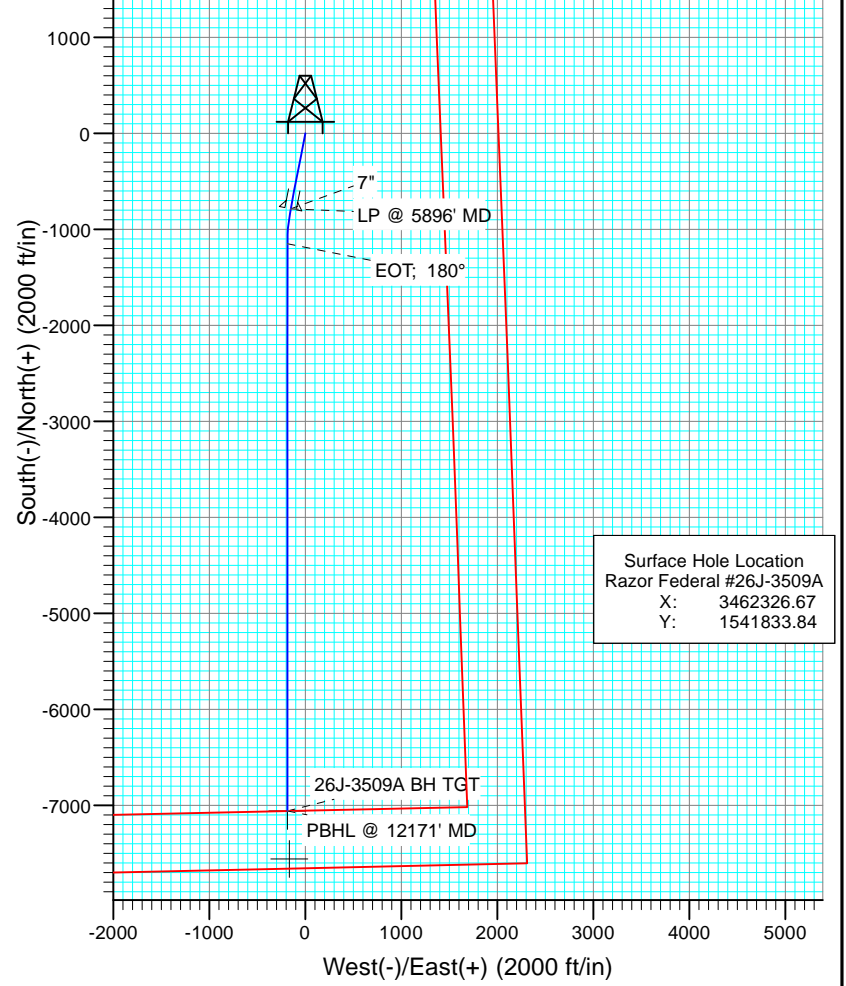
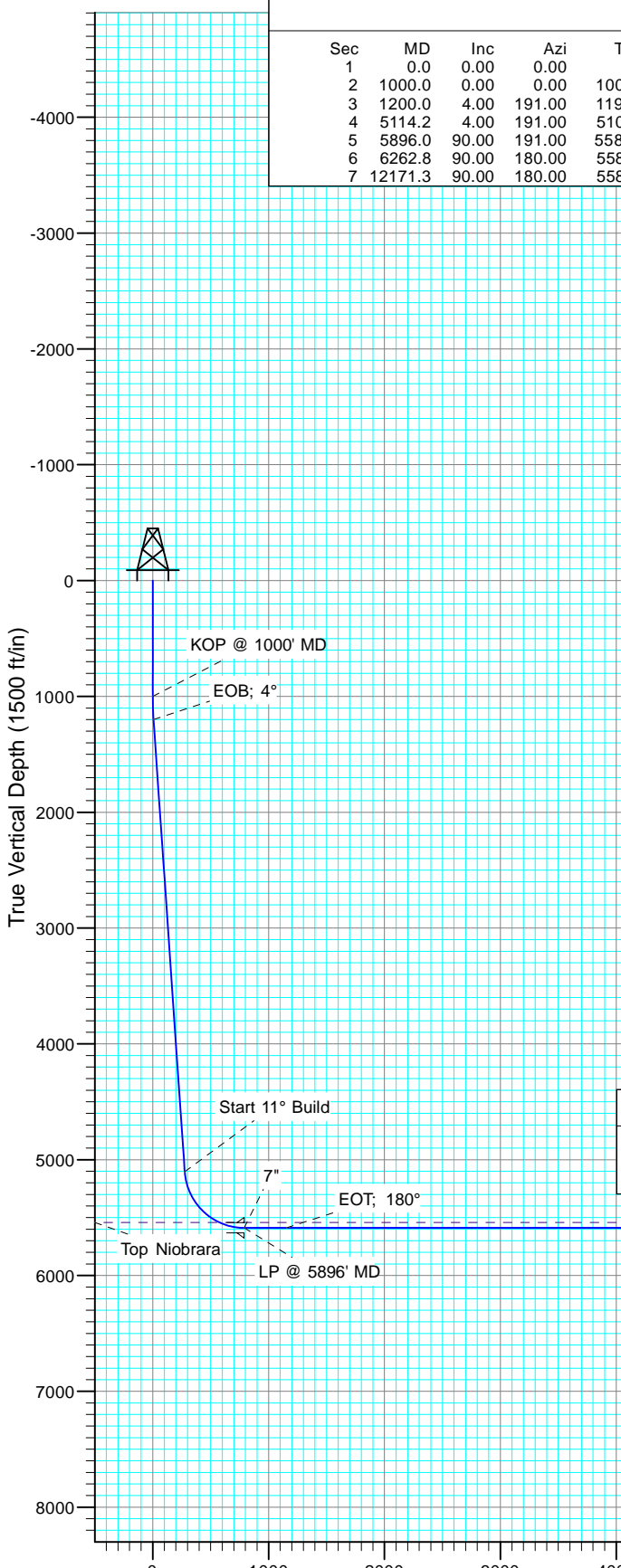


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0		KOP @ 1000' MD
3	1200.0	4.00	191.00	1199.8	-6.9	-1.3	2.00	191.00	6.9		EOB; 4°
4	5114.2	4.00	191.00	5104.5	-274.9	-53.4	0.00	0.00	276.2		Start 11° Build
5	5896.0	90.00	191.00	5589.1	-784.9	-152.6	11.00	0.00	788.7		LP @ 5896' MD
6	6262.8	90.00	180.00	5589.0	-1149.5	-187.7	3.00	-90.00	1154.1		EOT; 180°
7	12171.3	90.00	180.00	5589.0	-7058.0	-187.2	0.00	0.00	7060.5	26J-3509A BH TGPBHL @ 12171' MD	



Surface Hole Location
 Razor Federal #26J-3509A
 X: 3462326.67
 Y: 1541833.84

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
26J-3509A BH TGT	5589.0	-7058.0	-187.2	1534775.84	3462139.46
26J-3509A BHL	5589.0	-7557.6	-167.8	1534276.24	3462158.83

T G M

Azimuths to Grid North
 True North: -1.08°
 Magnetic North: 7.04°

Magnetic Field
 Strength: 53237.7snT
 Dip Angle: 67.46°
 Date: 5/16/2013
 Model: IGRF2013

Plan #2
 Razor Federal #26J-3509A
 WELL @ 4742.1ft (Original Well Elev)
 Ground Elevation @ 4725.6
 North American Datum 1983
 Well Razor Federal #26J-3509A, Grid North

Vertical Section at 181.52° (1500 ft/in)

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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

Site	S26-T10N-R58W				
Site Position:		Northing:	1,541,777.36 ft	Latitude:	40.808739
From:	Lat/Long	Easting:	3,459,649.47 ft	Longitude:	-103.839531
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	1.07 °

Well	Razor Federal #26J-3509A					
Well Position	+N/-S	0.0 ft	Northing:	1,541,833.84 ft	Latitude:	40.808756
	+E/-W	0.0 ft	Easting:	3,462,326.67 ft	Longitude:	-103.829858
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,725.6 ft

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

Design	Plan #2			
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	181.52

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	4.00	191.00	1,199.8	-6.9	-1.3	2.00	2.00	0.00	191.00	
5,114.2	4.00	191.00	5,104.5	-274.9	-53.4	0.00	0.00	0.00	0.00	
5,896.0	90.00	191.00	5,589.1	-784.9	-152.6	11.00	11.00	0.00	0.00	
6,262.8	90.00	180.00	5,589.0	-1,149.5	-187.7	3.00	0.00	-3.00	-90.00	
12,171.3	90.00	180.00	5,589.0	-7,058.0	-187.2	0.00	0.00	0.00	0.00	26J-3509A BH TGT

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1000' MD
1,100.0	2.00	191.00	1,100.0	-1.7	-0.3	1.7	2.00	2.00	
1,200.0	4.00	191.00	1,199.8	-6.9	-1.3	6.9	2.00	2.00	EOB; 4°
1,300.0	4.00	191.00	1,299.6	-13.7	-2.7	13.8	0.00	0.00	
1,400.0	4.00	191.00	1,399.4	-20.5	-4.0	20.6	0.00	0.00	
1,500.0	4.00	191.00	1,499.1	-27.4	-5.3	27.5	0.00	0.00	
1,600.0	4.00	191.00	1,598.9	-34.2	-6.7	34.4	0.00	0.00	
1,700.0	4.00	191.00	1,698.6	-41.1	-8.0	41.3	0.00	0.00	
1,800.0	4.00	191.00	1,798.4	-47.9	-9.3	48.2	0.00	0.00	
1,900.0	4.00	191.00	1,898.1	-54.8	-10.6	55.0	0.00	0.00	
2,000.0	4.00	191.00	1,997.9	-61.6	-12.0	61.9	0.00	0.00	
2,100.0	4.00	191.00	2,097.6	-68.5	-13.3	68.8	0.00	0.00	
2,200.0	4.00	191.00	2,197.4	-75.3	-14.6	75.7	0.00	0.00	
2,300.0	4.00	191.00	2,297.2	-82.2	-16.0	82.6	0.00	0.00	
2,400.0	4.00	191.00	2,396.9	-89.0	-17.3	89.4	0.00	0.00	
2,500.0	4.00	191.00	2,496.7	-95.9	-18.6	96.3	0.00	0.00	
2,600.0	4.00	191.00	2,596.4	-102.7	-20.0	103.2	0.00	0.00	
2,700.0	4.00	191.00	2,696.2	-109.6	-21.3	110.1	0.00	0.00	
2,800.0	4.00	191.00	2,795.9	-116.4	-22.6	117.0	0.00	0.00	
2,900.0	4.00	191.00	2,895.7	-123.3	-24.0	123.8	0.00	0.00	
3,000.0	4.00	191.00	2,995.5	-130.1	-25.3	130.7	0.00	0.00	
3,100.0	4.00	191.00	3,095.2	-137.0	-26.6	137.6	0.00	0.00	
3,200.0	4.00	191.00	3,195.0	-143.8	-28.0	144.5	0.00	0.00	
3,300.0	4.00	191.00	3,294.7	-150.6	-29.3	151.4	0.00	0.00	
3,400.0	4.00	191.00	3,394.5	-157.5	-30.6	158.3	0.00	0.00	
3,500.0	4.00	191.00	3,494.2	-164.3	-31.9	165.1	0.00	0.00	
3,600.0	4.00	191.00	3,594.0	-171.2	-33.3	172.0	0.00	0.00	
3,700.0	4.00	191.00	3,693.7	-178.0	-34.6	178.9	0.00	0.00	
3,800.0	4.00	191.00	3,793.5	-184.9	-35.9	185.8	0.00	0.00	
3,900.0	4.00	191.00	3,893.3	-191.7	-37.3	192.7	0.00	0.00	
4,000.0	4.00	191.00	3,993.0	-198.6	-38.6	199.5	0.00	0.00	
4,100.0	4.00	191.00	4,092.8	-205.4	-39.9	206.4	0.00	0.00	
4,200.0	4.00	191.00	4,192.5	-212.3	-41.3	213.3	0.00	0.00	
4,300.0	4.00	191.00	4,292.3	-219.1	-42.6	220.2	0.00	0.00	
4,400.0	4.00	191.00	4,392.0	-226.0	-43.9	227.1	0.00	0.00	
4,500.0	4.00	191.00	4,491.8	-232.8	-45.3	233.9	0.00	0.00	
4,600.0	4.00	191.00	4,591.6	-239.7	-46.6	240.8	0.00	0.00	
4,700.0	4.00	191.00	4,691.3	-246.5	-47.9	247.7	0.00	0.00	
4,800.0	4.00	191.00	4,791.1	-253.4	-49.2	254.6	0.00	0.00	
4,900.0	4.00	191.00	4,890.8	-260.2	-50.6	261.5	0.00	0.00	
5,000.0	4.00	191.00	4,990.6	-267.1	-51.9	268.3	0.00	0.00	
5,100.0	4.00	191.00	5,090.3	-273.9	-53.2	275.2	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,114.2	4.00	191.00	5,104.5	-274.9	-53.4	276.2	0.00	0.00	Start 11° Build
5,200.0	13.44	191.00	5,189.2	-287.6	-55.9	289.0	11.00	11.00	
5,300.0	24.44	191.00	5,283.7	-319.4	-62.1	321.0	11.00	11.00	
5,400.0	35.44	191.00	5,370.2	-368.3	-71.6	370.1	11.00	11.00	
5,500.0	46.44	191.00	5,445.6	-432.6	-84.1	434.6	11.00	11.00	
5,600.0	57.44	191.00	5,507.2	-509.7	-99.1	512.2	11.00	11.00	
5,673.0	65.46	191.00	5,542.0	-572.6	-111.3	575.3	11.00	11.00	Top Niobrara
5,700.0	68.44	191.00	5,552.6	-597.0	-116.0	599.9	11.00	11.00	
5,800.0	79.44	191.00	5,580.2	-691.2	-134.4	694.5	11.00	11.00	
5,896.0	90.00	191.00	5,589.1	-784.9	-152.6	788.7	11.00	11.00	LP @ 5896' MD - 7"
5,900.0	90.00	190.88	5,589.1	-788.8	-153.3	792.6	2.98	0.08	
6,000.0	90.00	187.88	5,589.1	-887.5	-169.6	891.7	3.00	0.00	
6,100.0	90.00	184.88	5,589.1	-986.8	-180.7	991.3	3.00	0.00	
6,200.0	90.00	181.88	5,589.0	-1,086.7	-186.6	1,091.2	3.00	0.00	
6,262.8	90.00	180.00	5,589.0	-1,149.5	-187.7	1,154.0	3.00	0.00	EOT; 180°
6,300.0	90.00	180.00	5,589.0	-1,186.7	-187.7	1,191.2	0.00	0.00	
6,400.0	90.00	180.00	5,589.0	-1,286.7	-187.7	1,291.2	0.00	0.00	
6,500.0	90.00	180.00	5,589.0	-1,386.7	-187.6	1,391.1	0.00	0.00	
6,600.0	90.00	180.00	5,589.0	-1,486.7	-187.6	1,491.1	0.00	0.00	
6,700.0	90.00	180.00	5,589.0	-1,586.7	-187.6	1,591.1	0.00	0.00	
6,800.0	90.00	180.00	5,589.0	-1,686.7	-187.6	1,691.0	0.00	0.00	
6,900.0	90.00	180.00	5,589.0	-1,786.7	-187.6	1,791.0	0.00	0.00	
7,000.0	90.00	180.00	5,589.0	-1,886.7	-187.6	1,891.0	0.00	0.00	
7,100.0	90.00	180.00	5,589.0	-1,986.7	-187.6	1,990.9	0.00	0.00	
7,200.0	90.00	180.00	5,589.0	-2,086.7	-187.6	2,090.9	0.00	0.00	
7,300.0	90.00	180.00	5,589.0	-2,186.7	-187.6	2,190.9	0.00	0.00	
7,400.0	90.00	180.00	5,589.0	-2,286.7	-187.6	2,290.8	0.00	0.00	
7,500.0	90.00	180.00	5,589.0	-2,386.7	-187.6	2,390.8	0.00	0.00	
7,600.0	90.00	180.00	5,589.0	-2,486.7	-187.6	2,490.8	0.00	0.00	
7,700.0	90.00	180.00	5,589.0	-2,586.7	-187.6	2,590.7	0.00	0.00	
7,800.0	90.00	180.00	5,589.0	-2,686.7	-187.5	2,690.7	0.00	0.00	
7,900.0	90.00	180.00	5,589.0	-2,786.7	-187.5	2,790.6	0.00	0.00	
8,000.0	90.00	180.00	5,589.0	-2,886.7	-187.5	2,890.6	0.00	0.00	
8,100.0	90.00	180.00	5,589.0	-2,986.7	-187.5	2,990.6	0.00	0.00	
8,200.0	90.00	180.00	5,589.0	-3,086.7	-187.5	3,090.5	0.00	0.00	
8,300.0	90.00	180.00	5,589.0	-3,186.7	-187.5	3,190.5	0.00	0.00	
8,400.0	90.00	180.00	5,589.0	-3,286.7	-187.5	3,290.5	0.00	0.00	
8,500.0	90.00	180.00	5,589.0	-3,386.7	-187.5	3,390.4	0.00	0.00	
8,600.0	90.00	180.00	5,589.0	-3,486.7	-187.5	3,490.4	0.00	0.00	
8,700.0	90.00	180.00	5,589.0	-3,586.7	-187.5	3,590.4	0.00	0.00	
8,800.0	90.00	180.00	5,589.0	-3,686.7	-187.5	3,690.3	0.00	0.00	
8,900.0	90.00	180.00	5,589.0	-3,786.7	-187.5	3,790.3	0.00	0.00	
9,000.0	90.00	180.00	5,589.0	-3,886.7	-187.5	3,890.3	0.00	0.00	
9,100.0	90.00	180.00	5,589.0	-3,986.7	-187.4	3,990.2	0.00	0.00	
9,200.0	90.00	180.00	5,589.0	-4,086.7	-187.4	4,090.2	0.00	0.00	
9,300.0	90.00	180.00	5,589.0	-4,186.7	-187.4	4,190.2	0.00	0.00	
9,400.0	90.00	180.00	5,589.0	-4,286.7	-187.4	4,290.1	0.00	0.00	
9,500.0	90.00	180.00	5,589.0	-4,386.7	-187.4	4,390.1	0.00	0.00	
9,600.0	90.00	180.00	5,589.0	-4,486.7	-187.4	4,490.0	0.00	0.00	
9,700.0	90.00	180.00	5,589.0	-4,586.7	-187.4	4,590.0	0.00	0.00	
9,800.0	90.00	180.00	5,589.0	-4,686.7	-187.4	4,690.0	0.00	0.00	
9,900.0	90.00	180.00	5,589.0	-4,786.7	-187.4	4,789.9	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
10,000.0	90.00	180.00	5,589.0	-4,886.7	-187.4	4,889.9	0.00	0.00	
10,100.0	90.00	180.00	5,589.0	-4,986.7	-187.4	4,989.9	0.00	0.00	
10,200.0	90.00	180.00	5,589.0	-5,086.7	-187.4	5,089.8	0.00	0.00	
10,300.0	90.00	180.00	5,589.0	-5,186.7	-187.4	5,189.8	0.00	0.00	
10,400.0	90.00	180.00	5,589.0	-5,286.7	-187.4	5,289.8	0.00	0.00	
10,500.0	90.00	180.00	5,589.0	-5,386.7	-187.3	5,389.7	0.00	0.00	
10,600.0	90.00	180.00	5,589.0	-5,486.7	-187.3	5,489.7	0.00	0.00	
10,700.0	90.00	180.00	5,589.0	-5,586.7	-187.3	5,589.7	0.00	0.00	
10,800.0	90.00	180.00	5,589.0	-5,686.7	-187.3	5,689.6	0.00	0.00	
10,900.0	90.00	180.00	5,589.0	-5,786.7	-187.3	5,789.6	0.00	0.00	
11,000.0	90.00	180.00	5,589.0	-5,886.7	-187.3	5,889.5	0.00	0.00	
11,100.0	90.00	180.00	5,589.0	-5,986.7	-187.3	5,989.5	0.00	0.00	
11,200.0	90.00	180.00	5,589.0	-6,086.7	-187.3	6,089.5	0.00	0.00	
11,300.0	90.00	180.00	5,589.0	-6,186.7	-187.3	6,189.4	0.00	0.00	
11,400.0	90.00	180.00	5,589.0	-6,286.7	-187.3	6,289.4	0.00	0.00	
11,500.0	90.00	180.00	5,589.0	-6,386.7	-187.3	6,389.4	0.00	0.00	
11,600.0	90.00	180.00	5,589.0	-6,486.7	-187.3	6,489.3	0.00	0.00	
11,700.0	90.00	180.00	5,589.0	-6,586.7	-187.3	6,589.3	0.00	0.00	
11,800.0	90.00	180.00	5,589.0	-6,686.7	-187.2	6,689.3	0.00	0.00	
11,900.0	90.00	180.00	5,589.0	-6,786.7	-187.2	6,789.2	0.00	0.00	
12,000.0	90.00	180.00	5,589.0	-6,886.7	-187.2	6,889.2	0.00	0.00	
12,100.0	90.00	180.00	5,589.0	-6,986.7	-187.2	6,989.2	0.00	0.00	
12,171.3	90.00	180.00	5,589.0	-7,058.0	-187.2	7,060.4	0.00	0.00	PBHL @ 12171' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
26J-3509A BHL - hit/miss target - Shape - Point	0.00	0.00	5,589.0	-7,557.6	-167.8	1,534,276.24	3,462,158.83	40.788025	-103.830978
- plan misses target center by 500.0ft at 12171.3ft MD (5589.0 TVD, -7058.0 N, -187.2 E)									
26J-3509A BH TGT - plan hits target center - Point	0.00	0.00	5,589.0	-7,058.0	-187.2	1,534,775.84	3,462,139.46	40.789397	-103.831014

