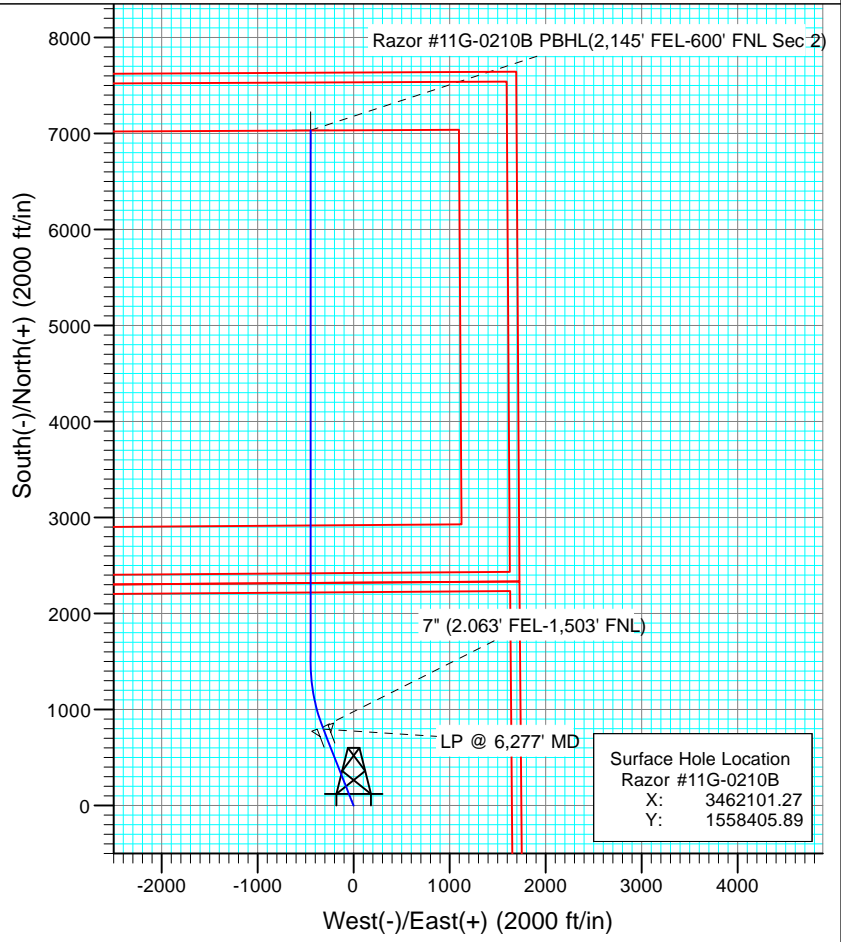
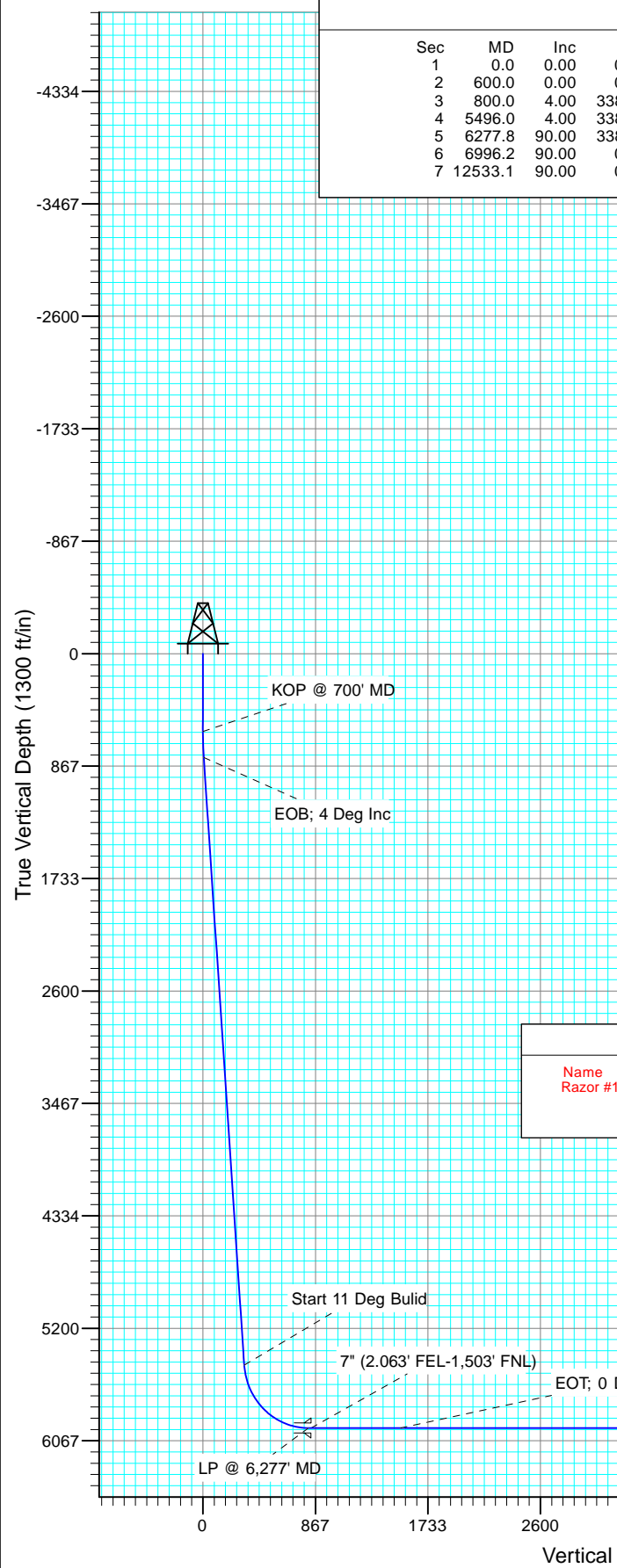


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	KOP @ 700' MD
3	800.0	4.00	338.45	799.8	6.5	-2.6	2.00	338.45	6.6	EOB; 4 Deg Inc
4	5496.0	4.00	338.45	5484.4	311.2	-122.9	0.00	0.00	318.3	Start 11 Deg Bulid
5	6277.8	90.00	338.45	5968.9	794.5	-313.7	11.00	0.00	812.8	LP @ 6,277' MD
6	6996.2	90.00	0.00	5969.0	1496.0	-447.2	3.00	90.00	1521.4	EOT; 0 Deg Azi
7	12533.1	90.00	0.00	5969.0	7032.9	-447.1	0.00	0.00	7047.1	PBHL @ 12,533' MD



Surface Hole Location
 Razor #11G-0210B
 X: 3462101.27
 Y: 1558405.89

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor #11G-0210B PBHL(2,145' FEL-600' FNL Sec 2)	5969.0	7032.9	-447.1	1565429.14	3461521.76

Azimuths to True North
 Magnetic North: 8.10°
 Magnetic Field
 Strength: 53238.7snT
 Dip Angle: 67.49°
 Date: 7/25/2013
 Model: IGRF2010

Plan #1
 Razor #11G-0210B
 WELL @ 4989.7ft (Original Well Elev)
 Ground Elevation @ 4972.9
 North American Datum 1983
 Well Razor #11G-0210B, True North

Start 11 Deg Bulid
 7" (2.063' FEL-1,503' FNL)
 EOT; 0 Deg Azi
 LP @ 6,277' MD
 Razor #11G-0210B PBHL(2,145' FEL-600' FNL Sec 2)

Vertical Section at 356.36° (1300 ft/in)

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Razor #11G-0210B
Company: Whiting Petroleum Corporation	TVD Reference: WELL @ 4989.7ft (Original Well Elev)
Project: Weld County, CO	MD Reference: WELL @ 4989.7ft (Original Well Elev)
Site: S11-T10N-R58W	North Reference: True
Well: Razor #11G-0210B	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 S11-T10N-R58W					
Site Position:		Northing:	1,558,623.69 ft	Latitude:	40.854775
From:	Lat/Long	Easting:	3,463,396.85 ft	Longitude:	-103.824847
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.08 °

Well Razor #11G-0210B						
Well Position	+N/-S	0.0 ft	Northing:	1,558,405.89 ft	Latitude:	40.854244
	+E/-W	0.0 ft	Easting:	3,462,101.27 ft	Longitude:	-103.829544
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,972.9 ft

Wellbore HZ					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	7/25/2013	(°)	(°)	(nT)
			8.10	67.49	53,239

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	356.36	

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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	4.00	338.45	799.8	6.5	-2.6	2.00	2.00	0.00	338.45	
5,496.0	4.00	338.45	5,484.4	311.2	-122.9	0.00	0.00	0.00	0.00	
6,277.8	90.00	338.45	5,968.9	794.5	-313.7	11.00	11.00	0.00	0.00	
6,996.2	90.00	0.00	5,969.0	1,496.0	-447.2	3.00	0.00	3.00	90.00	
12,533.1	90.00	0.00	5,969.0	7,032.9	-447.1	0.00	0.00	0.00	0.00	Razor #11G-0210B PI

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #11G-0210B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4989.7ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4989.7ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11G-0210B	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	KOP @ 700' MD
700.0	2.00	338.45	700.0	1.6	-0.6	1.7	2.00	2.00	
800.0	4.00	338.45	799.8	6.5	-2.6	6.6	2.00	2.00	EOB; 4 Deg Inc
900.0	4.00	338.45	899.6	13.0	-5.1	13.3	0.00	0.00	
1,000.0	4.00	338.45	999.4	19.5	-7.7	19.9	0.00	0.00	
1,100.0	4.00	338.45	1,099.1	26.0	-10.2	26.6	0.00	0.00	
1,200.0	4.00	338.45	1,198.9	32.4	-12.8	33.2	0.00	0.00	
1,300.0	4.00	338.45	1,298.6	38.9	-15.4	39.8	0.00	0.00	
1,400.0	4.00	338.45	1,398.4	45.4	-17.9	46.5	0.00	0.00	
1,500.0	4.00	338.45	1,498.1	51.9	-20.5	53.1	0.00	0.00	
1,600.0	4.00	338.45	1,597.9	58.4	-23.1	59.7	0.00	0.00	
1,700.0	4.00	338.45	1,697.6	64.9	-25.6	66.4	0.00	0.00	
1,800.0	4.00	338.45	1,797.4	71.4	-28.2	73.0	0.00	0.00	
1,900.0	4.00	338.45	1,897.2	77.9	-30.7	79.7	0.00	0.00	
2,000.0	4.00	338.45	1,996.9	84.3	-33.3	86.3	0.00	0.00	
2,100.0	4.00	338.45	2,096.7	90.8	-35.9	92.9	0.00	0.00	
2,200.0	4.00	338.45	2,196.4	97.3	-38.4	99.6	0.00	0.00	
2,300.0	4.00	338.45	2,296.2	103.8	-41.0	106.2	0.00	0.00	
2,400.0	4.00	338.45	2,395.9	110.3	-43.6	112.8	0.00	0.00	
2,500.0	4.00	338.45	2,495.7	116.8	-46.1	119.5	0.00	0.00	
2,600.0	4.00	338.45	2,595.5	123.3	-48.7	126.1	0.00	0.00	
2,700.0	4.00	338.45	2,695.2	129.8	-51.2	132.8	0.00	0.00	
2,800.0	4.00	338.45	2,795.0	136.3	-53.8	139.4	0.00	0.00	
2,900.0	4.00	338.45	2,894.7	142.7	-56.4	146.0	0.00	0.00	
3,000.0	4.00	338.45	2,994.5	149.2	-58.9	152.7	0.00	0.00	
3,100.0	4.00	338.45	3,094.2	155.7	-61.5	159.3	0.00	0.00	
3,200.0	4.00	338.45	3,194.0	162.2	-64.1	165.9	0.00	0.00	
3,300.0	4.00	338.45	3,293.7	168.7	-66.6	172.6	0.00	0.00	
3,400.0	4.00	338.45	3,393.5	175.2	-69.2	179.2	0.00	0.00	
3,500.0	4.00	338.45	3,493.3	181.7	-71.7	185.9	0.00	0.00	
3,600.0	4.00	338.45	3,593.0	188.2	-74.3	192.5	0.00	0.00	
3,700.0	4.00	338.45	3,692.8	194.6	-76.9	199.1	0.00	0.00	
3,800.0	4.00	338.45	3,792.5	201.1	-79.4	205.8	0.00	0.00	
3,900.0	4.00	338.45	3,892.3	207.6	-82.0	212.4	0.00	0.00	
4,000.0	4.00	338.45	3,992.0	214.1	-84.6	219.0	0.00	0.00	
4,100.0	4.00	338.45	4,091.8	220.6	-87.1	225.7	0.00	0.00	
4,200.0	4.00	338.45	4,191.6	227.1	-89.7	232.3	0.00	0.00	
4,300.0	4.00	338.45	4,291.3	233.6	-92.2	239.0	0.00	0.00	
4,400.0	4.00	338.45	4,391.1	240.1	-94.8	245.6	0.00	0.00	
4,500.0	4.00	338.45	4,490.8	246.5	-97.4	252.2	0.00	0.00	
4,600.0	4.00	338.45	4,590.6	253.0	-99.9	258.9	0.00	0.00	
4,700.0	4.00	338.45	4,690.3	259.5	-102.5	265.5	0.00	0.00	
4,800.0	4.00	338.45	4,790.1	266.0	-105.1	272.1	0.00	0.00	
4,900.0	4.00	338.45	4,889.9	272.5	-107.6	278.8	0.00	0.00	
5,000.0	4.00	338.45	4,989.6	279.0	-110.2	285.4	0.00	0.00	
5,100.0	4.00	338.45	5,089.4	285.5	-112.7	292.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #11G-0210B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4989.7ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4989.7ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11G-0210B	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
5,200.0	4.00	338.45	5,189.1	292.0	-115.3	298.7	0.00	0.00	
5,300.0	4.00	338.45	5,288.9	298.5	-117.9	305.3	0.00	0.00	
5,400.0	4.00	338.45	5,388.6	304.9	-120.4	312.0	0.00	0.00	
5,496.0	4.00	338.45	5,484.4	311.2	-122.9	318.3	0.00	0.00	Start 11 Deg Bulid
5,500.0	4.44	338.45	5,488.4	311.4	-123.0	318.6	11.00	11.00	
5,550.0	9.94	338.45	5,538.0	317.3	-125.3	324.6	11.00	11.00	
5,600.0	15.44	338.45	5,586.7	327.5	-129.3	335.0	11.00	11.00	
5,650.0	20.94	338.45	5,634.2	342.0	-135.1	349.9	11.00	11.00	
5,700.0	26.44	338.45	5,680.0	360.7	-142.4	369.0	11.00	11.00	
5,750.0	31.94	338.45	5,723.6	383.3	-151.4	392.2	11.00	11.00	
5,800.0	37.44	338.45	5,764.7	409.8	-161.8	419.2	11.00	11.00	
5,850.0	42.94	338.45	5,802.9	439.8	-173.7	449.9	11.00	11.00	
5,861.2	44.17	338.45	5,811.0	447.0	-176.5	457.3	11.00	11.00	Top Niobrara
5,900.0	48.44	338.45	5,837.8	473.0	-186.8	483.9	11.00	11.00	
5,950.0	53.94	338.45	5,869.1	509.3	-201.1	521.0	11.00	11.00	
6,000.0	59.44	338.45	5,896.6	548.1	-216.5	560.8	11.00	11.00	
6,050.0	64.94	338.45	5,919.9	589.2	-232.7	602.8	11.00	11.00	
6,100.0	70.44	338.45	5,938.9	632.2	-249.7	646.8	11.00	11.00	
6,150.0	75.94	338.45	5,953.3	676.7	-267.3	692.3	11.00	11.00	
6,200.0	81.44	338.45	5,963.1	722.3	-285.3	739.0	11.00	11.00	
6,250.0	86.94	338.45	5,968.2	768.6	-303.5	786.3	11.00	11.00	
6,277.8	90.00	338.45	5,968.9	794.5	-313.7	812.8	11.00	11.00	LP @ 6.277' MD
6,300.0	90.00	339.12	5,968.9	815.1	-321.8	833.9	3.00	0.00	7" (2.063' FEL-1,503' FNL)
6,400.0	90.00	342.12	5,968.9	909.4	-355.0	930.1	3.00	0.00	
6,500.0	90.00	345.12	5,968.9	1,005.4	-383.2	1,027.6	3.00	0.00	
6,600.0	90.00	348.12	5,968.9	1,102.6	-406.3	1,126.2	3.00	0.00	
6,700.0	90.00	351.12	5,968.9	1,201.0	-424.3	1,225.5	3.00	0.00	
6,800.0	90.00	354.12	5,968.9	1,300.1	-437.2	1,325.3	3.00	0.00	
6,900.0	90.00	357.12	5,968.9	1,399.8	-444.8	1,425.2	3.00	0.00	
6,996.2	90.00	0.00	5,969.0	1,496.0	-447.2	1,521.4	3.00	0.00	EOT; 0 Deg Azi
7,000.0	90.00	0.00	5,969.0	1,499.8	-447.2	1,525.2	0.00	0.00	
7,100.0	90.00	0.00	5,969.0	1,599.8	-447.2	1,625.0	0.00	0.00	
7,200.0	90.00	0.00	5,969.0	1,699.8	-447.2	1,724.8	0.00	0.00	
7,300.0	90.00	0.00	5,969.0	1,799.8	-447.2	1,824.6	0.00	0.00	
7,400.0	90.00	0.00	5,969.0	1,899.8	-447.2	1,924.4	0.00	0.00	
7,500.0	90.00	0.00	5,969.0	1,999.8	-447.2	2,024.1	0.00	0.00	
7,600.0	90.00	0.00	5,969.0	2,099.8	-447.2	2,123.9	0.00	0.00	
7,700.0	90.00	0.00	5,969.0	2,199.8	-447.2	2,223.7	0.00	0.00	
7,800.0	90.00	0.00	5,969.0	2,299.8	-447.2	2,323.5	0.00	0.00	
7,900.0	90.00	0.00	5,969.0	2,399.8	-447.2	2,423.3	0.00	0.00	
8,000.0	90.00	0.00	5,969.0	2,499.8	-447.2	2,523.1	0.00	0.00	
8,100.0	90.00	0.00	5,969.0	2,599.8	-447.2	2,622.9	0.00	0.00	
8,200.0	90.00	0.00	5,969.0	2,699.8	-447.2	2,722.7	0.00	0.00	
8,300.0	90.00	0.00	5,969.0	2,799.8	-447.2	2,822.5	0.00	0.00	
8,400.0	90.00	0.00	5,969.0	2,899.8	-447.2	2,922.3	0.00	0.00	
8,500.0	90.00	0.00	5,969.0	2,999.8	-447.2	3,022.1	0.00	0.00	
8,600.0	90.00	0.00	5,969.0	3,099.8	-447.2	3,121.9	0.00	0.00	
8,700.0	90.00	0.00	5,969.0	3,199.8	-447.2	3,221.7	0.00	0.00	
8,800.0	90.00	0.00	5,969.0	3,299.8	-447.2	3,321.5	0.00	0.00	
8,900.0	90.00	0.00	5,969.0	3,399.8	-447.2	3,421.3	0.00	0.00	
9,000.0	90.00	0.00	5,969.0	3,499.8	-447.2	3,521.1	0.00	0.00	
9,100.0	90.00	0.00	5,969.0	3,599.8	-447.2	3,620.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: Whiting Petroleum Corporation
Project: Weld County, CO
Site: S11-T10N-R58W
Well: Razor #11G-0210B
Wellbore: HZ
Design: Plan #1

