WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S10-T10N-R58W
Well: Razor #10E-0302B
Wellbore: HZ
Design: Plan #1

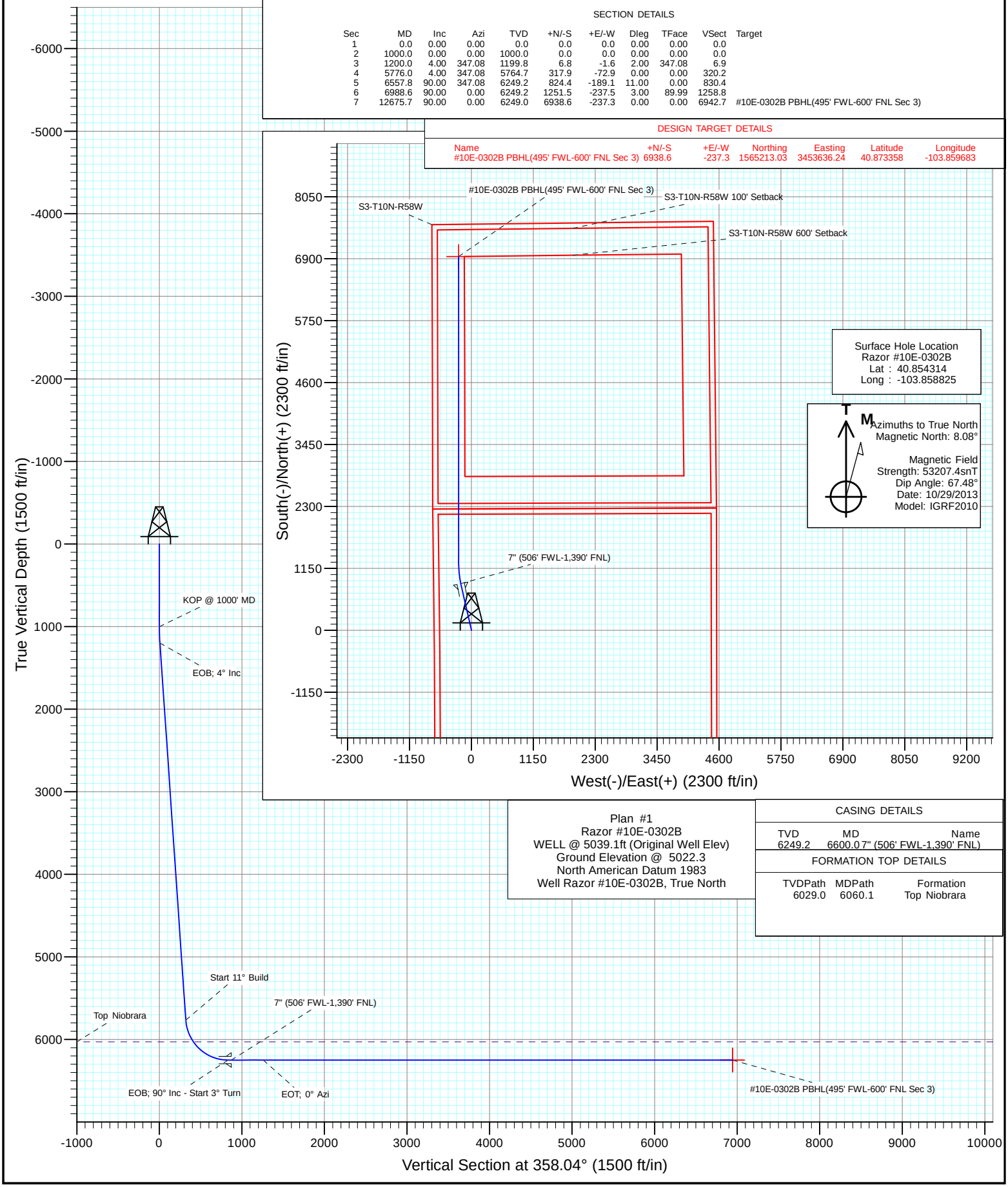
CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1200.0	4.00	347.08	1199.8	6.8	-1.6	2.00	347.08	6.9	
4	5776.0	4.00	347.08	5764.7	317.9	-72.9	0.00	0.00	320.2	
5	6557.8	90.00	347.08	6249.2	824.4	-189.1	11.00	0.00	830.4	
6	6988.6	90.00	0.00	6249.2	1251.5	-237.5	3.00	89.99	1258.8	
7	12675.7	90.00	0.00	6249.0	6938.6	-237.3	0.00	0.00	6942.7	#10E-0302B PBHL(495' FWL-600' FNL Sec 3)

DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
#10E-0302B PBHL(495' FWL-600' FNL Sec 3)	6938.6	-237.3	1565213.03	3453636.24	40.873358	-103.859683



Plan #1
Razor #10E-0302B
WELL @ 5039.1ft (Original Well Elev)
Ground Elevation @ 5022.3
North American Datum 1983
Well Razor #10E-0302B, True North

CASING DETAILS

TVD	MD	Name
6249.2	6600.0	7" (506' FWL-1,390' FNL)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6029.0	6060.1	Top Niobrara

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site:	S10-T10N-R58W	**North Reference:**	True
Well:	Razor #10E-0302B	**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 S10-T10N-R58W

Site Position:		**Northing:**	1,558,370.48 usft	**Latitude:**	40° 51' 15.74 N
From:	Lat/Long	**Easting:**	3,457,889.23 usft	**Longitude:**	103° 50' 41.08 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.07 °

Well Razor #10E-0302B

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,558,276.87 usft	**Latitude:**	40° 51' 15.53 N
	+E/-W	0.0 usft	**Easting:**	3,453,995.00 usft	**Longitude:**	103° 51' 31.77 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	5,022.3 usft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/29/2013	8.08	67.48	53,207

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	358.04

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
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	347.08	1,199.8	6.8	-1.6	2.00	2.00	0.00	347.08	
5,776.0	4.00	347.08	5,764.7	317.9	-72.9	0.00	0.00	0.00	0.00	
6,557.8	90.00	347.08	6,249.2	824.4	-189.1	11.00	11.00	0.00	0.00	
6,988.5	90.00	0.00	6,249.2	1,251.5	-237.5	3.00	0.00	3.00	89.99	
12,675.7	90.00	0.00	6,249.0	6,938.6	-237.3	0.00	0.00	0.00	0.00	#10E-0302B PBHL(4

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site:	S10-T10N-R58W	**North Reference:**	True
Well:	Razor #10E-0302B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
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	347.08	1,100.0	1.7	-0.4	1.7	2.00	2.00	
1,200.0	4.00	347.08	1,199.8	6.8	-1.6	6.9	2.00	2.00	EOB; 4° Inc
1,300.0	4.00	347.08	1,299.6	13.6	-3.1	13.7	0.00	0.00	
1,400.0	4.00	347.08	1,399.4	20.4	-4.7	20.5	0.00	0.00	
1,500.0	4.00	347.08	1,499.1	27.2	-6.2	27.4	0.00	0.00	
1,600.0	4.00	347.08	1,598.9	34.0	-7.8	34.2	0.00	0.00	
1,700.0	4.00	347.08	1,698.6	40.8	-9.4	41.1	0.00	0.00	
1,800.0	4.00	347.08	1,798.4	47.6	-10.9	47.9	0.00	0.00	
1,900.0	4.00	347.08	1,898.1	54.4	-12.5	54.8	0.00	0.00	
2,000.0	4.00	347.08	1,997.9	61.2	-14.0	61.6	0.00	0.00	
2,100.0	4.00	347.08	2,097.6	68.0	-15.6	68.5	0.00	0.00	
2,200.0	4.00	347.08	2,197.4	74.8	-17.2	75.3	0.00	0.00	
2,300.0	4.00	347.08	2,297.2	81.6	-18.7	82.2	0.00	0.00	
2,400.0	4.00	347.08	2,396.9	88.4	-20.3	89.0	0.00	0.00	
2,500.0	4.00	347.08	2,496.7	95.2	-21.8	95.9	0.00	0.00	
2,600.0	4.00	347.08	2,596.4	102.0	-23.4	102.7	0.00	0.00	
2,700.0	4.00	347.08	2,696.2	108.8	-25.0	109.6	0.00	0.00	
2,800.0	4.00	347.08	2,795.9	115.6	-26.5	116.4	0.00	0.00	
2,900.0	4.00	347.08	2,895.7	122.4	-28.1	123.3	0.00	0.00	
3,000.0	4.00	347.08	2,995.5	129.2	-29.6	130.1	0.00	0.00	
3,100.0	4.00	347.08	3,095.2	136.0	-31.2	137.0	0.00	0.00	
3,200.0	4.00	347.08	3,195.0	142.8	-32.8	143.8	0.00	0.00	
3,300.0	4.00	347.08	3,294.7	149.6	-34.3	150.7	0.00	0.00	
3,400.0	4.00	347.08	3,394.5	156.4	-35.9	157.5	0.00	0.00	
3,500.0	4.00	347.08	3,494.2	163.2	-37.4	164.4	0.00	0.00	
3,600.0	4.00	347.08	3,594.0	170.0	-39.0	171.2	0.00	0.00	
3,700.0	4.00	347.08	3,693.7	176.8	-40.6	178.1	0.00	0.00	
3,800.0	4.00	347.08	3,793.5	183.6	-42.1	184.9	0.00	0.00	
3,900.0	4.00	347.08	3,893.3	190.4	-43.7	191.8	0.00	0.00	
4,000.0	4.00	347.08	3,993.0	197.2	-45.2	198.6	0.00	0.00	
4,100.0	4.00	347.08	4,092.8	204.0	-46.8	205.5	0.00	0.00	
4,200.0	4.00	347.08	4,192.5	210.8	-48.4	212.3	0.00	0.00	
4,300.0	4.00	347.08	4,292.3	217.6	-49.9	219.2	0.00	0.00	
4,400.0	4.00	347.08	4,392.0	224.4	-51.5	226.0	0.00	0.00	
4,500.0	4.00	347.08	4,491.8	231.2	-53.0	232.8	0.00	0.00	
4,600.0	4.00	347.08	4,591.6	238.0	-54.6	239.7	0.00	0.00	
4,700.0	4.00	347.08	4,691.3	244.8	-56.1	246.5	0.00	0.00	
4,800.0	4.00	347.08	4,791.1	251.6	-57.7	253.4	0.00	0.00	
4,900.0	4.00	347.08	4,890.8	258.4	-59.3	260.2	0.00	0.00	
5,000.0	4.00	347.08	4,990.6	265.2	-60.8	267.1	0.00	0.00	
5,100.0	4.00	347.08	5,090.3	272.0	-62.4	273.9	0.00	0.00	

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Site:	S10-T10N-R58W	**North Reference:**	True
Well:	Razor #10E-0302B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
5,200.0	4.00	347.08	5,190.1	278.8	-63.9	280.8	0.00	0.00	
5,300.0	4.00	347.08	5,289.9	285.6	-65.5	287.6	0.00	0.00	
5,400.0	4.00	347.08	5,389.6	292.4	-67.1	294.5	0.00	0.00	
5,500.0	4.00	347.08	5,489.4	299.2	-68.6	301.3	0.00	0.00	
5,600.0	4.00	347.08	5,589.1	306.0	-70.2	308.2	0.00	0.00	
5,700.0	4.00	347.08	5,688.9	312.8	-71.7	315.0	0.00	0.00	
5,776.0	4.00	347.08	5,764.7	317.9	-72.9	320.2	0.00	0.00	Start 11° Build
5,800.0	6.64	347.08	5,788.6	320.1	-73.4	322.4	11.00	11.00	
5,850.0	12.14	347.08	5,837.9	328.0	-75.3	330.4	11.00	11.00	
5,900.0	17.64	347.08	5,886.2	340.6	-78.1	343.0	11.00	11.00	
5,950.0	23.14	347.08	5,933.0	357.5	-82.0	360.1	11.00	11.00	
6,000.0	28.64	347.08	5,978.0	378.8	-86.9	381.6	11.00	11.00	
6,050.0	34.14	347.08	6,020.7	404.2	-92.7	407.1	11.00	11.00	
6,060.1	35.25	347.08	6,029.0	409.8	-94.0	412.8	11.00	11.00	Top Niobrara
6,100.0	39.64	347.08	6,060.7	433.4	-99.4	436.6	11.00	11.00	
6,150.0	45.14	347.08	6,097.6	466.3	-107.0	469.6	11.00	11.00	
6,200.0	50.64	347.08	6,131.1	502.4	-115.3	506.1	11.00	11.00	
6,250.0	56.14	347.08	6,160.9	541.5	-124.2	545.4	11.00	11.00	
6,300.0	61.64	347.08	6,186.7	583.2	-133.8	587.5	11.00	11.00	
6,350.0	67.14	347.08	6,208.3	627.1	-143.9	631.7	11.00	11.00	
6,400.0	72.64	347.08	6,225.5	672.9	-154.4	677.8	11.00	11.00	
6,450.0	78.14	347.08	6,238.1	720.0	-165.2	725.3	11.00	11.00	
6,500.0	83.64	347.08	6,246.0	768.1	-176.2	773.7	11.00	11.00	
6,550.0	89.14	347.08	6,249.2	816.8	-187.4	822.7	11.00	11.00	
6,557.8	90.00	347.08	6,249.2	824.4	-189.1	830.4	11.00	11.00	EOB; 90° Inc - Start 3° Turn
6,600.0	90.00	348.35	6,249.2	865.6	-198.1	871.9	3.00	0.00	7" (506' FWL-1,390' FNL)
6,700.0	90.00	351.35	6,249.2	964.0	-215.7	970.8	3.00	0.00	
6,800.0	90.00	354.35	6,249.2	1,063.2	-228.2	1,070.4	3.00	0.00	
6,900.0	90.00	357.35	6,249.2	1,162.9	-235.4	1,170.3	3.00	0.00	
6,988.5	90.00	0.00	6,249.2	1,251.5	-237.5	1,258.8	3.00	0.00	EOT; 0° Azi
7,000.0	90.00	0.00	6,249.2	1,262.9	-237.5	1,270.3	0.00	0.00	
7,100.0	90.00	0.00	6,249.2	1,362.9	-237.5	1,370.2	0.00	0.00	
7,200.0	90.00	0.00	6,249.2	1,462.9	-237.5	1,470.2	0.00	0.00	
7,300.0	90.00	0.00	6,249.2	1,562.9	-237.5	1,570.1	0.00	0.00	
7,400.0	90.00	0.00	6,249.2	1,662.9	-237.4	1,670.1	0.00	0.00	
7,500.0	90.00	0.00	6,249.2	1,762.9	-237.4	1,770.0	0.00	0.00	
7,600.0	90.00	0.00	6,249.2	1,862.9	-237.4	1,869.9	0.00	0.00	
7,700.0	90.00	0.00	6,249.2	1,962.9	-237.4	1,969.9	0.00	0.00	
7,800.0	90.00	0.00	6,249.2	2,062.9	-237.4	2,069.8	0.00	0.00	
7,900.0	90.00	0.00	6,249.2	2,162.9	-237.4	2,169.8	0.00	0.00	
8,000.0	90.00	0.00	6,249.2	2,262.9	-237.4	2,269.7	0.00	0.00	
8,100.0	90.00	0.00	6,249.2	2,362.9	-237.4	2,369.6	0.00	0.00	
8,200.0	90.00	0.00	6,249.2	2,462.9	-237.4	2,469.6	0.00	0.00	
8,300.0	90.00	0.00	6,249.2	2,562.9	-237.4	2,569.5	0.00	0.00	
8,400.0	90.00	0.00	6,249.2	2,662.9	-237.4	2,669.5	0.00	0.00	
8,500.0	90.00	0.00	6,249.2	2,762.9	-237.4	2,769.4	0.00	0.00	
8,600.0	90.00	0.00	6,249.2	2,862.9	-237.4	2,869.4	0.00	0.00	
8,700.0	90.00	0.00	6,249.2	2,962.9	-237.4	2,969.3	0.00	0.00	
8,800.0	90.00	0.00	6,249.1	3,062.9	-237.4	3,069.2	0.00	0.00	
8,900.0	90.00	0.00	6,249.1	3,162.9	-237.4	3,169.2	0.00	0.00	
9,000.0	90.00	0.00	6,249.1	3,262.9	-237.4	3,269.1	0.00	0.00	
9,100.0	90.00	0.00	6,249.1	3,362.9	-237.4	3,369.1	0.00	0.00	

