8	453.5	1,344.9	0.00	0.00	
7,100.0	90.00	358.95	5,747.0	1,416.8	451.7	1,444.5	0.00	0.00	
7,200.0	90.00	358.95	5,747.0	1,516.8	449.9	1,544.1	0.00	0.00	
7,300.0	90.00	358.95	5,747.0	1,616.8	448.1	1,643.7	0.00	0.00	
7,400.0	90.00	358.95	5,747.0	1,716.7	446.2	1,743.4	0.00	0.00	
7,500.0	90.00	358.95	5,747.0	1,816.7	444.4	1,843.0	0.00	0.00	
7,600.0	90.00	358.95	5,747.0	1,916.7	442.6	1,942.6	0.00	0.00	
7,700.0	90.00	358.95	5,747.0	2,016.7	440.8	2,042.2	0.00	0.00	
7,800.0	90.00	358.95	5,747.0	2,116.7	438.9	2,141.8	0.00	0.00	
7,900.0	90.00	358.95	5,747.0	2,216.7	437.1	2,241.5	0.00	0.00	
8,000.0	90.00	358.95	5,747.0	2,316.6	435.3	2,341.1	0.00	0.00	
8,100.0	90.00	358.95	5,747.0	2,416.6	433.4	2,440.7	0.00	0.00	
8,200.0	90.00	358.95	5,747.0	2,516.6	431.6	2,540.3	0.00	0.00	
8,300.0	90.00	358.95	5,747.0	2,616.6	429.8	2,639.9	0.00	0.00	
8,400.0	90.00	358.95	5,747.0	2,716.6	428.0	2,739.6	0.00	0.00	
8,500.0	90.00	358.95	5,747.0	2,816.6	426.1	2,839.2	0.00	0.00	
8,600.0	90.00	358.95	5,747.0	2,916.5	424.3	2,938.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2412
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2412	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,700.0	90.00	358.95	5,747.0	3,016.5	422.5	3,038.4	0.00	0.00	
8,800.0	90.00	358.95	5,747.0	3,116.5	420.6	3,138.1	0.00	0.00	
8,900.0	90.00	358.95	5,747.0	3,216.5	418.8	3,237.7	0.00	0.00	
9,000.0	90.00	358.95	5,747.0	3,316.5	417.0	3,337.3	0.00	0.00	
9,100.0	90.00	358.95	5,747.0	3,416.5	415.2	3,436.9	0.00	0.00	
9,200.0	90.00	358.95	5,747.0	3,516.4	413.3	3,536.5	0.00	0.00	
9,300.0	90.00	358.95	5,747.0	3,616.4	411.5	3,636.2	0.00	0.00	
9,400.0	90.00	358.95	5,747.0	3,716.4	409.7	3,735.8	0.00	0.00	
9,500.0	90.00	358.95	5,747.0	3,816.4	407.9	3,835.4	0.00	0.00	
9,600.0	90.00	358.95	5,747.0	3,916.4	406.0	3,935.0	0.00	0.00	
9,700.0	90.00	358.95	5,747.0	4,016.4	404.2	4,034.6	0.00	0.00	
9,800.0	90.00	358.95	5,747.0	4,116.3	402.4	4,134.3	0.00	0.00	
9,900.0	90.00	358.95	5,747.0	4,216.3	400.5	4,233.9	0.00	0.00	
10,000.0	90.00	358.95	5,747.0	4,316.3	398.7	4,333.5	0.00	0.00	
10,100.0	90.00	358.95	5,747.0	4,416.3	396.9	4,433.1	0.00	0.00	
10,200.0	90.00	358.95	5,747.0	4,516.3	395.1	4,532.7	0.00	0.00	
10,300.0	90.00	358.95	5,747.0	4,616.3	393.2	4,632.4	0.00	0.00	
10,400.0	90.00	358.95	5,747.0	4,716.2	391.4	4,732.0	0.00	0.00	
10,500.0	90.00	358.95	5,747.0	4,816.2	389.6	4,831.6	0.00	0.00	
10,600.0	90.00	358.95	5,747.0	4,916.2	387.7	4,931.2	0.00	0.00	
10,700.0	90.00	358.95	5,747.0	5,016.2	385.9	5,030.9	0.00	0.00	
10,800.0	90.00	358.95	5,747.0	5,116.2	384.1	5,130.5	0.00	0.00	
10,900.0	90.00	358.95	5,747.0	5,216.2	382.3	5,230.1	0.00	0.00	
11,000.0	90.00	358.95	5,747.0	5,316.1	380.4	5,329.7	0.00	0.00	
11,100.0	90.00	358.95	5,747.0	5,416.1	378.6	5,429.3	0.00	0.00	
11,162.1	90.00	358.95	5,747.0	5,478.2	377.5	5,491.2	0.00	0.00	PBHL - 100' FNL, 1485' FEL

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Razor 25B -2412 PBHL - plan hits target center - Point	0.00	0.00	5,747.0	5,478.2	377.5	1,550,157.38	3,467,931.43	40.831314	-103.809017
Razor 25B -2412 VP - plan hits target center - Point	0.00	0.00	4,926.1	-130.0	480.0	1,544,552.11	3,468,140.79	40.815921	-103.808647

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,707.1	1,700.0	Surface Casing	0	0	
6,073.8	5,747.0	7" - 105' FSL, 1434' FEL	0	0	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor 25B -2412
Company:	Whiting Petroleum Corporation	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Project:	Weld County, CO	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site:	S25-T10N-R58W	North Reference:	True
Well:	Razor 25B -2412	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,610.3	1,604.0	Pierre			
5,722.6	5,633.0	Niobrara			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
0.5	0.5	0.0	0.0		SH - 281' FNL, 1909' FEL
525.0	525.0	0.0	0.0		KOP @ 525'
874.9	874.1	-5.6	20.6		EOB @ 7° INC
4,605.7	4,577.0	-124.4	459.4		START 2° Drop
4,955.6	4,926.1	-130.0	480.0		EOD @ 0° INC
5,255.6	5,226.1	-130.0	480.0		Start 11° Build
6,073.8	5,747.0	390.8	470.5		LP @ 5,747' TVD, 90° inc
11,162.1	5,747.0	5,478.2	377.5		PBHL - 100' FNL, 1485' FEL
11,162.1	5,747.0	5,478.2	377.5		TD @ 11,162.1' MD

Whiting Petroleum Corporation

Weld County, CO

S25-T10N-R58W

Razor 25B -2412

HZ

Plan #1

Anticollision Report

28 May, 2014

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,310.5usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	5/28/2014	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,162.1	Plan #1 (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
S12-T10N-R58W						
Razor Federal #12G-1309A - HZ - Plan #1	11,162.1	13,221.6	1,019.4	764.1	3.994	CC, ES, SF
Razor Federal #12G-1310B - HZ - Plan #1	11,162.1	13,293.1	691.2	433.5	2.683	CC, ES, SF
Razor Federal #12G-1311A - HZ - Plan #1	11,162.1	13,250.1	408.0	167.2	1.694	CC, ES, SF
Razor Federal #12G-1312B - HZ - Plan #1	11,162.1	13,435.7	202.0	99.5	1.970	CC, ES, SF
Razor Federal #12H-1313A - Hz - Plan #1	11,162.1	13,552.2	410.7	165.4	1.675	CC, ES, SF
Razor Federal #12H-1314B - Hz - Plan #1	11,162.1	13,641.6	689.9	428.7	2.641	CC, ES, SF
Razor Federal #12H-1315A - Hz - Plan #1	11,162.1	13,552.8	1,018.7	758.6	3.916	CC, ES, SF
S25-T10N-R58W						
Razor 25B -2409 - HZ - Plan #1	500.0	500.0	90.0	88.0	45.330	CC, ES
Razor 25B -2409 - HZ - Plan #1	11,162.1	11,104.5	992.6	779.4	4.656	SF
Razor 25B -2410 - HZ - Plan #1	400.0	400.0	59.8	58.3	38.953	CC, ES
Razor 25B -2410 - HZ - Plan #1	11,162.1	11,146.8	659.5	445.6	3.084	SF
Razor 25B -2411 - HZ - Plan #1	600.0	600.7	27.2	24.8	11.460	CC, ES
Razor 25B -2411 - HZ - Plan #1	11,162.1	11,063.1	339.2	131.1	1.630	SF
Razor 25B -2549 - HZ - Plan #2	500.0	500.0	186.9	184.9	94.179	CC, ES
Razor 25B -2549 - HZ - Plan #2	1,100.0	1,050.1	283.4	278.8	61.290	SF
Razor 25B -2550 - HZ - Plan #2	500.0	500.0	158.1	156.1	79.650	CC
Razor 25B -2550 - HZ - Plan #2	500.0	500.0	158.1	156.1	79.650	ES
Razor 25B -2550 - HZ - Plan #2	6,300.0	5,566.7	1,276.8	1,246.4	41.938	SF
Razor 25B -2551 - HZ - Plan #2	500.0	500.0	130.1	128.1	65.563	CC, ES
Razor 25B -2551 - HZ - Plan #2	6,700.0	5,550.0	1,299.6	1,263.0	35.481	SF
Razor 25B -2552 - HZ - Plan #2	500.0	500.0	103.2	101.3	52.020	CC, ES
Razor 25B -2552 - HZ - Plan #2	5,900.0	5,679.7	863.7	837.6	32.986	SF
Razor 25B -2553 - HZ - Plan #1	500.0	500.0	78.3	76.4	39.477	CC, ES
Razor 25B -2553 - HZ - Plan #1	1,000.0	997.5	104.6	100.4	24.720	SF
Razor 25B -2554 - HZ - Plan #2	814.8	817.6	58.0	54.6	17.130	CC, ES
Razor 25B -2554 - HZ - Plan #2	1,000.0	1,000.8	65.8	61.6	15.491	SF
Razor 25B -2555 - HZ - Plan #2	1,027.1	1,028.4	25.9	21.5	5.895	CC, ES
Razor 25B -2555 - HZ - Plan #2	1,100.0	1,100.7	27.5	22.8	5.829	SF
Razor 25B -2556 - HZ - Plan #2	1,209.3	1,207.2	18.3	13.1	3.506	CC, ES
Razor 25B -2556 - HZ - Plan #2	5,715.8	5,712.7	84.3	58.6	3.275	SF

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1309A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
10,600.0	5,747.0	13,221.6	5,812.0	96.1	150.9	-82.39	5,674.5	-614.1	1,263.4	1,018.8	244.57	5.166		
10,700.0	5,747.0	13,221.6	5,812.0	98.0	150.9	-82.39	5,674.5	-614.1	1,204.5	958.0	246.46	4.887		
10,800.0	5,747.0	13,221.6	5,812.0	99.9	150.9	-82.39	5,674.5	-614.1	1,151.3	903.0	248.36	4.636		
10,900.0	5,747.0	13,221.6	5,812.0	101.8	150.9	-82.39	5,674.5	-614.1	1,104.6	854.4	250.25	4.414		
11,000.0	5,747.0	13,221.6	5,812.0	103.7	150.9	-82.39	5,674.5	-614.1	1,065.3	813.2	252.15	4.225		
11,100.0	5,747.0	13,221.6	5,812.0	105.6	150.9	-82.39	5,674.5	-614.1	1,034.2	780.2	254.05	4.071		
11,162.1	5,747.0	13,221.6	5,812.0	106.8	150.9	-82.39	5,674.5	-614.1	1,019.4	764.1	255.22	3.994	CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1310B - 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		
10,300.0	5,747.0	13,293.1	5,911.0	90.4	151.4	-87.14	5,674.9	-284.3	1,257.4	1,016.2	241.20	5.213		
10,400.0	5,747.0	13,293.1	5,911.0	92.3	151.4	-87.14	5,674.9	-284.3	1,173.4	930.3	243.11	4.827		
10,500.0	5,747.0	13,293.1	5,911.0	94.2	151.4	-87.14	5,674.9	-284.3	1,092.1	847.0	245.01	4.457		
10,600.0	5,747.0	13,293.1	5,911.0	96.1	151.4	-87.14	5,674.9	-284.3	1,014.1	767.2	246.92	4.107		
10,700.0	5,747.0	13,293.1	5,911.0	98.0	151.4	-87.14	5,674.9	-284.3	940.3	691.5	248.82	3.779		
10,800.0	5,747.0	13,293.1	5,911.0	99.9	151.4	-87.14	5,674.9	-284.3	871.8	621.1	250.73	3.477		
10,900.0	5,747.0	13,293.1	5,911.0	101.8	151.4	-87.14	5,674.9	-284.3	809.9	557.2	252.64	3.206		
11,000.0	5,747.0	13,293.1	5,911.0	103.7	151.4	-87.14	5,674.9	-284.3	756.1	501.6	254.54	2.970		
11,100.0	5,747.0	13,293.1	5,911.0	105.6	151.4	-87.14	5,674.9	-284.3	712.4	456.0	256.45	2.778		
11,162.1	5,747.0	13,293.1	5,911.0	106.8	151.4	-87.14	5,674.9	-284.3	691.2	433.5	257.64	2.683	CC, ES, SF	

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													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			
10,200.0	5,747.0	13,250.1	5,812.0	88.5	151.1	-68.07	5,676.6	46.2	1,218.7	995.2	223.55	5.452			
10,300.0	5,747.0	13,250.1	5,812.0	90.4	151.1	-68.07	5,676.6	46.2	1,123.4	898.1	225.34	4.985			
10,400.0	5,747.0	13,250.1	5,812.0	92.3	151.1	-68.07	5,676.6	46.2	1,029.0	801.8	227.13	4.530			
10,500.0	5,747.0	13,250.1	5,812.0	94.2	151.1	-68.07	5,676.6	46.2	935.7	706.7	228.92	4.087			
10,600.0	5,747.0	13,250.1	5,812.0	96.1	151.1	-68.07	5,676.6	46.2	843.9	613.2	230.71	3.658			
10,700.0	5,747.0	13,250.1	5,812.0	98.0	151.1	-68.07	5,676.6	46.2	754.2	521.7	232.51	3.244			
10,800.0	5,747.0	13,250.1	5,812.0	99.9	151.1	-68.07	5,676.6	46.2	667.5	433.2	234.30	2.849			
10,900.0	5,747.0	13,250.1	5,812.0	101.8	151.1	-68.07	5,676.6	46.2	585.0	349.0	236.09	2.478			
11,000.0	5,747.0	13,250.1	5,812.0	103.7	151.1	-68.07	5,676.6	46.2	508.9	271.0	237.88	2.139			
11,100.0	5,747.0	13,250.1	5,812.0	105.6	151.1	-68.07	5,676.6	46.2	442.4	202.7	239.68	1.846			
11,162.1	5,747.0	13,250.1	5,812.0	106.8	151.1	-68.07	5,676.6	46.2	408.0	167.2	240.79	1.694	CC, ES, SF		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12G-1312B - 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		
10,100.0	5,747.0	13,435.7	5,911.0	86.6	151.2	3.82	5,677.6	376.0	1,261.9	1,167.1	94.76	13.317		
10,200.0	5,747.0	13,435.7	5,911.0	88.5	151.2	3.82	5,677.6	376.0	1,161.9	1,066.4	95.50	12.167		
10,300.0	5,747.0	13,435.7	5,911.0	90.4	151.2	3.82	5,677.6	376.0	1,062.0	965.7	96.23	11.036		
10,400.0	5,747.0	13,435.7	5,911.0	92.3	151.2	3.82	5,677.6	376.0	962.0	865.1	96.97	9.921		
10,500.0	5,747.0	13,435.7	5,911.0	94.2	151.2	3.82	5,677.6	376.0	862.1	764.4	97.70	8.824		
10,600.0	5,747.0	13,435.7	5,911.0	96.1	151.2	3.82	5,677.6	376.0	762.2	663.7	98.44	7.743		
10,700.0	5,747.0	13,435.7	5,911.0	98.0	151.2	3.82	5,677.6	376.0	662.3	563.1	99.18	6.678		
10,800.0	5,747.0	13,435.7	5,911.0	99.9	151.2	3.82	5,677.6	376.0	562.4	462.5	99.91	5.629		
10,900.0	5,747.0	13,435.7	5,911.0	101.8	151.2	3.82	5,677.6	376.0	462.6	362.0	100.65	4.597		
11,000.0	5,747.0	13,435.7	5,911.0	103.7	151.2	3.82	5,677.6	376.0	363.0	261.6	101.38	3.580		
11,100.0	5,747.0	13,435.7	5,911.0	105.6	151.2	3.82	5,677.6	376.0	263.5	161.4	102.12	2.581		
11,162.1	5,747.0	13,435.7	5,911.0	106.8	151.2	3.82	5,677.6	376.0	202.0	99.5	102.58	1.970	CC, ES, SF	

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S12-T10N-R58W - Razor Federal #12H-1313A - 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		
10,100.0	5,747.0	13,552.2	5,795.0	86.6	153.6	66.73	5,679.7	705.7	1,308.4	1,081.2	227.28	5.757		
10,200.0	5,747.0	13,552.2	5,795.0	88.5	153.6	66.73	5,679.7	705.7	1,212.6	983.7	228.97	5.296		
10,300.0	5,747.0	13,552.2	5,795.0	90.4	153.6	66.73	5,679.7	705.7	1,117.6	886.9	230.66	4.845		
10,400.0	5,747.0	13,552.2	5,795.0	92.3	153.6	66.73	5,679.7	705.7	1,023.5	791.1	232.35	4.405		
10,500.0	5,747.0	13,552.2	5,795.0	94.2	153.6	66.73	5,679.7	705.7	930.6	696.5	234.04	3.976		
10,600.0	5,747.0	13,552.2	5,795.0	96.1	153.6	66.73	5,679.7	705.7	839.3	603.6	235.73	3.560		
10,700.0	5,747.0	13,552.2	5,795.0	98.0	153.6	66.73	5,679.7	705.7	750.3	512.8	237.43	3.160		
10,800.0	5,747.0	13,552.2	5,795.0	99.9	153.6	66.73	5,679.7	705.7	664.4	425.2	239.12	2.778		
10,900.0	5,747.0	13,552.2	5,795.0	101.8	153.6	66.73	5,679.7	705.7	583.0	342.2	240.81	2.421		
11,000.0	5,747.0	13,552.2	5,795.0	103.7	153.6	66.73	5,679.7	705.7	508.3	265.8	242.51	2.096		
11,100.0	5,747.0	13,552.2	5,795.0	105.6	153.6	66.73	5,679.7	705.7	443.7	199.5	244.20	1.817		
11,162.1	5,747.0	13,552.2	5,795.0	106.8	153.6	66.73	5,679.7	705.7	410.7	165.4	245.26	1.675 CC, ES, SF		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design												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				
10,300.0	5,747.0	13,641.6	5,893.0	90.4	153.3	86.13	5,680.5	1,035.5	1,243.8	998.3	245.57	5.065				
10,400.0	5,747.0	13,641.6	5,893.0	92.3	153.3	86.13	5,680.5	1,035.5	1,160.5	913.1	247.38	4.691				
10,500.0	5,747.0	13,641.6	5,893.0	94.2	153.3	86.13	5,680.5	1,035.5	1,079.9	830.7	249.19	4.334				
10,600.0	5,747.0	13,641.6	5,893.0	96.1	153.3	86.13	5,680.5	1,035.5	1,002.9	751.9	251.01	3.995				
10,700.0	5,747.0	13,641.6	5,893.0	98.0	153.3	86.13	5,680.5	1,035.5	930.2	677.4	252.82	3.679				
10,800.0	5,747.0	13,641.6	5,893.0	99.9	153.3	86.13	5,680.5	1,035.5	863.0	608.4	254.64	3.389				
10,900.0	5,747.0	13,641.6	5,893.0	101.8	153.3	86.13	5,680.5	1,035.5	802.7	546.3	256.45	3.130				
11,000.0	5,747.0	13,641.6	5,893.0	103.7	153.3	86.13	5,680.5	1,035.5	750.9	492.7	258.27	2.908				
11,100.0	5,747.0	13,641.6	5,893.0	105.6	153.3	86.13	5,680.5	1,035.5	709.5	449.5	260.08	2.728				
11,162.1	5,747.0	13,641.6	5,893.0	106.8	153.3	86.13	5,680.5	1,035.5	689.9	428.7	261.21	2.641 CC, ES, SF				