Local Co-ordinate Reference: Well Razor #11G-0210B
TVD Reference: WELL @ 4989.7ft (Original Well Elev)
MD Reference: WELL @ 4989.7ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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
9,200.0	90.00	0.00	5,969.0	3,699.8	-447.2	3,720.7	0.00	0.00	
9,300.0	90.00	0.00	5,969.0	3,799.8	-447.2	3,820.5	0.00	0.00	
9,400.0	90.00	0.00	5,969.0	3,899.8	-447.2	3,920.3	0.00	0.00	
9,500.0	90.00	0.00	5,969.0	3,999.8	-447.2	4,020.1	0.00	0.00	
9,600.0	90.00	0.00	5,969.0	4,099.8	-447.2	4,119.9	0.00	0.00	
9,700.0	90.00	0.00	5,969.0	4,199.8	-447.2	4,219.7	0.00	0.00	
9,800.0	90.00	0.00	5,969.0	4,299.8	-447.2	4,319.5	0.00	0.00	
9,900.0	90.00	0.00	5,969.0	4,399.8	-447.2	4,419.3	0.00	0.00	
10,000.0	90.00	0.00	5,969.0	4,499.8	-447.2	4,519.1	0.00	0.00	
10,100.0	90.00	0.00	5,969.0	4,599.8	-447.2	4,618.9	0.00	0.00	
10,200.0	90.00	0.00	5,969.0	4,699.8	-447.2	4,718.7	0.00	0.00	
10,300.0	90.00	0.00	5,969.0	4,799.8	-447.2	4,818.5	0.00	0.00	
10,400.0	90.00	0.00	5,969.0	4,899.8	-447.2	4,918.3	0.00	0.00	
10,500.0	90.00	0.00	5,969.0	4,999.8	-447.2	5,018.1	0.00	0.00	
10,600.0	90.00	0.00	5,969.0	5,099.8	-447.2	5,117.9	0.00	0.00	
10,700.0	90.00	0.00	5,969.0	5,199.8	-447.2	5,217.7	0.00	0.00	
10,800.0	90.00	0.00	5,969.0	5,299.8	-447.2	5,317.5	0.00	0.00	
10,900.0	90.00	0.00	5,969.0	5,399.8	-447.2	5,417.3	0.00	0.00	
11,000.0	90.00	0.00	5,969.0	5,499.8	-447.2	5,517.1	0.00	0.00	
11,100.0	90.00	0.00	5,969.0	5,599.8	-447.1	5,616.9	0.00	0.00	
11,200.0	90.00	0.00	5,969.0	5,699.8	-447.1	5,716.7	0.00	0.00	
11,300.0	90.00	0.00	5,969.0	5,799.8	-447.1	5,816.5	0.00	0.00	
11,400.0	90.00	0.00	5,969.0	5,899.8	-447.1	5,916.3	0.00	0.00	
11,500.0	90.00	0.00	5,969.0	5,999.8	-447.1	6,016.1	0.00	0.00	
11,600.0	90.00	0.00	5,969.0	6,099.8	-447.1	6,115.9	0.00	0.00	
11,700.0	90.00	0.00	5,969.0	6,199.8	-447.1	6,215.7	0.00	0.00	
11,800.0	90.00	0.00	5,969.0	6,299.8	-447.1	6,315.5	0.00	0.00	
11,900.0	90.00	0.00	5,969.0	6,399.8	-447.1	6,415.3	0.00	0.00	
12,000.0	90.00	0.00	5,969.0	6,499.8	-447.1	6,515.1	0.00	0.00	
12,100.0	90.00	0.00	5,969.0	6,599.8	-447.1	6,614.9	0.00	0.00	
12,200.0	90.00	0.00	5,969.0	6,699.8	-447.1	6,714.7	0.00	0.00	
12,300.0	90.00	0.00	5,969.0	6,799.8	-447.1	6,814.5	0.00	0.00	
12,400.0	90.00	0.00	5,969.0	6,899.8	-447.1	6,914.3	0.00	0.00	
12,500.0	90.00	0.00	5,969.0	6,999.8	-447.1	7,014.1	0.00	0.00	
12,533.1	90.00	0.00	5,969.0	7,032.9	-447.1	7,047.1	0.00	0.00	PBHL @ 12,533' MD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Razor #11G-0210B PBH - hit/miss target - Shape - Point	0.00	0.00	5,969.0	7,032.9	-447.1	1,565,429.14	3,461,521.76	40.873547	-103.831161

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor #11G-0210B
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4989.7ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4989.7ft (Original Well Elev)
Site:	S11-T10N-R58W	North Reference:	True
Well:	Razor #11G-0210B	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)	
6,300.0	5,968.9	7" (2.063' FEL-1,503' FNL)	7.000	7.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,861.2	5,811.0	Top Niobrara		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
600.0	600.0	0.0	0.0	KOP @ 700' MD	
800.0	799.8	6.5	-2.6	EOB; 4 Deg Inc	
5,496.0	5,484.4	311.2	-122.9	Start 11 Deg Bulid	
6,277.8	5,968.9	794.5	-313.7	LP @ 6,277' MD	
6,996.2	5,969.0	1,496.0	-447.2	EOT; 0 Deg Azi	
12,533.1	5,969.0	7,032.9	-447.1	PBHL @ 12,533' MD	

Whiting Petroleum Corporation

Weld County, CO

S11-T10N-R58W

Razor #11G-0210B

HZ

Plan #1

Anticollision Report

26 July, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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 1,356.1usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	7/26/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,533.1	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Site Name						
Offset Well - Wellbore - Design						
S11-T10N-R58W						
Razor #11G-0209A - HZ - Plan #1	500.0	500.0	33.0	31.1	16.646	CC, ES
Razor #11G-0209A - HZ - Plan #1	12,533.1	12,538.5	344.7	86.4	1.334	Level 3, SF
Razor #11G-0211A - HZ - Plan #1	600.0	600.0	33.0	30.6	13.572	CC, ES
Razor #11G-0211A - HZ - Plan #1	12,533.1	12,382.8	345.4	86.6	1.335	Level 3, SF
Razor #11G-0212B - HZ - Plan #1	600.0	600.0	66.1	63.7	27.144	CC, ES
Razor #11G-0212B - HZ - Plan #1	12,533.1	12,481.0	659.9	391.5	2.459	SF
Razor #11G-1409A - HZ - Plan #1	600.0	600.0	81.8	79.4	33.618	CC, ES
Razor #11G-1409A - HZ - Plan #1	900.0	896.5	93.8	90.1	24.959	SF
Razor #11G-1410B - HZ - Plan #1	600.0	600.0	74.9	72.5	30.760	CC, ES
Razor #11G-1410B - HZ - Plan #1	800.0	797.2	83.0	79.7	25.102	SF
Razor #11G-1411A - HZ - Plan #1	600.0	600.0	81.9	79.4	33.624	CC, ES
Razor #11G-1411A - HZ - Plan #1	800.0	794.1	95.0	91.7	29.061	SF
Razor #11G-1412B - HZ - Plan #1	500.0	500.0	99.9	97.9	50.320	CC, ES
Razor #11G-1412B - HZ - Plan #1	5,500.0	5,446.7	767.9	743.4	31.419	SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	-89.99	0.0	-33.0	33.0						
100.0	100.0	100.0	100.0	0.1	0.1	-89.99	0.0	-33.0	33.0	32.9	0.19	176.699			
200.0	200.0	200.0	200.0	0.3	0.3	-89.99	0.0	-33.0	33.0	32.4	0.64	51.911			
300.0	300.0	300.0	300.0	0.5	0.5	-89.99	0.0	-33.0	33.0	32.0	1.09	30.425			
400.0	400.0	400.0	400.0	0.8	0.8	-89.99	0.0	-33.0	33.0	31.5	1.54	21.518			
500.0	500.0	500.0	500.0	1.0	1.0	-89.99	0.0	-33.0	33.0	31.1	1.99	16.646	CC, ES		
600.0	600.0	599.4	599.3	1.2	1.2	-87.52	1.5	-34.0	34.0	31.6	2.43	13.981			
700.0	700.0	698.6	698.4	1.4	1.4	-61.72	5.8	-36.7	36.3	33.5	2.88	12.633			
800.0	799.8	798.5	798.1	1.7	1.7	-60.44	11.7	-40.4	38.2	34.9	3.33	11.491			
900.0	899.6	898.5	897.9	1.9	1.9	-61.50	17.7	-44.1	39.3	35.5	3.79	10.367			
1,000.0	999.4	998.5	997.6	2.1	2.2	-62.51	23.6	-47.8	40.4	36.1	4.26	9.471			
1,100.0	1,099.1	1,098.5	1,097.4	2.4	2.4	-63.46	29.5	-51.5	41.4	36.7	4.74	8.743			
1,200.0	1,198.9	1,198.5	1,197.1	2.6	2.7	-64.36	35.4	-55.2	42.5	37.3	5.22	8.144			
1,300.0	1,298.6	1,298.5	1,296.9	2.9	2.9	-65.22	41.3	-58.9	43.6	37.9	5.71	7.642			
1,400.0	1,398.4	1,398.5	1,396.6	3.1	3.2	-66.04	47.2	-62.6	44.7	38.5	6.20	7.216			
1,500.0	1,498.1	1,498.5	1,496.4	3.4	3.4	-66.82	53.1	-66.3	45.8	39.2	6.69	6.852			
1,600.0	1,597.9	1,598.5	1,596.1	3.6	3.7	-67.56	59.1	-70.0	47.0	39.8	7.19	6.536			
1,700.0	1,697.6	1,698.5	1,695.9	3.9	3.9	-68.26	65.0	-73.7	48.1	40.4	7.68	6.261			
1,800.0	1,797.4	1,798.4	1,795.6	4.1	4.2	-68.94	70.9	-77.4	49.2	41.1	8.18	6.018			
1,900.0	1,897.2	1,898.4	1,895.4	4.4	4.4	-69.58	76.8	-81.1	50.4	41.7	8.68	5.803			
2,000.0	1,996.9	1,998.4	1,995.1	4.6	4.7	-70.19	82.7	-84.8	51.5	42.4	9.19	5.612			
2,100.0	2,096.7	2,098.4	2,094.9	4.9	4.9	-70.78	88.6	-88.5	52.7	43.0	9.69	5.440			
2,200.0	2,196.4	2,198.4	2,194.6	5.1	5.2	-71.34	94.5	-92.2	53.9	43.7	10.19	5.285			
2,300.0	2,296.2	2,298.4	2,294.3	5.4	5.4	-71.88	100.4	-95.9	55.0	44.3	10.70	5.145			
2,400.0	2,395.9	2,398.4	2,394.1	5.7	5.7	-72.39	106.4	-99.6	56.2	45.0	11.20	5.017			
2,500.0	2,495.7	2,498.4	2,493.8	5.9	6.0	-72.89	112.3	-103.3	57.4	45.7	11.71	4.900			
2,600.0	2,595.5	2,598.4	2,593.6	6.2	6.2	-73.36	118.2	-107.0	58.6	46.3	12.22	4.794			
2,700.0	2,695.2	2,698.4	2,693.3	6.4	6.5	-73.82	124.1	-110.7	59.8	47.0	12.73	4.695			
2,800.0	2,795.0	2,798.4	2,793.1	6.7	6.7	-74.26	130.0	-114.4	60.9	47.7	13.23	4.605			
2,900.0	2,894.7	2,898.4	2,892.8	6.9	7.0	-74.68	135.9	-118.1	62.1	48.4	13.74	4.521			
3,000.0	2,994.5	2,998.3	2,992.6	7.2	7.2	-75.08	141.8	-121.8	63.3	49.1	14.25	4.443			
3,100.0	3,094.2	3,098.3	3,092.3	7.4	7.5	-75.47	147.7	-125.5	64.5	49.8	14.76	4.371			
3,200.0	3,194.0	3,198.3	3,192.1	7.7	7.8	-75.85	153.7	-129.2	65.7	50.5	15.27	4.304			
3,300.0	3,293.7	3,298.3	3,291.8	8.0	8.0	-76.21	159.6	-132.9	66.9	51.2	15.78	4.241			
3,400.0	3,393.5	3,398.3	3,391.6	8.2	8.3	-76.56	165.5	-136.6	68.1	51.8	16.29	4.182			
3,500.0	3,493.3	3,498.3	3,491.3	8.5	8.5	-76.90	171.4	-140.3	69.4	52.5	16.81	4.127			
3,600.0	3,593.0	3,598.3	3,591.1	8.7	8.8	-77.22	177.3	-144.0	70.6	53.2	17.32	4.075			
3,700.0	3,692.8	3,698.3	3,690.8	9.0	9.0	-77.54	183.2	-147.7	71.8	53.9	17.83	4.026			
3,800.0	3,792.5	3,798.3	3,790.6	9.2	9.3	-77.84	189.1	-151.4	73.0	54.7	18.34	3.980			
3,900.0	3,892.3	3,898.3	3,890.3	9.5	9.6	-78.14	195.0	-155.1	74.2	55.4	18.85	3.936			
4,000.0	3,992.0	3,998.3	3,990.1	9.7	9.8	-78.42	201.0	-158.8	75.4	56.1	19.36	3.895			
4,100.0	4,091.8	4,098.3	4,089.8	10.0	10.1	-78.70	206.9	-162.5	76.7	56.8	19.88	3.856			
4,200.0	4,191.6	4,198.2	4,189.6	10.3	10.3	-78.96	212.8	-166.2	77.9	57.5	20.39	3.819			
4,300.0	4,291.3	4,298.2	4,289.3	10.5	10.6	-79.22	218.7	-169.9	79.1	58.2	20.90	3.784			
4,400.0	4,391.1	4,398.2	4,389.1	10.8	10.8	-79.47	224.6	-173.6	80.3	58.9	21.41	3.751			
4,500.0	4,490.8	4,498.2	4,488.8	11.0	11.1	-79.72	230.5	-177.3	81.6	59.6	21.93	3.719			
4,600.0	4,590.6	4,598.2	4,588.6	11.3	11.4	-79.95	236.4	-181.0	82.8	60.3	22.44	3.689			
4,700.0	4,690.3	4,698.2	4,688.3	11.5	11.6	-80.18	242.3	-184.7	84.0	61.1	22.95	3.660			
4,800.0	4,790.1	4,798.2	4,788.1	11.8	11.9	-80.41	248.3	-188.4	85.2	61.8	23.47	3.633			
4,900.0	4,889.9	4,898.2	4,887.8	12.1	12.1	-80.62	254.2	-192.1	86.5	62.5	23.98	3.606			
5,000.0	4,989.6	4,998.2	4,987.6	12.3	12.4	-80.83	260.1	-195.8	87.7	63.2	24.49	3.581			
5,100.0	5,089.4	5,098.2	5,087.3	12.6	12.6	-81.04	266.0	-199.5	89.0	63.9	25.01	3.557			