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Site:	S10-T10N-R58W	**North Reference:**	True
Well:	Razor #10E-0302B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
9,200.0	90.00	0.00	6,249.1	3,462.9	-237.4	3,469.0	0.00	0.00	
9,300.0	90.00	0.00	6,249.1	3,562.9	-237.4	3,568.9	0.00	0.00	
9,400.0	90.00	0.00	6,249.1	3,662.9	-237.4	3,668.9	0.00	0.00	
9,500.0	90.00	0.00	6,249.1	3,762.9	-237.4	3,768.8	0.00	0.00	
9,600.0	90.00	0.00	6,249.1	3,862.9	-237.4	3,868.8	0.00	0.00	
9,700.0	90.00	0.00	6,249.1	3,962.9	-237.4	3,968.7	0.00	0.00	
9,800.0	90.00	0.00	6,249.1	4,062.9	-237.4	4,068.7	0.00	0.00	
9,900.0	90.00	0.00	6,249.1	4,162.9	-237.4	4,168.6	0.00	0.00	
10,000.0	90.00	0.00	6,249.1	4,262.9	-237.4	4,268.5	0.00	0.00	
10,100.0	90.00	0.00	6,249.1	4,362.9	-237.4	4,368.5	0.00	0.00	
10,200.0	90.00	0.00	6,249.1	4,462.9	-237.4	4,468.4	0.00	0.00	
10,300.0	90.00	0.00	6,249.1	4,562.9	-237.4	4,568.4	0.00	0.00	
10,400.0	90.00	0.00	6,249.1	4,662.9	-237.4	4,668.3	0.00	0.00	
10,500.0	90.00	0.00	6,249.1	4,762.9	-237.4	4,768.2	0.00	0.00	
10,600.0	90.00	0.00	6,249.1	4,862.9	-237.4	4,868.2	0.00	0.00	
10,700.0	90.00	0.00	6,249.1	4,962.9	-237.4	4,968.1	0.00	0.00	
10,800.0	90.00	0.00	6,249.1	5,062.9	-237.3	5,068.1	0.00	0.00	
10,900.0	90.00	0.00	6,249.1	5,162.9	-237.3	5,168.0	0.00	0.00	
11,000.0	90.00	0.00	6,249.1	5,262.9	-237.3	5,268.0	0.00	0.00	
11,100.0	90.00	0.00	6,249.1	5,362.9	-237.3	5,367.9	0.00	0.00	
11,200.0	90.00	0.00	6,249.1	5,462.9	-237.3	5,467.8	0.00	0.00	
11,300.0	90.00	0.00	6,249.1	5,562.9	-237.3	5,567.8	0.00	0.00	
11,400.0	90.00	0.00	6,249.0	5,662.9	-237.3	5,667.7	0.00	0.00	
11,500.0	90.00	0.00	6,249.0	5,762.9	-237.3	5,767.7	0.00	0.00	
11,600.0	90.00	0.00	6,249.0	5,862.9	-237.3	5,867.6	0.00	0.00	
11,700.0	90.00	0.00	6,249.0	5,962.9	-237.3	5,967.5	0.00	0.00	
11,800.0	90.00	0.00	6,249.0	6,062.9	-237.3	6,067.5	0.00	0.00	
11,900.0	90.00	0.00	6,249.0	6,162.9	-237.3	6,167.4	0.00	0.00	
12,000.0	90.00	0.00	6,249.0	6,262.9	-237.3	6,267.4	0.00	0.00	
12,100.0	90.00	0.00	6,249.0	6,362.9	-237.3	6,367.3	0.00	0.00	
12,200.0	90.00	0.00	6,249.0	6,462.9	-237.3	6,467.2	0.00	0.00	
12,300.0	90.00	0.00	6,249.0	6,562.9	-237.3	6,567.2	0.00	0.00	
12,400.0	90.00	0.00	6,249.0	6,662.9	-237.3	6,667.1	0.00	0.00	
12,500.0	90.00	0.00	6,249.0	6,762.9	-237.3	6,767.1	0.00	0.00	
12,600.0	90.00	0.00	6,249.0	6,862.9	-237.3	6,867.0	0.00	0.00	
12,675.7	90.00	0.00	6,249.0	6,938.6	-237.3	6,942.7	0.00	0.00	PBHL @ 12,675' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
#10E-0302B PBHL(495' - plan hits target center - Point	0.00	0.00	6,249.0	6,938.6	-237.3	1,565,209.90	3,453,629.33	40° 52' 24.09 N	103° 51' 34.86 W

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site:	S10-T10N-R58W	**North Reference:**	True
Well:	Razor #10E-0302B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,600.0	6,249.2	7" (506' FWL-1,390' FNL)	7	7-1/2

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,060.1	6,029.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,000.0	1,000.0	0.0	0.0	KOP @ 1000' MD
1,200.0	1,199.8	6.8	-1.6	EOB; 4° Inc
5,776.0	5,764.7	317.9	-72.9	Start 11° Build
6,557.8	6,249.2	824.4	-189.1	EOB; 90° Inc - Start 3° Turn
6,988.5	6,249.2	1,251.5	-237.5	EOT; 0° Azi
12,675.7	6,249.0	6,938.6	-237.3	PBHL @ 12,675' MD

