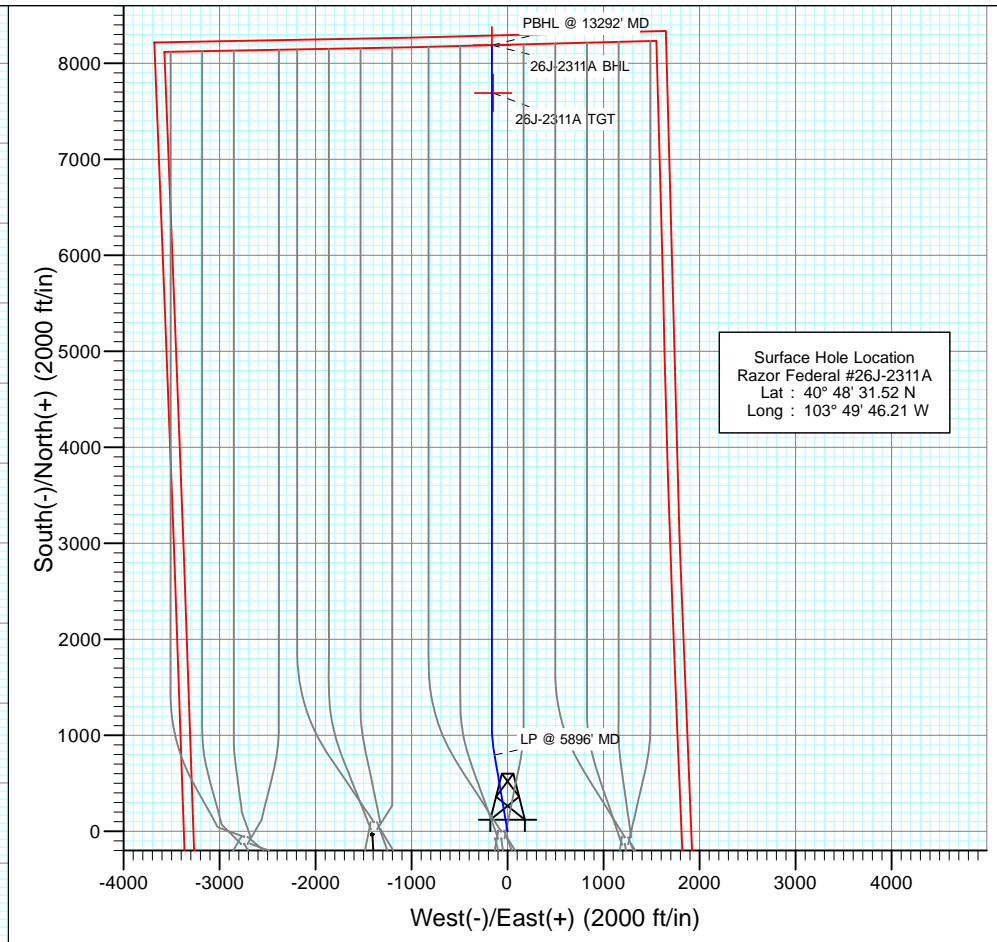


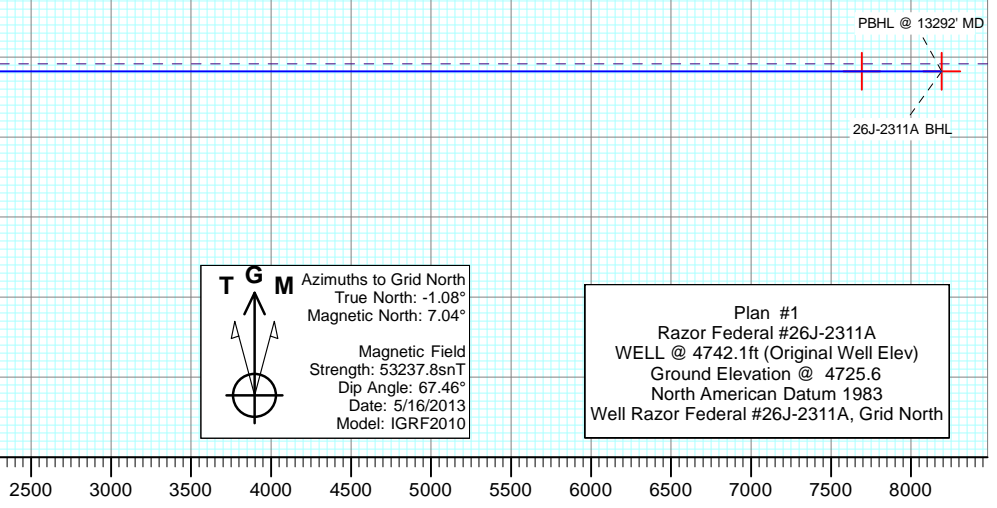
SECTION DETAILS

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	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	1100.0	4.00	350.30	1099.8	6.9	-1.2	2.00	350.30	6.9	
4	5114.4	4.00	350.30	5104.5	282.9	-48.4	0.00	0.00	283.8	
5	5896.2	90.00	350.30	5589.0	795.1	-135.9	11.00	0.00	797.6	
6	6219.7	90.00	0.00	5589.0	1117.0	-163.2	3.00	90.00	1120.1	
7	13292.6	90.00	0.00	5589.0	8189.9	-162.6	0.00	0.00	8191.5	26J-2311A BHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
26J-2311A BHL	8189.9	-162.6	1550025.56	3462262.30	40° 49' 52.46 N	103° 49' 46.32 W
26J-2311A TGT	7690.2	-148.8	1549525.85	3462276.17	40° 49' 47.52 N	103° 49' 46.26 W



T G M Azimuths to Grid North
 True North: -1.08°
 Magnetic North: 7.04°
 Magnetic Field Strength: 53237.8snT
 Dip Angle: 67.46°
 Date: 5/16/2013
 Model: IGRF2010

Plan #1
 Razor Federal #26J-2311A
 WELL @ 4742.1ft (Original Well Elev)
 Ground Elevation @ 4725.6
 North American Datum 1983
 Well Razor Federal #26J-2311A, Grid North

Vertical Section at 358.86° (1200 ft/in)

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Razor Federal #26J-2311A
Company: Whiting Petroleum Corporation	TVD Reference: WELL @ 4742.1ft (Original Well Elev)
Project: Weld County, CO	MD Reference: WELL @ 4742.1ft (Original Well Elev)
Site: S26-T10N-R58W	North Reference: Grid
Well: Razor Federal #26J-2311A	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 S26-T10N-R58W					
Site Position:		Northing:	1,541,777.36 ft	Latitude:	40.808739
From:	Lat/Long	Easting:	3,459,649.47 ft	Longitude:	-103.839531
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.07 °

Well Razor Federal #26J-2311A						
Well Position	+N/-S	0.0 ft	Northing:	1,541,835.65 ft	Latitude:	40.808756
	+E/-W	0.0 ft	Easting:	3,462,424.93 ft	Longitude:	-103.829503
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,725.6 ft

Wellbore HZ					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/16/2013	8.12	67.46	53,238

Design Plan #1					
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	358.86	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	4.00	350.30	1,099.8	6.9	-1.2	2.00	2.00	0.00	350.30	
5,114.4	4.00	350.30	5,104.5	282.9	-48.4	0.00	0.00	0.00	0.00	
5,896.2	90.00	350.30	5,589.0	795.1	-135.9	11.00	11.00	0.00	0.00	
6,219.7	90.00	0.00	5,589.0	1,117.0	-163.2	3.00	0.00	3.00	90.00	
13,292.6	90.00	0.00	5,589.0	8,189.9	-162.6	0.00	0.00	0.00	0.00	26J-2311A BHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	KOP @ 900' MD
1,000.0	2.00	350.30	1,000.0	1.7	-0.3	1.7	2.00	2.00	
1,100.0	4.00	350.30	1,099.8	6.9	-1.2	6.9	2.00	2.00	EOB; 4°
1,200.0	4.00	350.30	1,199.6	13.8	-2.4	13.8	0.00	0.00	
1,300.0	4.00	350.30	1,299.4	20.6	-3.5	20.7	0.00	0.00	
1,400.0	4.00	350.30	1,399.1	27.5	-4.7	27.6	0.00	0.00	
1,500.0	4.00	350.30	1,498.9	34.4	-5.9	34.5	0.00	0.00	
1,600.0	4.00	350.30	1,598.6	41.3	-7.1	41.4	0.00	0.00	
1,700.0	4.00	350.30	1,698.4	48.1	-8.2	48.3	0.00	0.00	
1,800.0	4.00	350.30	1,798.1	55.0	-9.4	55.2	0.00	0.00	
1,900.0	4.00	350.30	1,897.9	61.9	-10.6	62.1	0.00	0.00	
2,000.0	4.00	350.30	1,997.6	68.8	-11.8	69.0	0.00	0.00	
2,100.0	4.00	350.30	2,097.4	75.6	-12.9	75.9	0.00	0.00	
2,200.0	4.00	350.30	2,197.2	82.5	-14.1	82.8	0.00	0.00	
2,300.0	4.00	350.30	2,296.9	89.4	-15.3	89.7	0.00	0.00	
2,400.0	4.00	350.30	2,396.7	96.3	-16.5	96.6	0.00	0.00	
2,500.0	4.00	350.30	2,496.4	103.1	-17.6	103.5	0.00	0.00	
2,600.0	4.00	350.30	2,596.2	110.0	-18.8	110.4	0.00	0.00	
2,700.0	4.00	350.30	2,695.9	116.9	-20.0	117.3	0.00	0.00	
2,800.0	4.00	350.30	2,795.7	123.8	-21.2	124.2	0.00	0.00	
2,900.0	4.00	350.30	2,895.5	130.6	-22.3	131.1	0.00	0.00	
3,000.0	4.00	350.30	2,995.2	137.5	-23.5	138.0	0.00	0.00	
3,100.0	4.00	350.30	3,095.0	144.4	-24.7	144.9	0.00	0.00	
3,200.0	4.00	350.30	3,194.7	151.3	-25.9	151.8	0.00	0.00	
3,300.0	4.00	350.30	3,294.5	158.1	-27.0	158.7	0.00	0.00	
3,400.0	4.00	350.30	3,394.2	165.0	-28.2	165.6	0.00	0.00	
3,500.0	4.00	350.30	3,494.0	171.9	-29.4	172.5	0.00	0.00	
3,600.0	4.00	350.30	3,593.7	178.8	-30.6	179.3	0.00	0.00	
3,700.0	4.00	350.30	3,693.5	185.7	-31.7	186.2	0.00	0.00	
3,800.0	4.00	350.30	3,793.3	192.5	-32.9	193.1	0.00	0.00	
3,900.0	4.00	350.30	3,893.0	199.4	-34.1	200.0	0.00	0.00	
4,000.0	4.00	350.30	3,992.8	206.3	-35.3	206.9	0.00	0.00	
4,100.0	4.00	350.30	4,092.5	213.2	-36.4	213.8	0.00	0.00	
4,200.0	4.00	350.30	4,192.3	220.0	-37.6	220.7	0.00	0.00	
4,300.0	4.00	350.30	4,292.0	226.9	-38.8	227.6	0.00	0.00	
4,400.0	4.00	350.30	4,391.8	233.8	-40.0	234.5	0.00	0.00	
4,500.0	4.00	350.30	4,491.6	240.7	-41.1	241.4	0.00	0.00	
4,600.0	4.00	350.30	4,591.3	247.5	-42.3	248.3	0.00	0.00	
4,700.0	4.00	350.30	4,691.1	254.4	-43.5	255.2	0.00	0.00	
4,800.0	4.00	350.30	4,790.8	261.3	-44.7	262.1	0.00	0.00	
4,900.0	4.00	350.30	4,890.6	268.2	-45.8	269.0	0.00	0.00	
5,000.0	4.00	350.30	4,990.3	275.0	-47.0	275.9	0.00	0.00	
5,100.0	4.00	350.30	5,090.1	281.9	-48.2	282.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,114.4	4.00	350.30	5,104.5	282.9	-48.4	283.8	0.00	0.00	Start 11° Build
5,200.0	13.41	350.30	5,189.0	295.7	-50.5	296.6	11.00	11.00	
5,300.0	24.41	350.30	5,283.4	327.6	-56.0	328.6	11.00	11.00	
5,400.0	35.41	350.30	5,370.0	376.7	-64.4	377.9	11.00	11.00	
5,500.0	46.41	350.30	5,445.4	441.1	-75.4	442.5	11.00	11.00	
5,600.0	57.41	350.30	5,507.0	518.6	-88.6	520.2	11.00	11.00	
5,673.3	65.47	350.30	5,542.0	582.0	-99.5	583.8	11.00	11.00	Top Niobrara
5,700.0	68.41	350.30	5,552.5	606.2	-103.6	608.1	11.00	11.00	
5,800.0	79.41	350.30	5,580.1	700.8	-119.8	703.0	11.00	11.00	
5,896.2	90.00	350.30	5,589.0	795.1	-135.9	797.6	11.00	11.00	LP @ 5896' MD - 7"
5,900.0	90.00	350.41	5,589.0	798.8	-136.5	801.4	2.98	0.09	
6,000.0	90.00	353.41	5,589.0	897.8	-150.6	900.6	3.00	0.00	
6,100.0	90.00	356.41	5,589.0	997.4	-159.5	1,000.4	3.00	0.00	
6,200.0	90.00	359.41	5,589.0	1,097.3	-163.1	1,100.3	3.00	0.00	
6,219.7	90.00	0.00	5,589.0	1,117.0	-163.2	1,120.0	3.00	0.00	EOT; 0° Az
6,300.0	90.00	0.00	5,589.0	1,197.3	-163.2	1,200.3	0.00	0.00	
6,400.0	90.00	0.00	5,589.0	1,297.3	-163.2	1,300.3	0.00	0.00	
6,500.0	90.00	0.00	5,589.0	1,397.3	-163.2	1,400.3	0.00	0.00	
6,600.0	90.00	0.00	5,589.0	1,497.3	-163.2	1,500.3	0.00	0.00	
6,700.0	90.00	0.00	5,589.0	1,597.3	-163.2	1,600.2	0.00	0.00	
6,800.0	90.00	0.00	5,589.0	1,697.3	-163.2	1,700.2	0.00	0.00	
6,900.0	90.00	0.00	5,589.0	1,797.3	-163.2	1,800.2	0.00	0.00	
7,000.0	90.00	0.00	5,589.0	1,897.3	-163.1	1,900.2	0.00	0.00	
7,100.0	90.00	0.00	5,589.0	1,997.3	-163.1	2,000.2	0.00	0.00	
7,200.0	90.00	0.00	5,589.0	2,097.3	-163.1	2,100.1	0.00	0.00	
7,300.0	90.00	0.00	5,589.0	2,197.3	-163.1	2,200.1	0.00	0.00	
7,400.0	90.00	0.00	5,589.0	2,297.3	-163.1	2,300.1	0.00	0.00	
7,500.0	90.00	0.00	5,589.0	2,397.3	-163.1	2,400.1	0.00	0.00	
7,600.0	90.00	0.00	5,589.0	2,497.3	-163.1	2,500.1	0.00	0.00	
7,700.0	90.00	0.00	5,589.0	2,597.3	-163.1	2,600.0	0.00	0.00	
7,800.0	90.00	0.00	5,589.0	2,697.3	-163.1	2,700.0	0.00	0.00	
7,900.0	90.00	0.00	5,589.0	2,797.3	-163.1	2,800.0	0.00	0.00	
8,000.0	90.00	0.00	5,589.0	2,897.3	-163.1	2,900.0	0.00	0.00	
8,100.0	90.00	0.00	5,589.0	2,997.3	-163.0	3,000.0	0.00	0.00	
8,200.0	90.00	0.00	5,589.0	3,097.3	-163.0	3,099.9	0.00	0.00	
8,300.0	90.00	0.00	5,589.0	3,197.3	-163.0	3,199.9	0.00	0.00	
8,400.0	90.00	0.00	5,589.0	3,297.3	-163.0	3,299.9	0.00	0.00	
8,500.0	90.00	0.00	5,589.0	3,397.3	-163.0	3,399.9	0.00	0.00	
8,600.0	90.00	0.00	5,589.0	3,497.3	-163.0	3,499.9	0.00	0.00	
8,700.0	90.00	0.00	5,589.0	3,597.3	-163.0	3,599.8	0.00	0.00	
8,800.0	90.00	0.00	5,589.0	3,697.3	-163.0	3,699.8	0.00	0.00	
8,900.0	90.00	0.00	5,589.0	3,797.3	-163.0	3,799.8	0.00	0.00	
9,000.0	90.00	0.00	5,589.0	3,897.3	-163.0	3,899.8	0.00	0.00	
9,100.0	90.00	0.00	5,589.0	3,997.3	-163.0	3,999.8	0.00	0.00	
9,200.0	90.00	0.00	5,589.0	4,097.3	-163.0	4,099.7	0.00	0.00	
9,300.0	90.00	0.00	5,589.0	4,197.3	-162.9	4,199.7	0.00	0.00	
9,400.0	90.00	0.00	5,589.0	4,297.3	-162.9	4,299.7	0.00	0.00	
9,500.0	90.00	0.00	5,589.0	4,397.3	-162.9	4,399.7	0.00	0.00	
9,600.0	90.00	0.00	5,589.0	4,497.3	-162.9	4,499.7	0.00	0.00	
9,700.0	90.00	0.00	5,589.0	4,597.3	-162.9	4,599.6	0.00	0.00	
9,800.0	90.00	0.00	5,589.0	4,697.3	-162.9	4,699.6	0.00	0.00	
9,900.0	90.00	0.00	5,589.0	4,797.3	-162.9	4,799.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
10,000.0	90.00	0.00	5,589.0	4,897.3	-162.9	4,899.6	0.00	0.00	
10,100.0	90.00	0.00	5,589.0	4,997.3	-162.9	4,999.6	0.00	0.00	
10,200.0	90.00	0.00	5,589.0	5,097.3	-162.9	5,099.5	0.00	0.00	
10,300.0	90.00	0.00	5,589.0	5,197.3	-162.9	5,199.5	0.00	0.00	
10,400.0	90.00	0.00	5,589.0	5,297.3	-162.9	5,299.5	0.00	0.00	
10,500.0	90.00	0.00	5,589.0	5,397.3	-162.8	5,399.5	0.00	0.00	
10,600.0	90.00	0.00	5,589.0	5,497.3	-162.8	5,499.5	0.00	0.00	
10,700.0	90.00	0.00	5,589.0	5,597.3	-162.8	5,599.4	0.00	0.00	
10,800.0	90.00	0.00	5,589.0	5,697.3	-162.8	5,699.4	0.00	0.00	
10,900.0	90.00	0.00	5,589.0	5,797.3	-162.8	5,799.4	0.00	0.00	
11,000.0	90.00	0.00	5,589.0	5,897.3	-162.8	5,899.4	0.00	0.00	
11,100.0	90.00	0.00	5,589.0	5,997.3	-162.8	5,999.4	0.00	0.00	
11,200.0	90.00	0.00	5,589.0	6,097.3	-162.8	6,099.3	0.00	0.00	
11,300.0	90.00	0.00	5,589.0	6,197.3	-162.8	6,199.3	0.00	0.00	
11,400.0	90.00	0.00	5,589.0	6,297.3	-162.8	6,299.3	0.00	0.00	
11,500.0	90.00	0.00	5,589.0	6,397.3	-162.8	6,399.3	0.00	0.00	
11,600.0	90.00	0.00	5,589.0	6,497.3	-162.8	6,499.3	0.00	0.00	
11,700.0	90.00	0.00	5,589.0	6,597.3	-162.7	6,599.2	0.00	0.00	
11,800.0	90.00	0.00	5,589.0	6,697.3	-162.7	6,699.2	0.00	0.00	
11,900.0	90.00	0.00	5,589.0	6,797.3	-162.7	6,799.2	0.00	0.00	
12,000.0	90.00	0.00	5,589.0	6,897.3	-162.7	6,899.2	0.00	0.00	
12,100.0	90.00	0.00	5,589.0	6,997.3	-162.7	6,999.2	0.00	0.00	
12,200.0	90.00	0.00	5,589.0	7,097.3	-162.7	7,099.1	0.00	0.00	
12,300.0	90.00	0.00	5,589.0	7,197.3	-162.7	7,199.1	0.00	0.00	
12,400.0	90.00	0.00	5,589.0	7,297.3	-162.7	7,299.1	0.00	0.00	
12,500.0	90.00	0.00	5,589.0	7,397.3	-162.7	7,399.1	0.00	0.00	
12,600.0	90.00	0.00	5,589.0	7,497.3	-162.7	7,499.1	0.00	0.00	
12,700.0	90.00	0.00	5,589.0	7,597.3	-162.7	7,599.0	0.00	0.00	
12,800.0	90.00	0.00	5,589.0	7,697.3	-162.6	7,699.0	0.00	0.00	
12,900.0	90.00	0.00	5,589.0	7,797.3	-162.6	7,799.0	0.00	0.00	
13,000.0	90.00	0.00	5,589.0	7,897.3	-162.6	7,899.0	0.00	0.00	
13,100.0	90.00	0.00	5,589.0	7,997.3	-162.6	7,999.0	0.00	0.00	
13,200.0	90.00	0.00	5,589.0	8,097.3	-162.6	8,098.9	0.00	0.00	
13,292.6	90.00	0.00	5,589.0	8,189.9	-162.6	8,191.5	0.00	0.00	PBHL @ 13292' MD