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,896.0	5,589.1	7"	0.000	0.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,673.0	5,542.0	Top Niobrara		0.00	



Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Company:	Whiting Petroleum Corporation	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site:	S26-T10N-R58W	North Reference:	Grid
Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP @ 1000' MD
1,200.0	1,199.8	-6.9	-1.3	EOB; 4°
5,114.2	5,104.5	-274.9	-53.4	Start 11° Build
5,896.0	5,589.1	-784.9	-152.6	LP @ 5896' MD
6,262.8	5,589.0	-1,149.5	-187.7	EOT; 180°
12,171.3	5,589.0	-7,058.0	-187.2	PBHL @ 12171' MD



CATHEDRAL

**Whiting Petroleum
Corporation**

Weld County, CO
S26-T10N-R58W
Razor Federal #26J-3509A
HZ
Plan #2

Anticollision Report

18 June, 2013



CATHEDRAL

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 500.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program	Date	6/18/2013
From (ft)	To (ft)	Survey (Wellbore)
0.0	12,171.3	Plan #2 (HZ)
		Tool Name
		ISCWSA MWD
		Description
		MWD - ISCWSA

Site Name	Reference		Distance		Separation Factor	Warning
	Measured Depth (ft)	Offset Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
Offset Well - Wellbore - Design						
S26-T10N-R58W						
Razor #26J-2633L - HZ - Plan #1	200.0	200.0	82.1	81.5	128.880	CC
Razor #26J-2633L - HZ - Plan #1	4,000.0	3,993.8	93.7	75.7	5.204	ES
Razor #26J-2633L - HZ - Plan #1	5,300.0	5,288.6	102.6	76.9	3.993	SF
Razor #26K-3505A - HZ - Plan #2						Out of range
Razor #26K-3507A - HZ - Plan #2						Out of range
Razor #26K-3508B - HZ - Plan #1	6,763.5	7,048.9	360.4	295.1	5.514	CC
Razor #26K-3508B - HZ - Plan #1	12,171.3	12,455.9	361.3	100.3	1.384	Level 3, ES, SF
Razor #26L-3504B - HZ - Plan #2						Out of range
Razor 26-3524H (Existing) - Existing - SURVEYs						Out of range
Razor Federal #26I-3513A - HZ - Plan #1						Out of range
Razor Federal #26I-3514B - HZ - Plan #1						Out of range
Razor Federal #26J-2309A - HZ - Plan #1	841.5	842.0	27.3	23.8	7.721	CC, ES
Razor Federal #26J-2309A - HZ - Plan #1	1,000.0	1,000.1	29.5	25.2	6.897	SF
Razor Federal #26J-2310B - HZ - Plan #1	1,506.5	1,507.0	10.8	4.4	1.677	CC, ES, SF
Razor Federal #26J-2311A - HZ - Plan #1	1,061.1	1,061.7	97.9	93.4	21.793	CC
Razor Federal #26J-2311A - HZ - Plan #1	1,100.0	1,100.6	98.0	93.3	21.050	ES
Razor Federal #26J-2311A - HZ - Plan #1	1,500.0	1,497.0	116.5	110.2	18.370	SF
Razor Federal #26J-2312B - HZ - Plan #1	1,575.8	1,575.5	79.8	73.2	11.949	CC
Razor Federal #26J-2312B - HZ - Plan #1	1,600.0	1,599.5	79.9	73.1	11.768	ES
Razor Federal #26J-2312B - HZ - Plan #1	1,800.0	1,797.5	85.7	78.0	11.135	SF
Razor Federal #26J-3510B - HZ - Plan #1	600.0	600.0	81.6	79.2	33.527	CC, ES
Razor Federal #26J-3510B - HZ - Plan #1	12,171.3	12,144.3	360.6	98.3	1.375	Level 3, SF
Razor Federal #26J-3511A - HZ - Plan #1	800.0	800.0	65.3	62.0	19.593	CC, ES
Razor Federal #26J-3511A - HZ - Plan #1	5,114.2	5,109.1	225.6	201.1	9.223	SF
Razor Federal #26J-3512B - HZ - Plan #1	966.7	966.7	123.7	119.6	30.287	CC
Razor Federal #26J-3512B - HZ - Plan #1	1,000.0	1,000.0	123.7	119.4	29.215	ES
Razor Federal #26J-3512B - HZ - Plan #1	5,250.0	5,226.6	312.9	288.1	12.595	SF