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft				
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 usft			
Reference				Offset				Semi Major Axis					Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning					
10,600.0	5,747.0	13,552.8	5,795.0	96.1	153.7	81.81	5,681.6	1,365.4	1,249.8	999.8	249.99	4.999						
10,700.0	5,747.0	13,552.8	5,795.0	98.0	153.7	81.81	5,681.6	1,365.4	1,192.7	940.9	251.80	4.737						
10,800.0	5,747.0	13,552.8	5,795.0	99.9	153.7	81.81	5,681.6	1,365.4	1,141.5	887.9	253.60	4.501						
10,900.0	5,747.0	13,552.8	5,795.0	101.8	153.7	81.81	5,681.6	1,365.4	1,097.1	841.7	255.40	4.295						
11,000.0	5,747.0	13,552.8	5,795.0	103.7	153.7	81.81	5,681.6	1,365.4	1,060.2	803.0	257.21	4.122						
11,100.0	5,747.0	13,552.8	5,795.0	105.6	153.7	81.81	5,681.6	1,365.4	1,031.8	772.8	259.01	3.984						
11,162.1	5,747.0	13,552.8	5,795.0	106.8	153.7	81.81	5,681.6	1,365.4	1,018.7	758.6	260.13	3.916	CC, ES, SF					

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2409 - 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				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)				
0.0	0.0	0.0	0.0	0.0	0.0	-90.69	-1.1	-90.0	90.0					
100.0	100.0	100.0	100.0	0.1	0.1	-90.69	-1.1	-90.0	90.0	89.8	0.19	482.250		
200.0	200.0	200.0	200.0	0.3	0.3	-90.69	-1.1	-90.0	90.0	89.3	0.64	141.437		
300.0	300.0	300.0	300.0	0.5	0.5	-90.69	-1.1	-90.0	90.0	88.9	1.09	82.871		
400.0	400.0	400.0	400.0	0.8	0.8	-90.69	-1.1	-90.0	90.0	88.4	1.54	58.604		
500.0	500.0	500.0	500.0	1.0	1.0	-90.69	-1.1	-90.0	90.0	88.0	1.98	45.330	CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	164.32	-1.1	-90.0	90.9	88.5	2.43	37.489		
700.0	699.9	699.9	699.9	1.4	1.4	165.01	-1.1	-90.0	95.1	92.3	2.86	33.260		
800.0	799.6	799.6	799.6	1.6	1.7	166.10	-1.1	-90.0	102.7	99.4	3.31	31.065		
900.0	898.9	898.9	898.9	1.9	1.9	167.43	-1.1	-90.0	113.6	109.9	3.76	30.249		
1,000.0	998.2	998.2	998.2	2.2	2.1	168.64	-1.1	-90.0	125.6	121.4	4.20	29.889		
1,100.0	1,097.5	1,093.2	1,093.2	2.4	2.3	169.38	-1.5	-91.4	139.0	134.4	4.63	30.036		
1,200.0	1,196.7	1,187.3	1,187.1	2.7	2.5	169.60	-2.6	-95.9	155.6	150.5	5.05	30.788		
1,300.0	1,296.0	1,280.3	1,279.8	3.0	2.7	169.44	-4.6	-103.2	175.2	169.7	5.48	31.935		
1,400.0	1,395.2	1,372.1	1,371.0	3.3	2.9	169.01	-7.2	-113.3	197.7	191.8	5.92	33.376		
1,500.0	1,494.5	1,462.4	1,460.4	3.7	3.1	168.43	-10.6	-126.0	223.2	216.8	6.37	35.035		
1,600.0	1,593.7	1,558.1	1,554.8	4.0	3.4	167.81	-14.5	-141.1	250.4	243.6	6.83	36.656		
1,700.0	1,693.0	1,654.3	1,649.7	4.3	3.7	167.30	-18.5	-156.3	277.6	270.3	7.29	38.074		
1,800.0	1,792.2	1,750.5	1,744.6	4.6	4.0	166.89	-22.5	-171.4	304.8	297.1	7.76	39.306		
1,900.0	1,891.5	1,846.7	1,839.5	4.9	4.3	166.54	-26.5	-186.6	332.1	323.9	8.23	40.359		
2,000.0	1,990.7	1,942.9	1,934.5	5.2	4.7	166.25	-30.5	-201.8	359.3	350.6	8.70	41.298		
2,100.0	2,090.0	2,039.1	2,029.4	5.5	5.0	166.00	-34.5	-217.0	386.6	377.4	9.18	42.127		
2,200.0	2,189.3	2,135.3	2,124.3	5.9	5.3	165.78	-38.5	-232.2	413.9	404.2	9.66	42.864		
2,300.0	2,288.5	2,231.5	2,219.2	6.2	5.7	165.58	-42.5	-247.4	441.1	431.0	10.14	43.524		
2,400.0	2,387.8	2,327.7	2,314.1	6.5	6.0	165.41	-46.5	-262.5	468.4	457.8	10.62	44.119		
2,500.0	2,487.0	2,423.9	2,409.0	6.8	6.4	165.26	-50.5	-277.7	495.7	484.6	11.10	44.657		
2,600.0	2,586.3	2,520.1	2,503.9	7.1	6.7	165.13	-54.5	-292.9	523.0	511.4	11.58	45.147		
2,700.0	2,685.5	2,616.3	2,598.8	7.5	7.1	165.01	-58.4	-308.1	550.2	538.2	12.07	45.596		
2,800.0	2,784.8	2,712.5	2,693.7	7.8	7.4	164.90	-62.4	-323.3	577.5	565.0	12.55	46.007		
2,900.0	2,884.0	2,808.7	2,788.6	8.1	7.8	164.80	-66.4	-338.5	604.8	591.8	13.04	46.387		
3,000.0	2,983.3	2,904.9	2,883.6	8.4	8.2	164.70	-70.4	-353.6	632.1	618.6	13.52	46.738		
3,100.0	3,082.5	3,001.1	2,978.5	8.7	8.5	164.62	-74.4	-368.8	659.4	645.4	14.01	47.064		
3,200.0	3,181.8	3,097.3	3,073.4	9.1	8.9	164.54	-78.4	-384.0	686.7	672.2	14.50	47.368		
3,300.0	3,281.1	3,193.5	3,168.3	9.4	9.2	164.47	-82.4	-399.2	714.0	699.0	14.98	47.652		
3,400.0	3,380.3	3,289.7	3,263.2	9.7	9.6	164.41	-86.4	-414.4	741.3	725.8	15.47	47.919		
3,500.0	3,479.6	3,385.9	3,358.1	10.0	10.0	164.34	-90.4	-429.6	768.6	752.6	15.96	48.169		
3,600.0	3,578.8	3,482.1	3,453.0	10.4	10.3	164.29	-94.4	-444.7	795.9	779.4	16.44	48.405		
3,700.0	3,678.1	3,578.3	3,547.9	10.7	10.7	164.23	-98.4	-459.9	823.2	806.2	16.93	48.629		
3,800.0	3,777.3	3,674.5	3,642.8	11.0	11.1	164.18	-102.4	-475.1	850.5	833.0	17.41	48.840		
3,900.0	3,876.6	3,770.7	3,737.7	11.3	11.4	164.14	-106.4	-490.3	877.8	859.9	17.90	49.041		
4,000.0	3,975.8	3,866.9	3,832.7	11.6	11.8	164.09	-110.3	-505.5	905.1	886.7	18.38	49.232		
4,100.0	4,075.1	3,963.1	3,927.6	12.0	12.2	164.05	-114.3	-520.7	932.3	913.5	18.87	49.414		
4,200.0	4,174.4	4,059.3	4,022.5	12.3	12.5	164.01	-118.3	-535.8	959.6	940.3	19.35	49.587		
4,300.0	4,273.6	4,155.5	4,117.4	12.6	12.9	163.97	-122.3	-551.0	986.9	967.1	19.84	49.754		
4,400.0	4,372.9	4,251.7	4,212.3	12.9	13.3	163.94	-126.3	-566.2	1,014.2	993.9	20.32	49.913		
4,500.0	4,472.1	4,347.9	4,307.2	13.3	13.7	163.91	-130.3	-581.4	1,041.5	1,020.7	20.80	50.066		
4,600.0	4,571.4	4,457.6	4,415.5	13.6	14.1	163.87	-134.8	-596.5	1,068.7	1,047.4	21.31	50.155		
4,700.0	4,670.8	4,611.4	4,568.1	13.9	14.5	163.99	-139.6	-611.9	1,096.0	1,068.9	21.89	49.835		
4,800.0	4,770.5	4,769.1	4,725.4	14.1	14.8	164.09	-144.4	-627.5	1,104.4	1,082.0	22.40	49.310		
4,900.0	4,870.5	4,914.2	4,870.5	14.2	15.0	164.16	-143.1	-630.0	1,109.5	1,086.7	22.86	48.543		
5,000.0	4,970.5	5,014.2	4,970.5	14.4	15.1	-90.68	-143.1	-630.0	1,110.0	1,086.8	23.24	47.768		
5,100.0	5,070.5	5,114.2	5,070.5	14.5	15.3	-90.68	-143.1	-630.0	1,110.0	1,086.4	23.61	47.022		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2409 - 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				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	5,170.5	5,215.0	5,171.2	14.7	15.4	-90.64	-142.5	-630.0	1,110.0	1,086.1	23.98	46.297		
5,300.0	5,270.4	5,316.2	5,271.2	14.8	15.5	-88.95	-127.8	-629.9	1,109.9	1,085.6	24.29	45.694		
5,400.0	5,368.6	5,414.2	5,363.6	14.9	15.6	-88.20	-95.5	-629.8	1,109.6	1,085.0	24.51	45.270		
5,500.0	5,461.6	5,509.5	5,446.0	15.0	15.7	-87.52	-48.1	-629.7	1,109.0	1,084.3	24.69	44.915		
5,600.0	5,545.9	5,602.4	5,516.9	15.1	15.7	-86.94	12.0	-629.5	1,108.3	1,083.4	24.95	44.429		
5,700.0	5,618.5	5,693.5	5,574.8	15.1	15.8	-86.46	82.0	-629.2	1,107.4	1,081.9	25.40	43.596		
5,800.0	5,676.6	5,782.9	5,619.1	15.3	16.0	-86.11	159.6	-629.0	1,106.2	1,080.0	26.16	42.279		
5,900.0	5,718.2	5,871.1	5,649.1	15.5	16.2	-85.89	242.4	-628.7	1,104.7	1,077.4	27.30	40.465		
6,000.0	5,741.7	5,958.3	5,664.6	16.0	16.6	-85.80	328.2	-628.4	1,103.0	1,074.2	28.82	38.277		
6,100.0	5,747.0	6,050.8	5,667.0	16.7	17.3	-85.83	420.5	-628.1	1,101.1	1,070.3	30.74	35.824		
6,200.0	5,747.0	6,150.7	5,667.0	17.7	18.2	-85.82	520.5	-627.8	1,098.9	1,065.9	33.02	33.278		
6,300.0	5,747.0	6,250.7	5,667.0	18.9	19.3	-85.82	620.4	-627.5	1,096.8	1,061.2	35.58	30.828		
6,400.0	5,747.0	6,350.7	5,667.0	20.2	20.6	-85.81	720.4	-627.2	1,094.6	1,056.3	38.35	28.544		
6,500.0	5,747.0	6,450.7	5,667.0	21.6	21.9	-85.80	820.4	-626.9	1,092.5	1,051.2	41.29	26.456		
6,600.0	5,747.0	6,550.6	5,667.0	23.1	23.4	-85.79	920.4	-626.5	1,090.3	1,046.0	44.38	24.570		
6,700.0	5,747.0	6,650.6	5,667.0	24.6	24.9	-85.78	1,020.4	-626.2	1,088.2	1,040.6	47.57	22.874		
6,800.0	5,747.0	6,750.6	5,667.0	26.2	26.5	-85.77	1,120.3	-625.9	1,086.1	1,035.2	50.86	21.354		
6,900.0	5,747.0	6,850.6	5,667.0	27.8	28.1	-85.77	1,220.3	-625.6	1,083.9	1,029.7	54.22	19.991		
7,000.0	5,747.0	6,950.5	5,667.0	29.5	29.7	-85.76	1,320.3	-625.2	1,081.8	1,024.1	57.64	18.767		
7,100.0	5,747.0	7,050.5	5,667.0	31.2	31.4	-85.75	1,420.3	-624.9	1,079.6	1,018.5	61.11	17.666		
7,200.0	5,747.0	7,150.5	5,667.0	32.9	33.1	-85.74	1,520.2	-624.6	1,077.5	1,012.8	64.63	16.672		
7,300.0	5,747.0	7,250.5	5,667.0	34.6	34.8	-85.73	1,620.2	-624.3	1,075.3	1,007.2	68.18	15.772		
7,400.0	5,747.0	7,350.5	5,667.0	36.4	36.6	-85.72	1,720.2	-624.0	1,073.2	1,001.4	71.76	14.955		
7,500.0	5,747.0	7,450.4	5,667.0	38.2	38.3	-85.72	1,820.2	-623.6	1,071.0	995.7	75.37	14.210		
7,600.0	5,747.0	7,550.4	5,667.0	39.9	40.1	-85.71	1,920.1	-623.3	1,068.9	989.9	79.00	13.530		
7,700.0	5,747.0	7,650.4	5,667.0	41.7	41.9	-85.70	2,020.1	-623.0	1,066.8	984.1	82.65	12.907		
7,800.0	5,747.0	7,750.4	5,667.0	43.6	43.7	-85.69	2,120.1	-622.7	1,064.6	978.3	86.32	12.333		
7,900.0	5,747.0	7,850.3	5,667.0	45.4	45.5	-85.68	2,220.1	-622.3	1,062.5	972.5	90.00	11.805		
8,000.0	5,747.0	7,950.3	5,667.0	47.2	47.3	-85.67	2,320.0	-622.0	1,060.3	966.6	93.70	11.316		
8,100.0	5,747.0	8,050.3	5,667.0	49.0	49.2	-85.66	2,420.0	-621.7	1,058.2	960.8	97.41	10.864		
8,200.0	5,747.0	8,150.3	5,667.0	50.9	51.0	-85.65	2,520.0	-621.4	1,056.0	954.9	101.12	10.443		
8,300.0	5,747.0	8,250.2	5,667.0	52.7	52.8	-85.65	2,620.0	-621.1	1,053.9	949.0	104.85	10.051		
8,400.0	5,747.0	8,350.2	5,667.0	54.6	54.7	-85.64	2,720.0	-620.7	1,051.8	943.2	108.59	9.686		
8,500.0	5,747.0	8,450.2	5,667.0	56.4	56.5	-85.63	2,819.9	-620.4	1,049.6	937.3	112.33	9.344		
8,600.0	5,747.0	8,550.2	5,667.0	58.3	58.4	-85.62	2,919.9	-620.1	1,047.5	931.4	116.08	9.024		
8,700.0	5,747.0	8,650.2	5,667.0	60.2	60.2	-85.61	3,019.9	-619.8	1,045.3	925.5	119.83	8.723		
8,800.0	5,747.0	8,750.1	5,667.0	62.0	62.1	-85.60	3,119.9	-619.5	1,043.2	919.6	123.60	8.440		
8,900.0	5,747.0	8,850.1	5,667.0	63.9	64.0	-85.59	3,219.8	-619.1	1,041.0	913.7	127.36	8.174		
9,000.0	5,747.0	8,950.1	5,667.0	65.8	65.8	-85.58	3,319.8	-618.8	1,038.9	907.8	131.13	7.922		
9,100.0	5,747.0	9,050.1	5,667.0	67.7	67.7	-85.57	3,419.8	-618.5	1,036.7	901.8	134.91	7.685		
9,200.0	5,747.0	9,150.0	5,667.0	69.6	69.6	-85.56	3,519.8	-618.2	1,034.6	895.9	138.69	7.460		
9,300.0	5,747.0	9,250.0	5,667.0	71.4	71.5	-85.55	3,619.7	-617.8	1,032.5	890.0	142.47	7.247		
9,400.0	5,747.0	9,350.0	5,667.0	73.3	73.3	-85.55	3,719.7	-617.5	1,030.3	884.1	146.26	7.045		
9,500.0	5,747.0	9,450.0	5,667.0	75.2	75.2	-85.54	3,819.7	-617.2	1,028.2	878.1	150.05	6.852		
9,600.0	5,747.0	9,549.9	5,667.0	77.1	77.1	-85.53	3,919.7	-616.9	1,026.0	872.2	153.84	6.670		
9,700.0	5,747.0	9,649.9	5,667.0	79.0	79.0	-85.52	4,019.6	-616.6	1,023.9	866.3	157.63	6.495		
9,800.0	5,747.0	9,749.9	5,667.0	80.9	80.9	-85.51	4,119.6	-616.2	1,021.7	860.3	161.43	6.329		
9,900.0	5,747.0	9,849.9	5,667.0	82.8	82.8	-85.50	4,219.6	-615.9	1,019.6	854.4	165.23	6.171		
10,000.0	5,747.0	9,949.9	5,667.0	84.7	84.6	-85.49	4,319.6	-615.6	1,017.5	848.4	169.03	6.019		
10,100.0	5,747.0	10,049.8	5,667.0	86.6	86.5	-85.48	4,419.5	-615.3	1,015.3	842.5	172.83	5.875		
10,200.0	5,747.0	10,149.8	5,667.0	88.5	88.4	-85.47	4,519.5	-614.9	1,013.2	836.5	176.64	5.736		
10,300.0	5,747.0	10,249.8	5,667.0	90.4	90.3	-85.46	4,619.5	-614.6	1,011.0	830.6	180.44	5.603		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design												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				
10,400.0	5,747.0	10,349.8	5,667.0	92.3	92.2	-85.45	4,719.5	-614.3	1,008.9	824.6	184.25	5.476				
10,500.0	5,747.0	10,449.7	5,667.0	94.2	94.1	-85.44	4,819.5	-614.0	1,006.7	818.7	188.06	5.353				
10,600.0	5,747.0	10,549.7	5,667.0	96.1	96.0	-85.43	4,919.4	-613.7	1,004.6	812.7	191.87	5.236				
10,700.0	5,747.0	10,649.7	5,667.0	98.0	97.9	-85.42	5,019.4	-613.3	1,002.5	806.8	195.68	5.123				
10,800.0	5,747.0	10,749.7	5,667.0	99.9	99.8	-85.41	5,119.4	-613.0	1,000.3	800.8	199.49	5.014				
10,900.0	5,747.0	10,849.6	5,667.0	101.8	101.7	-85.40	5,219.4	-612.7	998.2	794.9	203.31	4.910				
11,000.0	5,747.0	10,949.6	5,667.0	103.7	103.6	-85.39	5,319.3	-612.4	996.0	788.9	207.12	4.809				
11,100.0	5,747.0	11,049.6	5,667.0	105.6	105.5	-85.38	5,419.3	-612.0	993.9	782.9	210.94	4.712				
11,162.1	5,747.0	11,104.5	5,667.0	106.8	106.5	-85.38	5,474.2	-611.9	992.6	779.4	213.18	4.656 SF				