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	5,189.1	5,198.2	5,187.0	12.8	12.9	-81.23	271.9	-203.2	90.2	64.7	25.52	3.534			
5,300.0	5,288.9	5,298.2	5,286.8	13.1	13.2	-81.43	277.8	-206.9	91.4	65.4	26.04	3.512			
5,400.0	5,388.6	5,398.0	5,386.4	13.3	13.4	-81.61	283.7	-210.6	92.7	66.1	26.55	3.490			
5,500.0	5,488.4	5,491.4	5,478.4	13.6	13.7	-76.77	296.7	-218.7	97.4	70.4	26.99	3.608			
5,600.0	5,586.7	5,581.5	5,563.2	13.9	14.2	-68.72	322.3	-234.7	108.1	80.7	27.40	3.946			
5,700.0	5,680.0	5,669.3	5,639.7	14.4	14.8	-63.31	358.7	-257.5	122.0	94.1	27.84	4.382			
5,800.0	5,764.7	5,755.1	5,706.3	15.1	15.5	-60.07	404.3	-286.1	137.4	109.1	28.31	4.853			
5,900.0	5,837.8	5,839.3	5,762.4	16.0	16.3	-58.46	457.5	-319.4	153.3	124.3	28.97	5.291			
6,000.0	5,896.6	5,922.3	5,807.0	17.1	17.3	-58.03	516.7	-356.4	169.1	139.1	30.06	5.626			
6,100.0	5,938.9	6,004.5	5,839.7	18.4	18.4	-58.46	580.6	-396.4	184.5	152.7	31.77	5.806			
6,200.0	5,963.1	6,086.4	5,860.1	19.8	19.7	-59.53	647.8	-438.4	199.1	164.9	34.19	5.822			
6,300.0	5,968.9	6,168.5	5,867.9	21.3	21.0	-61.28	716.9	-481.7	213.2	175.9	37.26	5.721			
6,400.0	5,968.9	6,275.1	5,867.9	22.8	22.7	-63.59	808.6	-536.1	230.6	189.9	40.71	5.665			
6,500.0	5,968.9	6,385.9	5,867.9	24.3	24.5	-65.58	906.9	-587.1	248.0	203.8	44.15	5.617			
6,600.0	5,968.9	6,498.0	5,867.9	25.9	26.3	-67.26	1,009.2	-632.9	265.1	217.5	47.53	5.577			
6,700.0	5,968.9	6,611.4	5,867.9	27.4	28.2	-68.69	1,115.4	-673.0	281.7	230.9	50.82	5.543			
6,800.0	5,968.9	6,726.3	5,867.9	29.0	30.2	-69.91	1,225.0	-707.1	297.8	243.8	54.00	5.515			
6,900.0	5,968.9	6,842.5	5,867.9	30.6	32.1	-70.97	1,337.8	-734.8	313.3	256.3	57.04	5.492			
7,000.0	5,968.9	6,960.0	5,867.9	32.2	34.1	-71.88	1,453.4	-755.9	328.0	268.0	59.97	5.470			
7,100.0	5,968.9	7,079.2	5,867.9	33.8	36.0	-72.62	1,571.8	-769.9	339.2	275.5	63.72	5.324			
7,200.0	5,968.9	7,199.6	5,867.9	35.5	38.0	-72.95	1,692.0	-776.5	344.5	277.1	67.42	5.110			
7,300.0	5,968.9	7,307.5	5,867.9	37.2	39.7	-72.97	1,799.8	-777.1	344.9	274.1	70.84	4.869			
7,400.0	5,968.9	7,407.5	5,867.9	38.9	41.2	-72.97	1,899.8	-777.0	344.9	270.8	74.13	4.653			
7,500.0	5,968.9	7,507.5	5,867.9	40.6	42.8	-72.97	1,999.8	-777.0	344.9	267.5	77.46	4.453			
7,600.0	5,968.9	7,607.5	5,867.9	42.3	44.5	-72.97	2,099.8	-777.0	344.9	264.1	80.82	4.268			
7,700.0	5,968.9	7,707.5	5,867.9	44.1	46.1	-72.97	2,199.8	-777.0	344.9	260.7	84.21	4.096			
7,800.0	5,968.9	7,807.5	5,867.9	45.8	47.8	-72.97	2,299.8	-777.0	344.9	257.3	87.63	3.936			
7,900.0	5,968.9	7,907.5	5,868.0	47.6	49.5	-72.97	2,399.8	-777.0	344.9	253.8	91.06	3.788			
8,000.0	5,969.0	8,007.5	5,868.0	49.4	51.2	-72.97	2,499.8	-777.0	344.9	250.4	94.52	3.649			
8,100.0	5,969.0	8,107.5	5,868.0	51.2	52.9	-72.97	2,599.8	-777.0	344.9	246.9	97.99	3.520			
8,200.0	5,969.0	8,207.5	5,868.0	53.0	54.6	-72.97	2,699.8	-777.0	344.9	243.4	101.48	3.398			
8,300.0	5,969.0	8,307.5	5,868.0	54.8	56.4	-72.97	2,799.8	-777.0	344.9	239.9	104.99	3.285			
8,400.0	5,969.0	8,407.5	5,868.0	56.6	58.1	-72.97	2,899.8	-777.0	344.9	236.4	108.51	3.178			
8,500.0	5,969.0	8,507.5	5,868.0	58.5	59.9	-72.97	2,999.8	-777.0	344.9	232.8	112.04	3.078			
8,600.0	5,969.0	8,607.5	5,868.0	60.3	61.6	-72.97	3,099.8	-777.0	344.9	229.3	115.57	2.984			
8,700.0	5,969.0	8,707.5	5,868.0	62.1	63.4	-72.97	3,199.8	-777.0	344.9	225.7	119.12	2.895			
8,800.0	5,969.0	8,807.5	5,868.0	64.0	65.2	-72.97	3,299.8	-776.9	344.9	222.2	122.68	2.811			
8,900.0	5,969.0	8,907.5	5,868.0	65.8	67.0	-72.97	3,399.8	-776.9	344.9	218.6	126.25	2.732			
9,000.0	5,969.0	9,007.5	5,868.0	67.7	68.8	-72.97	3,499.8	-776.9	344.9	215.0	129.82	2.656			
9,100.0	5,969.0	9,107.5	5,868.0	69.5	70.6	-72.97	3,599.8	-776.9	344.9	211.4	133.40	2.585			
9,200.0	5,969.0	9,207.5	5,868.0	71.4	72.4	-72.97	3,699.8	-776.9	344.8	207.9	136.99	2.517			
9,300.0	5,969.0	9,307.5	5,868.0	73.3	74.3	-72.97	3,799.8	-776.9	344.8	204.3	140.58	2.453			
9,400.0	5,969.0	9,407.5	5,868.0	75.1	76.1	-72.97	3,899.8	-776.9	344.8	200.7	144.18	2.392			
9,500.0	5,969.0	9,507.5	5,868.0	77.0	77.9	-72.97	3,999.8	-776.9	344.8	197.1	147.78	2.333			
9,600.0	5,969.0	9,607.5	5,868.0	78.9	79.8	-72.97	4,099.8	-776.9	344.8	193.4	151.39	2.278			
9,700.0	5,969.0	9,707.5	5,868.0	80.7	81.6	-72.97	4,199.8	-776.9	344.8	189.8	155.00	2.225			
9,800.0	5,969.0	9,807.5	5,868.0	82.6	83.4	-72.97	4,299.8	-776.9	344.8	186.2	158.62	2.174			
9,900.0	5,969.0	9,907.5	5,868.0	84.5	85.3	-72.97	4,399.8	-776.9	344.8	182.6	162.24	2.125			
10,000.0	5,969.0	10,007.5	5,868.0	86.4	87.1	-72.97	4,499.8	-776.9	344.8	179.0	165.86	2.079			
10,100.0	5,969.0	10,107.5	5,868.0	88.3	89.0	-72.97	4,599.8	-776.9	344.8	175.3	169.49	2.034			
10,200.0	5,969.0	10,207.5	5,868.0	90.1	90.8	-72.97	4,699.8	-776.8	344.8	171.7	173.12	1.992			
10,300.0	5,969.0	10,307.5	5,868.0	92.0	92.7	-72.97	4,799.8	-776.8	344.8	168.1	176.75	1.951			

