WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S11-T10N-R58W
Well: Razor #11H-1415A
Wellbore: HZ
Design: Plan #2

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	KOP @ 900' MD
3	1100.0	4.00	179.74	1099.8	-7.0	0.0	2.00	179.74	7.0	EOB; 4° Inc
4	5357.0	4.00	179.74	5346.5	-303.9	1.4	0.00	0.00	303.9	Start 11° Build
5	6138.8	90.00	179.74	5831.0	-823.5	3.7	11.00	0.00	823.5	LP @ 6,138' MD
6	6909.5	90.00	180.00	5831.0	-1594.2	5.5	0.03	89.99	1594.2	EOB; 180° Azi
7	13650.7	90.00	180.00	5831.0	-8335.4	5.0	0.00	0.00	8335.4	

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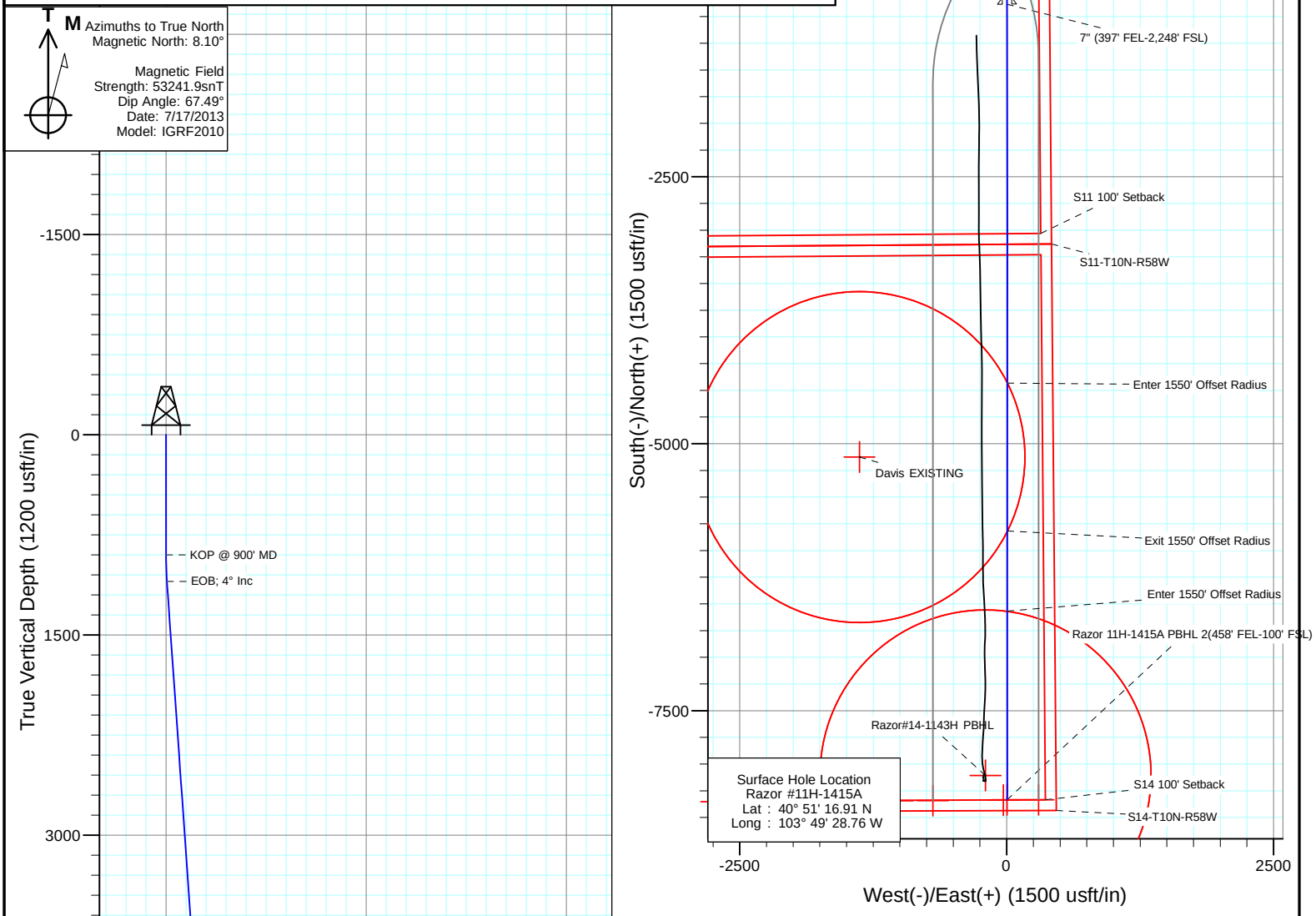
Azimuths to True North
Magnetic North: 8.10°

Magnetic Field
Strength: 53241.9snT
Dip Angle: 67.49°
Date: 7/17/2013
Model: IGRF2010



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Razor 11H-1415A PBHL 2(458' FEL-100' FSL)	5831.0	-8335.4	5.0	1550259.41	3463605.94

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5774.0	5892.8	Top Niobrara

Plan #2
Razor #11H-1415A
WELL @ 4971.3usft (Original Well Elev)
Ground Elevation @ 4954.5
North American Datum 1983
Well Razor #11H-1415A, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Project Weld County, CO

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site S11-T10N-R58W

Site Position:		**Northing:**	1,558,620.57 usft	**Latitude:**	40° 51' 17.19 N
From:	Lat/Long	**Easting:**	3,463,389.92 usft	**Longitude:**	103° 49' 29.45 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.08 °

Well Razor #11H-1415A

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,558,593.23 usft	**Latitude:**	40° 51' 16.91 N
	+E/-W	0.0 usft	**Easting:**	3,463,443.47 usft	**Longitude:**	103° 49' 28.76 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,954.5 usft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2013	8.10	67.49	53,242

Design Plan #2

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	179.97

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	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	4.00	179.74	1,099.8	-7.0	0.0	2.00	2.00	0.00	179.74	
5,357.0	4.00	179.74	5,346.5	-303.9	1.4	0.00	0.00	0.00	0.00	
6,138.8	90.00	179.74	5,831.0	-823.5	3.7	11.00	11.00	0.00	0.00	
6,909.5	90.00	180.00	5,831.0	-1,594.2	5.5	0.03	0.00	0.03	89.99	
13,650.7	90.00	180.00	5,831.0	-8,335.4	5.0	0.00	0.00	0.00	0.00	Razor 11H-1415A PBI

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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	KOP @ 900' MD
1,000.0	2.00	179.74	1,000.0	-1.7	0.0	1.7	2.00	2.00	
1,100.0	4.00	179.74	1,099.8	-7.0	0.0	7.0	2.00	2.00	EOB; 4° Inc
1,200.0	4.00	179.74	1,199.6	-14.0	0.1	14.0	0.00	0.00	
1,300.0	4.00	179.74	1,299.4	-20.9	0.1	20.9	0.00	0.00	
1,400.0	4.00	179.74	1,399.1	-27.9	0.1	27.9	0.00	0.00	
1,500.0	4.00	179.74	1,498.9	-34.9	0.2	34.9	0.00	0.00	
1,600.0	4.00	179.74	1,598.6	-41.9	0.2	41.9	0.00	0.00	
1,700.0	4.00	179.74	1,698.4	-48.8	0.2	48.8	0.00	0.00	
1,800.0	4.00	179.74	1,798.1	-55.8	0.3	55.8	0.00	0.00	
1,900.0	4.00	179.74	1,897.9	-62.8	0.3	62.8	0.00	0.00	
2,000.0	4.00	179.74	1,997.6	-69.8	0.3	69.8	0.00	0.00	
2,100.0	4.00	179.74	2,097.4	-76.7	0.3	76.7	0.00	0.00	
2,200.0	4.00	179.74	2,197.2	-83.7	0.4	83.7	0.00	0.00	
2,300.0	4.00	179.74	2,296.9	-90.7	0.4	90.7	0.00	0.00	
2,400.0	4.00	179.74	2,396.7	-97.7	0.4	97.7	0.00	0.00	
2,500.0	4.00	179.74	2,496.4	-104.6	0.5	104.6	0.00	0.00	
2,600.0	4.00	179.74	2,596.2	-111.6	0.5	111.6	0.00	0.00	
2,700.0	4.00	179.74	2,695.9	-118.6	0.5	118.6	0.00	0.00	
2,800.0	4.00	179.74	2,795.7	-125.6	0.6	125.6	0.00	0.00	
2,900.0	4.00	179.74	2,895.5	-132.5	0.6	132.5	0.00	0.00	
3,000.0	4.00	179.74	2,995.2	-139.5	0.6	139.5	0.00	0.00	
3,100.0	4.00	179.74	3,095.0	-146.5	0.7	146.5	0.00	0.00	
3,200.0	4.00	179.74	3,194.7	-153.5	0.7	153.5	0.00	0.00	
3,300.0	4.00	179.74	3,294.5	-160.4	0.7	160.4	0.00	0.00	
3,400.0	4.00	179.74	3,394.2	-167.4	0.8	167.4	0.00	0.00	
3,500.0	4.00	179.74	3,494.0	-174.4	0.8	174.4	0.00	0.00	
3,600.0	4.00	179.74	3,593.7	-181.4	0.8	181.4	0.00	0.00	
3,700.0	4.00	179.74	3,693.5	-188.3	0.9	188.3	0.00	0.00	
3,800.0	4.00	179.74	3,793.3	-195.3	0.9	195.3	0.00	0.00	
3,900.0	4.00	179.74	3,893.0	-202.3	0.9	202.3	0.00	0.00	
4,000.0	4.00	179.74	3,992.8	-209.3	0.9	209.3	0.00	0.00	
4,100.0	4.00	179.74	4,092.5	-216.2	1.0	216.2	0.00	0.00	
4,200.0	4.00	179.74	4,192.3	-223.2	1.0	223.2	0.00	0.00	
4,300.0	4.00	179.74	4,292.0	-230.2	1.0	230.2	0.00	0.00	
4,400.0	4.00	179.74	4,391.8	-237.2	1.1	237.2	0.00	0.00	
4,500.0	4.00	179.74	4,491.6	-244.1	1.1	244.1	0.00	0.00	
4,600.0	4.00	179.74	4,591.3	-251.1	1.1	251.1	0.00	0.00	
4,700.0	4.00	179.74	4,691.1	-258.1	1.2	258.1	0.00	0.00	
4,800.0	4.00	179.74	4,790.8	-265.1	1.2	265.1	0.00	0.00	
4,900.0	4.00	179.74	4,890.6	-272.1	1.2	272.1	0.00	0.00	
5,000.0	4.00	179.74	4,990.3	-279.0	1.3	279.0	0.00	0.00	
5,100.0	4.00	179.74	5,090.1	-286.0	1.3	286.0	0.00	0.00	

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Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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	179.74	5,189.9	-293.0	1.3	293.0	0.00	0.00	
5,300.0	4.00	179.74	5,289.6	-300.0	1.4	300.0	0.00	0.00	
5,357.0	4.00	179.74	5,346.5	-303.9	1.4	303.9	0.00	0.00	Start 11° Build
5,400.0	8.73	179.74	5,389.2	-308.7	1.4	308.7	11.00	11.00	
5,500.0	19.73	179.74	5,486.0	-333.2	1.5	333.2	11.00	11.00	
5,600.0	30.73	179.74	5,576.3	-375.8	1.7	375.8	11.00	11.00	
5,700.0	41.73	179.74	5,656.8	-434.8	2.0	434.8	11.00	11.00	
5,800.0	52.73	179.74	5,724.6	-508.1	2.3	508.1	11.00	11.00	
5,892.8	62.94	179.74	5,774.0	-586.6	2.7	586.6	11.00	11.00	Top Niobrara
5,900.0	63.73	179.74	5,777.2	-593.0	2.7	593.0	11.00	11.00	
6,000.0	74.73	179.74	5,812.6	-686.4	3.1	686.4	11.00	11.00	
6,100.0	85.73	179.74	5,829.5	-784.8	3.6	784.8	11.00	11.00	
6,138.8	90.00	179.74	5,831.0	-823.5	3.7	823.5	11.00	11.00	LP @ 6,138' MD
6,200.0	90.00	179.76	5,831.0	-884.7	4.0	884.7	0.03	0.00	7" (397' FEL-2,248' FSL)
6,300.0	90.00	179.80	5,831.0	-984.7	4.4	984.7	0.03	0.00	
6,400.0	90.00	179.83	5,831.0	-1,084.7	4.7	1,084.7	0.03	0.00	
6,500.0	90.00	179.86	5,831.0	-1,184.7	5.0	1,184.7	0.03	0.00	
6,600.0	90.00	179.90	5,831.0	-1,284.7	5.2	1,284.7	0.03	0.00	
6,700.0	90.00	179.93	5,831.0	-1,384.7	5.3	1,384.7	0.03	0.00	
6,800.0	90.00	179.97	5,831.0	-1,484.7	5.4	1,484.7	0.03	0.00	
6,900.0	90.00	180.00	5,831.0	-1,584.7	5.5	1,584.7	0.03	0.00	
6,909.5	90.00	180.00	5,831.0	-1,594.2	5.5	1,594.2	0.03	0.00	EOB; 180° Azi
7,000.0	90.00	180.00	5,831.0	-1,684.7	5.5	1,684.7	0.00	0.00	
7,100.0	90.00	180.00	5,831.0	-1,784.7	5.4	1,784.7	0.00	0.00	
7,200.0	90.00	180.00	5,831.0	-1,884.7	5.4	1,884.7	0.00	0.00	
7,300.0	90.00	180.00	5,831.0	-1,984.7	5.4	1,984.7	0.00	0.00	
7,400.0	90.00	180.00	5,831.0	-2,084.7	5.4	2,084.7	0.00	0.00	
7,500.0	90.00	180.00	5,831.0	-2,184.7	5.4	2,184.7	0.00	0.00	
7,600.0	90.00	180.00	5,831.0	-2,284.7	5.4	2,284.7	0.00	0.00	
7,700.0	90.00	180.00	5,831.0	-2,384.7	5.4	2,384.7	0.00	0.00	
7,800.0	90.00	180.00	5,831.0	-2,484.7	5.4	2,484.7	0.00	0.00	
7,900.0	90.00	180.00	5,831.0	-2,584.7	5.4	2,584.7	0.00	0.00	
8,000.0	90.00	180.00	5,831.0	-2,684.7	5.4	2,684.7	0.00	0.00	
8,100.0	90.00	180.00	5,831.0	-2,784.7	5.4	2,784.7	0.00	0.00	
8,200.0	90.00	180.00	5,831.0	-2,884.7	5.4	2,884.7	0.00	0.00	
8,300.0	90.00	180.00	5,831.0	-2,984.7	5.4	2,984.7	0.00	0.00	
8,400.0	90.00	180.00	5,831.0	-3,084.7	5.4	3,084.7	0.00	0.00	
8,500.0	90.00	180.00	5,831.0	-3,184.7	5.4	3,184.7	0.00	0.00	
8,600.0	90.00	180.00	5,831.0	-3,284.7	5.3	3,284.7	0.00	0.00	
8,700.0	90.00	180.00	5,831.0	-3,384.7	5.3	3,384.7	0.00	0.00	
8,800.0	90.00	180.00	5,831.0	-3,484.7	5.3	3,484.7	0.00	0.00	
8,900.0	90.00	180.00	5,831.0	-3,584.7	5.3	3,584.7	0.00	0.00	
9,000.0	90.00	180.00	5,831.0	-3,684.7	5.3	3,684.7	0.00	0.00	
9,100.0	90.00	180.00	5,831.0	-3,784.7	5.3	3,784.7	0.00	0.00	
9,200.0	90.00	180.00	5,831.0	-3,884.7	5.3	3,884.7	0.00	0.00	
9,300.0	90.00	180.00	5,831.0	-3,984.7	5.3	3,984.7	0.00	0.00	
9,400.0	90.00	180.00	5,831.0	-4,084.7	5.3	4,084.7	0.00	0.00	
9,500.0	90.00	180.00	5,831.0	-4,184.7	5.3	4,184.7	0.00	0.00	
9,600.0	90.00	180.00	5,831.0	-4,284.7	5.3	4,284.7	0.00	0.00	
9,700.0	90.00	180.00	5,831.0	-4,384.7	5.3	4,384.7	0.00	0.00	
9,746.3	90.00	180.00	5,831.0	-4,431.0	5.3	4,431.0	0.00	0.00	Enter 1550' Offset Radius
9,800.0	90.00	180.00	5,831.0	-4,484.7	5.3	4,484.7	0.00	0.00	

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Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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
9,900.0	90.00	180.00	5,831.0	-4,584.7	5.3	4,584.7	0.00	0.00	
10,000.0	90.00	180.00	5,831.0	-4,684.7	5.2	4,684.7	0.00	0.00	
10,100.0	90.00	180.00	5,831.0	-4,784.7	5.2	4,784.7	0.00	0.00	
10,200.0	90.00	180.00	5,831.0	-4,884.7	5.2	4,884.7	0.00	0.00	
10,300.0	90.00	180.00	5,831.0	-4,984.7	5.2	4,984.7	0.00	0.00	
10,400.0	90.00	180.00	5,831.0	-5,084.7	5.2	5,084.7	0.00	0.00	
10,500.0	90.00	180.00	5,831.0	-5,184.7	5.2	5,184.7	0.00	0.00	
10,600.0	90.00	180.00	5,831.0	-5,284.7	5.2	5,284.7	0.00	0.00	
10,700.0	90.00	180.00	5,831.0	-5,384.7	5.2	5,384.7	0.00	0.00	
10,800.0	90.00	180.00	5,831.0	-5,484.7	5.2	5,484.7	0.00	0.00	
10,900.0	90.00	180.00	5,831.0	-5,584.7	5.2	5,584.7	0.00	0.00	
11,000.0	90.00	180.00	5,831.0	-5,684.7	5.2	5,684.7	0.00	0.00	
11,100.0	90.00	180.00	5,831.0	-5,784.7	5.2	5,784.7	0.00	0.00	
11,133.3	90.00	180.00	5,831.0	-5,818.0	5.2	5,818.0	0.00	0.00	Exit 1550' Offset Radius
11,200.0	90.00	180.00	5,831.0	-5,884.7	5.2	5,884.7	0.00	0.00	
11,300.0	90.00	180.00	5,831.0	-5,984.7	5.2	5,984.7	0.00	0.00	
11,400.0	90.00	180.00	5,831.0	-6,084.7	5.2	6,084.7	0.00	0.00	
11,500.0	90.00	180.00	5,831.0	-6,184.7	5.1	6,184.7	0.00	0.00	
11,600.0	90.00	180.00	5,831.0	-6,284.7	5.1	6,284.7	0.00	0.00	
11,700.0	90.00	180.00	5,831.0	-6,384.7	5.1	6,384.7	0.00	0.00	
11,800.0	90.00	180.00	5,831.0	-6,484.7	5.1	6,484.7	0.00	0.00	
11,883.3	90.00	180.00	5,831.0	-6,568.0	5.1	6,568.0	0.00	0.00	Enter 1550' Offset Radius
11,900.0	90.00	180.00	5,831.0	-6,584.7	5.1	6,584.7	0.00	0.00	
12,000.0	90.00	180.00	5,831.0	-6,684.7	5.1	6,684.7	0.00	0.00	
12,100.0	90.00	180.00	5,831.0	-6,784.7	5.1	6,784.7	0.00	0.00	
12,200.0	90.00	180.00	5,831.0	-6,884.7	5.1	6,884.7	0.00	0.00	
12,300.0	90.00	180.00	5,831.0	-6,984.7	5.1	6,984.7	0.00	0.00	
12,400.0	90.00	180.00	5,831.0	-7,084.7	5.1	7,084.7	0.00	0.00	
12,500.0	90.00	180.00	5,831.0	-7,184.7	5.1	7,184.7	0.00	0.00	
12,600.0	90.00	180.00	5,831.0	-7,284.7	5.1	7,284.7	0.00	0.00	
12,700.0	90.00	180.00	5,831.0	-7,384.7	5.1	7,384.7	0.00	0.00	
12,800.0	90.00	180.00	5,831.0	-7,484.7	5.1	7,484.7	0.00	0.00	
12,900.0	90.00	180.00	5,831.0	-7,584.7	5.1	7,584.7	0.00	0.00	
13,000.0	90.00	180.00	5,831.0	-7,684.7	5.0	7,684.7	0.00	0.00	
13,100.0	90.00	180.00	5,831.0	-7,784.7	5.0	7,784.7	0.00	0.00	
13,200.0	90.00	180.00	5,831.0	-7,884.7	5.0	7,884.7	0.00	0.00	
13,300.0	90.00	180.00	5,831.0	-7,984.7	5.0	7,984.7	0.00	0.00	
13,400.0	90.00	180.00	5,831.0	-8,084.7	5.0	8,084.7	0.00	0.00	
13,500.0	90.00	180.00	5,831.0	-8,184.7	5.0	8,184.7	0.00	0.00	
13,600.0	90.00	180.00	5,831.0	-8,284.7	5.0	8,284.7	0.00	0.00	
13,650.7	90.00	180.00	5,831.0	-8,335.4	5.0	8,335.4	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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
Razor 11H-1415A PBHL - plan hits target center - Point	0.00	0.00	5,831.0	-8,335.4	5.0	1,550,259.41	3,463,605.94	40° 49' 54.55 N	103° 49' 28.69 W
Razor 11H-1415A PBHL - plan misses target center by 36.6usft at 13650.7usft MD (5831.0 TVD, -8335.4 N, 5.0 E) - Point	0.00	0.00	5,831.0	-8,338.4	-31.5	1,550,255.73	3,463,569.51	40° 49' 54.52 N	103° 49' 29.17 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,200.0	5,831.0	7" (397' FEL-2,248' FSL)	7	7-1/2

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,892.8	5,774.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
900.0	900.0	0.0	0.0	KOP @ 900' MD
1,100.0	1,099.8	-7.0	0.0	EOB; 4° Inc
5,357.0	5,346.5	-303.9	1.4	Start 11° Build
6,138.8	5,831.0	-823.5	3.7	LP @ 6,138' MD
6,909.5	5,831.0	-1,594.2	5.5	EOB; 180° Azi
9,746.3	5,831.0	-4,431.0	5.3	Enter 1550' Offset Radius
11,133.3	5,831.0	-5,818.0	5.2	Exit 1550' Offset Radius
11,883.3	5,831.0	-6,568.0	5.1	Enter 1550' Offset Radius
13,653.7	0.0			PBHL @ 13,653.7' MD