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
26J-2311A BHL - hit/miss target - Shape - Point	0.00	0.00	5,589.0	8,189.9	-162.6	1,550,025.56	3,462,262.32	40.831239	-103.829533	
26J-2311A TGT - plan misses target center by 13.9ft at 12792.9ft MD (5589.0 TVD, 7690.2 N, -162.6 E) - Point	0.00	0.00	5,589.0	7,690.2	-148.8	1,549,525.85	3,462,276.17	40.829867	-103.829517	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,896.2	5,589.0	7"	0.000	0.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,673.3	5,542.0	Top Niobrara		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
900.0	900.0	0.0	0.0	KOP @ 900' MD	
1,100.0	1,099.8	6.9	-1.2	EOB; 4°	
5,114.4	5,104.5	282.9	-48.4	Start 11° Build	
5,896.2	5,589.0	795.1	-135.9	LP @ 5896' MD	
6,219.7	5,589.0	1,117.0	-163.2	EOT; 0° Az	
13,292.6	5,589.0	8,189.9	-162.6	PBHL @ 13292' MD	

Whiting Petroleum Corporation

Weld County, CO

S26-T10N-R58W

Razor Federal #26J-2311A

HZ

Plan #1

Anticollision Report

22 May, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	5/22/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,292.6	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA	