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2410 - 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				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)				
0.0	0.0	0.0	0.0	0.0	0.0	-91.04	-1.1	-59.8	59.8					
100.0	100.0	100.0	100.0	0.1	0.1	-91.04	-1.1	-59.8	59.8	59.6	0.19	320.540		
200.0	200.0	200.0	200.0	0.3	0.3	-91.04	-1.1	-59.8	59.8	59.2	0.64	94.010		
300.0	300.0	300.0	300.0	0.5	0.5	-91.04	-1.1	-59.8	59.8	58.7	1.09	55.083		
400.0	400.0	400.0	400.0	0.8	0.8	-91.04	-1.1	-59.8	59.8	58.3	1.54	38.953 CC, ES		
500.0	500.0	498.2	498.2	1.0	1.0	-91.91	-2.0	-61.2	61.2	59.3	1.96	31.219		
600.0	600.0	596.9	596.7	1.2	1.2	160.90	-4.8	-65.2	66.4	64.0	2.38	27.840		
700.0	699.9	696.5	696.2	1.4	1.4	159.74	-8.0	-69.9	75.4	72.6	2.81	26.855		
800.0	799.6	795.7	795.2	1.6	1.6	159.62	-11.2	-74.5	87.7	84.5	3.25	26.992		
900.0	898.9	894.5	893.9	1.9	1.8	160.17	-14.3	-79.2	103.1	99.5	3.70	27.885		
1,000.0	998.2	993.1	992.3	2.2	2.1	160.80	-17.5	-83.8	119.5	115.4	4.15	28.824		
1,100.0	1,097.5	1,091.8	1,090.8	2.4	2.3	161.27	-20.6	-88.4	135.9	131.3	4.60	29.528		
1,200.0	1,196.7	1,190.4	1,189.3	2.7	2.6	161.65	-23.8	-93.0	152.3	147.2	5.06	30.072		
1,300.0	1,296.0	1,289.1	1,287.8	3.0	2.8	161.95	-27.0	-97.7	168.7	163.1	5.53	30.500		
1,400.0	1,395.2	1,387.7	1,386.3	3.3	3.0	162.19	-30.1	-102.3	185.0	179.0	6.00	30.847		
1,500.0	1,494.5	1,486.4	1,484.8	3.7	3.3	162.40	-33.3	-106.9	201.4	195.0	6.47	31.132		
1,600.0	1,593.7	1,585.0	1,583.3	4.0	3.5	162.58	-36.4	-111.6	217.8	210.9	6.94	31.370		
1,700.0	1,693.0	1,683.6	1,681.7	4.3	3.8	162.73	-39.6	-116.2	234.2	226.8	7.42	31.572		
1,800.0	1,792.2	1,782.3	1,780.2	4.6	4.0	162.86	-42.8	-120.8	250.6	242.7	7.89	31.745		
1,900.0	1,891.5	1,880.9	1,878.7	4.9	4.3	162.98	-45.9	-125.4	267.0	258.6	8.37	31.896		
2,000.0	1,990.7	1,979.6	1,977.2	5.2	4.5	163.08	-49.1	-130.1	283.4	274.6	8.85	32.028		
2,100.0	2,090.0	2,078.2	2,075.7	5.5	4.8	163.17	-52.2	-134.7	299.8	290.5	9.33	32.145		
2,200.0	2,189.3	2,176.9	2,174.2	5.9	5.0	163.25	-55.4	-139.3	316.2	306.4	9.81	32.250		
2,300.0	2,288.5	2,275.5	2,272.7	6.2	5.2	163.32	-58.6	-143.9	332.6	322.3	10.28	32.345		
2,400.0	2,387.8	2,374.2	2,371.1	6.5	5.5	163.39	-61.7	-148.6	349.0	338.3	10.76	32.430		
2,500.0	2,487.0	2,472.8	2,469.6	6.8	5.7	163.45	-64.9	-153.2	365.4	354.2	11.24	32.509		
2,600.0	2,586.3	2,571.4	2,568.1	7.1	6.0	163.51	-68.0	-157.8	381.8	370.1	11.72	32.581		
2,700.0	2,685.5	2,670.1	2,666.6	7.5	6.2	163.56	-71.2	-162.5	398.2	386.0	12.20	32.647		
2,800.0	2,784.8	2,768.7	2,765.1	7.8	6.5	163.60	-74.4	-167.1	414.6	402.0	12.68	32.709		
2,900.0	2,884.0	2,867.4	2,863.6	8.1	6.7	163.65	-77.5	-171.7	431.0	417.9	13.16	32.766		
3,000.0	2,983.3	2,966.0	2,962.1	8.4	7.0	163.69	-80.7	-176.3	447.4	433.8	13.63	32.820		
3,100.0	3,082.5	3,064.7	3,060.5	8.7	7.2	163.72	-83.8	-181.0	463.8	449.7	14.11	32.871		
3,200.0	3,181.8	3,163.3	3,159.0	9.1	7.5	163.76	-87.0	-185.6	480.3	465.7	14.59	32.919		
3,300.0	3,281.1	3,262.0	3,257.5	9.4	7.7	163.79	-90.2	-190.2	496.7	481.6	15.07	32.964		
3,400.0	3,380.3	3,360.6	3,356.0	9.7	8.0	163.82	-93.3	-194.8	513.1	497.5	15.54	33.007		
3,500.0	3,479.6	3,459.3	3,454.5	10.0	8.2	163.85	-96.5	-199.5	529.5	513.4	16.02	33.048		
3,600.0	3,578.8	3,557.9	3,553.0	10.4	8.5	163.88	-99.6	-204.1	545.9	529.4	16.50	33.088		
3,700.0	3,678.1	3,656.5	3,651.5	10.7	8.7	163.90	-102.8	-208.7	562.3	545.3	16.97	33.126		
3,800.0	3,777.3	3,755.2	3,749.9	11.0	9.0	163.93	-106.0	-213.4	578.7	561.2	17.45	33.162		
3,900.0	3,876.6	3,853.8	3,848.4	11.3	9.2	163.95	-109.1	-218.0	595.1	577.2	17.93	33.197		
4,000.0	3,975.8	3,952.5	3,946.9	11.6	9.5	163.97	-112.3	-222.6	611.5	593.1	18.40	33.230		
4,100.0	4,075.1	4,051.1	4,045.4	12.0	9.7	163.99	-115.4	-227.2	627.9	609.0	18.88	33.263		
4,200.0	4,174.4	4,149.8	4,143.9	12.3	10.0	164.01	-118.6	-231.9	644.3	625.0	19.35	33.294		
4,300.0	4,273.6	4,248.4	4,242.4	12.6	10.2	164.03	-121.8	-236.5	660.7	640.9	19.83	33.325		
4,400.0	4,372.9	4,347.1	4,340.9	12.9	10.5	164.04	-124.9	-241.1	677.1	656.8	20.30	33.355		
4,500.0	4,472.1	4,445.7	4,439.3	13.3	10.7	164.06	-128.1	-245.7	693.5	672.7	20.77	33.384		
4,600.0	4,571.4	4,544.3	4,537.8	13.6	10.9	164.08	-131.2	-250.4	709.9	688.7	21.25	33.412		
4,700.0	4,670.8	4,643.2	4,636.5	13.9	11.2	164.14	-134.4	-255.0	726.3	704.7	21.73	33.440		
4,800.0	4,770.5	4,742.5	4,735.7	14.1	11.4	164.11	-137.6	-259.7	742.7	720.6	22.21	33.468		
4,900.0	4,870.5	4,842.1	4,835.1	14.2	11.7	164.01	-140.6	-264.1	759.1	736.5	22.69	33.496		
5,000.0	4,970.5	4,941.4	4,934.5	14.4	11.9	-90.85	-141.1	-264.8	775.5	752.4	23.17	33.524		
5,100.0	5,070.5	5,040.4	5,033.5	14.5	12.1	-90.85	-141.1	-264.8	791.9	768.3	23.65	33.552		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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	5,170.5	5,177.4	5,170.5	14.7	12.2	-90.85	-141.1	-264.8	744.9	721.2	23.65	31.492			
5,300.0	5,270.4	5,278.2	5,271.2	14.8	12.4	-89.81	-139.1	-264.8	744.8	720.8	24.03	30.997			
5,400.0	5,368.6	5,379.9	5,371.0	14.9	12.5	-89.81	-120.5	-264.9	744.6	720.3	24.29	30.650			
5,500.0	5,461.6	5,481.5	5,465.2	15.0	12.6	-89.83	-83.0	-265.0	744.0	719.5	24.50	30.372			
5,600.0	5,545.9	5,582.9	5,550.2	15.1	12.7	-89.84	-28.0	-265.1	743.2	718.4	24.75	30.027			
5,700.0	5,618.5	5,684.1	5,622.9	15.1	12.8	-89.87	42.3	-265.4	742.1	716.9	25.19	29.457			
5,800.0	5,676.6	5,785.1	5,680.4	15.3	12.9	-89.90	125.0	-265.6	740.9	714.9	25.96	28.538			
5,900.0	5,718.2	5,885.8	5,720.9	15.5	13.5	-89.93	217.1	-265.9	739.5	712.4	27.14	27.243			
6,000.0	5,741.7	5,986.1	5,742.9	16.0	14.4	-89.97	314.8	-266.2	738.0	709.3	28.76	25.663			
6,100.0	5,747.0	6,086.2	5,747.0	16.7	15.4	-90.00	414.7	-266.5	736.5	705.8	30.74	23.957			
6,200.0	5,747.0	6,186.2	5,747.0	17.7	16.6	-90.00	514.7	-266.8	735.0	701.9	33.05	22.236			
6,300.0	5,747.0	6,286.1	5,747.0	18.9	17.9	-90.00	614.7	-267.1	733.5	697.8	35.63	20.587			
6,400.0	5,747.0	6,386.1	5,747.0	20.2	19.3	-90.00	714.7	-267.4	731.9	693.5	38.42	19.053			
6,500.0	5,747.0	6,486.1	5,747.0	21.6	20.8	-90.00	814.7	-267.7	730.4	689.0	41.38	17.652			
6,600.0	5,747.0	6,586.1	5,747.0	23.1	22.3	-90.00	914.6	-268.0	728.9	684.4	44.48	16.388			
6,700.0	5,747.0	6,686.1	5,747.0	24.6	23.9	-90.00	1,014.6	-268.3	727.4	679.7	47.69	15.253			
6,800.0	5,747.0	6,786.1	5,747.0	26.2	25.6	-90.00	1,114.6	-268.6	725.8	674.9	50.98	14.236			
6,900.0	5,747.0	6,886.1	5,747.0	27.8	27.2	-90.00	1,214.6	-268.9	724.3	670.0	54.36	13.325			
7,000.0	5,747.0	6,986.1	5,747.0	29.5	29.0	-90.00	1,314.6	-269.2	722.8	665.0	57.79	12.507			
7,100.0	5,747.0	7,086.1	5,747.0	31.2	30.7	-90.00	1,414.6	-269.6	721.3	660.0	61.27	11.771			
7,200.0	5,747.0	7,186.0	5,747.0	32.9	32.5	-90.00	1,514.6	-269.9	719.8	655.0	64.80	11.107			
7,300.0	5,747.0	7,286.0	5,747.0	34.6	34.2	-90.00	1,614.6	-270.2	718.2	649.9	68.36	10.506			
7,400.0	5,747.0	7,386.0	5,747.0	36.4	36.0	-90.00	1,714.5	-270.5	716.7	644.8	71.95	9.961			
7,500.0	5,747.0	7,486.0	5,747.0	38.2	37.8	-90.00	1,814.5	-270.8	715.2	639.6	75.57	9.464			
7,600.0	5,747.0	7,586.0	5,747.0	39.9	39.6	-90.00	1,914.5	-271.1	713.7	634.5	79.21	9.009			
7,700.0	5,747.0	7,686.0	5,747.0	41.7	41.5	-90.00	2,014.5	-271.4	712.2	629.3	82.87	8.593			
7,800.0	5,747.0	7,786.0	5,747.0	43.6	43.3	-90.00	2,114.5	-271.7	710.6	624.1	86.55	8.211			
7,900.0	5,747.0	7,886.0	5,747.0	45.4	45.1	-90.00	2,214.5	-272.0	709.1	618.9	90.24	7.858			
8,000.0	5,747.0	7,986.0	5,747.0	47.2	47.0	-90.00	2,314.5	-272.3	707.6	613.6	93.95	7.532			
8,100.0	5,747.0	8,085.9	5,747.0	49.0	48.8	-90.00	2,414.5	-272.6	706.1	608.4	97.67	7.229			
8,200.0	5,747.0	8,185.9	5,747.0	50.9	50.7	-90.00	2,514.4	-272.9	704.5	603.2	101.39	6.949			
8,300.0	5,747.0	8,285.9	5,747.0	52.7	52.5	-90.00	2,614.4	-273.2	703.0	597.9	105.13	6.687			
8,400.0	5,747.0	8,385.9	5,747.0	54.6	54.4	-90.00	2,714.4	-273.5	701.5	592.6	108.88	6.443			
8,500.0	5,747.0	8,485.9	5,747.0	56.4	56.3	-90.00	2,814.4	-273.8	700.0	587.4	112.63	6.215			
8,600.0	5,747.0	8,585.9	5,747.0	58.3	58.2	-90.00	2,914.4	-274.2	698.5	582.1	116.39	6.001			
8,700.0	5,747.0	8,685.9	5,747.0	60.2	60.0	-90.00	3,014.4	-274.5	696.9	576.8	120.15	5.800			
8,800.0	5,747.0	8,785.9	5,747.0	62.0	61.9	-90.00	3,114.4	-274.8	695.4	571.5	123.92	5.612			
8,900.0	5,747.0	8,885.8	5,747.0	63.9	63.8	-90.00	3,214.4	-275.1	693.9	566.2	127.70	5.434			
9,000.0	5,747.0	8,985.8	5,747.0	65.8	65.7	-90.00	3,314.4	-275.4	692.4	560.9	131.48	5.266			
9,100.0	5,747.0	9,085.8	5,747.0	67.7	67.6	-90.00	3,414.3	-275.7	690.8	555.6	135.27	5.107			
9,200.0	5,747.0	9,185.8	5,747.0	69.6	69.4	-90.00	3,514.3	-276.0	689.3	550.3	139.06	4.957			
9,300.0	5,747.0	9,285.8	5,747.0	71.4	71.3	-90.00	3,614.3	-276.3	687.8	545.0	142.85	4.815			
9,400.0	5,747.0	9,385.8	5,747.0	73.3	73.2	-90.00	3,714.3	-276.6	686.3	539.6	146.64	4.680			
9,500.0	5,747.0	9,485.8	5,747.0	75.2	75.1	-90.00	3,814.3	-276.9	684.8	534.3	150.44	4.552			
9,600.0	5,747.0	9,585.8	5,747.0	77.1	77.0	-90.00	3,914.3	-277.2	683.2	529.0	154.24	4.430			
9,700.0	5,747.0	9,685.8	5,747.0	79.0	78.9	-90.00	4,014.3	-277.5	681.7	523.7	158.05	4.313			
9,800.0	5,747.0	9,785.7	5,747.0	80.9	80.8	-90.00	4,114.3	-277.8	680.2	518.3	161.86	4.202			
9,900.0	5,747.0	9,885.7	5,747.0	82.8	82.7	-90.00	4,214.2	-278.1	678.7	513.0	165.67	4.097			
10,000.0	5,747.0	9,985.7	5,747.0	84.7	84.6	-90.00	4,314.2	-278.4	677.2	507.7	169.48	3.996			
10,100.0	5,747.0	10,085.7	5,747.0	86.6	86.5	-90.00	4,414.2	-278.7	675.6	502.3	173.29	3.899			
10,200.0	5,747.0	10,185.7	5,747.0	88.5	88.4	-90.00	4,514.2	-279.1	674.1	497.0	177.11	3.806			
10,300.0	5,747.0	10,285.7	5,747.0	90.4	90.3	-90.00	4,614.2	-279.4	672.6	491.7	180.92	3.718			

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													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			
10,400.0	5,747.0	10,385.7	5,747.0	92.3	92.2	-90.00	4,714.2	-279.7	671.1	486.3	184.74	3.632			
10,500.0	5,747.0	10,485.7	5,747.0	94.2	94.1	-90.00	4,814.2	-280.0	669.5	481.0	188.56	3.551			
10,600.0	5,747.0	10,585.7	5,747.0	96.1	96.0	-90.00	4,914.2	-280.3	668.0	475.6	192.38	3.472			
10,700.0	5,747.0	10,685.6	5,747.0	98.0	97.9	-90.00	5,014.1	-280.6	666.5	470.3	196.21	3.397			
10,800.0	5,747.0	10,785.6	5,747.0	99.9	99.8	-90.00	5,114.1	-280.9	665.0	465.0	200.03	3.324			
10,900.0	5,747.0	10,885.6	5,747.0	101.8	101.7	-90.00	5,214.1	-281.2	663.5	459.6	203.86	3.255			
11,000.0	5,747.0	10,985.6	5,747.0	103.7	103.6	-90.00	5,314.1	-281.5	661.9	454.3	207.68	3.187			
11,100.0	5,747.0	11,085.6	5,747.0	105.6	105.5	-90.00	5,414.1	-281.8	660.4	448.9	211.51	3.122			
11,162.1	5,747.0	11,146.8	5,747.0	106.8	106.7	-90.00	5,475.3	-282.0	659.5	445.6	213.87	3.084 SF			