Whiting Petroleum Corporation

Weld County, CO
S11-T10N-R58W
Razor #11H-1415A
HZ
Plan #2

Anticollision Report

18 November, 2013

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Reference Plan #2

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 10,000.0usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 11/18/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,650.7	Plan #2 (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
S11-T10N-R58W						
Razor #11H-0213A - HZ - Plan #1	666.7	666.7	30.4	27.7	11.118	CC
Razor #11H-0213A - HZ - Plan #1	700.0	700.0	30.4	27.5	10.540	ES
Razor #11H-0213A - HZ - Plan #1	800.0	799.0	31.9	28.6	9.588	SF
Razor #11H-0215A - HZ - Plan #1	990.9	991.3	25.8	21.6	6.177	CC
Razor #11H-0215A - HZ - Plan #1	1,000.0	1,000.4	25.8	21.6	6.124	ES, SF
Razor #11H-0216B - HZ - Plan #1	1,177.6	1,178.4	16.7	11.7	3.343	CC, ES
Razor #11H-0216B - HZ - Plan #1	1,200.0	1,200.6	16.9	11.9	3.337	SF
Razor #11H-1413A - HZ - Plan #1	466.7	466.7	60.1	58.3	32.759	CC
Razor #11H-1413A - HZ - Plan #1	600.0	599.9	60.2	57.8	24.976	ES
Razor #11H-1413A - HZ - Plan #1	13,650.7	13,794.5	696.8	377.9	2.185	SF
Razor #11H-1416B - HZ - Plan #1	1,316.9	1,313.2	50.5	45.1	9.406	CC
Razor #11H-1416B - HZ - Plan #1	13,650.7	13,732.2	310.5	7.7	1.025	Level 2, ES, SF
Razor 11 Offset (EXISTING) - EXISTING - EXISTING	10,440.6	5,763.7	1,384.4	1,276.4	12.816	CC, ES
Razor 11 Offset (EXISTING) - EXISTING - EXISTING	10,800.0	5,763.7	1,430.3	1,315.2	12.427	SF
Razor 11-0241H (Existing) - Existing - Existing	0.0	0.0	229.2			
Razor 11-0241H (Existing) - Existing - Existing	3,925.7	3,926.9	236.1	218.9	13.731	ES
Razor 11-0241H (Existing) - Existing - Existing	5,000.0	4,987.3	273.2	251.2	12.412	SF
Razor 14-1143H (EXISTING) - EXISTING - EXISTING	12,544.7	6,552.2	216.6	61.1	1.393	Level 3, CC, ES
Razor 14-1143H (EXISTING) - EXISTING - EXISTING	13,100.0	5,995.6	230.4	63.6	1.381	Level 3, SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0213A - 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	-62.22	14.2	-26.9	30.4				
100.0	100.0	100.0	100.0	0.1	0.1	-62.22	14.2	-26.9	30.4	30.2	0.19	162.550	
200.0	200.0	200.0	200.0	0.3	0.3	-62.22	14.2	-26.9	30.4	29.8	0.64	47.757	
300.0	300.0	300.0	300.0	0.5	0.5	-62.22	14.2	-26.9	30.4	29.3	1.09	27.990	
400.0	400.0	400.0	400.0	0.8	0.8	-62.22	14.2	-26.9	30.4	28.9	1.54	19.796	
500.0	500.0	500.0	500.0	1.0	1.0	-62.22	14.2	-26.9	30.4	28.4	1.99	15.314	
600.0	600.0	600.0	600.0	1.2	1.2	-62.22	14.2	-26.9	30.4	28.0	2.43	12.486	
666.7	666.7	666.7	666.7	1.4	1.4	-62.22	14.2	-26.9	30.4	27.7	2.73	11.118	CC
700.0	700.0	700.0	700.0	1.4	1.4	-62.22	14.2	-26.9	30.4	27.5	2.88	10.540	ES
800.0	800.0	799.0	799.0	1.7	1.7	-60.75	15.6	-27.8	31.9	28.6	3.33	9.588	SF
900.0	900.0	897.8	897.7	1.9	1.9	-57.08	19.9	-30.7	36.6	32.8	3.78	9.692	
1,000.0	1,000.0	997.5	997.1	2.1	2.1	128.57	25.6	-34.5	44.2	40.0	4.20	10.519	
1,100.0	1,099.8	1,096.8	1,096.1	2.3	2.4	135.01	31.4	-38.4	54.4	49.8	4.60	11.834	
1,200.0	1,199.6	1,195.9	1,195.0	2.5	2.6	140.45	37.2	-42.2	66.5	61.5	5.01	13.278	
1,300.0	1,299.4	1,295.0	1,293.9	2.7	2.8	144.21	42.9	-46.0	79.0	73.5	5.42	14.557	
1,400.0	1,399.1	1,394.1	1,392.7	2.9	3.1	146.93	48.7	-49.8	91.7	85.8	5.85	15.675	
1,500.0	1,498.9	1,493.2	1,491.6	3.1	3.3	148.99	54.5	-53.6	104.5	98.3	6.28	16.652	
1,600.0	1,598.6	1,592.3	1,590.5	3.3	3.6	150.60	60.2	-57.5	117.5	110.8	6.71	17.508	
1,700.0	1,698.4	1,691.4	1,689.3	3.6	3.8	151.88	66.0	-61.3	130.6	123.4	7.15	18.261	
1,800.0	1,798.1	1,790.5	1,788.2	3.8	4.1	152.94	71.7	-65.1	143.7	136.1	7.59	18.926	
1,900.0	1,897.9	1,889.6	1,887.0	4.0	4.3	153.81	77.5	-68.9	156.8	148.8	8.03	19.517	
2,000.0	1,997.6	1,988.7	1,985.9	4.3	4.6	154.55	83.2	-72.8	170.0	161.5	8.48	20.045	
2,100.0	2,097.4	2,087.8	2,084.8	4.5	4.8	155.19	89.0	-76.6	183.2	174.2	8.93	20.519	
2,200.0	2,197.2	2,186.9	2,183.6	4.8	5.1	155.74	94.8	-80.4	196.4	187.0	9.38	20.946	
2,300.0	2,296.9	2,286.0	2,282.5	5.0	5.3	156.22	100.5	-84.2	209.6	199.8	9.83	21.333	
2,400.0	2,396.7	2,385.2	2,381.4	5.3	5.6	156.64	106.3	-88.1	222.8	212.6	10.28	21.685	
2,500.0	2,496.4	2,484.3	2,480.2	5.5	5.8	157.01	112.0	-91.9	236.1	225.4	10.73	22.006	
2,600.0	2,596.2	2,583.4	2,579.1	5.8	6.1	157.35	117.8	-95.7	249.4	238.2	11.18	22.301	
2,700.0	2,695.9	2,682.5	2,678.0	6.0	6.3	157.65	123.6	-99.5	262.6	251.0	11.64	22.571	
2,800.0	2,795.7	2,781.6	2,776.8	6.3	6.6	157.92	129.3	-103.4	275.9	263.8	12.09	22.820	
2,900.0	2,895.5	2,880.7	2,875.7	6.5	6.8	158.17	135.1	-107.2	289.2	276.6	12.55	23.051	
3,000.0	2,995.2	2,979.8	2,974.6	6.8	7.1	158.40	140.8	-111.0	302.5	289.5	13.00	23.265	
3,100.0	3,095.0	3,078.9	3,073.4	7.1	7.3	158.60	146.6	-114.8	315.8	302.3	13.46	23.464	
3,200.0	3,194.7	3,178.0	3,172.3	7.3	7.6	158.79	152.4	-118.7	329.1	315.1	13.91	23.649	
3,300.0	3,294.5	3,277.1	3,271.2	7.6	7.9	158.97	158.1	-122.5	342.4	328.0	14.37	23.822	
3,400.0	3,394.2	3,376.2	3,370.0	7.8	8.1	159.13	163.9	-126.3	355.7	340.8	14.83	23.984	
3,500.0	3,494.0	3,475.3	3,468.9	8.1	8.4	159.28	169.6	-130.1	369.0	353.7	15.29	24.136	
3,600.0	3,593.7	3,574.4	3,567.8	8.4	8.6	159.42	175.4	-134.0	382.3	366.5	15.74	24.279	
3,700.0	3,693.5	3,673.5	3,666.6	8.6	8.9	159.55	181.1	-137.8	395.6	379.4	16.20	24.413	
3,800.0	3,793.3	3,772.7	3,765.5	8.9	9.1	159.67	186.9	-141.6	408.9	392.2	16.66	24.540	
3,900.0	3,893.0	3,871.8	3,864.4	9.1	9.4	159.79	192.7	-145.4	422.2	405.1	17.12	24.660	
4,000.0	3,992.8	3,970.9	3,963.2	9.4	9.6	159.89	198.4	-149.3	435.5	417.9	17.58	24.773	
4,100.0	4,092.5	4,070.0	4,062.1	9.7	9.9	160.00	204.2	-153.1	448.8	430.8	18.04	24.880	
4,200.0	4,192.3	4,169.1	4,161.0	9.9	10.1	160.09	209.9	-156.9	462.1	443.6	18.50	24.982	
4,300.0	4,292.0	4,268.2	4,259.8	10.2	10.4	160.18	215.7	-160.7	475.4	456.5	18.96	25.079	
4,400.0	4,391.8	4,367.3	4,358.7	10.4	10.7	160.27	221.5	-164.6	488.8	469.3	19.42	25.171	
4,500.0	4,491.6	4,466.4	4,457.6	10.7	10.9	160.35	227.2	-168.4	502.1	482.2	19.88	25.259	
4,600.0	4,591.3	4,565.5	4,556.4	11.0	11.2	160.42	233.0	-172.2	515.4	495.1	20.34	25.342	
4,700.0	4,691.1	4,664.6	4,655.3	11.2	11.4	160.50	238.7	-176.0	528.7	507.9	20.80	25.422	
4,800.0	4,790.8	4,763.7	4,754.1	11.5	11.7	160.56	244.5	-179.9	542.0	520.8	21.26	25.498	
4,900.0	4,890.6	4,862.8	4,853.0	11.8	11.9	160.63	250.3	-183.7	555.4	533.6	21.72	25.571	
5,000.0	4,990.3	4,961.9	4,951.9	12.0	12.2	160.69	256.0	-187.5	568.7	546.5	22.18	25.641	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0213A - 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
5,100.0	5,090.1	5,061.0	5,050.7	12.3	12.4	160.75	261.8	-191.3	582.0	559.4	22.64	25.707	
5,200.0	5,189.9	5,160.1	5,149.6	12.5	12.7	160.81	267.5	-195.2	595.3	572.2	23.10	25.771	
5,300.0	5,289.6	5,259.3	5,248.5	12.8	12.9	160.86	273.3	-199.0	608.6	585.1	23.56	25.833	
5,400.0	5,389.2	5,357.5	5,346.5	13.1	13.2	160.70	279.0	-202.8	623.6	599.8	23.84	26.158	
5,500.0	5,486.0	5,400.0	5,388.7	13.5	13.3	159.57	282.9	-205.4	657.2	633.9	23.29	28.215	
5,600.0	5,576.3	5,450.0	5,437.7	14.1	13.5	157.40	291.2	-210.9	713.6	691.4	22.24	32.080	
5,700.0	5,656.8	5,450.0	5,437.7	14.9	13.5	152.15	291.2	-210.9	787.6	766.5	21.12	37.286	
5,800.0	5,724.6	5,483.2	5,469.6	15.8	13.6	143.15	298.8	-215.9	873.9	852.5	21.39	40.865	
5,900.0	5,777.2	5,500.0	5,485.5	17.0	13.7	121.93	303.3	-218.9	968.2	942.0	26.26	36.868	
6,000.0	5,812.6	5,500.0	5,485.5	18.3	13.7	75.89	303.3	-218.9	1,065.7	1,034.8	30.90	34.489	
6,100.0	5,829.5	5,500.0	5,485.5	19.8	13.7	39.70	303.3	-218.9	1,162.6	1,140.3	22.34	52.048	
6,200.0	5,831.0	5,500.0	5,485.5	21.2	13.7	32.24	303.3	-218.9	1,257.1	1,237.2	19.94	63.040	
6,300.0	5,831.0	5,477.1	5,463.8	22.6	13.6	30.32	297.3	-214.9	1,351.4	1,331.6	19.85	68.070	
6,400.0	5,831.0	5,470.2	5,457.2	24.0	13.6	29.83	295.6	-213.8	1,446.6	1,426.2	20.48	70.640	
6,500.0	5,831.0	5,450.0	5,437.7	25.5	13.5	28.36	291.2	-210.9	1,542.6	1,521.9	20.62	74.813	
6,600.0	5,831.0	5,450.0	5,437.7	27.0	13.5	28.46	291.2	-210.9	1,638.5	1,616.9	21.58	75.913	
6,700.0	5,831.0	5,450.0	5,437.7	28.6	13.5	28.57	291.2	-210.9	1,734.9	1,712.3	22.58	76.824	
6,800.0	5,831.0	5,450.0	5,437.7	30.2	13.5	28.69	291.2	-210.9	1,831.7	1,808.1	23.61	77.576	
6,900.0	5,831.0	5,450.0	5,437.7	31.9	13.5	28.81	291.2	-210.9	1,928.8	1,904.1	24.67	78.193	
7,000.0	5,831.0	5,450.0	5,437.7	33.6	13.5	28.82	291.2	-210.9	2,026.2	2,000.5	25.69	78.885	
7,100.0	5,831.0	5,450.0	5,437.7	35.4	13.5	28.82	291.2	-210.9	2,123.8	2,097.1	26.72	79.489	
7,200.0	5,831.0	5,450.0	5,437.7	37.1	13.5	28.82	291.2	-210.9	2,221.7	2,193.9	27.79	79.940	
7,300.0	5,831.0	5,427.3	5,415.6	38.9	13.4	27.21	286.9	-208.0	2,319.2	2,291.4	27.77	83.503	
7,400.0	5,831.0	5,424.0	5,412.3	40.7	13.4	26.99	286.4	-207.7	2,417.2	2,388.5	28.68	84.274	
7,500.0	5,831.0	5,420.9	5,409.3	42.5	13.4	26.79	285.9	-207.3	2,515.3	2,485.7	29.60	84.975	
7,600.0	5,831.0	5,400.0	5,388.7	44.3	13.3	25.50	282.9	-205.4	2,614.0	2,584.2	29.70	88.002	
7,700.0	5,831.0	5,400.0	5,388.7	46.2	13.3	25.50	282.9	-205.4	2,712.2	2,681.5	30.75	88.204	
7,800.0	5,831.0	5,400.0	5,388.7	48.0	13.3	25.50	282.9	-205.4	2,810.7	2,778.9	31.80	88.384	
7,900.0	5,831.0	5,400.0	5,388.7	49.8	13.3	25.50	282.9	-205.4	2,909.2	2,876.3	32.85	88.548	
8,000.0	5,831.0	5,400.0	5,388.7	51.7	13.3	25.50	282.9	-205.4	3,007.8	2,973.9	33.91	88.696	
8,100.0	5,831.0	5,400.0	5,388.7	53.5	13.3	25.50	282.9	-205.4	3,106.5	3,071.5	34.97	88.831	
8,200.0	5,831.0	5,400.0	5,388.7	55.4	13.3	25.50	282.9	-205.4	3,205.3	3,169.3	36.03	88.954	
8,300.0	5,831.0	5,400.0	5,388.7	57.3	13.3	25.50	282.9	-205.4	3,304.1	3,267.1	37.10	89.066	
8,400.0	5,831.0	5,400.0	5,388.7	59.1	13.3	25.50	282.9	-205.4	3,403.1	3,364.9	38.16	89.170	
8,500.0	5,831.0	5,400.0	5,388.7	61.0	13.3	25.50	282.9	-205.4	3,502.1	3,462.8	39.23	89.266	
8,600.0	5,831.0	5,400.0	5,388.7	62.9	13.3	25.50	282.9	-205.4	3,601.1	3,560.8	40.30	89.354	
8,700.0	5,831.0	5,400.0	5,388.7	64.7	13.3	25.50	282.9	-205.4	3,700.2	3,658.8	41.37	89.436	
8,800.0	5,831.0	5,400.0	5,388.7	66.6	13.3	25.50	282.9	-205.4	3,799.3	3,756.9	42.45	89.512	
8,900.0	5,831.0	5,400.0	5,388.7	68.5	13.3	25.50	282.9	-205.4	3,898.5	3,855.0	43.52	89.582	
9,000.0	5,831.0	5,400.0	5,388.7	70.4	13.3	25.50	282.9	-205.4	3,997.8	3,953.2	44.59	89.648	
9,100.0	5,831.0	5,400.0	5,388.7	72.3	13.3	25.50	282.9	-205.4	4,097.0	4,051.3	45.67	89.710	
9,200.0	5,831.0	5,400.0	5,388.7	74.1	13.3	25.50	282.9	-205.4	4,196.3	4,149.6	46.75	89.768	
9,300.0	5,831.0	5,400.0	5,388.7	76.0	13.3	25.50	282.9	-205.4	4,295.6	4,247.8	47.82	89.822	
9,400.0	5,831.0	5,400.0	5,388.7	77.9	13.3	25.50	282.9	-205.4	4,395.0	4,346.1	48.90	89.873	
9,500.0	5,831.0	5,400.0	5,388.7	79.8	13.3	25.50	282.9	-205.4	4,494.4	4,444.4	49.98	89.921	
9,600.0	5,831.0	5,400.0	5,388.7	81.7	13.3	25.50	282.9	-205.4	4,593.8	4,542.8	51.06	89.966	
9,700.0	5,831.0	5,380.9	5,369.8	83.6	13.3	24.44	280.8	-204.0	4,692.9	4,642.0	50.89	92.225	
9,800.0	5,831.0	5,379.8	5,368.7	85.5	13.3	24.38	280.7	-203.9	4,792.3	4,740.5	51.88	92.380	
9,900.0	5,831.0	5,378.8	5,367.7	87.4	13.3	24.32	280.6	-203.8	4,891.8	4,838.9	52.87	92.528	
10,000.0	5,831.0	5,377.8	5,366.7	89.3	13.3	24.27	280.5	-203.8	4,991.3	4,937.4	53.86	92.669	
10,100.0	5,831.0	5,376.8	5,365.7	91.2	13.3	24.22	280.4	-203.7	5,090.8	5,035.9	54.86	92.803	
10,200.0	5,831.0	5,357.5	5,346.5	93.1	13.2	23.27	279.0	-202.8	5,190.6	5,135.9	54.70	94.898	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0213A - HZ - Plan #1