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S26-T10N-R58W						
Razor #26J-2633L - HZ - Plan #1	200.0	200.0	151.4	150.8	237.618	CC, ES
Razor #26J-2633L - HZ - Plan #1	4,100.0	4,072.8	492.7	474.4	26.894	SF
Razor #26K-2305A - HZ - Plan #1						Out of range
Razor #26K-2306B - HZ - Plan #1						Out of range
Razor #26K-2307A - HZ - Plan #1						Out of range
Razor #26K-2308B - HZ - Plan #1						Out of range
Razor #26K-3505A - HZ - Plan #1						Out of range
Razor #26K-3507A - HZ - Plan #1						Out of range
Razor #26K-3508B - HZ - Plan #1						Out of range
Razor #26L-2301A - HZ - Plan #1						Out of range
Razor #26L-2302B - HZ - Plan #1						Out of range
Razor #26L-2303A - HZ - Plan #1						Out of range
Razor #26L-2304B - HZ - Plan #1						Out of range
Razor #26L-3501A - HZ - Plan #1						Out of range
Razor #26L-3502B - HZ - Plan #1						Out of range
Razor #26L-3503A - HZ - Plan #1						Out of range
Razor #26L-3504B - HZ - Plan #1						Out of range
Razor 26-3524H (Existing) - Existing - SURVEYs						Out of range
Razor Federal #26I-2313A - HZ - Plan #1						Out of range
Razor Federal #26I-2314B - HZ - Plan #1						Out of range
Razor Federal #26I-2315A - HZ - Plan #1						Out of range
Razor Federal #26I-2316B - HZ - Plan #1						Out of range
Razor Federal #26I-3513A - HZ - Plan #1						Out of range
Razor Federal #26I-3514B - HZ - Plan #1						Out of range
Razor Federal #26I-3515A - HZ - Plan #1						Out of range
Razor Federal #26I-3516B - HZ - Plan #1						Out of range
Razor Federal #26J-2309A - HZ - Plan #1	500.0	500.0	66.2	64.2	33.318	CC, ES
Razor Federal #26J-2309A - HZ - Plan #1	5,150.0	5,140.8	190.4	165.4	7.621	SF
Razor Federal #26J-2310B - HZ - Plan #1	1,012.5	1,014.8	121.3	117.0	28.191	CC
Razor Federal #26J-2310B - HZ - Plan #1	13,292.6	13,479.2	341.7	37.9	1.125	Level 2, ES, SF
Razor Federal #26J-2312B - HZ - Plan #1	900.0	900.0	82.0	78.2	21.659	CC
Razor Federal #26J-2312B - HZ - Plan #1	13,292.6	13,470.3	341.3	37.4	1.123	Level 2, ES, SF
Razor Federal #26J-3509A - HZ - Plan #1	1,064.8	1,064.2	97.9	93.3	21.726	CC
Razor Federal #26J-3509A - HZ - Plan #1	1,100.0	1,098.9	97.9	93.3	21.058	ES
Razor Federal #26J-3509A - HZ - Plan #1	1,600.0	1,593.3	124.1	117.3	18.295	SF
Razor Federal #26J-3510B - HZ - Plan #1	600.0	600.0	100.0	97.6	41.077	CC, ES
Razor Federal #26J-3510B - HZ - Plan #1	1,400.0	1,390.7	161.0	155.2	27.430	SF
Razor Federal #26J-3511A - HZ - Plan #1	1,005.0	1,005.3	31.4	27.2	7.500	CC, ES
Razor Federal #26J-3511A - HZ - Plan #1	1,100.0	1,099.6	33.6	29.1	7.338	SF
Razor Federal #26J-3512B - HZ - Plan #1	900.0	900.0	75.1	71.3	19.835	CC, ES
Razor Federal #26J-3512B - HZ - Plan #1	1,100.0	1,097.4	83.4	78.8	17.934	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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft		
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 ft	
Reference				Offset				Semi Major Axis		Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-120.80	-77.5	-130.1	151.4							
100.0	100.0	100.0	100.0	0.1	0.1	-120.80	-77.5	-130.1	151.4	151.2	0.19	806.761				
200.0	200.0	200.0	200.0	0.3	0.3	-120.80	-77.5	-130.1	151.4	150.8	0.64	237.618	CC, ES			
300.0	300.0	298.5	298.5	0.5	0.5	-121.41	-79.2	-129.6	151.9	150.8	1.06	143.196				
400.0	400.0	397.5	397.4	0.8	0.7	-123.14	-83.8	-128.4	153.3	151.9	1.49	102.837				
500.0	500.0	497.4	497.1	1.0	1.0	-125.05	-89.1	-127.0	155.1	153.2	1.94	79.829				
600.0	600.0	597.2	596.8	1.2	1.2	-126.91	-94.3	-125.6	157.1	154.7	2.40	65.348				
700.0	700.0	697.1	696.5	1.4	1.4	-128.73	-99.6	-124.2	159.2	156.3	2.87	55.509				
800.0	800.0	796.9	796.2	1.7	1.7	-130.49	-104.8	-122.8	161.5	158.2	3.33	48.433				
900.0	900.0	896.8	895.9	1.9	1.9	-132.21	-110.1	-121.4	163.9	160.1	3.80	43.123				
1,000.0	1,000.0	996.5	995.5	2.1	2.2	-124.61	-115.3	-120.0	167.5	163.2	4.25	39.397				
1,100.0	1,099.8	1,095.9	1,094.8	2.3	2.4	-127.49	-120.6	-118.6	173.4	168.6	4.71	36.812				
1,200.0	1,199.6	1,195.2	1,193.9	2.6	2.7	-130.68	-125.8	-117.2	180.8	175.6	5.17	34.989				
1,300.0	1,299.4	1,294.4	1,292.9	2.8	2.9	-133.62	-131.0	-115.8	188.8	183.2	5.63	33.551				
1,400.0	1,399.1	1,393.6	1,392.0	3.0	3.2	-136.31	-136.2	-114.4	197.2	191.1	6.09	32.406				
1,500.0	1,498.9	1,492.9	1,491.1	3.3	3.4	-138.78	-141.5	-113.0	206.1	199.5	6.54	31.485				
1,600.0	1,598.6	1,592.1	1,590.2	3.5	3.6	-141.04	-146.7	-111.6	215.2	208.2	7.00	30.739				
1,700.0	1,698.4	1,691.3	1,689.3	3.8	3.9	-143.12	-151.9	-110.2	224.7	217.3	7.46	30.129				
1,800.0	1,798.1	1,790.6	1,788.3	4.0	4.1	-145.03	-157.1	-108.8	234.5	226.6	7.91	29.627				
1,900.0	1,897.9	1,889.8	1,887.4	4.3	4.4	-146.78	-162.3	-107.4	244.5	236.1	8.37	29.211				
2,000.0	1,997.6	1,989.0	1,986.5	4.5	4.6	-148.40	-167.6	-106.0	254.7	245.9	8.82	28.864				
2,100.0	2,097.4	2,088.2	2,085.6	4.8	4.9	-149.89	-172.8	-104.7	265.1	255.8	9.28	28.572				
2,200.0	2,197.2	2,187.5	2,184.7	5.0	5.1	-151.26	-178.0	-103.3	275.6	265.9	9.73	28.326				
2,300.0	2,296.9	2,286.7	2,283.8	5.3	5.4	-152.54	-183.2	-101.9	286.3	276.2	10.18	28.117				
2,400.0	2,396.7	2,385.9	2,382.8	5.5	5.6	-153.72	-188.5	-100.5	297.2	286.5	10.64	27.940				
2,500.0	2,496.4	2,485.2	2,481.9	5.8	5.9	-154.82	-193.7	-99.1	308.1	297.0	11.09	27.788				
2,600.0	2,596.2	2,584.4	2,581.0	6.0	6.1	-155.85	-198.9	-97.7	319.2	307.7	11.54	27.657				
2,700.0	2,695.9	2,683.6	2,680.1	6.3	6.4	-156.80	-204.1	-96.3	330.3	318.4	11.99	27.544				
2,800.0	2,795.7	2,782.9	2,779.2	6.5	6.6	-157.69	-209.3	-94.9	341.6	329.1	12.45	27.447				
2,900.0	2,895.5	2,882.1	2,878.3	6.8	6.9	-158.53	-214.6	-93.5	352.9	340.0	12.90	27.363				
3,000.0	2,995.2	2,981.3	2,977.3	7.0	7.1	-159.31	-219.8	-92.1	364.3	350.9	13.35	27.289				
3,100.0	3,095.0	3,080.5	3,076.4	7.3	7.4	-160.05	-225.0	-90.7	375.7	361.9	13.80	27.226				
3,200.0	3,194.7	3,179.8	3,175.5	7.5	7.6	-160.74	-230.2	-89.3	387.2	373.0	14.25	27.170				
3,300.0	3,294.5	3,279.0	3,274.6	7.8	7.9	-161.40	-235.5	-87.9	398.8	384.1	14.70	27.121				
3,400.0	3,394.2	3,378.2	3,373.7	8.0	8.1	-162.01	-240.7	-86.5	410.4	395.2	15.16	27.078				
3,500.0	3,494.0	3,477.5	3,472.8	8.3	8.4	-162.60	-245.9	-85.2	422.0	406.4	15.61	27.041				
3,600.0	3,593.7	3,576.7	3,571.8	8.6	8.6	-163.15	-251.1	-83.8	433.7	417.7	16.06	27.008				
3,700.0	3,693.5	3,675.9	3,670.9	8.8	8.9	-163.67	-256.3	-82.4	445.5	428.9	16.51	26.979				
3,800.0	3,793.3	3,775.2	3,770.0	9.1	9.1	-164.17	-261.6	-81.0	457.2	440.3	16.96	26.954				
3,900.0	3,893.0	3,874.4	3,869.1	9.3	9.4	-164.64	-266.8	-79.6	469.0	451.6	17.42	26.931				
4,000.0	3,992.8	3,973.6	3,968.2	9.6	9.6	-165.08	-272.0	-78.2	480.8	463.0	17.87	26.912				
4,100.0	4,092.5	4,072.8	4,067.3	9.8	9.9	-165.51	-277.2	-76.8	492.7	474.4	18.32	26.894	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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 S26-T10N-R58W - Razor Federal #26J-2309A - HZ - Plan #1													Offset Site Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 ft
Reference				Offset			Semi Major Axis			Distance			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-91.06	-1.2	-66.2	66.2						
100.0	100.0	100.0	100.0	0.1	0.1	-91.06	-1.2	-66.2	66.2	66.0	0.19	352.530			
200.0	200.0	200.0	200.0	0.3	0.3	-91.06	-1.2	-66.2	66.2	65.5	0.64	103.832			
300.0	300.0	300.0	300.0	0.5	0.5	-91.06	-1.2	-66.2	66.2	65.1	1.09	60.882			
400.0	400.0	400.0	400.0	0.8	0.8	-91.06	-1.2	-66.2	66.2	64.6	1.54	43.067			
500.0	500.0	500.0	500.0	1.0	1.0	-91.06	-1.2	-66.2	66.2	64.2	1.99	33.318	CC, ES		
600.0	600.0	598.8	598.7	1.2	1.2	-89.82	0.2	-67.1	67.1	64.7	2.43	27.602			
700.0	700.0	697.3	697.1	1.4	1.4	-86.32	4.5	-69.8	70.0	67.2	2.88	24.341			
800.0	800.0	797.0	796.6	1.7	1.7	-82.00	10.3	-73.6	74.4	71.1	3.33	22.345			
900.0	900.0	896.8	896.1	1.9	1.9	-78.18	16.2	-77.4	79.1	75.4	3.78	20.928			
1,000.0	1,000.0	996.6	995.7	2.1	2.2	-66.11	22.0	-81.1	83.5	79.2	4.24	19.696			
1,100.0	1,099.8	1,096.6	1,095.4	2.3	2.4	-66.07	27.9	-84.9	86.4	81.7	4.69	18.414			
1,200.0	1,199.6	1,196.5	1,195.1	2.6	2.6	-67.11	33.8	-88.7	88.7	83.6	5.16	17.197			
1,300.0	1,299.4	1,296.5	1,294.9	2.8	2.9	-68.10	39.6	-92.5	91.0	85.4	5.63	16.168			
1,400.0	1,399.1	1,396.4	1,394.6	3.0	3.2	-69.05	45.5	-96.2	93.4	87.3	6.11	15.290			
1,500.0	1,498.9	1,496.4	1,494.3	3.3	3.4	-69.94	51.4	-100.0	95.8	89.2	6.59	14.533			
1,600.0	1,598.6	1,596.4	1,594.0	3.5	3.7	-70.80	57.2	-103.8	98.1	91.1	7.07	13.876			
1,700.0	1,698.4	1,696.3	1,693.7	3.8	3.9	-71.61	63.1	-107.6	100.6	93.0	7.56	13.300			
1,800.0	1,798.1	1,796.3	1,793.5	4.0	4.2	-72.38	68.9	-111.3	103.0	94.9	8.05	12.793			
1,900.0	1,897.9	1,896.2	1,893.2	4.3	4.4	-73.12	74.8	-115.1	105.4	96.9	8.54	12.342			
2,000.0	1,997.6	1,996.2	1,992.9	4.5	4.7	-73.83	80.7	-118.9	107.9	98.9	9.04	11.940			
2,100.0	2,097.4	2,096.2	2,092.6	4.8	4.9	-74.50	86.5	-122.7	110.4	100.8	9.53	11.579			
2,200.0	2,197.2	2,196.1	2,192.3	5.0	5.2	-75.14	92.4	-126.4	112.9	102.8	10.03	11.254			
2,300.0	2,296.9	2,296.1	2,292.0	5.3	5.4	-75.76	98.3	-130.2	115.4	104.8	10.53	10.959			
2,400.0	2,396.7	2,396.1	2,391.8	5.5	5.7	-76.35	104.1	-134.0	117.9	106.9	11.03	10.691			
2,500.0	2,496.4	2,496.0	2,491.5	5.8	6.0	-76.91	110.0	-137.8	120.4	108.9	11.53	10.446			
2,600.0	2,596.2	2,596.0	2,591.2	6.0	6.2	-77.45	115.8	-141.5	123.0	110.9	12.03	10.222			
2,700.0	2,695.9	2,695.9	2,690.9	6.3	6.5	-77.97	121.7	-145.3	125.5	113.0	12.53	10.016			
2,800.0	2,795.7	2,795.9	2,790.6	6.5	6.7	-78.47	127.6	-149.1	128.1	115.1	13.04	9.826			
2,900.0	2,895.5	2,895.9	2,890.3	6.8	7.0	-78.95	133.4	-152.9	130.7	117.1	13.54	9.650			
3,000.0	2,995.2	2,995.8	2,990.1	7.0	7.2	-79.41	139.3	-156.6	133.2	119.2	14.04	9.487			
3,100.0	3,095.0	3,095.8	3,089.8	7.3	7.5	-79.85	145.2	-160.4	135.8	121.3	14.55	9.335			
3,200.0	3,194.7	3,195.7	3,189.5	7.5	7.8	-80.28	151.0	-164.2	138.4	123.4	15.06	9.194			
3,300.0	3,294.5	3,295.7	3,289.2	7.8	8.0	-80.69	156.9	-168.0	141.0	125.5	15.56	9.063			
3,400.0	3,394.2	3,395.7	3,388.9	8.0	8.3	-81.09	162.7	-171.7	143.6	127.6	16.07	8.939			
3,500.0	3,494.0	3,495.6	3,488.7	8.3	8.5	-81.47	168.6	-175.5	146.3	129.7	16.58	8.824			
3,600.0	3,593.7	3,595.6	3,588.4	8.6	8.8	-81.84	174.5	-179.3	148.9	131.8	17.08	8.715			
3,700.0	3,693.5	3,695.5	3,688.1	8.8	9.0	-82.19	180.3	-183.1	151.5	133.9	17.59	8.613			
3,800.0	3,793.3	3,795.5	3,787.8	9.1	9.3	-82.53	186.2	-186.8	154.2	136.1	18.10	8.517			
3,900.0	3,893.0	3,895.5	3,887.5	9.3	9.6	-82.87	192.1	-190.6	156.8	138.2	18.61	8.426			
4,000.0	3,992.8	3,995.4	3,987.2	9.6	9.8	-83.19	197.9	-194.4	159.4	140.3	19.12	8.341			
4,100.0	4,092.5	4,095.4	4,087.0	9.8	10.1	-83.50	203.8	-198.2	162.1	142.5	19.63	8.259			
4,200.0	4,192.3	4,195.4	4,186.7	10.1	10.3	-83.80	209.6	-201.9	164.8	144.6	20.13	8.183			
4,300.0	4,292.0	4,295.3	4,286.4	10.3	10.6	-84.09	215.5	-205.7	167.4	146.8	20.64	8.110			
4,400.0	4,391.8	4,395.3	4,386.1	10.6	10.8	-84.37	221.4	-209.5	170.1	148.9	21.15	8.040			
4,500.0	4,491.6	4,495.2	4,485.8	10.8	11.1	-84.64	227.2	-213.3	172.7	151.1	21.66	7.974			
4,600.0	4,591.3	4,595.2	4,585.5	11.1	11.4	-84.91	233.1	-217.0	175.4	153.2	22.17	7.911			
4,700.0	4,691.1	4,695.2	4,685.3	11.4	11.6	-85.16	239.0	-220.8	178.1	155.4	22.68	7.852			
4,800.0	4,790.8	4,795.1	4,785.0	11.6	11.9	-85.41	244.8	-224.6	180.8	157.6	23.19	7.794			
4,900.0	4,890.6	4,895.1	4,884.7	11.9	12.1	-85.65	250.7	-228.4	183.5	159.8	23.70	7.740			
5,000.0	4,990.3	4,995.0	4,984.4	12.1	12.4	-85.89	256.5	-232.1	186.1	161.9	24.21	7.688			
5,100.0	5,090.1	5,095.0	5,084.1	12.4	12.6	-86.12	262.4	-235.9	188.8	164.1	24.72	7.638			

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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft		
Survey Program: 0-ISWWSA MWD													Offset Well Error:		0.0 ft	
S26-T10N-R58W - Razor Federal #26J-2309A - HZ - Plan #1																
Reference				Offset				Semi Major Axis			Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning			
5,114.4	5,104.5	5,109.4	5,098.5	12.4	12.7	-86.15	263.3	-236.5	189.2	164.4	24.80	7.631				
5,150.0	5,139.9	5,140.8	5,129.8	12.5	12.8	-86.23	265.6	-238.0	190.4	165.4	24.99	7.621 SF				
5,200.0	5,189.0	5,183.7	5,172.1	12.7	12.9	-86.45	271.3	-241.7	193.4	168.1	25.30	7.645				
5,250.0	5,237.0	5,226.4	5,213.6	12.9	13.1	-86.76	280.0	-247.2	197.9	172.3	25.68	7.709				
5,300.0	5,283.4	5,269.1	5,254.0	13.1	13.3	-87.13	291.4	-254.6	204.0	177.9	26.12	7.810				
5,350.0	5,327.9	5,311.6	5,293.0	13.4	13.5	-87.52	305.5	-263.6	211.5	184.9	26.62	7.945				
5,400.0	5,370.0	5,353.9	5,330.4	13.8	13.8	-87.90	322.1	-274.4	220.5	193.3	27.20	8.107				
5,450.0	5,409.3	5,396.1	5,366.0	14.1	14.1	-88.24	341.2	-286.6	230.9	203.1	27.85	8.291				
5,500.0	5,445.4	5,438.1	5,399.5	14.6	14.4	-88.53	362.5	-300.4	242.7	214.1	28.59	8.490				
5,550.0	5,478.1	5,480.0	5,430.7	15.0	14.8	-88.73	386.0	-315.5	255.8	226.4	29.40	8.699				
5,600.0	5,507.0	5,521.9	5,459.5	15.6	15.2	-88.84	411.5	-331.9	270.0	239.7	30.29	8.913				
5,650.0	5,531.9	5,563.7	5,485.8	16.1	15.6	-88.84	438.8	-349.5	285.3	254.1	31.27	9.127				
5,700.0	5,552.5	5,605.6	5,509.5	16.8	16.1	-88.75	467.9	-368.2	301.7	269.3	32.32	9.334				
5,750.0	5,568.6	5,647.6	5,530.3	17.4	16.6	-88.55	498.5	-388.0	318.8	285.4	33.45	9.533				
5,800.0	5,580.1	5,689.8	5,548.3	18.1	17.2	-88.27	530.7	-408.7	336.8	302.1	34.65	9.717				
5,850.0	5,587.0	5,732.5	5,563.2	18.8	17.8	-87.91	564.2	-430.3	355.3	319.3	35.93	9.888				
5,896.2	5,589.0	5,772.3	5,574.1	19.5	18.4	-87.52	596.5	-451.0	372.8	335.6	37.16	10.033				
5,900.0	5,589.0	5,775.6	5,574.9	19.6	18.5	-87.66	599.1	-452.8	374.2	337.0	37.25	10.046				
6,000.0	5,589.0	5,864.3	5,588.0	20.9	19.9	-89.84	672.8	-500.2	415.7	376.1	39.63	10.491				
6,100.0	5,589.0	5,970.4	5,589.0	22.4	21.6	-90.00	762.8	-556.5	461.1	419.0	42.17	10.936				