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor #26J-2633L - HZ - Plan #1													Offset Site Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft	
Reference				Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-157.22	-75.7	-31.8	82.1						
100.0	100.0	100.0	100.0	0.1	0.1	-157.22	-75.7	-31.8	82.1	81.9	0.19	437.575			
200.0	200.0	200.0	200.0	0.3	0.3	-157.22	-75.7	-31.8	82.1	81.5	0.64	128.880 CC			
300.0	300.0	297.7	297.7	0.5	0.5	-157.92	-77.3	-31.4	83.5	82.4	1.06	78.642			
400.0	400.0	396.2	396.1	0.8	0.7	-159.80	-81.9	-30.1	87.4	85.9	1.49	58.500			
500.0	500.0	496.1	495.8	1.0	0.9	-161.76	-87.2	-28.7	91.9	90.0	1.93	47.601			
600.0	600.0	595.9	595.5	1.2	1.2	-163.53	-92.4	-27.3	96.5	94.1	2.37	40.654			
700.0	700.0	695.8	695.2	1.4	1.4	-165.13	-97.7	-25.9	101.2	98.4	2.82	35.881			
800.0	800.0	795.6	794.9	1.7	1.7	-166.60	-103.0	-24.5	106.0	102.7	3.27	32.415			
900.0	900.0	895.5	894.6	1.9	1.9	-167.93	-108.2	-23.1	110.8	107.1	3.72	29.794			
1,000.0	1,000.0	995.4	994.3	2.1	2.2	-169.16	-113.5	-21.7	115.7	111.5	4.17	27.746			
1,100.0	1,100.0	1,095.3	1,094.1	2.3	2.4	-1.30	-118.7	-20.3	118.9	114.3	4.60	25.848			
1,200.0	1,199.8	1,195.2	1,193.9	2.5	2.7	-2.45	-124.0	-18.9	118.6	113.6	5.00	23.733			
1,300.0	1,299.6	1,295.2	1,293.7	2.7	2.9	-3.67	-129.2	-17.5	116.6	111.2	5.41	21.572			
1,400.0	1,399.4	1,395.1	1,393.5	2.9	3.2	-4.92	-134.5	-16.1	114.8	108.9	5.82	19.703			
1,500.0	1,499.1	1,495.1	1,493.3	3.1	3.4	-6.21	-139.8	-14.7	112.9	106.7	6.25	18.077			
1,600.0	1,598.9	1,595.0	1,593.1	3.3	3.7	-7.55	-145.0	-13.3	111.1	104.5	6.67	16.655			
1,700.0	1,698.6	1,695.0	1,692.9	3.5	3.9	-8.93	-150.3	-11.9	109.4	102.3	7.10	15.404			
1,800.0	1,798.4	1,794.9	1,792.7	3.8	4.2	-10.35	-155.5	-10.5	107.8	100.2	7.54	14.299			
1,900.0	1,898.1	1,894.9	1,892.5	4.0	4.4	-11.82	-160.8	-9.1	106.2	98.2	7.97	13.317			
2,000.0	1,997.9	1,994.8	1,992.3	4.2	4.7	-13.33	-166.1	-7.7	104.7	96.3	8.41	12.442			
2,100.0	2,097.6	2,094.8	2,092.1	4.5	4.9	-14.88	-171.3	-6.3	103.2	94.4	8.85	11.658			
2,200.0	2,197.4	2,194.7	2,191.9	4.7	5.2	-16.47	-176.6	-4.9	101.9	92.6	9.30	10.954			
2,300.0	2,297.2	2,294.7	2,291.7	5.0	5.4	-18.11	-181.8	-3.5	100.6	90.8	9.75	10.319			
2,400.0	2,396.9	2,394.6	2,391.5	5.2	5.7	-19.79	-187.1	-2.1	99.4	89.2	10.20	9.746			
2,500.0	2,496.7	2,494.6	2,491.3	5.5	5.9	-21.50	-192.4	-0.7	98.3	87.6	10.65	9.226			
2,600.0	2,596.4	2,594.5	2,591.1	5.7	6.2	-23.26	-197.6	0.7	97.3	86.2	11.11	8.754			
2,700.0	2,696.2	2,694.5	2,690.9	6.0	6.4	-25.04	-202.9	2.1	96.4	84.8	11.57	8.325			
2,800.0	2,795.9	2,794.4	2,790.7	6.2	6.7	-26.87	-208.1	3.5	95.5	83.5	12.04	7.934			
2,900.0	2,895.7	2,894.4	2,890.5	6.5	6.9	-28.72	-213.4	4.9	94.8	82.3	12.51	7.577			
3,000.0	2,995.5	2,994.3	2,990.3	6.7	7.2	-30.60	-218.7	6.3	94.2	81.2	12.99	7.252			
3,100.0	3,095.2	3,094.3	3,090.1	7.0	7.4	-32.50	-223.9	7.7	93.6	80.2	13.47	6.954			
3,200.0	3,195.0	3,194.2	3,189.9	7.2	7.7	-34.42	-229.2	9.1	93.2	79.3	13.95	6.682			
3,300.0	3,294.7	3,294.2	3,289.7	7.5	7.9	-36.35	-234.4	10.5	92.9	78.5	14.44	6.434			
3,400.0	3,394.5	3,394.1	3,389.5	7.8	8.2	-38.30	-239.7	11.9	92.7	77.8	14.94	6.207			
3,500.0	3,494.2	3,494.1	3,489.3	8.0	8.4	-40.25	-245.0	13.3	92.6	77.2	15.44	5.999			
3,544.2	3,538.4	3,538.3	3,533.5	8.1	8.5	-41.12	-247.3	14.0	92.6	76.9	15.66	5.913			
3,600.0	3,594.0	3,594.0	3,589.2	8.3	8.7	-42.21	-250.2	14.7	92.6	76.7	15.94	5.810			
3,700.0	3,693.7	3,694.0	3,689.0	8.5	8.9	-44.16	-255.5	16.1	92.7	76.3	16.45	5.637			
3,800.0	3,793.5	3,793.9	3,788.8	8.8	9.2	-46.11	-260.7	17.5	92.9	76.0	16.96	5.479			
3,900.0	3,893.3	3,893.9	3,888.6	9.0	9.4	-48.04	-266.0	18.9	93.3	75.8	17.48	5.335			
4,000.0	3,993.0	3,993.8	3,988.4	9.3	9.7	-49.96	-271.3	20.4	93.7	75.7	18.01	5.204 ES			
4,100.0	4,092.8	4,093.8	4,088.2	9.6	9.9	-51.86	-276.5	21.8	94.2	75.7	18.53	5.085			
4,200.0	4,192.5	4,193.7	4,188.0	9.8	10.2	-53.73	-281.8	23.2	94.9	75.8	19.06	4.977			
4,300.0	4,292.3	4,293.7	4,287.8	10.1	10.4	-55.58	-287.0	24.6	95.6	76.0	19.60	4.879			
4,400.0	4,392.0	4,393.6	4,387.6	10.3	10.7	-57.40	-292.3	26.0	96.5	76.3	20.14	4.791			
4,500.0	4,491.8	4,493.6	4,487.4	10.6	10.9	-59.19	-297.6	27.4	97.4	76.7	20.67	4.711			
4,600.0	4,591.6	4,593.5	4,587.2	10.9	11.2	-60.93	-302.8	28.8	98.4	77.2	21.21	4.639			
4,700.0	4,691.3	4,693.5	4,687.0	11.1	11.4	-62.65	-308.1	30.2	99.5	77.8	21.76	4.575			
4,800.0	4,791.1	4,793.4	4,786.8	11.4	11.7	-64.32	-313.3	31.6	100.7	78.4	22.30	4.517			
4,900.0	4,890.8	4,893.4	4,886.6	11.7	11.9	-65.95	-318.6	33.0	102.0	79.2	22.84	4.466			
5,000.0	4,990.6	4,993.3	4,986.4	11.9	12.2	-67.54	-323.9	34.4	103.4	80.0	23.39	4.421			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor #26J-2633L - HZ - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														
Reference				Offset			Semi Major Axis			Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
5,100.0	5,090.3	5,093.3	5,086.2	12.2	12.4	-69.09	-329.1	35.8	104.8	80.9	23.93	4.380		
5,114.2	5,104.5	5,107.5	5,100.4	12.2	12.4	-69.30	-329.9	36.0	105.1	81.0	24.01	4.375		
5,150.0	5,140.1	5,143.2	5,136.0	12.3	12.5	-70.46	-331.7	36.5	105.2	80.9	24.23	4.340		
5,200.0	5,189.2	5,192.7	5,185.4	12.5	12.7	-74.29	-334.4	37.2	104.2	79.6	24.64	4.231		
5,250.0	5,237.2	5,241.3	5,234.0	12.7	12.8	-80.65	-336.9	37.9	102.8	77.7	25.15	4.090		
5,282.1	5,267.3	5,271.9	5,264.5	12.9	12.9	-85.94	-338.5	38.3	102.4	76.9	25.51	4.015		
5,300.0	5,283.7	5,288.6	5,281.2	13.0	12.9	-89.23	-339.4	38.5	102.6	76.9	25.70	3.993 SF		
5,350.0	5,328.1	5,334.1	5,326.6	13.3	13.0	-99.19	-341.8	39.2	105.6	79.5	26.11	4.045		
5,400.0	5,370.2	5,377.5	5,369.9	13.6	13.1	-109.31	-344.0	39.7	114.0	87.8	26.16	4.356		
5,450.0	5,409.5	5,417.7	5,410.1	14.1	13.2	-118.36	-345.5	40.1	129.1	103.3	25.78	5.009		
5,500.0	5,445.6	5,454.1	5,446.6	14.5	13.3	-125.50	-346.3	40.4	151.4	126.3	25.08	6.036		
5,550.0	5,478.3	5,486.5	5,478.9	15.0	13.3	-130.49	-346.7	40.5	180.2	155.9	24.31	7.414		
5,600.0	5,507.2	5,514.7	5,507.2	15.6	13.4	-133.47	-346.8	40.5	214.5	190.9	23.65	9.072		
5,650.0	5,532.0	5,539.6	5,532.0	16.1	13.4	-134.64	-346.8	40.5	253.2	229.9	23.28	10.876		
5,700.0	5,552.6	5,560.2	5,552.6	16.8	13.5	-133.70	-346.8	40.5	295.1	271.7	23.48	12.568		
5,750.0	5,568.7	5,576.3	5,568.7	17.5	13.5	-130.13	-346.8	40.5	339.7	315.1	24.59	13.813		
5,800.0	5,580.2	5,587.8	5,580.2	18.2	13.5	-122.73	-346.8	40.5	386.2	359.3	26.97	14.323		
5,850.0	5,587.0	5,594.6	5,587.0	18.9	13.5	-109.33	-346.8	40.5	434.1	403.5	30.54	14.215		
5,896.0	5,589.1	5,596.6	5,589.1	19.6	13.5	-90.00	-346.8	40.5	478.8	445.7	33.03	14.493		
5,900.0	5,589.1	5,596.6	5,589.1	19.6	13.5	-90.00	-346.8	40.5	482.6	449.6	33.09	14.585		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor #26K-3508B - HZ - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
6,000.0	5,589.1	6,430.3	5,700.0	21.0	27.0	102.74	-1,043.1	-633.4	499.1	456.0	43.08	11.586		
6,100.0	5,589.1	6,500.0	5,700.0	22.3	28.2	103.28	-1,109.6	-612.4	459.6	413.8	45.86	10.022		
6,200.0	5,589.0	6,581.0	5,700.0	23.8	29.5	103.88	-1,187.7	-591.1	428.5	379.7	48.86	8.771		
6,262.8	5,589.0	6,631.2	5,700.0	24.7	30.3	104.19	-1,236.6	-579.6	413.5	362.8	50.76	8.148		
6,300.0	5,589.0	6,661.3	5,700.0	25.3	30.8	104.41	-1,266.0	-573.3	406.0	354.2	51.76	7.843		
6,400.0	5,589.0	6,743.1	5,700.0	27.0	32.2	104.96	-1,346.5	-558.6	388.5	334.0	54.58	7.119		
6,500.0	5,589.0	6,826.2	5,700.0	28.7	33.5	105.41	-1,428.7	-547.1	375.2	317.8	57.46	6.531		
6,600.0	5,589.0	6,910.0	5,700.0	30.4	34.9	105.74	-1,512.2	-539.2	366.1	305.7	60.40	6.062		
6,700.0	5,589.0	7,000.0	5,700.0	32.1	36.3	105.93	-1,602.1	-534.8	361.3	297.8	63.50	5.691		
6,763.5	5,589.0	7,048.9	5,700.0	33.2	37.0	105.96	-1,650.9	-534.2	360.4	295.1	65.37	5.514 CC		
6,800.0	5,589.0	7,084.6	5,700.0	33.9	37.6	105.96	-1,686.6	-534.2	360.4	293.9	66.57	5.414		
6,900.0	5,589.0	7,184.6	5,700.0	35.7	39.2	105.95	-1,786.6	-534.2	360.4	290.5	69.95	5.153		
7,000.0	5,589.0	7,284.6	5,700.0	37.4	40.8	105.95	-1,886.6	-534.2	360.5	287.1	73.35	4.914		
7,100.0	5,589.0	7,384.6	5,700.0	39.2	42.5	105.95	-1,986.6	-534.2	360.5	283.7	76.79	4.694		
7,200.0	5,589.0	7,484.6	5,700.0	41.1	44.1	105.95	-2,086.6	-534.2	360.5	280.2	80.25	4.492		
7,300.0	5,589.0	7,584.6	5,700.0	42.9	45.8	105.95	-2,186.6	-534.2	360.5	276.8	83.73	4.306		
7,400.0	5,589.0	7,684.6	5,700.0	44.7	47.5	105.95	-2,286.6	-534.2	360.5	273.3	87.23	4.133		
7,500.0	5,589.0	7,784.6	5,700.0	46.5	49.2	105.95	-2,386.6	-534.2	360.5	269.8	90.74	3.973		
7,600.0	5,589.0	7,884.6	5,700.0	48.4	51.0	105.95	-2,486.6	-534.2	360.6	266.3	94.27	3.825		
7,700.0	5,589.0	7,984.6	5,700.0	50.2	52.7	105.95	-2,586.6	-534.2	360.6	262.8	97.82	3.686		
7,800.0	5,589.0	8,084.6	5,700.0	52.1	54.5	105.95	-2,686.6	-534.3	360.6	259.2	101.37	3.557		
7,900.0	5,589.0	8,184.6	5,700.0	53.9	56.2	105.95	-2,786.6	-534.3	360.6	255.7	104.94	3.436		
8,000.0	5,589.0	8,284.6	5,700.0	55.8	58.0	105.95	-2,886.6	-534.3	360.6	252.1	108.51	3.323		
8,100.0	5,589.0	8,384.6	5,700.0	57.7	59.8	105.95	-2,986.6	-534.3	360.6	248.5	112.10	3.217		
8,200.0	5,589.0	8,484.6	5,700.0	59.5	61.6	105.95	-3,086.6	-534.3	360.6	245.0	115.69	3.117		
8,300.0	5,589.0	8,584.6	5,700.0	61.4	63.4	105.95	-3,186.6	-534.3	360.7	241.4	119.29	3.023		
8,400.0	5,589.0	8,684.6	5,700.0	63.3	65.2	105.95	-3,286.6	-534.3	360.7	237.8	122.90	2.935		
8,500.0	5,589.0	8,784.6	5,700.0	65.2	67.0	105.94	-3,386.6	-534.3	360.7	234.2	126.51	2.851		
8,600.0	5,589.0	8,884.6	5,700.0	67.0	68.8	105.94	-3,486.6	-534.3	360.7	230.6	130.12	2.772		
8,700.0	5,589.0	8,984.6	5,700.0	68.9	70.7	105.94	-3,586.6	-534.3	360.7	227.0	133.75	2.697		
8,800.0	5,589.0	9,084.6	5,700.0	70.8	72.5	105.94	-3,686.6	-534.3	360.7	223.4	137.37	2.626		
8,900.0	5,589.0	9,184.6	5,700.0	72.7	74.3	105.94	-3,786.6	-534.3	360.8	219.8	141.01	2.558		
9,000.0	5,589.0	9,284.6	5,700.0	74.6	76.2	105.94	-3,886.6	-534.4	360.8	216.1	144.64	2.494		
9,100.0	5,589.0	9,384.6	5,700.0	76.5	78.0	105.94	-3,986.6	-534.4	360.8	212.5	148.28	2.433		
9,200.0	5,589.0	9,484.6	5,700.0	78.3	79.8	105.94	-4,086.6	-534.4	360.8	208.9	151.92	2.375		
9,300.0	5,589.0	9,584.6	5,700.0	80.2	81.7	105.94	-4,186.6	-534.4	360.8	205.3	155.57	2.319		
9,400.0	5,589.0	9,684.6	5,700.0	82.1	83.5	105.94	-4,286.6	-534.4	360.8	201.6	159.22	2.266		
9,500.0	5,589.0	9,784.6	5,700.0	84.0	85.4	105.94	-4,386.6	-534.4	360.9	198.0	162.87	2.216		
9,600.0	5,589.0	9,884.6	5,700.0	85.9	87.3	105.94	-4,486.6	-534.4	360.9	194.3	166.52	2.167		
9,700.0	5,589.0	9,984.6	5,700.0	87.8	89.1	105.94	-4,586.6	-534.4	360.9	190.7	170.18	2.121		
9,800.0	5,589.0	10,084.6	5,700.0	89.7	91.0	105.94	-4,686.6	-534.4	360.9	187.1	173.84	2.076		
9,900.0	5,589.0	10,184.6	5,700.0	91.6	92.8	105.94	-4,786.6	-534.4	360.9	183.4	177.50	2.033		
10,000.0	5,589.0	10,284.6	5,700.0	93.5	94.7	105.94	-4,886.6	-534.4	360.9	179.8	181.16	1.992		
10,100.0	5,589.0	10,384.6	5,700.0	95.4	96.6	105.93	-4,986.6	-534.4	360.9	176.1	184.82	1.953		
10,200.0	5,589.0	10,484.6	5,700.0	97.3	98.5	105.93	-5,086.6	-534.5	361.0	172.5	188.49	1.915		
10,300.0	5,589.0	10,584.6	5,700.0	99.2	100.3	105.93	-5,186.6	-534.5	361.0	168.8	192.16	1.879		
10,400.0	5,589.0	10,684.6	5,700.0	101.1	102.2	105.93	-5,286.6	-534.5	361.0	165.2	195.83	1.843		
10,500.0	5,589.0	10,784.6	5,700.0	103.0	104.1	105.93	-5,386.6	-534.5	361.0	161.5	199.50	1.810		
10,600.0	5,589.0	10,884.6	5,700.0	104.9	105.9	105.93	-5,486.6	-534.5	361.0	157.9	203.17	1.777		
10,700.0	5,589.0	10,984.6	5,700.0	106.8	107.8	105.93	-5,586.6	-534.5	361.0	154.2	206.84	1.745		
10,800.0	5,589.0	11,084.6	5,700.0	108.7	109.7	105.93	-5,686.6	-534.5	361.1	150.5	210.52	1.715		
10,900.0	5,589.0	11,184.6	5,700.0	110.6	111.6	105.93	-5,786.6	-534.5	361.1	146.9	214.19	1.686		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor #26K-3508B - HZ - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														
Reference				Offset			Semi Major Axis			Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
11,000.0	5,589.0	11,284.6	5,700.0	112.5	113.5	105.93	-5,886.6	-534.5	361.1	143.2	217.87	1.657		
11,100.0	5,589.0	11,384.6	5,700.0	114.4	115.4	105.93	-5,986.6	-534.5	361.1	139.6	221.55	1.630		
11,200.0	5,589.0	11,484.6	5,700.0	116.3	117.2	105.93	-6,086.6	-534.5	361.1	135.9	225.23	1.603		
11,300.0	5,589.0	11,584.6	5,700.0	118.2	119.1	105.93	-6,186.6	-534.6	361.1	132.2	228.91	1.578		
11,400.0	5,589.0	11,684.6	5,700.0	120.1	121.0	105.93	-6,286.6	-534.6	361.1	128.6	232.59	1.553		
11,500.0	5,589.0	11,784.6	5,700.0	122.0	122.9	105.93	-6,386.6	-534.6	361.2	124.9	236.27	1.529		
11,600.0	5,589.0	11,884.6	5,700.0	123.9	124.8	105.92	-6,486.6	-534.6	361.2	121.2	239.96	1.505		
11,700.0	5,589.0	11,984.6	5,700.0	125.8	126.7	105.92	-6,586.6	-534.6	361.2	117.6	243.64	1.482	Level 3	
11,800.0	5,589.0	12,084.6	5,700.0	127.8	128.6	105.92	-6,686.6	-534.6	361.2	113.9	247.33	1.460	Level 3	
11,900.0	5,589.0	12,184.6	5,700.0	129.7	130.5	105.92	-6,786.6	-534.6	361.2	110.2	251.01	1.439	Level 3	
12,000.0	5,589.0	12,284.6	5,700.0	131.6	132.3	105.92	-6,886.6	-534.6	361.2	106.5	254.70	1.418	Level 3	
12,100.0	5,589.0	12,384.6	5,700.0	133.5	134.2	105.92	-6,986.6	-534.6	361.3	102.9	258.39	1.398	Level 3	
12,171.3	5,589.0	12,455.9	5,700.0	134.8	135.6	105.92	-7,058.0	-534.6	361.3	100.3	261.02	1.384	Level 3, ES, SF	