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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)					
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-29.9	29.9						
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-29.9	29.9	29.7		0.19	160.244		
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-29.9	29.9	29.3		0.64	46.997		
300.0	300.0	300.0	300.0	0.5	0.5	-89.98	0.0	-29.9	29.9	28.8		1.09	27.537		
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-29.9	29.9	28.4		1.54	19.473		
500.0	500.0	500.7	500.6	1.0	1.0	-92.61	-1.3	-28.7	28.8	26.8		1.97	14.630		
599.2	599.2	600.0	599.9	1.2	1.2	156.23	-4.5	-25.9	27.5	25.1		2.37	11.602		
600.0	600.0	600.7	600.6	1.2	1.2	155.91	-4.5	-25.9	27.2	24.8		2.37	11.460	CC, ES	
700.0	699.9	700.7	700.5	1.4	1.4	152.20	-7.7	-23.0	28.9	26.1		2.79	10.362		
800.0	799.6	800.6	800.3	1.6	1.6	151.93	-10.9	-20.1	33.7	30.5		3.22	10.453		
900.0	898.9	900.3	899.9	1.9	1.8	153.93	-14.2	-17.2	41.5	37.9		3.68	11.297		
1,000.0	998.2	999.9	999.4	2.2	2.0	155.80	-17.4	-14.4	50.3	46.2		4.13	12.178		
1,100.0	1,097.5	1,099.5	1,098.9	2.4	2.3	157.11	-20.6	-11.5	59.1	54.5		4.59	12.873		
1,200.0	1,196.7	1,199.1	1,198.4	2.7	2.5	158.08	-23.8	-8.6	67.9	62.9		5.06	13.432		
1,300.0	1,296.0	1,298.7	1,297.9	3.0	2.7	158.82	-27.1	-5.7	76.8	71.2		5.53	13.890		
1,400.0	1,395.2	1,398.3	1,397.4	3.3	3.0	159.42	-30.3	-2.9	85.6	79.6		6.00	14.271		
1,500.0	1,494.5	1,497.9	1,496.9	3.7	3.2	159.90	-33.5	0.0	94.5	88.0		6.47	14.593		
1,600.0	1,593.7	1,597.5	1,596.4	4.0	3.5	160.30	-36.7	2.9	103.3	96.4		6.95	14.869		
1,700.0	1,693.0	1,697.1	1,696.0	4.3	3.7	160.63	-40.0	5.8	112.2	104.8		7.43	15.107		
1,800.0	1,792.2	1,796.7	1,795.5	4.6	3.9	160.92	-43.2	8.6	121.1	113.2		7.91	15.315		
1,900.0	1,891.5	1,896.3	1,895.0	4.9	4.2	161.17	-46.4	11.5	130.0	121.6		8.39	15.497		
2,000.0	1,990.7	1,995.9	1,994.5	5.2	4.4	161.38	-49.6	14.4	138.8	130.0		8.87	15.660		
2,100.0	2,090.0	2,095.5	2,094.0	5.5	4.6	161.57	-52.9	17.3	147.7	138.4		9.35	15.805		
2,200.0	2,189.3	2,195.1	2,193.5	5.9	4.9	161.74	-56.1	20.1	156.6	146.8		9.83	15.935		
2,300.0	2,288.5	2,294.7	2,293.0	6.2	5.1	161.89	-59.3	23.0	165.5	155.2		10.31	16.053		
2,400.0	2,387.8	2,394.3	2,392.5	6.5	5.4	162.03	-62.5	25.9	174.3	163.6		10.79	16.160		
2,500.0	2,487.0	2,493.9	2,492.0	6.8	5.6	162.15	-65.7	28.8	183.2	172.0		11.27	16.257		
2,600.0	2,586.3	2,593.5	2,591.5	7.1	5.8	162.26	-69.0	31.6	192.1	180.4		11.75	16.347		
2,700.0	2,685.5	2,693.1	2,691.1	7.5	6.1	162.36	-72.2	34.5	201.0	188.8		12.23	16.429		
2,800.0	2,784.8	2,792.7	2,790.6	7.8	6.3	162.45	-75.4	37.4	209.9	197.2		12.72	16.505		
2,900.0	2,884.0	2,892.3	2,890.1	8.1	6.6	162.54	-78.6	40.3	218.8	205.6		13.20	16.576		
3,000.0	2,983.3	2,991.9	2,989.6	8.4	6.8	162.62	-81.9	43.1	227.6	214.0		13.68	16.642		
3,100.0	3,082.5	3,091.6	3,089.1	8.7	7.0	162.69	-85.1	46.0	236.5	222.4		14.16	16.703		
3,200.0	3,181.8	3,191.2	3,188.6	9.1	7.3	162.76	-88.3	48.9	245.4	230.8		14.64	16.761		
3,300.0	3,281.1	3,290.8	3,288.1	9.4	7.5	162.82	-91.5	51.8	254.3	239.2		15.12	16.814		
3,400.0	3,380.3	3,390.4	3,387.6	9.7	7.8	162.88	-94.8	54.7	263.2	247.6		15.61	16.865		
3,500.0	3,479.6	3,490.0	3,487.1	10.0	8.0	162.93	-98.0	57.5	272.1	256.0		16.09	16.913		
3,600.0	3,578.8	3,589.6	3,586.7	10.4	8.2	162.98	-101.2	60.4	281.0	264.4		16.57	16.958		
3,700.0	3,678.1	3,689.2	3,686.2	10.7	8.5	163.03	-104.4	63.3	289.8	272.8		17.05	17.001		
3,800.0	3,777.3	3,788.8	3,785.7	11.0	8.7	163.08	-107.7	66.2	298.7	281.2		17.53	17.041		
3,900.0	3,876.6	3,888.4	3,885.2	11.3	8.9	163.12	-110.9	69.0	307.6	289.6		18.01	17.079		
4,000.0	3,975.8	3,988.0	3,984.7	11.6	9.2	163.16	-114.1	71.9	316.5	298.0		18.49	17.116		
4,100.0	4,075.1	4,087.6	4,084.2	12.0	9.4	163.20	-117.3	74.8	325.4	306.4		18.97	17.151		
4,200.0	4,174.4	4,187.2	4,183.7	12.3	9.7	163.23	-120.5	77.7	334.3	314.8		19.45	17.184		
4,300.0	4,273.6	4,286.8	4,283.2	12.6	9.9	163.27	-123.8	80.5	343.2	323.2		19.93	17.216		
4,400.0	4,372.9	4,386.4	4,382.7	12.9	10.1	163.30	-127.0	83.4	352.0	331.6		20.41	17.247		
4,500.0	4,472.1	4,486.0	4,482.2	13.3	10.4	163.33	-130.2	86.3	360.9	340.0		20.89	17.276		
4,600.0	4,571.4	4,585.6	4,581.8	13.6	10.6	163.36	-133.4	89.2	369.8	348.5		21.37	17.304		
4,700.0	4,670.8	4,685.3	4,681.4	13.9	10.9	163.36	-136.7	92.0	377.2	355.4		21.84	17.269		
4,800.0	4,770.5	4,785.0	4,776.5	14.1	11.1	163.27	-139.4	94.4	381.7	359.4		22.23	17.166		
4,900.0	4,870.5	4,874.5	4,870.5	14.2	11.3	163.33	-140.0	95.0	384.6	362.0		22.56	17.049		
5,000.0	4,970.5	4,974.5	4,970.5	14.4	11.4	-91.49	-140.0	95.0	385.1	362.3		22.84	16.862		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	5,070.5	5,074.5	5,070.5	14.5	11.6	-91.49	-140.0	95.0	385.1	361.9	23.20	16.601			
5,200.0	5,170.5	5,174.8	5,170.8	14.7	11.8	-91.40	-139.4	95.0	385.1	361.6	23.55	16.352			
5,271.4	5,241.8	5,246.4	5,241.8	14.8	11.9	-89.44	-131.1	94.9	385.0	361.3	23.79	16.185			
5,300.0	5,270.4	5,274.1	5,268.9	14.8	11.9	-88.52	-125.3	94.9	385.1	361.3	23.83	16.162			
5,400.0	5,368.6	5,370.5	5,359.9	14.9	12.0	-86.34	-94.1	94.6	385.4	361.5	23.95	16.091			
5,500.0	5,461.6	5,464.4	5,441.7	15.0	12.1	-84.32	-48.0	94.2	386.1	362.0	24.09	16.027			
5,600.0	5,545.9	5,556.3	5,512.3	15.1	12.2	-82.51	10.5	93.7	386.9	362.6	24.32	15.913			
5,700.0	5,618.5	5,646.4	5,570.6	15.1	12.4	-80.96	79.1	93.2	387.8	363.1	24.72	15.688			
5,800.0	5,676.6	5,735.2	5,615.7	15.3	12.8	-79.72	155.5	92.5	388.4	363.0	25.38	15.302			
5,900.0	5,718.2	5,823.0	5,646.8	15.5	13.5	-78.82	237.4	91.8	388.8	362.4	26.37	14.745			
6,000.0	5,741.7	5,910.1	5,663.7	16.0	14.2	-78.27	322.8	91.1	388.7	361.0	27.70	14.031			
6,100.0	5,747.0	6,001.2	5,667.0	16.7	15.2	-78.10	413.8	90.4	388.0	358.5	29.45	13.173			
6,200.0	5,747.0	6,101.2	5,667.0	17.7	16.4	-78.07	513.8	89.5	387.0	355.3	31.71	12.204			
6,300.0	5,747.0	6,201.2	5,667.0	18.9	17.7	-78.04	613.8	88.7	386.1	351.8	34.24	11.275			
6,400.0	5,747.0	6,301.2	5,667.0	20.2	19.1	-78.01	713.7	87.8	385.1	348.1	36.98	10.413			
6,500.0	5,747.0	6,401.2	5,667.0	21.6	20.6	-77.98	813.7	87.0	384.1	344.2	39.89	9.629			
6,600.0	5,747.0	6,501.2	5,667.0	23.1	22.2	-77.95	913.7	86.2	383.2	340.2	42.94	8.924			
6,700.0	5,747.0	6,601.2	5,667.0	24.6	23.8	-77.92	1,013.7	85.3	382.2	336.1	46.09	8.292			
6,800.0	5,747.0	6,701.2	5,667.0	26.2	25.4	-77.89	1,113.7	84.5	381.2	331.9	49.33	7.728			
6,900.0	5,747.0	6,801.2	5,667.0	27.8	27.1	-77.85	1,213.7	83.6	380.3	327.6	52.64	7.224			
7,000.0	5,747.0	6,901.2	5,667.0	29.5	28.9	-77.82	1,313.7	82.8	379.3	323.3	56.01	6.772			
7,100.0	5,747.0	7,001.2	5,667.0	31.2	30.6	-77.79	1,413.7	82.0	378.3	318.9	59.43	6.366			
7,200.0	5,747.0	7,101.2	5,667.0	32.9	32.4	-77.76	1,513.7	81.1	377.4	314.5	62.88	6.001			
7,300.0	5,747.0	7,201.2	5,667.0	34.6	34.1	-77.73	1,613.7	80.3	376.4	310.0	66.37	5.671			
7,400.0	5,747.0	7,301.2	5,667.0	36.4	35.9	-77.70	1,713.7	79.5	375.4	305.5	69.89	5.371			
7,500.0	5,747.0	7,401.2	5,667.0	38.2	37.8	-77.66	1,813.7	78.6	374.5	301.0	73.44	5.099			
7,600.0	5,747.0	7,501.2	5,667.0	39.9	39.6	-77.63	1,913.6	77.8	373.5	296.5	77.00	4.851			
7,700.0	5,747.0	7,601.1	5,667.0	41.7	41.4	-77.60	2,013.6	76.9	372.5	291.9	80.58	4.623			
7,800.0	5,747.0	7,701.1	5,667.0	43.6	43.2	-77.57	2,113.6	76.1	371.6	287.4	84.18	4.414			
7,900.0	5,747.0	7,801.1	5,667.0	45.4	45.1	-77.53	2,213.6	75.3	370.6	282.8	87.79	4.221			
8,000.0	5,747.0	7,901.1	5,667.0	47.2	46.9	-77.50	2,313.6	74.4	369.6	278.2	91.41	4.044			
8,100.0	5,747.0	8,001.1	5,667.0	49.0	48.8	-77.47	2,413.6	73.6	368.7	273.6	95.04	3.879			
8,200.0	5,747.0	8,101.1	5,667.0	50.9	50.7	-77.43	2,513.6	72.7	367.7	269.0	98.68	3.726			
8,300.0	5,747.0	8,201.1	5,667.0	52.7	52.5	-77.40	2,613.6	71.9	366.7	264.4	102.33	3.584			
8,400.0	5,747.0	8,301.1	5,667.0	54.6	54.4	-77.37	2,713.6	71.1	365.8	259.8	105.99	3.451			
8,500.0	5,747.0	8,401.1	5,667.0	56.4	56.3	-77.33	2,813.6	70.2	364.8	255.1	109.65	3.327			
8,600.0	5,747.0	8,501.1	5,667.0	58.3	58.1	-77.30	2,913.6	69.4	363.8	250.5	113.32	3.211			
8,700.0	5,747.0	8,601.1	5,667.0	60.2	60.0	-77.26	3,013.6	68.5	362.9	245.9	116.99	3.102			
8,800.0	5,747.0	8,701.1	5,667.0	62.0	61.9	-77.23	3,113.5	67.7	361.9	241.2	120.67	2.999			
8,900.0	5,747.0	8,801.1	5,667.0	63.9	63.8	-77.19	3,213.5	66.9	360.9	236.6	124.35	2.903			
9,000.0	5,747.0	8,901.1	5,667.0	65.8	65.7	-77.16	3,313.5	66.0	360.0	231.9	128.04	2.811			
9,100.0	5,747.0	9,001.1	5,667.0	67.7	67.6	-77.12	3,413.5	65.2	359.0	227.3	131.73	2.725			
9,200.0	5,747.0	9,101.1	5,667.0	69.6	69.5	-77.09	3,513.5	64.4	358.0	222.6	135.42	2.644			
9,300.0	5,747.0	9,201.1	5,667.0	71.4	71.4	-77.05	3,613.5	63.5	357.1	218.0	139.11	2.567			
9,400.0	5,747.0	9,301.1	5,667.0	73.3	73.2	-77.02	3,713.5	62.7	356.1	213.3	142.80	2.494			
9,500.0	5,747.0	9,401.1	5,667.0	75.2	75.1	-76.98	3,813.5	61.8	355.2	208.7	146.50	2.424			
9,600.0	5,747.0	9,501.1	5,667.0	77.1	77.0	-76.95	3,913.5	61.0	354.2	204.0	150.20	2.358			
9,700.0	5,747.0	9,601.1	5,667.0	79.0	78.9	-76.91	4,013.5	60.2	353.2	199.3	153.90	2.295			
9,800.0	5,747.0	9,701.0	5,667.0	80.9	80.8	-76.87	4,113.5	59.3	352.3	194.7	157.60	2.235			
9,900.0	5,747.0	9,801.0	5,667.0	82.8	82.7	-76.84	4,213.5	58.5	351.3	190.0	161.30	2.178			
10,000.0	5,747.0	9,901.0	5,667.0	84.7	84.6	-76.80	4,313.4	57.6	350.3	185.3	165.00	2.123			
10,100.0	5,747.0	10,001.0	5,667.0	86.6	86.5	-76.76	4,413.4	56.8	349.4	180.7	168.71	2.071			

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2411 - 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		
10,200.0	5,747.0	10,101.0	5,667.0	88.5	88.4	-76.73	4,513.4	56.0	348.4	176.0	172.41	2.021		
10,300.0	5,747.0	10,201.0	5,667.0	90.4	90.3	-76.69	4,613.4	55.1	347.5	171.3	176.12	1.973		
10,400.0	5,747.0	10,301.0	5,667.0	92.3	92.2	-76.65	4,713.4	54.3	346.5	166.7	179.82	1.927		
10,500.0	5,747.0	10,401.0	5,667.0	94.2	94.2	-76.61	4,813.4	53.4	345.5	162.0	183.53	1.883		
10,600.0	5,747.0	10,501.0	5,667.0	96.1	96.1	-76.57	4,913.4	52.6	344.6	157.3	187.23	1.840		
10,700.0	5,747.0	10,601.0	5,667.0	98.0	98.0	-76.54	5,013.4	51.8	343.6	152.7	190.94	1.800		
10,800.0	5,747.0	10,701.0	5,667.0	99.9	99.9	-76.50	5,113.4	50.9	342.6	148.0	194.64	1.760		
10,900.0	5,747.0	10,801.0	5,667.0	101.8	101.8	-76.46	5,213.4	50.1	341.7	143.3	198.35	1.723		
11,000.0	5,747.0	10,901.0	5,667.0	103.7	103.7	-76.42	5,313.4	49.2	340.7	138.7	202.05	1.686		
11,100.0	5,747.0	11,001.0	5,667.0	105.6	105.6	-76.38	5,413.4	48.4	339.8	134.0	205.76	1.651		
11,162.1	5,747.0	11,063.1	5,667.0	106.8	106.8	-76.36	5,475.5	47.9	339.2	131.1	208.06	1.630 SF		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft		
Survey Program: 0-ISCSWA 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)						
0.0	0.0	0.0	0.0	0.0	0.0	-105.72	-50.7	-179.9	186.9							
100.0	100.0	100.0	100.0	0.1	0.1	-105.72	-50.7	-179.9	186.9	186.7	0.19	1,001.924				
200.0	200.0	200.0	200.0	0.3	0.3	-105.72	-50.7	-179.9	186.9	186.3	0.64	293.851				
300.0	300.0	300.0	300.0	0.5	0.5	-105.72	-50.7	-179.9	186.9	185.8	1.09	172.174				
400.0	400.0	400.0	400.0	0.8	0.8	-105.72	-50.7	-179.9	186.9	185.4	1.54	121.757				
500.0	500.0	500.0	500.0	1.0	1.0	-105.72	-50.7	-179.9	186.9	184.9	1.98	94.179	CC, ES			
600.0	600.0	594.6	594.6	1.2	1.2	149.49	-50.2	-181.4	189.2	186.8	2.41	78.635				
700.0	699.9	688.7	688.6	1.4	1.4	150.71	-49.0	-185.9	197.2	194.4	2.83	69.809				
800.0	799.6	781.6	781.1	1.6	1.6	152.58	-47.0	-193.3	211.3	208.1	3.27	64.667				
900.0	898.9	872.7	871.6	1.9	1.9	154.85	-44.3	-203.3	231.6	227.9	3.72	62.214				
1,000.0	998.2	962.1	960.1	2.2	2.1	157.19	-40.8	-215.8	255.9	251.7	4.17	61.378				
1,100.0	1,097.5	1,050.1	1,046.8	2.4	2.4	159.32	-36.8	-230.7	283.4	278.8	4.62	61.290	SF			
1,200.0	1,196.7	1,145.3	1,140.2	2.7	2.8	161.31	-32.0	-248.2	312.6	307.5	5.08	61.511				
1,300.0	1,296.0	1,240.4	1,233.5	3.0	3.1	162.97	-27.2	-265.6	342.1	336.5	5.54	61.764				
1,400.0	1,395.2	1,335.5	1,326.9	3.3	3.5	164.36	-22.4	-283.1	371.8	365.8	6.00	61.994				
1,500.0	1,494.5	1,430.6	1,420.3	3.7	3.9	165.55	-17.7	-300.5	401.6	395.2	6.46	62.162				
1,600.0	1,593.7	1,525.8	1,513.7	4.0	4.2	166.58	-12.9	-318.0	431.6	424.7	6.92	62.352				
1,700.0	1,693.0	1,620.9	1,607.1	4.3	4.6	167.47	-8.1	-335.4	461.7	454.4	7.39	62.511				
1,800.0	1,792.2	1,716.0	1,700.5	4.6	5.0	168.25	-3.3	-352.9	492.0	484.1	7.85	62.653				
1,900.0	1,891.5	1,811.1	1,793.9	4.9	5.4	168.95	1.4	-370.3	522.2	513.9	8.32	62.782				
2,000.0	1,990.7	1,906.3	1,887.3	5.2	5.8	169.56	6.2	-387.8	552.6	543.8	8.79	62.900				
2,100.0	2,090.0	2,001.4	1,980.7	5.5	6.2	170.12	11.0	-405.2	583.0	573.7	9.25	63.008				
2,200.0	2,189.3	2,096.5	2,074.0	5.9	6.6	170.62	15.8	-422.7	613.4	603.7	9.72	63.108				
2,300.0	2,288.5	2,191.6	2,167.4	6.2	7.0	171.07	20.6	-440.1	643.9	633.7	10.19	63.201				
2,400.0	2,387.8	2,286.8	2,260.8	6.5	7.4	171.48	25.3	-457.6	674.4	663.7	10.66	63.288				
2,500.0	2,487.0	2,381.9	2,354.2	6.8	7.8	171.85	30.1	-475.0	704.9	693.8	11.12	63.370				
2,600.0	2,586.3	2,477.0	2,447.6	7.1	8.2	172.20	34.9	-492.5	735.5	723.9	11.59	63.448				
2,700.0	2,685.5	2,572.1	2,541.0	7.5	8.6	172.51	39.7	-509.9	766.1	754.0	12.06	63.522				
2,800.0	2,784.8	2,667.3	2,634.4	7.8	9.0	172.81	44.4	-527.4	796.7	784.2	12.53	63.593				
2,900.0	2,884.0	2,762.4	2,727.8	8.1	9.4	173.08	49.2	-544.8	827.3	814.3	13.00	63.661				
3,000.0	2,983.3	2,857.5	2,821.2	8.4	9.8	173.33	54.0	-562.3	858.0	844.5	13.46	63.726				
3,100.0	3,082.5	2,952.6	2,914.5	8.7	10.2	173.56	58.8	-579.8	888.6	874.7	13.93	63.790				
3,200.0	3,181.8	3,047.8	3,007.9	9.1	10.6	173.78	63.5	-597.2	919.3	904.9	14.40	63.851				
3,300.0	3,281.1	3,142.9	3,101.3	9.4	11.1	173.98	68.3	-614.7	950.0	935.1	14.86	63.911				
3,400.0	3,380.3	3,238.0	3,194.7	9.7	11.5	174.18	73.1	-632.1	980.7	965.3	15.33	63.969				
3,500.0	3,479.6	3,333.1	3,288.1	10.0	11.9	174.36	77.9	-649.6	1,011.4	995.6	15.80	64.027				
3,600.0	3,578.8	3,428.3	3,381.5	10.4	12.3	174.53	82.6	-667.0	1,042.1	1,025.8	16.26	64.083				
3,700.0	3,678.1	3,523.4	3,474.9	10.7	12.7	174.69	87.4	-684.5	1,072.8	1,056.0	16.73	64.138				
3,800.0	3,777.3	3,618.5	3,568.3	11.0	13.1	174.84	92.2	-701.9	1,103.5	1,086.3	17.19	64.193				
3,900.0	3,876.6	3,713.6	3,661.6	11.3	13.5	174.98	97.0	-719.4	1,134.2	1,116.6	17.65	64.246				
4,000.0	3,975.8	3,808.8	3,755.0	11.6	13.9	175.11	101.7	-736.8	1,165.0	1,146.8	18.12	64.295				
4,100.0	4,075.1	3,903.9	3,848.4	12.0	14.3	175.24	106.5	-754.3	1,195.7	1,177.1	18.59	64.308				
4,200.0	4,174.4	3,999.0	3,941.8	12.3	14.7	175.36	111.3	-771.7	1,226.4	1,207.4	19.07	64.320				
4,300.0	4,273.6	4,094.1	4,035.2	12.6	15.1	175.48	116.1	-789.2	1,257.2	1,237.6	19.54	64.331				
4,400.0	4,372.9	4,189.3	4,128.6	12.9	15.5	175.59	120.8	-806.6	1,287.9	1,267.9	20.02	64.341				