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 S26-T10N-R58W - Razor Federal #26J-2310B - HZ - Plan #1													Offset Site Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft	
Reference				Offset			Semi Major Axis			Distance			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-128.20	-76.9	-97.7	124.3						
100.0	100.0	100.0	100.0	0.1	0.1	-128.20	-76.9	-97.7	124.3	124.1	0.19	662.294			
200.0	200.0	200.0	200.0	0.3	0.3	-128.20	-76.9	-97.7	124.3	123.7	0.64	195.067			
300.0	300.0	300.0	300.0	0.5	0.5	-128.20	-76.9	-97.7	124.3	123.2	1.09	114.378			
400.0	400.0	400.0	400.0	0.8	0.8	-128.20	-76.9	-97.7	124.3	122.8	1.54	80.910			
500.0	500.0	500.0	500.0	1.0	1.0	-128.20	-76.9	-97.7	124.3	122.3	1.99	62.594			
600.0	600.0	600.0	600.0	1.2	1.2	-128.20	-76.9	-97.7	124.3	121.9	2.44	51.040			
700.0	700.0	700.0	700.0	1.4	1.4	-128.20	-76.9	-97.7	124.3	121.4	2.88	43.087			
800.0	800.0	801.3	801.3	1.7	1.7	-127.42	-75.2	-98.3	123.8	120.4	3.34	37.095			
900.0	900.0	902.4	902.2	1.9	1.9	-125.02	-70.2	-100.1	122.3	118.5	3.79	32.272			
1,000.0	1,000.0	1,002.3	1,001.8	2.1	2.1	-112.91	-63.6	-102.5	121.3	117.0	4.24	28.577			
1,012.5	1,012.5	1,014.8	1,014.3	2.1	2.2	-112.71	-62.8	-102.8	121.3	117.0	4.30	28.191	CC		
1,100.0	1,099.8	1,102.2	1,101.6	2.3	2.4	-111.96	-57.0	-104.8	121.8	117.1	4.71	25.886			
1,200.0	1,199.6	1,202.2	1,201.3	2.6	2.6	-111.80	-50.5	-107.2	123.0	117.8	5.18	23.763			
1,300.0	1,299.4	1,302.2	1,301.1	2.8	2.8	-111.63	-43.9	-109.6	124.2	118.5	5.65	21.967			
1,400.0	1,399.1	1,402.2	1,400.8	3.0	3.1	-111.47	-37.4	-112.0	125.4	119.2	6.14	20.433			
1,500.0	1,498.9	1,502.2	1,500.6	3.3	3.3	-111.31	-30.8	-114.3	126.5	119.9	6.62	19.110			
1,600.0	1,598.6	1,602.2	1,600.3	3.5	3.6	-111.16	-24.2	-116.7	127.7	120.6	7.11	17.961			
1,700.0	1,698.4	1,702.2	1,700.1	3.8	3.8	-111.01	-17.7	-119.1	128.9	121.3	7.60	16.953			
1,800.0	1,798.1	1,802.2	1,799.8	4.0	4.1	-110.86	-11.1	-121.4	130.1	122.0	8.10	16.064			
1,900.0	1,897.9	1,902.2	1,899.6	4.3	4.3	-110.71	-4.6	-123.8	131.3	122.7	8.60	15.274			
2,000.0	1,997.6	2,002.2	1,999.3	4.5	4.6	-110.57	2.0	-126.2	132.5	123.4	9.10	14.567			
2,100.0	2,097.4	2,102.2	2,099.1	4.8	4.8	-110.42	8.6	-128.5	133.7	124.1	9.59	13.933			
2,200.0	2,197.2	2,202.1	2,198.8	5.0	5.1	-110.28	15.1	-130.9	134.9	124.8	10.10	13.359			
2,300.0	2,296.9	2,302.1	2,298.6	5.3	5.4	-110.15	21.7	-133.3	136.1	125.5	10.60	12.839			
2,400.0	2,396.7	2,402.1	2,398.3	5.5	5.6	-110.01	28.2	-135.7	137.3	126.2	11.10	12.365			
2,500.0	2,496.4	2,502.1	2,498.1	5.8	5.9	-109.88	34.8	-138.0	138.5	126.9	11.60	11.931			
2,600.0	2,596.2	2,602.1	2,597.8	6.0	6.1	-109.75	41.4	-140.4	139.7	127.5	12.11	11.533			
2,700.0	2,695.9	2,702.1	2,697.6	6.3	6.4	-109.62	47.9	-142.8	140.9	128.2	12.61	11.166			
2,800.0	2,795.7	2,802.1	2,797.3	6.5	6.6	-109.50	54.5	-145.1	142.0	128.9	13.12	10.827			
2,900.0	2,895.5	2,902.1	2,897.1	6.8	6.9	-109.38	61.0	-147.5	143.2	129.6	13.63	10.513			
3,000.0	2,995.2	3,002.1	2,996.8	7.0	7.1	-109.26	67.6	-149.9	144.4	130.3	14.13	10.221			
3,100.0	3,095.0	3,102.1	3,096.6	7.3	7.4	-109.14	74.2	-152.3	145.6	131.0	14.64	9.949			
3,200.0	3,194.7	3,202.1	3,196.3	7.5	7.6	-109.02	80.7	-154.6	146.8	131.7	15.15	9.695			
3,300.0	3,294.5	3,302.1	3,296.1	7.8	7.9	-108.90	87.3	-157.0	148.0	132.4	15.65	9.457			
3,400.0	3,394.2	3,402.1	3,395.8	8.0	8.2	-108.79	93.8	-159.4	149.2	133.1	16.16	9.234			
3,500.0	3,494.0	3,502.0	3,495.5	8.3	8.4	-108.68	100.4	-161.7	150.4	133.8	16.67	9.025			
3,600.0	3,593.7	3,602.0	3,595.3	8.6	8.7	-108.57	107.0	-164.1	151.6	134.5	17.18	8.827			
3,700.0	3,693.5	3,702.0	3,695.0	8.8	8.9	-108.46	113.5	-166.5	152.9	135.2	17.69	8.642			
3,800.0	3,793.3	3,802.0	3,794.8	9.1	9.2	-108.35	120.1	-168.9	154.1	135.9	18.20	8.466			
3,900.0	3,893.0	3,902.0	3,894.5	9.3	9.4	-108.25	126.6	-171.2	155.3	136.6	18.71	8.300			
4,000.0	3,992.8	4,002.0	3,994.3	9.6	9.7	-108.15	133.2	-173.6	156.5	137.2	19.22	8.142			
4,100.0	4,092.5	4,102.0	4,094.0	9.8	9.9	-108.04	139.8	-176.0	157.7	137.9	19.73	7.993			
4,200.0	4,192.3	4,202.0	4,193.8	10.1	10.2	-107.94	146.3	-178.3	158.9	138.6	20.24	7.851			
4,300.0	4,292.0	4,302.0	4,293.5	10.3	10.5	-107.85	152.9	-180.7	160.1	139.3	20.74	7.716			
4,400.0	4,391.8	4,402.0	4,393.3	10.6	10.7	-107.75	159.4	-183.1	161.3	140.0	21.26	7.588			
4,500.0	4,491.6	4,502.0	4,493.0	10.8	11.0	-107.65	166.0	-185.4	162.5	140.7	21.77	7.466			
4,600.0	4,591.3	4,602.0	4,592.8	11.1	11.2	-107.56	172.5	-187.8	163.7	141.4	22.28	7.349			
4,700.0	4,691.1	4,702.0	4,692.5	11.4	11.5	-107.47	179.1	-190.2	164.9	142.1	22.79	7.237			
4,800.0	4,790.8	4,801.9	4,792.3	11.6	11.7	-107.37	185.7	-192.6	166.1	142.8	23.30	7.130			
4,900.0	4,890.6	4,901.9	4,892.0	11.9	12.0	-107.28	192.2	-194.9	167.3	143.5	23.81	7.028			
5,000.0	4,990.3	5,001.9	4,991.8	12.1	12.3	-107.19	198.8	-197.3	168.5	144.2	24.32	6.930			

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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 S26-T10N-R58W - Razor Federal #26J-2310B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.0	5,090.1	5,101.9	5,091.5	12.4	12.5	-107.11	205.3	-199.7	169.7	144.9	24.83	6.836		
5,114.4	5,104.5	5,116.3	5,105.9	12.4	12.5	-107.09	206.3	-200.0	169.9	145.0	24.90	6.823		
5,150.0	5,139.9	5,151.9	5,141.4	12.5	12.6	-107.37	208.6	-200.9	170.7	145.6	25.08	6.806		
5,200.0	5,189.0	5,201.5	5,190.9	12.7	12.8	-108.90	211.9	-202.0	173.1	147.8	25.33	6.836		
5,250.0	5,237.0	5,253.8	5,242.8	12.9	12.9	-111.09	217.5	-204.1	177.0	151.4	25.58	6.920		
5,300.0	5,283.4	5,307.1	5,294.9	13.1	13.1	-112.95	228.3	-208.0	181.9	156.0	25.86	7.034		
5,350.0	5,327.9	5,361.3	5,346.3	13.4	13.4	-114.44	244.3	-213.7	187.6	161.5	26.17	7.171		
5,400.0	5,370.0	5,416.3	5,396.4	13.8	13.7	-115.55	265.6	-221.4	194.2	167.6	26.52	7.320		
5,450.0	5,409.3	5,472.1	5,444.5	14.1	14.0	-116.27	292.1	-231.0	201.3	174.3	26.95	7.470		
5,500.0	5,445.4	5,528.7	5,489.9	14.6	14.5	-116.62	323.8	-242.5	208.9	181.5	27.47	7.605		
5,550.0	5,478.1	5,585.9	5,531.8	15.0	15.0	-116.62	360.4	-255.7	216.9	188.8	28.12	7.714		
5,600.0	5,507.0	5,643.7	5,569.6	15.6	15.5	-116.29	401.5	-270.6	225.2	196.3	28.93	7.783		
5,650.0	5,531.9	5,702.0	5,602.5	16.1	16.2	-115.65	446.7	-286.9	233.6	203.7	29.93	7.807		
5,700.0	5,552.5	5,760.8	5,630.1	16.8	16.9	-114.74	495.5	-304.5	242.2	211.0	31.12	7.782		
5,750.0	5,568.6	5,819.9	5,651.7	17.4	17.7	-113.59	547.2	-323.2	250.7	218.2	32.50	7.713		
5,800.0	5,580.1	5,879.1	5,667.1	18.1	18.5	-112.23	601.0	-342.7	259.2	225.1	34.06	7.609		
5,850.0	5,587.0	5,938.5	5,675.8	18.8	19.4	-110.68	656.2	-362.6	267.6	231.8	35.77	7.480		
5,896.2	5,589.0	5,993.1	5,678.0	19.5	20.3	-109.14	707.5	-381.1	275.2	237.7	37.44	7.350		
5,900.0	5,589.0	5,997.4	5,678.0	19.6	20.3	-109.09	711.5	-382.6	275.8	238.2	37.56	7.344		
6,000.0	5,589.0	6,112.2	5,678.0	20.9	22.0	-107.99	820.8	-417.7	291.8	251.4	40.45	7.215		
6,100.0	5,589.0	6,228.3	5,678.0	22.4	23.7	-107.04	933.2	-446.4	307.2	263.8	43.41	7.076		
6,200.0	5,589.0	6,345.7	5,678.0	23.9	25.6	-106.22	1,048.5	-468.5	321.8	275.4	46.39	6.936		
6,219.7	5,589.0	6,369.0	5,678.0	24.2	25.9	-106.08	1,071.5	-472.0	324.6	277.6	46.98	6.909		
6,300.0	5,589.0	6,464.5	5,678.0	25.4	27.4	-105.52	1,166.4	-483.6	333.9	284.1	49.80	6.705		
6,400.0	5,589.0	6,584.8	5,678.0	27.1	29.3	-105.17	1,286.4	-491.3	340.2	286.8	53.38	6.373		
6,500.0	5,589.0	6,695.7	5,678.0	28.8	31.1	-105.13	1,397.3	-492.4	341.0	284.2	56.79	6.005		
6,600.0	5,589.0	6,795.7	5,678.0	30.5	32.8	-105.13	1,497.3	-492.4	341.0	280.9	60.09	5.675		
6,700.0	5,589.0	6,895.7	5,678.0	32.2	34.4	-105.13	1,597.3	-492.4	341.0	277.6	63.44	5.376		
6,800.0	5,589.0	6,995.7	5,678.0	33.9	36.1	-105.13	1,697.3	-492.4	341.1	274.2	66.82	5.104		
6,900.0	5,589.0	7,095.7	5,678.0	35.7	37.8	-105.13	1,797.3	-492.4	341.1	270.8	70.24	4.856		
7,000.0	5,589.0	7,195.7	5,678.0	37.5	39.6	-105.13	1,897.3	-492.4	341.1	267.4	73.69	4.628		
7,100.0	5,589.0	7,295.7	5,678.0	39.3	41.3	-105.12	1,997.3	-492.4	341.1	263.9	77.16	4.420		
7,200.0	5,589.0	7,395.7	5,678.0	41.1	43.1	-105.12	2,097.3	-492.4	341.1	260.4	80.66	4.229		
7,300.0	5,589.0	7,495.7	5,678.0	42.9	44.8	-105.12	2,197.3	-492.4	341.1	256.9	84.18	4.052		
7,400.0	5,589.0	7,595.7	5,678.0	44.7	46.6	-105.12	2,297.3	-492.4	341.1	253.4	87.71	3.889		
7,500.0	5,589.0	7,695.7	5,678.0	46.6	48.4	-105.12	2,397.3	-492.4	341.1	249.9	91.25	3.738		
7,600.0	5,589.0	7,795.7	5,678.0	48.4	50.2	-105.12	2,497.3	-492.4	341.1	246.3	94.81	3.598		
7,700.0	5,589.0	7,895.7	5,678.0	50.3	52.0	-105.12	2,597.3	-492.4	341.1	242.7	98.39	3.467		
7,800.0	5,589.0	7,995.7	5,678.0	52.1	53.9	-105.12	2,697.3	-492.4	341.1	239.2	101.97	3.345		
7,900.0	5,589.0	8,095.7	5,678.0	54.0	55.7	-105.12	2,797.3	-492.4	341.1	235.6	105.56	3.232		
8,000.0	5,589.0	8,195.7	5,678.0	55.8	57.5	-105.12	2,897.3	-492.4	341.1	232.0	109.16	3.125		
8,100.0	5,589.0	8,295.7	5,678.0	57.7	59.4	-105.12	2,997.3	-492.4	341.2	228.4	112.77	3.025		
8,200.0	5,589.0	8,395.7	5,678.0	59.6	61.2	-105.12	3,097.3	-492.4	341.2	224.8	116.39	2.931		
8,300.0	5,589.0	8,495.7	5,678.0	61.4	63.1	-105.12	3,197.3	-492.4	341.2	221.2	120.01	2.843		
8,400.0	5,589.0	8,595.7	5,678.0	63.3	64.9	-105.12	3,297.3	-492.4	341.2	217.5	123.64	2.759		
8,500.0	5,589.0	8,695.7	5,678.0	65.2	66.8	-105.12	3,397.3	-492.4	341.2	213.9	127.27	2.681		
8,600.0	5,589.0	8,795.7	5,678.0	67.0	68.6	-105.12	3,497.3	-492.4	341.2	210.3	130.91	2.606		
8,700.0	5,589.0	8,895.7	5,678.0	68.9	70.5	-105.12	3,597.3	-492.4	341.2	206.6	134.56	2.536		
8,800.0	5,589.0	8,995.7	5,678.0	70.8	72.3	-105.12	3,697.3	-492.4	341.2	203.0	138.20	2.469		
8,900.0	5,589.0	9,095.7	5,678.0	72.7	74.2	-105.12	3,797.3	-492.4	341.2	199.4	141.85	2.405		
9,000.0	5,589.0	9,195.7	5,678.0	74.6	76.1	-105.12	3,897.3	-492.4	341.2	195.7	145.51	2.345		
9,100.0	5,589.0	9,295.7	5,678.0	76.5	77.9	-105.12	3,997.3	-492.4	341.2	192.1	149.17	2.288		