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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)					
10,400.0	5,969.0	10,407.5	5,868.0	93.9	94.6	-72.97	4,899.8	-776.8	344.8	164.4	180.38	1.911			
10,500.0	5,969.0	10,507.5	5,868.0	95.8	96.4	-72.97	4,999.8	-776.8	344.8	160.8	184.02	1.874			
10,600.0	5,969.0	10,607.5	5,868.0	97.7	98.3	-72.97	5,099.8	-776.8	344.8	157.1	187.66	1.837			
10,700.0	5,969.0	10,707.5	5,868.0	99.6	100.2	-72.97	5,199.8	-776.8	344.8	153.5	191.30	1.802			
10,800.0	5,969.0	10,807.5	5,868.0	101.5	102.0	-72.97	5,299.8	-776.8	344.8	149.8	194.95	1.769			
10,900.0	5,969.0	10,907.5	5,868.0	103.4	103.9	-72.97	5,399.8	-776.8	344.8	146.2	198.59	1.736			
11,000.0	5,969.0	11,007.5	5,868.0	105.3	105.8	-72.97	5,499.8	-776.8	344.8	142.5	202.24	1.705			
11,100.0	5,969.0	11,107.5	5,868.0	107.1	107.7	-72.97	5,599.8	-776.8	344.8	138.9	205.89	1.674			
11,200.0	5,969.0	11,207.5	5,868.0	109.0	109.5	-72.96	5,699.8	-776.8	344.8	135.2	209.54	1.645			
11,300.0	5,969.0	11,307.5	5,868.0	110.9	111.4	-72.96	5,799.8	-776.8	344.8	131.6	213.20	1.617			
11,400.0	5,969.0	11,407.5	5,868.0	112.8	113.3	-72.96	5,899.8	-776.8	344.8	127.9	216.85	1.590			
11,500.0	5,969.0	11,507.5	5,868.0	114.7	115.2	-72.96	5,999.8	-776.8	344.7	124.2	220.51	1.563			
11,600.0	5,969.0	11,607.5	5,868.0	116.6	117.1	-72.96	6,099.8	-776.8	344.7	120.6	224.17	1.538			
11,700.0	5,969.0	11,707.5	5,868.0	118.5	118.9	-72.96	6,199.8	-776.7	344.7	116.9	227.83	1.513			
11,800.0	5,969.0	11,807.5	5,868.0	120.4	120.8	-72.96	6,299.8	-776.7	344.7	113.2	231.49	1.489 Level 3			
11,900.0	5,969.0	11,907.5	5,868.0	122.3	122.7	-72.96	6,399.8	-776.7	344.7	109.6	235.15	1.466 Level 3			
12,000.0	5,969.0	12,007.5	5,868.0	124.2	124.6	-72.96	6,499.8	-776.7	344.7	105.9	238.81	1.444 Level 3			
12,100.0	5,969.0	12,107.5	5,868.0	126.1	126.5	-72.96	6,599.8	-776.7	344.7	102.2	242.47	1.422 Level 3			
12,200.0	5,969.0	12,207.5	5,868.0	128.0	128.4	-72.96	6,699.8	-776.7	344.7	98.6	246.14	1.400 Level 3			
12,300.0	5,969.0	12,307.5	5,868.0	129.9	130.3	-72.96	6,799.8	-776.7	344.7	94.9	249.80	1.380 Level 3			
12,400.0	5,969.0	12,407.5	5,868.0	131.9	132.2	-72.96	6,899.8	-776.7	344.7	91.2	253.47	1.360 Level 3			
12,500.0	5,969.0	12,507.5	5,868.0	133.8	134.0	-72.96	6,999.8	-776.7	344.7	87.6	257.14	1.341 Level 3			
12,526.5	5,969.0	12,533.9	5,868.0	134.3	134.5	-72.96	7,026.3	-776.7	344.7	86.6	258.11	1.335 Level 3			
12,533.1	5,969.0	12,538.5	5,868.0	134.4	134.6	-72.96	7,030.9	-776.7	344.7	86.4	258.31	1.334 Level 3, 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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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			
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	33.0	33.0						
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	33.0	33.0	32.9	0.19	176.699			
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	33.0	33.0	32.4	0.64	51.911			
300.0	300.0	300.0	300.0	0.5	0.5	90.01	0.0	33.0	33.0	32.0	1.09	30.425			
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	33.0	33.0	31.5	1.54	21.518			
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	33.0	33.0	31.1	1.99	16.646			
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	33.0	33.0	30.6	2.43	13.572 CC, ES			
700.0	700.0	700.0	700.0	1.4	1.4	114.31	0.0	33.0	33.7	30.8	2.88	11.699			
800.0	799.8	800.2	800.2	1.7	1.7	119.23	1.7	32.7	35.6	32.3	3.33	10.695			
900.0	899.6	900.6	900.5	1.9	1.9	120.91	6.9	31.8	37.4	33.7	3.78	9.893			
1,000.0	999.4	1,000.6	1,000.2	2.1	2.1	120.03	13.8	30.6	38.7	34.5	4.25	9.108			
1,100.0	1,099.1	1,100.6	1,100.0	2.4	2.4	119.21	20.6	29.4	40.0	35.2	4.72	8.464			
1,200.0	1,198.9	1,200.6	1,199.7	2.6	2.6	118.44	27.5	28.1	41.2	36.0	5.20	7.929			
1,300.0	1,298.6	1,300.6	1,299.5	2.9	2.8	117.72	34.4	26.9	42.5	36.8	5.69	7.479			
1,400.0	1,398.4	1,400.6	1,399.2	3.1	3.1	117.04	41.2	25.7	43.8	37.6	6.17	7.096			
1,500.0	1,498.1	1,500.6	1,498.9	3.4	3.3	116.40	48.1	24.4	45.1	38.4	6.67	6.767			
1,600.0	1,597.9	1,600.6	1,598.7	3.6	3.6	115.79	55.0	23.2	46.4	39.3	7.16	6.481			
1,700.0	1,697.6	1,700.6	1,698.4	3.9	3.8	115.22	61.8	22.0	47.7	40.1	7.66	6.231			
1,800.0	1,797.4	1,800.5	1,798.2	4.1	4.1	114.68	68.7	20.8	49.0	40.9	8.16	6.011			
1,900.0	1,897.2	1,900.5	1,897.9	4.4	4.3	114.16	75.6	19.5	50.3	41.7	8.66	5.816			
2,000.0	1,996.9	2,000.5	1,997.7	4.6	4.6	113.68	82.4	18.3	51.7	42.5	9.16	5.641			
2,100.0	2,096.7	2,100.5	2,097.4	4.9	4.8	113.21	89.3	17.1	53.0	43.3	9.66	5.484			
2,200.0	2,196.4	2,200.5	2,197.2	5.1	5.1	112.77	96.2	15.9	54.3	44.1	10.17	5.343			
2,300.0	2,296.2	2,300.5	2,296.9	5.4	5.3	112.35	103.0	14.6	55.6	45.0	10.67	5.215			
2,400.0	2,395.9	2,400.5	2,396.7	5.7	5.6	111.95	109.9	13.4	57.0	45.8	11.18	5.098			
2,500.0	2,495.7	2,500.5	2,496.4	5.9	5.9	111.57	116.8	12.2	58.3	46.6	11.68	4.991			
2,600.0	2,595.5	2,600.5	2,596.2	6.2	6.1	111.21	123.6	11.0	59.6	47.5	12.19	4.893			
2,700.0	2,695.2	2,700.5	2,695.9	6.4	6.4	110.86	130.5	9.7	61.0	48.3	12.70	4.803			
2,800.0	2,795.0	2,800.4	2,795.7	6.7	6.6	110.52	137.4	8.5	62.3	49.1	13.20	4.720			
2,900.0	2,894.7	2,900.4	2,895.4	6.9	6.9	110.20	144.2	7.3	63.7	50.0	13.71	4.643			
3,000.0	2,994.5	3,000.4	2,995.1	7.2	7.1	109.90	151.1	6.0	65.0	50.8	14.22	4.571			
3,100.0	3,094.2	3,100.4	3,094.9	7.4	7.4	109.60	158.0	4.8	66.4	51.6	14.73	4.505			
3,200.0	3,194.0	3,200.4	3,194.6	7.7	7.6	109.32	164.8	3.6	67.7	52.5	15.24	4.443			
3,300.0	3,293.7	3,300.4	3,294.4	8.0	7.9	109.05	171.7	2.4	69.1	53.3	15.75	4.385			
3,400.0	3,393.5	3,400.4	3,394.1	8.2	8.1	108.79	178.6	1.1	70.4	54.1	16.26	4.330			
3,500.0	3,493.3	3,500.4	3,493.9	8.5	8.4	108.54	185.4	-0.1	71.8	55.0	16.77	4.279			
3,600.0	3,593.0	3,600.4	3,593.6	8.7	8.7	108.30	192.3	-1.3	73.1	55.8	17.28	4.231			
3,700.0	3,692.8	3,700.4	3,693.4	9.0	8.9	108.06	199.2	-2.5	74.5	56.7	17.79	4.186			
3,800.0	3,792.5	3,800.4	3,793.1	9.2	9.2	107.84	206.0	-3.8	75.8	57.5	18.30	4.143			
3,900.0	3,892.3	3,900.3	3,892.9	9.5	9.4	107.62	212.9	-5.0	77.2	58.4	18.81	4.103			
4,000.0	3,992.0	4,000.3	3,992.6	9.7	9.7	107.41	219.8	-6.2	78.5	59.2	19.32	4.065			
4,100.0	4,091.8	4,100.3	4,092.4	10.0	9.9	107.21	226.6	-7.4	79.9	60.1	19.83	4.028			
4,200.0	4,191.6	4,200.3	4,192.1	10.3	10.2	107.01	233.5	-8.7	81.3	60.9	20.34	3.994			
4,300.0	4,291.3	4,300.3	4,291.9	10.5	10.4	106.83	240.4	-9.9	82.6	61.8	20.86	3.961			
4,400.0	4,391.1	4,400.3	4,391.6	10.8	10.7	106.64	247.2	-11.1	84.0	62.6	21.37	3.930			
4,500.0	4,490.8	4,500.3	4,491.4	11.0	11.0	106.47	254.1	-12.4	85.3	63.5	21.88	3.901			
4,600.0	4,590.6	4,600.3	4,591.1	11.3	11.2	106.29	261.0	-13.6	86.7	64.3	22.39	3.872			
4,700.0	4,690.3	4,700.3	4,690.8	11.5	11.5	106.13	267.8	-14.8	88.1	65.2	22.90	3.846			
4,800.0	4,790.1	4,800.3	4,790.6	11.8	11.7	105.97	274.7	-16.0	89.4	66.0	23.42	3.820			
4,900.0	4,889.9	4,900.2	4,890.3	12.1	12.0	105.81	281.6	-17.3	90.8	66.9	23.93	3.795			
5,000.0	4,989.6	5,000.2	4,990.1	12.3	12.2	105.66	288.4	-18.5	92.2	67.7	24.44	3.771			
5,100.0	5,089.4	5,100.2	5,089.8	12.6	12.5	105.51	295.3	-19.7	93.5	68.6	24.95	3.749			

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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		
5,200.0	5,189.1	5,200.2	5,189.6	12.8	12.8	105.37	302.2	-20.9	94.9	69.4	25.46	3.727		
5,300.0	5,288.9	5,300.2	5,289.3	13.1	13.0	105.23	309.0	-22.2	96.3	70.3	25.98	3.706		
5,400.0	5,388.6	5,400.3	5,389.1	13.3	13.3	105.08	315.9	-23.4	97.6	71.2	26.49	3.686		
5,500.0	5,488.4	5,500.0	5,487.2	13.6	13.6	98.85	333.0	-26.5	98.9	71.8	27.15	3.643		
5,600.0	5,586.7	5,595.5	5,576.3	13.9	14.1	88.16	366.4	-32.4	104.9	77.0	27.96	3.753		
5,700.0	5,680.0	5,687.7	5,655.2	14.4	14.7	79.34	413.3	-40.8	117.1	88.2	28.86	4.058		
5,800.0	5,764.7	5,777.1	5,722.4	15.1	15.4	72.88	471.0	-51.1	133.4	103.6	29.76	4.483		
5,900.0	5,837.8	5,864.0	5,777.3	16.0	16.3	68.48	537.3	-63.0	152.1	121.4	30.70	4.953		
6,000.0	5,896.6	5,950.0	5,819.8	17.1	17.3	65.65	610.7	-76.1	171.8	140.0	31.85	5.395		
6,100.0	5,938.9	6,032.6	5,848.6	18.4	18.3	63.99	686.9	-89.7	191.7	158.3	33.34	5.749		
6,200.0	5,963.1	6,115.3	5,864.8	19.8	19.5	63.19	766.6	-103.9	211.0	175.7	35.30	5.976		
6,300.0	5,968.9	6,190.0	5,868.4	21.3	20.6	63.40	840.1	-116.5	229.9	192.2	37.70	6.099		
6,400.0	5,968.9	6,259.4	5,868.4	22.8	21.6	66.06	909.4	-117.0	258.3	217.6	40.67	6.351		
6,500.0	5,968.9	6,355.3	5,868.4	24.3	23.0	68.65	1,005.4	-117.0	284.5	240.4	44.07	6.454		
6,600.0	5,968.9	6,452.6	5,868.4	25.9	24.5	70.45	1,102.6	-117.0	306.2	258.9	47.39	6.463		
6,700.0	5,968.9	6,550.9	5,868.4	27.4	26.1	71.68	1,201.0	-117.0	323.3	272.7	50.59	6.391		
6,800.0	5,968.9	6,650.1	5,868.4	29.0	27.8	72.48	1,300.1	-117.0	335.6	281.9	53.69	6.250		
6,900.0	5,968.9	6,749.8	5,868.4	30.6	29.5	72.93	1,399.8	-117.0	342.9	286.2	56.66	6.052		
7,000.0	5,968.9	6,849.7	5,868.4	32.2	31.2	73.06	1,499.8	-117.0	345.2	285.7	59.48	5.804		
7,100.0	5,968.9	6,949.7	5,868.4	33.8	32.9	73.06	1,599.8	-117.0	345.2	282.4	62.77	5.499		
7,200.0	5,968.9	7,049.7	5,868.4	35.5	34.7	73.06	1,699.8	-117.0	345.2	279.1	66.11	5.222		
7,300.0	5,968.9	7,149.7	5,868.4	37.2	36.5	73.06	1,799.8	-117.0	345.2	275.7	69.49	4.968		
7,400.0	5,968.9	7,249.7	5,868.4	38.9	38.3	73.06	1,899.8	-117.0	345.2	272.3	72.89	4.736		
7,500.0	5,968.9	7,349.7	5,868.3	40.6	40.1	73.06	1,999.8	-117.0	345.2	268.9	76.33	4.523		
7,600.0	5,968.9	7,449.7	5,868.3	42.3	41.9	73.06	2,099.8	-117.0	345.2	265.4	79.79	4.327		
7,700.0	5,968.9	7,549.7	5,868.3	44.1	43.7	73.06	2,199.8	-117.0	345.2	262.0	83.27	4.146		
7,800.0	5,968.9	7,649.7	5,868.3	45.8	45.5	73.05	2,299.8	-117.0	345.2	258.5	86.77	3.979		
7,900.0	5,968.9	7,749.7	5,868.3	47.6	47.4	73.05	2,399.8	-117.0	345.2	255.0	90.28	3.824		
8,000.0	5,969.0	7,849.7	5,868.3	49.4	49.2	73.05	2,499.8	-117.0	345.2	251.4	93.81	3.680		
8,100.0	5,969.0	7,949.7	5,868.3	51.2	51.1	73.05	2,599.8	-117.0	345.2	247.9	97.35	3.546		
8,200.0	5,969.0	8,049.7	5,868.3	53.0	52.9	73.05	2,699.8	-117.0	345.3	244.4	100.90	3.422		
8,300.0	5,969.0	8,149.7	5,868.3	54.8	54.8	73.05	2,799.8	-117.0	345.3	240.8	104.46	3.305		
8,400.0	5,969.0	8,249.7	5,868.3	56.6	56.7	73.05	2,899.8	-117.0	345.3	237.2	108.04	3.196		
8,500.0	5,969.0	8,349.7	5,868.3	58.5	58.5	73.05	2,999.8	-117.0	345.3	233.6	111.62	3.093		
8,600.0	5,969.0	8,449.7	5,868.3	60.3	60.4	73.05	3,099.8	-116.9	345.3	230.1	115.21	2.997		
8,700.0	5,969.0	8,549.7	5,868.3	62.1	62.3	73.04	3,199.8	-116.9	345.3	226.5	118.80	2.906		
8,800.0	5,969.0	8,649.7	5,868.3	64.0	64.1	73.04	3,299.8	-116.9	345.3	222.9	122.40	2.821		
8,900.0	5,969.0	8,749.7	5,868.2	65.8	66.0	73.04	3,399.8	-116.9	345.3	219.3	126.01	2.740		
9,000.0	5,969.0	8,849.7	5,868.2	67.7	67.9	73.04	3,499.8	-116.9	345.3	215.7	129.62	2.664		
9,100.0	5,969.0	8,949.7	5,868.2	69.5	69.8	73.04	3,599.8	-116.9	345.3	212.1	133.24	2.592		
9,200.0	5,969.0	9,049.7	5,868.2	71.4	71.7	73.04	3,699.8	-116.9	345.3	208.4	136.86	2.523		
9,300.0	5,969.0	9,149.7	5,868.2	73.3	73.6	73.04	3,799.8	-116.9	345.3	204.8	140.49	2.458		
9,400.0	5,969.0	9,249.7	5,868.2	75.1	75.5	73.04	3,899.8	-116.9	345.3	201.2	144.12	2.396		
9,500.0	5,969.0	9,349.7	5,868.2	77.0	77.4	73.03	3,999.8	-116.9	345.3	197.6	147.75	2.337		
9,600.0	5,969.0	9,449.7	5,868.2	78.9	79.2	73.03	4,099.8	-116.9	345.3	193.9	151.39	2.281		
9,700.0	5,969.0	9,549.7	5,868.2	80.7	81.1	73.03	4,199.8	-116.9	345.3	190.3	155.03	2.227		
9,800.0	5,969.0	9,649.7	5,868.2	82.6	83.0	73.03	4,299.8	-116.9	345.3	186.7	158.67	2.176		
9,900.0	5,969.0	9,749.7	5,868.2	84.5	84.9	73.03	4,399.8	-116.9	345.3	183.0	162.31	2.128		
10,000.0	5,969.0	9,849.7	5,868.2	86.4	86.8	73.03	4,499.8	-116.9	345.3	179.4	165.96	2.081		
10,100.0	5,969.0	9,949.7	5,868.2	88.3	88.7	73.03	4,599.8	-116.9	345.3	175.7	169.61	2.036		
10,200.0	5,969.0	10,049.7	5,868.2	90.1	90.6	73.03	4,699.8	-116.9	345.3	172.1	173.26	1.993		
10,300.0	5,969.0	10,149.7	5,868.2	92.0	92.5	73.03	4,799.8	-116.9	345.3	168.4	176.91	1.952		