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor Federal #26J-2309A - HZ - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	88.94	0.6	32.1	32.1					
100.0	100.0	100.0	100.0	0.1	0.1	88.94	0.6	32.1	32.1	31.9	0.19	171.102		
200.0	200.0	200.0	200.0	0.3	0.3	88.94	0.6	32.1	32.1	31.5	0.64	50.395		
300.0	300.0	300.0	300.0	0.5	0.5	88.94	0.6	32.1	32.1	31.0	1.09	29.549		
400.0	400.0	400.0	400.0	0.8	0.8	88.94	0.6	32.1	32.1	30.6	1.54	20.903		
500.0	500.0	500.0	500.0	1.0	1.0	88.94	0.6	32.1	32.1	30.1	1.99	16.171		
600.0	600.0	600.6	600.5	1.2	1.2	86.19	2.1	31.2	31.2	28.8	2.43	12.828		
700.0	700.0	700.9	700.7	1.4	1.4	77.04	6.5	28.3	29.0	26.2	2.88	10.068		
800.0	800.0	800.6	800.2	1.7	1.7	63.26	12.4	24.5	27.5	24.1	3.34	8.213		
841.5	841.5	842.0	841.5	1.8	1.8	57.22	14.8	23.0	27.3	23.8	3.54	7.721 CC, ES		
900.0	900.0	900.4	899.7	1.9	1.9	48.74	18.2	20.8	27.6	23.8	3.81	7.249		
1,000.0	1,000.0	1,000.1	999.2	2.1	2.2	35.23	24.1	17.0	29.5	25.2	4.27	6.897 SF		
1,100.0	1,100.0	1,099.8	1,098.6	2.3	2.4	-167.76	29.9	13.2	34.4	29.7	4.71	7.305		
1,200.0	1,199.8	1,199.1	1,197.7	2.5	2.7	-176.74	35.7	9.5	44.0	38.9	5.11	8.601		
1,300.0	1,299.6	1,298.3	1,296.7	2.7	2.9	177.63	41.5	5.7	56.0	50.4	5.52	10.129		
1,400.0	1,399.4	1,397.4	1,395.6	2.9	3.2	174.00	47.4	2.0	68.3	62.3	5.94	11.489		
1,500.0	1,499.1	1,496.6	1,494.5	3.1	3.4	171.48	53.2	-1.8	80.8	74.4	6.37	12.688		
1,600.0	1,598.9	1,595.8	1,593.4	3.3	3.7	169.64	59.0	-5.5	93.4	86.6	6.80	13.742		
1,700.0	1,698.6	1,694.9	1,692.3	3.5	3.9	168.24	64.8	-9.2	106.1	98.9	7.23	14.672		
1,800.0	1,798.4	1,794.1	1,791.3	3.8	4.2	167.14	70.6	-13.0	118.8	111.2	7.67	15.495		
1,900.0	1,898.1	1,893.3	1,890.2	4.0	4.4	166.25	76.4	-16.7	131.6	123.5	8.11	16.227		
2,000.0	1,997.9	1,992.4	1,989.1	4.2	4.7	165.52	82.3	-20.5	144.4	135.9	8.55	16.880		
2,100.0	2,097.6	2,091.6	2,088.0	4.5	4.9	164.91	88.1	-24.2	157.2	148.2	9.00	17.468		
2,200.0	2,197.4	2,190.7	2,186.9	4.7	5.2	164.39	93.9	-28.0	170.1	160.6	9.45	17.997		
2,300.0	2,297.2	2,289.9	2,285.9	5.0	5.4	163.95	99.7	-31.7	182.9	173.0	9.90	18.476		
2,400.0	2,396.9	2,389.1	2,384.8	5.2	5.7	163.56	105.5	-35.5	195.8	185.4	10.35	18.912		
2,500.0	2,496.7	2,488.2	2,483.7	5.5	5.9	163.22	111.3	-39.2	208.6	197.8	10.80	19.310		
2,600.0	2,596.4	2,587.4	2,582.6	5.7	6.2	162.92	117.2	-43.0	221.5	210.2	11.26	19.674		
2,700.0	2,696.2	2,686.6	2,681.6	6.0	6.4	162.65	123.0	-46.7	234.4	222.7	11.71	20.009		
2,800.0	2,795.9	2,785.7	2,780.5	6.2	6.7	162.41	128.8	-50.4	247.3	235.1	12.17	20.318		
2,900.0	2,895.7	2,884.9	2,879.4	6.5	7.0	162.20	134.6	-54.2	260.1	247.5	12.63	20.603		
3,000.0	2,995.5	2,984.0	2,978.3	6.7	7.2	162.00	140.4	-57.9	273.0	259.9	13.08	20.867		
3,100.0	3,095.2	3,083.2	3,077.2	7.0	7.5	161.82	146.2	-61.7	285.9	272.4	13.54	21.113		
3,200.0	3,195.0	3,182.4	3,176.2	7.2	7.7	161.66	152.0	-65.4	298.8	284.8	14.00	21.342		
3,300.0	3,294.7	3,281.5	3,275.1	7.5	8.0	161.51	157.9	-69.2	311.7	297.2	14.46	21.556		
3,400.0	3,394.5	3,380.7	3,374.0	7.8	8.2	161.37	163.7	-72.9	324.6	309.7	14.92	21.756		
3,500.0	3,494.2	3,479.8	3,472.9	8.0	8.5	161.25	169.5	-76.7	337.5	322.1	15.38	21.944		
3,600.0	3,594.0	3,579.0	3,571.8	8.3	8.7	161.13	175.3	-80.4	350.4	334.5	15.84	22.120		
3,700.0	3,693.7	3,678.2	3,670.8	8.5	9.0	161.02	181.1	-84.1	363.3	347.0	16.30	22.286		
3,800.0	3,793.5	3,777.3	3,769.7	8.8	9.2	160.92	186.9	-87.9	376.2	359.4	16.76	22.443		
3,900.0	3,893.3	3,876.5	3,868.6	9.0	9.5	160.82	192.8	-91.6	389.1	371.9	17.22	22.590		
4,000.0	3,993.0	3,975.7	3,967.5	9.3	9.8	160.74	198.6	-95.4	402.0	384.3	17.69	22.730		
4,100.0	4,092.8	4,074.8	4,066.4	9.6	10.0	160.65	204.4	-99.1	414.9	396.8	18.15	22.862		
4,200.0	4,192.5	4,174.0	4,165.4	9.8	10.3	160.57	210.2	-102.9	427.8	409.2	18.61	22.988		
4,300.0	4,292.3	4,273.1	4,264.3	10.1	10.5	160.50	216.0	-106.6	440.7	421.6	19.07	23.107		
4,400.0	4,392.0	4,372.3	4,363.2	10.3	10.8	160.43	221.8	-110.4	453.6	434.1	19.54	23.221		
4,500.0	4,491.8	4,471.5	4,462.1	10.6	11.0	160.37	227.6	-114.1	466.5	446.5	20.00	23.329		
4,600.0	4,591.6	4,570.6	4,561.0	10.9	11.3	160.30	233.5	-117.9	479.4	459.0	20.46	23.431		
4,700.0	4,691.3	4,669.8	4,660.0	11.1	11.5	160.24	239.3	-121.6	492.3	471.4	20.92	23.530		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26J-2310B - HZ - Plan #1													Offset Site Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft	
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	179.55	-75.1	0.6	75.1						
100.0	100.0	100.0	100.0	0.1	0.1	179.55	-75.1	0.6	75.1	74.9	0.19	399.971			
200.0	200.0	200.0	200.0	0.3	0.3	179.55	-75.1	0.6	75.1	74.4	0.64	117.804			
300.0	300.0	300.0	300.0	0.5	0.5	179.55	-75.1	0.6	75.1	74.0	1.09	69.075			
400.0	400.0	400.0	400.0	0.8	0.8	179.55	-75.1	0.6	75.1	73.5	1.54	48.863			
500.0	500.0	500.0	500.0	1.0	1.0	179.55	-75.1	0.6	75.1	73.1	1.99	37.801			
600.0	600.0	600.0	600.0	1.2	1.2	179.55	-75.1	0.6	75.1	72.6	2.44	30.824			
700.0	700.0	700.0	700.0	1.4	1.4	179.55	-75.1	0.6	75.1	72.2	2.88	26.021			
800.0	800.0	802.5	802.5	1.7	1.7	-179.97	-73.3	0.0	73.4	70.0	3.34	21.969			
900.0	900.0	904.6	904.4	1.9	1.9	-178.41	-68.2	-1.9	68.4	64.6	3.80	17.999			
1,000.0	1,000.0	1,004.4	1,004.0	2.1	2.1	-176.04	-61.7	-4.3	61.9	57.7	4.25	14.570			
1,100.0	1,100.0	1,104.0	1,103.3	2.3	2.4	-4.29	-55.1	-6.6	53.9	49.2	4.68	11.507			
1,200.0	1,199.8	1,203.3	1,202.4	2.5	2.6	-0.62	-48.6	-9.0	42.5	37.4	5.09	8.358			
1,300.0	1,299.6	1,302.4	1,301.3	2.7	2.9	6.01	-42.1	-11.3	29.7	24.2	5.51	5.402			
1,400.0	1,399.4	1,401.5	1,400.1	2.9	3.1	21.86	-35.6	-13.7	17.9	12.0	5.95	3.014			
1,500.0	1,499.1	1,500.6	1,499.0	3.1	3.3	69.93	-29.1	-16.0	10.8	4.4	6.42	1.690			
1,506.5	1,505.6	1,507.0	1,505.4	3.1	3.4	74.50	-28.7	-16.2	10.8	4.4	6.44	1.677	CC, ES, SF		
1,600.0	1,598.9	1,599.7	1,597.8	3.3	3.6	123.53	-22.6	-18.4	16.6	9.8	6.78	2.440			
1,700.0	1,698.6	1,698.8	1,696.7	3.5	3.8	141.75	-16.1	-20.7	28.1	20.9	7.19	3.911			
1,800.0	1,798.4	1,797.9	1,795.5	3.8	4.1	149.05	-9.6	-23.1	40.8	33.2	7.62	5.360			
1,900.0	1,898.1	1,897.0	1,894.4	4.0	4.3	152.86	-3.1	-25.4	53.9	45.8	8.05	6.691			
2,000.0	1,997.9	1,996.1	1,993.2	4.2	4.6	155.18	3.4	-27.8	67.1	58.6	8.49	7.899			
2,100.0	2,097.6	2,095.2	2,092.1	4.5	4.8	156.73	9.9	-30.1	80.4	71.4	8.94	8.993			
2,200.0	2,197.4	2,194.3	2,190.9	4.7	5.1	157.85	16.4	-32.5	93.7	84.3	9.38	9.986			
2,300.0	2,297.2	2,293.4	2,289.8	5.0	5.3	158.68	22.9	-34.8	107.0	97.2	9.83	10.890			
2,400.0	2,396.9	2,392.5	2,388.7	5.2	5.6	159.33	29.4	-37.2	120.4	110.1	10.27	11.716			
2,500.0	2,496.7	2,491.5	2,487.5	5.5	5.8	159.85	35.9	-39.5	133.7	123.0	10.72	12.472			
2,600.0	2,596.4	2,590.6	2,586.4	5.7	6.1	160.28	42.4	-41.9	147.1	135.9	11.17	13.168			
2,700.0	2,696.2	2,689.7	2,685.2	6.0	6.3	160.63	48.9	-44.2	160.5	148.9	11.62	13.808			
2,800.0	2,795.9	2,788.8	2,784.1	6.2	6.6	160.93	55.4	-46.6	173.9	161.8	12.07	14.401			
2,900.0	2,895.7	2,887.9	2,882.9	6.5	6.8	161.19	61.9	-48.9	187.3	174.8	12.53	14.950			
3,000.0	2,995.5	2,987.0	2,981.8	6.7	7.1	161.41	68.4	-51.3	200.7	187.7	12.98	15.460			
3,100.0	3,095.2	3,086.1	3,080.6	7.0	7.4	161.61	74.9	-53.6	214.1	200.6	13.43	15.936			
3,200.0	3,195.0	3,185.2	3,179.5	7.2	7.6	161.78	81.4	-56.0	227.5	213.6	13.89	16.380			
3,300.0	3,294.7	3,284.3	3,278.3	7.5	7.9	161.93	87.9	-58.3	240.9	226.5	14.34	16.795			
3,400.0	3,394.5	3,383.4	3,377.2	7.8	8.1	162.07	94.4	-60.7	254.3	239.5	14.80	17.185			
3,500.0	3,494.2	3,482.5	3,476.1	8.0	8.4	162.19	100.9	-63.0	267.7	252.4	15.25	17.550			
3,600.0	3,594.0	3,581.6	3,574.9	8.3	8.6	162.31	107.4	-65.4	281.1	265.4	15.71	17.895			
3,700.0	3,693.7	3,680.7	3,673.8	8.5	8.9	162.41	113.9	-67.7	294.5	278.3	16.16	18.219			
3,800.0	3,793.5	3,779.8	3,772.6	8.8	9.1	162.50	120.4	-70.1	307.9	291.3	16.62	18.526			
3,900.0	3,893.3	3,878.9	3,871.5	9.0	9.4	162.58	126.9	-72.4	321.3	304.3	17.08	18.816			
4,000.0	3,993.0	3,978.0	3,970.3	9.3	9.6	162.66	133.4	-74.8	334.7	317.2	17.53	19.090			
4,100.0	4,092.8	4,077.1	4,069.2	9.6	9.9	162.73	139.9	-77.1	348.2	330.2	17.99	19.350			
4,200.0	4,192.5	4,176.2	4,168.0	9.8	10.1	162.80	146.4	-79.5	361.6	343.1	18.45	19.598			
4,300.0	4,292.3	4,275.3	4,266.9	10.1	10.4	162.86	152.9	-81.8	375.0	356.1	18.91	19.833			
4,400.0	4,392.0	4,374.4	4,365.7	10.3	10.6	162.92	159.4	-84.2	388.4	369.0	19.36	20.057			
4,500.0	4,491.8	4,473.5	4,464.6	10.6	10.9	162.97	165.9	-86.5	401.8	382.0	19.82	20.270			
4,600.0	4,591.6	4,572.6	4,563.4	10.9	11.2	163.02	172.4	-88.9	415.2	394.9	20.28	20.473			
4,700.0	4,691.3	4,671.7	4,662.3	11.1	11.4	163.07	178.9	-91.2	428.6	407.9	20.74	20.668			
4,800.0	4,791.1	4,770.7	4,761.2	11.4	11.7	163.12	185.4	-93.6	442.0	420.8	21.20	20.854			
4,900.0	4,890.8	4,869.8	4,860.0	11.7	11.9	163.16	191.9	-95.9	455.5	433.8	21.66	21.031			
5,000.0	4,990.6	4,968.9	4,958.9	11.9	12.2	163.20	198.4	-98.3	468.9	446.8	22.11	21.202			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft				
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft				
S26-T10N-R58W - Razor Federal #26J-2310B - HZ - Plan #1																		
Reference				Offset				Semi Major Axis					Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor						
5,100.0	5,090.3	5,068.0	5,057.7	12.2	12.4	163.23	204.9	-100.6	482.3	459.7	22.57	21.365						
5,114.2	5,104.5	5,082.1	5,071.8	12.2	12.5	163.24	205.9	-100.9	484.2	461.5	22.64	21.388						
5,150.0	5,140.1	5,117.4	5,107.0	12.3	12.6	163.10	208.2	-101.8	490.2	467.5	22.66	21.627						