Survey Program: 0-ISCWSA MWD

Offset Site Error: 0.0 usft

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
10,300.0	5,831.0	5,357.5	5,346.5	95.0	13.2	23.27	279.0	-202.8	5,290.1	5,234.3	55.73	94.917	
10,400.0	5,831.0	5,357.5	5,346.5	96.9	13.2	23.27	279.0	-202.8	5,389.6	5,332.8	56.77	94.936	
10,500.0	5,831.0	5,357.5	5,346.5	98.8	13.2	23.27	279.0	-202.8	5,489.1	5,431.3	57.81	94.953	
10,600.0	5,831.0	5,357.5	5,346.5	100.7	13.2	23.27	279.0	-202.8	5,588.6	5,529.8	58.85	94.970	
10,700.0	5,831.0	5,357.5	5,346.5	102.6	13.2	23.27	279.0	-202.8	5,688.2	5,628.3	59.89	94.985	
10,800.0	5,831.0	5,357.5	5,346.5	104.5	13.2	23.27	279.0	-202.8	5,787.8	5,726.9	60.92	95.000	
10,900.0	5,831.0	5,357.5	5,346.5	106.4	13.2	23.27	279.0	-202.8	5,887.4	5,825.4	61.96	95.015	
11,000.0	5,831.0	5,357.5	5,346.5	108.3	13.2	23.27	279.0	-202.8	5,987.0	5,924.0	63.00	95.028	
11,100.0	5,831.0	5,357.5	5,346.5	110.2	13.2	23.27	279.0	-202.8	6,086.6	6,022.6	64.04	95.042	
11,200.0	5,831.0	5,357.5	5,346.5	112.1	13.2	23.27	279.0	-202.8	6,186.2	6,121.1	65.08	95.054	
11,300.0	5,831.0	5,357.5	5,346.5	114.0	13.2	23.27	279.0	-202.8	6,285.9	6,219.7	66.12	95.066	
11,400.0	5,831.0	5,357.5	5,346.5	115.9	13.2	23.27	279.0	-202.8	6,385.5	6,318.4	67.16	95.077	
11,500.0	5,831.0	5,357.5	5,346.5	117.8	13.2	23.27	279.0	-202.8	6,485.2	6,417.0	68.20	95.088	
11,600.0	5,831.0	5,357.5	5,346.5	119.7	13.2	23.27	279.0	-202.8	6,584.9	6,515.6	69.24	95.099	
11,700.0	5,831.0	5,357.5	5,346.5	121.6	13.2	23.27	279.0	-202.8	6,684.5	6,614.3	70.28	95.109	
11,800.0	5,831.0	5,357.5	5,346.5	123.6	13.2	23.27	279.0	-202.8	6,784.2	6,712.9	71.32	95.119	
11,900.0	5,831.0	5,357.5	5,346.5	125.5	13.2	23.27	279.0	-202.8	6,883.9	6,811.6	72.37	95.128	
12,000.0	5,831.0	5,357.5	5,346.5	127.4	13.2	23.27	279.0	-202.8	6,983.6	6,910.2	73.41	95.137	
12,100.0	5,831.0	5,357.5	5,346.5	129.3	13.2	23.27	279.0	-202.8	7,083.4	7,008.9	74.45	95.146	
12,200.0	5,831.0	5,357.5	5,346.5	131.2	13.2	23.27	279.0	-202.8	7,183.1	7,107.6	75.49	95.154	
12,300.0	5,831.0	5,357.5	5,346.5	133.1	13.2	23.27	279.0	-202.8	7,282.8	7,206.3	76.53	95.162	
12,400.0	5,831.0	5,357.5	5,346.5	135.0	13.2	23.27	279.0	-202.8	7,382.6	7,305.0	77.57	95.170	
12,500.0	5,831.0	5,357.5	5,346.5	136.9	13.2	23.27	279.0	-202.8	7,482.3	7,403.7	78.61	95.177	
12,600.0	5,831.0	5,357.5	5,346.5	138.8	13.2	23.27	279.0	-202.8	7,582.1	7,502.4	79.66	95.184	
12,700.0	5,831.0	5,357.5	5,346.5	140.7	13.2	23.27	279.0	-202.8	7,681.8	7,601.1	80.70	95.191	
12,800.0	5,831.0	5,357.5	5,346.5	142.7	13.2	23.27	279.0	-202.8	7,781.6	7,699.9	81.74	95.198	
12,900.0	5,831.0	5,357.5	5,346.5	144.6	13.2	23.27	279.0	-202.8	7,881.4	7,798.6	82.78	95.204	
13,000.0	5,831.0	5,357.5	5,346.5	146.5	13.2	23.27	279.0	-202.8	7,981.1	7,897.3	83.83	95.211	
13,100.0	5,831.0	5,357.5	5,346.5	148.4	13.2	23.27	279.0	-202.8	8,080.9	7,996.1	84.87	95.217	
13,200.0	5,831.0	5,357.5	5,346.5	150.3	13.2	23.27	279.0	-202.8	8,180.7	8,094.8	85.91	95.223	
13,300.0	5,831.0	5,352.6	5,341.6	152.2	13.2	23.04	278.7	-202.6	8,280.5	8,194.0	86.52	95.704	
13,400.0	5,831.0	5,346.8	5,335.8	154.1	13.2	22.78	278.4	-202.4	8,380.3	8,293.3	87.05	96.271	
13,500.0	5,831.0	5,341.0	5,330.0	156.1	13.2	22.52	278.0	-202.1	8,480.1	8,392.5	87.58	96.830	
13,600.0	5,831.0	5,335.2	5,324.2	158.0	13.1	22.27	277.7	-201.9	8,579.9	8,491.8	88.11	97.382	
13,650.7	5,831.0	5,332.3	5,321.3	158.9	13.1	22.14	277.5	-201.8	8,630.5	8,542.1	88.37	97.658	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0215A - 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	116.07	-13.2	26.9	29.9				
100.0	100.0	100.0	100.0	0.1	0.1	116.07	-13.2	26.9	29.9	29.8	0.19	160.109	
200.0	200.0	200.0	200.0	0.3	0.3	116.07	-13.2	26.9	29.9	29.3	0.64	47.038	
300.0	300.0	300.0	300.0	0.5	0.5	116.07	-13.2	26.9	29.9	28.9	1.09	27.569	
400.0	400.0	400.0	400.0	0.8	0.8	116.07	-13.2	26.9	29.9	28.4	1.54	19.498	
500.0	500.0	500.0	500.0	1.0	1.0	116.07	-13.2	26.9	29.9	28.0	1.99	15.083	
600.0	600.0	600.0	600.0	1.2	1.2	116.07	-13.2	26.9	29.9	27.5	2.43	12.298	
700.0	700.0	700.0	700.0	1.4	1.4	116.07	-13.2	26.9	29.9	27.1	2.88	10.381	
800.0	800.0	800.5	800.5	1.7	1.7	113.09	-11.4	26.7	29.1	25.7	3.33	8.720	
900.0	900.0	900.8	900.6	1.9	1.9	103.18	-6.2	26.3	27.0	23.2	3.78	7.134	
990.9	990.9	991.3	990.9	2.1	2.1	-93.26	0.1	25.7	25.8	21.6	4.17	6.177	CC
1,000.0	1,000.0	1,000.4	1,000.0	2.1	2.1	-95.33	0.8	25.7	25.8	21.6	4.21	6.124	ES, SF
1,100.0	1,099.8	1,099.6	1,099.0	2.3	2.4	-119.90	7.7	25.1	29.0	24.4	4.62	6.278	
1,200.0	1,199.6	1,198.6	1,197.8	2.5	2.6	-138.97	14.5	24.5	37.6	32.5	5.04	7.453	
1,300.0	1,299.4	1,297.7	1,296.5	2.7	2.8	-150.26	21.4	23.9	48.7	43.2	5.46	8.913	
1,400.0	1,399.1	1,396.7	1,395.3	2.9	3.1	-157.22	28.3	23.3	60.9	55.0	5.88	10.359	
1,500.0	1,498.9	1,495.7	1,494.1	3.1	3.3	-161.81	35.2	22.7	73.8	67.4	6.30	11.698	
1,600.0	1,598.6	1,594.8	1,592.9	3.3	3.6	-165.03	42.1	22.1	86.9	80.2	6.73	12.910	
1,700.0	1,698.4	1,693.8	1,691.7	3.6	3.8	-167.40	49.0	21.5	100.3	93.1	7.16	13.998	
1,800.0	1,798.1	1,792.8	1,790.5	3.8	4.1	-169.21	55.8	20.9	113.8	106.2	7.60	14.974	
1,900.0	1,897.9	1,891.8	1,889.3	4.0	4.3	-170.63	62.7	20.3	127.4	119.3	8.04	15.850	
2,000.0	1,997.6	1,990.9	1,988.1	4.3	4.6	-171.78	69.6	19.7	141.0	132.5	8.47	16.640	
2,100.0	2,097.4	2,089.9	2,086.8	4.5	4.8	-172.73	76.5	19.1	154.7	145.8	8.92	17.353	
2,200.0	2,197.2	2,188.9	2,185.6	4.8	5.1	-173.52	83.4	18.5	168.4	159.1	9.36	18.000	
2,300.0	2,296.9	2,288.0	2,284.4	5.0	5.3	-174.19	90.2	17.8	182.2	172.4	9.80	18.589	
2,400.0	2,396.7	2,387.0	2,383.2	5.3	5.6	-174.77	97.1	17.2	196.0	185.7	10.25	19.127	
2,500.0	2,496.4	2,486.0	2,482.0	5.5	5.8	-175.27	104.0	16.6	209.8	199.1	10.69	19.620	
2,600.0	2,596.2	2,585.0	2,580.8	5.8	6.1	-175.71	110.9	16.0	223.6	212.4	11.14	20.073	
2,700.0	2,695.9	2,684.1	2,679.6	6.0	6.3	-176.10	117.8	15.4	237.4	225.8	11.59	20.491	
2,800.0	2,795.7	2,783.1	2,778.4	6.3	6.6	-176.45	124.7	14.8	251.2	239.2	12.03	20.877	
2,900.0	2,895.5	2,882.1	2,877.1	6.5	6.8	-176.76	131.5	14.2	265.1	252.6	12.48	21.235	
3,000.0	2,995.2	2,981.2	2,975.9	6.8	7.1	-177.04	138.4	13.6	278.9	266.0	12.93	21.568	
3,100.0	3,095.0	3,080.2	3,074.7	7.1	7.3	-177.29	145.3	13.0	292.8	279.4	13.38	21.879	
3,200.0	3,194.7	3,179.2	3,173.5	7.3	7.6	-177.52	152.2	12.4	306.6	292.8	13.83	22.168	
3,300.0	3,294.5	3,278.2	3,272.3	7.6	7.8	-177.73	159.1	11.8	320.5	306.2	14.28	22.440	
3,400.0	3,394.2	3,377.3	3,371.1	7.8	8.1	-177.93	165.9	11.2	334.3	319.6	14.73	22.694	
3,500.0	3,494.0	3,476.3	3,469.9	8.1	8.3	-178.10	172.8	10.6	348.2	333.0	15.18	22.933	
3,600.0	3,593.7	3,575.3	3,568.7	8.4	8.6	-178.27	179.7	10.0	362.1	346.4	15.63	23.158	
3,700.0	3,693.5	3,674.4	3,667.4	8.6	8.8	-178.42	186.6	9.4	375.9	359.8	16.09	23.370	
3,800.0	3,793.3	3,773.4	3,766.2	8.9	9.1	-178.56	193.5	8.8	389.8	373.3	16.54	23.570	
3,900.0	3,893.0	3,872.4	3,865.0	9.1	9.3	-178.69	200.4	8.2	403.7	386.7	16.99	23.759	
4,000.0	3,992.8	3,971.4	3,963.8	9.4	9.6	-178.81	207.2	7.6	417.6	400.1	17.44	23.939	
4,100.0	4,092.5	4,070.5	4,062.6	9.7	9.9	-178.93	214.1	7.0	431.4	413.5	17.90	24.109	
4,200.0	4,192.3	4,169.5	4,161.4	9.9	10.1	-179.04	221.0	6.4	445.3	427.0	18.35	24.270	
4,300.0	4,292.0	4,268.5	4,260.2	10.2	10.4	-179.14	227.9	5.8	459.2	440.4	18.80	24.424	
4,400.0	4,391.8	4,367.6	4,358.9	10.4	10.6	-179.23	234.8	5.2	473.1	453.8	19.25	24.570	
4,500.0	4,491.6	4,466.6	4,457.7	10.7	10.9	-179.32	241.6	4.6	487.0	467.3	19.71	24.710	
4,600.0	4,591.3	4,565.6	4,556.5	11.0	11.1	-179.41	248.5	4.0	500.9	480.7	20.16	24.843	
4,700.0	4,691.1	4,664.6	4,655.3	11.2	11.4	-179.49	255.4	3.4	514.8	494.1	20.61	24.970	
4,800.0	4,790.8	4,763.7	4,754.1	11.5	11.6	-179.56	262.3	2.8	528.6	507.6	21.07	25.092	
4,900.0	4,890.6	4,862.7	4,852.9	11.8	11.9	-179.64	269.2	2.2	542.5	521.0	21.52	25.208	
5,000.0	4,990.3	4,961.7	4,951.7	12.0	12.1	-179.70	276.0	1.6	556.4	534.4	21.98	25.319	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0215A - 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
5,100.0	5,090.1	5,060.8	5,050.5	12.3	12.4	-179.77	282.9	1.0	570.3	547.9	22.43	25.426	
5,200.0	5,189.9	5,159.8	5,149.2	12.5	12.6	-179.83	289.8	0.4	584.2	561.3	22.88	25.529	
5,300.0	5,289.6	5,258.8	5,248.0	12.8	12.9	-179.89	296.7	-0.2	598.1	574.8	23.34	25.627	
5,400.0	5,389.2	5,357.5	5,346.5	13.1	13.1	-179.95	303.6	-0.8	613.7	590.1	23.59	26.016	
5,500.0	5,486.0	5,400.0	5,388.7	13.5	13.3	-179.98	308.2	-1.2	648.8	625.9	22.89	28.341	
5,600.0	5,576.3	5,435.1	5,423.2	14.1	13.4	179.96	314.7	-1.8	707.2	685.8	21.42	33.017	
5,700.0	5,656.8	5,450.0	5,437.7	14.9	13.4	179.91	318.1	-2.1	784.2	764.9	19.21	40.815	
5,800.0	5,724.6	5,478.7	5,465.3	15.8	13.6	179.75	325.8	-2.8	873.4	856.9	16.46	53.044	
5,900.0	5,777.2	5,500.0	5,485.5	17.0	13.7	179.29	332.6	-3.4	970.5	957.1	13.36	72.654	
6,000.0	5,812.6	5,500.0	5,485.5	18.3	13.7	2.24	332.6	-3.4	1,070.2	1,059.8	10.39	103.020	
6,100.0	5,829.5	5,500.0	5,485.5	19.8	13.7	0.41	332.6	-3.4	1,169.1	1,160.9	8.25	141.770	
6,200.0	5,831.0	5,475.7	5,462.4	21.2	13.6	0.26	325.0	-2.7	1,264.6	1,256.3	8.31	152.195	
6,300.0	5,831.0	5,450.0	5,437.7	22.6	13.4	0.26	318.1	-2.1	1,360.9	1,352.0	8.89	153.120	
6,400.0	5,831.0	5,450.0	5,437.7	24.0	13.4	0.38	318.1	-2.1	1,456.9	1,447.4	9.50	153.374	
6,500.0	5,831.0	5,450.0	5,437.7	25.5	13.4	0.51	318.1	-2.1	1,553.4	1,543.3	10.14	153.250	
6,600.0	5,831.0	5,450.0	5,437.7	27.0	13.4	0.64	318.1	-2.1	1,650.4	1,639.6	10.79	152.900	
6,700.0	5,831.0	5,450.0	5,437.7	28.6	13.4	0.79	318.1	-2.1	1,747.6	1,736.2	11.47	152.417	
6,800.0	5,831.0	5,450.0	5,437.7	30.2	13.4	0.94	318.1	-2.1	1,845.2	1,833.1	12.15	151.859	
6,900.0	5,831.0	5,450.0	5,437.7	31.9	13.4	1.10	318.1	-2.1	1,943.0	1,930.2	12.85	151.256	
7,000.0	5,831.0	5,428.1	5,416.3	33.6	13.4	1.00	313.2	-1.7	2,040.5	2,027.0	13.53	150.777	
7,100.0	5,831.0	5,424.1	5,412.4	35.4	13.4	0.98	312.4	-1.6	2,138.5	2,124.3	14.23	150.269	
7,200.0	5,831.0	5,420.4	5,408.8	37.1	13.3	0.97	311.7	-1.5	2,236.6	2,221.7	14.93	149.773	
7,300.0	5,831.0	5,400.0	5,388.7	38.9	13.3	0.88	308.2	-1.2	2,335.2	2,319.6	15.64	149.354	
7,400.0	5,831.0	5,400.0	5,388.7	40.7	13.3	0.88	308.2	-1.2	2,433.5	2,417.1	16.35	148.878	
7,500.0	5,831.0	5,400.0	5,388.7	42.5	13.3	0.88	308.2	-1.2	2,531.9	2,514.8	17.06	148.428	
7,600.0	5,831.0	5,400.0	5,388.7	44.3	13.3	0.88	308.2	-1.2	2,630.4	2,612.6	17.77	148.003	
7,700.0	5,831.0	5,400.0	5,388.7	46.2	13.3	0.88	308.2	-1.2	2,729.0	2,710.5	18.49	147.602	
7,800.0	5,831.0	5,400.0	5,388.7	48.0	13.3	0.88	308.2	-1.2	2,827.8	2,808.5	19.21	147.223	
7,900.0	5,831.0	5,400.0	5,388.7	49.8	13.3	0.88	308.2	-1.2	2,926.6	2,906.6	19.93	146.866	
8,000.0	5,831.0	5,400.0	5,388.7	51.7	13.3	0.88	308.2	-1.2	3,025.4	3,004.8	20.65	146.529	
8,100.0	5,831.0	5,400.0	5,388.7	53.5	13.3	0.88	308.2	-1.2	3,124.4	3,103.0	21.37	146.210	
8,200.0	5,831.0	5,400.0	5,388.7	55.4	13.3	0.88	308.2	-1.2	3,223.4	3,201.3	22.09	145.909	
8,300.0	5,831.0	5,400.0	5,388.7	57.3	13.3	0.88	308.2	-1.2	3,322.5	3,299.7	22.82	145.624	
8,400.0	5,831.0	5,400.0	5,388.7	59.1	13.3	0.88	308.2	-1.2	3,421.7	3,398.1	23.54	145.354	
8,500.0	5,831.0	5,400.0	5,388.7	61.0	13.3	0.88	308.2	-1.2	3,520.8	3,496.6	24.27	145.099	
8,600.0	5,831.0	5,400.0	5,388.7	62.9	13.3	0.88	308.2	-1.2	3,620.1	3,595.1	24.99	144.856	
8,700.0	5,831.0	5,400.0	5,388.7	64.7	13.3	0.88	308.2	-1.2	3,719.3	3,693.6	25.72	144.626	
8,800.0	5,831.0	5,400.0	5,388.7	66.6	13.3	0.88	308.2	-1.2	3,818.6	3,792.2	26.44	144.407	
8,900.0	5,831.0	5,400.0	5,388.7	68.5	13.3	0.88	308.2	-1.2	3,918.0	3,890.8	27.17	144.199	
9,000.0	5,831.0	5,400.0	5,388.7	70.4	13.3	0.88	308.2	-1.2	4,017.4	3,989.5	27.90	144.001	
9,100.0	5,831.0	5,379.9	5,368.8	72.3	13.2	0.82	305.6	-1.0	4,116.3	4,087.7	28.62	143.842	
9,200.0	5,831.0	5,378.7	5,367.6	74.1	13.2	0.81	305.5	-1.0	4,215.7	4,186.4	29.34	143.662	
9,300.0	5,831.0	5,377.5	5,366.4	76.0	13.2	0.81	305.3	-1.0	4,315.1	4,285.1	30.07	143.490	
9,400.0	5,831.0	5,357.5	5,346.5	77.9	13.1	0.76	303.6	-0.8	4,414.9	4,384.1	30.79	143.373	
9,500.0	5,831.0	5,357.5	5,346.5	79.8	13.1	0.76	303.6	-0.8	4,514.3	4,482.8	31.52	143.211	
9,600.0	5,831.0	5,357.5	5,346.5	81.7	13.1	0.76	303.6	-0.8	4,613.8	4,581.5	32.25	143.056	
9,700.0	5,831.0	5,357.5	5,346.5	83.6	13.1	0.76	303.6	-0.8	4,713.2	4,680.3	32.98	142.908	
9,800.0	5,831.0	5,357.5	5,346.5	85.5	13.1	0.76	303.6	-0.8	4,812.7	4,779.0	33.71	142.765	
9,900.0	5,831.0	5,357.5	5,346.5	87.4	13.1	0.76	303.6	-0.8	4,912.2	4,877.8	34.44	142.629	
10,000.0	5,831.0	5,357.5	5,346.5	89.3	13.1	0.76	303.6	-0.8	5,011.7	4,976.6	35.17	142.498	
10,100.0	5,831.0	5,357.5	5,346.5	91.2	13.1	0.76	303.6	-0.8	5,111.3	5,075.4	35.90	142.373	
10,200.0	5,831.0	5,357.5	5,346.5	93.1	13.1	0.76	303.6	-0.8	5,210.8	5,174.2	36.63	142.252	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0215A - 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
10,300.0	5,831.0	5,357.5	5,346.5	95.0	13.1	0.76	303.6	-0.8	5,310.4	5,273.1	37.36	142.136	
10,400.0	5,831.0	5,357.5	5,346.5	96.9	13.1	0.76	303.6	-0.8	5,410.0	5,371.9	38.09	142.024	
10,500.0	5,831.0	5,357.5	5,346.5	98.8	13.1	0.76	303.6	-0.8	5,509.6	5,470.8	38.82	141.916	
10,600.0	5,831.0	5,357.5	5,346.5	100.7	13.1	0.76	303.6	-0.8	5,609.2	5,569.7	39.55	141.813	
10,700.0	5,831.0	5,357.5	5,346.5	102.6	13.1	0.76	303.6	-0.8	5,708.9	5,668.6	40.28	141.712	
10,800.0	5,831.0	5,357.5	5,346.5	104.5	13.1	0.76	303.6	-0.8	5,808.5	5,767.5	41.02	141.616	
10,900.0	5,831.0	5,357.5	5,346.5	106.4	13.1	0.76	303.6	-0.8	5,908.2	5,866.4	41.75	141.523	
11,000.0	5,831.0	5,357.5	5,346.5	108.3	13.1	0.76	303.6	-0.8	6,007.8	5,965.4	42.48	141.433	
11,100.0	5,831.0	5,357.5	5,346.5	110.2	13.1	0.76	303.6	-0.8	6,107.5	6,064.3	43.21	141.345	
11,200.0	5,831.0	5,357.5	5,346.5	112.1	13.1	0.76	303.6	-0.8	6,207.2	6,163.3	43.94	141.261	
11,300.0	5,831.0	5,357.5	5,346.5	114.0	13.1	0.76	303.6	-0.8	6,306.9	6,262.2	44.67	141.180	