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	5,969.0	10,249.7	5,868.1	93.9	94.4	73.02	4,899.8	-116.9	345.3	164.8	180.57	1.913			
10,500.0	5,969.0	10,349.7	5,868.1	95.8	96.3	73.02	4,999.8	-116.9	345.3	161.1	184.23	1.875			
10,600.0	5,969.0	10,449.7	5,868.1	97.7	98.2	73.02	5,099.8	-116.9	345.4	157.5	187.89	1.838			
10,700.0	5,969.0	10,549.7	5,868.1	99.6	100.1	73.02	5,199.8	-116.9	345.4	153.8	191.55	1.803			
10,800.0	5,969.0	10,649.7	5,868.1	101.5	102.0	73.02	5,299.8	-116.8	345.4	150.2	195.21	1.769			
10,900.0	5,969.0	10,749.7	5,868.1	103.4	104.0	73.02	5,399.8	-116.8	345.4	146.5	198.87	1.737			
11,000.0	5,969.0	10,849.7	5,868.1	105.3	105.9	73.02	5,499.8	-116.8	345.4	142.8	202.54	1.705			
11,100.0	5,969.0	10,949.7	5,868.1	107.1	107.8	73.02	5,599.8	-116.8	345.4	139.2	206.20	1.675			
11,200.0	5,969.0	11,049.7	5,868.1	109.0	109.7	73.01	5,699.8	-116.8	345.4	135.5	209.87	1.646			
11,300.0	5,969.0	11,149.7	5,868.1	110.9	111.6	73.01	5,799.8	-116.8	345.4	131.8	213.54	1.617			
11,400.0	5,969.0	11,249.7	5,868.1	112.8	113.5	73.01	5,899.8	-116.8	345.4	128.2	217.21	1.590			
11,500.0	5,969.0	11,349.7	5,868.1	114.7	115.4	73.01	5,999.8	-116.8	345.4	124.5	220.88	1.564			
11,600.0	5,969.0	11,449.7	5,868.1	116.6	117.3	73.01	6,099.8	-116.8	345.4	120.8	224.55	1.538			
11,700.0	5,969.0	11,549.7	5,868.1	118.5	119.2	73.01	6,199.8	-116.8	345.4	117.2	228.22	1.513			
11,800.0	5,969.0	11,649.7	5,868.1	120.4	121.1	73.01	6,299.8	-116.8	345.4	113.5	231.89	1.490	Level 3		
11,900.0	5,969.0	11,749.7	5,868.0	122.3	123.0	73.01	6,399.8	-116.8	345.4	109.8	235.57	1.466	Level 3		
12,000.0	5,969.0	11,849.7	5,868.0	124.2	124.9	73.01	6,499.8	-116.8	345.4	106.2	239.24	1.444	Level 3		
12,100.0	5,969.0	11,949.7	5,868.0	126.1	126.9	73.00	6,599.8	-116.8	345.4	102.5	242.92	1.422	Level 3		
12,200.0	5,969.0	12,049.7	5,868.0	128.0	128.8	73.00	6,699.8	-116.8	345.4	98.8	246.59	1.401	Level 3		
12,300.0	5,969.0	12,149.7	5,868.0	129.9	130.7	73.00	6,799.8	-116.8	345.4	95.2	250.27	1.380	Level 3		
12,400.0	5,969.0	12,249.7	5,868.0	131.9	132.6	73.00	6,899.8	-116.8	345.4	91.5	253.95	1.360	Level 3		
12,500.0	5,969.0	12,349.7	5,868.0	133.8	134.5	73.00	6,999.8	-116.8	345.4	87.8	257.62	1.341	Level 3		
12,533.1	5,969.0	12,382.8	5,868.0	134.4	135.1	73.00	7,032.9	-116.8	345.4	86.6	258.84	1.335	Level 3, 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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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			
0.0	0.0	0.0	0.0	0.0	0.0	90.02	0.0	66.1	66.1						
100.0	100.0	100.0	100.0	0.1	0.1	90.02	0.0	66.1	66.1	65.9	0.19	353.397			
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	66.1	66.1	65.5	0.64	103.823			
300.0	300.0	300.0	300.0	0.5	0.5	90.02	0.0	66.1	66.1	65.0	1.09	60.850			
400.0	400.0	400.0	400.0	0.8	0.8	90.02	0.0	66.1	66.1	64.6	1.54	43.037			
500.0	500.0	500.0	500.0	1.0	1.0	90.02	0.0	66.1	66.1	64.1	1.99	33.291			
600.0	600.0	600.0	600.0	1.2	1.2	90.02	0.0	66.1	66.1	63.7	2.43	27.144	CC, ES		
700.0	700.0	700.0	700.0	1.4	1.4	112.95	0.0	66.1	66.7	63.9	2.88	23.155			
800.0	799.8	799.8	799.8	1.7	1.7	116.91	0.0	66.1	69.0	65.6	3.33	20.699			
900.0	899.6	899.6	899.6	1.9	1.9	120.47	1.7	66.3	72.4	68.6	3.78	19.124			
1,000.0	999.4	999.6	999.4	2.1	2.1	121.07	6.8	67.1	75.9	71.6	4.24	17.888			
1,100.0	1,099.1	1,099.5	1,099.1	2.4	2.3	120.34	13.7	68.2	79.4	74.6	4.71	16.855			
1,200.0	1,198.9	1,199.5	1,198.8	2.6	2.6	119.68	20.6	69.2	82.9	77.7	5.18	15.987			
1,300.0	1,298.6	1,299.4	1,298.5	2.9	2.8	119.07	27.5	70.2	86.4	80.7	5.66	15.250			
1,400.0	1,398.4	1,399.3	1,398.2	3.1	3.1	118.51	34.4	71.3	89.9	83.7	6.15	14.620			
1,500.0	1,498.1	1,499.3	1,497.9	3.4	3.3	117.99	41.3	72.3	93.4	86.8	6.64	14.075			
1,600.0	1,597.9	1,599.2	1,597.6	3.6	3.5	117.51	48.2	73.4	97.0	89.8	7.13	13.601			
1,700.0	1,697.6	1,699.1	1,697.3	3.9	3.8	117.07	55.1	74.4	100.5	92.9	7.62	13.185			
1,800.0	1,797.4	1,799.1	1,797.0	4.1	4.0	116.65	62.0	75.4	104.0	95.9	8.12	12.816			
1,900.0	1,897.2	1,899.0	1,896.7	4.4	4.3	116.26	68.9	76.5	107.6	99.0	8.62	12.489			
2,000.0	1,996.9	1,998.9	1,996.4	4.6	4.5	115.90	75.8	77.5	111.2	102.0	9.11	12.196			
2,100.0	2,096.7	2,098.9	2,096.0	4.9	4.8	115.55	82.7	78.5	114.7	105.1	9.61	11.933			
2,200.0	2,196.4	2,198.8	2,195.7	5.1	5.0	115.23	89.6	79.6	118.3	108.2	10.11	11.694			
2,300.0	2,296.2	2,298.8	2,295.4	5.4	5.3	114.93	96.5	80.6	121.8	111.2	10.62	11.478			
2,400.0	2,395.9	2,398.7	2,395.1	5.7	5.5	114.65	103.4	81.7	125.4	114.3	11.12	11.281			
2,500.0	2,495.7	2,498.6	2,494.8	5.9	5.8	114.38	110.2	82.7	129.0	117.4	11.62	11.100			
2,600.0	2,595.5	2,598.6	2,594.5	6.2	6.1	114.12	117.1	83.7	132.6	120.4	12.12	10.934			
2,700.0	2,695.2	2,698.5	2,694.2	6.4	6.3	113.88	124.0	84.8	136.2	123.5	12.63	10.781			
2,800.0	2,795.0	2,798.4	2,793.9	6.7	6.6	113.65	130.9	85.8	139.7	126.6	13.13	10.640			
2,900.0	2,894.7	2,898.4	2,893.6	6.9	6.8	113.44	137.8	86.9	143.3	129.7	13.64	10.509			
3,000.0	2,994.5	2,998.3	2,993.3	7.2	7.1	113.23	144.7	87.9	146.9	132.8	14.14	10.387			
3,100.0	3,094.2	3,098.2	3,093.0	7.4	7.3	113.03	151.6	88.9	150.5	135.8	14.65	10.274			
3,200.0	3,194.0	3,198.2	3,192.6	7.7	7.6	112.84	158.5	90.0	154.1	138.9	15.15	10.168			
3,300.0	3,293.7	3,298.1	3,292.3	8.0	7.8	112.67	165.4	91.0	157.7	142.0	15.66	10.069			
3,400.0	3,393.5	3,398.0	3,392.0	8.2	8.1	112.49	172.3	92.1	161.3	145.1	16.17	9.976			
3,500.0	3,493.3	3,498.0	3,491.7	8.5	8.3	112.33	179.2	93.1	164.9	148.2	16.67	9.888			
3,600.0	3,593.0	3,597.9	3,591.4	8.7	8.6	112.17	186.1	94.1	168.5	151.3	17.18	9.806			
3,700.0	3,692.8	3,697.8	3,691.1	9.0	8.8	112.02	193.0	95.2	172.1	154.4	17.69	9.729			
3,800.0	3,792.5	3,797.8	3,790.8	9.2	9.1	111.88	199.9	96.2	175.7	157.5	18.19	9.655			
3,900.0	3,892.3	3,897.7	3,890.5	9.5	9.4	111.74	206.8	97.2	179.3	160.6	18.70	9.586			
4,000.0	3,992.0	3,997.6	3,990.2	9.7	9.6	111.61	213.6	98.3	182.9	163.6	19.21	9.520			
4,100.0	4,091.8	4,097.6	4,089.9	10.0	9.9	111.48	220.5	99.3	186.5	166.7	19.71	9.458			
4,200.0	4,191.6	4,197.5	4,189.6	10.3	10.1	111.36	227.4	100.4	190.1	169.8	20.22	9.399			
4,300.0	4,291.3	4,297.4	4,289.2	10.5	10.4	111.24	234.3	101.4	193.7	172.9	20.73	9.342			
4,400.0	4,391.1	4,397.4	4,388.9	10.8	10.6	111.13	241.2	102.4	197.3	176.0	21.24	9.289			
4,500.0	4,490.8	4,497.3	4,488.6	11.0	10.9	111.02	248.1	103.5	200.9	179.1	21.74	9.238			
4,600.0	4,590.6	4,597.2	4,588.3	11.3	11.1	110.91	255.0	104.5	204.5	182.2	22.25	9.189			
4,700.0	4,690.3	4,697.2	4,688.0	11.5	11.4	110.81	261.9	105.6	208.1	185.3	22.76	9.142			
4,800.0	4,790.1	4,797.1	4,787.7	11.8	11.6	110.71	268.8	106.6	211.7	188.4	23.27	9.098			
4,900.0	4,889.9	4,897.0	4,887.4	12.1	11.9	110.61	275.7	107.6	215.3	191.5	23.78	9.055			
5,000.0	4,989.6	4,997.0	4,987.1	12.3	12.2	110.52	282.6	108.7	218.9	194.6	24.28	9.014			
5,100.0	5,089.4	5,096.9	5,086.8	12.6	12.4	110.43	289.5	109.7	222.5	197.7	24.79	8.975			