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
S25-T10N-R58W - Razor 25B -2550 - HZ - Plan #2													Offset Well Error:	0.0 usft
Survey Program: 0-ISCSWA MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-108.68	-50.6	-149.7	158.1					
100.0	100.0	100.0	100.0	0.1	0.1	-108.68	-50.6	-149.7	158.1	157.9	0.19	847.363		
200.0	200.0	200.0	200.0	0.3	0.3	-108.68	-50.6	-149.7	158.1	157.4	0.64	248.520		
300.0	300.0	300.0	300.0	0.5	0.5	-108.68	-50.6	-149.7	158.1	157.0	1.09	145.613		
400.0	400.0	400.0	400.0	0.8	0.8	-108.68	-50.6	-149.7	158.1	156.5	1.54	102.974		
500.0	500.0	500.0	500.0	1.0	1.0	-108.68	-50.6	-149.7	158.1	156.1	1.98	79.650 CC		
500.0	500.0	500.0	500.0	1.0	1.0	-108.68	-50.6	-149.7	158.1	156.1	1.98	79.650 ES		
600.0	600.0	598.2	598.2	1.2	1.2	146.45	-50.5	-150.1	159.2	156.8	2.42	65.852		
700.0	699.9	694.1	694.0	1.4	1.4	148.00	-48.9	-152.9	165.2	162.4	2.84	58.232		
800.0	799.6	788.9	788.6	1.6	1.6	150.63	-45.9	-158.5	176.8	173.5	3.28	53.882		
900.0	898.9	882.1	881.4	1.9	1.9	153.92	-41.5	-166.7	194.3	190.5	3.74	51.962		
1,000.0	998.2	973.7	972.1	2.2	2.1	157.32	-35.8	-177.3	215.8	211.6	4.19	51.483		
1,100.0	1,097.5	1,067.5	1,064.8	2.4	2.4	160.51	-28.9	-190.3	240.2	235.5	4.65	51.619		
1,200.0	1,196.7	1,163.6	1,159.7	2.7	2.7	163.21	-21.6	-203.8	265.3	260.2	5.11	51.886		
1,300.0	1,296.0	1,259.7	1,254.5	3.0	3.0	165.44	-14.3	-217.4	291.0	285.4	5.57	52.209		
1,400.0	1,395.2	1,355.8	1,349.4	3.3	3.4	167.32	-7.1	-230.9	317.0	310.9	6.03	52.535		
1,500.0	1,494.5	1,451.9	1,444.2	3.7	3.7	168.91	0.2	-244.4	343.2	336.7	6.50	52.835		
1,600.0	1,593.7	1,547.9	1,539.0	4.0	4.0	170.27	7.5	-258.0	369.7	362.8	6.96	53.140		
1,700.0	1,693.0	1,644.0	1,633.9	4.3	4.4	171.46	14.8	-271.5	396.4	388.9	7.42	53.422		
1,800.0	1,792.2	1,740.1	1,728.7	4.6	4.7	172.49	22.0	-285.0	423.2	415.3	7.88	53.686		
1,900.0	1,891.5	1,836.2	1,823.6	4.9	5.1	173.40	29.3	-298.6	450.0	441.7	8.34	53.932		
2,000.0	1,990.7	1,932.3	1,918.4	5.2	5.4	174.21	36.6	-312.1	477.0	468.2	8.81	54.161		
2,100.0	2,090.0	2,028.3	2,013.3	5.5	5.8	174.94	43.8	-325.6	504.1	494.8	9.27	54.375		
2,200.0	2,189.3	2,124.4	2,108.1	5.9	6.1	175.59	51.1	-339.2	531.3	521.5	9.73	54.574		
2,300.0	2,288.5	2,220.5	2,203.0	6.2	6.5	176.17	58.4	-352.7	558.4	548.2	10.20	54.761		
2,400.0	2,387.8	2,316.6	2,297.8	6.5	6.9	176.70	65.6	-366.2	585.7	575.0	10.66	54.936		
2,500.0	2,487.0	2,412.7	2,392.6	6.8	7.2	177.19	72.9	-379.8	613.0	601.9	11.12	55.101		
2,600.0	2,586.3	2,508.7	2,487.5	7.1	7.6	177.63	80.2	-393.3	640.3	628.7	11.59	55.257		
2,700.0	2,685.5	2,604.8	2,582.3	7.5	7.9	178.04	87.4	-406.8	667.7	655.6	12.05	55.404		
2,800.0	2,784.8	2,700.9	2,677.2	7.8	8.3	178.42	94.7	-420.4	695.0	682.5	12.51	55.543		
2,900.0	2,884.0	2,797.0	2,772.0	8.1	8.6	178.76	102.0	-433.9	722.5	709.5	12.98	55.675		
3,000.0	2,983.3	2,893.1	2,866.9	8.4	9.0	179.08	109.2	-447.4	749.9	736.5	13.44	55.801		
3,100.0	3,082.5	2,989.1	2,961.7	8.7	9.4	179.38	116.5	-461.0	777.4	763.4	13.90	55.921		
3,200.0	3,181.8	3,085.2	3,056.6	9.1	9.7	179.66	123.8	-474.5	804.8	790.5	14.36	56.037		
3,300.0	3,281.1	3,181.3	3,151.4	9.4	10.1	179.92	131.0	-488.0	832.3	817.5	14.82	56.147		
3,400.0	3,380.3	3,277.4	3,246.3	9.7	10.4	-179.84	138.3	-501.6	859.8	844.5	15.29	56.238		
3,500.0	3,479.6	3,373.5	3,341.1	10.0	10.8	-179.61	145.6	-515.1	887.3	871.6	15.76	56.308		
3,600.0	3,578.8	3,469.6	3,435.9	10.4	11.2	-179.39	152.8	-528.6	914.9	898.6	16.23	56.374		
3,700.0	3,678.1	3,565.6	3,530.8	10.7	11.5	-179.19	160.1	-542.2	942.4	925.7	16.70	56.436		
3,800.0	3,777.3	3,661.7	3,625.6	11.0	11.9	-179.00	167.4	-555.7	970.0	952.8	17.17	56.495		
3,900.0	3,876.6	3,757.8	3,720.5	11.3	12.2	-178.82	174.6	-569.2	997.5	979.9	17.64	56.550		
4,000.0	3,975.8	3,853.9	3,815.3	11.6	12.6	-178.65	181.9	-582.7	1,025.1	1,007.0	18.11	56.602		
4,100.0	4,075.1	3,950.0	3,910.2	12.0	13.0	-178.49	189.2	-596.3	1,052.7	1,034.1	18.58	56.652		
4,200.0	4,174.4	4,046.0	4,005.0	12.3	13.3	-178.33	196.4	-609.8	1,080.3	1,061.2	19.05	56.699		
4,300.0	4,273.6	4,142.1	4,099.9	12.6	13.7	-178.19	203.7	-623.3	1,107.8	1,088.3	19.52	56.743		
4,400.0	4,372.9	4,238.2	4,194.7	12.9	14.0	-178.05	211.0	-636.9	1,135.4	1,115.5	20.00	56.786		
4,500.0	4,472.1	4,334.3	4,289.5	13.3	14.4	-177.92	218.2	-650.4	1,163.0	1,142.6	20.47	56.826		
4,600.0	4,571.4	4,430.4	4,384.4	13.6	14.8	-177.79	225.5	-663.9	1,190.7	1,169.7	20.94	56.864		
4,700.0	4,670.8	4,535.2	4,487.9	13.9	15.2	-177.68	233.4	-678.6	1,218.7	1,195.3	21.48	56.643		
4,800.0	4,770.5	4,704.6	4,656.0	14.1	15.6	-177.53	243.3	-697.1	1,236.0	1,213.9	22.06	56.027		
4,900.0	4,870.5	4,877.9	4,828.9	14.2	15.9	-177.46	248.6	-706.9	1,246.0	1,223.4	22.58	55.180		
5,000.0	4,970.5	5,019.5	4,970.5	14.4	16.1	-72.30	249.4	-708.3	1,247.4	1,224.4	23.00	54.240		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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)					
5,100.0	5,070.5	5,119.5	5,070.5	14.5	16.3	-72.30	249.4	-708.3	1,247.4	1,224.1	23.38	53.354			
5,200.0	5,170.5	5,219.5	5,170.5	14.7	16.4	-72.30	249.4	-708.3	1,247.4	1,223.7	23.76	52.491			
5,300.0	5,270.4	5,522.3	5,464.1	14.8	16.5	-74.65	191.9	-705.6	1,243.1	1,218.7	24.42	50.914			
5,400.0	5,368.6	5,764.4	5,646.5	14.9	16.2	-85.84	36.2	-698.0	1,218.8	1,193.7	25.10	48.559			
5,500.0	5,461.6	5,813.0	5,673.3	15.0	16.2	-90.71	-4.2	-696.0	1,196.0	1,170.5	25.46	46.982			
5,600.0	5,545.9	5,809.2	5,671.4	15.1	16.2	-92.19	-1.0	-696.2	1,181.0	1,155.4	25.60	46.139			
5,700.0	5,618.5	5,786.1	5,659.0	15.1	16.2	-91.76	18.5	-697.1	1,175.0	1,149.2	25.76	45.617			
5,720.7	5,631.8	5,780.0	5,655.6	15.2	16.2	-91.49	23.5	-697.4	1,174.8	1,149.0	25.82	45.493			
5,800.0	5,676.6	5,753.9	5,640.2	15.3	16.2	-90.01	44.7	-698.4	1,177.3	1,151.2	26.08	45.139			
5,900.0	5,718.2	5,716.6	5,616.6	15.5	16.3	-87.32	73.4	-699.8	1,186.9	1,160.3	26.62	44.595			
6,000.0	5,741.7	5,676.4	5,588.8	16.0	16.3	-83.98	102.5	-701.2	1,202.3	1,175.0	27.29	44.064			
6,100.0	5,747.0	5,634.5	5,557.6	16.7	16.4	-80.87	130.4	-702.6	1,221.8	1,193.7	28.10	43.477			
6,200.0	5,747.0	5,600.0	5,530.3	17.7	16.4	-79.58	151.4	-703.6	1,246.4	1,217.2	29.22	42.659			
6,300.0	5,747.0	5,566.7	5,502.7	18.9	16.5	-78.29	169.9	-704.5	1,276.8	1,246.4	30.45	41.938 SF			

Cathedral Energy Services

Anticollision Report

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Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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)					
0.0	0.0	0.0	0.0	0.0	0.0	-112.91	-50.7	-119.9	130.1						
100.0	100.0	100.0	100.0	0.1	0.1	-112.91	-50.7	-119.9	130.1	129.9	0.19	697.498			
200.0	200.0	200.0	200.0	0.3	0.3	-112.91	-50.7	-119.9	130.1	129.5	0.64	204.567			
300.0	300.0	300.0	300.0	0.5	0.5	-112.91	-50.7	-119.9	130.1	129.0	1.09	119.860			
400.0	400.0	400.0	400.0	0.8	0.8	-112.91	-50.7	-119.9	130.1	128.6	1.54	84.762			
500.0	500.0	500.0	500.0	1.0	1.0	-112.91	-50.7	-119.9	130.1	128.1	1.98	65.563	CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	142.19	-50.7	-119.9	130.9	128.5	2.42	53.999			
700.0	699.9	697.4	697.3	1.4	1.4	143.83	-49.7	-121.2	135.3	132.5	2.85	47.507			
800.0	799.6	793.8	793.6	1.6	1.6	147.13	-46.9	-125.2	144.7	141.4	3.29	43.983			
900.0	898.9	888.7	888.2	1.9	1.9	151.43	-42.3	-131.7	159.7	156.0	3.75	42.607			
1,000.0	998.2	983.0	981.9	2.2	2.1	155.90	-35.9	-140.7	178.7	174.5	4.21	42.465			
1,100.0	1,097.5	1,080.0	1,078.1	2.4	2.4	159.81	-28.9	-150.7	199.3	194.7	4.67	42.710			
1,200.0	1,196.7	1,177.0	1,174.3	2.7	2.7	162.98	-21.8	-160.7	220.7	215.6	5.13	43.062			
1,300.0	1,296.0	1,274.0	1,270.6	3.0	2.9	165.60	-14.7	-170.6	242.6	237.0	5.58	43.450			
1,400.0	1,395.2	1,371.1	1,366.8	3.3	3.2	167.78	-7.7	-180.6	264.9	258.9	6.04	43.845			
1,500.0	1,494.5	1,468.1	1,463.1	3.7	3.5	169.62	-0.6	-190.6	287.6	281.1	6.50	44.224			
1,600.0	1,593.7	1,565.1	1,559.3	4.0	3.8	171.20	6.4	-200.6	310.4	303.5	6.96	44.591			
1,700.0	1,693.0	1,662.1	1,655.6	4.3	4.1	172.56	13.5	-210.6	333.5	326.1	7.42	44.937			
1,800.0	1,792.2	1,759.1	1,751.8	4.6	4.4	173.74	20.6	-220.6	356.7	348.8	7.88	45.260			
1,900.0	1,891.5	1,856.2	1,848.1	4.9	4.7	174.78	27.6	-230.6	380.1	371.7	8.34	45.561			
2,000.0	1,990.7	1,953.2	1,944.3	5.2	5.0	175.70	34.7	-240.6	403.5	394.7	8.80	45.842			
2,100.0	2,090.0	2,050.2	2,040.5	5.5	5.4	176.52	41.8	-250.6	427.0	417.8	9.26	46.103			
2,200.0	2,189.3	2,147.2	2,136.8	5.9	5.7	177.25	48.8	-260.6	450.7	440.9	9.72	46.346			
2,300.0	2,288.5	2,244.2	2,233.0	6.2	6.0	177.91	55.9	-270.6	474.3	464.2	10.18	46.573			
2,400.0	2,387.8	2,341.2	2,329.3	6.5	6.3	178.51	63.0	-280.6	498.1	487.4	10.65	46.786			
2,500.0	2,487.0	2,438.3	2,425.5	6.8	6.6	179.06	70.0	-290.6	521.8	510.7	11.11	46.985			
2,600.0	2,586.3	2,535.3	2,521.8	7.1	6.9	179.55	77.1	-300.6	545.7	534.1	11.57	47.173			
2,700.0	2,685.5	2,632.3	2,618.0	7.5	7.2	-179.99	84.2	-310.6	569.5	557.5	12.03	47.349			
2,800.0	2,784.8	2,729.3	2,714.2	7.8	7.5	-179.58	91.2	-320.5	593.4	580.9	12.49	47.515			
2,900.0	2,884.0	2,826.3	2,810.5	8.1	7.8	-179.19	98.3	-330.5	617.3	604.4	12.95	47.673			
3,000.0	2,983.3	2,923.4	2,906.7	8.4	8.2	-178.83	105.4	-340.5	641.2	627.8	13.41	47.822			
3,100.0	3,082.5	3,020.4	3,003.0	8.7	8.5	-178.50	112.4	-350.5	665.2	651.3	13.87	47.964			
3,200.0	3,181.8	3,117.4	3,099.2	9.1	8.8	-178.19	119.5	-360.5	689.2	674.9	14.33	48.099			
3,300.0	3,281.1	3,214.4	3,195.5	9.4	9.1	-177.90	126.6	-370.5	713.2	698.4	14.79	48.224			
3,400.0	3,380.3	3,311.4	3,291.7	9.7	9.4	-177.64	133.6	-380.5	737.2	721.9	15.26	48.321			
3,500.0	3,479.6	3,408.5	3,387.9	10.0	9.7	-177.38	140.7	-390.5	761.2	745.5	15.72	48.413			
3,600.0	3,578.8	3,505.5	3,484.2	10.4	10.0	-177.15	147.8	-400.5	785.2	769.1	16.19	48.499			
3,700.0	3,678.1	3,602.5	3,580.4	10.7	10.4	-176.92	154.8	-410.5	809.3	792.6	16.66	48.580			
3,800.0	3,777.3	3,699.5	3,676.7	11.0	10.7	-176.71	161.9	-420.5	833.4	816.2	17.13	48.658			
3,900.0	3,876.6	3,796.5	3,772.9	11.3	11.0	-176.52	169.0	-430.5	857.4	839.8	17.60	48.731			
4,000.0	3,975.8	3,893.5	3,869.2	11.6	11.3	-176.33	176.0	-440.5	881.5	863.4	18.06	48.800			
4,100.0	4,075.1	3,990.6	3,965.4	12.0	11.6	-176.15	183.1	-450.5	905.6	887.1	18.53	48.866			
4,200.0	4,174.4	4,087.6	4,061.6	12.3	11.9	-175.98	190.2	-460.5	929.7	910.7	19.00	48.928			
4,300.0	4,273.6	4,184.6	4,157.9	12.6	12.3	-175.82	197.2	-470.5	953.8	934.3	19.47	48.988			
4,400.0	4,372.9	4,281.6	4,254.1	12.9	12.6	-175.67	204.3	-480.4	977.9	958.0	19.94	49.044			
4,500.0	4,472.1	4,378.6	4,350.4	13.3	12.9	-175.53	211.4	-490.4	1,002.0	981.6	20.41	49.099			
4,600.0	4,571.4	4,475.7	4,446.6	13.6	13.2	-175.39	218.4	-500.4	1,026.1	1,005.3	20.88	49.150			
4,700.0	4,670.8	4,573.0	4,543.2	13.9	13.5	-175.29	225.5	-510.5	1,048.8	1,027.4	21.39	49.027			
4,800.0	4,770.5	4,671.1	4,640.5	14.1	13.8	-175.17	232.7	-520.6	1,068.0	1,046.1	21.86	48.860			
4,900.0	4,870.5	4,799.2	4,767.7	14.2	14.2	-175.01	241.4	-532.8	1,083.1	1,060.8	22.34	48.475			
5,000.0	4,970.5	4,956.6	4,924.7	14.4	14.5	-69.71	247.8	-541.9	1,090.5	1,067.7	22.80	47.838			
5,100.0	5,070.5	5,102.4	5,070.5	14.5	14.7	-69.68	249.3	-544.2	1,092.2	1,068.9	23.24	46.999			