11,400.0	5,831.0	5,357.5	5,346.5	115.9	13.1	0.76	303.6	-0.8	6,406.6	6,361.2	45.40	141.101	
11,500.0	5,831.0	5,357.5	5,346.5	117.8	13.1	0.76	303.6	-0.8	6,506.3	6,460.2	46.14	141.024	
11,600.0	5,831.0	5,357.5	5,346.5	119.7	13.1	0.76	303.6	-0.8	6,606.1	6,559.2	46.87	140.950	
11,700.0	5,831.0	5,357.5	5,346.5	121.6	13.1	0.76	303.6	-0.8	6,705.8	6,658.2	47.60	140.878	
11,800.0	5,831.0	5,357.5	5,346.5	123.6	13.1	0.76	303.6	-0.8	6,805.5	6,757.2	48.33	140.809	
11,900.0	5,831.0	5,357.5	5,346.5	125.5	13.1	0.76	303.6	-0.8	6,905.3	6,856.2	49.06	140.741	
12,000.0	5,831.0	5,355.2	5,344.2	127.4	13.1	0.75	303.4	-0.8	7,005.0	6,955.2	49.79	140.679	
12,100.0	5,831.0	5,348.2	5,337.2	129.3	13.1	0.74	302.9	-0.8	7,104.8	7,054.3	50.52	140.626	
12,200.0	5,831.0	5,341.3	5,330.3	131.2	13.1	0.72	302.4	-0.7	7,204.6	7,153.3	51.25	140.574	
12,300.0	5,831.0	5,334.3	5,323.4	133.1	13.1	0.71	301.9	-0.7	7,304.3	7,252.3	51.98	140.524	
12,400.0	5,831.0	5,327.4	5,316.4	135.0	13.1	0.69	301.5	-0.6	7,404.1	7,351.4	52.71	140.474	
12,500.0	5,831.0	5,320.4	5,309.5	136.9	13.1	0.68	301.0	-0.6	7,503.8	7,450.4	53.44	140.426	
12,600.0	5,831.0	5,313.5	5,302.6	138.8	13.0	0.67	300.5	-0.5	7,603.6	7,549.4	54.16	140.379	
12,700.0	5,831.0	5,306.5	5,295.6	140.7	13.0	0.65	300.0	-0.5	7,703.4	7,648.5	54.89	140.333	
12,800.0	5,831.0	5,299.6	5,288.7	142.7	13.0	0.64	299.5	-0.5	7,803.1	7,747.5	55.62	140.288	
12,900.0	5,831.0	5,292.6	5,281.8	144.6	13.0	0.63	299.0	-0.4	7,902.9	7,846.5	56.35	140.244	
13,000.0	5,831.0	5,285.7	5,274.8	146.5	13.0	0.61	298.6	-0.4	8,002.6	7,945.5	57.08	140.201	
13,100.0	5,831.0	5,278.7	5,267.9	148.4	12.9	0.60	298.1	-0.3	8,102.4	8,044.6	57.81	140.159	
13,200.0	5,831.0	5,271.8	5,261.0	150.3	12.9	0.59	297.6	-0.3	8,202.1	8,143.6	58.54	140.118	
13,300.0	5,831.0	5,264.8	5,254.0	152.2	12.9	0.58	297.1	-0.2	8,301.9	8,242.6	59.27	140.078	
13,400.0	5,831.0	5,257.9	5,247.1	154.1	12.9	0.57	296.6	-0.2	8,401.7	8,341.7	60.00	140.038	
13,500.0	5,831.0	5,250.9	5,240.2	156.1	12.9	0.56	296.1	-0.2	8,501.4	8,440.7	60.72	140.000	
13,600.0	5,831.0	5,244.0	5,233.2	158.0	12.9	0.55	295.7	-0.1	8,601.2	8,539.7	61.45	139.962	
13,650.7	5,831.0	5,240.5	5,229.7	158.9	12.8	0.54	295.4	-0.1	8,651.7	8,589.9	61.82	139.943	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0216B - 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	-152.09	-43.5	-23.1	49.2				
100.0	100.0	100.0	100.0	0.1	0.1	-152.09	-43.5	-23.1	49.2	49.1	0.19	263.350	
200.0	200.0	200.0	200.0	0.3	0.3	-152.09	-43.5	-23.1	49.2	48.6	0.64	77.369	
300.0	300.0	300.0	300.0	0.5	0.5	-152.09	-43.5	-23.1	49.2	48.2	1.09	45.345	
400.0	400.0	400.0	400.0	0.8	0.8	-152.09	-43.5	-23.1	49.2	47.7	1.54	32.071	
500.0	500.0	500.0	500.0	1.0	1.0	-152.09	-43.5	-23.1	49.2	47.3	1.99	24.808	
600.0	600.0	600.0	600.0	1.2	1.2	-152.09	-43.5	-23.1	49.2	46.8	2.43	20.228	
700.0	700.0	701.6	701.6	1.4	1.4	-151.47	-41.8	-22.7	47.6	44.7	2.89	16.462	
800.0	800.0	803.0	802.8	1.7	1.7	-149.31	-36.5	-21.6	42.5	39.2	3.35	12.705	
900.0	900.0	902.7	902.3	1.9	1.9	-145.62	-29.6	-20.3	36.0	32.2	3.80	9.479	
1,000.0	1,000.0	1,002.3	1,001.7	2.1	2.1	42.28	-22.8	-18.9	28.4	24.2	4.23	6.715	
1,100.0	1,099.8	1,101.6	1,100.7	2.3	2.4	63.23	-16.0	-17.6	19.8	15.2	4.64	4.270	
1,177.6	1,177.2	1,178.4	1,177.3	2.4	2.6	95.78	-10.8	-16.5	16.7	11.7	4.98	3.343	CC, ES
1,200.0	1,199.6	1,200.6	1,199.5	2.5	2.6	106.25	-9.3	-16.2	16.9	11.9	5.08	3.337	SF
1,300.0	1,299.4	1,299.7	1,298.3	2.7	2.9	141.01	-2.5	-14.9	23.8	18.3	5.49	4.328	
1,400.0	1,399.1	1,398.7	1,397.1	2.9	3.1	157.15	4.3	-13.5	35.0	29.1	5.90	5.936	
1,500.0	1,498.9	1,497.7	1,495.9	3.1	3.4	165.14	11.1	-12.2	47.7	41.3	6.32	7.544	
1,600.0	1,598.6	1,596.8	1,594.7	3.3	3.6	169.74	17.8	-10.8	60.8	54.1	6.74	9.021	
1,700.0	1,698.4	1,695.8	1,693.5	3.6	3.9	172.69	24.6	-9.5	74.2	67.1	7.17	10.350	
1,800.0	1,798.1	1,794.9	1,792.3	3.8	4.1	174.74	31.4	-8.1	87.8	80.2	7.61	11.541	
1,900.0	1,897.9	1,893.9	1,891.1	4.0	4.4	176.24	38.2	-6.8	101.4	93.4	8.04	12.609	
2,000.0	1,997.6	1,992.9	1,989.9	4.3	4.6	177.38	44.9	-5.4	115.1	106.6	8.48	13.569	
2,100.0	2,097.4	2,092.0	2,088.7	4.5	4.9	178.28	51.7	-4.1	128.8	119.9	8.92	14.436	
2,200.0	2,197.2	2,191.0	2,187.4	4.8	5.1	179.01	58.5	-2.7	142.6	133.2	9.37	15.221	
2,300.0	2,296.9	2,290.0	2,286.2	5.0	5.4	179.61	65.3	-1.4	156.3	146.5	9.81	15.935	
2,400.0	2,396.7	2,389.1	2,385.0	5.3	5.6	-179.89	72.0	0.0	170.1	159.8	10.26	16.586	
2,500.0	2,496.4	2,488.1	2,483.8	5.5	5.9	-179.46	78.8	1.3	183.9	173.2	10.70	17.183	
2,600.0	2,596.2	2,587.1	2,582.6	5.8	6.1	-179.10	85.6	2.7	197.7	186.5	11.15	17.731	
2,700.0	2,695.9	2,686.2	2,681.4	6.0	6.4	-178.78	92.4	4.0	211.5	199.9	11.60	18.236	
2,800.0	2,795.7	2,785.2	2,780.2	6.3	6.6	-178.50	99.1	5.4	225.3	213.2	12.04	18.703	
2,900.0	2,895.5	2,884.3	2,879.0	6.5	6.9	-178.25	105.9	6.8	239.1	226.6	12.49	19.136	
3,000.0	2,995.2	2,983.3	2,977.8	6.8	7.1	-178.03	112.7	8.1	252.9	240.0	12.94	19.539	
3,100.0	3,095.0	3,082.3	3,076.6	7.1	7.4	-177.83	119.5	9.5	266.7	253.3	13.39	19.914	
3,200.0	3,194.7	3,181.4	3,175.4	7.3	7.6	-177.65	126.2	10.8	280.5	266.7	13.84	20.264	
3,300.0	3,294.5	3,280.4	3,274.2	7.6	7.9	-177.49	133.0	12.2	294.4	280.1	14.30	20.591	
3,400.0	3,394.2	3,379.4	3,373.0	7.8	8.1	-177.34	139.8	13.5	308.2	293.4	14.75	20.899	
3,500.0	3,494.0	3,478.5	3,471.8	8.1	8.4	-177.21	146.6	14.9	322.0	306.8	15.20	21.187	
3,600.0	3,593.7	3,577.5	3,570.6	8.4	8.6	-177.09	153.3	16.2	335.9	320.2	15.65	21.459	
3,700.0	3,693.5	3,676.5	3,669.4	8.6	8.9	-176.97	160.1	17.6	349.7	333.6	16.10	21.715	
3,800.0	3,793.3	3,775.6	3,768.2	8.9	9.1	-176.87	166.9	18.9	363.5	347.0	16.56	21.957	
3,900.0	3,893.0	3,874.6	3,867.0	9.1	9.4	-176.77	173.7	20.3	377.3	360.3	17.01	22.186	
4,000.0	3,992.8	3,973.7	3,965.8	9.4	9.7	-176.68	180.4	21.6	391.2	373.7	17.46	22.402	
4,100.0	4,092.5	4,072.7	4,064.6	9.7	9.9	-176.60	187.2	23.0	405.0	387.1	17.91	22.608	
4,200.0	4,192.3	4,171.7	4,163.4	9.9	10.2	-176.52	194.0	24.3	418.9	400.5	18.37	22.803	
4,300.0	4,292.0	4,270.8	4,262.2	10.2	10.4	-176.44	200.8	25.7	432.7	413.9	18.82	22.989	
4,400.0	4,391.8	4,369.8	4,360.9	10.4	10.7	-176.37	207.5	27.0	446.5	427.3	19.28	23.166	
4,500.0	4,491.6	4,468.8	4,459.7	10.7	10.9	-176.31	214.3	28.4	460.4	440.6	19.73	23.334	
4,600.0	4,591.3	4,567.9	4,558.5	11.0	11.2	-176.25	221.1	29.7	474.2	454.0	20.18	23.495	
4,700.0	4,691.1	4,666.9	4,657.3	11.2	11.4	-176.19	227.9	31.1	488.0	467.4	20.64	23.649	
4,800.0	4,790.8	4,766.0	4,756.1	11.5	11.7	-176.14	234.6	32.4	501.9	480.8	21.09	23.795	
4,900.0	4,890.6	4,865.0	4,854.9	11.8	11.9	-176.09	241.4	33.8	515.7	494.2	21.55	23.936	
5,000.0	4,990.3	4,964.0	4,953.7	12.0	12.2	-176.04	248.2	35.1	529.6	507.6	22.00	24.071	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0216B - 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
5,100.0	5,090.1	5,063.1	5,052.5	12.3	12.4	-175.99	255.0	36.5	543.4	520.9	22.45	24.200	
5,200.0	5,189.9	5,162.1	5,151.3	12.5	12.7	-175.95	261.7	37.8	557.2	534.3	22.91	24.324	
5,300.0	5,289.6	5,261.1	5,250.1	12.8	12.9	-175.90	268.5	39.2	571.1	547.7	23.36	24.443	
5,400.0	5,389.2	5,359.9	5,348.6	13.1	13.2	-175.81	275.3	40.5	586.7	563.1	23.62	24.841	
5,500.0	5,486.0	5,454.7	5,443.2	13.5	13.4	-175.63	281.8	41.8	617.8	594.8	23.02	26.832	
5,600.0	5,576.3	5,500.0	5,488.2	14.1	13.6	-175.20	286.3	42.7	669.2	647.7	21.57	31.033	
5,700.0	5,656.8	5,525.9	5,513.7	14.9	13.7	-174.25	290.7	43.6	740.6	721.2	19.41	38.166	
5,800.0	5,724.6	5,550.0	5,537.3	15.8	13.7	-172.25	295.8	44.6	826.6	809.8	16.81	49.175	
5,900.0	5,777.2	5,550.0	5,537.3	17.0	13.7	-165.53	295.8	44.6	921.6	906.7	14.92	61.757	
6,000.0	5,812.6	5,550.0	5,537.3	18.3	13.7	-81.32	295.8	44.6	1,020.9	989.2	31.74	32.169	
6,100.0	5,829.5	5,550.0	5,537.3	19.8	13.7	-12.29	295.8	44.6	1,120.2	1,109.3	10.89	102.839	
6,200.0	5,831.0	5,550.0	5,537.3	21.2	13.7	-8.82	295.8	44.6	1,217.2	1,207.3	9.91	122.843	
6,300.0	5,831.0	5,550.0	5,537.3	22.6	13.7	-8.68	295.8	44.6	1,314.4	1,304.0	10.45	125.790	
6,400.0	5,831.0	5,550.0	5,537.3	24.0	13.7	-8.52	295.8	44.6	1,412.0	1,401.0	11.02	128.078	
6,500.0	5,831.0	5,550.0	5,537.3	25.5	13.7	-8.36	295.8	44.6	1,509.9	1,498.3	11.62	129.889	
6,600.0	5,831.0	5,527.9	5,515.8	27.0	13.7	-7.46	291.1	43.7	1,607.5	1,595.5	12.02	133.780	
6,700.0	5,831.0	5,523.3	5,511.2	28.6	13.7	-7.16	290.2	43.5	1,705.6	1,693.0	12.61	135.258	
6,800.0	5,831.0	5,500.0	5,488.2	30.2	13.6	-6.38	286.3	42.7	1,804.3	1,791.2	13.08	137.903	
6,900.0	5,831.0	5,500.0	5,488.2	31.9	13.6	-6.20	286.3	42.7	1,902.5	1,888.8	13.74	138.484	
7,000.0	5,831.0	5,500.0	5,488.2	33.6	13.6	-6.19	286.3	42.7	2,001.0	1,986.5	14.44	138.534	
7,100.0	5,831.0	5,500.0	5,488.2	35.4	13.6	-6.19	286.3	42.7	2,099.6	2,084.4	15.16	138.475	
7,200.0	5,831.0	5,500.0	5,488.2	37.1	13.6	-6.19	286.3	42.7	2,198.3	2,182.4	15.89	138.386	
7,300.0	5,831.0	5,500.0	5,488.2	38.9	13.6	-6.19	286.3	42.7	2,297.1	2,280.5	16.61	138.278	
7,400.0	5,831.0	5,500.0	5,488.2	40.7	13.6	-6.19	286.3	42.7	2,396.0	2,378.7	17.34	138.157	
7,500.0	5,831.0	5,500.0	5,488.2	42.5	13.6	-6.19	286.3	42.7	2,495.0	2,476.9	18.08	138.028	
7,600.0	5,831.0	5,500.0	5,488.2	44.3	13.6	-6.19	286.3	42.7	2,594.1	2,575.3	18.81	137.895	
7,700.0	5,831.0	5,500.0	5,488.2	46.2	13.6	-6.19	286.3	42.7	2,693.2	2,673.7	19.55	137.760	
7,800.0	5,831.0	5,500.0	5,488.2	48.0	13.6	-6.19	286.3	42.7	2,792.4	2,772.1	20.29	137.626	
7,900.0	5,831.0	5,500.0	5,488.2	49.8	13.6	-6.19	286.3	42.7	2,891.7	2,870.7	21.03	137.493	
8,000.0	5,831.0	5,500.0	5,488.2	51.7	13.6	-6.19	286.3	42.7	2,991.0	2,969.2	21.77	137.363	
8,100.0	5,831.0	5,500.0	5,488.2	53.5	13.6	-6.19	286.3	42.7	3,090.4	3,067.8	22.52	137.236	
8,200.0	5,831.0	5,500.0	5,488.2	55.4	13.6	-6.19	286.3	42.7	3,189.8	3,166.5	23.26	137.112	
8,300.0	5,831.0	5,481.9	5,470.3	57.3	13.5	-5.81	284.1	42.3	3,288.8	3,265.0	23.87	137.772	
8,400.0	5,831.0	5,480.4	5,468.8	59.1	13.5	-5.78	283.9	42.3	3,388.2	3,363.6	24.61	137.702	
8,500.0	5,831.0	5,479.0	5,467.4	61.0	13.5	-5.75	283.7	42.2	3,487.7	3,462.3	25.34	137.631	
8,600.0	5,831.0	5,477.6	5,466.1	62.9	13.5	-5.73	283.6	42.2	3,587.1	3,561.0	26.08	137.560	
8,700.0	5,831.0	5,460.0	5,448.5	64.7	13.5	-5.42	282.1	41.9	3,686.9	3,660.2	26.71	138.044	
8,800.0	5,831.0	5,460.0	5,448.5	66.6	13.5	-5.42	282.1	41.9	3,786.4	3,758.9	27.45	137.924	
8,900.0	5,831.0	5,460.0	5,448.5	68.5	13.5	-5.42	282.1	41.9	3,885.9	3,857.7	28.20	137.808	
9,000.0	5,831.0	5,460.0	5,448.5	70.4	13.5	-5.42	282.1	41.9	3,985.4	3,956.4	28.94	137.698	
9,100.0	5,831.0	5,460.0	5,448.5	72.3	13.5	-5.42	282.1	41.9	4,084.9	4,055.2	29.69	137.591	
9,200.0	5,831.0	5,460.0	5,448.5	74.1	13.5	-5.42	282.1	41.9	4,184.5	4,154.1	30.44	137.489	
9,300.0	5,831.0	5,460.0	5,448.5	76.0	13.5	-5.42	282.1	41.9	4,284.1	4,252.9	31.18	137.391	
9,400.0	5,831.0	5,460.0	5,448.5	77.9	13.5	-5.42	282.1	41.9	4,383.7	4,351.8	31.93	137.297	
9,500.0	5,831.0	5,460.0	5,448.5	79.8	13.5	-5.42	282.1	41.9	4,483.3	4,450.6	32.68	137.206	
9,600.0	5,831.0	5,460.0	5,448.5	81.7	13.5	-5.42	282.1	41.9	4,583.0	4,549.5	33.42	137.119	
9,700.0	5,831.0	5,460.0	5,448.5	83.6	13.5	-5.42	282.1	41.9	4,682.6	4,648.4	34.17	137.035	
9,800.0	5,831.0	5,460.0	5,448.5	85.5	13.5	-5.42	282.1	41.9	4,782.3	4,747.4	34.92	136.954	
9,900.0	5,831.0	5,460.0	5,448.5	87.4	13.5	-5.42	282.1	41.9	4,882.0	4,846.3	35.67	136.876	
10,000.0	5,831.0	5,460.0	5,448.5	89.3	13.5	-5.42	282.1	41.9	4,981.7	4,945.3	36.42	136.800	
10,100.0	5,831.0	5,460.0	5,448.5	91.2	13.5	-5.42	282.1	41.9	5,081.4	5,044.2	37.16	136.728	
10,200.0	5,831.0	5,460.0	5,448.5	93.1	13.5	-5.42	282.1	41.9	5,181.1	5,143.2	37.91	136.658	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0216B - 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
10,300.0	5,831.0	5,460.0	5,448.5	95.0	13.5	-5.42	282.1	41.9	5,280.8	5,242.2	38.66	136.590	
10,400.0	5,831.0	5,460.0	5,448.5	96.9	13.5	-5.42	282.1	41.9	5,380.6	5,341.2	39.41	136.525	
10,500.0	5,831.0	5,460.0	5,448.5	98.8	13.5	-5.42	282.1	41.9	5,480.3	5,440.2	40.16	136.461	
10,600.0	5,831.0	5,460.0	5,448.5	100.7	13.5	-5.42	282.1	41.9	5,580.1	5,539.2	40.91	136.400	
10,700.0	5,831.0	5,453.4	5,441.9	102.6	13.4	-5.32	281.7	41.8	5,679.8	5,638.2	41.61	136.513	
10,800.0	5,831.0	5,446.6	5,435.1	104.5	13.4	-5.21	281.2	41.7	5,779.6	5,737.3	42.30	136.624	
10,900.0	5,831.0	5,439.7	5,428.3	106.4	13.4	-5.11	280.7	41.6	5,879.4	5,836.4	43.00	136.728	
11,000.0	5,831.0	5,432.9	5,421.4	108.3	13.4	-5.01	280.3	41.5	5,979.1	5,935.4	43.70	136.824	
11,100.0	5,831.0	5,426.0	5,414.6	110.2	13.4	-4.92	279.8	41.4	6,078.9	6,034.5	44.40	136.914	
11,200.0	5,831.0	5,419.2	5,407.8	112.1	13.3	-4.83	279.3	41.3	6,178.7	6,133.6	45.10	136.998	
11,300.0	5,831.0	5,412.4	5,401.0	114.0	13.3	-4.74	278.9	41.2	6,278.4	6,232.6	45.80	137.075	
11,400.0	5,831.0	5,405.5	5,394.1	115.9	13.3	-4.65	278.4	41.2	6,378.2	6,331.7	46.51	137.148	
11,500.0	5,831.0	5,398.7	5,387.3	117.8	13.3	-4.57	277.9	41.1	6,477.9	6,430.7	47.21	137.216	
11,600.0	5,831.0	5,391.8	5,380.5	119.7	13.3	-4.49	277.4	41.0	6,577.7	6,529.8	47.92	137.279	
11,700.0	5,831.0	5,385.0	5,373.7	121.6	13.3	-4.41	277.0	40.9	6,677.5	6,628.8	48.62	137.337	
11,800.0	5,831.0	5,378.2	5,366.8	123.6	13.2	-4.34	276.5	40.8	6,777.2	6,727.9	49.33	137.392	
11,900.0	5,831.0	5,371.3	5,360.0	125.5	13.2	-4.26	276.0	40.7	6,877.0	6,827.0	50.04	137.443	
12,000.0	5,831.0	5,364.5	5,353.2	127.4	13.2	-4.19	275.6	40.6	6,976.8	6,926.0	50.74	137.491	
12,100.0	5,831.0	5,357.6	5,346.4	129.3	13.2	-4.12	275.1	40.5	7,076.5	7,025.1	51.45	137.535	
12,200.0	5,831.0	5,350.8	5,339.5	131.2	13.2	-4.05	274.6	40.4	7,176.3	7,124.1	52.16	137.577	
12,300.0	5,831.0	5,344.0	5,332.7	133.1	13.2	-3.99	274.2	40.3	7,276.1	7,223.2	52.87	137.615	
12,400.0	5,831.0	5,337.1	5,325.9	135.0	13.1	-3.92	273.7	40.2	7,375.8	7,322.2	53.58	137.652	
12,500.0	5,831.0	5,330.3	5,319.1	136.9	13.1	-3.86	273.2	40.1	7,475.6	7,421.3	54.29	137.685	
12,600.0	5,831.0	5,323.4	5,312.2	138.8	13.1	-3.80	272.8	40.0	7,575.3	7,520.3	55.01	137.716	