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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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												S26-T10N-R58W - Razor Federal #26J-2310B - HZ - Plan #1		Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		Total	Separation	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor			
9,200.0	5,589.0	9,395.7	5,678.0	78.3	79.8	-105.12	4,097.3	-492.4	341.2	188.4	152.83	2.233			
9,300.0	5,589.0	9,495.7	5,678.0	80.2	81.7	-105.12	4,197.3	-492.4	341.2	184.8	156.49	2.181			
9,400.0	5,589.0	9,595.7	5,678.0	82.1	83.6	-105.12	4,297.3	-492.4	341.3	181.1	160.16	2.131			
9,500.0	5,589.0	9,695.7	5,678.0	84.0	85.5	-105.12	4,397.3	-492.4	341.3	177.4	163.83	2.083			
9,600.0	5,589.0	9,795.7	5,678.0	85.9	87.3	-105.12	4,497.3	-492.4	341.3	173.8	167.50	2.037			
9,700.0	5,589.0	9,895.7	5,678.0	87.8	89.2	-105.12	4,597.3	-492.4	341.3	170.1	171.17	1.994			
9,800.0	5,589.0	9,995.7	5,678.0	89.7	91.1	-105.12	4,697.3	-492.4	341.3	166.4	174.85	1.952			
9,900.0	5,589.0	10,095.7	5,678.0	91.6	93.0	-105.12	4,797.3	-492.4	341.3	162.8	178.53	1.912			
10,000.0	5,589.0	10,195.7	5,678.0	93.5	94.9	-105.12	4,897.3	-492.4	341.3	159.1	182.21	1.873			
10,100.0	5,589.0	10,295.7	5,678.0	95.4	96.8	-105.11	4,997.3	-492.4	341.3	155.4	185.89	1.836			
10,200.0	5,589.0	10,395.7	5,678.0	97.3	98.7	-105.11	5,097.3	-492.4	341.3	151.8	189.57	1.801			
10,300.0	5,589.0	10,495.7	5,678.0	99.2	100.5	-105.11	5,197.3	-492.4	341.3	148.1	193.25	1.766			
10,400.0	5,589.0	10,595.7	5,678.0	101.1	102.4	-105.11	5,297.3	-492.4	341.3	144.4	196.94	1.733			
10,500.0	5,589.0	10,695.7	5,678.0	103.0	104.3	-105.11	5,397.3	-492.4	341.3	140.7	200.63	1.701			
10,600.0	5,589.0	10,795.7	5,678.0	104.9	106.2	-105.11	5,497.3	-492.4	341.4	137.0	204.31	1.671			
10,700.0	5,589.0	10,895.7	5,678.0	106.8	108.1	-105.11	5,597.3	-492.4	341.4	133.4	208.00	1.641			
10,800.0	5,589.0	10,995.7	5,678.0	108.7	110.0	-105.11	5,697.3	-492.4	341.4	129.7	211.69	1.613			
10,900.0	5,589.0	11,095.7	5,678.0	110.6	111.9	-105.11	5,797.3	-492.4	341.4	126.0	215.39	1.585			
11,000.0	5,589.0	11,195.7	5,678.0	112.5	113.8	-105.11	5,897.3	-492.4	341.4	122.3	219.08	1.558			
11,100.0	5,589.0	11,295.7	5,678.0	114.4	115.7	-105.11	5,997.3	-492.4	341.4	118.6	222.77	1.532			
11,200.0	5,589.0	11,395.7	5,678.0	116.3	117.6	-105.11	6,097.3	-492.4	341.4	114.9	226.47	1.507			
11,300.0	5,589.0	11,495.7	5,678.0	118.2	119.5	-105.11	6,197.3	-492.4	341.4	111.2	230.16	1.483	Level 3		
11,400.0	5,589.0	11,595.7	5,678.0	120.1	121.4	-105.11	6,297.3	-492.4	341.4	107.6	233.86	1.460	Level 3		
11,500.0	5,589.0	11,695.7	5,678.0	122.0	123.3	-105.11	6,397.3	-492.4	341.4	103.9	237.55	1.437	Level 3		
11,600.0	5,589.0	11,795.7	5,678.0	123.9	125.2	-105.11	6,497.3	-492.4	341.4	100.2	241.25	1.415	Level 3		
11,700.0	5,589.0	11,895.7	5,678.0	125.8	127.1	-105.11	6,597.3	-492.4	341.4	96.5	244.95	1.394	Level 3		
11,800.0	5,589.0	11,995.7	5,678.0	127.7	129.0	-105.11	6,697.3	-492.4	341.4	92.8	248.65	1.373	Level 3		
11,900.0	5,589.0	12,095.7	5,678.0	129.6	130.9	-105.11	6,797.3	-492.4	341.5	89.1	252.35	1.353	Level 3		
12,000.0	5,589.0	12,195.7	5,678.0	131.5	132.8	-105.11	6,897.3	-492.4	341.5	85.4	256.05	1.334	Level 3		
12,100.0	5,589.0	12,295.7	5,678.0	133.5	134.7	-105.11	6,997.3	-492.4	341.5	81.7	259.75	1.315	Level 3		
12,200.0	5,589.0	12,395.7	5,678.0	135.4	136.6	-105.11	7,097.3	-492.4	341.5	78.0	263.45	1.296	Level 3		
12,300.0	5,589.0	12,495.7	5,678.0	137.3	138.5	-105.11	7,197.3	-492.4	341.5	74.3	267.16	1.278	Level 3		
12,400.0	5,589.0	12,595.7	5,678.0	139.2	140.4	-105.11	7,297.3	-492.4	341.5	70.6	270.86	1.261	Level 3		
12,500.0	5,589.0	12,695.7	5,678.0	141.1	142.3	-105.11	7,397.3	-492.4	341.5	66.9	274.56	1.244	Level 2		
12,600.0	5,589.0	12,795.7	5,678.0	143.0	144.2	-105.11	7,497.3	-492.4	341.5	63.2	278.27	1.227	Level 2		
12,700.0	5,589.0	12,895.7	5,678.0	144.9	146.1	-105.11	7,597.3	-492.4	341.5	59.5	281.97	1.211	Level 2		
12,800.0	5,589.0	12,995.7	5,678.0	146.8	148.0	-105.11	7,697.3	-492.4	341.5	55.8	285.68	1.195	Level 2		
12,900.0	5,589.0	13,095.7	5,678.0	148.7	149.9	-105.11	7,797.3	-492.4	341.5	52.1	289.38	1.180	Level 2		
13,000.0	5,589.0	13,195.7	5,678.0	150.6	151.8	-105.10	7,897.3	-492.4	341.5	48.4	293.09	1.165	Level 2		
13,100.0	5,589.0	13,295.7	5,678.0	152.5	153.7	-105.10	7,997.3	-492.4	341.5	44.8	296.79	1.151	Level 2		
13,200.0	5,589.0	13,395.7	5,678.0	154.4	155.6	-105.10	8,097.3	-492.4	341.6	41.1	300.50	1.137	Level 2		
13,252.7	5,589.0	13,448.4	5,678.0	155.5	156.6	-105.10	8,150.0	-492.4	341.6	39.1	302.45	1.129	Level 2		
13,292.6	5,589.0	13,479.2	5,678.0	156.2	157.2	-105.10	8,180.8	-492.4	341.7	37.9	303.76	1.125	Level 2, 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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 S26-T10N-R58W - Razor Federal #26J-2312B - HZ - Plan #1													Offset Site Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft	
Reference				Offset				Semi Major Axis		Distance			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-157.38	-75.6	-31.5	82.0						
100.0	100.0	100.0	100.0	0.1	0.1	-157.38	-75.6	-31.5	82.0	81.8	0.19	436.672			
200.0	200.0	200.0	200.0	0.3	0.3	-157.38	-75.6	-31.5	82.0	81.3	0.64	128.614			
300.0	300.0	300.0	300.0	0.5	0.5	-157.38	-75.6	-31.5	82.0	80.9	1.09	75.413			
400.0	400.0	400.0	400.0	0.8	0.8	-157.38	-75.6	-31.5	82.0	80.4	1.54	53.346			
500.0	500.0	500.0	500.0	1.0	1.0	-157.38	-75.6	-31.5	82.0	80.0	1.99	41.270			
600.0	600.0	600.0	600.0	1.2	1.2	-157.38	-75.6	-31.5	82.0	79.5	2.44	33.652			
700.0	700.0	700.0	700.0	1.4	1.4	-157.38	-75.6	-31.5	82.0	79.1	2.88	28.408			
800.0	800.0	800.0	800.0	1.7	1.7	-157.38	-75.6	-31.5	82.0	78.6	3.33	24.578			
900.0	900.0	900.0	900.0	1.9	1.9	-157.38	-75.6	-31.5	82.0	78.2	3.78	21.659 CC			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-148.30	-75.6	-31.5	83.4	79.2	4.23	19.710			
1,100.0	1,099.8	1,099.8	1,099.8	2.3	2.3	-150.05	-75.6	-31.5	87.9	83.3	4.68	18.785			
1,200.0	1,199.6	1,202.9	1,202.9	2.6	2.6	-152.11	-73.8	-31.2	92.3	87.1	5.14	17.962			
1,300.0	1,299.4	1,306.0	1,305.8	2.8	2.8	-153.78	-68.4	-30.0	93.1	87.5	5.60	16.643			
1,400.0	1,399.1	1,406.0	1,405.5	3.0	3.0	-155.31	-61.6	-28.7	92.5	86.4	6.05	15.285			
1,500.0	1,498.9	1,505.9	1,505.3	3.3	3.3	-156.87	-54.7	-27.3	91.9	85.4	6.50	14.125			
1,600.0	1,598.6	1,605.9	1,605.0	3.5	3.5	-158.44	-47.9	-25.9	91.3	84.4	6.96	13.125			
1,700.0	1,698.4	1,705.9	1,704.7	3.8	3.7	-160.03	-41.1	-24.5	90.9	83.5	7.42	12.257			
1,800.0	1,798.1	1,805.8	1,804.4	4.0	4.0	-161.63	-34.2	-23.1	90.5	82.6	7.87	11.498			
1,900.0	1,897.9	1,905.8	1,904.2	4.3	4.2	-163.25	-27.4	-21.7	90.2	81.9	8.33	10.830			
2,000.0	1,997.6	2,005.8	2,003.9	4.5	4.5	-164.87	-20.6	-20.3	90.0	81.2	8.79	10.240			
2,100.0	2,097.4	2,105.7	2,103.6	4.8	4.7	-166.51	-13.7	-18.9	89.8	80.5	9.24	9.715			
2,200.0	2,197.2	2,205.7	2,203.3	5.0	5.0	-168.15	-6.9	-17.5	89.7	80.0	9.70	9.248			
2,277.4	2,274.4	2,283.1	2,280.5	5.2	5.1	-169.42	-1.6	-16.4	89.7	79.6	10.05	8.919			
2,300.0	2,296.9	2,305.7	2,303.1	5.3	5.2	-169.79	-0.1	-16.1	89.7	79.5	10.16	8.829			
2,400.0	2,396.7	2,405.6	2,402.8	5.5	5.4	-171.43	6.8	-14.7	89.7	79.1	10.62	8.452			
2,500.0	2,496.4	2,505.6	2,502.5	5.8	5.7	-173.06	13.6	-13.3	89.9	78.8	11.08	8.113			
2,600.0	2,596.2	2,605.6	2,602.2	6.0	5.9	-174.69	20.4	-11.9	90.1	78.5	11.54	7.807			
2,700.0	2,695.9	2,705.5	2,701.9	6.3	6.2	-176.31	27.3	-10.5	90.3	78.3	12.00	7.529			
2,800.0	2,795.7	2,805.5	2,801.7	6.5	6.4	-177.93	34.1	-9.2	90.7	78.2	12.46	7.277			
2,900.0	2,895.5	2,905.5	2,901.4	6.8	6.7	-179.52	40.9	-7.8	91.1	78.2	12.93	7.047			
3,000.0	2,995.2	3,005.4	3,001.1	7.0	6.9	178.89	47.8	-6.4	91.6	78.2	13.39	6.838			
3,100.0	3,095.0	3,105.4	3,100.8	7.3	7.2	177.33	54.6	-5.0	92.1	78.3	13.86	6.647			
3,200.0	3,194.7	3,205.4	3,200.6	7.5	7.5	175.79	61.4	-3.6	92.8	78.4	14.33	6.473			
3,300.0	3,294.5	3,305.3	3,300.3	7.8	7.7	174.26	68.3	-2.2	93.4	78.6	14.80	6.313			
3,400.0	3,394.2	3,405.3	3,400.0	8.0	8.0	172.77	75.1	-0.8	94.2	78.9	15.28	6.166			
3,500.0	3,494.0	3,505.3	3,499.7	8.3	8.2	171.29	81.9	0.6	95.0	79.3	15.75	6.032			
3,600.0	3,593.7	3,605.2	3,599.5	8.6	8.5	169.84	88.8	2.0	95.9	79.7	16.23	5.908			
3,700.0	3,693.5	3,705.2	3,699.2	8.8	8.7	168.42	95.6	3.4	96.8	80.1	16.71	5.795			
3,800.0	3,793.3	3,805.2	3,798.9	9.1	9.0	167.03	102.4	4.8	97.8	80.6	17.19	5.690			
3,900.0	3,893.0	3,905.1	3,898.6	9.3	9.2	165.66	109.3	6.2	98.9	81.2	17.68	5.594			
4,000.0	3,992.8	4,005.1	3,998.4	9.6	9.5	164.33	116.1	7.6	100.0	81.8	18.16	5.505			
4,100.0	4,092.5	4,105.1	4,098.1	9.8	9.7	163.03	122.9	8.9	101.2	82.5	18.65	5.423			
4,200.0	4,192.3	4,205.0	4,197.8	10.1	10.0	161.75	129.8	10.3	102.4	83.2	19.14	5.347			
4,300.0	4,292.0	4,305.0	4,297.5	10.3	10.2	160.51	136.6	11.7	103.6	84.0	19.64	5.278			
4,400.0	4,391.8	4,405.0	4,397.2	10.6	10.5	159.29	143.4	13.1	104.9	84.8	20.13	5.213			
4,500.0	4,491.6	4,504.9	4,497.0	10.8	10.7	158.11	150.3	14.5	106.3	85.7	20.63	5.153			
4,600.0	4,591.3	4,604.9	4,596.7	11.1	11.0	156.96	157.1	15.9	107.7	86.6	21.13	5.098			
4,700.0	4,691.1	4,704.9	4,696.4	11.4	11.3	155.84	163.9	17.3	109.1	87.5	21.63	5.047			
4,800.0	4,790.8	4,804.8	4,796.1	11.6	11.5	154.74	170.7	18.7	110.6	88.5	22.13	5.000			
4,900.0	4,890.6	4,904.8	4,895.9	11.9	11.8	153.68	177.6	20.1	112.2	89.5	22.63	4.956			
5,000.0	4,990.3	5,004.8	4,995.6	12.1	12.0	152.65	184.4	21.5	113.7	90.6	23.13	4.916			