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor Federal #26J-2311A - HZ - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														
Reference				Offset			Semi Major Axis			Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	88.94	1.8	98.3	98.3					
100.0	100.0	100.0	100.0	0.1	0.1	88.94	1.8	98.3	98.3	98.1	0.19	523.632		
200.0	200.0	200.0	200.0	0.3	0.3	88.94	1.8	98.3	98.3	97.6	0.64	154.227		
300.0	300.0	300.0	300.0	0.5	0.5	88.94	1.8	98.3	98.3	97.2	1.09	90.431		
400.0	400.0	400.0	400.0	0.8	0.8	88.94	1.8	98.3	98.3	96.7	1.54	63.970		
500.0	500.0	500.0	500.0	1.0	1.0	88.94	1.8	98.3	98.3	96.3	1.99	49.489		
600.0	600.0	600.0	600.0	1.2	1.2	88.94	1.8	98.3	98.3	95.8	2.44	40.354		
700.0	700.0	700.0	700.0	1.4	1.4	88.94	1.8	98.3	98.3	95.4	2.88	34.066		
800.0	800.0	800.0	800.0	1.7	1.7	88.94	1.8	98.3	98.3	94.9	3.33	29.473		
900.0	900.0	900.0	900.0	1.9	1.9	88.94	1.8	98.3	98.3	94.5	3.78	25.972		
1,000.0	1,000.0	1,000.5	1,000.5	2.1	2.1	87.93	3.5	98.0	98.0	93.8	4.23	23.155		
1,061.1	1,061.1	1,061.7	1,061.6	2.2	2.3	-105.07	6.3	97.5	97.9	93.4	4.49	21.793	CC	
1,100.0	1,100.0	1,100.6	1,100.4	2.3	2.3	-107.12	8.7	97.1	98.0	93.3	4.65	21.050	ES	
1,200.0	1,199.8	1,199.8	1,199.4	2.5	2.6	-113.91	15.6	95.9	99.8	94.7	5.06	19.733		
1,300.0	1,299.6	1,298.9	1,298.3	2.7	2.8	-121.21	22.4	94.7	103.9	98.4	5.48	18.969		
1,400.0	1,399.4	1,398.0	1,397.1	2.9	3.0	-127.87	29.2	93.6	109.5	103.6	5.91	18.543		
1,500.0	1,499.1	1,497.0	1,495.9	3.1	3.3	-133.81	36.0	92.4	116.5	110.2	6.34	18.370	SF	
1,600.0	1,598.9	1,596.1	1,594.7	3.3	3.5	-139.04	42.8	91.3	124.7	117.9	6.78	18.375		
1,700.0	1,698.6	1,695.1	1,693.5	3.5	3.8	-143.61	49.6	90.1	133.7	126.5	7.22	18.503		
1,800.0	1,798.4	1,794.2	1,792.3	3.8	4.0	-147.58	56.4	88.9	143.5	135.8	7.67	18.712		
1,900.0	1,898.1	1,893.3	1,891.2	4.0	4.2	-151.03	63.2	87.8	153.8	145.7	8.11	18.971		
2,000.0	1,997.9	1,992.3	1,990.0	4.2	4.5	-154.04	70.0	86.6	164.7	156.1	8.55	19.260		
2,100.0	2,097.6	2,091.4	2,088.8	4.5	4.7	-156.68	76.9	85.4	175.9	166.9	8.99	19.563		
2,200.0	2,197.4	2,190.4	2,187.6	4.7	5.0	-158.99	83.7	84.3	187.5	178.1	9.44	19.872		
2,300.0	2,297.2	2,289.5	2,286.4	5.0	5.2	-161.04	90.5	83.1	199.3	189.5	9.88	20.179		
2,400.0	2,396.9	2,388.5	2,385.2	5.2	5.5	-162.85	97.3	81.9	211.4	201.1	10.32	20.479		
2,500.0	2,496.7	2,487.6	2,484.1	5.5	5.7	-164.47	104.1	80.8	223.7	212.9	10.77	20.772		
2,600.0	2,596.4	2,586.7	2,582.9	5.7	6.0	-165.92	110.9	79.6	236.1	224.9	11.21	21.053		
2,700.0	2,696.2	2,685.7	2,681.7	6.0	6.2	-167.22	117.7	78.4	248.6	237.0	11.66	21.324		
2,800.0	2,795.9	2,784.8	2,780.5	6.2	6.5	-168.40	124.5	77.3	261.3	249.2	12.11	21.583		
2,900.0	2,895.7	2,883.8	2,879.3	6.5	6.7	-169.47	131.3	76.1	274.1	261.5	12.55	21.831		
3,000.0	2,995.5	2,982.9	2,978.1	6.7	7.0	-170.45	138.2	75.0	286.9	273.9	13.00	22.067		
3,100.0	3,095.2	3,082.0	3,077.0	7.0	7.2	-171.34	145.0	73.8	299.8	286.4	13.45	22.292		
3,200.0	3,195.0	3,181.0	3,175.8	7.2	7.5	-172.16	151.8	72.6	312.8	298.9	13.90	22.508		
3,300.0	3,294.7	3,280.1	3,274.6	7.5	7.7	-172.91	158.6	71.5	325.9	311.5	14.35	22.710		
3,400.0	3,394.5	3,379.1	3,373.4	7.8	8.0	-173.60	165.4	70.3	339.0	324.2	14.80	22.905		
3,500.0	3,494.2	3,478.2	3,472.2	8.0	8.2	-174.24	172.2	69.1	352.1	336.8	15.25	23.090		
3,600.0	3,594.0	3,577.2	3,571.0	8.3	8.5	-174.84	179.0	68.0	365.3	349.6	15.70	23.267		
3,700.0	3,693.7	3,676.3	3,669.9	8.5	8.7	-175.40	185.8	66.8	378.5	362.3	16.15	23.435		
3,800.0	3,793.5	3,775.4	3,768.7	8.8	9.0	-175.91	192.6	65.6	391.7	375.1	16.60	23.596		
3,900.0	3,893.3	3,874.4	3,867.5	9.0	9.3	-176.40	199.5	64.5	405.0	388.0	17.05	23.749		
4,000.0	3,993.0	3,973.5	3,966.3	9.3	9.5	-176.85	206.3	63.3	418.3	400.8	17.51	23.896		
4,100.0	4,092.8	4,072.5	4,065.1	9.6	9.8	-177.27	213.1	62.1	431.7	413.7	17.96	24.036		
4,200.0	4,192.5	4,171.6	4,163.9	9.8	10.0	-177.67	219.9	61.0	445.0	426.6	18.41	24.171		
4,300.0	4,292.3	4,270.6	4,262.8	10.1	10.3	-178.05	226.7	59.8	458.4	439.5	18.86	24.299		
4,400.0	4,392.0	4,369.7	4,361.6	10.3	10.5	-178.40	233.5	58.7	471.8	452.5	19.32	24.422		
4,500.0	4,491.8	4,468.8	4,460.4	10.6	10.8	-178.74	240.3	57.5	485.2	465.4	19.77	24.540		
4,600.0	4,591.6	4,567.8	4,559.2	10.9	11.0	-179.06	247.1	56.3	498.6	478.4	20.22	24.654		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
S26-T10N-R58W - Razor Federal #26J-2312B - HZ - Plan #1													Offset Well Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD															
Reference				Offset				Semi Major Axis		Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	137.89	-73.8	66.7	99.5						
100.0	100.0	100.0	100.0	0.1	0.1	137.89	-73.8	66.7	99.5	99.3	0.19	530.300			
200.0	200.0	200.0	200.0	0.3	0.3	137.89	-73.8	66.7	99.5	98.9	0.64	156.191			
300.0	300.0	300.0	300.0	0.5	0.5	137.89	-73.8	66.7	99.5	98.4	1.09	91.582			
400.0	400.0	400.0	400.0	0.8	0.8	137.89	-73.8	66.7	99.5	98.0	1.54	64.784			
500.0	500.0	500.0	500.0	1.0	1.0	137.89	-73.8	66.7	99.5	97.5	1.99	50.119			
600.0	600.0	600.0	600.0	1.2	1.2	137.89	-73.8	66.7	99.5	97.1	2.44	40.868			
700.0	700.0	700.0	700.0	1.4	1.4	137.89	-73.8	66.7	99.5	96.6	2.88	34.500			
800.0	800.0	800.0	800.0	1.7	1.7	137.89	-73.8	66.7	99.5	96.2	3.33	29.848			
900.0	900.0	900.0	900.0	1.9	1.9	137.89	-73.8	66.7	99.5	95.7	3.78	26.302			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	137.89	-73.8	66.7	99.5	95.3	4.23	23.509			
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-53.94	-73.8	66.7	98.5	93.8	4.65	21.160			
1,200.0	1,199.8	1,201.6	1,201.6	2.5	2.6	-57.50	-72.1	67.1	94.5	89.5	5.06	18.689			
1,300.0	1,299.6	1,302.4	1,302.2	2.7	2.8	-64.28	-66.8	68.2	88.6	83.1	5.48	16.176			
1,400.0	1,399.4	1,401.4	1,401.0	2.9	3.0	-72.86	-60.1	69.5	83.5	77.6	5.90	14.147			
1,500.0	1,499.1	1,500.5	1,499.8	3.1	3.2	-82.29	-53.3	70.9	80.5	74.2	6.34	12.699			
1,575.8	1,574.7	1,575.5	1,574.7	3.3	3.4	-89.74	-48.2	72.0	79.8	73.2	6.68	11.949 CC			
1,600.0	1,598.9	1,599.5	1,598.6	3.3	3.5	-92.13	-46.5	72.3	79.9	73.1	6.79	11.768 ES			
1,700.0	1,698.6	1,698.5	1,697.4	3.5	3.7	-101.84	-39.8	73.7	81.7	74.4	7.25	11.275			
1,800.0	1,798.4	1,797.5	1,796.2	3.8	4.0	-110.90	-33.0	75.1	85.7	78.0	7.70	11.135 SF			
1,900.0	1,898.1	1,896.6	1,895.0	4.0	4.2	-118.98	-26.2	76.4	91.7	83.6	8.15	11.257			
2,000.0	1,997.9	1,995.6	1,993.7	4.2	4.4	-125.96	-19.5	77.8	99.3	90.7	8.59	11.560			
2,100.0	2,097.6	2,094.6	2,092.5	4.5	4.7	-131.88	-12.7	79.2	108.2	99.1	9.03	11.978			
2,200.0	2,197.4	2,193.7	2,191.3	4.7	4.9	-136.88	-5.9	80.6	118.0	108.5	9.47	12.464			
2,300.0	2,297.2	2,292.7	2,290.1	5.0	5.2	-141.08	0.9	82.0	128.6	118.7	9.90	12.984			
2,400.0	2,396.9	2,391.7	2,388.9	5.2	5.4	-144.64	7.6	83.3	139.8	129.4	10.34	13.516			
2,500.0	2,496.7	2,490.7	2,487.7	5.5	5.7	-147.66	14.4	84.7	151.4	140.6	10.78	14.047			
2,600.0	2,596.4	2,589.8	2,586.5	5.7	5.9	-150.25	21.2	86.1	163.4	152.2	11.22	14.567			
2,700.0	2,696.2	2,688.8	2,685.2	6.0	6.2	-152.48	27.9	87.5	175.7	164.0	11.66	15.070			
2,800.0	2,795.9	2,787.8	2,784.0	6.2	6.4	-154.42	34.7	88.9	188.2	176.1	12.10	15.555			
2,900.0	2,895.7	2,886.8	2,882.8	6.5	6.7	-156.11	41.5	90.2	200.8	188.3	12.54	16.020			
3,000.0	2,995.5	2,985.9	2,981.6	6.7	6.9	-157.61	48.2	91.6	213.7	200.7	12.98	16.463			
3,100.0	3,095.2	3,084.9	3,080.4	7.0	7.1	-158.93	55.0	93.0	226.7	213.2	13.42	16.885			
3,200.0	3,195.0	3,183.9	3,179.2	7.2	7.4	-160.11	61.8	94.4	239.7	225.9	13.87	17.287			
3,300.0	3,294.7	3,283.0	3,278.0	7.5	7.6	-161.17	68.5	95.8	252.9	238.6	14.31	17.669			
3,400.0	3,394.5	3,382.0	3,376.7	7.8	7.9	-162.12	75.3	97.1	266.1	251.4	14.76	18.033			
3,500.0	3,494.2	3,481.0	3,475.5	8.0	8.1	-162.98	82.1	98.5	279.4	264.2	15.21	18.379			
3,600.0	3,594.0	3,580.0	3,574.3	8.3	8.4	-163.77	88.8	99.9	292.8	277.2	15.65	18.707			
3,700.0	3,693.7	3,679.1	3,673.1	8.5	8.6	-164.49	95.6	101.3	306.2	290.1	16.10	19.021			
3,800.0	3,793.5	3,778.1	3,771.9	8.8	8.9	-165.14	102.4	102.7	319.7	303.1	16.55	19.319			
3,900.0	3,893.3	3,877.1	3,870.7	9.0	9.2	-165.74	109.1	104.0	333.2	316.2	17.00	19.603			
4,000.0	3,993.0	3,976.1	3,969.5	9.3	9.4	-166.30	115.9	105.4	346.7	329.3	17.45	19.874			
4,100.0	4,092.8	4,075.2	4,068.2	9.6	9.7	-166.81	122.7	106.8	360.3	342.4	17.89	20.132			
4,200.0	4,192.5	4,174.2	4,167.0	9.8	9.9	-167.29	129.5	108.2	373.8	355.5	18.34	20.379			
4,300.0	4,292.3	4,273.2	4,265.8	10.1	10.2	-167.73	136.2	109.5	387.5	368.7	18.79	20.615			
4,400.0	4,392.0	4,372.2	4,364.6	10.3	10.4	-168.15	143.0	110.9	401.1	381.8	19.24	20.841			
4,500.0	4,491.8	4,471.3	4,463.4	10.6	10.7	-168.53	149.8	112.3	414.7	395.0	19.70	21.057			
4,600.0	4,591.6	4,570.3	4,562.2	10.9	10.9	-168.90	156.5	113.7	428.4	408.2	20.15	21.264			
4,700.0	4,691.3	4,669.3	4,661.0	11.1	11.2	-169.23	163.3	115.1	442.1	421.5	20.60	21.463			
4,800.0	4,791.1	4,768.4	4,759.7	11.4	11.4	-169.55	170.1	116.4	455.8	434.7	21.05	21.653			
4,900.0	4,890.8	4,867.4	4,858.5	11.7	11.7	-169.85	176.8	117.8	469.5	448.0	21.50	21.836			
5,000.0	4,990.6	4,966.4	4,957.3	11.9	11.9	-170.14	183.6	119.2	483.2	461.2	21.95	22.012			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26J-2312B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,090.3	5,065.4	5,056.1	12.2	12.2	-170.40	190.4	120.6	496.9	474.5	22.40	22.180		
5,114.2	5,104.5	5,079.5	5,070.1	12.2	12.2	-170.44	191.3	120.8	498.9	476.4	22.47	22.204		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor Federal #26J-3510B - HZ - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														
Reference				Offset				Semi Major Axis		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	155.76	-74.5	33.5	81.6					
100.0	100.0	100.0	100.0	0.1	0.1	155.76	-74.5	33.5	81.6	81.5	0.19	435.048		
200.0	200.0	200.0	200.0	0.3	0.3	155.76	-74.5	33.5	81.6	81.0	0.64	128.136		
300.0	300.0	300.0	300.0	0.5	0.5	155.76	-74.5	33.5	81.6	80.6	1.09	75.132		
400.0	400.0	400.0	400.0	0.8	0.8	155.76	-74.5	33.5	81.6	80.1	1.54	53.148		
500.0	500.0	500.0	500.0	1.0	1.0	155.76	-74.5	33.5	81.6	79.7	1.99	41.117		
600.0	600.0	600.0	600.0	1.2	1.2	155.76	-74.5	33.5	81.6	79.2	2.44	33.527 CC, ES		
700.0	700.0	697.3	697.3	1.4	1.4	156.08	-76.1	33.7	83.3	80.4	2.85	29.191		
800.0	800.0	794.4	794.2	1.7	1.6	156.98	-81.0	34.4	88.2	84.9	3.26	27.060		
900.0	900.0	894.0	893.6	1.9	1.8	158.09	-87.9	35.3	94.9	91.2	3.68	25.801		
1,000.0	1,000.0	993.7	993.1	2.1	2.0	159.06	-94.8	36.3	101.7	97.6	4.11	24.770		
1,100.0	1,100.0	1,093.6	1,092.7	2.3	2.2	-31.53	-101.7	37.2	107.0	102.5	4.50	23.790		
1,200.0	1,199.8	1,193.5	1,192.4	2.5	2.5	-32.12	-108.6	38.1	109.4	104.5	4.88	22.406		
1,300.0	1,299.6	1,293.5	1,292.1	2.7	2.7	-33.21	-115.5	39.1	110.3	105.0	5.28	20.873		
1,400.0	1,399.4	1,393.5	1,391.9	2.9	2.9	-34.28	-122.4	40.0	111.2	105.5	5.70	19.522		
1,500.0	1,499.1	1,493.5	1,491.6	3.1	3.2	-35.33	-129.3	40.9	112.2	106.1	6.12	18.330		
1,600.0	1,598.9	1,593.4	1,591.3	3.3	3.4	-36.36	-136.2	41.9	113.2	106.6	6.55	17.275		
1,700.0	1,698.6	1,693.4	1,691.1	3.5	3.7	-37.37	-143.1	42.8	114.2	107.2	6.99	16.339		
1,800.0	1,798.4	1,793.4	1,790.8	3.8	4.0	-38.36	-150.0	43.7	115.3	107.9	7.44	15.504		
1,900.0	1,898.1	1,893.4	1,890.5	4.0	4.2	-39.34	-156.9	44.7	116.4	108.5	7.89	14.757		
2,000.0	1,997.9	1,993.3	1,990.3	4.2	4.5	-40.29	-163.9	45.6	117.6	109.2	8.35	14.087		
2,100.0	2,097.6	2,093.3	2,090.0	4.5	4.7	-41.23	-170.8	46.5	118.8	110.0	8.81	13.482		
2,200.0	2,197.4	2,193.3	2,189.7	4.7	5.0	-42.15	-177.7	47.5	120.0	110.7	9.28	12.935		
2,300.0	2,297.2	2,293.3	2,289.5	5.0	5.2	-43.05	-184.6	48.4	121.2	111.5	9.75	12.438		
2,400.0	2,396.9	2,393.2	2,389.2	5.2	5.5	-43.93	-191.5	49.3	122.5	112.3	10.22	11.986		
2,500.0	2,496.7	2,493.2	2,488.9	5.5	5.8	-44.80	-198.4	50.3	123.8	113.1	10.70	11.573		
2,600.0	2,596.4	2,593.2	2,588.6	5.7	6.0	-45.64	-205.3	51.2	125.1	113.9	11.18	11.194		
2,700.0	2,696.2	2,693.2	2,688.4	6.0	6.3	-46.47	-212.2	52.1	126.5	114.8	11.66	10.846		
2,800.0	2,795.9	2,793.1	2,788.1	6.2	6.5	-47.28	-219.1	53.1	127.9	115.7	12.15	10.526		
2,900.0	2,895.7	2,893.1	2,887.8	6.5	6.8	-48.07	-226.1	54.0	129.3	116.6	12.64	10.230		
3,000.0	2,995.5	2,993.1	2,987.6	6.7	7.1	-48.84	-233.0	55.0	130.7	117.6	13.13	9.956		
3,100.0	3,095.2	3,093.1	3,087.3	7.0	7.3	-49.60	-239.9	55.9	132.2	118.5	13.62	9.702		
3,200.0	3,195.0	3,193.0	3,187.0	7.2	7.6	-50.34	-246.8	56.8	133.6	119.5	14.12	9.466		
3,300.0	3,294.7	3,293.0	3,286.8	7.5	7.8	-51.07	-253.7	57.8	135.1	120.5	14.61	9.246		
3,400.0	3,394.5	3,393.0	3,386.5	7.8	8.1	-51.78	-260.6	58.7	136.6	121.5	15.11	9.041		
3,500.0	3,494.2	3,492.9	3,486.2	8.0	8.4	-52.47	-267.5	59.6	138.2	122.6	15.62	8.849		
3,600.0	3,594.0	3,592.9	3,586.0	8.3	8.6	-53.15	-274.4	60.6	139.7	123.6	16.12	8.669		
3,700.0	3,693.7	3,692.9	3,685.7	8.5	8.9	-53.81	-281.3	61.5	141.3	124.7	16.62	8.501		
3,800.0	3,793.5	3,792.9	3,785.4	8.8	9.2	-54.46	-288.3	62.4	142.9	125.8	17.13	8.343		
3,900.0	3,893.3	3,892.8	3,885.1	9.0	9.4	-55.09	-295.2	63.4	144.5	126.9	17.64	8.194		
4,000.0	3,993.0	3,992.8	3,984.9	9.3	9.7	-55.71	-302.1	64.3	146.2	128.0	18.15	8.055		
4,100.0	4,092.8	4,092.8	4,084.6	9.6	10.0	-56.32	-309.0	65.2	147.8	129.2	18.66	7.923		
4,200.0	4,192.5	4,192.8	4,184.3	9.8	10.2	-56.91	-315.9	66.2	149.5	130.3	19.17	7.798		
4,300.0	4,292.3	4,292.7	4,284.1	10.1	10.5	-57.49	-322.8	67.1	151.2	131.5	19.68	7.680		
4,400.0	4,392.0	4,392.7	4,383.8	10.3	10.7	-58.06	-329.7	68.0	152.9	132.7	20.20	7.569		
4,500.0	4,491.8	4,492.7	4,483.5	10.6	11.0	-58.61	-336.6	69.0	154.6	133.9	20.71	7.463		
4,600.0	4,591.6	4,592.7	4,583.3	10.9	11.3	-59.15	-343.5	69.9	156.3	135.1	21.23	7.363		
4,700.0	4,691.3	4,692.6	4,683.0	11.1	11.5	-59.68	-350.5	70.8	158.0	136.3	21.74	7.268		
4,800.0	4,791.1	4,792.6	4,782.7	11.4	11.8	-60.20	-357.4	71.8	159.8	137.5	22.26	7.178		
4,900.0	4,890.8	4,892.6	4,882.5	11.7	12.1	-60.71	-364.3	72.7	161.6	138.8	22.78	7.092		
5,000.0	4,990.6	4,992.6	4,982.2	11.9	12.3	-61.21	-371.2	73.6	163.3	140.0	23.30	7.010		
5,100.0	5,090.3	5,092.5	5,081.9	12.2	12.6	-61.69	-378.1	74.6	165.1	141.3	23.82	6.932		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S26-T10N-R58W - Razor Federal #26J-3510B - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-ISCSWA MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,114.2	5,104.5	5,106.7	5,096.1	12.2	12.6	-61.76	-379.1	74.7	165.4	141.5	23.89	6.921		
5,150.0	5,140.1	5,142.5	5,131.8	12.3	12.7	-62.30	-381.6	75.0	165.4	141.3	24.10	6.865		
5,200.0	5,189.2	5,192.1	5,181.2	12.5	12.8	-64.49	-385.0	75.5	163.7	139.3	24.45	6.697		
5,250.0	5,237.2	5,234.8	5,223.7	12.7	13.0	-67.60	-388.8	76.0	161.1	136.2	24.86	6.480		
5,300.0	5,283.7	5,275.6	5,264.0	13.0	13.1	-70.99	-395.5	76.9	159.7	134.4	25.35	6.300		
5,318.8	5,300.6	5,291.0	5,279.0	13.1	13.2	-72.34	-398.9	77.4	159.6	134.0	25.57	6.242		
5,350.0	5,328.1	5,316.8	5,303.9	13.3	13.3	-74.67	-405.5	78.3	159.9	134.0	25.95	6.164		
5,400.0	5,370.2	5,358.4	5,343.3	13.6	13.5	-78.50	-418.7	80.1	162.0	135.4	26.64	6.081		
5,450.0	5,409.5	5,400.0	5,381.5	14.1	13.7	-82.30	-434.9	82.3	166.2	138.8	27.42	6.060		
5,500.0	5,445.6	5,443.0	5,419.5	14.5	14.0	-86.06	-454.8	85.0	172.5	144.2	28.27	6.102		
5,550.0	5,478.3	5,486.1	5,455.8	15.0	14.3	-89.51	-477.8	88.1	180.9	151.8	29.16	6.206		
5,600.0	5,507.2	5,529.8	5,490.5	15.6	14.7	-92.62	-504.1	91.6	191.5	161.4	30.07	6.368		
5,650.0	5,532.0	5,574.2	5,523.4	16.1	15.1	-95.33	-533.7	95.6	204.0	173.0	31.01	6.579		
5,700.0	5,552.6	5,619.3	5,554.1	16.8	15.5	-97.61	-566.5	100.0	218.2	186.3	31.97	6.826		
5,750.0	5,568.7	5,665.5	5,582.4	17.5	16.1	-99.47	-602.6	104.9	234.0	201.0	32.98	7.095		
5,800.0	5,580.2	5,712.7	5,607.9	18.2	16.6	-100.94	-642.0	110.3	251.0	217.0	34.05	7.372		
5,850.0	5,587.0	5,761.2	5,630.2	18.9	17.2	-102.04	-684.6	116.0	269.1	233.9	35.20	7.646		
5,896.0	5,589.1	5,807.1	5,647.5	19.6	17.8	-102.77	-726.7	121.7	286.4	250.1	36.32	7.886		
5,900.0	5,589.1	5,811.1	5,648.9	19.6	17.9	-102.98	-730.5	122.2	287.9	251.5	36.41	7.909		
6,000.0	5,589.1	5,919.8	5,673.8	21.0	19.5	-105.98	-835.1	136.4	321.8	282.9	38.87	8.278		
6,100.0	5,589.1	6,036.7	5,678.0	22.3	21.2	-105.19	-950.9	151.3	345.7	303.5	42.19	8.193		
6,200.0	5,589.0	6,157.3	5,678.0	23.8	22.8	-104.41	-1,071.1	160.5	358.7	313.3	45.48	7.887		
6,262.8	5,589.0	6,234.1	5,678.0	24.7	23.9	-104.26	-1,147.9	162.4	361.2	313.7	47.52	7.601		
6,300.0	5,589.0	6,272.9	5,678.0	25.3	24.5	-104.26	-1,186.7	162.5	361.3	312.6	48.68	7.421		
6,400.0	5,589.0	6,372.9	5,678.0	27.0	26.1	-104.26	-1,286.7	162.5	361.2	309.3	51.91	6.959		
6,500.0	5,589.0	6,472.9	5,678.0	28.7	27.8	-104.26	-1,386.7	162.5	361.2	306.0	55.22	6.541		
6,600.0	5,589.0	6,572.9	5,678.0	30.4	29.5	-104.26	-1,486.7	162.4	361.2	302.6	58.59	6.165		
6,700.0	5,589.0	6,672.9	5,678.0	32.1	31.3	-104.26	-1,586.7	162.4	361.2	299.2	61.99	5.826		
6,800.0	5,589.0	6,772.9	5,678.0	33.9	33.0	-104.26	-1,686.7	162.4	361.2	295.8	65.44	5.520		
6,900.0	5,589.0	6,872.9	5,678.0	35.7	34.8	-104.26	-1,786.7	162.4	361.2	292.3	68.91	5.241		
7,000.0	5,589.0	6,972.9	5,678.0	37.4	36.6	-104.27	-1,886.7	162.4	361.2	288.8	72.41	4.988		
7,100.0	5,589.0	7,072.9	5,678.0	39.2	38.4	-104.27	-1,986.7	162.4	361.2	285.2	75.93	4.756		
7,200.0	5,589.0	7,172.9	5,678.0	41.1	40.2	-104.27	-2,086.7	162.4	361.1	281.7	79.47	4.544		
7,300.0	5,589.0	7,272.9	5,678.0	42.9	42.1	-104.27	-2,186.7	162.4	361.1	278.1	83.03	4.349		
7,400.0	5,589.0	7,372.9	5,678.0	44.7	43.9	-104.27	-2,286.7	162.4	361.1	274.5	86.60	4.170		
7,500.0	5,589.0	7,472.9	5,678.0	46.5	45.7	-104.27	-2,386.7	162.4	361.1	270.9	90.19	4.004		
7,600.0	5,589.0	7,572.9	5,678.0	48.4	47.6	-104.27	-2,486.7	162.4	361.1	267.3	93.79	3.850		
7,700.0	5,589.0	7,672.9	5,678.0	50.2	49.4	-104.27	-2,586.7	162.4	361.1	263.7	97.39	3.708		
7,800.0	5,589.0	7,772.9	5,678.0	52.1	51.3	-104.27	-2,686.7	162.4	361.1	260.1	101.01	3.575		
7,900.0	5,589.0	7,872.9	5,678.0	53.9	53.1	-104.27	-2,786.7	162.4	361.1	256.4	104.63	3.451		
8,000.0	5,589.0	7,972.9	5,678.0	55.8	55.0	-104.27	-2,886.7	162.4	361.1	252.8	108.27	3.335		
8,100.0	5,589.0	8,072.9	5,678.0	57.7	56.9	-104.27	-2,986.7	162.4	361.0	249.1	111.90	3.226		
8,200.0	5,589.0	8,172.9	5,678.0	59.5	58.7	-104.27	-3,086.7	162.4	361.0	245.5	115.55	3.124		
8,300.0	5,589.0	8,272.9	5,678.0	61.4	60.6	-104.27	-3,186.7	162.4	361.0	241.8	119.20	3.029		
8,400.0	5,589.0	8,372.9	5,678.0	63.3	62.5	-104.27	-3,286.7	162.4	361.0	238.2	122.85	2.938		
8,500.0	5,589.0	8,472.9	5,678.0	65.2	64.4	-104.27	-3,386.7	162.4	361.0	234.5	126.51	2.853		
8,600.0	5,589.0	8,572.9	5,678.0	67.0	66.2	-104.27	-3,486.7	162.4	361.0	230.8	130.18	2.773		
8,700.0	5,589.0	8,672.9	5,678.0	68.9	68.1	-104.27	-3,586.7	162.3	361.0	227.1	133.85	2.697		
8,800.0	5,589.0	8,772.9	5,678.0	70.8	70.0	-104.27	-3,686.7	162.3	361.0	223.4	137.52	2.625		
8,900.0	5,589.0	8,872.9	5,678.0	72.7	71.9	-104.27	-3,786.7	162.3	360.9	219.8	141.19	2.556		
9,000.0	5,589.0	8,972.9	5,678.0	74.6	73.8	-104.28	-3,886.7	162.3	360.9	216.1	144.87	2.491		
9,100.0	5,589.0	9,072.9	5,678.0	76.5	75.7	-104.28	-3,986.7	162.3	360.9	212.4	148.55	2.430		