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	5,189.1	5,196.8	5,186.5	12.8	12.7	110.34	296.4	110.8	226.1	200.8	25.30	8.937			
5,300.0	5,288.9	5,296.8	5,286.2	13.1	12.9	110.26	303.3	111.8	229.7	203.9	25.81	8.901			
5,400.0	5,388.6	5,396.7	5,385.8	13.3	13.2	110.18	310.2	112.8	233.3	207.0	26.32	8.867			
5,500.0	5,488.4	5,496.6	5,485.5	13.6	13.4	110.09	317.0	113.9	236.9	210.1	26.82	8.834			
5,600.0	5,586.7	5,588.9	5,576.5	13.9	13.7	109.32	331.5	116.0	245.6	218.2	27.38	8.971			
5,700.0	5,680.0	5,679.8	5,662.2	14.4	14.2	107.73	361.1	120.5	263.5	235.4	28.14	9.364			
5,800.0	5,764.7	5,768.6	5,739.7	15.1	14.7	105.43	403.7	126.9	289.9	260.7	29.19	9.931			
5,900.0	5,837.8	5,855.2	5,807.1	16.0	15.4	102.53	457.2	135.0	323.7	293.1	30.60	10.577			
6,000.0	5,896.6	5,939.5	5,863.4	17.1	16.1	99.16	519.3	144.3	363.5	331.1	32.39	11.222			
6,100.0	5,938.9	6,022.2	5,907.9	18.4	17.0	95.45	588.0	154.7	408.0	373.5	34.50	11.824			
6,200.0	5,963.1	6,104.1	5,940.7	19.8	18.0	91.56	662.2	165.9	455.7	418.9	36.84	12.369			
6,300.0	5,968.9	6,186.7	5,961.5	21.3	19.1	89.03	741.2	177.8	505.1	465.7	39.33	12.840			
6,400.0	5,968.9	6,274.2	5,969.4	22.8	20.4	90.06	827.2	190.7	551.9	509.9	42.00	13.140			
6,500.0	5,968.9	6,403.9	5,969.4	24.3	22.1	90.05	956.1	206.0	591.2	545.9	45.26	13.061			
6,600.0	5,968.9	6,544.6	5,969.4	25.9	24.1	90.05	1,096.5	212.5	618.9	570.0	48.89	12.658			
6,700.0	5,968.9	6,649.1	5,969.4	27.4	25.7	90.04	1,201.0	212.6	636.9	584.8	52.17	12.209			
6,800.0	5,968.9	6,748.2	5,969.4	29.0	27.4	90.04	1,300.1	212.6	649.8	594.4	55.40	11.730			
6,900.0	5,968.9	6,847.9	5,969.4	30.6	29.0	90.04	1,399.8	212.6	657.5	598.9	58.59	11.221			
7,000.0	5,968.9	6,947.9	5,969.4	32.2	30.7	90.04	1,499.8	212.6	659.9	598.1	61.73	10.689			
7,100.0	5,968.9	7,047.9	5,969.4	33.8	32.4	90.04	1,599.8	212.6	659.9	594.7	65.12	10.132			
7,200.0	5,968.9	7,147.9	5,969.4	35.5	34.2	90.04	1,699.8	212.6	659.9	591.3	68.57	9.624			
7,300.0	5,968.9	7,247.9	5,969.4	37.2	35.9	90.04	1,799.8	212.6	659.9	587.8	72.05	9.159			
7,400.0	5,968.9	7,347.9	5,969.4	38.9	37.7	90.04	1,899.8	212.6	659.9	584.3	75.56	8.733			
7,500.0	5,968.9	7,447.9	5,969.4	40.6	39.5	90.04	1,999.8	212.6	659.9	580.8	79.11	8.341			
7,600.0	5,968.9	7,547.9	5,969.3	42.3	41.3	90.03	2,099.8	212.6	659.9	577.2	82.68	7.981			
7,700.0	5,968.9	7,647.9	5,969.3	44.1	43.1	90.03	2,199.8	212.6	659.9	573.6	86.28	7.648			
7,800.0	5,968.9	7,747.9	5,969.3	45.8	44.9	90.03	2,299.8	212.7	659.9	570.0	89.90	7.340			
7,900.0	5,968.9	7,847.9	5,969.3	47.6	46.7	90.03	2,399.8	212.7	659.9	566.3	93.53	7.055			
8,000.0	5,969.0	7,947.9	5,969.3	49.4	48.6	90.03	2,499.8	212.7	659.9	562.7	97.19	6.790			
8,100.0	5,969.0	8,047.9	5,969.3	51.2	50.4	90.03	2,599.8	212.7	659.9	559.0	100.85	6.543			
8,200.0	5,969.0	8,147.9	5,969.3	53.0	52.2	90.03	2,699.8	212.7	659.9	555.4	104.53	6.313			
8,300.0	5,969.0	8,247.9	5,969.3	54.8	54.1	90.03	2,799.8	212.7	659.9	551.7	108.22	6.098			
8,400.0	5,969.0	8,347.9	5,969.3	56.6	55.9	90.03	2,899.8	212.7	659.9	548.0	111.92	5.896			
8,500.0	5,969.0	8,447.9	5,969.3	58.5	57.8	90.03	2,999.8	212.7	659.9	544.3	115.63	5.707			
8,600.0	5,969.0	8,547.9	5,969.3	60.3	59.7	90.03	3,099.8	212.7	659.9	540.5	119.35	5.529			
8,700.0	5,969.0	8,647.9	5,969.3	62.1	61.5	90.03	3,199.8	212.7	659.9	536.8	123.07	5.362			
8,800.0	5,969.0	8,747.9	5,969.3	64.0	63.4	90.03	3,299.8	212.7	659.9	533.1	126.80	5.204			
8,900.0	5,969.0	8,847.9	5,969.3	65.8	65.3	90.03	3,399.8	212.7	659.9	529.3	130.54	5.055			
9,000.0	5,969.0	8,947.9	5,969.2	67.7	67.2	90.02	3,499.8	212.7	659.9	525.6	134.29	4.914			
9,100.0	5,969.0	9,047.9	5,969.2	69.5	69.0	90.02	3,599.8	212.7	659.9	521.8	138.04	4.780			
9,200.0	5,969.0	9,147.9	5,969.2	71.4	70.9	90.02	3,699.8	212.7	659.9	518.1	141.79	4.654			
9,300.0	5,969.0	9,247.9	5,969.2	73.3	72.8	90.02	3,799.8	212.7	659.9	514.3	145.55	4.534			
9,400.0	5,969.0	9,347.9	5,969.2	75.1	74.7	90.02	3,899.8	212.7	659.9	510.6	149.32	4.419			
9,500.0	5,969.0	9,447.9	5,969.2	77.0	76.6	90.02	3,999.8	212.7	659.9	506.8	153.09	4.311			
9,600.0	5,969.0	9,547.9	5,969.2	78.9	78.5	90.02	4,099.8	212.7	659.9	503.0	156.86	4.207			
9,700.0	5,969.0	9,647.9	5,969.2	80.7	80.4	90.02	4,199.8	212.7	659.9	499.3	160.63	4.108			
9,800.0	5,969.0	9,747.9	5,969.2	82.6	82.2	90.02	4,299.8	212.7	659.9	495.5	164.41	4.014			
9,900.0	5,969.0	9,847.9	5,969.2	84.5	84.1	90.02	4,399.8	212.7	659.9	491.7	168.19	3.923			
10,000.0	5,969.0	9,947.9	5,969.2	86.4	86.0	90.02	4,499.8	212.7	659.9	487.9	171.98	3.837			
10,100.0	5,969.0	10,047.9	5,969.2	88.3	87.9	90.02	4,599.8	212.7	659.9	484.1	175.76	3.754			
10,200.0	5,969.0	10,147.9	5,969.2	90.1	89.8	90.02	4,699.8	212.7	659.9	480.3	179.55	3.675			
10,300.0	5,969.0	10,247.9	5,969.2	92.0	91.7	90.02	4,799.8	212.7	659.9	476.6	183.34	3.599			

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	5,969.0	10,347.9	5,969.1	93.9	93.6	90.01	4,899.8	212.7	659.9	472.8	187.14	3.526			
10,500.0	5,969.0	10,447.9	5,969.1	95.8	95.5	90.01	4,999.8	212.7	659.9	469.0	190.93	3.456			
10,600.0	5,969.0	10,547.9	5,969.1	97.7	97.4	90.01	5,099.8	212.7	659.9	465.2	194.73	3.389			
10,700.0	5,969.0	10,647.9	5,969.1	99.6	99.3	90.01	5,199.8	212.7	659.9	461.4	198.53	3.324			
10,800.0	5,969.0	10,747.9	5,969.1	101.5	101.2	90.01	5,299.8	212.7	659.9	457.6	202.33	3.262			
10,900.0	5,969.0	10,847.9	5,969.1	103.4	103.1	90.01	5,399.8	212.7	659.9	453.8	206.13	3.201			
11,000.0	5,969.0	10,947.9	5,969.1	105.3	105.0	90.01	5,499.8	212.8	659.9	450.0	209.94	3.143			
11,100.0	5,969.0	11,047.9	5,969.1	107.1	106.9	90.01	5,599.8	212.8	659.9	446.2	213.74	3.087			
11,200.0	5,969.0	11,147.9	5,969.1	109.0	108.8	90.01	5,699.8	212.8	659.9	442.4	217.55	3.033			
11,300.0	5,969.0	11,247.9	5,969.1	110.9	110.8	90.01	5,799.8	212.8	659.9	438.5	221.36	2.981			
11,400.0	5,969.0	11,347.9	5,969.1	112.8	112.7	90.01	5,899.8	212.8	659.9	434.7	225.16	2.931			
11,500.0	5,969.0	11,447.9	5,969.1	114.7	114.6	90.01	5,999.8	212.8	659.9	430.9	228.97	2.882			
11,600.0	5,969.0	11,547.9	5,969.1	116.6	116.5	90.01	6,099.8	212.8	659.9	427.1	232.79	2.835			
11,700.0	5,969.0	11,647.9	5,969.1	118.5	118.4	90.01	6,199.8	212.8	659.9	423.3	236.60	2.789			
11,800.0	5,969.0	11,747.9	5,969.1	120.4	120.3	90.01	6,299.8	212.8	659.9	419.5	240.41	2.745			
11,900.0	5,969.0	11,847.9	5,969.0	122.3	122.2	90.00	6,399.8	212.8	659.9	415.7	244.23	2.702			
12,000.0	5,969.0	11,947.9	5,969.0	124.2	124.1	90.00	6,499.8	212.8	659.9	411.9	248.04	2.660			
12,100.0	5,969.0	12,047.9	5,969.0	126.1	126.0	90.00	6,599.8	212.8	659.9	408.1	251.86	2.620			
12,200.0	5,969.0	12,147.9	5,969.0	128.0	127.9	90.00	6,699.8	212.8	659.9	404.2	255.67	2.581			
12,300.0	5,969.0	12,247.9	5,969.0	129.9	129.8	90.00	6,799.8	212.8	659.9	400.4	259.49	2.543			
12,400.0	5,969.0	12,347.9	5,969.0	131.9	131.7	90.00	6,899.8	212.8	659.9	396.6	263.31	2.506			
12,500.0	5,969.0	12,447.9	5,969.0	133.8	133.7	90.00	6,999.8	212.8	659.9	392.8	267.13	2.470			
12,533.1	5,969.0	12,481.0	5,969.0	134.4	134.3	90.00	7,032.9	212.8	659.9	391.5	268.39	2.459 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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	-156.19	-74.9	-33.0	81.8						
100.0	100.0	100.0	100.0	0.1	0.1	-156.19	-74.9	-33.0	81.8	81.7	0.19	437.677			
200.0	200.0	200.0	200.0	0.3	0.3	-156.19	-74.9	-33.0	81.8	81.2	0.64	128.583			
300.0	300.0	300.0	300.0	0.5	0.5	-156.19	-74.9	-33.0	81.8	80.8	1.09	75.362			
400.0	400.0	400.0	400.0	0.8	0.8	-156.19	-74.9	-33.0	81.8	80.3	1.54	53.300			
500.0	500.0	500.0	500.0	1.0	1.0	-156.19	-74.9	-33.0	81.8	79.9	1.99	41.230			
600.0	600.0	600.0	600.0	1.2	1.2	-156.19	-74.9	-33.0	81.8	79.4	2.43	33.618	CC, ES		
700.0	700.0	700.0	700.0	1.4	1.4	-135.48	-74.9	-33.0	83.1	80.2	2.88	28.805			
800.0	799.8	799.8	799.8	1.7	1.7	-137.85	-74.9	-33.0	86.9	83.6	3.34	26.051			
900.0	899.6	896.5	896.5	1.9	1.9	-140.48	-76.3	-33.8	93.8	90.1	3.76	24.959	SF		
1,000.0	999.4	992.7	992.5	2.1	2.0	-142.36	-80.6	-36.1	104.2	100.1	4.17	24.978			
1,100.0	1,099.1	1,091.6	1,091.2	2.4	2.2	-143.71	-86.6	-39.4	116.6	112.0	4.60	25.363			
1,200.0	1,198.9	1,190.8	1,190.2	2.6	2.4	-144.81	-92.7	-42.7	129.0	124.0	5.02	25.678			
1,300.0	1,298.6	1,290.0	1,289.1	2.9	2.7	-145.71	-98.8	-46.0	141.4	136.0	5.46	25.922			
1,400.0	1,398.4	1,389.2	1,388.1	3.1	2.9	-146.47	-104.9	-49.2	153.9	148.0	5.89	26.111			
1,500.0	1,498.1	1,488.4	1,487.0	3.4	3.1	-147.12	-111.0	-52.5	166.4	160.1	6.34	26.260			
1,600.0	1,597.9	1,587.6	1,586.0	3.6	3.3	-147.67	-117.1	-55.8	178.9	172.1	6.78	26.379			
1,700.0	1,697.6	1,686.8	1,685.0	3.9	3.6	-148.15	-123.2	-59.1	191.4	184.2	7.23	26.475			
1,800.0	1,797.4	1,786.0	1,783.9	4.1	3.8	-148.57	-129.3	-62.4	204.0	196.3	7.68	26.553			
1,900.0	1,897.2	1,885.2	1,882.9	4.4	4.1	-148.95	-135.4	-65.7	216.5	208.4	8.14	26.617			
2,000.0	1,996.9	1,984.4	1,981.8	4.6	4.3	-149.28	-141.5	-69.0	229.1	220.5	8.59	26.671			
2,100.0	2,096.7	2,083.6	2,080.8	4.9	4.6	-149.58	-147.5	-72.3	241.7	232.6	9.05	26.715			
2,200.0	2,196.4	2,182.8	2,179.8	5.1	4.8	-149.85	-153.6	-75.5	254.2	244.7	9.50	26.753			
2,300.0	2,296.2	2,282.0	2,278.7	5.4	5.1	-150.09	-159.7	-78.8	266.8	256.8	9.96	26.784			
2,400.0	2,395.9	2,381.2	2,377.7	5.7	5.3	-150.31	-165.8	-82.1	279.4	269.0	10.42	26.811			
2,500.0	2,495.7	2,480.4	2,476.6	5.9	5.6	-150.51	-171.9	-85.4	292.0	281.1	10.88	26.834			
2,600.0	2,595.5	2,579.6	2,575.6	6.2	5.8	-150.70	-178.0	-88.7	304.6	293.2	11.34	26.854			
2,700.0	2,695.2	2,678.8	2,674.5	6.4	6.1	-150.87	-184.1	-92.0	317.2	305.3	11.80	26.871			
2,800.0	2,795.0	2,778.0	2,773.5	6.7	6.3	-151.03	-190.2	-95.3	329.7	317.5	12.26	26.886			
2,900.0	2,894.7	2,877.2	2,872.5	6.9	6.6	-151.17	-196.3	-98.5	342.3	329.6	12.73	26.899			
3,000.0	2,994.5	2,976.4	2,971.4	7.2	6.9	-151.31	-202.4	-101.8	354.9	341.7	13.19	26.910			
3,100.0	3,094.2	3,075.6	3,070.4	7.4	7.1	-151.44	-208.4	-105.1	367.5	353.9	13.65	26.920			
3,200.0	3,194.0	3,174.8	3,169.3	7.7	7.4	-151.56	-214.5	-108.4	380.1	366.0	14.12	26.929			
3,300.0	3,293.7	3,274.0	3,268.3	8.0	7.6	-151.67	-220.6	-111.7	392.7	378.2	14.58	26.936			
3,400.0	3,393.5	3,373.2	3,367.3	8.2	7.9	-151.77	-226.7	-115.0	405.3	390.3	15.04	26.943			
3,500.0	3,493.3	3,472.4	3,466.2	8.5	8.1	-151.87	-232.8	-118.3	417.9	402.4	15.51	26.949			
3,600.0	3,593.0	3,571.6	3,565.2	8.7	8.4	-151.96	-238.9	-121.5	430.6	414.6	15.97	26.954			
3,700.0	3,692.8	3,670.8	3,664.1	9.0	8.7	-152.05	-245.0	-124.8	443.2	426.7	16.44	26.959			
3,800.0	3,792.5	3,770.0	3,763.1	9.2	8.9	-152.13	-251.1	-128.1	455.8	438.9	16.90	26.963			
3,900.0	3,892.3	3,869.2	3,862.0	9.5	9.2	-152.20	-257.2	-131.4	468.4	451.0	17.37	26.966			
4,000.0	3,992.0	3,968.4	3,961.0	9.7	9.4	-152.28	-263.3	-134.7	481.0	463.2	17.83	26.970			
4,100.0	4,091.8	4,067.6	4,060.0	10.0	9.7	-152.35	-269.3	-138.0	493.6	475.3	18.30	26.973			
4,200.0	4,191.6	4,166.8	4,158.9	10.3	10.0	-152.41	-275.4	-141.3	506.2	487.4	18.77	26.975			
4,300.0	4,291.3	4,266.0	4,257.9	10.5	10.2	-152.48	-281.5	-144.5	518.8	499.6	19.23	26.977			
4,400.0	4,391.1	4,365.2	4,356.8	10.8	10.5	-152.54	-287.6	-147.8	531.4	511.7	19.70	26.979			
4,500.0	4,490.8	4,464.4	4,455.8	11.0	10.7	-152.59	-293.7	-151.1	544.0	523.9	20.16	26.981			
4,600.0	4,590.6	4,563.6	4,554.8	11.3	11.0	-152.65	-299.8	-154.4	556.7	536.0	20.63	26.983			
4,700.0	4,690.3	4,662.8	4,653.7	11.5	11.3	-152.70	-305.9	-157.7	569.3	548.2	21.10	26.984			
4,800.0	4,790.1	4,762.0	4,752.7	11.8	11.5	-152.75	-312.0	-161.0	581.9	560.3	21.56	26.985			
4,900.0	4,889.9	4,861.2	4,851.6	12.1	11.8	-152.80	-318.1	-164.3	594.5	572.5	22.03	26.986			
5,000.0	4,989.6	4,960.4	4,950.6	12.3	12.0	-152.84	-324.2	-167.5	607.1	584.6	22.50	26.987			
5,100.0	5,089.4	5,059.6	5,049.5	12.6	12.3	-152.89	-330.2	-170.8	619.7	596.8	22.96	26.988			