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
S25-T10N-R58W - Razor 25B -2551 - HZ - Plan #2													Offset Well Error:	0.0 usft
Survey Program: 0-ISCSWA MWD														
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	5,170.5	5,202.4	5,170.5	14.7	14.9	-69.68	249.3	-544.2	1,092.2	1,068.5	23.63	46.224		
5,300.0	5,270.4	5,302.3	5,270.4	14.8	15.1	-68.79	249.3	-544.2	1,091.5	1,067.4	24.03	45.421		
5,400.0	5,368.6	5,470.8	5,438.4	14.9	15.3	-71.65	241.6	-543.8	1,084.4	1,059.9	24.50	44.261		
5,500.0	5,461.6	5,718.7	5,663.6	15.0	15.1	-83.29	143.8	-539.0	1,060.4	1,035.2	25.17	42.124		
5,600.0	5,545.9	5,783.4	5,712.6	15.1	15.1	-89.52	101.7	-537.0	1,035.8	1,010.2	25.57	40.508		
5,700.0	5,618.5	5,789.1	5,716.7	15.1	15.1	-91.66	97.7	-536.8	1,019.5	993.6	25.83	39.470		
5,800.0	5,676.6	5,771.7	5,704.1	15.3	15.1	-91.38	109.8	-537.4	1,013.2	987.0	26.18	38.696		
5,813.0	5,683.0	5,768.5	5,701.8	15.3	15.1	-91.21	111.9	-537.5	1,013.1	986.9	26.26	38.586		
5,900.0	5,718.2	5,743.3	5,682.8	15.5	15.1	-89.46	128.5	-538.3	1,016.6	989.9	26.74	38.018		
6,000.0	5,741.7	5,708.8	5,655.7	16.0	15.2	-86.38	149.7	-539.3	1,028.5	1,001.0	27.53	37.356		
6,100.0	5,747.0	5,671.1	5,624.4	16.7	15.2	-83.11	170.7	-540.3	1,047.1	1,018.7	28.43	36.835		
6,200.0	5,747.0	5,638.3	5,596.0	17.7	15.2	-81.54	187.2	-541.1	1,072.5	1,043.0	29.54	36.312		
6,300.0	5,747.0	5,611.7	5,572.3	18.9	15.3	-80.24	199.2	-541.7	1,105.1	1,074.3	30.77	35.917		
6,400.0	5,747.0	5,600.0	5,561.7	20.2	15.3	-79.66	204.1	-542.0	1,144.7	1,112.5	32.16	35.595		
6,500.0	5,747.0	5,571.6	5,535.4	21.6	15.3	-78.24	214.9	-542.5	1,190.6	1,157.1	33.53	35.510		
6,600.0	5,747.0	5,550.0	5,515.1	23.1	15.3	-77.15	222.2	-542.8	1,242.5	1,207.5	34.98	35.519		
6,700.0	5,747.0	5,550.0	5,515.1	24.6	15.3	-77.15	222.2	-542.8	1,299.6	1,263.0	36.63	35.481 SF		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2552 - 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	-119.38	-50.7	-90.0	103.2	103.1	0.19	553.417		
100.0	100.0	100.0	100.0	0.1	0.1	-119.38	-50.7	-90.0	103.2	103.1	0.19	553.417		
200.0	200.0	200.0	200.0	0.3	0.3	-119.38	-50.7	-90.0	103.2	102.6	0.64	162.310		
300.0	300.0	300.0	300.0	0.5	0.5	-119.38	-50.7	-90.0	103.2	102.2	1.09	95.101		
400.0	400.0	400.0	400.0	0.8	0.8	-119.38	-50.7	-90.0	103.2	101.7	1.54	67.253		
500.0	500.0	500.0	500.0	1.0	1.0	-119.38	-50.7	-90.0	103.2	101.3	1.98	52.020	CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	135.83	-50.7	-90.0	103.9	101.5	2.42	42.887		
700.0	699.9	699.4	699.4	1.4	1.4	137.62	-50.4	-90.3	107.2	104.4	2.85	37.581		
800.0	799.6	797.5	797.5	1.6	1.7	141.76	-47.9	-92.6	114.4	111.1	3.30	34.688		
900.0	898.9	894.3	894.0	1.9	1.9	147.56	-43.2	-97.2	126.3	122.6	3.76	33.625		
1,000.0	998.2	990.8	990.1	2.2	2.1	153.61	-36.3	-103.8	141.9	137.7	4.22	33.642		
1,100.0	1,097.5	1,088.5	1,087.1	2.4	2.4	158.67	-29.0	-110.9	159.2	154.5	4.68	34.016		
1,200.0	1,196.7	1,186.1	1,184.2	2.7	2.6	162.72	-21.7	-118.0	177.4	172.2	5.14	34.519		
1,300.0	1,296.0	1,283.7	1,281.3	3.0	2.9	166.02	-14.3	-125.1	196.3	190.7	5.60	35.068		
1,400.0	1,395.2	1,381.3	1,378.4	3.3	3.2	168.73	-7.0	-132.2	215.7	209.7	6.06	35.621		
1,500.0	1,494.5	1,478.9	1,475.5	3.7	3.4	171.00	0.3	-139.3	235.6	229.1	6.52	36.153		
1,600.0	1,593.7	1,576.6	1,572.6	4.0	3.7	172.91	7.6	-146.3	255.7	248.7	6.98	36.656		
1,700.0	1,693.0	1,674.2	1,669.7	4.3	4.0	174.55	15.0	-153.4	276.1	268.6	7.44	37.128		
1,800.0	1,792.2	1,771.8	1,766.8	4.6	4.3	175.96	22.3	-160.5	296.6	288.7	7.90	37.566		
1,900.0	1,891.5	1,869.4	1,863.8	4.9	4.5	177.19	29.6	-167.6	317.3	309.0	8.36	37.971		
2,000.0	1,990.7	1,967.0	1,960.9	5.2	4.8	178.26	36.9	-174.7	338.2	329.4	8.82	38.346		
2,100.0	2,090.0	2,064.6	2,058.0	5.5	5.1	179.22	44.3	-181.8	359.1	349.8	9.28	38.694		
2,200.0	2,189.3	2,162.3	2,155.1	5.9	5.4	-179.94	51.6	-188.9	380.1	370.4	9.74	39.016		
2,300.0	2,288.5	2,259.9	2,252.2	6.2	5.7	-179.18	58.9	-195.9	401.2	391.0	10.21	39.315		
2,400.0	2,387.8	2,357.5	2,349.3	6.5	5.9	-178.49	66.2	-203.0	422.4	411.7	10.67	39.593		
2,500.0	2,487.0	2,455.1	2,446.4	6.8	6.2	-177.87	73.6	-210.1	443.6	432.4	11.13	39.853		
2,600.0	2,586.3	2,552.7	2,543.4	7.1	6.5	-177.31	80.9	-217.2	464.8	453.2	11.59	40.096		
2,700.0	2,685.5	2,650.4	2,640.5	7.5	6.8	-176.80	88.2	-224.3	486.1	474.0	12.05	40.324		
2,800.0	2,784.8	2,748.0	2,737.6	7.8	7.1	-176.33	95.5	-231.4	507.4	494.9	12.52	40.537		
2,900.0	2,884.0	2,845.6	2,834.7	8.1	7.4	-175.90	102.9	-238.5	528.8	515.8	12.98	40.739		
3,000.0	2,983.3	2,943.2	2,931.8	8.4	7.7	-175.50	110.2	-245.6	550.1	536.7	13.44	40.928		
3,100.0	3,082.5	3,040.8	3,028.9	8.7	8.0	-175.13	117.5	-252.6	571.5	557.6	13.90	41.108		
3,200.0	3,181.8	3,138.5	3,126.0	9.1	8.2	-174.79	124.8	-259.7	593.0	578.6	14.37	41.263		
3,300.0	3,281.1	3,236.1	3,223.0	9.4	8.5	-174.47	132.2	-266.8	614.4	599.6	14.84	41.403		
3,400.0	3,380.3	3,333.7	3,320.1	9.7	8.8	-174.17	139.5	-273.9	635.9	620.6	15.31	41.535		
3,500.0	3,479.6	3,431.3	3,417.2	10.0	9.1	-173.90	146.8	-281.0	657.3	641.6	15.78	41.659		
3,600.0	3,578.8	3,528.9	3,514.3	10.4	9.4	-173.64	154.1	-288.1	678.8	662.6	16.25	41.776		
3,700.0	3,678.1	3,626.6	3,611.4	10.7	9.7	-173.39	161.5	-295.2	700.3	683.6	16.72	41.887		
3,800.0	3,777.3	3,724.2	3,708.5	11.0	10.0	-173.16	168.8	-302.2	721.8	704.6	17.19	41.991		
3,900.0	3,876.6	3,821.8	3,805.6	11.3	10.3	-172.95	176.1	-309.3	743.3	725.7	17.66	42.091		
4,000.0	3,975.8	3,919.4	3,902.6	11.6	10.5	-172.74	183.4	-316.4	764.9	746.7	18.13	42.185		
4,100.0	4,075.1	4,017.0	3,999.7	12.0	10.8	-172.55	190.8	-323.5	786.4	767.8	18.60	42.275		
4,200.0	4,174.4	4,114.7	4,096.8	12.3	11.1	-172.37	198.1	-330.6	808.0	788.9	19.07	42.360		
4,300.0	4,273.6	4,212.3	4,193.9	12.6	11.4	-172.20	205.4	-337.7	829.5	810.0	19.55	42.441		
4,400.0	4,372.9	4,309.9	4,291.0	12.9	11.7	-172.03	212.7	-344.8	851.1	831.1	20.02	42.518		
4,500.0	4,472.1	4,407.5	4,388.1	13.3	12.0	-171.87	220.1	-351.8	872.6	852.2	20.49	42.592		
4,600.0	4,571.4	4,505.1	4,485.2	13.6	12.3	-171.73	227.4	-358.9	894.2	873.3	20.96	42.663		
4,700.0	4,670.8	4,603.1	4,582.6	13.9	12.6	-171.63	234.7	-366.0	914.3	892.8	21.47	42.731		
4,800.0	4,770.5	4,724.8	4,703.7	14.1	12.9	-171.47	243.1	-374.1	930.3	908.4	21.95	42.775		
4,900.0	4,870.5	4,867.5	4,846.2	14.2	13.1	-171.37	248.5	-379.4	938.8	916.4	22.40	41.913		
5,000.0	4,970.5	4,991.8	4,970.5	14.4	13.3	-66.20	249.3	-380.2	940.1	917.3	22.79	41.246		
5,100.0	5,070.5	5,091.8	5,070.5	14.5	13.5	-66.20	249.3	-380.2	940.1	916.9	23.18	40.551		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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	5,170.5	5,191.8	5,170.5	14.7	13.7	-66.20	249.3	-380.2	940.1	916.5	23.58	39.873			
5,300.0	5,270.4	5,461.1	5,433.9	14.8	13.9	-68.55	206.2	-378.0	935.2	911.1	24.10	38.799			
5,400.0	5,368.6	5,701.4	5,624.8	14.9	13.6	-82.46	63.9	-371.1	905.3	880.7	24.61	36.783			
5,500.0	5,461.6	5,760.5	5,660.2	15.0	13.5	-89.68	16.7	-368.8	875.4	850.3	25.04	34.958			
5,600.0	5,545.9	5,763.3	5,661.7	15.1	13.5	-92.14	14.3	-368.7	855.2	830.0	25.23	33.899			
5,700.0	5,618.5	5,744.3	5,651.0	15.1	13.5	-91.78	30.0	-369.4	847.0	821.6	25.40	33.352			
5,719.6	5,631.1	5,739.2	5,648.0	15.2	13.6	-91.47	34.2	-369.6	846.8	821.3	25.46	33.261			
5,800.0	5,676.6	5,714.9	5,633.3	15.3	13.6	-89.52	53.5	-370.6	850.3	824.6	25.71	33.071			
5,900.0	5,718.2	5,679.7	5,610.5	15.5	13.6	-85.88	80.2	-371.9	863.7	837.6	26.19	32.986 SF			
6,000.0	5,741.7	5,641.1	5,583.4	16.0	13.7	-81.33	107.7	-373.2	884.9	858.2	26.77	33.061			
6,100.0	5,747.0	5,600.0	5,552.4	16.7	13.7	-77.10	134.6	-374.5	911.5	884.2	27.34	33.336			
6,200.0	5,747.0	5,564.7	5,524.1	17.7	13.8	-75.31	155.8	-375.6	944.5	916.2	28.32	33.355			
6,300.0	5,747.0	5,534.7	5,499.0	18.9	13.8	-73.75	172.2	-376.4	984.6	955.2	29.41	33.476			
6,400.0	5,747.0	5,500.0	5,468.9	20.2	13.8	-71.91	189.4	-377.2	1,031.6	1,001.0	30.53	33.787			
6,500.0	5,747.0	5,500.0	5,468.9	21.6	13.8	-71.91	189.4	-377.2	1,084.7	1,052.7	32.02	33.873			
6,600.0	5,747.0	5,469.5	5,441.5	23.1	13.9	-70.27	202.8	-377.9	1,143.1	1,109.9	33.26	34.368			
6,700.0	5,747.0	5,450.0	5,423.6	24.6	13.9	-69.22	210.5	-378.3	1,206.6	1,172.0	34.64	34.836			
6,800.0	5,747.0	5,450.0	5,423.6	26.2	13.9	-69.22	210.5	-378.3	1,274.4	1,238.1	36.28	35.130			

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2553 - 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				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)				
0.0	0.0	0.0	0.0	0.0	0.0	-130.26	-50.6	-59.8	78.3					
100.0	100.0	100.0	100.0	0.1	0.1	-130.26	-50.6	-59.8	78.3	78.2	0.19	419.979		
200.0	200.0	200.0	200.0	0.3	0.3	-130.26	-50.6	-59.8	78.3	77.7	0.64	123.174		
300.0	300.0	300.0	300.0	0.5	0.5	-130.26	-50.6	-59.8	78.3	77.3	1.09	72.170		
400.0	400.0	400.0	400.0	0.8	0.8	-130.26	-50.6	-59.8	78.3	76.8	1.54	51.037		
500.0	500.0	500.0	500.0	1.0	1.0	-130.26	-50.6	-59.8	78.3	76.4	1.98	39.477	CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	125.16	-50.6	-59.8	78.9	76.5	2.42	32.566		
700.0	699.9	699.9	699.9	1.4	1.4	127.63	-50.6	-59.8	81.5	78.6	2.85	28.549		
800.0	799.6	800.1	800.0	1.6	1.7	132.83	-49.0	-60.5	86.2	82.9	3.30	26.095		
900.0	898.9	899.2	899.0	1.9	1.9	140.88	-44.3	-62.5	94.0	90.3	3.77	24.953		
1,000.0	998.2	997.5	997.0	2.2	2.1	149.41	-37.0	-65.6	104.6	100.4	4.23	24.720	SF	
1,100.0	1,097.5	1,095.7	1,094.9	2.4	2.4	156.41	-29.5	-68.8	117.2	112.5	4.69	24.957		
1,200.0	1,196.7	1,194.0	1,192.9	2.7	2.6	162.02	-22.0	-72.1	131.1	125.9	5.15	25.432		
1,300.0	1,296.0	1,292.3	1,290.8	3.0	2.8	166.53	-14.4	-75.3	146.1	140.4	5.62	26.010		
1,400.0	1,395.2	1,390.6	1,388.7	3.3	3.1	170.19	-6.9	-78.5	161.7	155.7	6.08	26.617		
1,500.0	1,494.5	1,488.9	1,486.7	3.7	3.3	173.20	0.6	-81.7	177.9	171.4	6.54	27.217		
1,600.0	1,593.7	1,587.2	1,584.6	4.0	3.6	175.70	8.1	-85.0	194.6	187.6	7.00	27.788		
1,700.0	1,693.0	1,685.4	1,682.6	4.3	3.9	177.81	15.6	-88.2	211.5	204.0	7.47	28.326		
1,800.0	1,792.2	1,783.7	1,780.5	4.6	4.1	179.61	23.2	-91.4	228.6	220.7	7.93	28.826		
1,900.0	1,891.5	1,882.0	1,878.4	4.9	4.4	-178.85	30.7	-94.6	246.0	237.6	8.40	29.289		
2,000.0	1,990.7	1,980.3	1,976.4	5.2	4.6	-177.51	38.2	-97.8	263.5	254.6	8.87	29.717		
2,100.0	2,090.0	2,078.6	2,074.3	5.5	4.9	-176.33	45.7	-101.1	281.1	271.8	9.34	30.113		
2,200.0	2,189.3	2,176.8	2,172.3	5.9	5.2	-175.29	53.2	-104.3	298.8	289.0	9.80	30.479		
2,300.0	2,288.5	2,275.1	2,270.2	6.2	5.4	-174.37	60.8	-107.5	316.6	306.4	10.27	30.818		
2,400.0	2,387.8	2,373.4	2,368.1	6.5	5.7	-173.55	68.3	-110.7	334.5	323.8	10.74	31.133		
2,500.0	2,487.0	2,471.7	2,466.1	6.8	5.9	-172.81	75.8	-113.9	352.5	341.2	11.22	31.426		
2,600.0	2,586.3	2,570.0	2,564.0	7.1	6.2	-172.15	83.3	-117.2	370.5	358.8	11.69	31.699		
2,700.0	2,685.5	2,668.2	2,662.0	7.5	6.5	-171.54	90.8	-120.4	388.5	376.3	12.16	31.954		
2,800.0	2,784.8	2,766.5	2,759.9	7.8	6.7	-170.99	98.4	-123.6	406.6	393.9	12.63	32.193		
2,900.0	2,884.0	2,864.8	2,857.8	8.1	7.0	-170.48	105.9	-126.8	424.7	411.6	13.10	32.417		
3,000.0	2,983.3	2,963.1	2,955.8	8.4	7.3	-170.02	113.4	-130.0	442.8	429.2	13.57	32.621		
3,100.0	3,082.5	3,061.4	3,053.7	8.7	7.5	-169.59	120.9	-133.3	461.0	446.9	14.05	32.803		
3,200.0	3,181.8	3,159.7	3,151.7	9.1	7.8	-169.20	128.4	-136.5	479.1	464.6	14.53	32.974		
3,300.0	3,281.1	3,257.9	3,249.6	9.4	8.0	-168.83	136.0	-139.7	497.4	482.3	15.01	33.135		
3,400.0	3,380.3	3,356.2	3,347.5	9.7	8.3	-168.49	143.5	-142.9	515.6	500.1	15.49	33.287		
3,500.0	3,479.6	3,454.5	3,445.5	10.0	8.6	-168.18	151.0	-146.2	533.8	517.8	15.97	33.429		
3,600.0	3,578.8	3,552.8	3,543.4	10.4	8.8	-167.88	158.5	-149.4	552.1	535.6	16.45	33.564		
3,700.0	3,678.1	3,651.1	3,641.4	10.7	9.1	-167.60	166.0	-152.6	570.3	553.4	16.93	33.692		
3,800.0	3,777.3	3,749.3	3,739.3	11.0	9.4	-167.34	173.6	-155.8	588.6	571.2	17.41	33.812		
3,900.0	3,876.6	3,847.6	3,837.2	11.3	9.6	-167.10	181.1	-159.0	606.9	589.0	17.89	33.927		
4,000.0	3,975.8	3,945.9	3,935.2	11.6	9.9	-166.87	188.6	-162.3	625.2	606.8	18.37	34.035		
4,100.0	4,075.1	4,044.2	4,033.1	12.0	10.2	-166.65	196.1	-165.5	643.5	624.7	18.85	34.138		
4,200.0	4,174.4	4,142.5	4,131.1	12.3	10.4	-166.45	203.6	-168.7	661.8	642.5	19.33	34.236		
4,300.0	4,273.6	4,240.7	4,229.0	12.6	10.7	-166.25	211.2	-171.9	680.2	660.3	19.81	34.330		
4,400.0	4,372.9	4,339.0	4,326.9	12.9	11.0	-166.07	218.7	-175.1	698.5	678.2	20.29	34.419		
4,500.0	4,472.1	4,437.3	4,424.9	13.3	11.2	-165.90	226.2	-178.4	716.8	696.1	20.78	34.504		
4,600.0	4,571.4	4,535.6	4,522.8	13.6	11.5	-165.73	233.7	-181.6	735.2	713.9	21.26	34.586		
4,700.0	4,670.8	4,637.7	4,624.6	13.9	11.8	-165.62	241.5	-184.9	752.0	730.2	21.77	34.548		
4,800.0	4,770.5	4,763.5	4,750.2	14.1	12.0	-165.52	249.9	-187.7	763.4	741.1	22.23	34.344		
4,900.0	4,870.5	4,883.8	4,870.5	14.2	12.2	-165.56	249.4	-188.3	767.9	745.3	22.62	33.951		
5,000.0	4,970.5	4,983.8	4,970.5	14.4	12.4	-60.42	249.4	-188.3	768.5	745.5	23.01	33.403		
5,100.0	5,070.5	5,083.8	5,070.5	14.5	12.6	-60.42	249.4	-188.3	768.5	745.1	23.40	32.841		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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	5,170.5	5,270.0	5,255.8	14.7	12.8	-61.16	237.7	-187.8	767.1	743.2	23.88	32.126			
5,300.0	5,270.4	5,588.9	5,528.5	14.8	12.6	-73.10	82.3	-181.1	740.2	716.1	24.08	30.733			
5,400.0	5,368.6	5,697.1	5,593.3	14.9	12.6	-85.46	-4.1	-177.4	702.4	677.8	24.59	28.564			
5,500.0	5,461.6	5,721.0	5,605.1	15.0	12.6	-90.93	-24.9	-176.5	672.7	647.8	24.92	26.990			
5,600.0	5,545.9	5,712.8	5,601.1	15.1	12.6	-91.96	-17.7	-176.8	657.1	632.0	25.04	26.237			
5,652.6	5,585.8	5,702.0	5,595.7	15.1	12.6	-91.26	-8.3	-177.2	655.0	629.9	25.11	26.086			
5,700.0	5,618.5	5,689.8	5,589.4	15.1	12.6	-90.05	2.1	-177.6	656.6	631.5	25.17	26.088			
5,800.0	5,676.6	5,658.8	5,572.4	15.3	12.6	-86.05	28.0	-178.7	670.0	644.6	25.40	26.380			
5,900.0	5,718.2	5,623.1	5,550.9	15.5	12.6	-80.63	56.4	-180.0	694.2	668.6	25.67	27.042			
6,000.0	5,741.7	5,584.5	5,525.5	16.0	12.6	-74.44	85.5	-181.2	725.9	700.1	25.74	28.197			
6,100.0	5,747.0	5,550.0	5,501.1	16.7	12.7	-69.50	109.8	-182.3	761.8	735.9	25.82	29.508			
6,200.0	5,747.0	5,500.0	5,462.9	17.7	12.7	-66.67	142.0	-183.7	803.8	777.4	26.41	30.434			
6,300.0	5,747.0	5,477.1	5,444.5	18.9	12.7	-65.34	155.5	-184.2	853.0	825.6	27.38	31.151			
6,400.0	5,747.0	5,450.0	5,421.8	20.2	12.8	-63.75	170.5	-184.9	908.9	880.5	28.36	32.042			
6,500.0	5,747.0	5,428.1	5,403.0	21.6	12.8	-62.46	181.7	-185.4	970.5	941.0	29.46	32.947			
6,600.0	5,747.0	5,400.0	5,378.2	23.1	12.8	-60.80	194.8	-185.9	1,037.1	1,006.7	30.47	34.040			
6,700.0	5,747.0	5,400.0	5,378.2	24.6	12.8	-60.80	194.8	-185.9	1,108.0	1,076.0	31.98	34.644			
6,800.0	5,747.0	5,376.2	5,356.6	26.2	12.8	-59.40	205.0	-186.4	1,182.4	1,149.3	33.09	35.736			
6,900.0	5,747.0	5,350.0	5,332.4	27.8	12.8	-57.88	214.9	-186.8	1,260.2	1,226.0	34.13	36.924			