12,700.0	5,831.0	5,316.6	5,305.4	140.7	13.1	-3.74	272.3	39.9	7,675.1	7,619.4	55.72	137.746	
12,800.0	5,831.0	5,309.7	5,298.6	142.7	13.1	-3.68	271.8	39.8	7,774.9	7,718.4	56.43	137.773	
12,900.0	5,831.0	5,302.9	5,291.8	144.6	13.1	-3.63	271.4	39.8	7,874.6	7,817.5	57.15	137.798	
13,000.0	5,831.0	5,296.1	5,285.0	146.5	13.0	-3.57	270.9	39.7	7,974.4	7,916.5	57.86	137.821	
13,100.0	5,831.0	5,289.2	5,278.1	148.4	13.0	-3.52	270.4	39.6	8,074.2	8,015.6	58.58	137.843	
13,200.0	5,831.0	5,282.4	5,271.3	150.3	13.0	-3.46	270.0	39.5	8,173.9	8,114.6	59.29	137.863	
13,300.0	5,831.0	5,275.5	5,264.5	152.2	13.0	-3.41	269.5	39.4	8,273.7	8,213.7	60.01	137.882	
13,400.0	5,831.0	5,268.7	5,257.7	154.1	13.0	-3.36	269.0	39.3	8,373.5	8,312.7	60.72	137.899	
13,500.0	5,831.0	5,261.9	5,250.8	156.1	12.9	-3.32	268.6	39.2	8,473.2	8,411.8	61.44	137.916	
13,600.0	5,831.0	5,255.0	5,244.0	158.0	12.9	-3.27	268.1	39.1	8,573.0	8,510.8	62.15	137.930	
13,650.7	5,831.0	5,251.6	5,240.5	158.9	12.9	-3.24	267.9	39.1	8,623.6	8,561.0	62.52	137.938	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1413A - 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	-61.87	28.3	-53.0	60.1				
100.0	100.0	100.0	100.0	0.1	0.1	-61.87	28.3	-53.0	60.1	59.9	0.19	321.500	
200.0	200.0	200.0	200.0	0.3	0.3	-61.87	28.3	-53.0	60.1	59.5	0.64	94.452	
300.0	300.0	300.0	300.0	0.5	0.5	-61.87	28.3	-53.0	60.1	59.0	1.09	55.358	
400.0	400.0	400.0	400.0	0.8	0.8	-61.87	28.3	-53.0	60.1	58.6	1.54	39.152	
466.7	466.7	466.7	466.7	0.9	0.9	-61.87	28.3	-53.0	60.1	58.3	1.84	32.759	CC
500.0	500.0	500.0	500.0	1.0	1.0	-61.87	28.3	-53.0	60.1	58.1	1.99	30.286	
600.0	600.0	599.9	599.9	1.2	1.2	-63.53	26.8	-53.9	60.2	57.8	2.41	24.976	ES
700.0	700.0	699.6	699.5	1.4	1.4	-68.47	22.2	-56.3	60.6	57.8	2.82	21.462	
800.0	800.0	799.4	799.0	1.7	1.6	-74.88	16.1	-59.7	61.8	58.6	3.26	18.982	
900.0	900.0	899.2	898.5	1.9	1.8	-80.97	10.0	-63.0	63.8	60.1	3.70	17.232	
1,000.0	1,000.0	999.0	998.1	2.1	2.1	95.06	3.9	-66.3	66.6	62.5	4.13	16.134	
1,100.0	1,099.8	1,098.9	1,097.8	2.3	2.3	94.03	-2.2	-69.7	69.9	65.3	4.54	15.392	
1,200.0	1,199.6	1,198.9	1,197.5	2.5	2.5	94.52	-8.4	-73.0	73.3	68.3	4.97	14.738	
1,300.0	1,299.4	1,298.8	1,297.2	2.7	2.8	94.96	-14.5	-76.3	76.7	71.3	5.42	14.147	
1,400.0	1,399.1	1,398.8	1,396.9	2.9	3.0	95.37	-20.6	-79.7	80.1	74.3	5.89	13.618	
1,500.0	1,498.9	1,498.7	1,496.6	3.1	3.3	95.74	-26.7	-83.0	83.6	77.2	6.36	13.146	
1,600.0	1,598.6	1,598.6	1,596.3	3.3	3.5	96.08	-32.9	-86.3	87.0	80.2	6.84	12.726	
1,700.0	1,698.4	1,698.6	1,696.0	3.6	3.8	96.40	-39.0	-89.6	90.4	83.1	7.32	12.350	
1,800.0	1,798.1	1,798.5	1,795.7	3.8	4.1	96.69	-45.1	-93.0	93.9	86.1	7.81	12.013	
1,900.0	1,897.9	1,898.5	1,895.4	4.0	4.3	96.97	-51.2	-96.3	97.3	89.0	8.31	11.711	
2,000.0	1,997.6	1,998.4	1,995.1	4.3	4.6	97.22	-57.3	-99.6	100.8	92.0	8.81	11.438	
2,100.0	2,097.4	2,098.3	2,094.8	4.5	4.8	97.46	-63.5	-103.0	104.2	94.9	9.31	11.192	
2,200.0	2,197.2	2,198.3	2,194.5	4.8	5.1	97.68	-69.6	-106.3	107.7	97.8	9.82	10.967	
2,300.0	2,296.9	2,298.2	2,294.2	5.0	5.4	97.89	-75.7	-109.6	111.1	100.8	10.32	10.762	
2,400.0	2,396.7	2,398.2	2,393.9	5.3	5.6	98.08	-81.8	-113.0	114.5	103.7	10.83	10.575	
2,500.0	2,496.4	2,498.1	2,493.5	5.5	5.9	98.27	-88.0	-116.3	118.0	106.7	11.34	10.403	
2,600.0	2,596.2	2,598.0	2,593.2	5.8	6.1	98.44	-94.1	-119.6	121.4	109.6	11.85	10.245	
2,700.0	2,695.9	2,698.0	2,692.9	6.0	6.4	98.61	-100.2	-123.0	124.9	112.5	12.37	10.099	
2,800.0	2,795.7	2,797.9	2,792.6	6.3	6.7	98.76	-106.3	-126.3	128.4	115.5	12.88	9.964	
2,900.0	2,895.5	2,897.9	2,892.3	6.5	6.9	98.91	-112.5	-129.6	131.8	118.4	13.40	9.838	
3,000.0	2,995.2	2,997.8	2,992.0	6.8	7.2	99.05	-118.6	-133.0	135.3	121.3	13.91	9.722	
3,100.0	3,095.0	3,097.7	3,091.7	7.1	7.5	99.18	-124.7	-136.3	138.7	124.3	14.43	9.613	
3,200.0	3,194.7	3,197.7	3,191.4	7.3	7.7	99.31	-130.8	-139.6	142.2	127.2	14.95	9.511	
3,300.0	3,294.5	3,297.6	3,291.1	7.6	8.0	99.43	-137.0	-143.0	145.6	130.2	15.47	9.416	
3,400.0	3,394.2	3,397.5	3,390.8	7.8	8.2	99.54	-143.1	-146.3	149.1	133.1	15.98	9.327	
3,500.0	3,494.0	3,497.5	3,490.5	8.1	8.5	99.65	-149.2	-149.6	152.5	136.0	16.50	9.243	
3,600.0	3,593.7	3,597.4	3,590.2	8.4	8.8	99.76	-155.3	-153.0	156.0	139.0	17.02	9.164	
3,700.0	3,693.5	3,697.4	3,689.9	8.6	9.0	99.86	-161.4	-156.3	159.5	141.9	17.54	9.090	
3,800.0	3,793.3	3,797.3	3,789.6	8.9	9.3	99.96	-167.6	-159.6	162.9	144.9	18.06	9.020	
3,900.0	3,893.0	3,897.2	3,889.3	9.1	9.6	100.05	-173.7	-162.9	166.4	147.8	18.58	8.953	
4,000.0	3,992.8	3,997.2	3,989.0	9.4	9.8	100.14	-179.8	-166.3	169.8	150.7	19.11	8.890	
4,100.0	4,092.5	4,097.1	4,088.7	9.7	10.1	100.22	-185.9	-169.6	173.3	153.7	19.63	8.830	
4,200.0	4,192.3	4,197.1	4,188.4	9.9	10.4	100.30	-192.1	-172.9	176.8	156.6	20.15	8.774	
4,300.0	4,292.0	4,297.0	4,288.1	10.2	10.6	100.38	-198.2	-176.3	180.2	159.6	20.67	8.720	
4,400.0	4,391.8	4,396.9	4,387.8	10.4	10.9	100.46	-204.3	-179.6	183.7	162.5	21.19	8.668	
4,500.0	4,491.6	4,496.9	4,487.5	10.7	11.1	100.53	-210.4	-182.9	187.2	165.4	21.71	8.619	
4,600.0	4,591.3	4,596.8	4,587.2	11.0	11.4	100.60	-216.6	-186.3	190.6	168.4	22.24	8.572	
4,700.0	4,691.1	4,696.8	4,686.9	11.2	11.7	100.67	-222.7	-189.6	194.1	171.3	22.76	8.528	
4,800.0	4,790.8	4,796.7	4,786.6	11.5	11.9	100.73	-228.8	-192.9	197.5	174.3	23.28	8.485	
4,900.0	4,890.6	4,896.6	4,886.3	11.8	12.2	100.79	-234.9	-196.3	201.0	177.2	23.80	8.444	
5,000.0	4,990.3	4,996.6	4,986.0	12.0	12.5	100.85	-241.1	-199.6	204.5	180.1	24.33	8.405	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1413A - 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
5,100.0	5,090.1	5,096.5	5,085.7	12.3	12.7	100.91	-247.2	-202.9	207.9	183.1	24.85	8.368	
5,200.0	5,189.9	5,196.5	5,185.3	12.5	13.0	100.97	-253.3	-206.3	211.4	186.0	25.37	8.332	
5,300.0	5,289.6	5,296.4	5,285.0	12.8	13.3	101.02	-259.4	-209.6	214.9	189.0	25.90	8.297	
5,400.0	5,389.2	5,392.0	5,380.3	13.1	13.5	100.96	-266.3	-213.3	219.0	192.6	26.42	8.289	
5,500.0	5,486.0	5,480.1	5,466.2	13.5	13.9	100.50	-283.1	-222.5	230.4	203.2	27.14	8.489	
5,600.0	5,576.3	5,567.0	5,546.5	14.1	14.4	99.63	-311.9	-238.1	250.0	221.9	28.12	8.891	
5,700.0	5,656.8	5,650.0	5,617.2	14.9	15.0	98.25	-350.0	-258.9	277.1	247.8	29.37	9.436	
5,800.0	5,724.6	5,735.6	5,681.9	15.8	15.7	96.50	-399.2	-285.6	310.8	279.8	31.04	10.012	
5,900.0	5,777.2	5,817.7	5,734.5	17.0	16.6	94.27	-454.4	-315.7	349.8	316.8	33.05	10.586	
6,000.0	5,812.6	5,900.0	5,776.8	18.3	17.6	91.73	-516.3	-349.4	393.0	357.6	35.35	11.116	
6,100.0	5,829.5	5,980.2	5,806.8	19.8	18.7	88.89	-581.6	-384.9	439.0	401.1	37.87	11.590	
6,200.0	5,831.0	6,063.6	5,825.5	21.2	19.9	89.26	-652.9	-423.7	486.5	446.0	40.52	12.005	
6,300.0	5,831.0	6,155.0	5,831.0	22.6	21.3	90.00	-733.0	-467.2	534.6	491.3	43.23	12.366	
6,400.0	5,831.0	6,281.4	5,831.0	24.0	23.1	90.00	-846.4	-523.0	579.0	532.6	46.39	12.483	
6,500.0	5,831.0	6,416.1	5,831.0	25.5	25.0	90.00	-971.0	-574.0	617.2	567.4	49.79	12.396	
6,600.0	5,831.0	6,558.1	5,831.0	27.0	27.1	90.00	-1,105.9	-618.2	648.5	595.1	53.47	12.129	
6,700.0	5,831.0	6,706.6	5,831.0	28.6	29.4	90.00	-1,250.1	-653.6	672.5	615.2	57.37	11.723	
6,800.0	5,831.0	6,859.9	5,831.0	30.2	31.7	90.00	-1,401.4	-678.2	688.7	627.3	61.43	11.211	
6,900.0	5,831.0	7,016.4	5,831.0	31.9	34.1	90.00	-1,557.3	-690.7	696.7	631.1	65.59	10.622	
7,000.0	5,831.0	7,143.8	5,831.0	33.6	36.1	90.00	-1,684.8	-692.2	697.7	628.3	69.37	10.057	
7,100.0	5,831.0	7,243.8	5,831.0	35.4	37.7	90.00	-1,784.8	-692.2	697.7	624.9	72.81	9.582	
7,200.0	5,831.0	7,343.8	5,831.0	37.1	39.3	90.00	-1,884.8	-692.2	697.6	621.4	76.28	9.146	
7,300.0	5,831.0	7,443.8	5,831.0	38.9	40.9	90.00	-1,984.8	-692.2	697.6	617.8	79.79	8.743	
7,400.0	5,831.0	7,543.8	5,831.0	40.7	42.6	90.00	-2,084.8	-692.2	697.6	614.3	83.33	8.372	
7,500.0	5,831.0	7,643.8	5,831.0	42.5	44.3	90.00	-2,184.8	-692.2	697.6	610.7	86.89	8.028	
7,600.0	5,831.0	7,743.8	5,831.0	44.3	46.0	90.00	-2,284.8	-692.2	697.6	607.1	90.48	7.710	
7,700.0	5,831.0	7,843.8	5,831.0	46.2	47.7	90.00	-2,384.8	-692.2	697.6	603.5	94.09	7.414	
7,800.0	5,831.0	7,943.8	5,831.0	48.0	49.4	90.00	-2,484.8	-692.2	697.6	599.9	97.72	7.138	
7,900.0	5,831.0	8,043.8	5,831.0	49.8	51.2	90.00	-2,584.8	-692.2	697.6	596.2	101.36	6.882	
8,000.0	5,831.0	8,143.8	5,831.0	51.7	53.0	90.00	-2,684.8	-692.2	697.5	592.5	105.02	6.642	
8,100.0	5,831.0	8,243.8	5,831.0	53.5	54.7	90.00	-2,784.8	-692.2	697.5	588.8	108.69	6.417	
8,200.0	5,831.0	8,343.8	5,831.0	55.4	56.5	90.00	-2,884.8	-692.1	697.5	585.1	112.38	6.207	
8,300.0	5,831.0	8,443.8	5,831.0	57.3	58.3	90.00	-2,984.8	-692.1	697.5	581.4	116.07	6.009	
8,400.0	5,831.0	8,543.8	5,831.0	59.1	60.1	90.00	-3,084.8	-692.1	697.5	577.7	119.77	5.824	
8,500.0	5,831.0	8,643.8	5,831.0	61.0	61.9	90.00	-3,184.8	-692.1	697.5	574.0	123.48	5.648	
8,600.0	5,831.0	8,743.8	5,831.0	62.9	63.7	90.00	-3,284.8	-692.1	697.5	570.3	127.20	5.483	
8,700.0	5,831.0	8,843.8	5,831.0	64.7	65.5	90.00	-3,384.8	-692.1	697.5	566.5	130.93	5.327	
8,800.0	5,831.0	8,943.8	5,831.0	66.6	67.4	90.00	-3,484.8	-692.1	697.4	562.8	134.66	5.179	
8,900.0	5,831.0	9,043.8	5,831.0	68.5	69.2	90.00	-3,584.8	-692.1	697.4	559.0	138.40	5.039	
9,000.0	5,831.0	9,143.8	5,831.0	70.4	71.0	90.00	-3,684.8	-692.1	697.4	555.3	142.15	4.906	
9,100.0	5,831.0	9,243.8	5,831.0	72.3	72.9	90.00	-3,784.8	-692.1	697.4	551.5	145.90	4.780	
9,200.0	5,831.0	9,343.8	5,831.0	74.1	74.7	90.00	-3,884.8	-692.1	697.4	547.7	149.65	4.660	
9,300.0	5,831.0	9,443.8	5,831.0	76.0	76.6	90.00	-3,984.8	-692.1	697.4	544.0	153.41	4.546	
9,400.0	5,831.0	9,543.8	5,831.0	77.9	78.4	90.00	-4,084.8	-692.1	697.4	540.2	157.18	4.437	
9,500.0	5,831.0	9,643.8	5,831.0	79.8	80.3	90.00	-4,184.8	-692.1	697.4	536.4	160.94	4.333	
9,600.0	5,831.0	9,743.8	5,831.0	81.7	82.1	90.00	-4,284.8	-692.1	697.3	532.6	164.71	4.234	
9,700.0	5,831.0	9,843.8	5,831.0	83.6	84.0	90.00	-4,384.8	-692.1	697.3	528.8	168.49	4.139	
9,800.0	5,831.0	9,943.8	5,831.0	85.5	85.9	90.00	-4,484.8	-692.1	697.3	525.1	172.27	4.048	
9,900.0	5,831.0	10,043.8	5,831.0	87.4	87.7	90.00	-4,584.8	-692.1	697.3	521.3	176.05	3.961	
10,000.0	5,831.0	10,143.8	5,831.0	89.3	89.6	90.00	-4,684.8	-692.0	697.3	517.5	179.83	3.878	
10,100.0	5,831.0	10,243.8	5,831.0	91.2	91.5	90.00	-4,784.8	-692.0	697.3	513.7	183.62	3.798	
10,200.0	5,831.0	10,343.8	5,831.0	93.1	93.3	90.00	-4,884.8	-692.0	697.3	509.9	187.40	3.721	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1413A - 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
10,300.0	5,831.0	10,443.8	5,831.0	95.0	95.2	90.00	-4,984.8	-692.0	697.3	506.1	191.19	3.647	
10,400.0	5,831.0	10,543.8	5,831.0	96.9	97.1	90.00	-5,084.8	-692.0	697.2	502.3	194.99	3.576	
10,500.0	5,831.0	10,643.8	5,831.0	98.8	99.0	90.00	-5,184.8	-692.0	697.2	498.5	198.78	3.508	
10,600.0	5,831.0	10,743.8	5,831.0	100.7	100.9	90.00	-5,284.8	-692.0	697.2	494.6	202.58	3.442	
10,700.0	5,831.0	10,843.8	5,831.0	102.6	102.7	90.00	-5,384.8	-692.0	697.2	490.8	206.37	3.378	
10,800.0	5,831.0	10,943.8	5,831.0	104.5	104.6	90.00	-5,484.8	-692.0	697.2	487.0	210.17	3.317	
10,900.0	5,831.0	11,043.8	5,831.0	106.4	106.5	90.00	-5,584.8	-692.0	697.2	483.2	213.97	3.258	
11,000.0	5,831.0	11,143.8	5,831.0	108.3	108.4	90.00	-5,684.8	-692.0	697.2	479.4	217.78	3.201	
11,100.0	5,831.0	11,243.8	5,831.0	110.2	110.3	90.00	-5,784.8	-692.0	697.2	475.6	221.58	3.146	
11,200.0	5,831.0	11,343.8	5,831.0	112.1	112.2	90.00	-5,884.8	-692.0	697.1	471.8	225.39	3.093	
11,300.0	5,831.0	11,443.8	5,831.0	114.0	114.1	90.00	-5,984.8	-692.0	697.1	467.9	229.19	3.042	
11,400.0	5,831.0	11,543.8	5,831.0	115.9	115.9	90.00	-6,084.8	-692.0	697.1	464.1	233.00	2.992	
11,500.0	5,831.0	11,643.8	5,831.0	117.8	117.8	90.00	-6,184.8	-692.0	697.1	460.3	236.81	2.944	
11,600.0	5,831.0	11,743.8	5,831.0	119.7	119.7	90.00	-6,284.8	-692.0	697.1	456.5	240.62	2.897	
11,700.0	5,831.0	11,843.8	5,831.0	121.6	121.6	90.00	-6,384.8	-692.0	697.1	452.7	244.43	2.852	
11,800.0	5,831.0	11,943.8	5,831.0	123.6	123.5	90.00	-6,484.8	-691.9	697.1	448.8	248.24	2.808	
11,900.0	5,831.0	12,043.8	5,831.0	125.5	125.4	90.00	-6,584.8	-691.9	697.1	445.0	252.06	2.765	
12,000.0	5,831.0	12,143.8	5,831.0	127.4	127.3	90.00	-6,684.8	-691.9	697.0	441.2	255.87	2.724	
12,100.0	5,831.0	12,243.8	5,831.0	129.3	129.2	90.00	-6,784.8	-691.9	697.0	437.4	259.68	2.684	
12,200.0	5,831.0	12,343.8	5,831.0	131.2	131.1	90.00	-6,884.8	-691.9	697.0	433.5	263.50	2.645	
12,300.0	5,831.0	12,443.8	5,831.0	133.1	133.0	90.00	-6,984.8	-691.9	697.0	429.7	267.32	2.607	
12,400.0	5,831.0	12,543.8	5,831.0	135.0	134.9	90.00	-7,084.8	-691.9	697.0	425.9	271.13	2.571	
12,500.0	5,831.0	12,643.8	5,831.0	136.9	136.8	90.00	-7,184.8	-691.9	697.0	422.0	274.95	2.535	
12,600.0	5,831.0	12,743.8	5,831.0	138.8	138.7	90.00	-7,284.8	-691.9	697.0	418.2	278.77	2.500	
12,700.0	5,831.0	12,843.8	5,831.0	140.7	140.6	90.00	-7,384.8	-691.9	697.0	414.4	282.59	2.466	
12,800.0	5,831.0	12,943.8	5,831.0	142.7	142.5	90.00	-7,484.8	-691.9	696.9	410.5	286.41	2.433	
12,900.0	5,831.0	13,043.8	5,831.0	144.6	144.4	90.00	-7,584.8	-691.9	696.9	406.7	290.23	2.401	
13,000.0	5,831.0	13,143.8	5,831.0	146.5	146.3	90.00	-7,684.8	-691.9	696.9	402.9	294.05	2.370	
13,100.0	5,831.0	13,243.8	5,831.0	148.4	148.2	90.00	-7,784.8	-691.9	696.9	399.0	297.87	2.340	
13,200.0	5,831.0	13,343.8	5,831.0	150.3	150.1	90.00	-7,884.8	-691.9	696.9	395.2	301.70	2.310	
13,300.0	5,831.0	13,443.8	5,831.0	152.2	152.0	90.00	-7,984.8	-691.9	696.9	391.4	305.52	2.281	
13,400.0	5,831.0	13,543.8	5,831.0	154.1	153.9	90.00	-8,084.8	-691.9	696.9	387.5	309.34	2.253	
13,500.0	5,831.0	13,643.8	5,831.0	156.1	155.8	90.00	-8,184.8	-691.8	696.9	383.7	313.17	2.225	
13,600.0	5,831.0	13,743.8	5,831.0	158.0	157.7	90.00	-8,284.8	-691.8	696.8	379.9	316.99	2.198	
13,650.7	5,831.0	13,794.5	5,831.0	158.9	158.7	90.00	-8,335.4	-691.8	696.8	377.9	318.93	2.185	SF