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft			
Survey Program: 0-ISCSWA MWD												Offset Well Error:		0.0 ft		
Reference				Offset				Semi Major Axis				Distance				Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
9,200.0	5,589.0	9,172.9	5,678.0	78.3	77.6	-104.28	-4,086.7	162.3	360.9	208.7	152.23	2.371				
9,300.0	5,589.0	9,272.9	5,678.0	80.2	79.5	-104.28	-4,186.7	162.3	360.9	205.0	155.91	2.315				
9,400.0	5,589.0	9,372.9	5,678.0	82.1	81.4	-104.28	-4,286.7	162.3	360.9	201.3	159.60	2.261				
9,500.0	5,589.0	9,472.9	5,678.0	84.0	83.2	-104.28	-4,386.7	162.3	360.9	197.6	163.29	2.210				
9,600.0	5,589.0	9,572.9	5,678.0	85.9	85.1	-104.28	-4,486.7	162.3	360.9	193.9	166.98	2.161				
9,700.0	5,589.0	9,672.9	5,678.0	87.8	87.0	-104.28	-4,586.7	162.3	360.9	190.2	170.67	2.114				
9,800.0	5,589.0	9,772.9	5,678.0	89.7	88.9	-104.28	-4,686.7	162.3	360.8	186.5	174.37	2.069				
9,900.0	5,589.0	9,872.9	5,678.0	91.6	90.8	-104.28	-4,786.7	162.3	360.8	182.8	178.06	2.026				
10,000.0	5,589.0	9,972.9	5,678.0	93.5	92.7	-104.28	-4,886.7	162.3	360.8	179.1	181.76	1.985				
10,100.0	5,589.0	10,072.9	5,678.0	95.4	94.6	-104.28	-4,986.7	162.3	360.8	175.3	185.46	1.945				
10,200.0	5,589.0	10,172.9	5,678.0	97.3	96.5	-104.28	-5,086.7	162.3	360.8	171.6	189.16	1.907				
10,300.0	5,589.0	10,272.9	5,678.0	99.2	98.4	-104.28	-5,186.7	162.3	360.8	167.9	192.86	1.871				
10,400.0	5,589.0	10,372.9	5,678.0	101.1	100.3	-104.28	-5,286.7	162.3	360.8	164.2	196.56	1.835				
10,500.0	5,589.0	10,472.9	5,678.0	103.0	102.2	-104.28	-5,386.7	162.3	360.8	160.5	200.27	1.801				
10,600.0	5,589.0	10,572.9	5,678.0	104.9	104.1	-104.28	-5,486.7	162.3	360.7	156.8	203.97	1.769				
10,700.0	5,589.0	10,672.9	5,678.0	106.8	106.0	-104.28	-5,586.7	162.3	360.7	153.1	207.68	1.737				
10,800.0	5,589.0	10,772.9	5,678.0	108.7	107.9	-104.28	-5,686.7	162.3	360.7	149.3	211.38	1.706				
10,900.0	5,589.0	10,872.9	5,678.0	110.6	109.8	-104.28	-5,786.7	162.2	360.7	145.6	215.09	1.677				
11,000.0	5,589.0	10,972.9	5,678.0	112.5	111.8	-104.29	-5,886.7	162.2	360.7	141.9	218.80	1.649				
11,100.0	5,589.0	11,072.9	5,678.0	114.4	113.7	-104.29	-5,986.7	162.2	360.7	138.2	222.51	1.621				
11,200.0	5,589.0	11,172.9	5,678.0	116.3	115.6	-104.29	-6,086.7	162.2	360.7	134.5	226.22	1.594				
11,300.0	5,589.0	11,272.9	5,678.0	118.2	117.5	-104.29	-6,186.7	162.2	360.7	130.7	229.93	1.569				
11,400.0	5,589.0	11,372.9	5,678.0	120.1	119.4	-104.29	-6,286.7	162.2	360.7	127.0	233.64	1.544				
11,500.0	5,589.0	11,472.9	5,678.0	122.0	121.3	-104.29	-6,386.7	162.2	360.6	123.3	237.35	1.519				
11,600.0	5,589.0	11,572.9	5,678.0	123.9	123.2	-104.29	-6,486.7	162.2	360.6	119.6	241.06	1.496 Level 3				
11,700.0	5,589.0	11,672.9	5,678.0	125.8	125.1	-104.29	-6,586.7	162.2	360.6	115.8	244.78	1.473 Level 3				
11,800.0	5,589.0	11,772.9	5,678.0	127.8	127.0	-104.29	-6,686.7	162.2	360.6	112.1	248.49	1.451 Level 3				
11,900.0	5,589.0	11,872.9	5,678.0	129.7	128.9	-104.29	-6,786.7	162.2	360.6	108.4	252.20	1.430 Level 3				
12,000.0	5,589.0	11,972.9	5,678.0	131.6	130.8	-104.29	-6,886.7	162.2	360.6	104.7	255.92	1.409 Level 3				
12,100.0	5,589.0	12,072.9	5,678.0	133.5	132.7	-104.29	-6,986.7	162.2	360.6	100.9	259.63	1.389 Level 3				
12,171.3	5,589.0	12,144.3	5,678.0	134.8	134.1	-104.29	-7,058.0	162.2	360.6	98.3	262.28	1.375 Level 3, SF				