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
S25-T10N-R58W - Razor 25B -2554 - HZ - Plan #2													Offset Well Error:	0.0 usft
Survey Program: 0-ISCSWA MWD														
Reference				Offset				Semi Major Axis			Distance			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-149.45	-50.6	-29.9	58.8					
100.0	100.0	100.0	100.0	0.1	0.1	-149.45	-50.6	-29.9	58.8	58.6	0.19	315.231		
200.0	200.0	200.0	200.0	0.3	0.3	-149.45	-50.6	-29.9	58.8	58.2	0.64	92.453		
300.0	300.0	300.0	300.0	0.5	0.5	-149.45	-50.6	-29.9	58.8	57.7	1.09	54.170		
400.0	400.0	400.0	400.0	0.8	0.8	-149.45	-50.6	-29.9	58.8	57.3	1.54	38.308		
500.0	500.0	500.0	500.0	1.0	1.0	-149.45	-50.6	-29.9	58.8	56.8	1.98	29.631		
600.0	600.0	600.0	600.0	1.2	1.2	106.31	-50.6	-29.9	59.1	56.7	2.42	24.389		
700.0	699.9	701.7	701.7	1.4	1.4	111.21	-48.8	-29.7	58.9	56.0	2.85	20.632		
800.0	799.6	802.9	802.7	1.6	1.7	121.22	-43.5	-29.1	58.0	54.7	3.31	17.533		
814.8	814.3	817.6	817.4	1.7	1.7	123.12	-42.4	-29.0	58.0	54.6	3.38	17.130 CC, ES		
900.0	898.9	902.0	901.5	1.9	1.9	134.85	-36.3	-28.3	59.9	56.1	3.78	15.861		
1,000.0	998.2	1,000.8	1,000.1	2.2	2.1	147.46	-29.1	-27.5	65.8	61.6	4.25	15.491 SF		
1,100.0	1,097.5	1,099.7	1,098.7	2.4	2.4	157.64	-21.9	-26.7	74.3	69.6	4.71	15.774		
1,200.0	1,196.7	1,198.5	1,197.3	2.7	2.6	165.55	-14.8	-25.9	84.7	79.6	5.18	16.369		
1,300.0	1,296.0	1,297.4	1,295.9	3.0	2.9	171.67	-7.6	-25.1	96.4	90.7	5.64	17.084		
1,400.0	1,395.2	1,396.2	1,394.5	3.3	3.1	176.43	-0.4	-24.3	108.9	102.8	6.11	17.819		
1,500.0	1,494.5	1,495.1	1,493.1	3.7	3.4	-179.80	6.8	-23.5	122.0	115.4	6.58	18.529		
1,600.0	1,593.7	1,594.0	1,591.7	4.0	3.6	-176.77	14.0	-22.7	135.5	128.4	7.06	19.194		
1,700.0	1,693.0	1,692.8	1,690.3	4.3	3.9	-174.29	21.2	-21.9	149.3	141.7	7.54	19.808		
1,800.0	1,792.2	1,791.7	1,788.8	4.6	4.1	-172.23	28.4	-21.1	163.3	155.3	8.02	20.371		
1,900.0	1,891.5	1,890.5	1,887.4	4.9	4.4	-170.50	35.5	-20.3	177.5	169.0	8.50	20.885		
2,000.0	1,990.7	1,989.4	1,986.0	5.2	4.6	-169.03	42.7	-19.5	191.9	182.9	8.99	21.355		
2,100.0	2,090.0	2,088.2	2,084.6	5.5	4.9	-167.76	49.9	-18.7	206.4	196.9	9.47	21.785		
2,200.0	2,189.3	2,187.1	2,183.2	5.9	5.1	-166.66	57.1	-17.9	220.9	210.9	9.96	22.179		
2,300.0	2,288.5	2,285.9	2,281.8	6.2	5.4	-165.69	64.3	-17.1	235.5	225.1	10.45	22.542		
2,400.0	2,387.8	2,384.8	2,380.4	6.5	5.6	-164.84	71.5	-16.3	250.2	239.2	10.94	22.876		
2,500.0	2,487.0	2,483.6	2,479.0	6.8	5.9	-164.08	78.7	-15.5	264.9	253.5	11.43	23.184		
2,600.0	2,586.3	2,582.5	2,577.5	7.1	6.1	-163.40	85.8	-14.7	279.7	267.8	11.92	23.470		
2,700.0	2,685.5	2,681.3	2,676.1	7.5	6.4	-162.79	93.0	-13.9	294.5	282.1	12.41	23.735		
2,800.0	2,784.8	2,780.2	2,774.7	7.8	6.7	-162.24	100.2	-13.0	309.3	296.4	12.90	23.981		
2,900.0	2,884.0	2,879.0	2,873.3	8.1	6.9	-161.74	107.4	-12.2	324.1	310.8	13.39	24.201		
3,000.0	2,983.3	2,977.9	2,971.9	8.4	7.2	-161.28	114.6	-11.4	339.0	325.1	13.89	24.406		
3,100.0	3,082.5	3,076.7	3,070.5	8.7	7.4	-160.86	121.8	-10.6	353.9	339.5	14.39	24.597		
3,200.0	3,181.8	3,175.6	3,169.1	9.1	7.7	-160.47	128.9	-9.8	368.8	353.9	14.89	24.776		
3,300.0	3,281.1	3,274.5	3,267.7	9.4	7.9	-160.12	136.1	-9.0	383.7	368.4	15.38	24.944		
3,400.0	3,380.3	3,373.3	3,366.3	9.7	8.2	-159.79	143.3	-8.2	398.7	382.8	15.88	25.102		
3,500.0	3,479.6	3,472.2	3,464.8	10.0	8.4	-159.49	150.5	-7.4	413.6	397.3	16.38	25.250		
3,600.0	3,578.8	3,571.0	3,563.4	10.4	8.7	-159.20	157.7	-6.6	428.6	411.7	16.88	25.390		
3,700.0	3,678.1	3,669.9	3,662.0	10.7	9.0	-158.94	164.9	-5.8	443.6	426.2	17.38	25.522		
3,800.0	3,777.3	3,768.7	3,760.6	11.0	9.2	-158.69	172.1	-5.0	458.6	440.7	17.88	25.647		
3,900.0	3,876.6	3,867.6	3,859.2	11.3	9.5	-158.46	179.2	-4.2	473.5	455.2	18.38	25.765		
4,000.0	3,975.8	3,966.4	3,957.8	11.6	9.7	-158.24	186.4	-3.4	488.5	469.7	18.88	25.877		
4,100.0	4,075.1	4,065.3	4,056.4	12.0	10.0	-158.04	193.6	-2.6	503.5	484.2	19.38	25.984		
4,200.0	4,174.4	4,164.1	4,155.0	12.3	10.2	-157.84	200.8	-1.8	518.5	498.7	19.88	26.085		
4,300.0	4,273.6	4,263.0	4,253.5	12.6	10.5	-157.66	208.0	-1.0	533.6	513.2	20.38	26.181		
4,400.0	4,372.9	4,361.8	4,352.1	12.9	10.7	-157.49	215.2	-0.2	548.6	527.7	20.88	26.273		
4,500.0	4,472.1	4,460.7	4,450.7	13.3	11.0	-157.33	222.4	0.6	563.6	542.2	21.38	26.360		
4,600.0	4,571.4	4,559.5	4,549.3	13.6	11.3	-157.17	229.5	1.4	578.6	556.7	21.88	26.444		
4,700.0	4,670.8	4,658.6	4,648.1	13.9	11.5	-157.07	236.7	2.2	592.2	569.8	22.40	26.444		
4,800.0	4,770.5	4,761.8	4,751.1	14.1	11.8	-156.82	244.0	3.0	602.6	579.7	22.86	26.360		
4,900.0	4,870.5	4,874.2	4,863.4	14.2	12.0	-156.65	248.7	3.5	608.2	584.9	23.25	26.154		
5,000.0	4,970.5	4,981.3	4,970.5	14.4	12.2	-51.47	249.4	3.6	609.0	585.4	23.63	25.766		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													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	5,070.5	5,081.3	5,070.5	14.5	12.4	-51.47	249.4	3.6	609.0	585.0	24.02	25.356		
5,200.0	5,170.5	5,181.3	5,170.5	14.7	12.6	-51.47	249.4	3.6	609.0	584.6	24.41	24.953		
5,300.0	5,270.4	5,413.3	5,399.1	14.8	12.8	-53.70	219.8	4.7	602.9	578.2	24.69	24.422		
5,400.0	5,368.6	5,643.7	5,592.7	14.9	12.6	-72.44	98.6	9.3	561.3	536.9	24.43	22.973		
5,500.0	5,461.6	5,714.9	5,639.7	15.0	12.6	-85.93	45.2	11.3	514.4	489.6	24.83	20.719		
5,600.0	5,545.9	5,726.5	5,646.7	15.1	12.6	-91.33	35.9	11.6	480.5	455.3	25.12	19.130		
5,700.0	5,618.5	5,713.3	5,638.7	15.1	12.6	-91.34	46.5	11.2	466.0	440.7	25.33	18.397		
5,718.9	5,630.6	5,709.2	5,636.2	15.2	12.6	-90.89	49.7	11.1	465.6	440.2	25.45	18.296		
5,800.0	5,676.6	5,687.9	5,622.8	15.3	12.6	-87.65	66.2	10.5	472.2	446.5	25.67	18.392		
5,900.0	5,718.2	5,650.0	5,597.2	15.5	12.6	-80.76	94.1	9.4	496.0	470.1	25.91	19.141		
6,000.0	5,741.7	5,619.5	5,575.1	16.0	12.6	-73.58	115.2	8.6	532.1	506.3	25.80	20.623		
6,100.0	5,747.0	5,580.8	5,545.5	16.7	12.6	-66.68	140.0	7.7	575.3	550.0	25.36	22.685		
6,200.0	5,747.0	5,550.0	5,520.6	17.7	12.7	-64.17	158.2	7.0	626.6	600.7	25.92	24.171		
6,300.0	5,747.0	5,517.7	5,493.5	18.9	12.7	-61.55	175.6	6.4	686.0	659.5	26.50	25.883		
6,400.0	5,747.0	5,500.0	5,478.1	20.2	12.7	-60.13	184.4	6.0	752.4	724.9	27.43	27.425		
6,500.0	5,747.0	5,472.8	5,453.9	21.6	12.7	-57.97	196.9	5.6	824.1	796.0	28.17	29.254		
6,600.0	5,747.0	5,450.0	5,433.2	23.1	12.7	-56.20	206.4	5.2	900.4	871.4	29.02	31.029		
6,700.0	5,747.0	5,450.0	5,433.2	24.6	12.7	-56.20	206.4	5.2	980.4	949.9	30.48	32.166		
6,800.0	5,747.0	5,426.1	5,411.1	26.2	12.8	-54.38	215.4	4.9	1,063.0	1,031.7	31.30	33.962		
6,900.0	5,747.0	5,400.0	5,386.5	27.8	12.8	-52.45	224.1	4.6	1,148.4	1,116.3	32.03	35.853		
7,000.0	5,747.0	5,400.0	5,386.5	29.5	12.8	-52.45	224.1	4.6	1,235.2	1,201.6	33.53	36.834		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design S25-T10N-R58W - Razor 25B -2555 - 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	180.00	-50.7	0.0	50.7					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-50.7	0.0	50.7	50.5	0.19	271.506		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-50.7	0.0	50.7	50.0	0.64	79.629		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-50.7	0.0	50.7	49.6	1.09	46.656		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-50.7	0.0	50.7	49.1	1.54	32.994		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-50.7	0.0	50.7	48.7	1.98	25.521		
600.0	600.0	600.7	600.7	1.2	1.2	75.68	-50.3	0.2	50.0	47.6	2.42	20.646		
700.0	699.9	702.1	702.0	1.4	1.4	78.71	-47.3	2.2	46.0	43.2	2.85	16.121		
800.0	799.6	803.0	802.7	1.6	1.7	85.26	-41.3	6.1	38.6	35.2	3.31	11.645		
900.0	898.9	902.3	901.6	1.9	1.9	100.06	-34.0	10.9	30.5	26.7	3.79	8.043		
1,000.0	998.2	1,001.5	1,000.4	2.2	2.2	124.18	-26.6	15.7	26.1	21.9	4.26	6.127		
1,027.1	1,025.1	1,028.4	1,027.2	2.2	2.2	131.65	-24.6	17.0	25.9	21.5	4.39	5.895 CC, ES		
1,100.0	1,097.5	1,100.7	1,099.2	2.4	2.4	151.09	-19.3	20.4	27.5	22.8	4.72	5.829 SF		
1,200.0	1,196.7	1,199.9	1,198.0	2.7	2.7	171.57	-12.0	25.2	33.9	28.7	5.18	6.538		
1,300.0	1,296.0	1,299.1	1,296.9	3.0	2.9	-175.49	-4.6	30.0	43.1	37.4	5.68	7.597		
1,400.0	1,395.2	1,398.3	1,395.7	3.3	3.2	-167.35	2.7	34.8	53.8	47.6	6.19	8.690		
1,500.0	1,494.5	1,497.5	1,494.5	3.7	3.5	-161.96	10.0	39.5	65.1	58.4	6.71	9.712		
1,600.0	1,593.7	1,596.7	1,593.3	4.0	3.7	-158.19	17.4	44.3	76.9	69.6	7.23	10.635		
1,700.0	1,693.0	1,695.9	1,692.1	4.3	4.0	-155.43	24.7	49.1	88.9	81.1	7.75	11.461		
1,800.0	1,792.2	1,795.1	1,790.9	4.6	4.3	-153.33	32.0	53.9	101.0	92.7	8.28	12.198		
1,900.0	1,891.5	1,894.3	1,889.7	4.9	4.5	-151.68	39.4	58.7	113.3	104.5	8.81	12.856		
2,000.0	1,990.7	1,993.5	1,988.5	5.2	4.8	-150.35	46.7	63.4	125.6	116.3	9.34	13.447		
2,100.0	2,090.0	2,092.7	2,087.3	5.5	5.1	-149.26	54.0	68.2	138.0	128.1	9.87	13.978		
2,200.0	2,189.3	2,191.9	2,186.2	5.9	5.3	-148.35	61.4	73.0	150.4	140.0	10.40	14.458		
2,300.0	2,288.5	2,291.1	2,285.0	6.2	5.6	-147.58	68.7	77.8	162.9	151.9	10.94	14.893		
2,400.0	2,387.8	2,390.3	2,383.8	6.5	5.9	-146.92	76.0	82.6	175.4	163.9	11.47	15.290		
2,500.0	2,487.0	2,489.5	2,482.6	6.8	6.1	-146.35	83.4	87.3	187.9	175.9	12.00	15.650		
2,600.0	2,586.3	2,588.7	2,581.4	7.1	6.4	-145.84	90.7	92.1	200.4	187.8	12.54	15.978		
2,700.0	2,685.5	2,687.9	2,680.2	7.5	6.7	-145.40	98.0	96.9	212.9	199.8	13.08	16.278		
2,800.0	2,784.8	2,787.1	2,779.0	7.8	7.0	-145.01	105.4	101.7	225.5	211.8	13.62	16.556		
2,900.0	2,884.0	2,886.3	2,877.8	8.1	7.2	-144.66	112.7	106.4	238.0	223.9	14.16	16.812		
3,000.0	2,983.3	2,985.5	2,976.7	8.4	7.5	-144.34	120.0	111.2	250.6	235.9	14.70	17.050		
3,100.0	3,082.5	3,084.7	3,075.5	8.7	7.8	-144.05	127.4	116.0	263.1	247.9	15.24	17.271		
3,200.0	3,181.8	3,183.9	3,174.3	9.1	8.1	-143.79	134.7	120.8	275.7	259.9	15.78	17.477		
3,300.0	3,281.1	3,283.1	3,273.1	9.4	8.3	-143.56	142.0	125.6	288.3	272.0	16.32	17.670		
3,400.0	3,380.3	3,382.3	3,371.9	9.7	8.6	-143.34	149.4	130.3	300.9	284.0	16.86	17.850		
3,500.0	3,479.6	3,481.5	3,470.7	10.0	8.9	-143.14	156.7	135.1	313.5	296.1	17.40	18.019		
3,600.0	3,578.8	3,580.7	3,569.5	10.4	9.1	-142.95	164.0	139.9	326.1	308.1	17.94	18.178		
3,700.0	3,678.1	3,679.9	3,668.3	10.7	9.4	-142.78	171.3	144.7	338.7	320.2	18.48	18.328		
3,800.0	3,777.3	3,779.1	3,767.2	11.0	9.7	-142.62	178.7	149.4	351.3	332.2	19.02	18.469		
3,900.0	3,876.6	3,878.3	3,866.0	11.3	10.0	-142.47	186.0	154.2	363.9	344.3	19.56	18.602		
4,000.0	3,975.8	3,977.5	3,964.8	11.6	10.2	-142.34	193.3	159.0	376.5	356.4	20.10	18.728		
4,100.0	4,075.1	4,076.7	4,063.6	12.0	10.5	-142.21	200.7	163.8	389.1	368.4	20.64	18.848		
4,200.0	4,174.4	4,175.9	4,162.4	12.3	10.8	-142.09	208.0	168.6	401.7	380.5	21.18	18.961		
4,300.0	4,273.6	4,275.1	4,261.2	12.6	11.0	-141.97	215.3	173.3	414.3	392.5	21.73	19.069		
4,400.0	4,372.9	4,374.3	4,360.0	12.9	11.3	-141.87	222.7	178.1	426.9	404.6	22.27	19.171		
4,500.0	4,472.1	4,473.5	4,458.8	13.3	11.6	-141.77	230.0	182.9	439.5	416.7	22.81	19.269		
4,600.0	4,571.4	4,572.7	4,557.6	13.6	11.9	-141.67	237.3	187.7	452.1	428.8	23.35	19.362		
4,700.0	4,670.8	4,675.8	4,660.4	13.9	12.1	-141.67	244.3	192.2	463.2	439.4	23.87	19.407		
4,800.0	4,770.5	4,781.5	4,766.0	14.1	12.3	-141.77	248.4	194.9	470.5	446.2	24.28	19.381		
4,900.0	4,870.5	4,886.0	4,870.5	14.2	12.5	-141.98	249.3	195.5	473.8	449.1	24.62	19.245		
5,000.0	4,970.5	4,986.0	4,970.5	14.4	12.7	-36.87	249.3	195.5	474.2	449.2	25.01	18.962		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft	
Survey Program: 0-ISCSWA 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)					
5,100.0	5,070.5	5,086.0	5,070.5	14.5	12.9	-36.87	249.3	195.5	474.2	448.8	25.37	18.689			
5,200.0	5,170.5	5,256.1	5,240.1	14.7	13.1	-37.47	240.8	195.8	472.4	446.6	25.79	18.319			
5,300.0	5,270.4	5,550.0	5,499.5	14.8	12.9	-50.90	111.2	199.9	433.8	408.7	25.09	17.292			
5,400.0	5,368.6	5,666.7	5,575.7	14.9	12.8	-74.44	23.2	202.6	370.6	346.2	24.44	15.162			
5,500.0	5,461.6	5,698.7	5,592.9	15.0	12.8	-88.42	-3.7	203.5	313.1	288.3	24.84	12.605			
5,600.0	5,545.9	5,695.8	5,591.5	15.1	12.8	-91.89	-1.3	203.4	279.0	253.9	25.08	11.125			
5,651.4	5,584.8	5,687.3	5,587.0	15.1	12.8	-90.66	5.9	203.2	274.3	249.1	25.19	10.890			
5,700.0	5,618.5	5,676.5	5,581.1	15.1	12.8	-88.00	15.0	202.9	278.4	253.2	25.22	11.040			
5,800.0	5,676.6	5,650.0	5,566.0	15.3	12.9	-79.34	36.8	202.2	308.8	283.7	25.15	12.280			
5,900.0	5,718.2	5,614.6	5,544.1	15.5	12.9	-67.28	64.6	201.3	358.7	334.6	24.08	14.897			
6,000.0	5,741.7	5,577.6	5,519.3	16.0	12.9	-55.53	91.9	200.5	417.0	395.3	21.69	19.221			
6,100.0	5,747.0	5,538.7	5,491.1	16.7	13.0	-47.14	118.8	199.6	477.0	457.5	19.45	24.521			
6,200.0	5,747.0	5,500.0	5,461.2	17.7	13.0	-44.01	143.3	198.9	542.1	522.7	19.31	28.068			
6,300.0	5,747.0	5,473.7	5,439.9	18.9	13.0	-41.98	158.6	198.4	613.3	593.7	19.60	31.298			
6,400.0	5,747.0	5,450.0	5,420.0	20.2	13.0	-40.22	171.6	198.0	689.5	669.5	20.01	34.460			
6,500.0	5,747.0	5,426.1	5,399.4	21.6	13.1	-38.52	183.6	197.6	769.5	749.0	20.45	37.629			
6,600.0	5,747.0	5,400.0	5,376.3	23.1	13.1	-36.75	195.8	197.2	852.6	831.8	20.85	40.895			
6,700.0	5,747.0	5,400.0	5,376.3	24.6	13.1	-36.75	195.8	197.2	938.2	916.2	22.03	42.594			
6,800.0	5,747.0	5,375.5	5,354.1	26.2	13.1	-35.18	206.0	196.9	1,025.5	1,003.0	22.48	45.613			
6,900.0	5,747.0	5,350.0	5,330.4	27.8	13.1	-33.63	215.7	196.6	1,114.8	1,091.9	22.91	48.657			
7,000.0	5,747.0	5,350.0	5,330.4	29.5	13.1	-33.63	215.7	196.6	1,205.0	1,180.9	24.10	50.007			
7,100.0	5,747.0	5,350.0	5,330.4	31.2	13.1	-33.63	215.7	196.6	1,296.7	1,271.4	25.29	51.262			