Whiting Petroleum Corporation

Weld County, CO
S10-T10N-R58W
Razor #10E-0302B
HZ
Plan #1

Anticollision Report

06 November, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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** 10/30/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,675.7	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S10-T10N-R58W						
BUSH 1 (EXISTING) - BURNS WELL - NO SURVEYS						Out of range
FREGEAU 1 (EXISTING) - CREST WELL - NO SURVEY						Out of range
FREGEAU 2 (EXISTING) - CREST WELL - NO SURVEY						Out of range
Razor #10E-0301A - HZ - Plan #1	900.0	900.0	32.9	29.1	8.702	CC, ES
Razor #10E-0301A - HZ - Plan #1	12,675.7	12,634.8	350.5	99.0	1.393	Level 3, SF
Razor #10E-0303A - HZ - Plan #1	1,000.0	1,000.0	32.9	28.7	7.778	CC
Razor #10E-0303A - HZ - Plan #1	1,100.0	1,100.0	33.4	28.7	7.126	ES
Razor #10E-0303A - HZ - Plan #1	12,675.7	12,547.9	351.0	99.0	1.393	Level 3, SF
Razor #10E-0304B - HZ - Plan #1	1,000.0	1,000.0	66.1	61.9	15.620	CC
Razor #10E-0304B - HZ - Plan #1	1,100.0	1,100.0	66.5	61.8	14.213	ES
Razor #10E-0304B - HZ - Plan #1	12,675.7	12,715.7	659.9	395.7	2.498	SF
Razor #10E-1501A - HZ - Plan #1	1,000.0	1,000.0	81.7	77.5	19.310	CC, ES
Razor #10E-1501A - HZ - Plan #1	1,200.0	1,199.8	87.5	82.3	17.054	SF
Razor #10E-1502B - HZ - Plan #1	1,000.0	1,000.0	75.1	70.8	17.733	CC, ES
Razor #10E-1502B - HZ - Plan #1	1,200.0	1,197.1	83.6	78.5	16.398	SF
Razor #10E-1503A - HZ - Plan #1	1,000.0	1,000.0	82.0	77.7	19.362	CC, ES
Razor #10E-1503A - HZ - Plan #1	1,100.0	1,097.2	85.3	80.7	18.352	SF
Razor #10E-1504B - HZ - Plan #1	900.0	900.0	100.0	96.2	26.439	CC, ES
Razor #10E-1504B - HZ - Plan #1	1,100.0	1,093.2	108.0	103.4	23.467	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0301A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-32.9	32.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-32.9	32.9	32.7	0.19	176.041	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-32.9	32.9	32.3	0.64	51.718	
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-32.9	32.9	31.8	1.09	30.312	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-32.9	32.9	31.4	1.54	21.438	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-32.9	32.9	30.9	1.99	16.584	
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-32.9	32.9	30.5	2.43	13.522	
700.0	700.0	700.0	700.0	1.4	1.4	-90.00	0.0	-32.9	32.9	30.0	2.88	11.414	
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-32.9	32.9	29.6	3.33	9.875	
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-32.9	32.9	29.1	3.78	8.702	CC, ES
1,000.0	1,000.0	999.5	999.5	2.1	2.1	-87.34	1.6	-33.6	33.7	29.5	4.23	7.965	
1,100.0	1,100.0	1,098.8	1,098.7	2.3	2.3	-69.70	6.3	-35.8	35.8	31.1	4.67	7.650	
1,200.0	1,199.8	1,198.8	1,198.4	2.6	2.6	-68.16	12.6	-38.8	37.7	32.6	5.12	7.357	
1,300.0	1,299.6	1,298.8	1,298.1	2.8	2.8	-69.17	18.9	-41.7	39.0	33.4	5.58	6.986	
1,400.0	1,399.3	1,398.8	1,397.9	3.0	3.0	-70.10	25.2	-44.7	40.3	34.2	6.04	6.666	
1,500.0	1,499.1	1,498.7	1,497.6	3.3	3.3	-70.98	31.5	-47.6	41.6	35.1	6.52	6.386	
1,600.0	1,598.9	1,598.7	1,597.4	3.5	3.5	-71.81	37.9	-50.5	42.9	35.9	6.99	6.141	
1,700.0	1,698.6	1,698.7	1,697.1	3.7	3.8	-72.58	44.2	-53.5	44.3	36.8	7.47	5.925	
1,800.0	1,798.4	1,798.7	1,796.8	4.0	4.0	-73.31	50.5	-56.4	45.6	37.7	7.96	5.733	
1,900.0	1,898.1	1,898.7	1,896.6	4.2	4.3	-74.00	56.8	-59.4	47.0	38.5	8.44	5.562	
2,000.0	1,997.9	1,998.7	1,996.3	4.5	4.5	-74.65	63.2	-62.3	48.3	39.4	8.93	5.409	
2,100.0	2,097.6	2,098.7	2,096.1	4.7	4.8	-75.26	69.5	-65.2	49.7	40.3	9.43	5.271	
2,200.0	2,197.4	2,198.7	2,195.8	5.0	5.0	-75.84	75.8	-68.2	51.1	41.1	9.92	5.146	
2,300.0	2,297.2	2,298.7	2,295.6	5.2	5.3	-76.39	82.1	-71.1	52.4	42.0	10.42	5.033	
2,400.0	2,396.9	2,398.6	2,395.3	5.5	5.5	-76.91	88.5	-74.1	53.8	42.9	10.92	4.930	
2,500.0	2,496.7	2,498.6	2,495.1	5.7	5.8	-77.41	94.8	-77.0	55.2	43.8	11.41	4.835	
2,600.0	2,596.4	2,598.6	2,594.8	6.0	6.0	-77.88	101.1	-79.9	56.6	44.7	11.92	4.748	
2,700.0	2,696.2	2,698.6	2,694.6	6.2	6.3	-78.33	107.4	-82.9	58.0	45.6	12.42	4.669	
2,800.0	2,795.9	2,798.6	2,794.3	6.5	6.5	-78.76	113.8	-85.8	59.4	46.4	12.92	4.595	
2,900.0	2,895.7	2,898.6	2,894.0	6.7	6.8	-79.16	120.1	-88.8	60.8	47.3	13.42	4.527	
3,000.0	2,995.4	2,998.6	2,993.8	7.0	7.0	-79.55	126.4	-91.7	62.2	48.2	13.93	4.463	
3,100.0	3,095.2	3,098.6	3,093.5	7.2	7.3	-79.93	132.7	-94.6	63.6	49.1	14.43	4.404	
3,200.0	3,195.0	3,198.6	3,193.3	7.5	7.5	-80.28	139.1	-97.6	65.0	50.0	14.94	4.349	
3,300.0	3,294.7	3,298.5	3,293.0	7.7	7.8	-80.62	145.4	-100.5	66.4	50.9	15.44	4.298	
3,400.0	3,394.5	3,398.5	3,392.8	8.0	8.1	-80.95	151.7	-103.5	67.8	51.8	15.95	4.250	
3,500.0	3,494.2	3,498.5	3,492.5	8.3	8.3	-81.27	158.0	-106.4	69.2	52.7	16.46	4.205	
3,600.0	3,594.0	3,598.5	3,592.3	8.5	8.6	-81.57	164.4	-109.4	70.6	53.6	16.96	4.162	
3,700.0	3,693.7	3,698.5	3,692.0	8.8	8.8	-81.86	170.7	-112.3	72.0	54.6	17.47	4.122	
3,800.0	3,793.5	3,798.5	3,791.8	9.0	9.1	-82.13	177.0	-115.2	73.4	55.5	17.98	4.084	
3,900.0	3,893.3	3,898.5	3,891.5	9.3	9.3	-82.40	183.3	-118.2	74.9	56.4	18.49	4.049	
4,000.0	3,993.0	3,998.5	3,991.2	9.5	9.6	-82.66	189.7	-121.1	76.3	57.3	19.00	4.015	
4,100.0	4,092.8	4,098.5	4,091.0	9.8	9.8	-82.91	196.0	-124.1	77.7	58.2	19.51	3.983	
4,200.0	4,192.5	4,198.4	4,190.7	10.0	10.1	-83.15	202.3	-127.0	79.1	59.1	20.02	3.953	
4,300.0	4,292.3	4,298.4	4,290.5	10.3	10.4	-83.38	208.6	-129.9	80.5	60.0	20.53	3.924	
4,400.0	4,392.0	4,398.4	4,390.2	10.5	10.6	-83.60	215.0	-132.9	82.0	60.9	21.04	3.897	
4,500.0	4,491.8	4,498.4	4,490.0	10.8	10.9	-83.82	221.3	-135.8	83.4	61.9	21.55	3.871	
4,600.0	4,591.5	4,598.4	4,589.7	11.1	11.1	-84.03	227.6	-138.8	84.8	62.8	22.06	3.846	
4,700.0	4,691.3	4,698.4	4,689.5	11.3	11.4	-84.23	233.9	-141.7	86.3	63.7	22.57	3.822	
4,800.0	4,791.1	4,798.4	4,789.2	11.6	11.6	-84.42	240.3	-144.6	87.7	64.6	23.08	3.800	
4,900.0	4,890.8	4,898.4	4,889.0	11.8	11.9	-84.61	246.6	-147.6	89.1	65.5	23.59	3.778	
5,000.0	4,990.6	4,998.4	4,988.7	12.1	12.1	-84.79	252.9	-150.5	90.6	66.5	24.10	3.758	
5,100.0	5,090.3	5,098.4	5,088.4	12.3	12.4	-84.97	259.2	-153.5	92.0	67.4	24.61	3.738	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0301A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,198.3	5,188.2	12.6	12.7	-85.14	265.6	-156.4	93.4	68.3	25.12	3.719	
5,300.0	5,289.8	5,298.3	5,287.9	12.8	12.9	-85.31	271.9	-159.4	94.9	69.2	25.63	3.701	
5,400.0	5,389.6	5,398.3	5,387.7	13.1	13.2	-85.47	278.2	-162.3	96.3	70.1	26.14	3.683	
5,500.0	5,489.4	5,498.3	5,487.4	13.4	13.4	-85.62	284.5	-165.2	97.7	71.1	26.66	3.666	
5,600.0	5,589.1	5,598.3	5,587.2	13.6	13.7	-85.78	290.9	-168.2	99.2	72.0	27.17	3.650	
5,700.0	5,688.9	5,696.1	5,684.6	13.9	13.9	-85.12	298.4	-171.7	101.0	73.4	27.67	3.651	
5,800.0	5,788.6	5,788.3	5,774.2	14.1	14.3	-77.58	317.7	-180.7	108.2	80.1	28.11	3.849	
5,900.0	5,886.2	5,876.8	5,855.4	14.5	14.8	-69.26	349.4	-195.4	121.6	93.0	28.55	4.258	
6,000.0	5,978.0	5,962.7	5,927.4	15.0	15.4	-63.67	391.6	-215.0	138.4	109.4	28.96	4.779	
6,100.0	6,060.6	6,050.0	5,991.8	15.7	16.1	-60.23	445.0	-239.9	156.8	127.5	29.37	5.339	
6,200.0	6,131.1	6,128.1	6,040.3	16.6	16.9	-58.45	500.4	-265.6	175.6	145.7	29.92	5.871	
6,300.0	6,186.7	6,208.7	6,080.2	17.6	17.8	-57.78	563.7	-295.1	194.2	163.4	30.87	6.292	
6,400.0	6,225.5	6,288.3	6,108.7	18.9	18.9	-57.95	631.2	-326.4	212.1	179.7	32.42	6.543	
6,500.0	6,246.0	6,367.6	6,125.4	20.2	20.1	-58.76	701.4	-359.1	229.0	194.4	34.65	6.608	
6,600.0	6,249.2	6,450.1	6,130.3	21.7	21.3	-60.44	776.0	-393.7	245.9	208.3	37.56	6.546	
6,700.0	6,249.2	6,560.8	6,130.3	23.1	23.0	-62.81	877.9	-436.9	265.5	224.5	40.93	6.486	
6,800.0	6,249.2	6,673.0	6,130.3	24.5	24.7	-64.82	983.6	-474.5	284.9	240.7	44.21	6.444	
6,900.0	6,249.2	6,786.9	6,130.3	26.0	26.5	-66.52	1,092.9	-506.3	304.0	256.6	47.43	6.410	
7,000.0	6,249.2	6,902.3	6,130.3	27.5	28.3	-67.99	1,205.5	-531.8	322.6	272.0	50.63	6.371	
7,100.0	6,249.2	7,020.0	6,130.3	29.1	30.2	-69.21	1,321.6	-550.7	337.6	283.3	54.33	6.214	
7,200.0	6,249.2	7,139.6	6,130.3	30.7	32.1	-69.91	1,440.6	-562.6	347.0	289.0	57.98	5.984	
7,300.0	6,249.2	7,260.3	6,130.3	32.4	34.1	-70.16	1,561.2	-567.1	350.4	288.9	61.56	5.692	
7,400.0	6,249.2	7,362.0	6,130.2	34.1	35.7	-70.16	1,662.9	-567.1	350.5	285.6	64.80	5.408	
7,500.0	6,249.2	7,462.0	6,130.2	35.9	37.3	-70.16	1,762.9	-567.1	350.5	282.4	68.06	5.149	
7,600.0	6,249.2	7,562.0	6,130.2	37.6	39.0	-70.16	1,862.9	-567.1	350.5	279.1	71.35	4.912	
7,700.0	6,249.2	7,662.0	6,130.2	39.4	40.6	-70.16	1,962.9	-567.1	350.5	275.8	74.68	4.693	
7,800.0	6,249.2	7,762.0	6,130.2	41.1	42.3	-70.16	2,062.9	-567.1	350.5	272.4	78.03	4.491	
7,900.0	6,249.2	7,862.0	6,130.2	42.9	44.0	-70.16	2,162.9	-567.1	350.5	269.0	81.41	4.305	
8,000.0	6,249.2	7,962.0	6,130.2	44.7	45.8	-70.16	2,262.9	-567.1	350.5	265.6	84.81	4.132	
8,100.0	6,249.2	8,062.0	6,130.2	46.5	47.5	-70.16	2,362.9	-567.1	350.5	262.2	88.23	3.972	
8,200.0	6,249.2	8,162.0	6,130.2	48.4	49.3	-70.16	2,462.9	-567.1	350.5	258.8	91.67	3.823	
8,300.0	6,249.2	8,262.0	6,130.2	50.2	51.0	-70.16	2,562.9	-567.1	350.5	255.3	95.13	3.684	
8,400.0	6,249.2	8,362.0	6,130.2	52.0	52.8	-70.16	2,662.9	-567.1	350.5	251.9	98.60	3.554	
8,500.0	6,249.2	8,462.0	6,130.2	53.9	54.6	-70.16	2,762.9	-567.1	350.5	248.4	102.08	3.433	
8,600.0	6,249.2	8,562.0	6,130.2	55.7	56.4	-70.16	2,862.9	-567.1	350.5	244.9	105.57	3.320	
8,700.0	6,249.2	8,662.0	6,130.2	57.5	58.2	-70.16	2,962.9	-567.1	350.5	241.4	109.07	3.213	
8,800.0	6,249.1	8,762.0	6,130.2	59.4	60.0	-70.16	3,062.9	-567.1	350.5	237.9	112.58	3.113	
8,900.0	6,249.1	8,862.0	6,130.2	61.3	61.8	-70.16	3,162.9	-567.1	350.5	234.4	116.11	3.018	
9,000.0	6,249.1	8,962.0	6,130.2	63.1	63.7	-70.16	3,262.9	-567.1	350.5	230.8	119.63	2.929	
9,100.0	6,249.1	9,062.0	6,130.2	65.0	65.5	-70.16	3,362.9	-567.1	350.5	227.3	123.17	2.845	
9,200.0	6,249.1	9,162.0	6,130.2	66.9	67.3	-70.16	3,462.9	-567.0	350.5	223.8	126.71	2.766	
9,300.0	6,249.1	9,262.0	6,130.2	68.7	69.2	-70.16	3,562.9	-567.0	350.5	220.2	130.26	2.691	
9,400.0	6,249.1	9,362.0	6,130.2	70.6	71.0	-70.16	3,662.9	-567.0	350.5	216.7	133.81	2.619	
9,500.0	6,249.1	9,462.0	6,130.1	72.5	72.9	-70.16	3,762.9	-567.0	350.5	213.1	137.37	2.551	
9,600.0	6,249.1	9,562.0	6,130.1	74.4	74.7	-70.16	3,862.9	-567.0	350.5	209.5	140.93	2.487	