Cathedral Energy Services

Anticollision Report

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1416B - 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	176.95	-57.7	3.1	57.8				
100.0	100.0	100.0	100.0	0.1	0.1	176.95	-57.7	3.1	57.8	57.6	0.19	308.919	
200.0	200.0	200.0	200.0	0.3	0.3	176.95	-57.7	3.1	57.8	57.1	0.64	90.756	
300.0	300.0	300.0	300.0	0.5	0.5	176.95	-57.7	3.1	57.8	56.7	1.09	53.192	
400.0	400.0	400.0	400.0	0.8	0.8	176.95	-57.7	3.1	57.8	56.2	1.54	37.620	
500.0	500.0	500.0	500.0	1.0	1.0	176.95	-57.7	3.1	57.8	55.8	1.99	29.101	
600.0	600.0	600.0	600.0	1.2	1.2	176.95	-57.7	3.1	57.8	55.3	2.43	23.728	
700.0	700.0	700.0	700.0	1.4	1.4	176.95	-57.7	3.1	57.8	54.9	2.88	20.030	
800.0	800.0	800.0	800.0	1.7	1.7	176.95	-57.7	3.1	57.8	54.4	3.33	17.329	
900.0	900.0	900.0	900.0	1.9	1.9	176.95	-57.7	3.1	57.8	54.0	3.78	15.270	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-2.88	-57.7	3.1	56.0	51.8	4.20	13.324	
1,100.0	1,099.8	1,098.1	1,098.1	2.3	2.3	-3.56	-59.3	3.5	52.5	47.9	4.57	11.479	
1,200.0	1,199.6	1,196.3	1,196.2	2.5	2.5	-5.23	-64.2	4.9	50.6	45.6	4.93	10.259	
1,262.5	1,262.0	1,258.8	1,258.5	2.6	2.6	-6.55	-68.4	6.1	50.5	45.4	5.16	9.784	
1,300.0	1,299.4	1,296.3	1,295.9	2.7	2.7	-7.35	-70.9	6.8	50.5	45.2	5.30	9.523	
1,316.9	1,316.2	1,313.2	1,312.7	2.7	2.7	-7.71	-72.0	7.1	50.5	45.1	5.37	9.406	CC
1,400.0	1,399.1	1,396.2	1,395.6	2.9	2.9	-9.48	-77.6	8.7	50.5	44.8	5.69	8.877	
1,500.0	1,498.9	1,496.2	1,495.3	3.1	3.1	-11.60	-84.3	10.6	50.6	44.5	6.09	8.310	
1,600.0	1,598.6	1,596.2	1,595.1	3.3	3.3	-13.71	-91.0	12.5	50.8	44.3	6.50	7.814	
1,700.0	1,698.4	1,696.2	1,694.8	3.6	3.5	-15.81	-97.7	14.3	51.0	44.1	6.92	7.377	
1,800.0	1,798.1	1,796.2	1,794.6	3.8	3.8	-17.88	-104.4	16.2	51.3	44.0	7.34	6.992	
1,900.0	1,897.9	1,896.2	1,894.3	4.0	4.0	-19.93	-111.2	18.1	51.7	43.9	7.77	6.652	
2,000.0	1,997.6	1,996.1	1,994.0	4.3	4.2	-21.95	-117.9	20.0	52.1	43.9	8.21	6.351	
2,100.0	2,097.4	2,096.1	2,093.8	4.5	4.5	-23.93	-124.6	21.9	52.6	44.0	8.65	6.082	
2,200.0	2,197.2	2,196.1	2,193.5	4.8	4.7	-25.87	-131.3	23.8	53.2	44.1	9.10	5.844	
2,300.0	2,296.9	2,296.1	2,293.3	5.0	5.0	-27.77	-138.0	25.7	53.8	44.2	9.55	5.630	
2,400.0	2,396.7	2,396.1	2,393.0	5.3	5.2	-29.63	-144.7	27.6	54.4	44.4	10.01	5.439	
2,500.0	2,496.4	2,496.0	2,492.7	5.5	5.5	-31.44	-151.4	29.5	55.2	44.7	10.48	5.267	
2,600.0	2,596.2	2,596.0	2,592.5	5.8	5.7	-33.19	-158.1	31.3	55.9	45.0	10.95	5.112	
2,700.0	2,695.9	2,696.0	2,692.2	6.0	6.0	-34.90	-164.9	33.2	56.8	45.4	11.42	4.972	
2,800.0	2,795.7	2,796.0	2,791.9	6.3	6.2	-36.56	-171.6	35.1	57.7	45.8	11.90	4.846	
2,900.0	2,895.5	2,896.0	2,891.7	6.5	6.5	-38.17	-178.3	37.0	58.6	46.2	12.38	4.731	
3,000.0	2,995.2	2,996.0	2,991.4	6.8	6.7	-39.73	-185.0	38.9	59.6	46.7	12.87	4.627	
3,100.0	3,095.0	3,095.9	3,091.2	7.1	7.0	-41.23	-191.7	40.8	60.6	47.2	13.37	4.533	
3,200.0	3,194.7	3,195.9	3,190.9	7.3	7.2	-42.68	-198.4	42.7	61.6	47.8	13.86	4.447	
3,300.0	3,294.5	3,295.9	3,290.6	7.6	7.5	-44.09	-205.1	44.6	62.7	48.4	14.36	4.368	
3,400.0	3,394.2	3,395.9	3,390.4	7.8	7.8	-45.44	-211.9	46.5	63.9	49.0	14.86	4.297	
3,500.0	3,494.0	3,495.9	3,490.1	8.1	8.0	-46.75	-218.6	48.4	65.0	49.7	15.37	4.231	
3,600.0	3,593.7	3,595.9	3,589.9	8.4	8.3	-48.01	-225.3	50.2	66.2	50.3	15.88	4.171	
3,700.0	3,693.5	3,695.8	3,689.6	8.6	8.5	-49.23	-232.0	52.1	67.5	51.1	16.39	4.116	
3,800.0	3,793.3	3,795.8	3,789.3	8.9	8.8	-50.40	-238.7	54.0	68.7	51.8	16.90	4.066	
3,900.0	3,893.0	3,895.8	3,889.1	9.1	9.0	-51.53	-245.4	55.9	70.0	52.6	17.42	4.019	
4,000.0	3,992.8	3,995.8	3,988.8	9.4	9.3	-52.62	-252.1	57.8	71.3	53.4	17.93	3.976	
4,100.0	4,092.5	4,095.8	4,088.5	9.7	9.6	-53.66	-258.8	59.7	72.6	54.2	18.45	3.937	
4,200.0	4,192.3	4,195.7	4,188.3	9.9	9.8	-54.67	-265.6	61.6	74.0	55.0	18.97	3.901	
4,300.0	4,292.0	4,295.7	4,288.0	10.2	10.1	-55.65	-272.3	63.5	75.4	55.9	19.50	3.867	
4,400.0	4,391.8	4,395.7	4,387.8	10.4	10.3	-56.59	-279.0	65.4	76.8	56.8	20.02	3.836	
4,500.0	4,491.6	4,495.7	4,487.5	10.7	10.6	-57.49	-285.7	67.3	78.2	57.7	20.54	3.808	
4,600.0	4,591.3	4,595.7	4,587.2	11.0	10.9	-58.36	-292.4	69.1	79.7	58.6	21.07	3.781	
4,700.0	4,691.1	4,695.7	4,687.0	11.2	11.1	-59.20	-299.1	71.0	81.1	59.5	21.59	3.757	
4,800.0	4,790.8	4,795.6	4,786.7	11.5	11.4	-60.01	-305.8	72.9	82.6	60.5	22.12	3.734	
4,900.0	4,890.6	4,895.6	4,886.5	11.8	11.7	-60.79	-312.6	74.8	84.1	61.4	22.65	3.713	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1416B - 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
5,000.0	4,990.3	4,995.6	4,986.2	12.0	11.9	-61.55	-319.3	76.7	85.6	62.4	23.18	3.693	
5,100.0	5,090.1	5,095.6	5,085.9	12.3	12.2	-62.28	-326.0	78.6	87.1	63.4	23.71	3.675	
5,200.0	5,189.9	5,195.6	5,185.7	12.5	12.4	-62.98	-332.7	80.5	88.7	64.4	24.24	3.658	
5,300.0	5,289.6	5,295.6	5,285.4	12.8	12.7	-63.66	-339.4	82.4	90.2	65.4	24.77	3.642	
5,400.0	5,389.2	5,395.5	5,385.1	13.1	13.0	-65.33	-346.1	84.3	91.0	65.7	25.34	3.591	
5,500.0	5,486.0	5,491.1	5,480.4	13.5	13.2	-75.88	-353.5	86.3	87.4	61.0	26.33	3.318	
5,520.7	5,505.3	5,509.8	5,498.9	13.6	13.3	-78.62	-356.2	87.1	87.2	60.6	26.60	3.278	
5,600.0	5,576.3	5,582.5	5,569.5	14.1	13.6	-89.33	-372.6	91.7	90.3	62.7	27.59	3.274	
5,700.0	5,656.8	5,676.8	5,656.4	14.9	14.1	-101.11	-407.7	101.6	103.2	74.6	28.69	3.598	
5,800.0	5,724.6	5,774.3	5,737.7	15.8	14.8	-109.20	-459.2	116.1	124.5	95.0	29.56	4.213	
5,900.0	5,777.2	5,875.4	5,810.0	17.0	15.8	-113.73	-526.9	135.2	151.6	121.0	30.57	4.960	
6,000.0	5,812.6	5,980.7	5,869.4	18.3	17.0	-115.56	-610.4	158.6	182.1	150.0	32.10	5.674	
6,100.0	5,829.5	6,090.8	5,911.5	19.8	18.4	-115.54	-708.1	186.1	214.3	179.9	34.39	6.232	
6,200.0	5,831.0	6,206.9	5,931.9	21.2	20.1	-115.31	-817.9	217.1	245.0	207.8	37.24	6.579	
6,300.0	5,831.0	6,320.2	5,933.0	22.6	21.8	-112.86	-927.4	246.2	268.6	227.8	40.79	6.584	
6,400.0	5,831.0	6,433.6	5,933.0	24.0	23.4	-111.09	-1,038.4	269.0	287.1	242.9	44.18	6.497	
6,500.0	5,831.0	6,549.3	5,933.0	25.5	25.1	-109.98	-1,152.9	285.5	300.2	252.6	47.57	6.310	
6,600.0	5,831.0	6,666.5	5,933.0	27.0	26.9	-109.38	-1,269.8	295.1	307.7	256.8	50.95	6.040	
6,700.0	5,831.0	6,781.5	5,933.0	28.6	28.6	-109.23	-1,384.7	297.7	309.6	255.4	54.23	5.709	
6,800.0	5,831.0	6,881.5	5,933.0	30.2	30.3	-109.24	-1,484.7	297.7	309.5	252.1	57.39	5.394	
6,883.9	5,831.0	6,965.4	5,933.0	31.6	31.7	-109.24	-1,568.6	297.7	309.5	249.4	60.08	5.152	
6,900.0	5,831.0	6,981.5	5,933.0	31.9	32.0	-109.24	-1,584.7	297.7	309.5	248.9	60.61	5.106	
7,000.0	5,831.0	7,081.5	5,933.0	33.6	33.7	-109.24	-1,684.7	297.7	309.5	245.6	63.90	4.844	
7,100.0	5,831.0	7,181.5	5,933.0	35.4	35.5	-109.24	-1,784.7	297.7	309.5	242.3	67.25	4.603	
7,200.0	5,831.0	7,281.5	5,933.0	37.1	37.2	-109.24	-1,884.7	297.7	309.6	238.9	70.64	4.382	
7,300.0	5,831.0	7,381.5	5,933.0	38.9	39.0	-109.24	-1,984.7	297.7	309.6	235.5	74.05	4.181	
7,400.0	5,831.0	7,481.5	5,933.0	40.7	40.8	-109.24	-2,084.7	297.7	309.6	232.1	77.48	3.996	
7,500.0	5,831.0	7,581.5	5,933.0	42.5	42.6	-109.23	-2,184.7	297.7	309.6	228.7	80.93	3.826	
7,600.0	5,831.0	7,681.5	5,933.0	44.3	44.4	-109.23	-2,284.7	297.7	309.6	225.2	84.40	3.669	
7,700.0	5,831.0	7,781.5	5,933.0	46.2	46.2	-109.23	-2,384.7	297.8	309.6	221.7	87.88	3.523	
7,800.0	5,831.0	7,881.5	5,933.0	48.0	48.0	-109.23	-2,484.7	297.8	309.6	218.3	91.38	3.388	
7,900.0	5,831.0	7,981.5	5,933.0	49.8	49.9	-109.23	-2,584.7	297.8	309.7	214.8	94.90	3.263	
8,000.0	5,831.0	8,081.5	5,933.0	51.7	51.7	-109.23	-2,684.7	297.8	309.7	211.3	98.42	3.147	
8,100.0	5,831.0	8,181.5	5,933.0	53.5	53.6	-109.23	-2,784.7	297.8	309.7	207.7	101.95	3.038	
8,200.0	5,831.0	8,281.5	5,933.0	55.4	55.4	-109.23	-2,884.7	297.8	309.7	204.2	105.49	2.936	
8,300.0	5,831.0	8,381.5	5,933.0	57.3	57.3	-109.23	-2,984.7	297.8	309.7	200.7	109.04	2.840	
8,400.0	5,831.0	8,481.5	5,933.0	59.1	59.1	-109.23	-3,084.7	297.8	309.7	197.1	112.60	2.751	
8,500.0	5,831.0	8,581.5	5,933.0	61.0	61.0	-109.23	-3,184.7	297.8	309.7	193.6	116.16	2.667	
8,600.0	5,831.0	8,681.5	5,933.0	62.9	62.9	-109.22	-3,284.7	297.8	309.8	190.0	119.73	2.587	
8,700.0	5,831.0	8,781.5	5,933.0	64.7	64.7	-109.22	-3,384.7	297.8	309.8	186.5	123.30	2.512	
8,800.0	5,831.0	8,881.5	5,933.0	66.6	66.6	-109.22	-3,484.7	297.8	309.8	182.9	126.88	2.442	
8,900.0	5,831.0	8,981.5	5,933.0	68.5	68.5	-109.22	-3,584.7	297.9	309.8	179.3	130.47	2.375	
9,000.0	5,831.0	9,081.5	5,933.0	70.4	70.4	-109.22	-3,684.7	297.9	309.8	175.8	134.05	2.311	
9,100.0	5,831.0	9,181.5	5,933.0	72.3	72.2	-109.22	-3,784.7	297.9	309.8	172.2	137.65	2.251	
9,200.0	5,831.0	9,281.5	5,933.0	74.1	74.1	-109.22	-3,884.7	297.9	309.8	168.6	141.24	2.194	
9,300.0	5,831.0	9,381.5	5,933.0	76.0	76.0	-109.22	-3,984.7	297.9	309.9	165.0	144.84	2.139	
9,400.0	5,831.0	9,481.5	5,933.0	77.9	77.9	-109.22	-4,084.7	297.9	309.9	161.4	148.44	2.088	
9,500.0	5,831.0	9,581.5	5,933.0	79.8	79.8	-109.22	-4,184.7	297.9	309.9	157.8	152.05	2.038	
9,600.0	5,831.0	9,681.5	5,933.0	81.7	81.7	-109.22	-4,284.7	297.9	309.9	154.3	155.66	1.991	
9,700.0	5,831.0	9,781.5	5,933.0	83.6	83.6	-109.21	-4,384.7	297.9	309.9	150.7	159.27	1.946	
9,800.0	5,831.0	9,881.5	5,933.0	85.5	85.5	-109.21	-4,484.7	297.9	309.9	147.1	162.88	1.903	
9,900.0	5,831.0	9,981.5	5,933.0	87.4	87.4	-109.21	-4,584.7	297.9	310.0	143.5	166.49	1.862	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1416B - 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
10,000.0	5,831.0	10,081.5	5,933.0	89.3	89.3	-109.21	-4,684.7	298.0	310.0	139.9	170.11	1.822	
10,100.0	5,831.0	10,181.5	5,933.0	91.2	91.2	-109.21	-4,784.7	298.0	310.0	136.3	173.73	1.784	
10,200.0	5,831.0	10,281.5	5,933.0	93.1	93.1	-109.21	-4,884.7	298.0	310.0	132.6	177.35	1.748	
10,300.0	5,831.0	10,381.5	5,933.0	95.0	94.9	-109.21	-4,984.7	298.0	310.0	129.0	180.97	1.713	
10,400.0	5,831.0	10,481.5	5,933.0	96.9	96.8	-109.21	-5,084.7	298.0	310.0	125.4	184.59	1.679	
10,500.0	5,831.0	10,581.5	5,933.0	98.8	98.7	-109.21	-5,184.7	298.0	310.0	121.8	188.22	1.647	
10,600.0	5,831.0	10,681.5	5,933.0	100.7	100.7	-109.21	-5,284.7	298.0	310.1	118.2	191.85	1.616	
10,700.0	5,831.0	10,781.5	5,933.0	102.6	102.6	-109.21	-5,384.7	298.0	310.1	114.6	195.47	1.586	
10,800.0	5,831.0	10,881.5	5,933.0	104.5	104.5	-109.20	-5,484.7	298.0	310.1	111.0	199.10	1.557	
10,900.0	5,831.0	10,981.5	5,933.0	106.4	106.4	-109.20	-5,584.7	298.0	310.1	107.4	202.73	1.530	
11,000.0	5,831.0	11,081.5	5,933.0	108.3	108.3	-109.20	-5,684.7	298.0	310.1	103.7	206.36	1.503	
11,100.0	5,831.0	11,181.5	5,933.0	110.2	110.2	-109.20	-5,784.7	298.0	310.1	100.1	210.00	1.477	Level 3
11,200.0	5,831.0	11,281.5	5,933.0	112.1	112.1	-109.20	-5,884.7	298.1	310.1	96.5	213.63	1.452	Level 3
11,300.0	5,831.0	11,381.5	5,933.0	114.0	114.0	-109.20	-5,984.7	298.1	310.2	92.9	217.27	1.428	Level 3
11,400.0	5,831.0	11,481.5	5,933.0	115.9	115.9	-109.20	-6,084.7	298.1	310.2	89.3	220.90	1.404	Level 3
11,500.0	5,831.0	11,581.5	5,933.0	117.8	117.8	-109.20	-6,184.7	298.1	310.2	85.6	224.54	1.381	Level 3
11,600.0	5,831.0	11,681.5	5,933.0	119.7	119.7	-109.20	-6,284.7	298.1	310.2	82.0	228.18	1.359	Level 3
11,700.0	5,831.0	11,781.5	5,933.0	121.6	121.6	-109.20	-6,384.7	298.1	310.2	78.4	231.81	1.338	Level 3
11,800.0	5,831.0	11,881.5	5,933.0	123.6	123.5	-109.20	-6,484.7	298.1	310.2	74.8	235.45	1.318	Level 3
11,900.0	5,831.0	11,981.5	5,933.0	125.5	125.4	-109.19	-6,584.7	298.1	310.2	71.1	239.09	1.298	Level 3
12,000.0	5,831.0	12,081.5	5,933.0	127.4	127.3	-109.19	-6,684.7	298.1	310.3	67.5	242.73	1.278	Level 3
12,100.0	5,831.0	12,181.5	5,933.0	129.3	129.2	-109.19	-6,784.7	298.1	310.3	63.9	246.37	1.259	Level 3
12,200.0	5,831.0	12,281.5	5,933.0	131.2	131.1	-109.19	-6,884.7	298.1	310.3	60.3	250.02	1.241	Level 2
12,300.0	5,831.0	12,381.5	5,933.0	133.1	133.1	-109.19	-6,984.7	298.1	310.3	56.6	253.66	1.223	Level 2
12,400.0	5,831.0	12,481.5	5,933.0	135.0	135.0	-109.19	-7,084.7	298.2	310.3	53.0	257.30	1.206	Level 2
12,500.0	5,831.0	12,581.5	5,933.0	136.9	136.9	-109.19	-7,184.7	298.2	310.3	49.4	260.94	1.189	Level 2
12,600.0	5,831.0	12,681.5	5,933.0	138.8	138.8	-109.19	-7,284.7	298.2	310.3	45.8	264.59	1.173	Level 2
12,700.0	5,831.0	12,781.5	5,933.0	140.7	140.7	-109.19	-7,384.7	298.2	310.4	42.1	268.23	1.157	Level 2
12,800.0	5,831.0	12,881.5	5,933.0	142.7	142.6	-109.19	-7,484.7	298.2	310.4	38.5	271.88	1.142	Level 2
12,900.0	5,831.0	12,981.5	5,933.0	144.6	144.5	-109.19	-7,584.7	298.2	310.4	34.9	275.52	1.127	Level 2
13,000.0	5,831.0	13,081.5	5,933.0	146.5	146.4	-109.18	-7,684.7	298.2	310.4	31.2	279.17	1.112	Level 2
13,100.0	5,831.0	13,181.5	5,933.0	148.4	148.4	-109.18	-7,784.7	298.2	310.4	27.6	282.82	1.098	Level 2
13,200.0	5,831.0	13,281.5	5,933.0	150.3	150.3	-109.18	-7,884.7	298.2	310.4	24.0	286.46	1.084	Level 2
13,300.0	5,831.0	13,381.5	5,933.0	152.2	152.2	-109.18	-7,984.7	298.2	310.4	20.3	290.11	1.070	Level 2
13,400.0	5,831.0	13,481.5	5,933.0	154.1	154.1	-109.18	-8,084.7	298.2	310.5	16.7	293.76	1.057	Level 2
13,500.0	5,831.0	13,581.5	5,933.0	156.1	156.0	-109.18	-8,184.7	298.2	310.5	13.1	297.41	1.044	Level 2
13,600.0	5,831.0	13,681.5	5,933.0	158.0	157.9	-109.18	-8,284.7	298.3	310.5	9.4	301.05	1.031	Level 2
13,650.7	5,831.0	13,732.2	5,933.0	158.9	158.8	-109.18	-8,335.4	298.3	310.5	7.7	302.79	1.025	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 11 Offset (EXISTING) - EXISTING - EXISTING

Offset Site Error: 0.0 usft

Survey Program: 6900-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	-164.94	-5,125.3	-1,379.2	5,308.0				
100.0	100.0	32.7	32.7	0.1	0.0	-164.94	-5,125.3	-1,379.2	5,307.6	5,307.5	0.13	N/A	
200.0	200.0	132.7	132.7	0.3	0.1	-164.94	-5,125.3	-1,379.2	5,307.6	5,307.1	0.47	N/A	
300.0	300.0	232.7	232.7	0.5	0.3	-164.94	-5,125.3	-1,379.2	5,307.6	5,306.8	0.80	6,599.680	
400.0	400.0	332.7	332.7	0.8	0.4	-164.94	-5,125.3	-1,379.2	5,307.6	5,306.5	1.14	4,650.798	
500.0	500.0	432.7	432.7	1.0	0.5	-164.94	-5,125.3	-1,379.2	5,307.6	5,306.1	1.48	3,590.519	
600.0	600.0	532.7	532.7	1.2	0.6	-164.94	-5,125.3	-1,379.2	5,307.6	5,305.8	1.82	2,923.929	
700.0	700.0	632.7	632.7	1.4	0.7	-164.94	-5,125.3	-1,379.2	5,307.6	5,305.4	2.15	2,466.091	
800.0	800.0	732.7	732.7	1.7	0.8	-164.94	-5,125.3	-1,379.2	5,307.6	5,305.1	2.49	2,132.222	
900.0	900.0	832.7	832.7	1.9	0.9	-164.94	-5,125.3	-1,379.2	5,307.6	5,304.8	2.83	1,877.978	
1,000.0	1,000.0	932.7	932.7	2.1	1.0	15.34	-5,125.3	-1,379.2	5,305.9	5,302.8	3.16	1,679.542	
1,100.0	1,099.8	1,032.5	1,032.5	2.3	1.2	15.38	-5,125.3	-1,379.2	5,300.9	5,297.4	3.47	1,525.827	
1,200.0	1,199.6	1,132.3	1,132.3	2.5	1.3	15.40	-5,125.3	-1,379.2	5,294.1	5,290.4	3.78	1,401.497	
1,300.0	1,299.4	1,232.1	1,232.1	2.7	1.4	15.42	-5,125.3	-1,379.2	5,287.4	5,283.3	4.09	1,293.277	
1,400.0	1,399.1	1,331.8	1,331.8	2.9	1.5	15.44	-5,125.3	-1,379.2	5,280.7	5,276.3	4.41	1,198.723	
1,500.0	1,498.9	1,431.6	1,431.6	3.1	1.6	15.46	-5,125.3	-1,379.2	5,274.0	5,269.2	4.73	1,115.723	
1,600.0	1,598.6	1,531.3	1,531.3	3.3	1.7	15.48	-5,125.3	-1,379.2	5,267.2	5,262.2	5.05	1,042.493	
1,700.0	1,698.4	1,631.1	1,631.1	3.6	1.8	15.50	-5,125.3	-1,379.2	5,260.5	5,255.1	5.38	977.547	
1,800.0	1,798.1	1,730.8	1,730.8	3.8	1.9	15.52	-5,125.3	-1,379.2	5,253.8	5,248.1	5.71	919.652	
1,900.0	1,897.9	1,830.6	1,830.6	4.0	2.1	15.54	-5,125.3	-1,379.2	5,247.1	5,241.0	6.05	867.788	
2,000.0	1,997.6	1,930.4	1,930.4	4.3	2.2	15.56	-5,125.3	-1,379.2	5,240.3	5,234.0	6.38	821.107	
2,100.0	2,097.4	2,030.1	2,030.1	4.5	2.3	15.58	-5,125.3	-1,379.2	5,233.6	5,226.9	6.72	778.905	
2,200.0	2,197.2	2,129.9	2,129.9	4.8	2.4	15.60	-5,125.3	-1,379.2	5,226.9	5,219.8	7.06	740.593	
2,300.0	2,296.9	2,229.6	2,229.6	5.0	2.5	15.62	-5,125.3	-1,379.2	5,220.2	5,212.8	7.40	705.676	
2,400.0	2,396.7	2,329.4	2,329.4	5.3	2.6	15.64	-5,125.3	-1,379.2	5,213.5	5,205.7	7.74	673.735	
2,500.0	2,496.4	2,429.1	2,429.1	5.5	2.7	15.66	-5,125.3	-1,379.2	5,206.8	5,198.7	8.08	644.418	
2,600.0	2,596.2	2,528.9	2,528.9	5.8	2.8	15.68	-5,125.3	-1,379.2	5,200.0	5,191.6	8.42	617.422	
2,700.0	2,695.9	2,628.6	2,628.6	6.0	3.0	15.70	-5,125.3	-1,379.2	5,193.3	5,184.6	8.77	592.488	
2,800.0	2,795.7	2,728.4	2,728.4	6.3	3.1	15.72	-5,125.3	-1,379.2	5,186.6	5,177.5	9.11	569.394	
2,900.0	2,895.5	2,828.2	2,828.2	6.5	3.2	15.75	-5,125.3	-1,379.2	5,179.9	5,170.4	9.45	547.948	
3,000.0	2,995.2	2,927.9	2,927.9	6.8	3.3	15.77	-5,125.3	-1,379.2	5,173.2	5,163.4	9.80	527.982	
3,100.0	3,095.0	3,027.7	3,027.7	7.1	3.4	15.79	-5,125.3	-1,379.2	5,166.5	5,156.3	10.14	509.352	
3,200.0	3,194.7	3,127.4	3,127.4	7.3	3.5	15.81	-5,125.3	-1,379.2	5,159.7	5,149.3	10.49	491.929	
3,300.0	3,294.5	3,227.2	3,227.2	7.6	3.6	15.83	-5,125.3	-1,379.2	5,153.0	5,142.2	10.83	475.602	
3,400.0	3,394.2	3,326.9	3,326.9	7.8	3.7	15.85	-5,125.3	-1,379.2	5,146.3	5,135.1	11.18	460.272	
3,500.0	3,494.0	3,426.7	3,426.7	8.1	3.8	15.87	-5,125.3	-1,379.2	5,139.6	5,128.1	11.53	445.851	
3,600.0	3,593.7	3,526.5	3,526.5	8.4	4.0	15.89	-5,125.3	-1,379.2	5,132.9	5,121.0	11.87	432.262	
3,700.0	3,693.5	3,626.2	3,626.2	8.6	4.1	15.91	-5,125.3	-1,379.2	5,126.2	5,114.0	12.22	419.436	
3,800.0	3,793.3	3,726.0	3,726.0	8.9	4.2	15.94	-5,125.3	-1,379.2	5,119.5	5,106.9	12.57	407.311	
3,900.0	3,893.0	3,825.7	3,825.7	9.1	4.3	15.96	-5,125.3	-1,379.2	5,112.8	5,099.9	12.92	395.832	
4,000.0	3,992.8	3,925.5	3,925.5	9.4	4.4	15.98	-5,125.3	-1,379.2	5,106.1	5,092.8	13.26	384.948	
4,100.0	4,092.5	4,025.2	4,025.2	9.7	4.5	16.00	-5,125.3	-1,379.2	5,099.4	5,085.7	13.61	374.616	
4,200.0	4,192.3	4,125.0	4,125.0	9.9	4.6	16.02	-5,125.3	-1,379.2	5,092.6	5,078.7	13.96	364.794	
4,300.0	4,292.0	4,224.8	4,224.8	10.2	4.7	16.04	-5,125.3	-1,379.2	5,085.9	5,071.6	14.31	355.446	
4,400.0	4,391.8	4,324.5	4,324.5	10.4	4.9	16.07	-5,125.3	-1,379.2	5,079.2	5,064.6	14.66	346.539	
4,500.0	4,491.6	4,424.3	4,424.3	10.7	5.0	16.09	-5,125.3	-1,379.2	5,072.5	5,057.5	15.01	338.042	
4,600.0	4,591.3	4,524.0	4,524.0	11.0	5.1	16.11	-5,125.3	-1,379.2	5,065.8	5,050.5	15.35	329.929	
4,700.0	4,691.1	4,623.8	4,623.8	11.2	5.2	16.13	-5,125.3	-1,379.2	5,059.1	5,043.4	15.70	322.173	
4,800.0	4,790.8	4,723.5	4,723.5	11.5	5.3	16.15	-5,125.3	-1,379.2	5,052.4	5,036.4	16.05	314.752	
4,900.0	4,890.6	4,823.3	4,823.3	11.8	5.4	16.18	-5,125.3	-1,379.2	5,045.7	5,029.3	16.40	307.645	
5,000.0	4,990.3	4,923.0	4,923.0	12.0	5.5	16.20	-5,125.3	-1,379.2	5,039.0	5,022.3	16.75	300.832	
5,100.0	5,090.1	5,022.8	5,022.8	12.3	5.6	16.22	-5,125.3	-1,379.2	5,032.3	5,015.2	17.10	294.296	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 11 Offset (EXISTING) - EXISTING - EXISTING