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
S25-T10N-R58W - Razor 25B -2556 - HZ - Plan #2													Offset Well Error:	0.0 usft
Survey Program: 0-ISCSWA MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	149.22	-50.7	30.2	59.0					
100.0	100.0	100.0	100.0	0.1	0.1	149.22	-50.7	30.2	59.0	58.8	0.19	316.061		
200.0	200.0	200.0	200.0	0.3	0.3	149.22	-50.7	30.2	59.0	58.3	0.64	92.696		
300.0	300.0	300.0	300.0	0.5	0.5	149.22	-50.7	30.2	59.0	57.9	1.09	54.313		
400.0	400.0	400.0	400.0	0.8	0.8	149.22	-50.7	30.2	59.0	57.4	1.54	38.409		
500.0	500.0	500.0	500.0	1.0	1.0	149.22	-50.7	30.2	59.0	57.0	1.98	29.709		
600.0	600.0	600.3	600.3	1.2	1.2	43.05	-49.5	31.5	58.0	55.6	2.42	23.960		
700.0	699.9	700.4	700.3	1.4	1.4	40.74	-46.2	35.5	54.1	51.2	2.85	18.982		
800.0	799.6	800.3	799.7	1.6	1.7	36.51	-40.5	42.2	47.4	44.1	3.31	14.333		
900.0	898.9	899.7	898.6	1.9	1.9	29.80	-33.4	50.7	38.3	34.5	3.78	10.126		
1,000.0	998.2	999.1	997.3	2.2	2.2	19.55	-26.2	59.3	29.2	25.0	4.26	6.865		
1,100.0	1,097.5	1,098.5	1,096.1	2.4	2.5	1.36	-18.9	67.9	21.8	17.1	4.70	4.640		
1,200.0	1,196.7	1,197.9	1,194.9	2.7	2.8	-28.42	-11.7	76.5	18.3	13.1	5.16	3.547		
1,209.3	1,206.0	1,207.2	1,204.1	2.8	2.8	-31.59	-11.0	77.3	18.3	13.1	5.21	3.506 CC, ES		
1,300.0	1,296.0	1,297.3	1,293.6	3.0	3.1	-59.85	-4.5	85.1	20.8	15.0	5.78	3.593		
1,400.0	1,395.2	1,396.8	1,392.4	3.3	3.3	-80.09	2.7	93.7	27.7	21.2	6.44	4.292		
1,500.0	1,494.5	1,496.2	1,491.2	3.7	3.6	-91.46	10.0	102.3	36.5	29.5	7.07	5.169		
1,600.0	1,593.7	1,595.6	1,589.9	4.0	3.9	-98.24	17.2	110.9	46.3	38.6	7.67	6.033		
1,700.0	1,693.0	1,695.0	1,688.7	4.3	4.2	-102.62	24.4	119.5	56.5	48.2	8.27	6.830		
1,800.0	1,792.2	1,794.4	1,787.5	4.6	4.5	-105.65	31.6	128.1	66.9	58.0	8.86	7.550		
1,900.0	1,891.5	1,893.8	1,886.2	4.9	4.8	-107.87	38.9	136.7	77.4	68.0	9.45	8.195		
2,000.0	1,990.7	1,993.2	1,985.0	5.2	5.1	-109.55	46.1	145.3	88.0	78.0	10.03	8.773		
2,100.0	2,090.0	2,092.6	2,083.8	5.5	5.4	-110.87	53.3	153.9	98.7	88.1	10.62	9.293		
2,200.0	2,189.3	2,192.0	2,182.5	5.9	5.7	-111.93	60.5	162.5	109.4	98.2	11.21	9.762		
2,300.0	2,288.5	2,291.4	2,281.3	6.2	6.0	-112.80	67.8	171.1	120.2	108.4	11.80	10.186		
2,400.0	2,387.8	2,390.8	2,380.1	6.5	6.3	-113.53	75.0	179.7	130.9	118.6	12.39	10.571		
2,500.0	2,487.0	2,490.2	2,478.9	6.8	6.6	-114.14	82.2	188.3	141.7	128.8	12.98	10.923		
2,600.0	2,586.3	2,589.6	2,577.6	7.1	6.9	-114.67	89.4	196.9	152.5	139.0	13.57	11.244		
2,700.0	2,685.5	2,689.0	2,676.4	7.5	7.2	-115.13	96.7	205.5	163.4	149.2	14.16	11.539		
2,800.0	2,784.8	2,788.4	2,775.2	7.8	7.5	-115.54	103.9	214.1	174.2	159.4	14.75	11.811		
2,900.0	2,884.0	2,887.8	2,873.9	8.1	7.8	-115.89	111.1	222.7	185.0	169.7	15.34	12.062		
3,000.0	2,983.3	2,987.2	2,972.7	8.4	8.1	-116.21	118.3	231.3	195.9	179.9	15.93	12.294		
3,100.0	3,082.5	3,086.6	3,071.5	8.7	8.4	-116.49	125.6	239.9	206.7	190.2	16.52	12.510		
3,200.0	3,181.8	3,186.0	3,170.2	9.1	8.7	-116.75	132.8	248.5	217.6	200.4	17.12	12.711		
3,300.0	3,281.1	3,285.5	3,269.0	9.4	9.1	-116.98	140.0	257.1	228.4	210.7	17.71	12.899		
3,400.0	3,380.3	3,384.9	3,367.8	9.7	9.4	-117.19	147.2	265.7	239.3	221.0	18.30	13.074		
3,500.0	3,479.6	3,484.3	3,466.5	10.0	9.7	-117.38	154.5	274.3	250.1	231.2	18.89	13.239		
3,600.0	3,578.8	3,583.7	3,565.3	10.4	10.0	-117.55	161.7	282.9	261.0	241.5	19.49	13.393		
3,700.0	3,678.1	3,683.1	3,664.1	10.7	10.3	-117.72	168.9	291.5	271.9	251.8	20.08	13.539		
3,800.0	3,777.3	3,782.5	3,762.8	11.0	10.6	-117.87	176.1	300.1	282.7	262.1	20.67	13.676		
3,900.0	3,876.6	3,881.9	3,861.6	11.3	10.9	-118.00	183.4	308.7	293.6	272.3	21.27	13.805		
4,000.0	3,975.8	3,981.3	3,960.4	11.6	11.2	-118.13	190.6	317.3	304.5	282.6	21.86	13.927		
4,100.0	4,075.1	4,080.7	4,059.1	12.0	11.5	-118.25	197.8	325.9	315.3	292.9	22.45	14.043		
4,200.0	4,174.4	4,180.1	4,157.9	12.3	11.8	-118.36	205.0	334.5	326.2	303.2	23.05	14.153		
4,300.0	4,273.6	4,279.5	4,256.7	12.6	12.1	-118.47	212.3	343.1	337.1	313.4	23.64	14.257		
4,400.0	4,372.9	4,378.9	4,355.5	12.9	12.4	-118.56	219.5	351.7	348.0	323.7	24.24	14.357		
4,500.0	4,472.1	4,478.3	4,454.2	13.3	12.7	-118.66	226.7	360.3	358.8	334.0	24.83	14.451		
4,600.0	4,571.4	4,577.7	4,553.0	13.6	13.0	-118.74	233.9	368.9	369.7	344.3	25.43	14.541		
4,700.0	4,670.8	4,680.3	4,655.0	13.9	13.3	-118.84	241.1	377.4	379.6	353.7	25.98	14.613		
4,800.0	4,770.5	4,786.3	4,760.7	14.1	13.5	-118.87	248.3	383.6	386.5	360.1	26.40	14.637		
4,900.0	4,870.5	4,892.6	4,866.9	14.2	13.7	-118.89	248.9	386.8	390.0	363.2	26.76	14.574		
5,000.0	4,970.5	4,996.2	4,970.5	14.4	13.9	-13.74	249.3	387.3	390.5	363.4	27.09	14.415		

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 25B -2412
Project:	Weld County, CO	TVD Reference:	KB=17' @ 4773.4usft (Cade #23)
Reference Site:	S25-T10N-R58W	MD Reference:	KB=17' @ 4773.4usft (Cade #23)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor 25B -2412	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 #1	Offset TVD Reference:	Offset Datum

Offset Design													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	5,070.5	5,096.2	5,070.5	14.5	14.0	-13.74	249.3	387.3	390.5	363.1	27.43	14.237			
5,200.0	5,170.5	5,196.2	5,170.5	14.7	14.2	-13.74	249.3	387.3	390.5	362.7	27.77	14.062			
5,300.0	5,270.4	5,410.3	5,382.1	14.8	14.4	-13.96	225.4	387.9	382.0	353.9	28.09	13.599			
5,400.0	5,368.6	5,632.3	5,573.6	14.9	14.3	-27.41	116.5	390.7	318.3	291.4	26.90	11.830			
5,500.0	5,461.6	5,709.1	5,626.8	15.0	14.2	-60.82	61.3	392.2	230.4	205.5	24.90	9.252			
5,600.0	5,545.9	5,725.5	5,637.1	15.1	14.2	-90.32	48.5	392.5	142.7	117.3	25.37	5.623			
5,700.0	5,618.5	5,715.6	5,631.0	15.1	14.2	-92.17	56.2	392.3	85.7	60.1	25.66	3.342			
5,715.8	5,628.7	5,712.7	5,629.1	15.1	14.2	-90.35	58.5	392.2	84.3	58.6	25.74	3.275 SF			
5,800.0	5,676.6	5,692.7	5,616.2	15.3	14.2	-73.43	73.7	391.8	117.1	92.1	25.01	4.683			
5,900.0	5,718.2	5,662.3	5,595.4	15.5	14.2	-48.13	95.8	391.3	193.2	172.9	20.30	9.519			
6,000.0	5,741.7	5,627.5	5,570.0	16.0	14.3	-30.78	119.7	390.6	274.0	260.3	13.73	19.958			
6,100.0	5,747.0	5,590.0	5,541.0	16.7	14.3	-22.42	143.4	390.0	351.6	341.7	9.89	35.562			
6,200.0	5,747.0	5,550.0	5,508.2	17.7	14.3	-19.63	166.3	389.4	431.4	421.8	9.64	44.766			
6,300.0	5,747.0	5,528.6	5,490.0	18.9	14.4	-18.35	177.6	389.1	514.8	504.8	10.00	51.459			
6,400.0	5,747.0	5,500.0	5,465.0	20.2	14.4	-16.84	191.4	388.8	601.2	590.9	10.33	58.181			
6,500.0	5,747.0	5,484.7	5,451.3	21.6	14.4	-16.11	198.2	388.6	689.7	678.8	10.94	63.042			
6,600.0	5,747.0	5,467.3	5,435.5	23.1	14.4	-15.34	205.4	388.4	780.0	768.5	11.54	67.581			
6,700.0	5,747.0	5,450.0	5,419.5	24.6	14.4	-14.63	212.1	388.2	871.7	859.5	12.17	71.655			
6,800.0	5,747.0	5,450.0	5,419.5	26.2	14.4	-14.63	212.1	388.2	964.6	951.6	13.02	74.081			
6,900.0	5,747.0	5,427.4	5,398.4	27.8	14.4	-13.79	220.0	388.0	1,058.1	1,044.5	13.58	77.891			
7,000.0	5,747.0	5,400.0	5,372.3	29.5	14.4	-12.87	228.4	387.8	1,153.0	1,138.8	14.12	81.651			
7,100.0	5,747.0	5,400.0	5,372.3	31.2	14.4	-12.87	228.4	387.8	1,247.7	1,232.7	14.96	83.390			

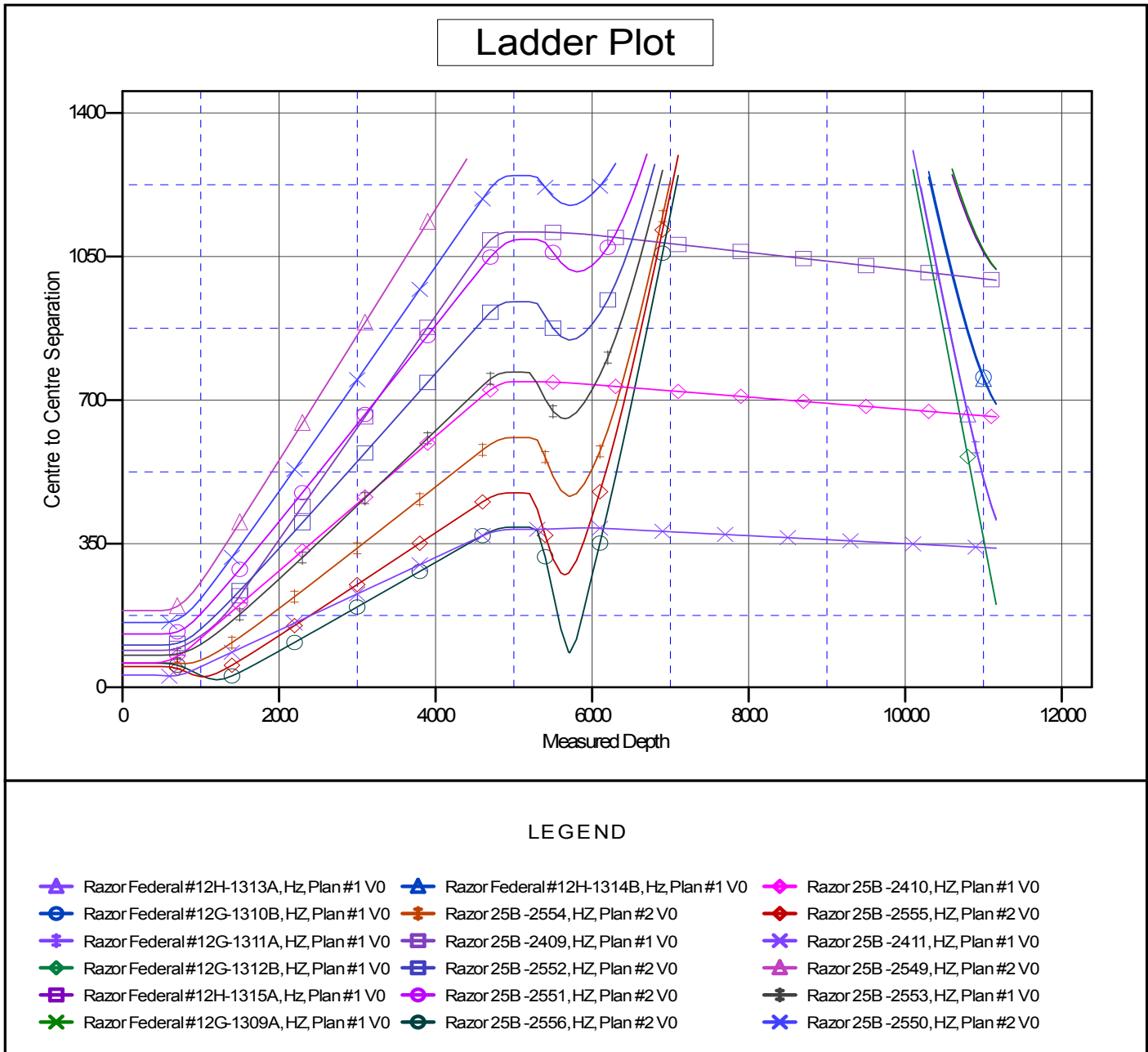
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company: Whiting Petroleum Corporation	Local Co-ordinate Reference: Well Razor 25B -2412
Project: Weld County, CO	TVD Reference: KB=17' @ 4773.4usft (Cade #23)
Reference Site: S25-T10N-R58W	MD Reference: KB=17' @ 4773.4usft (Cade #23)
Site Error: 0.0usft	North Reference: True
Reference Well: Razor 25B -2412	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 #1	Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=17' @ 4773.4usft (Cade #23) Coordinates are relative to: Razor 25B -2412
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 1.09°



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