9,700.0	6,249.1	9,662.0	6,130.1	76.2	76.6	-70.16	3,962.9	-567.0	350.5	206.0	144.50	2.425	
9,800.0	6,249.1	9,762.0	6,130.1	78.1	78.4	-70.16	4,062.9	-567.0	350.5	202.4	148.07	2.367	
9,900.0	6,249.1	9,862.0	6,130.1	80.0	80.3	-70.15	4,162.9	-567.0	350.5	198.8	151.64	2.311	
10,000.0	6,249.1	9,962.0	6,130.1	81.9	82.2	-70.15	4,262.9	-567.0	350.5	195.2	155.22	2.258	
10,100.0	6,249.1	10,062.0	6,130.1	83.8	84.0	-70.15	4,362.9	-567.0	350.5	191.7	158.80	2.207	
10,200.0	6,249.1	10,162.0	6,130.1	85.7	85.9	-70.15	4,462.9	-567.0	350.5	188.1	162.38	2.158	
10,300.0	6,249.1	10,262.0	6,130.1	87.6	87.8	-70.15	4,562.9	-567.0	350.5	184.5	165.97	2.112	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0301A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	6,249.1	10,362.0	6,130.1	89.5	89.6	-70.15	4,662.9	-567.0	350.5	180.9	169.56	2.067	
10,500.0	6,249.1	10,462.0	6,130.1	91.3	91.5	-70.15	4,762.9	-567.0	350.5	177.3	173.15	2.024	
10,600.0	6,249.1	10,562.0	6,130.1	93.2	93.4	-70.15	4,862.9	-567.0	350.5	173.7	176.75	1.983	
10,700.0	6,249.1	10,662.0	6,130.1	95.1	95.3	-70.15	4,962.9	-567.0	350.5	170.1	180.34	1.943	
10,800.0	6,249.1	10,762.0	6,130.1	97.0	97.2	-70.15	5,062.9	-567.0	350.5	166.5	183.94	1.905	
10,900.0	6,249.1	10,862.0	6,130.1	98.9	99.0	-70.15	5,162.9	-567.0	350.5	162.9	187.54	1.869	
11,000.0	6,249.1	10,962.0	6,130.1	100.8	100.9	-70.15	5,262.9	-567.0	350.5	159.3	191.14	1.834	
11,100.0	6,249.1	11,062.0	6,130.1	102.7	102.8	-70.15	5,362.9	-567.0	350.5	155.7	194.75	1.800	
11,200.0	6,249.1	11,162.0	6,130.1	104.6	104.7	-70.15	5,462.9	-567.0	350.5	152.1	198.35	1.767	
11,300.0	6,249.1	11,262.0	6,130.1	106.5	106.6	-70.15	5,562.9	-567.0	350.5	148.5	201.96	1.735	
11,400.0	6,249.0	11,362.0	6,130.1	108.4	108.5	-70.15	5,662.9	-567.0	350.5	144.9	205.57	1.705	
11,500.0	6,249.0	11,462.0	6,130.1	110.3	110.4	-70.15	5,762.9	-567.0	350.5	141.3	209.18	1.676	
11,600.0	6,249.0	11,562.0	6,130.1	112.2	112.3	-70.15	5,862.9	-567.0	350.5	137.7	212.79	1.647	
11,700.0	6,249.0	11,662.0	6,130.0	114.1	114.2	-70.15	5,962.9	-567.0	350.5	134.1	216.40	1.620	
11,800.0	6,249.0	11,762.0	6,130.0	116.1	116.0	-70.15	6,062.9	-567.0	350.5	130.5	220.01	1.593	
11,900.0	6,249.0	11,862.0	6,130.0	118.0	117.9	-70.15	6,162.9	-567.0	350.5	126.9	223.63	1.567	
12,000.0	6,249.0	11,962.0	6,130.0	119.9	119.8	-70.15	6,262.9	-567.0	350.5	123.2	227.24	1.542	
12,100.0	6,249.0	12,062.0	6,130.0	121.8	121.7	-70.15	6,362.9	-567.0	350.5	119.6	230.86	1.518	
12,200.0	6,249.0	12,162.0	6,130.0	123.7	123.6	-70.15	6,462.9	-567.0	350.5	116.0	234.48	1.495	Level 3
12,300.0	6,249.0	12,262.0	6,130.0	125.6	125.5	-70.15	6,562.9	-567.0	350.5	112.4	238.10	1.472	Level 3
12,400.0	6,249.0	12,362.0	6,130.0	127.5	127.4	-70.15	6,662.9	-567.0	350.5	108.8	241.72	1.450	Level 3
12,500.0	6,249.0	12,462.0	6,130.0	129.4	129.3	-70.15	6,762.9	-567.0	350.5	105.1	245.34	1.429	Level 3
12,600.0	6,249.0	12,562.0	6,130.0	131.3	131.2	-70.15	6,862.9	-567.0	350.5	101.5	248.96	1.408	Level 3
12,643.9	6,249.0	12,605.9	6,130.0	132.1	132.0	-70.15	6,906.8	-567.0	350.5	100.0	250.53	1.399	Level 3
12,675.7	6,249.0	12,634.8	6,130.0	132.7	132.5	-70.15	6,935.7	-567.0	350.5	99.0	251.53	1.393	Level 3, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0303A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	32.9	32.9				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	32.9	32.9	32.7	0.19	176.041	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	32.9	32.9	32.3	0.64	51.718	
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	32.9	32.9	31.8	1.09	30.312	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	32.9	32.9	31.4	1.54	21.438	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	32.9	32.9	30.9	1.99	16.584	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	32.9	32.9	30.5	2.43	13.522	
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	32.9	32.9	30.0	2.88	11.414	
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	32.9	32.9	29.6	3.33	9.875	
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	32.9	32.9	29.1	3.78	8.702	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	32.9	32.9	28.7	4.23	7.778	CC
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	105.83	0.0	32.9	33.4	28.7	4.68	7.126	ES
1,200.0	1,199.8	1,200.0	1,199.9	2.6	2.6	111.21	1.7	33.0	35.0	29.8	5.13	6.820	
1,300.0	1,299.6	1,300.0	1,299.9	2.8	2.8	113.20	7.0	33.4	37.1	31.5	5.58	6.653	
1,400.0	1,399.3	1,400.0	1,399.6	3.0	3.0	112.44	13.9	33.9	39.1	33.0	6.04	6.473	
1,500.0	1,499.1	1,500.0	1,499.4	3.3	3.2	111.75	20.9	34.3	41.0	34.5	6.50	6.312	
1,600.0	1,598.9	1,600.0	1,599.1	3.5	3.5	111.12	27.8	34.8	43.0	36.1	6.98	6.168	
1,700.0	1,698.6	1,700.0	1,698.8	3.7	3.7	110.55	34.8	35.3	45.0	37.6	7.45	6.039	
1,800.0	1,798.4	1,799.9	1,798.6	4.0	4.0	110.02	41.8	35.7	47.0	39.1	7.94	5.922	
1,900.0	1,898.1	1,899.9	1,898.3	4.2	4.2	109.54	48.7	36.2	49.0	40.6	8.42	5.817	
2,000.0	1,997.9	1,999.9	1,998.0	4.5	4.4	109.10	55.7	36.6	51.0	42.1	8.91	5.723	
2,100.0	2,097.6	2,099.9	2,097.8	4.7	4.7	108.69	62.6	37.1	53.0	43.6	9.40	5.636	
2,200.0	2,197.4	2,199.9	2,197.5	5.0	4.9	108.31	69.6	37.6	55.0	45.1	9.89	5.558	
2,300.0	2,297.2	2,299.8	2,297.2	5.2	5.2	107.96	76.6	38.0	57.0	46.6	10.39	5.486	
2,400.0	2,396.9	2,399.8	2,397.0	5.5	5.4	107.63	83.5	38.5	59.0	48.1	10.88	5.420	
2,500.0	2,496.7	2,499.8	2,496.7	5.7	5.7	107.32	90.5	39.0	61.0	49.6	11.38	5.359	
2,600.0	2,596.4	2,599.8	2,596.4	6.0	5.9	107.03	97.4	39.4	63.0	51.1	11.88	5.303	
2,700.0	2,696.2	2,699.8	2,696.2	6.2	6.2	106.76	104.4	39.9	65.0	52.6	12.38	5.251	
2,800.0	2,795.9	2,799.7	2,795.9	6.5	6.4	106.51	111.3	40.4	67.0	54.1	12.88	5.203	
2,900.0	2,895.7	2,899.7	2,895.7	6.7	6.7	106.27	118.3	40.8	69.0	55.7	13.38	5.158	
3,000.0	2,995.4	2,999.7	2,995.4	7.0	6.9	106.04	125.3	41.3	71.0	57.2	13.89	5.116	
3,100.0	3,095.2	3,099.7	3,095.1	7.2	7.2	105.83	132.2	41.8	73.1	58.7	14.39	5.077	
3,200.0	3,195.0	3,199.7	3,194.9	7.5	7.4	105.63	139.2	42.2	75.1	60.2	14.89	5.041	
3,300.0	3,294.7	3,299.6	3,294.6	7.7	7.7	105.44	146.1	42.7	77.1	61.7	15.40	5.007	
3,400.0	3,394.5	3,399.6	3,394.3	8.0	7.9	105.26	153.1	43.2	79.1	63.2	15.90	4.975	
3,500.0	3,494.2	3,499.6	3,494.1	8.3	8.2	105.08	160.1	43.6	81.1	64.7	16.41	4.944	
3,600.0	3,594.0	3,599.6	3,593.8	8.5	8.5	104.92	167.0	44.1	83.1	66.2	16.91	4.916	
3,700.0	3,693.7	3,699.5	3,693.5	8.8	8.7	104.76	174.0	44.6	85.2	67.7	17.42	4.889	
3,800.0	3,793.5	3,799.5	3,793.3	9.0	9.0	104.61	180.9	45.0	87.2	69.3	17.93	4.863	
3,900.0	3,893.3	3,899.5	3,893.0	9.3	9.2	104.47	187.9	45.5	89.2	70.8	18.43	4.839	
4,000.0	3,993.0	3,999.5	3,992.7	9.5	9.5	104.34	194.8	46.0	91.2	72.3	18.94	4.817	
4,100.0	4,092.8	4,099.5	4,092.5	9.8	9.7	104.21	201.8	46.4	93.2	73.8	19.45	4.795	
4,200.0	4,192.5	4,199.4	4,192.2	10.0	10.0	104.08	208.8	46.9	95.3	75.3	19.96	4.774	
4,300.0	4,292.3	4,299.4	4,292.0	10.3	10.2	103.96	215.7	47.4	97.3	76.8	20.46	4.755	
4,400.0	4,392.0	4,399.4	4,391.7	10.5	10.5	103.85	222.7	47.8	99.3	78.3	20.97	4.736	
4,500.0	4,491.8	4,499.4	4,491.4	10.8	10.7	103.74	229.6	48.3	101.3	79.9	21.48	4.718	
4,600.0	4,591.5	4,599.4	4,591.2	11.1	11.0	103.63	236.6	48.8	103.4	81.4	21.99	4.701	
4,700.0	4,691.3	4,699.3	4,690.9	11.3	11.2	103.53	243.6	49.2	105.4	82.9	22.50	4.685	
4,800.0	4,791.1	4,799.3	4,790.6	11.6	11.5	103.43	250.5	49.7	107.4	84.4	23.00	4.669	
4,900.0	4,890.8	4,899.3	4,890.4	11.8	11.8	103.34	257.5	50.2	109.4	85.9	23.51	4.654	
5,000.0	4,990.6	4,999.3	4,990.1	12.1	12.0	103.25	264.4	50.6	111.5	87.4	24.02	4.640	
5,100.0	5,090.3	5,099.3	5,089.8	12.3	12.3	103.16	271.4	51.1	113.5	88.9	24.53	4.626	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0303A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,199.2	5,189.6	12.6	12.5	103.08	278.4	51.6	115.5	90.5	25.04	4.613	
5,300.0	5,289.8	5,299.2	5,289.3	12.8	12.8	102.99	285.3	52.0	117.5	92.0	25.55	4.600	
5,400.0	5,389.6	5,399.2	5,389.0	13.1	13.0	102.92	292.3	52.5	119.6	93.5	26.06	4.588	
5,500.0	5,489.4	5,499.2	5,488.8	13.4	13.3	102.84	299.2	53.0	121.6	95.0	26.57	4.576	
5,600.0	5,589.1	5,599.1	5,588.5	13.6	13.5	102.77	306.2	53.4	123.6	96.5	27.08	4.565	
5,700.0	5,688.9	5,698.3	5,687.3	13.9	13.8	101.91	314.8	54.0	125.8	98.2	27.60	4.556	
5,800.0	5,788.6	5,793.5	5,779.5	14.1	14.2	94.71	337.6	55.5	130.4	102.2	28.24	4.620	
5,900.0	5,886.2	5,884.2	5,862.3	14.5	14.6	86.01	374.5	58.0	142.3	113.3	28.98	4.910	
6,000.0	5,978.0	5,971.6	5,934.7	15.0	15.2	79.15	423.1	61.2	160.6	130.7	29.83	5.383	
6,100.0	6,060.6	6,056.0	5,995.9	15.7	15.9	74.16	480.8	65.1	183.0	152.3	30.73	5.957	
6,200.0	6,131.1	6,137.9	6,045.7	16.6	16.7	70.69	545.6	69.4	208.0	176.3	31.72	6.556	
6,300.0	6,186.7	6,217.8	6,084.0	17.6	17.6	68.36	615.6	74.1	234.1	201.2	32.92	7.112	
6,400.0	6,225.5	6,300.0	6,111.6	18.9	18.6	66.94	692.7	79.3	260.7	226.2	34.50	7.556	
6,500.0	6,246.0	6,374.4	6,125.9	20.2	19.6	66.02	765.4	84.2	286.8	250.4	36.37	7.884	
6,600.0	6,249.2	6,458.8	6,129.8	21.7	20.8	66.79	849.5	89.7	312.0	273.0	39.01	7.998	
6,700.0	6,249.2	6,573.3	6,129.8	23.1	22.4	68.60	964.0	92.7	330.7	288.5	42.25	7.828	
6,800.0	6,249.2	6,672.5	6,129.8	24.5	23.9	69.49	1,063.2	92.7	342.3	297.1	45.25	7.566	
6,900.0	6,249.2	6,772.3	6,129.8	26.0	25.5	69.97	1,162.9	92.7	349.1	300.9	48.22	7.241	
7,000.0	6,249.2	6,872.2	6,129.8	27.5	27.1	70.11	1,262.9	92.7	351.1	300.0	51.12	6.867	
7,100.0	6,249.2	6,972.2	6,129.8	29.1	28.7	70.11	1,362.9	92.7	351.1	296.8	54.25	6.471	
7,200.0	6,249.2	7,072.2	6,129.8	30.7	30.4	70.11	1,462.9	92.7	351.1	293.6	57.45	6.111	
7,300.0	6,249.2	7,172.2	6,129.8	32.4	32.2	70.11	1,562.9	92.7	351.1	290.4	60.69	5.785	
7,400.0	6,249.2	7,272.2	6,129.8	34.1	33.9	70.12	1,662.9	92.7	351.1	287.1	63.98	5.487	
7,500.0	6,249.2	7,372.2	6,129.8	35.9	35.7	70.12	1,762.9	92.7	351.1	283.8	67.30	5.216	
7,600.0	6,249.2	7,472.2	6,129.8	37.6	37.4	70.12	1,862.9	92.7	351.1	280.4	70.66	4.968	
7,700.0	6,249.2	7,572.2	6,129.8	39.4	39.2	70.12	1,962.9	92.7	351.1	277.0	74.05	4.741	
7,800.0	6,249.2	7,672.2	6,129.8	41.1	41.0	70.12	2,062.9	92.7	351.1	273.6	77.46	4.532	
7,900.0	6,249.2	7,772.2	6,129.8	42.9	42.9	70.12	2,162.9	92.7	351.1	270.2	80.89	4.340	
8,000.0	6,249.2	7,872.2	6,129.8	44.7	44.7	70.12	2,262.9	92.7	351.1	266.7	84.33	4.163	
8,100.0	6,249.2	7,972.2	6,129.8	46.5	46.5	70.12	2,362.9	92.7	351.1	263.3	87.80	3.998	