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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 ft
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.0	5,090.1	5,104.7	5,095.3	12.4	12.3	151.64	191.2	22.9	115.3	91.7	23.64	4.879			
5,114.4	5,104.5	5,119.1	5,109.7	12.4	12.3	151.50	192.2	23.1	115.5	91.8	23.71	4.873			
5,150.0	5,139.9	5,154.7	5,145.1	12.5	12.4	151.35	194.7	23.6	117.2	93.4	23.82	4.919			
5,200.0	5,189.0	5,204.5	5,194.8	12.7	12.5	151.88	198.1	24.3	123.1	99.3	23.84	5.163			
5,250.0	5,237.0	5,263.3	5,253.1	12.9	12.7	152.37	205.5	25.8	131.3	107.6	23.75	5.529			
5,300.0	5,283.4	5,322.9	5,310.9	13.1	12.9	151.75	219.5	28.6	140.0	116.4	23.59	5.933			
5,350.0	5,327.9	5,383.0	5,367.2	13.4	13.2	150.19	240.1	32.8	149.1	125.7	23.43	6.363			
5,400.0	5,370.0	5,443.5	5,421.0	13.8	13.6	147.85	267.1	38.3	158.6	135.3	23.33	6.798			
5,450.0	5,409.3	5,504.0	5,471.3	14.1	14.0	144.87	300.0	45.0	168.7	145.3	23.40	7.207			
5,500.0	5,445.4	5,564.4	5,517.2	14.6	14.4	141.41	338.4	52.9	179.3	155.6	23.74	7.555			
5,550.0	5,478.1	5,624.5	5,558.2	15.0	15.0	137.59	381.4	61.6	190.7	166.3	24.41	7.813			
5,600.0	5,507.0	5,684.1	5,593.5	15.6	15.5	133.52	428.5	71.2	202.9	177.4	25.45	7.970			
5,650.0	5,531.9	5,743.2	5,622.9	16.1	16.2	129.30	478.7	81.5	215.8	189.0	26.85	8.037			
5,700.0	5,552.5	5,801.7	5,646.1	16.8	16.9	125.01	531.2	92.2	229.6	201.0	28.56	8.039			
5,750.0	5,568.6	5,859.5	5,663.0	17.4	17.7	120.72	585.4	103.2	244.1	213.6	30.50	8.004			
5,800.0	5,580.1	5,916.7	5,673.5	18.1	18.4	116.48	640.5	114.4	259.3	226.7	32.57	7.959			
5,850.0	5,587.0	5,973.4	5,677.8	18.8	19.2	112.33	695.8	125.7	274.9	240.2	34.71	7.921			
5,896.2	5,589.0	6,024.1	5,678.0	19.5	19.9	108.95	745.5	135.4	289.8	253.3	36.56	7.927			
5,900.0	5,589.0	6,028.2	5,678.0	19.6	20.0	108.84	749.6	136.2	291.0	254.4	36.69	7.932			
6,000.0	5,589.0	6,141.3	5,678.0	20.9	21.5	106.66	861.4	152.9	318.4	278.3	40.07	7.946			
6,100.0	5,589.0	6,259.2	5,678.0	22.4	23.2	105.49	978.8	163.3	335.4	291.9	43.48	7.713			
6,200.0	5,589.0	6,377.7	5,678.0	23.9	25.0	105.11	1,097.3	166.5	341.4	294.5	46.86	7.286			
6,219.7	5,589.0	6,397.4	5,678.0	24.2	25.3	105.10	1,117.0	166.5	341.5	294.0	47.46	7.195			
6,300.0	5,589.0	6,477.7	5,678.0	25.4	26.6	105.10	1,197.3	166.5	341.5	291.5	49.96	6.835			
6,400.0	5,589.0	6,577.7	5,678.0	27.1	28.2	105.10	1,297.3	166.5	341.5	288.3	53.18	6.421			
6,500.0	5,589.0	6,677.7	5,678.0	28.8	29.9	105.10	1,397.3	166.5	341.5	285.0	56.46	6.049			
6,600.0	5,589.0	6,777.7	5,678.0	30.5	31.6	105.10	1,497.3	166.5	341.5	281.7	59.78	5.712			
6,700.0	5,589.0	6,877.7	5,678.0	32.2	33.3	105.10	1,597.3	166.5	341.5	278.3	63.16	5.407			
6,800.0	5,589.0	6,977.7	5,678.0	33.9	35.1	105.10	1,697.3	166.5	341.5	274.9	66.57	5.130			
6,900.0	5,589.0	7,077.7	5,678.0	35.7	36.9	105.10	1,797.3	166.5	341.5	271.5	70.01	4.878			
7,000.0	5,589.0	7,177.7	5,678.0	37.5	38.6	105.10	1,897.3	166.5	341.5	268.0	73.48	4.647			
7,100.0	5,589.0	7,277.7	5,678.0	39.3	40.4	105.10	1,997.3	166.5	341.5	264.5	76.97	4.437			
7,200.0	5,589.0	7,377.7	5,678.0	41.1	42.2	105.10	2,097.3	166.5	341.5	261.0	80.48	4.243			
7,300.0	5,589.0	7,477.7	5,678.0	42.9	44.0	105.10	2,197.3	166.6	341.5	257.5	84.01	4.065			
7,400.0	5,589.0	7,577.7	5,678.0	44.7	45.8	105.10	2,297.3	166.6	341.5	253.9	87.56	3.900			
7,500.0	5,589.0	7,677.7	5,678.0	46.6	47.7	105.10	2,397.3	166.6	341.5	250.3	91.12	3.748			
7,600.0	5,589.0	7,777.7	5,678.0	48.4	49.5	105.10	2,497.3	166.6	341.5	246.8	94.69	3.606			
7,700.0	5,589.0	7,877.7	5,678.0	50.3	51.3	105.10	2,597.3	166.6	341.5	243.2	98.27	3.475			
7,800.0	5,589.0	7,977.7	5,678.0	52.1	53.2	105.10	2,697.3	166.6	341.5	239.6	101.87	3.352			
7,900.0	5,589.0	8,077.7	5,678.0	54.0	55.0	105.11	2,797.3	166.6	341.5	236.0	105.47	3.238			
8,000.0	5,589.0	8,177.7	5,678.0	55.8	56.9	105.11	2,897.3	166.6	341.4	232.4	109.08	3.130			
8,100.0	5,589.0	8,277.7	5,678.0	57.7	58.8	105.11	2,997.3	166.6	341.4	228.8	112.69	3.030			
8,200.0	5,589.0	8,377.7	5,678.0	59.6	60.6	105.11	3,097.3	166.6	341.4	225.1	116.32	2.935			
8,300.0	5,589.0	8,477.7	5,678.0	61.4	62.5	105.11	3,197.3	166.6	341.4	221.5	119.95	2.847			
8,400.0	5,589.0	8,577.7	5,678.0	63.3	64.4	105.11	3,297.3	166.6	341.4	217.9	123.58	2.763			
8,500.0	5,589.0	8,677.7	5,678.0	65.2	66.2	105.11	3,397.3	166.6	341.4	214.2	127.22	2.684			
8,600.0	5,589.0	8,777.7	5,678.0	67.0	68.1	105.11	3,497.3	166.6	341.4	210.6	130.87	2.609			
8,700.0	5,589.0	8,877.7	5,678.0	68.9	70.0	105.11	3,597.3	166.6	341.4	206.9	134.51	2.538			
8,800.0	5,589.0	8,977.7	5,678.0	70.8	71.9	105.11	3,697.3	166.6	341.4	203.3	138.17	2.471			
8,900.0	5,589.0	9,077.7	5,678.0	72.7	73.7	105.11	3,797.3	166.6	341.4	199.6	141.82	2.407			
9,000.0	5,589.0	9,177.7	5,678.0	74.6	75.6	105.11	3,897.3	166.6	341.4	195.9	145.48	2.347			
9,100.0	5,589.0	9,277.7	5,678.0	76.5	77.5	105.11	3,997.3	166.7	341.4	192.3	149.14	2.289			