Offset Site Error: 0.0 usft

Survey Program: 6900-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	5,189.9	5,122.6	5,122.6	12.5	5.7	16.24	-5,125.3	-1,379.2	5,025.6	5,008.2	17.45	288.020	
5,300.0	5,289.6	5,222.3	5,222.3	12.8	5.9	16.26	-5,125.3	-1,379.2	5,018.9	5,001.1	17.80	281.989	
5,400.0	5,389.2	5,321.9	5,321.9	13.1	6.0	16.43	-5,125.3	-1,379.2	5,010.5	4,992.4	18.16	275.985	
5,500.0	5,486.0	5,418.7	5,418.7	13.5	6.1	17.29	-5,125.3	-1,379.2	4,987.0	4,968.8	18.18	274.316	
5,600.0	5,576.3	5,509.0	5,509.0	14.1	6.2	18.98	-5,125.3	-1,379.2	4,946.1	4,928.4	17.77	278.267	
5,700.0	5,656.8	5,589.5	5,589.5	14.9	6.3	21.86	-5,125.3	-1,379.2	4,889.6	4,872.5	17.12	285.524	
5,800.0	5,724.6	5,657.3	5,657.3	15.8	6.3	26.67	-5,125.3	-1,379.2	4,819.4	4,802.7	16.69	288.706	
5,900.0	5,777.2	5,709.9	5,709.9	17.0	6.4	35.00	-5,125.3	-1,379.2	4,738.3	4,720.8	17.48	271.062	
6,000.0	5,812.6	5,745.3	5,745.3	18.3	6.4	50.23	-5,125.3	-1,379.2	4,649.2	4,628.2	20.92	222.207	
6,100.0	5,829.5	5,762.3	5,762.3	19.8	6.5	77.05	-5,125.3	-1,379.2	4,555.4	4,529.3	26.17	174.057	
6,200.0	5,831.0	5,763.7	5,763.7	21.2	6.5	90.00	-5,125.3	-1,379.2	4,460.4	4,432.3	28.10	158.757	
6,300.0	5,831.0	5,763.7	5,763.7	22.6	6.5	90.00	-5,125.3	-1,379.2	4,365.6	4,336.1	29.53	147.852	
6,400.0	5,831.0	5,763.7	5,763.7	24.0	6.5	90.00	-5,125.3	-1,379.2	4,271.0	4,239.9	31.04	137.616	
6,500.0	5,831.0	5,763.7	5,763.7	25.5	6.5	90.00	-5,125.3	-1,379.2	4,176.6	4,144.0	32.61	128.081	
6,600.0	5,831.0	5,763.7	5,763.7	27.0	6.5	90.00	-5,125.3	-1,379.2	4,082.4	4,048.2	34.24	119.242	
6,700.0	5,831.0	5,763.7	5,763.7	28.6	6.5	90.00	-5,125.3	-1,379.2	3,988.6	3,952.7	35.91	111.074	
6,800.0	5,831.0	5,763.7	5,763.7	30.2	6.5	90.00	-5,125.3	-1,379.2	3,895.0	3,857.4	37.62	103.536	
6,900.0	5,831.0	5,763.7	5,763.7	31.9	6.5	90.00	-5,125.3	-1,379.2	3,801.7	3,762.3	39.36	96.580	
7,000.0	5,831.0	5,763.7	5,763.7	33.6	6.5	90.00	-5,125.3	-1,379.2	3,708.7	3,667.6	41.15	90.123	
7,100.0	5,831.0	5,763.7	5,763.7	35.4	6.5	90.00	-5,125.3	-1,379.2	3,616.1	3,573.2	42.99	84.125	
7,200.0	5,831.0	5,763.7	5,763.7	37.1	6.5	90.00	-5,125.3	-1,379.2	3,524.0	3,479.1	44.84	78.597	
7,300.0	5,831.0	5,763.7	5,763.7	38.9	6.5	90.00	-5,125.3	-1,379.2	3,432.2	3,385.5	46.70	73.494	
7,400.0	5,831.0	5,763.7	5,763.7	40.7	6.5	90.00	-5,125.3	-1,379.2	3,341.0	3,292.4	48.58	68.775	
7,500.0	5,831.0	5,763.7	5,763.7	42.5	6.5	90.00	-5,125.3	-1,379.2	3,250.2	3,199.8	50.47	64.404	
7,600.0	5,831.0	5,763.7	5,763.7	44.3	6.5	90.00	-5,125.3	-1,379.2	3,160.0	3,107.7	52.36	60.347	
7,700.0	5,831.0	5,763.7	5,763.7	46.2	6.5	90.00	-5,125.3	-1,379.2	3,070.5	3,016.2	54.27	56.576	
7,800.0	5,831.0	5,763.7	5,763.7	48.0	6.5	90.00	-5,125.3	-1,379.2	2,981.5	2,925.4	56.19	53.066	
7,900.0	5,831.0	5,763.7	5,763.7	49.8	6.5	90.00	-5,125.3	-1,379.2	2,893.4	2,835.2	58.11	49.795	
8,000.0	5,831.0	5,763.7	5,763.7	51.7	6.5	90.00	-5,125.3	-1,379.2	2,806.0	2,745.9	60.03	46.741	
8,100.0	5,831.0	5,763.7	5,763.7	53.5	6.5	90.00	-5,125.3	-1,379.2	2,719.4	2,657.5	61.96	43.887	
8,200.0	5,831.0	5,763.7	5,763.7	55.4	6.5	90.00	-5,125.3	-1,379.2	2,633.8	2,569.9	63.90	41.217	
8,300.0	5,831.0	5,763.7	5,763.7	57.3	6.5	90.00	-5,125.3	-1,379.2	2,549.3	2,483.5	65.84	38.718	
8,400.0	5,831.0	5,763.7	5,763.7	59.1	6.5	90.00	-5,125.3	-1,379.2	2,465.9	2,398.2	67.79	36.377	
8,500.0	5,831.0	5,763.7	5,763.7	61.0	6.5	90.00	-5,125.3	-1,379.2	2,383.8	2,314.1	69.74	34.184	
8,600.0	5,831.0	5,763.7	5,763.7	62.9	6.5	90.00	-5,125.3	-1,379.2	2,303.2	2,231.5	71.69	32.128	
8,700.0	5,831.0	5,763.7	5,763.7	64.7	6.5	90.00	-5,125.3	-1,379.2	2,224.1	2,150.4	73.64	30.200	
8,800.0	5,831.0	5,763.7	5,763.7	66.6	6.5	90.00	-5,125.3	-1,379.2	2,146.7	2,071.1	75.60	28.395	
8,900.0	5,831.0	5,763.7	5,763.7	68.5	6.5	90.00	-5,125.3	-1,379.2	2,071.3	1,993.7	77.56	26.705	
9,000.0	5,831.0	5,763.7	5,763.7	70.4	6.5	90.00	-5,125.3	-1,379.2	1,998.0	1,918.5	79.52	25.125	
9,100.0	5,831.0	5,763.7	5,763.7	72.3	6.5	90.00	-5,125.3	-1,379.2	1,927.2	1,845.7	81.49	23.650	
9,200.0	5,831.0	5,763.7	5,763.7	74.1	6.5	90.00	-5,125.3	-1,379.2	1,859.0	1,775.5	83.45	22.275	
9,300.0	5,831.0	5,763.7	5,763.7	76.0	6.5	90.00	-5,125.3	-1,379.2	1,793.8	1,708.4	85.42	20.999	
9,400.0	5,831.0	5,763.7	5,763.7	77.9	6.5	90.00	-5,125.3	-1,379.2	1,731.9	1,644.5	87.39	19.818	
9,500.0	5,831.0	5,763.7	5,763.7	79.8	6.5	90.00	-5,125.3	-1,379.2	1,673.7	1,584.4	89.36	18.729	
9,600.0	5,831.0	5,763.7	5,763.7	81.7	6.5	90.00	-5,125.3	-1,379.2	1,619.7	1,528.3	91.34	17.733	
9,700.0	5,831.0	5,763.7	5,763.7	83.6	6.5	90.00	-5,125.3	-1,379.2	1,570.1	1,476.8	93.31	16.826	
9,800.0	5,831.0	5,763.7	5,763.7	85.5	6.5	90.00	-5,125.3	-1,379.2	1,525.5	1,430.2	95.29	16.009	
9,900.0	5,831.0	5,763.7	5,763.7	87.4	6.5	90.00	-5,125.3	-1,379.2	1,486.2	1,389.0	97.26	15.280	
10,000.0	5,831.0	5,763.7	5,763.7	89.3	6.5	90.00	-5,125.3	-1,379.2	1,452.9	1,353.6	99.24	14.639	
10,100.0	5,831.0	5,763.7	5,763.7	91.2	6.5	90.00	-5,125.3	-1,379.2	1,425.7	1,324.5	101.22	14.085	
10,200.0	5,831.0	5,763.7	5,763.7	93.1	6.5	90.00	-5,125.3	-1,379.2	1,405.2	1,302.0	103.20	13.616	
10,300.0	5,831.0	5,763.7	5,763.7	95.0	6.5	90.00	-5,125.3	-1,379.2	1,391.5	1,286.4	105.18	13.230	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 11 Offset (EXISTING) - EXISTING - EXISTING

Offset Site Error: 0.0 usft

Survey Program: 6900-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	5,831.0	5,763.7	5,763.7	96.9	6.5	90.00	-5,125.3	-1,379.2	1,385.0	1,277.8	107.16	12.924	
10,440.6	5,831.0	5,763.7	5,763.7	97.6	6.5	90.00	-5,125.3	-1,379.2	1,384.4	1,276.4	108.02	12.816	CC, ES
10,500.0	5,831.0	5,763.7	5,763.7	98.8	6.5	90.00	-5,125.3	-1,379.2	1,385.7	1,276.5	109.15	12.696	
10,600.0	5,831.0	5,763.7	5,763.7	100.7	6.5	90.00	-5,125.3	-1,379.2	1,393.6	1,282.4	111.13	12.540	
10,700.0	5,831.0	5,763.7	5,763.7	102.6	6.5	90.00	-5,125.3	-1,379.2	1,408.5	1,295.4	113.11	12.452	
10,800.0	5,831.0	5,763.7	5,763.7	104.5	6.5	90.00	-5,125.3	-1,379.2	1,430.3	1,315.2	115.10	12.427	SF
10,900.0	5,831.0	5,763.7	5,763.7	106.4	6.5	90.00	-5,125.3	-1,379.2	1,458.6	1,341.5	117.08	12.458	
11,000.0	5,831.0	5,763.7	5,763.7	108.3	6.5	90.00	-5,125.3	-1,379.2	1,493.1	1,374.1	119.07	12.540	
11,100.0	5,831.0	5,763.7	5,763.7	110.2	6.5	90.00	-5,125.3	-1,379.2	1,533.4	1,412.4	121.06	12.667	
11,200.0	5,831.0	5,763.7	5,763.7	112.1	6.5	90.00	-5,125.3	-1,379.2	1,579.0	1,455.9	123.04	12.833	
11,300.0	5,831.0	5,763.7	5,763.7	114.0	6.5	90.00	-5,125.3	-1,379.2	1,629.4	1,504.4	125.03	13.032	
11,400.0	5,831.0	5,763.7	5,763.7	115.9	6.5	90.00	-5,125.3	-1,379.2	1,684.3	1,557.3	127.02	13.260	
11,500.0	5,831.0	5,763.7	5,763.7	117.8	6.5	90.00	-5,125.3	-1,379.2	1,743.2	1,614.2	129.01	13.512	
11,600.0	5,831.0	5,763.7	5,763.7	119.7	6.5	90.00	-5,125.3	-1,379.2	1,805.7	1,674.7	131.00	13.784	
11,700.0	5,831.0	5,763.7	5,763.7	121.6	6.5	90.00	-5,125.3	-1,379.2	1,871.5	1,738.5	132.99	14.073	
11,800.0	5,831.0	5,763.7	5,763.7	123.6	6.5	90.00	-5,125.3	-1,379.2	1,940.2	1,805.2	134.98	14.374	
11,900.0	5,831.0	5,763.7	5,763.7	125.5	6.5	90.00	-5,125.3	-1,379.2	2,011.5	1,874.6	136.97	14.686	
12,000.0	5,831.0	5,763.7	5,763.7	127.4	6.5	90.00	-5,125.3	-1,379.2	2,085.2	1,946.3	138.96	15.006	
12,100.0	5,831.0	5,763.7	5,763.7	129.3	6.5	90.00	-5,125.3	-1,379.2	2,161.0	2,020.1	140.95	15.332	
12,200.0	5,831.0	5,763.7	5,763.7	131.2	6.5	90.00	-5,125.3	-1,379.2	2,238.7	2,095.8	142.94	15.662	
12,300.0	5,831.0	5,763.7	5,763.7	133.1	6.5	90.00	-5,125.3	-1,379.2	2,318.1	2,173.2	144.93	15.995	
12,400.0	5,831.0	5,763.7	5,763.7	135.0	6.5	90.00	-5,125.3	-1,379.2	2,399.1	2,252.2	146.93	16.329	
12,500.0	5,831.0	5,763.7	5,763.7	136.9	6.5	90.00	-5,125.3	-1,379.2	2,481.4	2,332.5	148.92	16.663	
12,600.0	5,831.0	5,763.7	5,763.7	138.8	6.5	90.00	-5,125.3	-1,379.2	2,565.0	2,414.1	150.91	16.997	
12,700.0	5,831.0	5,763.7	5,763.7	140.7	6.5	90.00	-5,125.3	-1,379.2	2,649.8	2,496.9	152.90	17.330	
12,800.0	5,831.0	5,763.7	5,763.7	142.7	6.5	90.00	-5,125.3	-1,379.2	2,735.5	2,580.6	154.90	17.660	
12,900.0	5,831.0	5,763.7	5,763.7	144.6	6.5	90.00	-5,125.3	-1,379.2	2,822.2	2,665.3	156.89	17.989	
13,000.0	5,831.0	5,763.7	5,763.7	146.5	6.5	90.00	-5,125.3	-1,379.2	2,909.8	2,750.9	158.88	18.314	
13,100.0	5,831.0	5,763.7	5,763.7	148.4	6.5	90.00	-5,125.3	-1,379.2	2,998.1	2,837.2	160.88	18.636	
13,200.0	5,831.0	5,763.7	5,763.7	150.3	6.5	90.00	-5,125.3	-1,379.2	3,087.2	2,924.3	162.87	18.955	
13,300.0	5,831.0	5,763.7	5,763.7	152.2	6.5	90.00	-5,125.3	-1,379.2	3,176.9	3,012.0	164.87	19.269	
13,400.0	5,831.0	5,763.7	5,763.7	154.1	6.5	90.00	-5,125.3	-1,379.2	3,267.2	3,100.3	166.86	19.580	
13,500.0	5,831.0	5,763.7	5,763.7	156.1	6.5	90.00	-5,125.3	-1,379.2	3,358.0	3,189.2	168.86	19.887	
13,600.0	5,831.0	5,763.7	5,763.7	158.0	6.5	90.00	-5,125.3	-1,379.2	3,449.4	3,278.5	170.85	20.189	
13,650.7	5,831.0	5,763.7	5,763.7	158.9	6.5	90.00	-5,125.3	-1,379.2	3,495.8	3,324.0	171.86	20.341	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 11-0241H (Existing) - Existing - Existing

Offset Site Error: 0.0 usft

Survey Program: 132-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	-104.87	-58.8	-221.5	229.2				
100.0	100.0	94.9	94.9	0.1	0.1	-104.83	-58.9	-222.5	230.2	230.0	0.20	1,164.971	
200.0	200.0	192.8	192.7	0.3	0.3	-104.68	-59.0	-225.1	232.8	232.2	0.59	393.850	
300.0	300.0	292.7	292.6	0.5	0.5	-104.34	-58.3	-228.2	235.7	234.7	1.03	228.666	
400.0	400.0	393.3	393.2	0.8	0.7	-103.85	-57.1	-231.4	238.4	237.0	1.47	162.229	
500.0	500.0	493.1	492.9	1.0	0.9	-103.34	-55.6	-234.5	241.1	239.2	1.91	126.273	
600.0	600.0	592.3	592.0	1.2	1.2	-102.81	-54.1	-237.7	243.9	241.6	2.35	103.600	
700.0	700.0	693.5	693.1	1.4	1.4	-102.25	-52.3	-241.0	246.7	243.9	2.79	88.276	
800.0	800.0	795.6	795.2	1.7	1.6	-101.88	-51.2	-243.5	248.8	245.6	3.22	77.197	
900.0	900.0	895.3	894.9	1.9	1.8	-101.66	-50.7	-245.4	250.6	247.0	3.65	68.619	
1,000.0	1,000.0	996.9	996.5	2.1	2.0	79.08	-50.5	-246.9	251.7	247.6	4.05	62.140	
1,100.0	1,099.8	1,097.4	1,097.0	2.3	2.2	80.15	-51.1	-247.8	251.7	247.3	4.43	56.856	
1,200.0	1,199.6	1,197.8	1,197.4	2.5	2.4	81.52	-52.1	-248.5	251.5	246.6	4.82	52.133	
1,300.0	1,299.4	1,298.5	1,298.0	2.7	2.6	82.81	-53.5	-248.7	250.9	245.7	5.24	47.922	
1,400.0	1,399.1	1,397.7	1,397.2	2.9	2.8	83.96	-55.4	-248.8	250.5	244.8	5.66	44.284	
1,464.0	1,463.0	1,461.2	1,460.7	3.0	2.9	84.63	-56.9	-249.0	250.4	244.5	5.93	42.218	
1,500.0	1,498.9	1,497.0	1,496.5	3.1	3.0	84.98	-57.8	-249.2	250.4	244.3	6.09	41.142	
1,600.0	1,598.6	1,595.5	1,595.0	3.3	3.2	85.90	-60.7	-249.8	250.7	244.2	6.53	38.427	
1,700.0	1,698.4	1,694.8	1,694.2	3.6	3.4	86.61	-64.6	-251.0	251.7	244.7	6.97	36.092	
1,800.0	1,798.1	1,793.6	1,792.8	3.8	3.7	87.20	-69.0	-252.3	252.9	245.5	7.42	34.065	
1,900.0	1,897.9	1,893.2	1,892.4	4.0	3.9	87.85	-73.2	-254.1	254.6	246.7	7.88	32.322	
2,000.0	1,997.6	1,996.9	1,996.0	4.3	4.1	88.61	-77.1	-255.3	255.7	247.4	8.34	30.659	
2,098.8	2,096.2	2,096.4	2,095.5	4.5	4.3	89.60	-79.6	-255.3	255.7	246.9	8.79	29.075	
2,100.0	2,097.4	2,097.6	2,096.7	4.5	4.3	89.61	-79.6	-255.3	255.7	246.9	8.80	29.057	
2,200.0	2,197.2	2,191.6	2,190.6	4.8	4.5	90.33	-83.0	-256.3	256.8	247.5	9.26	27.746	
2,300.0	2,296.9	2,302.1	2,301.0	5.0	4.7	91.33	-86.2	-256.7	257.2	247.5	9.74	26.408	
2,400.0	2,396.7	2,402.6	2,401.5	5.3	5.0	92.38	-88.5	-254.9	255.5	245.3	10.21	25.038	
2,500.0	2,496.4	2,502.8	2,501.6	5.5	5.2	93.27	-91.7	-252.4	253.3	242.6	10.68	23.725	
2,556.1	2,552.4	2,554.2	2,552.9	5.7	5.3	93.65	-93.6	-251.8	252.8	241.8	10.93	23.125	
2,600.0	2,596.2	2,596.2	2,594.9	5.8	5.4	93.92	-95.4	-252.0	253.0	241.9	11.13	22.729	
2,700.0	2,695.9	2,698.4	2,697.0	6.0	5.6	94.71	-99.0	-252.0	253.3	241.7	11.61	21.827	
2,800.0	2,795.7	2,802.1	2,800.7	6.3	5.8	95.48	-102.9	-251.2	252.9	240.8	12.08	20.927	
2,900.0	2,895.5	2,907.1	2,905.6	6.5	6.0	97.13	-103.4	-247.3	249.8	237.3	12.56	19.897	
3,000.0	2,995.2	3,006.6	3,005.1	6.8	6.2	98.82	-103.5	-243.1	246.6	233.6	13.02	18.944	
3,100.0	3,095.0	3,106.3	3,104.6	7.1	6.4	100.58	-103.5	-238.8	243.5	230.0	13.47	18.070	
3,200.0	3,194.7	3,204.7	3,203.0	7.3	6.6	102.28	-103.8	-234.8	240.8	226.9	13.93	17.287	
3,300.0	3,294.5	3,302.4	3,300.6	7.6	6.8	103.92	-104.3	-231.6	239.1	224.8	14.38	16.625	
3,400.0	3,394.2	3,400.7	3,398.9	7.8	7.0	105.48	-105.0	-229.3	238.5	223.6	14.84	16.070	
3,500.0	3,494.0	3,500.4	3,498.5	8.1	7.3	106.98	-106.0	-227.4	238.3	223.0	15.30	15.578	
3,600.0	3,593.7	3,601.0	3,599.1	8.4	7.5	108.49	-107.1	-225.4	238.1	222.4	15.75	15.116	
3,700.0	3,693.5	3,702.0	3,700.0	8.6	7.7	110.09	-108.0	-222.7	237.7	221.5	16.20	14.670	
3,800.0	3,793.3	3,802.7	3,800.7	8.9	7.9	111.85	-108.5	-219.4	237.0	220.3	16.65	14.235	
3,900.0	3,893.0	3,902.6	3,900.5	9.1	8.1	113.74	-108.5	-215.7	236.2	219.1	17.09	13.826	
3,925.7	3,918.7	3,926.9	3,924.8	9.2	8.1	114.21	-108.5	-214.9	236.1	218.9	17.20	13.731	ES
4,000.0	3,992.8	3,995.0	3,992.9	9.4	8.3	115.28	-108.8	-213.8	237.1	219.6	17.51	13.539	
4,100.0	4,092.5	4,094.2	4,092.1	9.7	8.5	116.48	-109.9	-214.4	240.2	222.2	17.96	13.372	
4,200.0	4,192.3	4,194.4	4,192.3	9.9	8.7	117.72	-110.9	-214.7	243.2	224.8	18.41	13.210	
4,300.0	4,292.0	4,294.0	4,291.9	10.2	8.9	118.89	-112.0	-215.0	246.3	227.4	18.86	13.058	
4,400.0	4,391.8	4,393.3	4,391.2	10.4	9.1	119.94	-113.3	-215.7	249.6	230.3	19.31	12.926	
4,500.0	4,491.6	4,492.6	4,490.4	10.7	9.3	120.89	-114.9	-216.7	253.3	233.5	19.76	12.818	
4,600.0	4,591.3	4,594.1	4,591.9	11.0	9.5	121.61	-117.4	-218.0	256.8	236.6	20.22	12.699	
4,700.0	4,691.1	4,694.3	4,692.1	11.2	9.8	122.07	-121.0	-219.5	259.8	239.1	20.69	12.558	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 11-0241H (Existing) - Existing - Existing