8,200.0	6,249.2	8,072.2	6,129.8	48.4	48.3	70.13	2,462.9	92.7	351.1	259.8	91.28	3.846	
8,300.0	6,249.2	8,172.2	6,129.8	50.2	50.2	70.13	2,562.9	92.7	351.1	256.3	94.77	3.704	
8,400.0	6,249.2	8,272.2	6,129.8	52.0	52.0	70.13	2,662.9	92.7	351.1	252.8	98.28	3.572	
8,500.0	6,249.2	8,372.2	6,129.8	53.9	53.9	70.13	2,762.9	92.7	351.1	249.3	101.79	3.449	
8,600.0	6,249.2	8,472.2	6,129.8	55.7	55.7	70.13	2,862.9	92.7	351.1	245.7	105.31	3.333	
8,700.0	6,249.2	8,572.2	6,129.8	57.5	57.6	70.13	2,962.9	92.7	351.1	242.2	108.85	3.225	
8,800.0	6,249.1	8,672.2	6,129.8	59.4	59.5	70.13	3,062.9	92.8	351.1	238.7	112.38	3.124	
8,900.0	6,249.1	8,772.2	6,129.9	61.3	61.3	70.13	3,162.9	92.8	351.1	235.1	115.93	3.028	
9,000.0	6,249.1	8,872.2	6,129.9	63.1	63.2	70.14	3,262.9	92.8	351.0	231.6	119.48	2.938	
9,100.0	6,249.1	8,972.2	6,129.9	65.0	65.1	70.14	3,362.9	92.8	351.0	228.0	123.04	2.853	
9,200.0	6,249.1	9,072.2	6,129.9	66.9	67.0	70.14	3,462.9	92.8	351.0	224.4	126.61	2.773	
9,300.0	6,249.1	9,172.2	6,129.9	68.7	68.9	70.14	3,562.9	92.8	351.0	220.9	130.18	2.697	
9,400.0	6,249.1	9,272.2	6,129.9	70.6	70.7	70.14	3,662.9	92.8	351.0	217.3	133.75	2.625	
9,500.0	6,249.1	9,372.2	6,129.9	72.5	72.6	70.14	3,762.9	92.8	351.0	213.7	137.33	2.556	
9,600.0	6,249.1	9,472.2	6,129.9	74.4	74.5	70.14	3,862.9	92.8	351.0	210.1	140.91	2.491	
9,700.0	6,249.1	9,572.2	6,129.9	76.2	76.4	70.14	3,962.9	92.8	351.0	206.6	144.49	2.430	
9,800.0	6,249.1	9,672.2	6,129.9	78.1	78.3	70.15	4,062.9	92.8	351.0	203.0	148.08	2.371	
9,900.0	6,249.1	9,772.2	6,129.9	80.0	80.2	70.15	4,162.9	92.8	351.0	199.4	151.67	2.314	
10,000.0	6,249.1	9,872.2	6,129.9	81.9	82.1	70.15	4,262.9	92.8	351.0	195.8	155.26	2.261	
10,100.0	6,249.1	9,972.2	6,129.9	83.8	84.0	70.15	4,362.9	92.8	351.0	192.2	158.86	2.210	
10,200.0	6,249.1	10,072.2	6,129.9	85.7	85.9	70.15	4,462.9	92.8	351.0	188.6	162.46	2.161	
10,300.0	6,249.1	10,172.2	6,129.9	87.6	87.8	70.15	4,562.9	92.8	351.0	185.0	166.06	2.114	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0303A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	6,249.1	10,272.2	6,129.9	89.5	89.7	70.15	4,662.9	92.8	351.0	181.4	169.66	2.069	
10,500.0	6,249.1	10,372.2	6,129.9	91.3	91.6	70.15	4,762.9	92.8	351.0	177.8	173.27	2.026	
10,600.0	6,249.1	10,472.2	6,129.9	93.2	93.5	70.16	4,862.9	92.8	351.0	174.2	176.88	1.985	
10,700.0	6,249.1	10,572.2	6,129.9	95.1	95.4	70.16	4,962.9	92.8	351.0	170.5	180.48	1.945	
10,800.0	6,249.1	10,672.2	6,129.9	97.0	97.3	70.16	5,062.9	92.8	351.0	166.9	184.10	1.907	
10,900.0	6,249.1	10,772.2	6,129.9	98.9	99.2	70.16	5,162.9	92.8	351.0	163.3	187.71	1.870	
11,000.0	6,249.1	10,872.2	6,129.9	100.8	101.1	70.16	5,262.9	92.8	351.0	159.7	191.32	1.835	
11,100.0	6,249.1	10,972.2	6,129.9	102.7	103.0	70.16	5,362.9	92.9	351.0	156.1	194.94	1.801	
11,200.0	6,249.1	11,072.2	6,129.9	104.6	104.9	70.16	5,462.9	92.9	351.0	152.5	198.55	1.768	
11,300.0	6,249.1	11,172.2	6,129.9	106.5	106.8	70.16	5,562.9	92.9	351.0	148.9	202.17	1.736	
11,400.0	6,249.0	11,272.2	6,129.9	108.4	108.7	70.17	5,662.9	92.9	351.0	145.2	205.79	1.706	
11,500.0	6,249.0	11,372.2	6,130.0	110.3	110.6	70.17	5,762.9	92.9	351.0	141.6	209.41	1.676	
11,600.0	6,249.0	11,472.2	6,130.0	112.2	112.5	70.17	5,862.9	92.9	351.0	138.0	213.03	1.648	
11,700.0	6,249.0	11,572.2	6,130.0	114.1	114.4	70.17	5,962.9	92.9	351.0	134.4	216.66	1.620	
11,800.0	6,249.0	11,672.2	6,130.0	116.1	116.3	70.17	6,062.9	92.9	351.0	130.7	220.28	1.594	
11,900.0	6,249.0	11,772.2	6,130.0	118.0	118.2	70.17	6,162.9	92.9	351.0	127.1	223.90	1.568	
12,000.0	6,249.0	11,872.2	6,130.0	119.9	120.1	70.17	6,262.9	92.9	351.0	123.5	227.53	1.543	
12,100.0	6,249.0	11,972.2	6,130.0	121.8	122.0	70.18	6,362.9	92.9	351.0	119.9	231.16	1.519	
12,200.0	6,249.0	12,072.2	6,130.0	123.7	123.9	70.18	6,462.9	92.9	351.0	116.2	234.78	1.495	Level 3
12,300.0	6,249.0	12,172.2	6,130.0	125.6	125.9	70.18	6,562.9	92.9	351.0	112.6	238.41	1.472	Level 3
12,400.0	6,249.0	12,272.2	6,130.0	127.5	127.8	70.18	6,662.9	92.9	351.0	109.0	242.04	1.450	Level 3
12,500.0	6,249.0	12,372.2	6,130.0	129.4	129.7	70.18	6,762.9	92.9	351.0	105.3	245.67	1.429	Level 3
12,600.0	6,249.0	12,472.2	6,130.0	131.3	131.6	70.18	6,862.9	92.9	351.0	101.7	249.30	1.408	Level 3
12,675.7	6,249.0	12,547.9	6,130.0	132.7	133.0	70.18	6,938.6	92.9	351.0	99.0	252.05	1.393	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0304B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	66.1	66.1				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	66.1	66.1	65.9	0.19	353.562	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	66.1	66.1	65.5	0.64	103.871	
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	66.1	66.1	65.0	1.09	60.878	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	66.1	66.1	64.6	1.54	43.057	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	66.1	66.1	64.1	1.99	33.307	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	66.1	66.1	63.7	2.43	27.157	
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	66.1	66.1	63.2	2.88	22.924	
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	66.1	66.1	62.8	3.33	19.833	
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	66.1	66.1	62.3	3.78	17.476	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	66.1	66.1	61.9	4.23	15.620	CC
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	104.38	0.0	66.1	66.5	61.8	4.68	14.213	ES
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	108.62	0.0	66.1	68.0	62.9	5.13	13.264	
1,300.0	1,299.6	1,299.2	1,299.2	2.8	2.8	112.58	1.6	66.7	70.8	65.2	5.58	12.694	
1,400.0	1,399.3	1,398.8	1,398.7	3.0	3.0	113.58	6.6	68.3	74.3	68.2	6.03	12.317	
1,500.0	1,499.1	1,498.8	1,498.4	3.3	3.2	113.20	13.2	70.5	78.0	71.5	6.49	12.015	
1,600.0	1,598.9	1,598.7	1,598.0	3.5	3.5	112.85	19.8	72.6	81.7	74.7	6.96	11.742	
1,700.0	1,698.6	1,698.6	1,697.7	3.7	3.7	112.53	26.4	74.8	85.4	78.0	7.43	11.496	
1,800.0	1,798.4	1,798.5	1,797.4	4.0	3.9	112.24	33.0	77.0	89.1	81.2	7.91	11.273	
1,900.0	1,898.1	1,898.5	1,897.1	4.2	4.2	111.97	39.7	79.2	92.8	84.5	8.39	11.070	
2,000.0	1,997.9	1,998.4	1,996.8	4.5	4.4	111.72	46.3	81.4	96.6	87.7	8.87	10.887	
2,100.0	2,097.6	2,098.3	2,096.5	4.7	4.7	111.49	52.9	83.5	100.3	90.9	9.36	10.719	
2,200.0	2,197.4	2,198.3	2,196.2	5.0	4.9	111.27	59.5	85.7	104.0	94.2	9.85	10.565	
2,300.0	2,297.2	2,298.2	2,295.8	5.2	5.1	111.08	66.1	87.9	107.8	97.4	10.34	10.424	
2,400.0	2,396.9	2,398.1	2,395.5	5.5	5.4	110.89	72.8	90.1	111.5	100.7	10.83	10.295	
2,500.0	2,496.7	2,498.1	2,495.2	5.7	5.6	110.72	79.4	92.3	115.2	103.9	11.32	10.175	
2,600.0	2,596.4	2,598.0	2,594.9	6.0	5.9	110.55	86.0	94.5	118.9	107.1	11.82	10.065	
2,700.0	2,696.2	2,697.9	2,694.6	6.2	6.1	110.40	92.6	96.6	122.7	110.4	12.31	9.963	
2,800.0	2,795.9	2,797.8	2,794.3	6.5	6.4	110.26	99.2	98.8	126.4	113.6	12.81	9.867	
2,900.0	2,895.7	2,897.8	2,894.0	6.7	6.6	110.12	105.9	101.0	130.1	116.8	13.31	9.779	
3,000.0	2,995.4	2,997.7	2,993.6	7.0	6.9	109.99	112.5	103.2	133.9	120.1	13.81	9.696	
3,100.0	3,095.2	3,097.6	3,093.3	7.2	7.1	109.87	119.1	105.4	137.6	123.3	14.31	9.619	
3,200.0	3,195.0	3,197.6	3,193.0	7.5	7.4	109.76	125.7	107.5	141.4	126.5	14.81	9.546	
3,300.0	3,294.7	3,297.5	3,292.7	7.7	7.6	109.65	132.3	109.7	145.1	129.8	15.31	9.478	
3,400.0	3,394.5	3,397.4	3,392.4	8.0	7.9	109.55	139.0	111.9	148.8	133.0	15.81	9.414	
3,500.0	3,494.2	3,497.4	3,492.1	8.3	8.1	109.45	145.6	114.1	152.6	136.3	16.31	9.353	
3,600.0	3,594.0	3,597.3	3,591.8	8.5	8.4	109.35	152.2	116.3	156.3	139.5	16.81	9.296	
3,700.0	3,693.7	3,697.2	3,691.5	8.8	8.6	109.27	158.8	118.5	160.0	142.7	17.32	9.242	
3,800.0	3,793.5	3,797.1	3,791.1	9.0	8.9	109.18	165.4	120.6	163.8	146.0	17.82	9.191	
3,900.0	3,893.3	3,897.1	3,890.8	9.3	9.2	109.10	172.1	122.8	167.5	149.2	18.32	9.143	
4,000.0	3,993.0	3,997.0	3,990.5	9.5	9.4	109.02	178.7	125.0	171.3	152.4	18.83	9.097	
4,100.0	4,092.8	4,096.9	4,090.2	9.8	9.7	108.95	185.3	127.2	175.0	155.7	19.33	9.054	
4,200.0	4,192.5	4,196.9	4,189.9	10.0	9.9	108.88	191.9	129.4	178.7	158.9	19.83	9.012	
4,300.0	4,292.3	4,296.8	4,289.6	10.3	10.2	108.81	198.5	131.5	182.5	162.1	20.34	8.972	
4,400.0	4,392.0	4,396.7	4,389.3	10.5	10.4	108.74	205.2	133.7	186.2	165.4	20.84	8.935	
4,500.0	4,491.8	4,496.6	4,488.9	10.8	10.7	108.68	211.8	135.9	190.0	168.6	21.35	8.899	
4,600.0	4,591.5	4,596.6	4,588.6	11.1	10.9	108.62	218.4	138.1	193.7	171.8	21.85	8.864	
4,700.0	4,691.3	4,696.5	4,688.3	11.3	11.2	108.56	225.0	140.3	197.4	175.1	22.36	8.831	
4,800.0	4,791.1	4,796.4	4,788.0	11.6	11.4	108.50	231.6	142.5	201.2	178.3	22.86	8.800	
4,900.0	4,890.8	4,896.4	4,887.7	11.8	11.7	108.45	238.3	144.6	204.9	181.6	23.37	8.770	
5,000.0	4,990.6	4,996.3	4,987.4	12.1	11.9	108.40	244.9	146.8	208.7	184.8	23.87	8.741	
5,100.0	5,090.3	5,096.2	5,087.1	12.3	12.2	108.35	251.5	149.0	212.4	188.0	24.38	8.713	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0304B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,196.2	5,186.7	12.6	12.5	108.30	258.1	151.2	216.1	191.3	24.88	8.686	
5,300.0	5,289.8	5,296.1	5,286.4	12.8	12.7	108.25	264.7	153.4	219.9	194.5	25.39	8.661	
5,400.0	5,389.6	5,396.0	5,386.1	13.1	13.0	108.21	271.4	155.5	223.6	197.7	25.90	8.636	
5,500.0	5,489.4	5,495.9	5,485.8	13.4	13.2	108.16	278.0	157.7	227.4	201.0	26.40	8.612	
5,600.0	5,589.1	5,595.9	5,585.5	13.6	13.5	108.12	284.6	159.9	231.1	204.2	26.91	8.589	
5,700.0	5,688.9	5,695.8	5,685.2	13.9	13.7	108.08	291.2	162.1	234.9	207.4	27.41	8.567	
5,800.0	5,788.6	5,793.8	5,782.9	14.1	14.0	107.95	298.0	164.3	238.9	210.9	27.91	8.557	
5,900.0	5,886.2	5,883.8	5,871.1	14.5	14.3	107.12	314.4	169.7	249.7	221.2	28.49	8.764	
6,000.0	5,978.0	5,972.2	5,953.7	15.0	14.7	105.58	344.2	179.5	269.8	240.5	29.27	9.218	
6,100.0	6,060.6	6,058.5	6,028.0	15.7	15.2	103.40	385.7	193.2	298.3	268.0	30.32	9.840	
6,200.0	6,131.1	6,142.5	6,092.5	16.6	15.9	100.66	436.7	210.0	334.1	302.4	31.70	10.538	
6,300.0	6,186.7	6,224.3	6,146.2	17.6	16.6	97.44	495.2	229.3	375.8	342.4	33.43	11.242	
6,400.0	6,225.5	6,304.6	6,188.9	18.9	17.5	93.87	559.7	250.6	422.0	386.6	35.43	11.911	
6,500.0	6,246.0	6,384.4	6,220.4	20.2	18.4	90.10	629.2	273.5	471.3	433.7	37.63	12.526	
6,600.0	6,249.2	6,465.5	6,240.7	21.7	19.5	88.93	703.7	298.0	521.9	481.9	40.00	13.048	