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD													Offset Well Error:		0.0 ft
Reference				Offset			Semi Major Axis			Distance			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	88.94	1.2	65.3	65.3						
100.0	100.0	100.0	100.0	0.1	0.1	88.94	1.2	65.3	65.3	65.1	0.19	348.105			
200.0	200.0	200.0	200.0	0.3	0.3	88.94	1.2	65.3	65.3	64.7	0.64	102.528			
300.0	300.0	300.0	300.0	0.5	0.5	88.94	1.2	65.3	65.3	64.2	1.09	60.117			
400.0	400.0	400.0	400.0	0.8	0.8	88.94	1.2	65.3	65.3	63.8	1.54	42.526			
500.0	500.0	500.0	500.0	1.0	1.0	88.94	1.2	65.3	65.3	63.3	1.99	32.900			
600.0	600.0	600.0	600.0	1.2	1.2	88.94	1.2	65.3	65.3	62.9	2.44	26.827			
700.0	700.0	700.0	700.0	1.4	1.4	88.94	1.2	65.3	65.3	62.4	2.88	22.646			
800.0	800.0	800.0	800.0	1.7	1.7	88.94	1.2	65.3	65.3	62.0	3.33	19.593 CC, ES			
900.0	900.0	899.2	899.2	1.9	1.9	90.34	-0.4	65.9	66.0	62.2	3.75	17.565			
1,000.0	1,000.0	998.1	998.0	2.1	2.0	94.36	-5.2	67.8	68.0	63.9	4.16	16.363			
1,100.0	1,100.0	1,097.9	1,097.5	2.3	2.2	-92.92	-11.7	70.3	71.4	66.9	4.55	15.701			
1,200.0	1,199.8	1,197.9	1,197.2	2.5	2.4	-92.20	-18.2	72.9	75.1	70.2	4.93	15.238			
1,300.0	1,299.6	1,297.8	1,296.9	2.7	2.7	-92.87	-24.6	75.4	78.9	73.5	5.33	14.791			
1,400.0	1,399.4	1,397.7	1,396.6	2.9	2.9	-93.49	-31.1	77.9	82.7	76.9	5.76	14.360			
1,500.0	1,499.1	1,497.6	1,496.3	3.1	3.1	-94.05	-37.6	80.5	86.5	80.3	6.20	13.955			
1,600.0	1,598.9	1,597.6	1,595.9	3.3	3.4	-94.57	-44.1	83.0	90.3	83.6	6.65	13.580			
1,700.0	1,698.6	1,697.5	1,695.6	3.5	3.6	-95.04	-50.6	85.5	94.1	87.0	7.11	13.234			
1,800.0	1,798.4	1,797.4	1,795.3	3.8	3.9	-95.48	-57.1	88.1	97.9	90.3	7.58	12.917			
1,900.0	1,898.1	1,897.3	1,895.0	4.0	4.1	-95.88	-63.6	90.6	101.7	93.6	8.05	12.627			
2,000.0	1,997.9	1,997.3	1,994.7	4.2	4.3	-96.26	-70.1	93.2	105.5	97.0	8.54	12.362			
2,100.0	2,097.6	2,097.2	2,094.3	4.5	4.6	-96.61	-76.6	95.7	109.3	100.3	9.02	12.118			
2,200.0	2,197.4	2,197.1	2,194.0	4.7	4.8	-96.93	-83.1	98.2	113.2	103.7	9.51	11.895			
2,300.0	2,297.2	2,297.0	2,293.7	5.0	5.1	-97.23	-89.6	100.8	117.0	107.0	10.01	11.691			
2,400.0	2,396.9	2,397.0	2,393.4	5.2	5.4	-97.52	-96.1	103.3	120.8	110.3	10.51	11.502			
2,500.0	2,496.7	2,496.9	2,493.1	5.5	5.6	-97.79	-102.6	105.8	124.7	113.7	11.01	11.328			
2,600.0	2,596.4	2,596.8	2,592.8	5.7	5.9	-98.04	-109.1	108.4	128.5	117.0	11.51	11.168			
2,700.0	2,696.2	2,696.7	2,692.4	6.0	6.1	-98.27	-115.6	110.9	132.4	120.4	12.01	11.019			
2,800.0	2,795.9	2,796.7	2,792.1	6.2	6.4	-98.50	-122.0	113.4	136.2	123.7	12.52	10.881			
2,900.0	2,895.7	2,896.6	2,891.8	6.5	6.6	-98.71	-128.5	116.0	140.1	127.0	13.03	10.752			
3,000.0	2,995.5	2,996.5	2,991.5	6.7	6.9	-98.91	-135.0	118.5	143.9	130.4	13.54	10.632			
3,100.0	3,095.2	3,096.4	3,091.2	7.0	7.2	-99.10	-141.5	121.0	147.8	133.7	14.05	10.520			
3,200.0	3,195.0	3,196.4	3,190.8	7.2	7.4	-99.28	-148.0	123.6	151.6	137.1	14.56	10.416			
3,300.0	3,294.7	3,296.3	3,290.5	7.5	7.7	-99.45	-154.5	126.1	155.5	140.4	15.07	10.317			
3,400.0	3,394.5	3,396.2	3,390.2	7.8	7.9	-99.61	-161.0	128.6	159.3	143.8	15.58	10.225			
3,500.0	3,494.2	3,496.1	3,489.9	8.0	8.2	-99.76	-167.5	131.2	163.2	147.1	16.10	10.138			
3,600.0	3,594.0	3,596.0	3,589.6	8.3	8.5	-99.91	-174.0	133.7	167.1	150.4	16.61	10.057			
3,700.0	3,693.7	3,696.0	3,689.2	8.5	8.7	-100.05	-180.5	136.2	170.9	153.8	17.13	9.979			
3,800.0	3,793.5	3,795.9	3,788.9	8.8	9.0	-100.19	-187.0	138.8	174.8	157.1	17.64	9.907			
3,900.0	3,893.3	3,895.8	3,888.6	9.0	9.2	-100.31	-193.5	141.3	178.6	160.5	18.16	9.838			
4,000.0	3,993.0	3,995.7	3,988.3	9.3	9.5	-100.44	-200.0	143.8	182.5	163.8	18.68	9.772			
4,100.0	4,092.8	4,095.7	4,088.0	9.6	9.8	-100.56	-206.5	146.4	186.4	167.2	19.19	9.710			
4,200.0	4,192.5	4,195.6	4,187.7	9.8	10.0	-100.67	-213.0	148.9	190.2	170.5	19.71	9.651			
4,300.0	4,292.3	4,295.5	4,287.3	10.1	10.3	-100.78	-219.4	151.4	194.1	173.9	20.23	9.595			
4,400.0	4,392.0	4,395.4	4,387.0	10.3	10.6	-100.88	-225.9	154.0	198.0	177.2	20.75	9.542			
4,500.0	4,491.8	4,495.4	4,486.7	10.6	10.8	-100.98	-232.4	156.5	201.8	180.6	21.27	9.491			
4,600.0	4,591.6	4,595.3	4,586.4	10.9	11.1	-101.08	-238.9	159.0	205.7	183.9	21.79	9.442			
4,700.0	4,691.3	4,695.2	4,686.1	11.1	11.3	-101.17	-245.4	161.6	209.6	187.3	22.30	9.395			
4,800.0	4,791.1	4,795.1	4,785.7	11.4	11.6	-101.26	-251.9	164.1	213.4	190.6	22.82	9.351			
4,900.0	4,890.8	4,895.1	4,885.4	11.7	11.9	-101.35	-258.4	166.6	217.3	194.0	23.34	9.309			
5,000.0	4,990.6	4,995.0	4,985.1	11.9	12.1	-101.43	-264.9	169.2	221.2	197.3	23.86	9.268			
5,100.0	5,090.3	5,094.9	5,084.8	12.2	12.4	-101.51	-271.4	171.7	225.0	200.7	24.38	9.229			

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

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor Federal #26J-3511A - HZ - Plan #1													Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD														
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,114.2	5,104.5	5,109.1	5,098.9	12.2	12.4	-101.53	-272.3	172.1	225.6	201.1	24.46	9.223 SF		
5,150.0	5,140.1	5,140.8	5,130.5	12.3	12.5	-101.45	-275.0	173.1	227.5	202.8	24.64	9.231		
5,200.0	5,189.2	5,184.0	5,173.1	12.5	12.7	-101.28	-281.4	175.6	232.2	207.2	24.95	9.307		
5,250.0	5,237.2	5,226.8	5,214.6	12.7	12.8	-101.02	-291.1	179.4	239.3	213.9	25.31	9.452		
5,300.0	5,283.7	5,269.3	5,254.9	13.0	13.1	-100.64	-303.8	184.3	248.6	222.9	25.74	9.660		
5,350.0	5,328.1	5,311.3	5,293.4	13.3	13.3	-100.15	-319.2	190.4	260.2	233.9	26.23	9.920		
5,400.0	5,370.2	5,350.0	5,327.7	13.6	13.5	-99.47	-336.0	196.9	273.8	247.0	26.77	10.229		
5,450.0	5,409.5	5,393.7	5,364.6	14.1	13.9	-98.78	-357.8	205.4	289.4	261.9	27.42	10.554		
5,500.0	5,445.6	5,434.1	5,396.9	14.5	14.2	-97.89	-380.4	214.3	306.8	278.6	28.13	10.904		
5,550.0	5,478.3	5,473.9	5,426.8	15.0	14.6	-96.87	-404.9	223.8	325.8	296.9	28.95	11.252		
5,600.0	5,507.2	5,513.3	5,454.3	15.6	14.9	-95.70	-431.1	234.0	346.3	316.5	29.86	11.601		
5,650.0	5,532.0	5,550.0	5,477.9	16.1	15.3	-94.34	-457.3	244.3	368.2	337.4	30.81	11.951		
5,700.0	5,552.6	5,590.7	5,501.8	16.8	15.8	-93.02	-488.0	256.2	391.2	359.4	31.89	12.269		
5,750.0	5,568.7	5,629.0	5,521.8	17.5	16.3	-91.53	-518.4	268.1	415.3	382.3	33.00	12.582		
5,800.0	5,580.2	5,667.2	5,539.3	18.2	16.8	-89.96	-550.0	280.4	440.1	405.9	34.17	12.879		
5,850.0	5,587.0	5,705.4	5,554.3	18.9	17.3	-88.33	-582.7	293.2	465.5	430.2	35.38	13.158		
5,896.0	5,589.1	5,740.8	5,565.9	19.6	17.8	-86.82	-613.9	305.4	489.4	452.9	36.53	13.396		
5,900.0	5,589.1	5,743.8	5,566.8	19.6	17.8	-86.96	-616.6	306.4	491.5	454.8	36.64	13.413		