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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft			
Survey Program: 0-ISCSWA MWD												Offset Well Error:		0.0 ft		
Reference				Offset				Semi Major Axis				Distance				Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
9,200.0	5,589.0	9,377.7	5,678.0	78.3	79.4	105.11	4,097.3	166.7	341.4	188.6	152.81	2.234				
9,300.0	5,589.0	9,477.7	5,678.0	80.2	81.3	105.11	4,197.3	166.7	341.4	184.9	156.48	2.182				
9,400.0	5,589.0	9,577.7	5,678.0	82.1	83.2	105.11	4,297.3	166.7	341.4	181.3	160.15	2.132				
9,500.0	5,589.0	9,677.7	5,678.0	84.0	85.0	105.11	4,397.3	166.7	341.4	177.6	163.82	2.084				
9,600.0	5,589.0	9,777.7	5,678.0	85.9	86.9	105.11	4,497.3	166.7	341.4	173.9	167.49	2.038				
9,700.0	5,589.0	9,877.7	5,678.0	87.8	88.8	105.11	4,597.3	166.7	341.4	170.2	171.17	1.995				
9,800.0	5,589.0	9,977.7	5,678.0	89.7	90.7	105.11	4,697.3	166.7	341.4	166.6	174.85	1.953				
9,900.0	5,589.0	10,077.7	5,678.0	91.6	92.6	105.11	4,797.3	166.7	341.4	162.9	178.53	1.912				
10,000.0	5,589.0	10,177.7	5,678.0	93.5	94.5	105.11	4,897.3	166.7	341.4	159.2	182.21	1.874				
10,100.0	5,589.0	10,277.7	5,678.0	95.4	96.4	105.11	4,997.3	166.7	341.4	155.5	185.89	1.837				
10,200.0	5,589.0	10,377.7	5,678.0	97.3	98.3	105.11	5,097.3	166.7	341.4	151.8	189.58	1.801				
10,300.0	5,589.0	10,477.7	5,678.0	99.2	100.2	105.11	5,197.3	166.7	341.4	148.1	193.26	1.766				
10,400.0	5,589.0	10,577.7	5,678.0	101.1	102.1	105.11	5,297.3	166.7	341.4	144.4	196.95	1.733				
10,500.0	5,589.0	10,677.7	5,678.0	103.0	104.0	105.11	5,397.3	166.7	341.4	140.7	200.64	1.701				
10,600.0	5,589.0	10,777.7	5,678.0	104.9	105.9	105.11	5,497.3	166.7	341.4	137.1	204.33	1.671				
10,700.0	5,589.0	10,877.7	5,678.0	106.8	107.8	105.11	5,597.3	166.7	341.4	133.4	208.02	1.641				
10,800.0	5,589.0	10,977.7	5,678.0	108.7	109.7	105.11	5,697.3	166.8	341.4	129.7	211.71	1.612				
10,900.0	5,589.0	11,077.7	5,678.0	110.6	111.6	105.11	5,797.3	166.8	341.4	126.0	215.40	1.585				
11,000.0	5,589.0	11,177.7	5,678.0	112.5	113.5	105.11	5,897.3	166.8	341.4	122.3	219.10	1.558				
11,100.0	5,589.0	11,277.7	5,678.0	114.4	115.4	105.11	5,997.3	166.8	341.4	118.6	222.79	1.532				
11,200.0	5,589.0	11,377.7	5,678.0	116.3	117.3	105.11	6,097.3	166.8	341.4	114.9	226.48	1.507				
11,300.0	5,589.0	11,477.7	5,678.0	118.2	119.2	105.11	6,197.3	166.8	341.4	111.2	230.18	1.483 Level 3				
11,400.0	5,589.0	11,577.7	5,678.0	120.1	121.1	105.11	6,297.3	166.8	341.4	107.5	233.88	1.460 Level 3				
11,500.0	5,589.0	11,677.7	5,678.0	122.0	123.0	105.11	6,397.3	166.8	341.4	103.8	237.57	1.437 Level 3				
11,600.0	5,589.0	11,777.7	5,678.0	123.9	124.9	105.11	6,497.3	166.8	341.4	100.1	241.27	1.415 Level 3				
11,700.0	5,589.0	11,877.7	5,678.0	125.8	126.8	105.11	6,597.3	166.8	341.4	96.4	244.97	1.393 Level 3				
11,800.0	5,589.0	11,977.7	5,678.0	127.7	128.7	105.11	6,697.3	166.8	341.3	92.7	248.67	1.373 Level 3				
11,900.0	5,589.0	12,077.7	5,678.0	129.6	130.6	105.11	6,797.3	166.8	341.3	89.0	252.37	1.353 Level 3				
12,000.0	5,589.0	12,177.7	5,678.0	131.5	132.5	105.11	6,897.3	166.8	341.3	85.3	256.07	1.333 Level 3				
12,100.0	5,589.0	12,277.7	5,678.0	133.5	134.4	105.11	6,997.3	166.8	341.3	81.6	259.77	1.314 Level 3				
12,200.0	5,589.0	12,377.7	5,678.0	135.4	136.4	105.11	7,097.3	166.8	341.3	77.9	263.48	1.296 Level 3				
12,300.0	5,589.0	12,477.7	5,678.0	137.3	138.3	105.11	7,197.3	166.8	341.3	74.2	267.18	1.278 Level 3				
12,400.0	5,589.0	12,577.7	5,678.0	139.2	140.2	105.11	7,297.3	166.8	341.3	70.5	270.88	1.260 Level 3				
12,500.0	5,589.0	12,677.7	5,678.0	141.1	142.1	105.11	7,397.3	166.9	341.3	66.7	274.58	1.243 Level 2				
12,600.0	5,589.0	12,777.7	5,678.0	143.0	144.0	105.11	7,497.3	166.9	341.3	63.0	278.29	1.227 Level 2				
12,700.0	5,589.0	12,877.7	5,678.0	144.9	145.9	105.11	7,597.3	166.9	341.3	59.3	281.99	1.210 Level 2				
12,800.0	5,589.0	12,977.7	5,678.0	146.8	147.8	105.11	7,697.3	166.9	341.3	55.6	285.70	1.195 Level 2				
12,900.0	5,589.0	13,077.7	5,678.0	148.7	149.7	105.11	7,797.3	166.9	341.3	51.9	289.40	1.179 Level 2				
13,000.0	5,589.0	13,177.7	5,678.0	150.6	151.6	105.11	7,897.3	166.9	341.3	48.2	293.11	1.164 Level 2				
13,100.0	5,589.0	13,277.7	5,678.0	152.5	153.5	105.11	7,997.3	166.9	341.3	44.5	296.81	1.150 Level 2				
13,200.0	5,589.0	13,377.7	5,678.0	154.4	155.4	105.11	8,097.3	166.9	341.3	40.8	300.52	1.136 Level 2				
13,292.6	5,589.0	13,470.3	5,678.0	156.2	157.2	105.12	8,189.9	166.9	341.3	37.4	303.95	1.123 Level 2, 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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 ft
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-91.06	-1.8	-98.3	98.3						
100.0	100.0	100.0	100.0	0.1	0.1	-91.06	-1.8	-98.3	98.3	98.1	0.19	523.632			
200.0	200.0	200.0	200.0	0.3	0.3	-91.06	-1.8	-98.3	98.3	97.6	0.64	154.227			
300.0	300.0	300.0	300.0	0.5	0.5	-91.06	-1.8	-98.3	98.3	97.2	1.09	90.431			
400.0	400.0	400.0	400.0	0.8	0.8	-91.06	-1.8	-98.3	98.3	96.7	1.54	63.970			
500.0	500.0	500.0	500.0	1.0	1.0	-91.06	-1.8	-98.3	98.3	96.3	1.99	49.489			
600.0	600.0	600.0	600.0	1.2	1.2	-91.06	-1.8	-98.3	98.3	95.8	2.44	40.354			
700.0	700.0	700.0	700.0	1.4	1.4	-91.06	-1.8	-98.3	98.3	95.4	2.88	34.066			
800.0	800.0	800.0	800.0	1.7	1.7	-91.06	-1.8	-98.3	98.3	94.9	3.33	29.473			
900.0	900.0	900.0	900.0	1.9	1.9	-91.06	-1.8	-98.3	98.3	94.5	3.78	25.972			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-82.37	-1.8	-98.3	98.0	93.8	4.23	23.161			
1,064.8	1,064.7	1,064.2	1,064.2	2.3	2.2	-84.51	-2.5	-98.4	97.9	93.3	4.50	21.726	CC		
1,100.0	1,099.8	1,098.9	1,098.9	2.3	2.3	-86.35	-3.5	-98.6	97.9	93.3	4.65	21.058	ES		
1,200.0	1,199.6	1,197.1	1,196.9	2.6	2.5	-93.09	-8.5	-99.4	99.6	94.6	5.05	19.716			
1,300.0	1,299.4	1,296.1	1,295.7	2.8	2.7	-100.43	-15.3	-100.6	103.6	98.1	5.47	18.925			
1,400.0	1,399.1	1,395.1	1,394.5	3.0	2.9	-107.15	-22.1	-101.8	109.2	103.3	5.91	18.482			
1,500.0	1,498.9	1,494.2	1,493.3	3.3	3.1	-113.15	-28.9	-103.0	116.1	109.7	6.34	18.297			
1,600.0	1,598.6	1,593.3	1,592.1	3.5	3.3	-118.43	-35.7	-104.2	124.1	117.3	6.78	18.295	SF		
1,700.0	1,698.4	1,692.3	1,691.0	3.8	3.5	-123.05	-42.5	-105.4	133.1	125.9	7.23	18.420			
1,800.0	1,798.1	1,791.4	1,789.8	4.0	3.7	-127.06	-49.3	-106.6	142.9	135.2	7.67	18.628			
1,900.0	1,897.9	1,890.4	1,888.6	4.3	4.0	-130.55	-56.1	-107.8	153.2	145.1	8.11	18.889			
2,000.0	1,997.6	1,989.5	1,987.4	4.5	4.2	-133.59	-62.9	-109.0	164.0	155.5	8.55	19.180			
2,100.0	2,097.4	2,088.5	2,086.2	4.8	4.5	-136.25	-69.7	-110.2	175.3	166.3	9.00	19.486			
2,200.0	2,197.2	2,187.6	2,185.0	5.0	4.7	-138.59	-76.5	-111.4	186.9	177.4	9.44	19.798			
2,300.0	2,296.9	2,286.6	2,283.8	5.3	4.9	-140.66	-83.3	-112.6	198.7	188.8	9.88	20.109			
2,400.0	2,396.7	2,385.7	2,382.7	5.5	5.2	-142.49	-90.1	-113.8	210.8	200.4	10.33	20.413			
2,500.0	2,496.4	2,484.8	2,481.5	5.8	5.4	-144.12	-96.9	-115.0	223.0	212.3	10.77	20.709			
2,600.0	2,596.2	2,583.8	2,580.3	6.0	5.7	-145.58	-103.7	-116.2	235.5	224.2	11.21	20.995			
2,700.0	2,695.9	2,682.9	2,679.1	6.3	5.9	-146.89	-110.6	-117.4	248.0	236.4	11.66	21.269			
2,800.0	2,795.7	2,781.9	2,777.9	6.5	6.2	-148.08	-117.4	-118.6	260.7	248.6	12.11	21.532			
2,900.0	2,895.5	2,881.0	2,876.7	6.8	6.4	-149.16	-124.2	-119.8	273.5	260.9	12.55	21.783			
3,000.0	2,995.2	2,980.0	2,975.5	7.0	6.7	-150.14	-131.0	-121.0	286.3	273.3	13.00	22.022			
3,100.0	3,095.0	3,079.1	3,074.3	7.3	6.9	-151.04	-137.8	-122.2	299.3	285.8	13.45	22.250			
3,200.0	3,194.7	3,178.1	3,173.2	7.5	7.2	-151.86	-144.6	-123.4	312.3	298.4	13.90	22.468			
3,300.0	3,294.5	3,277.2	3,272.0	7.8	7.4	-152.61	-151.4	-124.6	325.3	311.0	14.35	22.675			
3,400.0	3,394.2	3,376.3	3,370.8	8.0	7.7	-153.31	-158.2	-125.8	338.4	323.6	14.80	22.872			
3,500.0	3,494.0	3,475.3	3,469.6	8.3	7.9	-153.96	-165.0	-127.0	351.6	336.4	15.25	23.060			
3,600.0	3,593.7	3,574.4	3,568.4	8.6	8.2	-154.56	-171.8	-128.2	364.8	349.1	15.70	23.239			
3,700.0	3,693.5	3,673.4	3,667.2	8.8	8.5	-155.12	-178.6	-129.4	378.0	361.9	16.15	23.410			
3,800.0	3,793.3	3,772.5	3,766.0	9.1	8.7	-155.64	-185.4	-130.6	391.3	374.7	16.60	23.573			
3,900.0	3,893.0	3,871.5	3,864.9	9.3	9.0	-156.12	-192.2	-131.8	404.6	387.6	17.05	23.729			
4,000.0	3,992.8	3,970.6	3,963.7	9.6	9.2	-156.58	-199.0	-133.0	417.9	400.4	17.50	23.878			
4,100.0	4,092.5	4,069.6	4,062.5	9.8	9.5	-157.00	-205.8	-134.2	431.3	413.3	17.96	24.020			
4,200.0	4,192.3	4,168.7	4,161.3	10.1	9.7	-157.40	-212.6	-135.4	444.7	426.2	18.41	24.156			
4,300.0	4,292.0	4,267.8	4,260.1	10.3	10.0	-157.78	-219.4	-136.6	458.0	439.2	18.86	24.286			
4,400.0	4,391.8	4,366.8	4,358.9	10.6	10.3	-158.14	-226.2	-137.8	471.5	452.1	19.31	24.411			
4,500.0	4,491.6	4,465.9	4,457.7	10.8	10.5	-158.47	-233.0	-139.0	484.9	465.1	19.77	24.531			
4,600.0	4,591.3	4,564.9	4,556.6	11.1	10.8	-158.79	-239.8	-140.2	498.3	478.1	20.22	24.646			

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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 ft
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-139.67	-76.3	-64.7	100.0						
100.0	100.0	100.0	100.0	0.1	0.1	-139.67	-76.3	-64.7	100.0	99.8	0.19	533.010			
200.0	200.0	200.0	200.0	0.3	0.3	-139.67	-76.3	-64.7	100.0	99.4	0.64	156.989			
300.0	300.0	300.0	300.0	0.5	0.5	-139.67	-76.3	-64.7	100.0	98.9	1.09	92.050			
400.0	400.0	400.0	400.0	0.8	0.8	-139.67	-76.3	-64.7	100.0	98.5	1.54	65.115			
500.0	500.0	500.0	500.0	1.0	1.0	-139.67	-76.3	-64.7	100.0	98.0	1.99	50.375			
600.0	600.0	600.0	600.0	1.2	1.2	-139.67	-76.3	-64.7	100.0	97.6	2.44	41.077	CC, ES		
700.0	700.0	697.7	697.7	1.4	1.4	-140.37	-77.9	-64.5	101.2	98.3	2.85	35.467			
800.0	800.0	795.1	795.0	1.7	1.6	-142.38	-82.8	-63.8	104.7	101.5	3.26	32.142			
900.0	900.0	894.8	894.4	1.9	1.8	-144.96	-89.7	-62.9	109.7	106.1	3.68	29.807			
1,000.0	1,000.0	994.4	993.7	2.1	2.0	-138.11	-96.6	-62.0	116.3	112.1	4.11	28.262			
1,100.0	1,099.8	1,093.6	1,092.8	2.3	2.2	-141.61	-103.5	-61.1	125.8	121.2	4.55	27.645			
1,200.0	1,199.6	1,192.7	1,191.5	2.6	2.5	-145.13	-110.3	-60.1	137.1	132.1	4.99	27.495			
1,300.0	1,299.4	1,291.7	1,290.3	2.8	2.7	-148.11	-117.2	-59.2	148.9	143.5	5.43	27.434			
1,400.0	1,399.1	1,390.7	1,389.1	3.0	2.9	-150.64	-124.0	-58.3	161.0	155.2	5.87	27.430	SF		
1,500.0	1,498.9	1,489.7	1,487.9	3.3	3.2	-152.82	-130.9	-57.4	173.4	167.1	6.31	27.463			
1,600.0	1,598.6	1,588.8	1,586.7	3.5	3.4	-154.71	-137.7	-56.4	186.0	179.3	6.76	27.519			
1,700.0	1,698.4	1,687.8	1,685.5	3.8	3.7	-156.36	-144.5	-55.5	198.8	191.6	7.21	27.589			
1,800.0	1,798.1	1,786.8	1,784.3	4.0	3.9	-157.81	-151.4	-54.6	211.7	204.1	7.65	27.667			
1,900.0	1,897.9	1,885.8	1,883.0	4.3	4.2	-159.09	-158.2	-53.7	224.8	216.7	8.10	27.749			
2,000.0	1,997.6	1,984.9	1,981.8	4.5	4.4	-160.23	-165.1	-52.7	237.9	229.4	8.55	27.831			
2,100.0	2,097.4	2,083.9	2,080.6	4.8	4.7	-161.25	-171.9	-51.8	251.2	242.2	9.00	27.913			
2,200.0	2,197.2	2,182.9	2,179.4	5.0	5.0	-162.17	-178.8	-50.9	264.5	255.0	9.45	27.994			
2,300.0	2,296.9	2,282.0	2,278.2	5.3	5.2	-163.00	-185.6	-50.0	277.8	267.9	9.90	28.072			
2,400.0	2,396.7	2,381.0	2,377.0	5.5	5.5	-163.75	-192.5	-49.0	291.2	280.9	10.35	28.147			
2,500.0	2,496.4	2,480.0	2,475.8	5.8	5.7	-164.44	-199.3	-48.1	304.7	293.9	10.80	28.219			
2,600.0	2,596.2	2,579.0	2,574.5	6.0	6.0	-165.07	-206.2	-47.2	318.2	306.9	11.25	28.288			
2,700.0	2,695.9	2,678.1	2,673.3	6.3	6.2	-165.65	-213.0	-46.2	331.7	320.0	11.70	28.354			
2,800.0	2,795.7	2,777.1	2,772.1	6.5	6.5	-166.18	-219.9	-45.3	345.3	333.1	12.15	28.417			
2,900.0	2,895.5	2,876.1	2,870.9	6.8	6.8	-166.67	-226.7	-44.4	358.9	346.3	12.60	28.477			
3,000.0	2,995.2	2,975.1	2,969.7	7.0	7.0	-167.13	-233.5	-43.5	372.5	359.4	13.05	28.534			
3,100.0	3,095.0	3,074.2	3,068.5	7.3	7.3	-167.55	-240.4	-42.5	386.1	372.6	13.51	28.588			
3,200.0	3,194.7	3,173.2	3,167.3	7.5	7.5	-167.95	-247.2	-41.6	399.8	385.8	13.96	28.640			
3,300.0	3,294.5	3,272.2	3,266.0	7.8	7.8	-168.32	-254.1	-40.7	413.4	399.0	14.41	28.689			
3,400.0	3,394.2	3,371.3	3,364.8	8.0	8.1	-168.66	-260.9	-39.8	427.1	412.3	14.86	28.737			
3,500.0	3,494.0	3,470.3	3,463.6	8.3	8.3	-168.99	-267.8	-38.8	440.8	425.5	15.32	28.782			
3,600.0	3,593.7	3,569.3	3,562.4	8.6	8.6	-169.29	-274.6	-37.9	454.5	438.8	15.77	28.824			
3,700.0	3,693.5	3,668.3	3,661.2	8.8	8.8	-169.58	-281.5	-37.0	468.3	452.0	16.22	28.865			
3,800.0	3,793.3	3,767.4	3,760.0	9.1	9.1	-169.85	-288.3	-36.1	482.0	465.3	16.68	28.905			
3,900.0	3,893.0	3,866.4	3,858.8	9.3	9.4	-170.11	-295.2	-35.1	495.7	478.6	17.13	28.942			