6,700.0	6,249.2	6,552.4	6,248.7	23.1	20.7	89.94	785.8	325.1	569.4	526.8	42.55	13.382	
6,800.0	6,249.2	6,683.1	6,248.7	24.5	22.4	89.95	911.1	362.0	609.4	563.7	45.71	13.333	
6,900.0	6,249.2	6,825.5	6,248.7	26.0	24.4	89.95	1,050.2	392.4	637.8	588.6	49.22	12.958	
7,000.0	6,249.2	6,974.7	6,248.7	27.5	26.6	89.96	1,197.9	413.0	653.7	600.7	53.00	12.334	
7,100.0	6,249.2	7,126.9	6,248.7	29.1	28.9	89.96	1,349.8	422.0	659.6	602.7	56.96	11.581	
7,200.0	6,249.2	7,239.9	6,248.7	30.7	30.6	89.96	1,462.9	422.4	659.9	599.4	60.43	10.920	
7,300.0	6,249.2	7,339.9	6,248.7	32.4	32.2	89.96	1,562.9	422.4	659.9	596.1	63.76	10.349	
7,400.0	6,249.2	7,439.9	6,248.7	34.1	33.9	89.96	1,662.9	422.4	659.9	592.7	67.15	9.827	
7,500.0	6,249.2	7,539.9	6,248.7	35.9	35.5	89.96	1,762.9	422.4	659.9	589.3	70.58	9.349	
7,600.0	6,249.2	7,639.9	6,248.8	37.6	37.2	89.96	1,862.9	422.4	659.9	585.8	74.05	8.911	
7,700.0	6,249.2	7,739.9	6,248.8	39.4	38.9	89.96	1,962.9	422.4	659.9	582.3	77.56	8.508	
7,800.0	6,249.2	7,839.9	6,248.8	41.1	40.7	89.96	2,062.9	422.4	659.9	578.8	81.10	8.137	
7,900.0	6,249.2	7,939.9	6,248.8	42.9	42.4	89.96	2,162.9	422.4	659.9	575.2	84.67	7.794	
8,000.0	6,249.2	8,039.9	6,248.8	44.7	44.2	89.96	2,262.9	422.4	659.9	571.6	88.25	7.477	
8,100.0	6,249.2	8,139.9	6,248.8	46.5	46.0	89.97	2,362.9	422.4	659.9	568.0	91.86	7.183	
8,200.0	6,249.2	8,239.9	6,248.8	48.4	47.7	89.97	2,462.9	422.5	659.9	564.4	95.49	6.910	
8,300.0	6,249.2	8,339.9	6,248.8	50.2	49.5	89.97	2,562.9	422.5	659.9	560.7	99.13	6.656	
8,400.0	6,249.2	8,439.9	6,248.8	52.0	51.3	89.97	2,662.9	422.5	659.9	557.1	102.79	6.419	
8,500.0	6,249.2	8,539.9	6,248.8	53.9	53.2	89.97	2,762.9	422.5	659.9	553.4	106.46	6.198	
8,600.0	6,249.2	8,639.9	6,248.8	55.7	55.0	89.97	2,862.9	422.5	659.9	549.7	110.15	5.991	
8,700.0	6,249.2	8,739.9	6,248.8	57.5	56.8	89.97	2,962.9	422.5	659.9	546.0	113.84	5.797	
8,800.0	6,249.1	8,839.9	6,248.8	59.4	58.6	89.97	3,062.9	422.5	659.9	542.3	117.54	5.614	
8,900.0	6,249.1	8,939.9	6,248.8	61.3	60.5	89.97	3,162.9	422.5	659.9	538.6	121.26	5.442	
9,000.0	6,249.1	9,039.9	6,248.8	63.1	62.3	89.97	3,262.9	422.5	659.9	534.9	124.98	5.280	
9,100.0	6,249.1	9,139.9	6,248.8	65.0	64.2	89.97	3,362.9	422.5	659.9	531.2	128.70	5.127	
9,200.0	6,249.1	9,239.9	6,248.8	66.9	66.0	89.97	3,462.9	422.5	659.9	527.4	132.44	4.983	
9,300.0	6,249.1	9,339.9	6,248.8	68.7	67.9	89.97	3,562.9	422.5	659.9	523.7	136.18	4.846	
9,400.0	6,249.1	9,439.9	6,248.8	70.6	69.7	89.98	3,662.9	422.5	659.9	520.0	139.92	4.716	
9,500.0	6,249.1	9,539.9	6,248.8	72.5	71.6	89.98	3,762.9	422.5	659.9	516.2	143.67	4.593	
9,600.0	6,249.1	9,639.9	6,248.9	74.4	73.5	89.98	3,862.9	422.5	659.9	512.5	147.43	4.476	
9,700.0	6,249.1	9,739.9	6,248.9	76.2	75.3	89.98	3,962.9	422.5	659.9	508.7	151.19	4.365	
9,800.0	6,249.1	9,839.9	6,248.9	78.1	77.2	89.98	4,062.9	422.5	659.9	504.9	154.95	4.259	
9,900.0	6,249.1	9,939.9	6,248.9	80.0	79.1	89.98	4,162.9	422.5	659.9	501.2	158.72	4.158	
10,000.0	6,249.1	10,039.9	6,248.9	81.9	81.0	89.98	4,262.9	422.5	659.9	497.4	162.49	4.061	
10,100.0	6,249.1	10,139.9	6,248.9	83.8	82.8	89.98	4,362.9	422.5	659.9	493.6	166.27	3.969	
10,200.0	6,249.1	10,239.9	6,248.9	85.7	84.7	89.98	4,462.9	422.5	659.9	489.8	170.04	3.881	
10,300.0	6,249.1	10,339.9	6,248.9	87.6	86.6	89.98	4,562.9	422.5	659.9	486.1	173.82	3.796	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-0304B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	6,249.1	10,439.9	6,248.9	89.5	88.5	89.98	4,662.9	422.5	659.9	482.3	177.61	3.715	
10,500.0	6,249.1	10,539.9	6,248.9	91.3	90.4	89.98	4,762.9	422.5	659.9	478.5	181.39	3.638	
10,600.0	6,249.1	10,639.9	6,248.9	93.2	92.3	89.98	4,862.9	422.5	659.9	474.7	185.18	3.563	
10,700.0	6,249.1	10,739.9	6,248.9	95.1	94.1	89.99	4,962.9	422.5	659.9	470.9	188.97	3.492	
10,800.0	6,249.1	10,839.9	6,248.9	97.0	96.0	89.99	5,062.9	422.5	659.9	467.1	192.76	3.423	
10,900.0	6,249.1	10,939.9	6,248.9	98.9	97.9	89.99	5,162.9	422.5	659.9	463.3	196.56	3.357	
11,000.0	6,249.1	11,039.9	6,248.9	100.8	99.8	89.99	5,262.9	422.5	659.9	459.5	200.35	3.294	
11,100.0	6,249.1	11,139.9	6,248.9	102.7	101.7	89.99	5,362.9	422.5	659.9	455.7	204.15	3.232	
11,200.0	6,249.1	11,239.9	6,248.9	104.6	103.6	89.99	5,462.9	422.5	659.9	451.9	207.95	3.173	
11,300.0	6,249.1	11,339.9	6,248.9	106.5	105.5	89.99	5,562.9	422.5	659.9	448.1	211.75	3.116	
11,400.0	6,249.0	11,439.9	6,248.9	108.4	107.4	89.99	5,662.9	422.6	659.9	444.3	215.56	3.061	
11,500.0	6,249.0	11,539.9	6,248.9	110.3	109.3	89.99	5,762.9	422.6	659.9	440.5	219.36	3.008	
11,600.0	6,249.0	11,639.9	6,248.9	112.2	111.2	89.99	5,862.9	422.6	659.9	436.7	223.16	2.957	
11,700.0	6,249.0	11,739.9	6,249.0	114.1	113.1	89.99	5,962.9	422.6	659.9	432.9	226.97	2.907	
11,800.0	6,249.0	11,839.9	6,249.0	116.1	115.0	89.99	6,062.9	422.6	659.9	429.1	230.78	2.859	
11,900.0	6,249.0	11,939.9	6,249.0	118.0	116.9	89.99	6,162.9	422.6	659.9	425.3	234.59	2.813	
12,000.0	6,249.0	12,039.9	6,249.0	119.9	118.8	89.99	6,262.9	422.6	659.9	421.5	238.40	2.768	
12,100.0	6,249.0	12,139.9	6,249.0	121.8	120.7	90.00	6,362.9	422.6	659.9	417.7	242.21	2.724	
12,200.0	6,249.0	12,239.9	6,249.0	123.7	122.6	90.00	6,462.9	422.6	659.9	413.9	246.02	2.682	
12,300.0	6,249.0	12,339.9	6,249.0	125.6	124.5	90.00	6,562.9	422.6	659.9	410.0	249.84	2.641	
12,400.0	6,249.0	12,439.9	6,249.0	127.5	126.4	90.00	6,662.9	422.6	659.9	406.2	253.65	2.602	
12,500.0	6,249.0	12,539.9	6,249.0	129.4	128.3	90.00	6,762.9	422.6	659.9	402.4	257.46	2.563	
12,600.0	6,249.0	12,639.9	6,249.0	131.3	130.2	90.00	6,862.9	422.6	659.9	398.6	261.28	2.526	
12,675.7	6,249.0	12,715.7	6,249.0	132.7	131.6	90.00	6,938.6	422.6	659.9	395.7	264.17	2.498	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1501A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-156.67	-75.1	-32.4	81.7				
100.0	100.0	100.0	100.0	0.1	0.1	-156.67	-75.1	-32.4	81.7	81.5	0.19	437.083	
200.0	200.0	200.0	200.0	0.3	0.3	-156.67	-75.1	-32.4	81.7	81.1	0.64	128.409	
300.0	300.0	300.0	300.0	0.5	0.5	-156.67	-75.1	-32.4	81.7	80.7	1.09	75.259	
400.0	400.0	400.0	400.0	0.8	0.8	-156.67	-75.1	-32.4	81.7	80.2	1.54	53.228	
500.0	500.0	500.0	500.0	1.0	1.0	-156.67	-75.1	-32.4	81.7	79.8	1.99	41.175	
600.0	600.0	600.0	600.0	1.2	1.2	-156.67	-75.1	-32.4	81.7	79.3	2.43	33.572	
700.0	700.0	700.0	700.0	1.4	1.4	-156.67	-75.1	-32.4	81.7	78.9	2.88	28.340	
800.0	800.0	800.0	800.0	1.7	1.7	-156.67	-75.1	-32.4	81.7	78.4	3.33	24.518	
900.0	900.0	900.0	900.0	1.9	1.9	-156.67	-75.1	-32.4	81.7	78.0	3.78	21.605	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-156.67	-75.1	-32.4	81.7	77.5	4.23	19.310	CC, ES
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-144.45	-75.1	-32.4	83.2	78.5	4.68	17.761	
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	-146.39	-75.1	-32.4	87.5	82.3	5.13	17.054	SF
1,300.0	1,299.6	1,296.4	1,296.4	2.8	2.8	-148.64	-76.6	-33.0	95.0	89.5	5.55	17.130	
1,400.0	1,399.3	1,392.4	1,392.3	3.0	2.9	-150.41	-81.1	-34.7	106.1	100.1	5.95	17.825	
1,500.0	1,499.1	1,491.2	1,490.8	3.3	3.1	-151.80	-87.5	-37.2	119.1	112.7	6.36	18.720	
1,600.0	1,598.9	1,590.3	1,589.7	3.5	3.3	-152.91	-94.0	-39.7	132.2	125.4	6.78	19.508	
1,700.0	1,698.6	1,689.4	1,688.6	3.7	3.5	-153.83	-100.4	-42.1	145.3	138.1	7.20	20.195	
1,800.0	1,798.4	1,788.6	1,787.4	4.0	3.7	-154.59	-106.9	-44.6	158.5	150.8	7.62	20.798	
1,900.0	1,898.1	1,887.7	1,886.3	4.2	3.9	-155.24	-113.3	-47.1	171.6	163.6	8.05	21.329	
2,000.0	1,997.9	1,986.8	1,985.2	4.5	4.2	-155.79	-119.8	-49.6	184.8	176.4	8.48	21.800	
2,100.0	2,097.6	2,085.9	2,084.1	4.7	4.4	-156.27	-126.2	-52.1	198.1	189.1	8.91	22.219	
2,200.0	2,197.4	2,185.0	2,182.9	5.0	4.6	-156.69	-132.7	-54.6	211.3	201.9	9.35	22.594	
2,300.0	2,297.2	2,284.1	2,281.8	5.2	4.9	-157.06	-139.1	-57.1	224.5	214.7	9.79	22.932	
2,400.0	2,396.9	2,383.2	2,380.7	5.5	5.1	-157.39	-145.6	-59.6	237.8	227.5	10.23	23.237	
2,500.0	2,496.7	2,482.3	2,479.5	5.7	5.3	-157.68	-152.0	-62.1	251.0	240.4	10.68	23.513	
2,600.0	2,596.4	2,581.4	2,578.4	6.0	5.6	-157.95	-158.5	-64.5	264.3	253.2	11.12	23.765	
2,700.0	2,696.2	2,680.5	2,677.3	6.2	5.8	-158.19	-164.9	-67.0	277.6	266.0	11.57	23.995	
2,800.0	2,795.9	2,779.7	2,776.1	6.5	6.1	-158.41	-171.4	-69.5	290.8	278.8	12.01	24.206	
2,900.0	2,895.7	2,878.8	2,875.0	6.7	6.3	-158.61	-177.8	-72.0	304.1	291.6	12.46	24.400	
3,000.0	2,995.4	2,977.9	2,973.9	7.0	6.6	-158.79	-184.3	-74.5	317.4	304.5	12.91	24.579	
3,100.0	3,095.2	3,077.0	3,072.7	7.2	6.8	-158.96	-190.7	-77.0	330.6	317.3	13.36	24.744	
3,200.0	3,195.0	3,176.1	3,171.6	7.5	7.0	-159.11	-197.2	-79.5	343.9	330.1	13.81	24.898	
3,300.0	3,294.7	3,275.2	3,270.5	7.7	7.3	-159.25	-203.6	-82.0	357.2	342.9	14.27	25.040	
3,400.0	3,394.5	3,374.3	3,369.3	8.0	7.6	-159.39	-210.1	-84.5	370.5	355.8	14.72	25.173	
3,500.0	3,494.2	3,473.4	3,468.2	8.3	7.8	-159.51	-216.5	-86.9	383.8	368.6	15.17	25.297	
3,600.0	3,594.0	3,572.5	3,567.1	8.5	8.1	-159.62	-223.0	-89.4	397.1	381.4	15.62	25.413	
3,700.0	3,693.7	3,671.6	3,665.9	8.8	8.3	-159.73	-229.4	-91.9	410.4	394.3	16.08	25.522	
3,800.0	3,793.5	3,770.8	3,764.8	9.0	8.6	-159.83	-235.9	-94.4	423.6	407.1	16.53	25.625	
3,900.0	3,893.3	3,869.9	3,863.7	9.3	8.8	-159.93	-242.3	-96.9	436.9	420.0	16.99	25.721	
4,000.0	3,993.0	3,969.0	3,962.6	9.5	9.1	-160.02	-248.8	-99.4	450.2	432.8	17.44	25.812	
4,100.0	4,092.8	4,068.1	4,061.4	9.8	9.3	-160.10	-255.2	-101.9	463.5	445.6	17.90	25.897	
4,200.0	4,192.5	4,167.2	4,160.3	10.0	9.6	-160.18	-261.7	-104.4	476.8	458.5	18.35	25.978	
4,300.0	4,292.3	4,266.3	4,259.2	10.3	9.8	-160.26	-268.1	-106.9	490.1	471.3	18.81	26.055	
4,400.0	4,392.0	4,365.4	4,358.0	10.5	10.1	-160.33	-274.6	-109.3	503.4	484.2	19.27	26.128	
4,500.0	4,491.8	4,464.5	4,456.9	10.8	10.4	-160.40	-281.0	-111.8	516.7	497.0	19.72	26.197	
4,600.0	4,591.5	4,563.6	4,555.8	11.1	10.6	-160.46	-287.5	-114.3	530.0	509.8	20.18	26.262	
4,700.0	4,691.3	4,662.7	4,654.6	11.3	10.9	-160.52	-293.9	-116.8	543.3	522.7	20.64	26.325	
4,800.0	4,791.1	4,761.9	4,753.5	11.6	11.1	-160.58	-300.4	-119.3	556.6	535.5	21.10	26.384	
4,900.0	4,890.8	4,861.0	4,852.4	11.8	11.4	-160.63	-306.8	-121.8	569.9	548.4	21.55	26.441	
5,000.0	4,990.6	4,960.1	4,951.2	12.1	11.6	-160.69	-313.3	-124.3	583.2	561.2	22.01	26.495	
5,100.0	5,090.3	5,059.2	5,050.1	12.3	11.9	-160.74	-319.7	-126.8	596.5	574.0	22.47	26.547	