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
S26-T10N-R58W - Razor Federal #26J-3512B - HZ - Plan #1													Offset Well Error:	0.0 ft	
Survey Program: 0-ISCSWA MWD															
Reference				Offset				Semi Major Axis		Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	126.30	-73.2	99.7	123.7						
100.0	100.0	100.0	100.0	0.1	0.1	126.30	-73.2	99.7	123.7	123.5	0.19	659.002			
200.0	200.0	200.0	200.0	0.3	0.3	126.30	-73.2	99.7	123.7	123.0	0.64	194.098			
300.0	300.0	300.0	300.0	0.5	0.5	126.30	-73.2	99.7	123.7	122.6	1.09	113.809			
400.0	400.0	400.0	400.0	0.8	0.8	126.30	-73.2	99.7	123.7	122.1	1.54	80.507			
500.0	500.0	500.0	500.0	1.0	1.0	126.30	-73.2	99.7	123.7	121.7	1.99	62.283			
600.0	600.0	600.0	600.0	1.2	1.2	126.30	-73.2	99.7	123.7	121.2	2.44	50.786			
700.0	700.0	700.0	700.0	1.4	1.4	126.30	-73.2	99.7	123.7	120.8	2.88	42.872			
800.0	800.0	800.0	800.0	1.7	1.7	126.30	-73.2	99.7	123.7	120.3	3.33	37.092			
900.0	900.0	900.0	900.0	1.9	1.9	126.30	-73.2	99.7	123.7	119.9	3.78	32.686			
966.7	966.7	966.7	966.7	2.0	2.0	126.30	-73.2	99.7	123.7	119.6	4.08	30.287 CC			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	126.30	-73.2	99.7	123.7	119.4	4.23	29.215 ES			
1,100.0	1,100.0	1,096.1	1,096.1	2.3	2.3	-65.11	-74.6	100.5	124.5	119.9	4.62	26.948			
1,200.0	1,199.8	1,192.2	1,192.0	2.5	2.5	-66.30	-78.7	103.1	127.0	122.0	4.97	25.561			
1,300.0	1,299.6	1,291.7	1,291.3	2.7	2.7	-67.90	-84.6	106.8	130.7	125.3	5.34	24.448			
1,400.0	1,399.4	1,391.6	1,390.9	2.9	2.9	-69.41	-90.4	110.5	134.4	128.7	5.74	23.424			
1,500.0	1,499.1	1,491.4	1,490.6	3.1	3.1	-70.83	-96.3	114.2	138.3	132.1	6.15	22.487			
1,600.0	1,598.9	1,591.3	1,590.2	3.3	3.3	-72.18	-102.2	117.9	142.2	135.6	6.57	21.635			
1,700.0	1,698.6	1,691.2	1,689.8	3.5	3.5	-73.46	-108.1	121.6	146.2	139.2	7.01	20.862			
1,800.0	1,798.4	1,791.1	1,789.4	3.8	3.8	-74.66	-114.0	125.3	150.3	142.8	7.45	20.161			
1,900.0	1,898.1	1,890.9	1,889.1	4.0	4.0	-75.81	-119.9	129.1	154.4	146.5	7.91	19.528			
2,000.0	1,997.9	1,990.8	1,988.7	4.2	4.2	-76.89	-125.8	132.8	158.6	150.2	8.37	18.953			
2,100.0	2,097.6	2,090.7	2,088.3	4.5	4.5	-77.91	-131.7	136.5	162.9	154.0	8.84	18.431			
2,200.0	2,197.4	2,190.5	2,187.9	4.7	4.7	-78.89	-137.6	140.2	167.2	157.8	9.31	17.957			
2,300.0	2,297.2	2,290.4	2,287.6	5.0	5.0	-79.81	-143.5	143.9	171.5	161.7	9.79	17.524			
2,400.0	2,396.9	2,390.3	2,387.2	5.2	5.2	-80.69	-149.4	147.6	175.9	165.6	10.27	17.129			
2,500.0	2,496.7	2,490.1	2,486.8	5.5	5.5	-81.53	-155.3	151.3	180.3	169.6	10.75	16.768			
2,600.0	2,596.4	2,590.0	2,586.4	5.7	5.7	-82.32	-161.2	155.0	184.8	173.5	11.24	16.436			
2,700.0	2,696.2	2,689.9	2,686.1	6.0	6.0	-83.08	-167.1	158.7	189.3	177.5	11.73	16.130			
2,800.0	2,795.9	2,789.7	2,785.7	6.2	6.2	-83.80	-173.0	162.4	193.8	181.6	12.23	15.849			
2,900.0	2,895.7	2,889.6	2,885.3	6.5	6.5	-84.49	-178.9	166.2	198.4	185.6	12.72	15.588			
3,000.0	2,995.5	2,989.5	2,984.9	6.7	6.7	-85.15	-184.8	169.9	202.9	189.7	13.22	15.347			
3,100.0	3,095.2	3,089.3	3,084.6	7.0	7.0	-85.78	-190.7	173.6	207.6	193.8	13.72	15.124			
3,200.0	3,195.0	3,189.2	3,184.2	7.2	7.3	-86.38	-196.6	177.3	212.2	198.0	14.23	14.916			
3,300.0	3,294.7	3,289.1	3,283.8	7.5	7.5	-86.96	-202.5	181.0	216.8	202.1	14.73	14.722			
3,400.0	3,394.5	3,388.9	3,383.4	7.8	7.8	-87.51	-208.4	184.7	221.5	206.3	15.23	14.541			
3,500.0	3,494.2	3,488.8	3,483.1	8.0	8.0	-88.04	-214.3	188.4	226.2	210.5	15.74	14.372			
3,600.0	3,594.0	3,588.7	3,582.7	8.3	8.3	-88.55	-220.2	192.1	230.9	214.7	16.25	14.214			
3,700.0	3,693.7	3,688.5	3,682.3	8.5	8.5	-89.04	-226.1	195.8	235.7	218.9	16.76	14.065			
3,800.0	3,793.5	3,788.4	3,781.9	8.8	8.8	-89.50	-232.0	199.6	240.4	223.2	17.26	13.926			
3,900.0	3,893.3	3,888.3	3,881.6	9.0	9.1	-89.95	-237.9	203.3	245.2	227.4	17.77	13.794			
4,000.0	3,993.0	3,988.2	3,981.2	9.3	9.3	-90.39	-243.7	207.0	250.0	231.7	18.29	13.670			
4,100.0	4,092.8	4,088.0	4,080.8	9.6	9.6	-90.80	-249.6	210.7	254.8	236.0	18.80	13.553			
4,200.0	4,192.5	4,187.9	4,180.4	9.8	9.8	-91.20	-255.5	214.4	259.6	240.3	19.31	13.443			
4,300.0	4,292.3	4,287.8	4,280.1	10.1	10.1	-91.59	-261.4	218.1	264.4	244.6	19.82	13.338			
4,400.0	4,392.0	4,387.6	4,379.7	10.3	10.4	-91.96	-267.3	221.8	269.2	248.9	20.33	13.239			
4,500.0	4,491.8	4,487.5	4,479.3	10.6	10.6	-92.32	-273.2	225.5	274.1	253.2	20.85	13.145			
4,600.0	4,591.6	4,587.4	4,578.9	10.9	10.9	-92.67	-279.1	229.2	278.9	257.5	21.36	13.056			
4,700.0	4,691.3	4,687.2	4,678.6	11.1	11.1	-93.01	-285.0	232.9	283.8	261.9	21.88	12.971			
4,800.0	4,791.1	4,787.1	4,778.2	11.4	11.4	-93.33	-290.9	236.7	288.6	266.3	22.39	12.890			
4,900.0	4,890.8	4,887.0	4,877.8	11.7	11.7	-93.64	-296.8	240.4	293.5	270.6	22.91	12.814			
5,000.0	4,990.6	4,986.8	4,977.4	11.9	11.9	-93.94	-302.7	244.1	298.4	275.0	23.42	12.740			

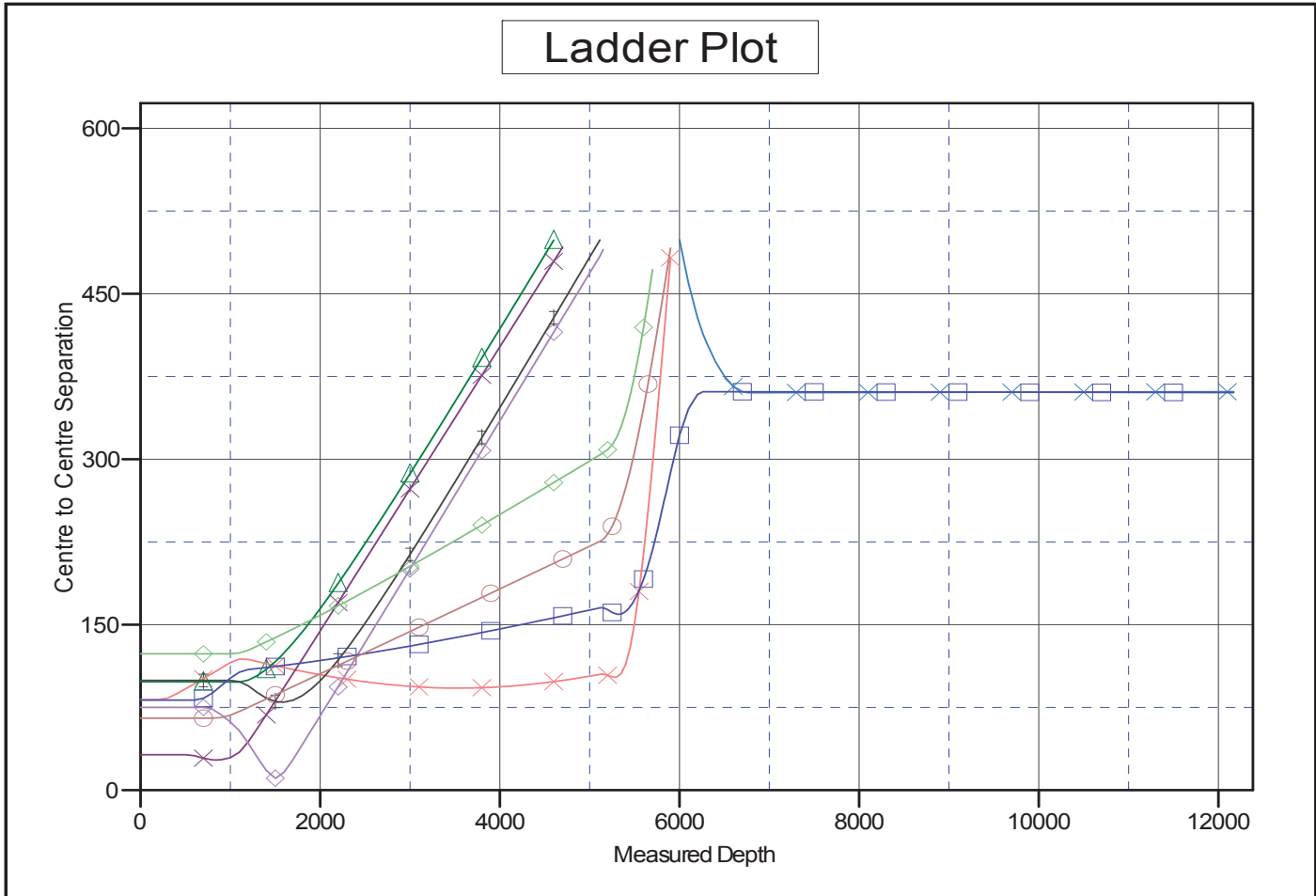
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
S26-T10N-R58W - Razor Federal #26J-3512B - HZ - Plan #1														Offset Well Error:	0.0 ft
Survey Program: 0-ISCSWA MWD															
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,100.0	5,090.3	5,086.7	5,077.1	12.2	12.2	-94.24	-308.6	247.8	303.3	279.4	23.94	12.670			
5,114.2	5,104.5	5,100.9	5,091.2	12.2	12.2	-94.28	-309.4	248.3	304.0	280.0	24.01	12.660			
5,150.0	5,140.1	5,136.6	5,126.8	12.3	12.3	-94.41	-311.6	249.6	305.9	281.7	24.20	12.636			
5,200.0	5,189.2	5,186.1	5,176.2	12.5	12.4	-95.28	-314.5	251.5	308.8	284.3	24.51	12.598			
5,250.0	5,237.2	5,226.6	5,216.6	12.7	12.6	-96.41	-317.3	253.3	312.9	288.1	24.84	12.595 SF			
5,300.0	5,283.7	5,262.3	5,251.9	13.0	12.7	-97.30	-321.8	256.1	319.8	294.6	25.20	12.687			
5,350.0	5,328.1	5,300.0	5,288.7	13.3	12.8	-98.14	-328.7	260.4	329.5	303.9	25.61	12.865			
5,400.0	5,370.2	5,332.6	5,320.0	13.6	13.0	-98.54	-336.5	265.3	342.1	316.1	26.06	13.129			
5,450.0	5,409.5	5,367.0	5,352.2	14.1	13.2	-98.80	-346.5	271.6	357.6	331.0	26.57	13.462			
5,500.0	5,445.6	5,400.0	5,382.4	14.5	13.3	-98.73	-357.8	278.7	375.8	348.7	27.12	13.855			
5,550.0	5,478.3	5,433.5	5,412.1	15.0	13.6	-98.43	-370.9	287.0	396.5	368.8	27.76	14.285			
5,600.0	5,507.2	5,465.6	5,439.6	15.6	13.8	-97.76	-384.9	295.8	419.6	391.1	28.46	14.746			
5,650.0	5,532.0	5,500.0	5,467.9	16.1	14.0	-96.98	-401.5	306.2	444.9	415.6	29.23	15.219			
5,700.0	5,552.6	5,527.4	5,489.4	16.8	14.3	-95.42	-415.8	315.2	472.0	442.0	30.07	15.696			

Company:	Whiting Petroleum Corporation	Local Co-ordinate Reference:	Well Razor Federal #26J-3509A
Project:	Weld County, CO	TVD Reference:	WELL @ 4742.1ft (Original Well Elev)
Reference Site:	S26-T10N-R58W	MD Reference:	WELL @ 4742.1ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	Grid
Reference Well:	Razor Federal #26J-3509A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4742.1ft (Original Well Elev) Coordinates are relative to: Razor Federal #26J-3509A
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 1.08°



LEGEND

- ✖ Razor #26J-2633L, HZ, Plan #1 V0
- ✖ Razor #26K-3508B, HZ, Plan #1 V0
- ✖ Razor Federal #26J-2309A, HZ, Plan #1 V0
- ◇ Razor Federal #26J-2310B, HZ, Plan #1 V0
- △ Razor Federal #26J-2311A, HZ, Plan #1 V0
- ⊠ Razor Federal #26J-2312B, HZ, Plan #1 V0
- ⊠ Razor Federal #26J-3510B, HZ, Plan #1 V0
- △ Razor Federal #26J-3511A, HZ, Plan #1 V0
- ◇ Razor Federal #26J-3512B, HZ, Plan #1 V0