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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 S11-T10N-R58W - Razor #11G-1409A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,158.8	5,148.5	12.8	12.6	-152.93	-336.3	-174.1	632.3	608.9	23.43	26.989		
5,300.0	5,288.9	5,258.0	5,247.5	13.1	12.8	-152.97	-342.4	-177.4	645.0	621.1	23.90	26.990		
5,400.0	5,388.6	5,357.2	5,346.4	13.3	13.1	-153.01	-348.5	-180.7	657.6	633.2	24.36	26.990		
5,500.0	5,488.4	5,422.5	5,411.5	13.6	13.3	-152.97	-353.2	-183.2	671.8	647.0	24.75	27.146		
5,600.0	5,586.7	5,465.6	5,453.9	13.9	13.4	-151.39	-359.5	-186.6	702.0	677.4	24.55	28.597		
5,700.0	5,680.0	5,500.0	5,487.4	14.4	13.6	-148.26	-366.7	-190.5	753.9	730.0	23.90	31.550		
5,800.0	5,764.7	5,532.4	5,518.3	15.1	13.7	-142.77	-375.2	-195.1	823.4	800.1	23.31	35.323		
5,900.0	5,837.8	5,550.0	5,534.8	16.0	13.8	-132.54	-380.6	-198.0	905.9	881.8	24.05	37.668		
6,000.0	5,896.6	5,566.9	5,550.4	17.1	13.9	-114.04	-386.1	-201.0	996.5	968.5	27.98	35.610		
6,100.0	5,938.9	5,572.6	5,555.7	18.4	13.9	-83.53	-388.1	-202.1	1,091.0	1,059.2	31.81	34.295		
6,200.0	5,963.1	5,571.6	5,554.8	19.8	13.9	-53.37	-387.8	-201.9	1,185.8	1,158.1	27.69	42.824		
6,300.0	5,968.9	5,550.0	5,534.8	21.3	13.8	-35.58	-380.6	-198.0	1,278.1	1,256.5	21.53	59.355		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	-180.00	-74.9	0.0	74.9	74.7	0.19	400.465			
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-74.9	0.0	74.9	74.7	0.64	117.651			
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-74.9	0.0	74.9	74.3	1.09	68.954			
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-74.9	0.0	74.9	73.8	1.54	48.769			
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-74.9	0.0	74.9	73.4	1.99	37.725			
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-74.9	0.0	74.9	72.9	2.43	30.760	CC, ES		
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-74.9	0.0	74.9	72.5	2.88	26.522			
700.0	700.0	700.0	700.0	1.4	1.4	-158.92	-74.9	0.0	76.5	73.6	3.31	25.102	SF		
800.0	799.8	797.2	797.2	1.7	1.6	-159.80	-76.5	-0.5	83.0	79.7	3.72	25.393			
900.0	899.6	893.7	893.6	1.9	1.8	-160.28	-81.2	-1.9	94.4	90.7	4.14	25.995			
1,000.0	999.4	992.6	992.3	2.1	2.0	-160.34	-87.7	-3.9	107.5	103.4	4.56	26.466			
1,100.0	1,099.1	1,091.8	1,091.1	2.4	2.2	-160.38	-94.4	-5.9	120.7	116.1	4.99	26.819			
1,200.0	1,198.9	1,190.9	1,190.0	2.6	2.4	-160.41	-101.0	-7.9	133.8	128.8	5.42	27.089			
1,300.0	1,298.6	1,290.0	1,288.9	2.9	2.7	-160.44	-107.6	-9.9	147.0	141.5	5.86	27.298			
1,400.0	1,398.4	1,389.2	1,387.8	3.1	2.9	-160.47	-114.2	-11.9	160.1	154.2	6.31	27.463			
1,500.0	1,498.1	1,488.3	1,486.7	3.4	3.1	-160.49	-120.8	-14.0	173.2	166.9	6.75	27.595			
1,600.0	1,597.9	1,587.4	1,585.6	3.6	3.4	-160.50	-127.4	-16.0	186.4	179.6	7.20	27.701			
1,700.0	1,697.6	1,686.6	1,684.5	3.9	3.6	-160.52	-134.1	-18.0	199.5	192.3	7.65	27.788			
1,800.0	1,797.4	1,785.7	1,783.4	4.1	3.9	-160.53	-140.7	-20.0	212.7	205.0	8.11	27.861			
1,900.0	1,897.2	1,884.8	1,882.3	4.4	4.1	-160.54	-147.3	-22.0	225.8	217.7	8.56	27.921			
2,000.0	1,996.9	1,984.0	1,981.2	4.6	4.4	-160.55	-153.9	-24.0	239.0	230.4	9.01	27.972			
2,100.0	2,096.7	2,083.1	2,080.1	4.9	4.6	-160.56	-160.5	-26.0	252.1	243.1	9.47	28.015			
2,200.0	2,196.4	2,182.2	2,178.9	5.1	4.9	-160.57	-167.1	-28.0	265.3	255.8	9.92	28.052			
2,300.0	2,296.2	2,281.4	2,277.8	5.4	5.1	-160.58	-173.8	-30.0	278.4	268.5	10.38	28.083			
2,400.0	2,395.9	2,380.5	2,376.7	5.7	5.4	-160.59	-180.4	-32.1	291.5	281.2	10.84	28.111			
2,500.0	2,495.7	2,479.6	2,475.6	5.9	5.6	-160.59	-187.0	-34.1	304.7	293.8	11.30	28.134			
2,600.0	2,595.5	2,578.8	2,574.5	6.2	5.9	-160.60	-193.6	-36.1	317.8	306.5	11.76	28.155			
2,700.0	2,695.2	2,677.9	2,673.4	6.4	6.2	-160.60	-200.2	-38.1	331.0	319.2	12.21	28.173			
2,800.0	2,795.0	2,777.0	2,772.3	6.7	6.4	-160.61	-206.8	-40.1	344.1	331.9	12.67	28.190			
2,900.0	2,894.7	2,876.2	2,871.2	6.9	6.7	-160.61	-213.5	-42.1	357.3	344.6	13.13	28.204			
3,000.0	2,994.5	2,975.3	2,970.1	7.2	6.9	-160.62	-220.1	-44.1	370.4	357.3	13.59	28.216			
3,100.0	3,094.2	3,074.4	3,069.0	7.4	7.2	-160.62	-226.7	-46.1	383.6	370.0	14.05	28.228			
3,200.0	3,194.0	3,173.6	3,167.9	7.7	7.4	-160.62	-233.3	-48.1	396.7	382.6	14.51	28.238			
3,300.0	3,293.7	3,272.7	3,266.7	8.0	7.7	-160.63	-239.9	-50.1	409.8	395.3	14.97	28.247			
3,400.0	3,393.5	3,371.8	3,365.6	8.2	8.0	-160.63	-246.5	-52.2	423.0	408.0	15.44	28.255			
3,500.0	3,493.3	3,470.9	3,464.5	8.5	8.2	-160.63	-253.2	-54.2	436.1	420.7	15.90	28.262			
3,600.0	3,593.0	3,570.1	3,563.4	8.7	8.5	-160.64	-259.8	-56.2	449.3	433.4	16.36	28.269			
3,700.0	3,692.8	3,669.2	3,662.3	9.0	8.7	-160.64	-266.4	-58.2	462.4	446.1	16.82	28.275			
3,800.0	3,792.5	3,768.3	3,761.2	9.2	9.0	-160.64	-273.0	-60.2	475.6	458.7	17.28	28.280			
3,900.0	3,892.3	3,867.5	3,860.1	9.5	9.3	-160.64	-279.6	-62.2	488.7	471.4	17.74	28.285			
4,000.0	3,992.0	3,966.6	3,959.0	9.7	9.5	-160.65	-286.2	-64.2	501.9	484.1	18.20	28.290			
4,100.0	4,091.8	4,065.7	4,057.9	10.0	9.8	-160.65	-292.9	-66.2	515.0	496.8	18.67	28.294			
4,200.0	4,191.6	4,164.9	4,156.8	10.3	10.0	-160.65	-299.5	-68.2	528.1	509.5	19.13	28.297			
4,300.0	4,291.3	4,264.0	4,255.7	10.5	10.3	-160.65	-306.1	-70.2	541.3	522.2	19.59	28.301			
4,400.0	4,391.1	4,363.1	4,354.5	10.8	10.6	-160.65	-312.7	-72.3	554.4	534.8	20.05	28.304			
4,500.0	4,490.8	4,462.3	4,453.4	11.0	10.8	-160.66	-319.3	-74.3	567.6	547.5	20.52	28.307			
4,600.0	4,590.6	4,561.4	4,552.3	11.3	11.1	-160.66	-325.9	-76.3	580.7	560.2	20.98	28.310			
4,700.0	4,690.3	4,660.5	4,651.2	11.5	11.3	-160.66	-332.6	-78.3	593.9	572.9	21.44	28.312			
4,800.0	4,790.1	4,759.7	4,750.1	11.8	11.6	-160.66	-339.2	-80.3	607.0	585.6	21.90	28.314			
4,900.0	4,889.9	4,858.8	4,849.0	12.1	11.9	-160.66	-345.8	-82.3	620.2	598.3	22.37	28.316			
5,000.0	4,989.6	4,957.9	4,947.9	12.3	12.1	-160.66	-352.4	-84.3	633.3	610.9	646.4	623.6	22.83	28.318	
5,100.0	5,089.4	5,057.1	5,046.8	12.6	12.4	-160.67	-359.0	-86.3	646.4	623.6					

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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 S11-T10N-R58W - Razor #11G-1410B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,156.2	5,145.7	12.8	12.6	-160.67	-365.6	-88.3	659.6	636.3	23.29	28.320		
5,300.0	5,288.9	5,255.3	5,244.6	13.1	12.9	-160.67	-372.3	-90.3	672.7	649.0	23.75	28.322		
5,400.0	5,388.6	5,354.5	5,343.5	13.3	13.2	-160.67	-378.9	-92.4	685.9	661.7	24.22	28.323		
5,500.0	5,488.4	5,453.6	5,442.3	13.6	13.4	-160.65	-385.5	-94.4	699.0	674.4	24.67	28.338		
5,600.0	5,586.7	5,519.7	5,508.3	13.9	13.6	-159.87	-390.4	-95.9	722.9	698.5	24.41	29.616		
5,700.0	5,680.0	5,550.0	5,538.2	14.4	13.7	-157.95	-394.6	-97.1	769.8	746.3	23.45	32.825		
5,800.0	5,764.7	5,600.0	5,587.0	15.1	13.9	-154.68	-405.1	-100.3	836.3	814.1	22.21	37.657		
5,900.0	5,837.8	5,600.0	5,587.0	16.0	13.9	-147.17	-405.1	-100.3	917.4	895.8	21.60	42.477		
6,000.0	5,896.6	5,623.2	5,609.2	17.1	14.0	-132.75	-411.5	-102.3	1,008.2	984.0	24.26	41.566		
6,100.0	5,938.9	5,629.4	5,615.1	18.4	14.1	-98.86	-413.4	-102.8	1,104.4	1,072.5	31.93	34.587		
6,200.0	5,963.1	5,629.0	5,614.7	19.8	14.1	-54.36	-413.2	-102.8	1,201.7	1,173.4	28.38	42.350		
6,300.0	5,968.9	5,623.0	5,609.0	21.3	14.0	-32.82	-411.4	-102.2	1,297.0	1,276.4	20.59	63.003		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	156.19	-74.9	33.0	81.9						
100.0	100.0	100.0	100.0	0.1	0.1	156.19	-74.9	33.0	81.9	81.7	0.19	437.753			
200.0	200.0	200.0	200.0	0.3	0.3	156.19	-74.9	33.0	81.9	81.2	0.64	128.606			
300.0	300.0	300.0	300.0	0.5	0.5	156.19	-74.9	33.0	81.9	80.8	1.09	75.375			
400.0	400.0	400.0	400.0	0.8	0.8	156.19	-74.9	33.0	81.9	80.3	1.54	53.310			
500.0	500.0	500.0	500.0	1.0	1.0	156.19	-74.9	33.0	81.9	79.9	1.99	41.238			
600.0	600.0	600.0	600.0	1.2	1.2	156.19	-74.9	33.0	81.9	79.4	2.43	33.624 CC, ES			
700.0	700.0	697.4	697.4	1.4	1.4	178.27	-76.6	33.0	85.1	82.3	2.85	29.822			
800.0	799.8	794.1	794.0	1.7	1.6	179.64	-81.5	32.8	95.0	91.7	3.27	29.061 SF			
900.0	899.6	893.0	892.6	1.9	1.8	-178.84	-88.4	32.6	108.3	104.7	3.69	29.389			
1,000.0	999.4	992.1	991.4	2.1	2.0	-177.65	-95.3	32.3	121.8	117.6	4.11	29.637			
1,100.0	1,099.1	1,091.1	1,090.3	2.4	2.2	-176.70	-102.2	32.1	135.2	130.7	4.54	29.802			
1,200.0	1,198.9	1,190.2	1,189.1	2.6	2.5	-175.92	-109.1	31.8	148.7	143.7	4.97	29.912			
1,300.0	1,298.6	1,289.3	1,287.9	2.9	2.7	-175.27	-116.0	31.6	162.2	156.8	5.41	29.984			
1,400.0	1,398.4	1,388.3	1,386.7	3.1	2.9	-174.72	-122.9	31.3	175.7	169.9	5.85	30.033			
1,500.0	1,498.1	1,487.4	1,485.6	3.4	3.2	-174.25	-129.8	31.1	189.3	183.0	6.30	30.064			
1,600.0	1,597.9	1,586.5	1,584.4	3.6	3.4	-173.84	-136.7	30.8	202.8	196.1	6.74	30.083			
1,700.0	1,697.6	1,685.5	1,683.2	3.9	3.7	-173.48	-143.6	30.5	216.4	209.2	7.19	30.095			
1,800.0	1,797.4	1,784.6	1,782.0	4.1	3.9	-173.17	-150.5	30.3	230.0	222.3	7.64	30.101			
1,900.0	1,897.2	1,883.7	1,880.9	4.4	4.2	-172.89	-157.4	30.0	243.5	235.5	8.09	30.103			
2,000.0	1,996.9	1,982.7	1,979.7	4.6	4.4	-172.64	-164.3	29.8	257.1	248.6	8.54	30.102			
2,100.0	2,096.7	2,081.8	2,078.5	4.9	4.7	-172.41	-171.2	29.5	270.7	261.7	8.99	30.098			
2,200.0	2,196.4	2,180.9	2,177.4	5.1	4.9	-172.21	-178.1	29.3	284.3	274.9	9.45	30.093			
2,300.0	2,296.2	2,279.9	2,276.2	5.4	5.2	-172.02	-185.0	29.0	297.9	288.0	9.90	30.087			
2,400.0	2,395.9	2,379.0	2,375.0	5.7	5.5	-171.85	-191.9	28.8	311.5	301.1	10.36	30.081			
2,500.0	2,495.7	2,478.1	2,473.8	5.9	5.7	-171.70	-198.9	28.5	325.1	314.3	10.81	30.074			
2,600.0	2,595.5	2,577.1	2,572.7	6.2	6.0	-171.56	-205.8	28.3	338.7	327.4	11.26	30.066			
2,700.0	2,695.2	2,676.2	2,671.5	6.4	6.2	-171.43	-212.7	28.0	352.3	340.6	11.72	30.059			
2,800.0	2,795.0	2,775.3	2,770.3	6.7	6.5	-171.30	-219.6	27.8	365.9	353.7	12.18	30.051			
2,900.0	2,894.7	2,874.3	2,869.1	6.9	6.7	-171.19	-226.5	27.5	379.5	366.9	12.63	30.043			
3,000.0	2,994.5	2,973.4	2,968.0	7.2	7.0	-171.09	-233.4	27.3	393.1	380.0	13.09	30.036			
3,100.0	3,094.2	3,072.5	3,066.8	7.4	7.3	-170.99	-240.3	27.0	406.7	393.2	13.54	30.028			
3,200.0	3,194.0	3,171.6	3,165.6	7.7	7.5	-170.90	-247.2	26.8	420.3	406.3	14.00	30.021			
3,300.0	3,293.7	3,270.6	3,264.4	8.0	7.8	-170.81	-254.1	26.5	433.9	419.5	14.46	30.013			
3,400.0	3,393.5	3,369.7	3,363.3	8.2	8.0	-170.73	-261.0	26.3	447.5	432.6	14.91	30.006			
3,500.0	3,493.3	3,468.8	3,462.1	8.5	8.3	-170.65	-267.9	26.0	461.1	445.8	15.37	29.999			
3,600.0	3,593.0	3,567.8	3,560.9	8.7	8.6	-170.58	-274.8	25.8	474.8	458.9	15.83	29.993			
3,700.0	3,692.8	3,666.9	3,659.7	9.0	8.8	-170.51	-281.7	25.5	488.4	472.1	16.29	29.986			
3,800.0	3,792.5	3,766.0	3,758.6	9.2	9.1	-170.45	-288.6	25.3	502.0	485.2	16.74	29.980			
3,900.0	3,892.3	3,865.0	3,857.4	9.5	9.3	-170.39	-295.5	25.0	515.6	498.4	17.20	29.974			
4,000.0	3,992.0	3,964.1	3,956.2	9.7	9.6	-170.33	-302.4	24.8	529.2	511.5	17.66	29.968			
4,100.0	4,091.8	4,063.2	4,055.0	10.0	9.9	-170.28	-309.3	24.5	542.8	524.7	18.12	29.962			
4,200.0	4,191.6	4,162.2	4,153.9	10.3	10.1	-170.23	-316.3	24.3	556.4	537.9	18.57	29.956			
4,300.0	4,291.3	4,261.3	4,252.7	10.5	10.4	-170.18	-323.2	24.0	570.1	551.0	19.03	29.951			
4,400.0	4,391.1	4,360.4	4,351.5	10.8	10.7	-170.13	-330.1	23.8	583.7	564.2	19.49	29.946			
4,500.0	4,490.8	4,459.4	4,450.4	11.0	10.9	-170.08	-337.0	23.5	597.3	577.3	19.95	29.940			
4,600.0	4,590.6	4,558.5	4,549.2	11.3	11.2	-170.04	-343.9	23.3	610.9	590.5	20.41	29.935			
4,700.0	4,690.3	4,657.6	4,648.0	11.5	11.4	-170.00	-350.8	23.0	624.5	603.7	20.87	29.931			
4,800.0	4,790.1	4,756.6	4,746.8	11.8	11.7	-169.96	-357.7	22.8	638.1	616.8	21.32	29.926			
4,900.0	4,889.9	4,855.7	4,845.7	12.1	12.0	-169.92	-364.6	22.5	651.8	630.0	21.78	29.921			
5,000.0	4,989.6	4,954.8	4,944.5	12.3	12.2	-169.89	-371.5	22.3	665.4	643.1	22.24	29.917			
5,100.0	5,089.4	5,053.8	5,043.3	12.6	12.5	-169.85	-378.4	22.0	679.0	656.3	22.70	29.913			