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

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1501A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,158.3	5,149.0	12.6	12.2	-160.79	-326.2	-129.3	609.8	586.9	22.93	26.597	
5,300.0	5,289.8	5,257.4	5,247.8	12.8	12.4	-160.83	-332.6	-131.7	623.1	599.7	23.39	26.644	
5,400.0	5,389.6	5,356.5	5,346.7	13.1	12.7	-160.88	-339.1	-134.2	636.4	612.6	23.85	26.690	
5,500.0	5,489.4	5,455.6	5,445.6	13.4	12.9	-160.92	-345.5	-136.7	649.7	625.4	24.30	26.733	
5,600.0	5,589.1	5,554.7	5,544.4	13.6	13.2	-160.96	-352.0	-139.2	663.0	638.3	24.76	26.775	
5,700.0	5,688.9	5,653.8	5,643.3	13.9	13.5	-161.00	-358.4	-141.7	676.3	651.1	25.22	26.816	
5,800.0	5,788.6	5,700.0	5,689.2	14.1	13.6	-160.79	-363.1	-143.5	694.0	668.5	25.48	27.236	
5,900.0	5,886.2	5,750.0	5,738.1	14.5	13.8	-159.39	-372.5	-147.1	731.5	706.5	25.05	29.208	
6,000.0	5,978.0	5,771.7	5,759.1	15.0	13.9	-156.55	-377.9	-149.2	790.2	766.3	23.97	32.964	
6,100.0	6,060.6	5,800.0	5,785.9	15.7	14.0	-151.40	-386.2	-152.4	866.1	843.2	22.85	37.907	
6,200.0	6,131.1	5,800.0	5,785.9	16.6	14.0	-139.71	-386.2	-152.4	954.0	930.6	23.41	40.754	
6,300.0	6,186.7	5,823.3	5,807.6	17.6	14.1	-115.95	-394.0	-155.5	1,048.4	1,019.6	28.76	36.448	
6,400.0	6,225.5	5,825.5	5,809.7	18.9	14.1	-70.20	-394.8	-155.8	1,145.8	1,114.4	31.41	36.478	
6,500.0	6,246.0	5,821.7	5,806.2	20.2	14.1	-37.56	-393.5	-155.2	1,242.3	1,220.1	22.17	56.021	
6,600.0	6,249.2	5,800.0	5,785.9	21.7	14.0	-24.19	-386.2	-152.4	1,335.5	1,318.9	16.65	80.229	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1502B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	179.37	-75.1	0.8	75.1				
100.0	100.0	100.0	100.0	0.1	0.1	179.37	-75.1	0.8	75.1	74.9	0.19	401.377	
200.0	200.0	200.0	200.0	0.3	0.3	179.37	-75.1	0.8	75.1	74.4	0.64	117.919	
300.0	300.0	300.0	300.0	0.5	0.5	179.37	-75.1	0.8	75.1	74.0	1.09	69.111	
400.0	400.0	400.0	400.0	0.8	0.8	179.37	-75.1	0.8	75.1	73.5	1.54	48.880	
500.0	500.0	500.0	500.0	1.0	1.0	179.37	-75.1	0.8	75.1	73.1	1.99	37.811	
600.0	600.0	600.0	600.0	1.2	1.2	179.37	-75.1	0.8	75.1	72.6	2.43	30.830	
700.0	700.0	700.0	700.0	1.4	1.4	179.37	-75.1	0.8	75.1	72.2	2.88	26.024	
800.0	800.0	800.0	800.0	1.7	1.7	179.37	-75.1	0.8	75.1	71.7	3.33	22.515	
900.0	900.0	900.0	900.0	1.9	1.9	179.37	-75.1	0.8	75.1	71.3	3.78	19.840	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	179.37	-75.1	0.8	75.1	70.8	4.23	17.733	CC, ES
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-167.98	-75.1	0.8	76.8	72.1	4.68	16.398	
1,200.0	1,199.8	1,197.1	1,197.0	2.6	2.5	-168.52	-76.7	0.6	83.6	78.5	5.10	16.398	SF
1,300.0	1,299.6	1,293.4	1,293.2	2.8	2.7	-168.86	-81.5	0.0	95.4	89.9	5.50	17.355	
1,400.0	1,399.3	1,392.2	1,391.8	3.0	2.9	-168.97	-88.3	-0.9	109.1	103.2	5.90	18.473	
1,500.0	1,499.1	1,491.3	1,490.7	3.3	3.1	-169.05	-95.2	-1.9	122.8	116.5	6.32	19.439	
1,600.0	1,598.9	1,590.3	1,589.5	3.5	3.3	-169.12	-102.0	-2.8	136.5	129.7	6.73	20.269	
1,700.0	1,698.6	1,689.4	1,688.3	3.7	3.5	-169.17	-108.9	-3.7	150.2	143.0	7.15	20.988	
1,800.0	1,798.4	1,788.5	1,787.1	4.0	3.7	-169.22	-115.7	-4.6	163.9	156.3	7.58	21.615	
1,900.0	1,898.1	1,887.5	1,885.9	4.2	3.9	-169.26	-122.6	-5.5	177.5	169.5	8.01	22.165	
2,000.0	1,997.9	1,986.6	1,984.7	4.5	4.2	-169.29	-129.4	-6.4	191.2	182.8	8.44	22.651	
2,100.0	2,097.6	2,085.6	2,083.6	4.7	4.4	-169.32	-136.3	-7.3	204.9	196.1	8.88	23.083	
2,200.0	2,197.4	2,184.7	2,182.4	5.0	4.6	-169.34	-143.1	-8.3	218.6	209.3	9.32	23.469	
2,300.0	2,297.2	2,283.7	2,281.2	5.2	4.9	-169.36	-150.0	-9.2	232.3	222.6	9.76	23.815	
2,400.0	2,396.9	2,382.8	2,380.0	5.5	5.1	-169.38	-156.8	-10.1	246.0	235.8	10.20	24.128	
2,500.0	2,496.7	2,481.9	2,478.8	5.7	5.4	-169.40	-163.7	-11.0	259.7	249.1	10.64	24.411	
2,600.0	2,596.4	2,580.9	2,577.6	6.0	5.6	-169.42	-170.5	-11.9	273.4	262.3	11.08	24.669	
2,700.0	2,696.2	2,680.0	2,676.5	6.2	5.9	-169.43	-177.4	-12.8	287.1	275.6	11.53	24.904	
2,800.0	2,795.9	2,779.0	2,775.3	6.5	6.1	-169.44	-184.2	-13.7	300.8	288.8	11.97	25.120	
2,900.0	2,895.7	2,878.1	2,874.1	6.7	6.3	-169.46	-191.1	-14.7	314.5	302.1	12.42	25.318	
3,000.0	2,995.4	2,977.2	2,972.9	7.0	6.6	-169.47	-197.9	-15.6	328.2	315.3	12.87	25.501	
3,100.0	3,095.2	3,076.2	3,071.7	7.2	6.8	-169.48	-204.8	-16.5	341.9	328.6	13.32	25.670	
3,200.0	3,195.0	3,175.3	3,170.5	7.5	7.1	-169.49	-211.6	-17.4	355.6	341.8	13.77	25.827	
3,300.0	3,294.7	3,274.3	3,269.4	7.7	7.4	-169.49	-218.5	-18.3	369.3	355.1	14.22	25.973	
3,400.0	3,394.5	3,373.4	3,368.2	8.0	7.6	-169.50	-225.3	-19.2	383.0	368.3	14.67	26.110	
3,500.0	3,494.2	3,472.4	3,467.0	8.3	7.9	-169.51	-232.2	-20.1	396.7	381.6	15.12	26.237	
3,600.0	3,594.0	3,571.5	3,565.8	8.5	8.1	-169.52	-239.0	-21.0	410.4	394.8	15.57	26.356	
3,700.0	3,693.7	3,670.6	3,664.6	8.8	8.4	-169.52	-245.9	-22.0	424.1	408.0	16.02	26.467	
3,800.0	3,793.5	3,769.6	3,763.4	9.0	8.6	-169.53	-252.7	-22.9	437.8	421.3	16.47	26.572	
3,900.0	3,893.3	3,868.7	3,862.2	9.3	8.9	-169.54	-259.6	-23.8	451.5	434.5	16.93	26.671	
4,000.0	3,993.0	3,967.7	3,961.1	9.5	9.1	-169.54	-266.4	-24.7	465.2	447.8	17.38	26.764	
4,100.0	4,092.8	4,066.8	4,059.9	9.8	9.4	-169.55	-273.3	-25.6	478.9	461.0	17.83	26.852	
4,200.0	4,192.5	4,165.8	4,158.7	10.0	9.6	-169.55	-280.1	-26.5	492.5	474.3	18.29	26.935	
4,300.0	4,292.3	4,264.9	4,257.5	10.3	9.9	-169.55	-287.0	-27.4	506.2	487.5	18.74	27.014	
4,400.0	4,392.0	4,364.0	4,356.3	10.5	10.2	-169.56	-293.8	-28.4	519.9	500.7	19.19	27.088	
4,500.0	4,491.8	4,463.0	4,455.1	10.8	10.4	-169.56	-300.7	-29.3	533.6	514.0	19.65	27.159	
4,600.0	4,591.5	4,562.1	4,554.0	11.1	10.7	-169.57	-307.5	-30.2	547.3	527.2	20.10	27.227	
4,700.0	4,691.3	4,661.1	4,652.8	11.3	10.9	-169.57	-314.4	-31.1	561.0	540.5	20.56	27.291	
4,800.0	4,791.1	4,760.2	4,751.6	11.6	11.2	-169.57	-321.2	-32.0	574.7	553.7	21.01	27.352	
4,900.0	4,890.8	4,859.2	4,850.4	11.8	11.4	-169.58	-328.1	-32.9	588.4	567.0	21.47	27.411	
5,000.0	4,990.6	4,958.3	4,949.2	12.1	11.7	-169.58	-334.9	-33.8	602.1	580.2	21.92	27.466	
5,100.0	5,090.3	5,057.4	5,048.0	12.3	12.0	-169.58	-341.8	-34.8	615.8	593.4	22.38	27.520	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1502B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,156.4	5,146.9	12.6	12.2	-169.59	-348.6	-35.7	629.5	606.7	22.83	27.571	
5,300.0	5,289.8	5,255.5	5,245.7	12.8	12.5	-169.59	-355.5	-36.6	643.2	619.9	23.29	27.620	
5,400.0	5,389.6	5,354.5	5,344.5	13.1	12.7	-169.59	-362.3	-37.5	656.9	633.2	23.74	27.667	
5,500.0	5,489.4	5,453.6	5,443.3	13.4	13.0	-169.59	-369.2	-38.4	670.6	646.4	24.20	27.712	
5,600.0	5,589.1	5,552.6	5,542.1	13.6	13.3	-169.60	-376.0	-39.3	684.3	659.6	24.65	27.755	
5,700.0	5,688.9	5,651.7	5,640.9	13.9	13.5	-169.60	-382.9	-40.2	698.0	672.9	25.11	27.796	
5,800.0	5,788.6	5,750.7	5,739.7	14.1	13.8	-169.53	-389.7	-41.2	712.2	686.7	25.47	27.962	
5,900.0	5,886.2	5,800.0	5,788.8	14.5	13.9	-168.97	-393.7	-41.7	741.6	716.7	24.91	29.765	
6,000.0	5,978.0	5,850.0	5,838.1	15.0	14.1	-167.82	-401.9	-42.8	794.3	770.7	23.60	33.656	
6,100.0	6,060.6	5,866.5	5,854.2	15.7	14.2	-165.33	-405.6	-43.3	865.9	844.2	21.65	39.991	
6,200.0	6,131.1	5,900.0	5,886.4	16.6	14.3	-160.66	-414.7	-44.5	951.8	932.0	19.77	48.147	
6,300.0	6,186.7	5,900.0	5,886.4	17.6	14.3	-146.71	-414.7	-44.5	1,045.9	1,024.8	21.15	49.451	
6,400.0	6,225.5	5,900.0	5,886.4	18.9	14.3	-89.99	-414.7	-44.5	1,144.5	1,111.1	33.44	34.225	
6,500.0	6,246.0	5,900.0	5,886.4	20.2	14.3	-31.01	-414.7	-44.5	1,243.3	1,223.8	19.53	63.668	
6,600.0	6,249.2	5,900.0	5,886.4	21.7	14.3	-16.61	-414.7	-44.5	1,339.5	1,326.3	13.24	101.167	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1503A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	156.32	-75.1	32.9	82.0				
100.0	100.0	100.0	100.0	0.1	0.1	156.32	-75.1	32.9	82.0	81.8	0.19	438.263	
200.0	200.0	200.0	200.0	0.3	0.3	156.32	-75.1	32.9	82.0	81.3	0.64	128.755	
300.0	300.0	300.0	300.0	0.5	0.5	156.32	-75.1	32.9	82.0	80.9	1.09	75.463	
400.0	400.0	400.0	400.0	0.8	0.8	156.32	-75.1	32.9	82.0	80.4	1.54	53.372	
500.0	500.0	500.0	500.0	1.0	1.0	156.32	-75.1	32.9	82.0	80.0	1.99	41.286	
600.0	600.0	600.0	600.0	1.2	1.2	156.32	-75.1	32.9	82.0	79.5	2.43	33.663	
700.0	700.0	700.0	700.0	1.4	1.4	156.32	-75.1	32.9	82.0	79.1	2.88	28.416	
800.0	800.0	800.0	800.0	1.7	1.7	156.32	-75.1	32.9	82.0	78.6	3.33	24.584	
900.0	900.0	900.0	900.0	1.9	1.9	156.32	-75.1	32.9	82.0	78.2	3.78	21.663	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	156.32	-75.1	32.9	82.0	77.7	4.23	19.362	CC, ES
1,100.0	1,100.0	1,097.2	1,097.2	2.3	2.3	169.70	-76.7	33.2	85.3	80.7	4.65	18.352	SF
1,200.0	1,199.8	1,193.7	1,193.5	2.6	2.5	170.90	-81.5	34.0	95.4	90.4	5.05	18.903	
1,300.0	1,299.6	1,292.5	1,292.1	2.8	2.7	172.25	-88.3	35.2	109.1	103.7	5.46	20.001	
1,400.0	1,399.3	1,391.5	1,390.9	3.0	2.9	173.30	-95.1	36.4	122.9	117.0	5.87	20.944	
1,500.0	1,499.1	1,490.6	1,489.7	3.3	3.1	174.14	-101.9	37.6	136.7	130.4	6.28	21.748	
1,600.0	1,598.9	1,589.6	1,588.5	3.5	3.3	174.82	-108.7	38.7	150.5	143.8	6.71	22.438	
1,700.0	1,698.6	1,688.6	1,687.3	3.7	3.5	175.39	-115.5	39.9	164.3	157.2	7.13	23.036	
1,800.0	1,798.4	1,787.6	1,786.0	4.0	3.7	175.87	-122.3	41.1	178.1	170.6	7.56	23.557	
1,900.0	1,898.1	1,886.7	1,884.8	4.2	4.0	176.29	-129.1	42.3	192.0	184.0	7.99	24.013	
2,000.0	1,997.9	1,985.7	1,983.6	4.5	4.2	176.64	-135.9	43.4	205.8	197.4	8.43	24.418	
2,100.0	2,097.6	2,084.7	2,082.4	4.7	4.4	176.95	-142.7	44.6	219.7	210.8	8.87	24.778	
2,200.0	2,197.4	2,183.7	2,181.2	5.0	4.7	177.23	-149.6	45.8	233.6	224.3	9.31	25.099	
2,300.0	2,297.2	2,282.8	2,280.0	5.2	4.9	177.47	-156.4	47.0	247.4	237.7	9.75	25.388	
2,400.0	2,396.9	2,381.8	2,378.8	5.5	5.2	177.69	-163.2	48.1	261.3	251.1	10.19	25.648	
2,500.0	2,496.7	2,480.8	2,477.5	5.7	5.4	177.88	-170.0	49.3	275.2	264.6	10.63	25.885	
2,600.0	2,596.4	2,579.9	2,576.3	6.0	5.7	178.06	-176.8	50.5	289.1	278.0	11.08	26.100	
2,700.0	2,696.2	2,678.9	2,675.1	6.2	5.9	178.22	-183.6	51.7	303.0	291.5	11.52	26.297	
2,800.0	2,795.9	2,777.9	2,773.9	6.5	6.2	178.37	-190.4	52.8	316.9	304.9	11.97	26.477	
2,900.0	2,895.7	2,876.9	2,872.7	6.7	6.4	178.50	-197.2	54.0	330.8	318.3	12.41	26.643	
3,000.0	2,995.4	2,976.0	2,971.5	7.0	6.7	178.63	-204.0	55.2	344.7	331.8	12.86	26.796	
3,100.0	3,095.2	3,075.0	3,070.3	7.2	6.9	178.74	-210.8	56.4	358.6	345.2	13.31	26.938	
3,200.0	3,195.0	3,174.0	3,169.1	7.5	7.2	178.85	-217.6	57.5	372.4	358.7	13.76	27.070	
3,300.0	3,294.7	3,273.0	3,267.8	7.7	7.4	178.94	-224.4	58.7	386.3	372.1	14.21	27.192	
3,400.0	3,394.5	3,372.1	3,366.6	8.0	7.7	179.03	-231.2	59.9	400.2	385.6	14.66	27.306	
3,500.0	3,494.2	3,471.1	3,465.4	8.3	7.9	179.12	-238.0	61.1	414.1	399.0	15.11	27.413	
3,600.0	3,594.0	3,570.1	3,564.2	8.5	8.2	179.20	-244.9	62.2	428.0	412.5	15.56	27.513	
3,700.0	3,693.7	3,669.2	3,663.0	8.8	8.5	179.27	-251.7	63.4	441.9	425.9	16.01	27.607	
3,800.0	3,793.5	3,768.2	3,761.8	9.0	8.7	179.34	-258.5	64.6	455.8	439.4	16.46	27.695	
3,900.0	3,893.3	3,867.2	3,860.6	9.3	9.0	179.41	-265.3	65.8	469.7	452.8	16.91	27.778	
4,000.0	3,993.0	3,966.2	3,959.3	9.5	9.2	179.47	-272.1	67.0	483.7	466.3	17.36	27.857	
4,100.0	4,092.8	4,065.3	4,058.1	9.8	9.5	179.53	-278.9	68.1	497.6	479.7	17.81	27.931	
4,200.0	4,192.5	4,164.3	4,156.9	10.0	9.7	179.58	-285.7	69.3	511.5	493.2	18.27	28.001	
4,300.0	4,292.3	4,263.3	4,255.7	10.3	10.0	179.64	-292.5	70.5	525.4	506.6	18.72	28.067	
4,400.0	4,392.0	4,362.3	4,354.5	10.5	10.3	179.69	-299.3	71.7	539.3	520.1	19.17	28.130	
4,500.0	4,491.8	4,461.4	4,453.3	10.8	10.5	179.73	-306.1	72.8	553.2	533.5	19.62	28.190	
4,600.0	4,591.5	4,560.4	4,552.1	11.1	10.8	179.78	-312.9	74.0	567.1	547.0	20.08	28.247	
4,700.0	4,691.3	4,659.4	4,650.8	11.3	11.0	179.82	-319.7	75.2	581.0	560.5	20.53	28.301	
4,800.0	4,791.1	4,758.5	4,749.6	11.6	11.3	179.86	-326.5	76.4	594.9	573.9	20.98	28.353	
4,900.0	4,890.8	4,857.5	4,848.4	11.8	11.5	179.90	-333.3	77.5	608.8	587.4	21.43	28.402	
5,000.0	4,990.6	4,956.5	4,947.2	12.1	11.8	179.94	-340.1	78.7	622.7	600.8	21.89	28.450	
5,100.0	5,090.3	5,055.5	5,046.0	12.3	12.1	179.97	-347.0	79.9	636.6	614.3	22.34	28.495	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1503A - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,154.6	5,144.8	12.6	12.3	-179.99	-353.8	81.1	650.5	627.7	22.79	28.538	
5,300.0	5,289.8	5,253.6	5,243.6	12.8	12.6	-179.96	-360.6	82.2	664.4	641.2	23.25	28.579	
5,400.0	5,389.6	5,352.6	5,342.3	13.1	12.8	-179.93	-367.4	83.4	678.3	654.6	23.70	28.619	
5,500.0	5,489.4	5,451.6	5,441.1	13.4	13.1	-179.90	-374.2	84.6	692.2	668.1	24.16	28.657	
5,600.0	5,589.1	5,550.7	5,539.9	13.6	13.4	-179.87	-381.0	85.8	706.1	681.5	24.61	28.694	
5,700.0	5,688.9	5,649.7	5,638.7	13.9	13.6	-179.84	-387.8	86.9	720.1	695.0	25.06	28.729	
5,800.0	5,788.6	5,700.0	5,688.7	14.1	13.8	-179.82	-393.1	87.9	738.0	712.7	25.31	29.152	
5,900.0	5,886.2	5,732.1	5,720.2	14.5	13.9	-179.78	-398.9	88.9	776.0	751.3	24.69	31.426	
6,000.0	5,978.0	5,750.0	5,737.6	15.0	14.0	-179.73	-403.0	89.6	836.7	813.5	23.21	36.044	
6,100.0	6,060.6	5,800.0	5,785.4	15.7	14.2	-179.58	-417.4	92.1	914.5	893.5	21.04	43.475	
6,200.0	6,131.1	5,800.0	5,785.4	16.6	14.2	-179.38	-417.4	92.1	1,004.3	986.1	18.12	55.420	
6,300.0	6,186.7	5,800.0	5,785.4	17.6	14.2	-178.46	-417.4	92.1	1,101.5	1,086.7	14.85	74.157	
6,400.0	6,225.5	5,800.0	5,785.4	18.9	14.2	-2.39	-417.4	92.1	1,201.3	1,189.8	11.51	104.413	
6,500.0	6,246.0	5,800.0	5,785.4	20.2	14.2	-0.64	-417.4	92.1	1,299.9	1,291.0	8.86	146.742	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1504B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	138.62	-75.1	66.1	100.0				
100.0	100.0	100.0	100.0	0.1	0.1	138.62	-75.1	66.1	100.0	99.8	0.19	534.874	
200.0	200.0	200.0	200.0	0.3	0.3	138.62	-75.1	66.1	100.0	99.4	0.64	157.138	
300.0	300.0	300.0	300.0	0.5	0.5	138.62	-75.1	66.1	100.0	98.9	1.09	92.098	
400.0	400.0	400.0	400.0	0.8	0.8	138.62	-75.1	66.1	100.0	98.5	1.54	65.137	
500.0	500.0	500.0	500.0	1.0	1.0	138.62	-75.1	66.1	100.0	98.0	1.99	50.387	
600.0	600.0	600.0	600.0	1.2	1.2	138.62	-75.1	66.1	100.0	97.6	2.43	41.083	
700.0	700.0	700.0	700.0	1.4	1.4	138.62	-75.1	66.1	100.0	97.1	2.88	34.680	
800.0	800.0	800.0	800.0	1.7	1.7	138.62	-75.1	66.1	100.0	96.7	3.33	30.004	
900.0	900.0	900.0	900.0	1.9	1.9	138.62	-75.1	66.1	100.0	96.2	3.78	26.439	CC, ES
1,000.0	1,000.0	996.8	996.8	2.1	2.1	138.92	-76.6	66.7	101.6	97.4	4.20	24.197	
1,100.0	1,100.0	1,093.2	1,093.0	2.3	2.3	153.04	-81.1	68.6	108.0	103.4	4.60	23.467	SF
1,200.0	1,199.8	1,192.2	1,191.8	2.6	2.4	155.08	-87.5	71.2	119.4	114.3	5.01	23.812	
1,300.0	1,299.6	1,291.2	1,290.6	2.8	2.7	157.15	-93.9	73.8	132.5	127.0	5.43	24.415	
1,400.0	1,399.3	1,390.3	1,389.4	3.0	2.9	158.85	-100.2	76.5	145.7	139.9	5.85	24.930	
1,500.0	1,499.1	1,489.3	1,488.2	3.3	3.1	160.26	-106.6	79.1	159.1	152.8	6.27	25.371	
1,600.0	1,598.9	1,588.3	1,587.0	3.5	3.3	161.46	-113.0	81.7	172.5	165.8	6.70	25.752	
1,700.0	1,698.6	1,687.4	1,685.8	3.7	3.5	162.48	-119.4	84.3	186.0	178.9	7.13	26.084	
1,800.0	1,798.4	1,786.4	1,784.6	4.0	3.8	163.36	-125.8	87.0	199.6	192.0	7.57	26.374	
1,900.0	1,898.1	1,885.4	1,883.3	4.2	4.0	164.13	-132.2	89.6	213.2	205.2	8.01	26.631	
2,000.0	1,997.9	1,984.5	1,982.1	4.5	4.3	164.81	-138.6	92.2	226.8	218.4	8.44	26.859	
2,100.0	2,097.6	2,083.5	2,080.9	4.7	4.5	165.41	-145.0	94.8	240.5	231.6	8.89	27.063	
2,200.0	2,197.4	2,182.5	2,179.7	5.0	4.8	165.95	-151.4	97.4	254.2	244.8	9.33	27.245	
2,300.0	2,297.2	2,281.6	2,278.5	5.2	5.0	166.43	-157.8	100.1	267.9	258.1	9.77	27.410	
2,400.0	2,396.9	2,380.6	2,377.3	5.5	5.2	166.86	-164.1	102.7	281.6	271.4	10.22	27.559	
2,500.0	2,496.7	2,479.6	2,476.1	5.7	5.5	167.26	-170.5	105.3	295.3	284.6	10.66	27.694	
2,600.0	2,596.4	2,578.7	2,574.9	6.0	5.7	167.62	-176.9	107.9	309.0	297.9	11.11	27.818	
2,700.0	2,696.2	2,677.7	2,673.7	6.2	6.0	167.94	-183.3	110.6	322.8	311.2	11.56	27.931	
2,800.0	2,795.9	2,776.7	2,772.5	6.5	6.3	168.25	-189.7	113.2	336.6	324.6	12.00	28.035	
2,900.0	2,895.7	2,875.8	2,871.3	6.7	6.5	168.52	-196.1	115.8	350.3	337.9	12.45	28.131	
3,000.0	2,995.4	2,974.8	2,970.1	7.0	6.8	168.78	-202.5	118.4	364.1	351.2	12.90	28.220	
3,100.0	3,095.2	3,073.8	3,068.9	7.2	7.0	169.02	-208.9	121.1	377.9	364.5	13.35	28.302	
3,200.0	3,195.0	3,172.9	3,167.6	7.5	7.3	169.24	-215.3	123.7	391.7	377.9	13.80	28.379	
3,300.0	3,294.7	3,271.9	3,266.4	7.7	7.5	169.45	-221.7	126.3	405.5	391.2	14.25	28.450	
3,400.0	3,394.5	3,370.9	3,365.2	8.0	7.8	169.64	-228.1	128.9	419.3	404.6	14.70	28.517	
3,500.0	3,494.2	3,470.0	3,464.0	8.3	8.0	169.82	-234.4	131.6	433.1	417.9	15.15	28.579	
3,600.0	3,594.0	3,569.0	3,562.8	8.5	8.3	169.99	-240.8	134.2	446.9	431.3	15.61	28.637	
3,700.0	3,693.7	3,668.0	3,661.6	8.8	8.6	170.15	-247.2	136.8	460.7	444.7	16.06	28.692	
3,800.0	3,793.5	3,767.1	3,760.4	9.0	8.8	170.30	-253.6	139.4	474.5	458.0	16.51	28.744	
3,900.0	3,893.3	3,866.1	3,859.2	9.3	9.1	170.44	-260.0	142.0	488.4	471.4	16.96	28.793	
4,000.0	3,993.0	3,965.1	3,958.0	9.5	9.3	170.58	-266.4	144.7	502.2	484.8	17.41	28.839	
4,100.0	4,092.8	4,064.2	4,056.8	9.8	9.6	170.70	-272.8	147.3	516.0	498.1	17.87	28.882	
4,200.0	4,192.5	4,163.2	4,155.6	10.0	9.8	170.82	-279.2	149.9	529.8	511.5	18.32	28.923	
4,300.0	4,292.3	4,262.2	4,254.4	10.3	10.1	170.94	-285.6	152.5	543.7	524.9	18.77	28.962	
4,400.0	4,392.0	4,361.3	4,353.1	10.5	10.4	171.04	-292.0	155.2	557.5	538.3	19.22	28.999	
4,500.0	4,491.8	4,460.3	4,451.9	10.8	10.6	171.15	-298.3	157.8	571.3	551.7	19.68	29.035	
4,600.0	4,591.5	4,559.3	4,550.7	11.1	10.9	171.24	-304.7	160.4	585.2	565.0	20.13	29.068	
4,700.0	4,691.3	4,658.4	4,649.5	11.3	11.1	171.34	-311.1	163.0	599.0	578.4	20.58	29.100	
4,800.0	4,791.1	4,757.4	4,748.3	11.6	11.4	171.43	-317.5	165.7	612.8	591.8	21.04	29.131	
4,900.0	4,890.8	4,856.4	4,847.1	11.8	11.7	171.51	-323.9	168.3	626.7	605.2	21.49	29.160	
5,000.0	4,990.6	4,955.5	4,945.9	12.1	11.9	171.59	-330.3	170.9	640.5	618.6	21.95	29.188	
5,100.0	5,090.3	5,054.5	5,044.7	12.3	12.2	171.67	-336.7	173.5	654.4	632.0	22.40	29.214	