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 Federal #26J-2311A
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Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 ft
Reference				Offset			Semi Major Axis			Distance			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-91.05	-0.6	-32.9	32.9						
100.0	100.0	100.0	100.0	0.1	0.1	-91.05	-0.6	-32.9	32.9	32.8	0.19	175.527			
200.0	200.0	200.0	200.0	0.3	0.3	-91.05	-0.6	-32.9	32.9	32.3	0.64	51.699			
300.0	300.0	300.0	300.0	0.5	0.5	-91.05	-0.6	-32.9	32.9	31.9	1.09	30.313			
400.0	400.0	400.0	400.0	0.8	0.8	-91.05	-0.6	-32.9	32.9	31.4	1.54	21.443			
500.0	500.0	500.0	500.0	1.0	1.0	-91.05	-0.6	-32.9	32.9	31.0	1.99	16.589			
600.0	600.0	600.0	600.0	1.2	1.2	-91.05	-0.6	-32.9	32.9	30.5	2.44	13.527			
700.0	700.0	700.0	700.0	1.4	1.4	-91.05	-0.6	-32.9	32.9	30.1	2.88	11.419			
800.0	800.0	800.0	800.0	1.7	1.7	-91.05	-0.6	-32.9	32.9	29.6	3.33	9.880			
900.0	900.0	900.4	900.3	1.9	1.9	-93.97	-2.2	-32.3	32.4	28.6	3.76	8.618			
1,000.0	1,000.0	1,000.3	1,000.2	2.1	2.0	-96.69	-7.1	-30.4	31.4	27.2	4.16	7.539			
1,005.0	1,004.9	1,005.3	1,005.1	2.1	2.1	-97.63	-7.4	-30.3	31.4	27.2	4.18	7.500 CC, ES			
1,100.0	1,099.8	1,099.6	1,099.2	2.3	2.2	-117.63	-13.6	-27.9	33.6	29.1	4.58	7.338 SF			
1,200.0	1,199.6	1,198.6	1,198.0	2.6	2.4	-135.85	-20.0	-25.4	40.9	35.9	5.02	8.150			
1,300.0	1,299.4	1,297.7	1,296.8	2.8	2.7	-147.81	-26.4	-22.9	51.0	45.5	5.45	9.351			
1,400.0	1,399.1	1,396.7	1,395.6	3.0	2.9	-155.64	-32.9	-20.3	62.5	56.6	5.88	10.626			
1,500.0	1,498.9	1,495.7	1,494.4	3.3	3.1	-160.97	-39.3	-17.8	74.8	68.5	6.31	11.849			
1,600.0	1,598.6	1,594.8	1,593.2	3.5	3.4	-164.77	-45.8	-15.3	87.6	80.8	6.75	12.980			
1,700.0	1,698.4	1,693.8	1,692.0	3.8	3.6	-167.60	-52.2	-12.8	100.6	93.5	7.18	14.010			
1,800.0	1,798.1	1,792.8	1,790.8	4.0	3.8	-169.78	-58.6	-10.3	113.9	106.3	7.62	14.942			
1,900.0	1,897.9	1,891.9	1,889.5	4.3	4.1	-171.50	-65.1	-7.8	127.3	119.2	8.06	15.785			
2,000.0	1,997.6	1,990.9	1,988.3	4.5	4.3	-172.90	-71.5	-5.3	140.7	132.2	8.50	16.549			
2,100.0	2,097.4	2,090.0	2,087.1	4.8	4.6	-174.05	-77.9	-2.8	154.2	145.3	8.95	17.241			
2,200.0	2,197.2	2,189.0	2,185.9	5.0	4.8	-175.01	-84.4	-0.2	167.8	158.4	9.39	17.872			
2,300.0	2,296.9	2,288.0	2,284.7	5.3	5.1	-175.83	-90.8	2.3	181.5	171.6	9.84	18.448			
2,400.0	2,396.7	2,387.1	2,383.5	5.5	5.3	-176.54	-97.2	4.8	195.1	184.8	10.28	18.975			
2,500.0	2,496.4	2,486.1	2,482.3	5.8	5.6	-177.15	-103.7	7.3	208.8	198.1	10.73	19.459			
2,600.0	2,596.2	2,585.1	2,581.1	6.0	5.8	-177.69	-110.1	9.8	222.5	211.3	11.18	19.904			
2,700.0	2,695.9	2,684.2	2,679.9	6.3	6.1	-178.16	-116.5	12.3	236.2	224.6	11.63	20.316			
2,800.0	2,795.7	2,783.2	2,778.7	6.5	6.3	-178.59	-123.0	14.8	249.9	237.9	12.08	20.697			
2,900.0	2,895.5	2,882.3	2,877.5	6.8	6.6	-178.97	-129.4	17.3	263.7	251.2	12.53	21.052			
3,000.0	2,995.2	2,981.3	2,976.3	7.0	6.9	-179.31	-135.9	19.8	277.4	264.5	12.98	21.381			
3,100.0	3,095.0	3,080.3	3,075.1	7.3	7.1	-179.62	-142.3	22.4	291.2	277.8	13.43	21.689			
3,200.0	3,194.7	3,179.4	3,173.9	7.5	7.4	-179.90	-148.7	24.9	305.0	291.1	13.88	21.976			
3,300.0	3,294.5	3,278.4	3,272.7	7.8	7.6	-179.85	-155.2	27.4	318.7	304.4	14.33	22.245			
3,400.0	3,394.2	3,377.4	3,371.5	8.0	7.9	-179.61	-161.6	29.9	332.5	317.7	14.78	22.498			
3,500.0	3,494.0	3,476.5	3,470.3	8.3	8.1	-179.39	-168.0	32.4	346.3	331.1	15.23	22.736			
3,600.0	3,593.7	3,575.5	3,569.1	8.6	8.4	-179.19	-174.5	34.9	360.1	344.4	15.68	22.959			
3,700.0	3,693.5	3,674.5	3,667.9	8.8	8.7	-179.01	-180.9	37.4	373.9	357.8	16.14	23.171			
3,800.0	3,793.3	3,773.6	3,766.7	9.1	8.9	-178.84	-187.3	39.9	387.7	371.1	16.59	23.370			
3,900.0	3,893.0	3,872.6	3,865.5	9.3	9.2	-178.67	-193.8	42.5	401.5	384.5	17.04	23.559			
4,000.0	3,992.8	3,971.7	3,964.3	9.6	9.4	-178.52	-200.2	45.0	415.3	397.8	17.50	23.738			
4,100.0	4,092.5	4,070.7	4,063.0	9.8	9.7	-178.38	-206.6	47.5	429.1	411.2	17.95	23.908			
4,200.0	4,192.3	4,169.7	4,161.8	10.1	10.0	-178.25	-213.1	50.0	442.9	424.5	18.40	24.070			
4,300.0	4,292.0	4,268.8	4,260.6	10.3	10.2	-178.13	-219.5	52.5	456.7	437.9	18.86	24.223			
4,400.0	4,391.8	4,367.8	4,359.4	10.6	10.5	-178.01	-226.0	55.0	470.6	451.3	19.31	24.370			
4,500.0	4,491.6	4,466.8	4,458.2	10.8	10.7	-177.90	-232.4	57.5	484.4	464.6	19.76	24.509			
4,600.0	4,591.3	4,565.9	4,557.0	11.1	11.0	-177.80	-238.8	60.0	498.2	478.0	20.22	24.643			

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 Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft	
Reference				Offset				Semi Major Axis		Distance			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	178.92	-75.0	1.4	75.1						
100.0	100.0	100.0	100.0	0.1	0.1	178.92	-75.0	1.4	75.1	74.9	0.19	399.904			
200.0	200.0	200.0	200.0	0.3	0.3	178.92	-75.0	1.4	75.1	74.4	0.64	117.785			
300.0	300.0	300.0	300.0	0.5	0.5	178.92	-75.0	1.4	75.1	74.0	1.09	69.063			
400.0	400.0	400.0	400.0	0.8	0.8	178.92	-75.0	1.4	75.1	73.5	1.54	48.854			
500.0	500.0	500.0	500.0	1.0	1.0	178.92	-75.0	1.4	75.1	73.1	1.99	37.795			
600.0	600.0	600.0	600.0	1.2	1.2	178.92	-75.0	1.4	75.1	72.6	2.44	30.819			
700.0	700.0	700.0	700.0	1.4	1.4	178.92	-75.0	1.4	75.1	72.2	2.88	26.016			
800.0	800.0	800.0	800.0	1.7	1.7	178.92	-75.0	1.4	75.1	71.7	3.33	22.509			
900.0	900.0	900.0	900.0	1.9	1.9	178.92	-75.0	1.4	75.1	71.3	3.78	19.835 CC, ES			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-171.57	-75.0	1.4	76.8	72.5	4.23	18.138			
1,100.0	1,099.8	1,097.4	1,097.4	2.3	2.3	-172.65	-76.4	2.3	83.4	78.8	4.65	17.934 SF			
1,200.0	1,199.6	1,194.1	1,193.9	2.6	2.5	-174.67	-80.6	4.9	94.8	89.7	5.06	18.744			
1,300.0	1,299.4	1,293.0	1,292.6	2.8	2.7	-176.73	-86.4	8.6	108.0	102.5	5.47	19.728			
1,400.0	1,399.1	1,392.0	1,391.4	3.0	2.9	-178.35	-92.3	12.3	121.2	115.3	5.89	20.584			
1,500.0	1,498.9	1,491.1	1,490.2	3.3	3.1	-179.65	-98.1	15.9	134.6	128.3	6.31	21.320			
1,600.0	1,598.6	1,590.1	1,589.0	3.5	3.3	179.29	-104.0	19.6	148.0	141.2	6.74	21.958			
1,700.0	1,698.4	1,689.2	1,687.9	3.8	3.5	178.40	-109.8	23.3	161.4	154.3	7.17	22.515			
1,800.0	1,798.1	1,788.3	1,786.7	4.0	3.8	177.65	-115.7	27.0	174.9	167.3	7.60	23.003			
1,900.0	1,897.9	1,887.3	1,885.5	4.3	4.0	177.01	-121.5	30.7	188.4	180.4	8.04	23.434			
2,000.0	1,997.6	1,986.4	1,984.3	4.5	4.2	176.45	-127.4	34.3	201.9	193.4	8.48	23.817			
2,100.0	2,097.4	2,085.5	2,083.1	4.8	4.5	175.96	-133.2	38.0	215.5	206.5	8.92	24.159			
2,200.0	2,197.2	2,184.5	2,182.0	5.0	4.7	175.53	-139.1	41.7	229.0	219.7	9.36	24.466			
2,300.0	2,296.9	2,283.6	2,280.8	5.3	5.0	175.15	-144.9	45.4	242.6	232.8	9.80	24.743			
2,400.0	2,396.7	2,382.7	2,379.6	5.5	5.2	174.81	-150.8	49.1	256.1	245.9	10.25	24.993			
2,500.0	2,496.4	2,481.7	2,478.4	5.8	5.5	174.50	-156.6	52.7	269.7	259.0	10.69	25.222			
2,600.0	2,596.2	2,580.8	2,577.3	6.0	5.7	174.22	-162.5	56.4	283.3	272.2	11.14	25.430			
2,700.0	2,695.9	2,679.8	2,676.1	6.3	6.0	173.97	-168.3	60.1	296.9	285.3	11.59	25.621			
2,800.0	2,795.7	2,778.9	2,774.9	6.5	6.2	173.74	-174.2	63.8	310.5	298.5	12.04	25.796			
2,900.0	2,895.5	2,878.0	2,873.7	6.8	6.5	173.53	-180.0	67.5	324.1	311.6	12.49	25.958			
3,000.0	2,995.2	2,977.0	2,972.5	7.0	6.7	173.34	-185.9	71.1	337.7	324.8	12.94	26.107			
3,100.0	3,095.0	3,076.1	3,071.4	7.3	7.0	173.16	-191.7	74.8	351.3	337.9	13.39	26.246			
3,200.0	3,194.7	3,175.2	3,170.2	7.5	7.2	172.99	-197.6	78.5	364.9	351.1	13.84	26.375			
3,300.0	3,294.5	3,274.2	3,269.0	7.8	7.5	172.84	-203.4	82.2	378.6	364.3	14.29	26.495			
3,400.0	3,394.2	3,373.3	3,367.8	8.0	7.7	172.70	-209.3	85.9	392.2	377.4	14.74	26.608			
3,500.0	3,494.0	3,472.4	3,466.7	8.3	8.0	172.56	-215.1	89.6	405.8	390.6	15.19	26.713			
3,600.0	3,593.7	3,571.4	3,565.5	8.6	8.2	172.44	-221.0	93.2	419.4	403.8	15.64	26.811			
3,700.0	3,693.5	3,670.5	3,664.3	8.8	8.5	172.32	-226.8	96.9	433.0	416.9	16.10	26.904			
3,800.0	3,793.3	3,769.5	3,763.1	9.1	8.8	172.21	-232.7	100.6	446.7	430.1	16.55	26.991			
3,900.0	3,893.0	3,868.6	3,861.9	9.3	9.0	172.11	-238.5	104.3	460.3	443.3	17.00	27.073			
4,000.0	3,992.8	3,967.7	3,960.8	9.6	9.3	172.01	-244.4	108.0	473.9	456.5	17.46	27.151			
4,100.0	4,092.5	4,066.7	4,059.6	9.8	9.5	171.92	-250.2	111.6	487.6	469.6	17.91	27.225			

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-2311A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-2311A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	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 WELL @ 4742.1ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Razor Federal #26J-2311A
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.08°