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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 S11-T10N-R58W - Razor #11G-1411A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,152.9	5,142.1	12.8	12.7	-169.82	-385.3	21.8	692.6	669.4	23.16	29.909		
5,300.0	5,288.9	5,252.0	5,241.0	13.1	13.0	-169.79	-392.2	21.5	706.2	682.6	23.62	29.905		
5,400.0	5,388.6	5,351.0	5,339.8	13.3	13.3	-169.76	-399.1	21.3	719.8	695.8	24.07	29.901		
5,500.0	5,488.4	5,418.2	5,406.8	13.6	13.5	-169.71	-404.3	21.1	734.7	710.2	24.45	30.047		
5,600.0	5,586.7	5,450.0	5,438.2	13.9	13.6	-169.02	-408.9	20.9	766.1	742.0	24.05	31.849		
5,700.0	5,680.0	5,500.0	5,486.9	14.4	13.8	-167.66	-420.0	20.5	820.5	797.5	22.97	35.720		
5,800.0	5,764.7	5,517.7	5,503.9	15.1	13.8	-164.97	-425.0	20.3	893.4	872.1	21.24	42.051		
5,900.0	5,837.8	5,550.0	5,534.4	16.0	14.0	-159.78	-435.7	19.9	980.1	960.5	19.59	50.025		
6,000.0	5,896.6	5,550.0	5,534.4	17.1	14.0	-144.39	-435.7	19.9	1,074.7	1,053.2	21.45	50.100		
6,100.0	5,938.9	5,550.0	5,534.4	18.4	14.0	-83.77	-435.7	19.9	1,173.3	1,140.8	32.56	36.034		
6,200.0	5,963.1	5,550.0	5,534.4	19.8	14.0	-29.81	-435.7	19.9	1,272.0	1,253.2	18.79	67.696		

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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	138.58	-74.9	66.1	99.9							
100.0	100.0	100.0	100.0	0.1	0.1	138.58	-74.9	66.1	99.9	99.7	0.19	534.162				
200.0	200.0	200.0	200.0	0.3	0.3	138.58	-74.9	66.1	99.9	99.3	0.64	156.929				
300.0	300.0	300.0	300.0	0.5	0.5	138.58	-74.9	66.1	99.9	98.8	1.09	91.975				
400.0	400.0	400.0	400.0	0.8	0.8	138.58	-74.9	66.1	99.9	98.4	1.54	65.050				
500.0	500.0	500.0	500.0	1.0	1.0	138.58	-74.9	66.1	99.9	97.9	1.99	50.320	CC, ES			
600.0	600.0	596.9	596.9	1.2	1.2	138.96	-76.5	66.6	101.4	99.0	2.40	42.210				
700.0	700.0	693.4	693.3	1.4	1.4	161.82	-81.1	68.0	107.7	104.9	2.82	38.256				
800.0	799.8	792.4	792.0	1.7	1.6	163.81	-87.7	70.1	119.2	116.0	3.25	36.724				
900.0	899.6	891.5	890.8	1.9	1.8	165.70	-94.3	72.1	132.5	128.8	3.67	36.109				
1,000.0	999.4	990.5	989.6	2.1	2.0	167.24	-100.9	74.2	145.9	141.8	4.10	35.588				
1,100.0	1,099.1	1,089.5	1,088.4	2.4	2.3	168.52	-107.5	76.2	159.4	154.9	4.54	35.145				
1,200.0	1,198.9	1,188.5	1,187.2	2.6	2.5	169.61	-114.1	78.3	173.0	168.0	4.97	34.767				
1,300.0	1,298.6	1,287.6	1,286.0	2.9	2.8	170.53	-120.7	80.4	186.6	181.1	5.42	34.442				
1,400.0	1,398.4	1,386.6	1,384.8	3.1	3.0	171.33	-127.3	82.4	200.2	194.3	5.86	34.161				
1,500.0	1,498.1	1,485.6	1,483.5	3.4	3.3	172.03	-133.9	84.5	213.9	207.6	6.31	33.914				
1,600.0	1,597.9	1,584.6	1,582.3	3.6	3.5	172.64	-140.5	86.5	227.6	220.8	6.75	33.699				
1,700.0	1,697.6	1,683.7	1,681.1	3.9	3.8	173.19	-147.1	88.6	241.3	234.1	7.20	33.509				
1,800.0	1,797.4	1,782.7	1,779.9	4.1	4.0	173.67	-153.7	90.6	255.1	247.4	7.65	33.339				
1,900.0	1,897.2	1,881.7	1,878.7	4.4	4.3	174.11	-160.3	92.7	268.9	260.7	8.10	33.187				
2,000.0	1,996.9	1,980.8	1,977.5	4.6	4.5	174.50	-166.9	94.7	282.6	274.1	8.55	33.050				
2,100.0	2,096.7	2,079.8	2,076.3	4.9	4.8	174.86	-173.5	96.8	296.4	287.4	9.00	32.926				
2,200.0	2,196.4	2,178.8	2,175.1	5.1	5.0	175.18	-180.1	98.8	310.2	300.8	9.45	32.813				
2,300.0	2,296.2	2,277.8	2,273.8	5.4	5.3	175.48	-186.7	100.9	324.0	314.1	9.91	32.710				
2,400.0	2,395.9	2,376.9	2,372.6	5.7	5.6	175.76	-193.2	102.9	337.9	327.5	10.36	32.616				
2,500.0	2,495.7	2,475.9	2,471.4	5.9	5.8	176.01	-199.8	105.0	351.7	340.9	10.81	32.529				
2,600.0	2,595.5	2,574.9	2,570.2	6.2	6.1	176.24	-206.4	107.1	365.5	354.3	11.26	32.449				
2,700.0	2,695.2	2,674.0	2,669.0	6.4	6.3	176.45	-213.0	109.1	379.4	367.6	11.72	32.375				
2,800.0	2,795.0	2,773.0	2,767.8	6.7	6.6	176.66	-219.6	111.2	393.2	381.0	12.17	32.307				
2,900.0	2,894.7	2,872.0	2,866.6	6.9	6.9	176.84	-226.2	113.2	407.0	394.4	12.62	32.243				
3,000.0	2,994.5	2,971.0	2,965.3	7.2	7.1	177.02	-232.8	115.3	420.9	407.8	13.08	32.183				
3,100.0	3,094.2	3,070.1	3,064.1	7.4	7.4	177.18	-239.4	117.3	434.8	421.2	13.53	32.128				
3,200.0	3,194.0	3,169.1	3,162.9	7.7	7.6	177.33	-246.0	119.4	448.6	434.6	13.99	32.075				
3,300.0	3,293.7	3,268.1	3,261.7	8.0	7.9	177.48	-252.6	121.4	462.5	448.0	14.44	32.026				
3,400.0	3,393.5	3,367.2	3,360.5	8.2	8.2	177.61	-259.2	123.5	476.3	461.4	14.89	31.980				
3,500.0	3,493.3	3,466.2	3,459.3	8.5	8.4	177.74	-265.8	125.5	490.2	474.9	15.35	31.937				
3,600.0	3,593.0	3,565.2	3,558.1	8.7	8.7	177.86	-272.4	127.6	504.1	488.3	15.80	31.896				
3,700.0	3,692.8	3,664.2	3,656.9	9.0	8.9	177.98	-279.0	129.7	517.9	501.7	16.26	31.857				
3,800.0	3,792.5	3,763.3	3,755.6	9.2	9.2	178.08	-285.6	131.7	531.8	515.1	16.71	31.820				
3,900.0	3,892.3	3,862.3	3,854.4	9.5	9.5	178.19	-292.2	133.8	545.7	528.5	17.17	31.786				
4,000.0	3,992.0	3,961.3	3,953.2	9.7	9.7	178.29	-298.8	135.8	559.6	541.9	17.62	31.753				
4,100.0	4,091.8	4,060.4	4,052.0	10.0	10.0	178.38	-305.4	137.9	573.4	555.4	18.08	31.721				
4,200.0	4,191.6	4,159.4	4,150.8	10.3	10.2	178.47	-312.0	139.9	587.3	568.8	18.53	31.691				
4,300.0	4,291.3	4,258.4	4,249.6	10.5	10.5	178.55	-318.6	142.0	601.2	582.2	18.99	31.663				
4,400.0	4,391.1	4,357.4	4,348.4	10.8	10.8	178.63	-325.2	144.0	615.1	595.6	19.44	31.636				
4,500.0	4,490.8	4,456.5	4,447.2	11.0	11.0	178.71	-331.8	146.1	629.0	609.1	19.90	31.610				
4,600.0	4,590.6	4,555.5	4,545.9	11.3	11.3	178.78	-338.3	148.1	642.9	622.5	20.35	31.585				
4,700.0	4,690.3	4,654.5	4,644.7	11.5	11.6	178.86	-344.9	150.2	656.7	635.9	20.81	31.561				
4,800.0	4,790.1	4,753.6	4,743.5	11.8	11.8	178.92	-351.5	152.2	670.6	649.4	21.26	31.538				
4,900.0	4,889.9	4,852.6	4,842.3	12.1	12.1	178.99	-358.1	154.3	684.5	662.8	21.72	31.517				
5,000.0	4,989.6	4,951.6	4,941.1	12.3	12.3	179.05	-364.7	156.4	698.4	676.2	22.17	31.496				
5,100.0	5,089.4	5,050.6	5,039.9	12.6	12.6	179.11	-371.3	158.4	712.3	689.7	22.63	31.475				

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 #11G-0210B
Project:	Weld County, CO	TVD Reference:	WELL @ 4989.7usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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 S11-T10N-R58W - Razor #11G-1412B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,189.1	5,149.7	5,138.7	12.8	12.9	179.17	-377.9	160.5	726.2	703.1	23.09	31.456		
5,300.0	5,288.9	5,248.7	5,237.4	13.1	13.1	179.22	-384.5	162.5	740.1	716.5	23.54	31.438		
5,400.0	5,388.6	5,347.7	5,336.2	13.3	13.4	179.28	-391.1	164.6	754.0	730.0	24.00	31.420		
5,500.0	5,488.4	5,446.7	5,435.0	13.6	13.6	179.33	-397.7	166.6	767.9	743.4	24.44	31.419 SF		
5,600.0	5,586.7	5,500.0	5,488.1	13.9	13.8	179.33	-401.3	167.7	793.1	769.1	24.05	32.982		
5,700.0	5,680.0	5,550.0	5,537.7	14.4	13.9	179.31	-407.2	169.6	841.0	818.1	22.85	36.810		
5,800.0	5,764.7	5,576.3	5,563.5	15.1	14.0	179.23	-412.2	171.1	909.4	888.6	20.85	43.626		
5,900.0	5,837.8	5,600.0	5,586.5	16.0	14.1	179.06	-417.7	172.9	993.0	974.8	18.19	54.575		
6,000.0	5,896.6	5,600.0	5,586.5	17.1	14.1	178.40	-417.7	172.9	1,086.6	1,071.5	15.06	72.146		
6,100.0	5,938.9	5,600.0	5,586.5	18.4	14.1	171.09	-417.7	172.9	1,185.4	1,172.7	12.70	93.353		
6,200.0	5,963.1	5,600.0	5,586.5	19.8	14.1	2.22	-417.7	172.9	1,285.1	1,276.0	9.14	140.545		

Cathedral Energy Services

Anticollision Report

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Reference Site:	S11-T10N-R58W	MD Reference:	WELL @ 4989.7usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Razor #11G-0210B	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 WELL @ 4989.7usft (Original Well Ele)
 Offset Depths are relative to Offset Datum
 Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #11G-0210B
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 1.08°