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

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 S10-T10N-R58W - Razor #10E-1504B - HZ - Plan #1

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.1	5,153.5	5,143.5	12.6	12.4	171.75	-343.1	176.2	668.2	645.4	22.85	29.240	
5,300.0	5,289.8	5,252.6	5,242.3	12.8	12.7	171.82	-349.5	178.8	682.1	658.8	23.31	29.264	
5,400.0	5,389.6	5,351.6	5,341.1	13.1	13.0	171.89	-355.9	181.4	695.9	672.1	23.76	29.288	
5,500.0	5,489.4	5,450.6	5,439.9	13.4	13.2	171.96	-362.3	184.0	709.8	685.5	24.22	29.310	
5,600.0	5,589.1	5,549.7	5,538.6	13.6	13.5	172.02	-368.6	186.6	723.6	698.9	24.67	29.332	
5,700.0	5,688.9	5,648.7	5,637.4	13.9	13.7	172.08	-375.0	189.3	737.5	712.3	25.12	29.353	
5,800.0	5,788.6	5,747.6	5,736.1	14.1	14.0	172.09	-381.4	191.9	751.8	726.4	25.48	29.508	
5,900.0	5,886.2	5,800.0	5,788.3	14.5	14.1	171.70	-385.3	193.5	781.2	756.3	24.90	31.366	
6,000.0	5,978.0	5,850.0	5,837.6	15.0	14.3	170.91	-392.9	196.6	834.0	810.4	23.54	35.433	
6,100.0	6,060.6	5,850.0	5,837.6	15.7	14.3	168.90	-392.9	196.6	905.6	884.2	21.43	42.266	
6,200.0	6,131.1	5,880.3	5,867.1	16.6	14.5	165.23	-399.5	199.3	991.0	971.9	19.18	51.678	
6,300.0	6,186.7	5,900.0	5,885.9	17.6	14.5	155.13	-404.7	201.5	1,085.8	1,066.9	18.89	57.487	
6,400.0	6,225.5	5,900.0	5,885.9	18.9	14.5	97.04	-404.7	201.5	1,184.5	1,151.4	33.11	35.775	
6,500.0	6,246.0	5,900.0	5,885.9	20.2	14.5	25.51	-404.7	201.5	1,283.7	1,266.6	17.14	74.888	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #10E-0302B
Project:	Weld County, CO	**TVD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Reference Site:	S10-T10N-R58W	**MD Reference:**	WELL @ 5039.1usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #10E-0302B	**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 @ 5039.1usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #10E-0302B
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.06°