Offset Site Error: 0.0 usft

Survey Program: 132-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
4,800.0	4,790.8	4,790.9	4,788.6	11.5	10.0	122.34	-124.8	-221.8	263.5	242.3	21.15	12.460	
4,900.0	4,890.6	4,888.9	4,886.5	11.8	10.2	123.21	-125.6	-223.8	268.6	247.0	21.59	12.441	
5,000.0	4,990.3	4,987.3	4,984.9	12.0	10.4	124.70	-124.1	-223.7	273.2	251.2	22.01	12.412 SF	
5,100.0	5,090.1	5,076.8	5,074.2	12.3	10.5	126.35	-119.6	-225.0	281.3	258.9	22.41	12.556	
5,200.0	5,189.9	5,177.7	5,175.0	12.5	10.8	128.17	-113.7	-227.1	290.7	267.9	22.82	12.738	
5,300.0	5,289.6	5,277.7	5,274.8	12.8	11.0	129.72	-108.8	-229.1	299.8	276.5	23.24	12.897	
5,400.0	5,389.2	5,354.0	5,350.9	13.1	11.1	130.59	-103.0	-231.4	313.0	289.4	23.58	13.270	
5,500.0	5,486.0	5,418.0	5,413.5	13.5	11.2	131.21	-90.5	-233.9	345.7	322.0	23.69	14.591	
5,600.0	5,576.3	5,469.4	5,462.5	14.1	11.3	130.59	-74.9	-235.1	399.3	375.6	23.66	16.876	
5,700.0	5,656.8	5,505.4	5,495.9	14.9	11.4	126.21	-61.7	-235.4	470.4	446.4	24.00	19.599	
5,800.0	5,724.6	5,528.0	5,516.6	15.8	11.4	115.30	-52.5	-235.5	554.2	528.6	25.68	21.581	
5,900.0	5,777.2	5,528.0	5,516.6	17.0	11.4	91.59	-52.5	-235.5	645.4	616.8	28.58	22.582	
6,000.0	5,812.6	5,528.0	5,516.6	18.3	11.4	63.45	-52.5	-235.5	738.9	711.7	27.18	27.191	
6,100.0	5,829.5	5,515.4	5,505.1	19.8	11.4	41.25	-57.7	-235.4	831.0	809.5	21.51	38.633	
6,200.0	5,831.0	5,496.0	5,487.3	21.2	11.4	34.51	-65.3	-235.3	920.0	900.3	19.68	46.740	
6,300.0	5,831.0	5,482.1	5,474.4	22.6	11.3	33.57	-70.4	-235.2	1,010.0	989.8	20.15	50.128	
6,400.0	5,831.0	5,464.0	5,457.4	24.0	11.3	32.40	-76.8	-235.0	1,101.2	1,080.6	20.53	53.647	
6,500.0	5,831.0	5,464.0	5,457.4	25.5	11.3	32.47	-76.8	-235.0	1,193.4	1,171.9	21.50	55.508	
6,600.0	5,831.0	5,444.5	5,439.0	27.0	11.3	31.27	-83.0	-234.7	1,286.4	1,264.5	21.89	58.769	
6,700.0	5,831.0	5,433.0	5,428.0	28.6	11.2	30.62	-86.4	-234.4	1,380.2	1,357.6	22.54	61.225	
6,800.0	5,831.0	5,433.0	5,428.0	30.2	11.2	30.71	-86.4	-234.4	1,474.7	1,451.1	23.59	62.509	
6,900.0	5,831.0	5,433.0	5,428.0	31.9	11.2	30.80	-86.4	-234.4	1,569.8	1,545.1	24.70	63.544	
7,000.0	5,831.0	5,415.3	5,410.9	33.6	11.2	29.72	-91.2	-233.9	1,665.1	1,640.0	25.14	66.227	
7,100.0	5,831.0	5,401.0	5,397.0	35.4	11.2	28.87	-94.6	-233.4	1,761.1	1,735.4	25.71	68.509	
7,200.0	5,831.0	5,401.0	5,397.0	37.1	11.2	28.87	-94.6	-233.4	1,857.3	1,830.5	26.79	69.329	
7,300.0	5,831.0	5,401.0	5,397.0	38.9	11.2	28.87	-94.6	-233.4	1,953.9	1,926.0	27.88	70.079	
7,400.0	5,831.0	5,401.0	5,397.0	40.7	11.2	28.87	-94.6	-233.4	2,050.8	2,021.8	28.98	70.766	
7,500.0	5,831.0	5,401.0	5,397.0	42.5	11.2	28.87	-94.6	-233.4	2,147.9	2,117.8	30.08	71.397	
7,600.0	5,831.0	5,386.7	5,383.0	44.3	11.2	28.05	-97.5	-232.8	2,245.1	2,214.5	30.60	73.361	
7,700.0	5,831.0	5,382.7	5,379.2	46.2	11.2	27.83	-98.3	-232.7	2,342.6	2,311.1	31.54	74.278	
7,800.0	5,831.0	5,369.0	5,365.7	48.0	11.1	27.08	-100.7	-232.1	2,440.4	2,408.4	32.06	76.113	
7,900.0	5,831.0	5,369.0	5,365.7	49.8	11.1	27.08	-100.7	-232.1	2,538.2	2,505.1	33.15	76.568	
8,000.0	5,831.0	5,369.0	5,365.7	51.7	11.1	27.08	-100.7	-232.1	2,636.2	2,601.9	34.24	76.992	
8,100.0	5,831.0	5,369.0	5,365.7	53.5	11.1	27.08	-100.7	-232.1	2,734.2	2,698.9	35.33	77.388	
8,200.0	5,831.0	5,369.0	5,365.7	55.4	11.1	27.08	-100.7	-232.1	2,832.5	2,796.0	36.43	77.759	
8,300.0	5,831.0	5,369.0	5,365.7	57.3	11.1	27.08	-100.7	-232.1	2,930.8	2,893.3	37.52	78.106	
8,400.0	5,831.0	5,369.0	5,365.7	59.1	11.1	27.08	-100.7	-232.1	3,029.3	2,990.7	38.62	78.432	
8,500.0	5,831.0	5,369.0	5,365.7	61.0	11.1	27.08	-100.7	-232.1	3,127.8	3,088.1	39.72	78.739	
8,600.0	5,831.0	5,369.0	5,365.7	62.9	11.1	27.08	-100.7	-232.1	3,226.5	3,185.6	40.83	79.029	
8,700.0	5,831.0	5,369.0	5,365.7	64.7	11.1	27.08	-100.7	-232.1	3,325.2	3,283.3	41.93	79.302	
8,800.0	5,831.0	5,369.0	5,365.7	66.6	11.1	27.08	-100.7	-232.1	3,424.0	3,380.9	43.04	79.561	
8,900.0	5,831.0	5,353.9	5,350.7	68.5	11.1	26.29	-103.0	-231.4	3,522.6	3,479.2	43.36	81.243	
9,000.0	5,831.0	5,352.4	5,349.2	70.4	11.1	26.21	-103.2	-231.4	3,621.4	3,577.1	44.37	81.616	
9,100.0	5,831.0	5,337.0	5,334.0	72.3	11.1	25.46	-104.9	-230.7	3,720.6	3,675.9	44.68	83.272	
9,200.0	5,831.0	5,337.0	5,334.0	74.1	11.1	25.46	-104.9	-230.7	3,819.5	3,773.8	45.76	83.476	
9,300.0	5,831.0	5,337.0	5,334.0	76.0	11.1	25.46	-104.9	-230.7	3,918.5	3,871.7	46.83	83.670	
9,400.0	5,831.0	5,337.0	5,334.0	77.9	11.1	25.46	-104.9	-230.7	4,017.5	3,969.6	47.91	83.856	
9,500.0	5,831.0	5,337.0	5,334.0	79.8	11.1	25.46	-104.9	-230.7	4,116.6	4,067.6	48.99	84.032	
9,600.0	5,831.0	5,337.0	5,334.0	81.7	11.1	25.46	-104.9	-230.7	4,215.8	4,165.7	50.07	84.201	
9,700.0	5,831.0	5,337.0	5,334.0	83.6	11.1	25.46	-104.9	-230.7	4,314.9	4,263.8	51.15	84.363	
9,800.0	5,831.0	5,337.0	5,334.0	85.5	11.1	25.46	-104.9	-230.7	4,414.1	4,361.9	52.23	84.517	
9,900.0	5,831.0	5,337.0	5,334.0	87.4	11.1	25.46	-104.9	-230.7	4,513.4	4,460.1	53.31	84.665	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 11-0241H (Existing) - Existing - Existing

Survey Program: 132-ISCWSA MWD

Offset Site Error: 0.0 usft

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
10,000.0	5,831.0	5,337.0	5,334.0	89.3	11.1	25.46	-104.9	-230.7	4,612.6	4,558.2	54.39	84.807	
10,100.0	5,831.0	5,337.0	5,334.0	91.2	11.1	25.46	-104.9	-230.7	4,711.9	4,656.5	55.47	84.944	
10,200.0	5,831.0	5,337.0	5,334.0	93.1	11.1	25.46	-104.9	-230.7	4,811.3	4,754.7	56.55	85.075	
10,300.0	5,831.0	5,337.0	5,334.0	95.0	11.1	25.46	-104.9	-230.7	4,910.6	4,853.0	57.64	85.200	
10,400.0	5,831.0	5,337.0	5,334.0	96.9	11.1	25.46	-104.9	-230.7	5,010.0	4,951.3	58.72	85.321	
10,500.0	5,831.0	5,337.0	5,334.0	98.8	11.1	25.46	-104.9	-230.7	5,109.4	5,049.6	59.80	85.438	
10,600.0	5,831.0	5,337.0	5,334.0	100.7	11.1	25.46	-104.9	-230.7	5,208.8	5,148.0	60.89	85.550	
10,700.0	5,831.0	5,337.0	5,334.0	102.6	11.1	25.46	-104.9	-230.7	5,308.3	5,246.3	61.97	85.658	
10,800.0	5,831.0	5,337.0	5,334.0	104.5	11.1	25.46	-104.9	-230.7	5,407.8	5,344.7	63.06	85.762	
10,900.0	5,831.0	5,337.0	5,334.0	106.4	11.1	25.46	-104.9	-230.7	5,507.3	5,443.1	64.14	85.863	
11,000.0	5,831.0	5,337.0	5,334.0	108.3	11.1	25.46	-104.9	-230.7	5,606.8	5,541.5	65.23	85.960	
11,100.0	5,831.0	5,337.0	5,334.0	110.2	11.1	25.46	-104.9	-230.7	5,706.3	5,640.0	66.31	86.054	
11,200.0	5,831.0	5,337.0	5,334.0	112.1	11.1	25.46	-104.9	-230.7	5,805.8	5,738.4	67.40	86.145	
11,300.0	5,831.0	5,337.0	5,334.0	114.0	11.1	25.46	-104.9	-230.7	5,905.4	5,836.9	68.48	86.233	
11,400.0	5,831.0	5,337.0	5,334.0	115.9	11.1	25.46	-104.9	-230.7	6,005.0	5,935.4	69.57	86.318	
11,500.0	5,831.0	5,337.0	5,334.0	117.8	11.1	25.46	-104.9	-230.7	6,104.6	6,033.9	70.65	86.400	
11,600.0	5,831.0	5,337.0	5,334.0	119.7	11.1	25.46	-104.9	-230.7	6,204.2	6,132.4	71.74	86.480	
11,700.0	5,831.0	5,337.0	5,334.0	121.6	11.1	25.46	-104.9	-230.7	6,303.8	6,230.9	72.83	86.558	
11,800.0	5,831.0	5,337.0	5,334.0	123.6	11.1	25.46	-104.9	-230.7	6,403.4	6,329.5	73.91	86.633	
11,900.0	5,831.0	5,322.3	5,319.4	125.5	11.0	24.77	-106.2	-230.2	6,502.9	6,429.0	73.89	88.006	
12,000.0	5,831.0	5,321.6	5,318.6	127.4	11.0	24.74	-106.3	-230.2	6,602.5	6,527.6	74.91	88.143	
12,100.0	5,831.0	5,320.8	5,317.9	129.3	11.0	24.70	-106.3	-230.2	6,702.1	6,626.2	75.92	88.275	
12,200.0	5,831.0	5,320.1	5,317.2	131.2	11.0	24.67	-106.4	-230.2	6,801.8	6,724.8	76.94	88.403	
12,300.0	5,831.0	5,305.0	5,302.1	133.1	11.0	24.01	-107.4	-229.7	6,901.6	6,824.7	76.89	89.762	
12,400.0	5,831.0	5,305.0	5,302.1	135.0	11.0	24.01	-107.4	-229.7	7,001.3	6,923.3	77.94	89.823	
12,500.0	5,831.0	5,305.0	5,302.1	136.9	11.0	24.01	-107.4	-229.7	7,100.9	7,021.9	79.00	89.883	
12,600.0	5,831.0	5,305.0	5,302.1	138.8	11.0	24.01	-107.4	-229.7	7,200.6	7,120.5	80.06	89.940	
12,700.0	5,831.0	5,305.0	5,302.1	140.7	11.0	24.01	-107.4	-229.7	7,300.3	7,219.2	81.12	89.997	
12,800.0	5,831.0	5,305.0	5,302.1	142.7	11.0	24.01	-107.4	-229.7	7,400.0	7,317.8	82.18	90.051	
12,900.0	5,831.0	5,305.0	5,302.1	144.6	11.0	24.01	-107.4	-229.7	7,499.7	7,416.4	83.23	90.105	
13,000.0	5,831.0	5,305.0	5,302.1	146.5	11.0	24.01	-107.4	-229.7	7,599.4	7,515.1	84.29	90.157	
13,100.0	5,831.0	5,305.0	5,302.1	148.4	11.0	24.01	-107.4	-229.7	7,699.1	7,613.7	85.35	90.207	
13,200.0	5,831.0	5,305.0	5,302.1	150.3	11.0	24.01	-107.4	-229.7	7,798.8	7,712.4	86.41	90.257	
13,300.0	5,831.0	5,305.0	5,302.1	152.2	11.0	24.01	-107.4	-229.7	7,898.5	7,811.1	87.47	90.305	
13,400.0	5,831.0	5,305.0	5,302.1	154.1	11.0	24.01	-107.4	-229.7	7,998.3	7,909.7	88.52	90.352	
13,500.0	5,831.0	5,305.0	5,302.1	156.1	11.0	24.01	-107.4	-229.7	8,098.0	8,008.4	89.58	90.398	
13,600.0	5,831.0	5,305.0	5,302.1	158.0	11.0	24.01	-107.4	-229.7	8,197.8	8,107.1	90.64	90.443	
13,650.7	5,831.0	5,305.0	5,302.1	158.9	11.0	24.01	-107.4	-229.7	8,248.3	8,157.1	91.18	90.465	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 14-1143H (EXISTING) - EXISTING - EXISTING

Offset Site Error: 0.0 usft

Survey Program: 205-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	12,608.0	5,883.8	0.0	125.1	-166.47	-1,177.0	-283.2	6,024.8				
100.0	100.0	12,608.0	5,883.8	0.1	125.1	-166.47	-1,177.0	-283.2	5,926.9	5,893.2	33.75	175.605	
200.0	200.0	12,608.0	5,883.8	0.3	125.1	-166.47	-1,177.0	-283.2	5,829.1	5,795.1	33.98	171.563	
300.0	300.0	12,608.0	5,883.8	0.5	125.1	-166.47	-1,177.0	-283.2	5,731.3	5,697.1	34.20	167.576	
400.0	400.0	12,608.0	5,883.8	0.8	125.1	-166.47	-1,177.0	-283.2	5,633.6	5,599.1	34.43	163.644	
500.0	500.0	12,608.0	5,883.8	1.0	125.1	-166.47	-1,177.0	-283.2	5,535.9	5,501.3	34.65	159.765	
600.0	600.0	12,608.0	5,883.8	1.2	125.1	-166.47	-1,177.0	-283.2	5,438.4	5,403.5	34.88	155.939	
700.0	700.0	12,608.0	5,883.8	1.4	125.1	-166.47	-1,177.0	-283.2	5,341.0	5,305.9	35.10	152.164	
800.0	800.0	12,608.0	5,883.8	1.7	125.1	-166.47	-1,177.0	-283.2	5,243.6	5,208.3	35.32	148.440	
900.0	900.0	12,608.0	5,883.8	1.9	125.1	-166.47	-1,177.0	-283.2	5,146.4	5,110.8	35.55	144.766	
1,000.0	1,000.0	12,608.0	5,883.8	2.1	125.1	16.06	-1,177.0	-283.2	5,048.8	5,005.3	43.53	115.996	
1,100.0	1,099.8	12,608.0	5,883.8	2.3	125.1	19.15	-1,177.0	-283.2	4,950.7	4,901.2	49.52	99.974	
1,200.0	1,199.6	12,608.0	5,883.8	2.5	125.1	19.15	-1,177.0	-283.2	4,852.3	4,802.6	49.71	97.621	
1,300.0	1,299.4	12,608.0	5,883.8	2.7	125.1	19.15	-1,177.0	-283.2	4,754.0	4,704.1	49.90	95.273	
1,400.0	1,399.1	12,608.0	5,883.8	2.9	125.1	19.15	-1,177.0	-283.2	4,655.8	4,605.7	50.10	92.932	
1,500.0	1,498.9	12,608.0	5,883.8	3.1	125.1	19.15	-1,177.0	-283.2	4,557.6	4,507.3	50.30	90.603	
1,600.0	1,598.6	12,608.0	5,883.8	3.3	125.1	19.15	-1,177.0	-283.2	4,459.6	4,409.0	50.51	88.288	
1,700.0	1,698.4	12,608.0	5,883.8	3.6	125.1	19.15	-1,177.0	-283.2	4,361.6	4,310.8	50.72	85.987	
1,800.0	1,798.1	12,608.0	5,883.8	3.8	125.1	19.15	-1,177.0	-283.2	4,263.7	4,212.7	50.94	83.703	
1,900.0	1,897.9	12,608.0	5,883.8	4.0	125.1	19.15	-1,177.0	-283.2	4,165.9	4,114.7	51.15	81.437	
2,000.0	1,997.6	12,608.0	5,883.8	4.3	125.1	19.15	-1,177.0	-283.2	4,068.2	4,016.8	51.37	79.189	
2,100.0	2,097.4	12,608.0	5,883.8	4.5	125.1	19.15	-1,177.0	-283.2	3,970.6	3,919.0	51.59	76.960	
2,200.0	2,197.2	12,608.0	5,883.8	4.8	125.1	19.15	-1,177.0	-283.2	3,873.1	3,821.3	51.81	74.750	
2,300.0	2,296.9	12,608.0	5,883.8	5.0	125.1	19.15	-1,177.0	-283.2	3,775.8	3,723.8	52.04	72.559	
2,400.0	2,396.7	12,608.0	5,883.8	5.3	125.1	19.15	-1,177.0	-283.2	3,678.7	3,626.4	52.26	70.389	
2,500.0	2,496.4	12,608.0	5,883.8	5.5	125.1	19.15	-1,177.0	-283.2	3,581.6	3,529.1	52.49	68.239	
2,600.0	2,596.2	12,608.0	5,883.8	5.8	125.1	19.15	-1,177.0	-283.2	3,484.8	3,432.1	52.71	66.110	
2,700.0	2,695.9	12,608.0	5,883.8	6.0	125.1	19.15	-1,177.0	-283.2	3,388.1	3,335.2	52.94	64.002	
2,800.0	2,795.7	12,608.0	5,883.8	6.3	125.1	19.15	-1,177.0	-283.2	3,291.6	3,238.5	53.16	61.914	
2,900.0	2,895.5	12,608.0	5,883.8	6.5	125.1	19.15	-1,177.0	-283.2	3,195.4	3,142.0	53.39	59.848	
3,000.0	2,995.2	12,608.0	5,883.8	6.8	125.1	19.15	-1,177.0	-283.2	3,099.4	3,045.8	53.62	57.803	
3,100.0	3,095.0	12,608.0	5,883.8	7.1	125.1	19.15	-1,177.0	-283.2	3,003.6	2,949.8	53.85	55.779	
3,200.0	3,194.7	12,608.0	5,883.8	7.3	125.1	19.15	-1,177.0	-283.2	2,908.2	2,854.1	54.08	53.778	
3,300.0	3,294.5	12,608.0	5,883.8	7.6	125.1	19.15	-1,177.0	-283.2	2,813.0	2,758.7	54.31	51.799	
3,400.0	3,394.2	12,608.0	5,883.8	7.8	125.1	19.15	-1,177.0	-283.2	2,718.2	2,663.7	54.54	49.843	
3,500.0	3,494.0	12,608.0	5,883.8	8.1	125.1	19.15	-1,177.0	-283.2	2,623.8	2,569.0	54.77	47.910	
3,600.0	3,593.7	12,608.0	5,883.8	8.4	125.1	19.15	-1,177.0	-283.2	2,529.8	2,474.8	54.99	46.000	
3,700.0	3,693.5	12,608.0	5,883.8	8.6	125.1	19.15	-1,177.0	-283.2	2,436.3	2,381.0	55.23	44.115	
3,800.0	3,793.3	12,608.0	5,883.8	8.9	125.1	19.15	-1,177.0	-283.2	2,343.3	2,287.8	55.46	42.255	
3,900.0	3,893.0	12,608.0	5,883.8	9.1	125.1	19.15	-1,177.0	-283.2	2,250.9	2,195.2	55.69	40.422	
4,000.0	3,992.8	12,608.0	5,883.8	9.4	125.1	19.15	-1,177.0	-283.2	2,159.2	2,103.3	55.92	38.615	
4,100.0	4,092.5	12,608.0	5,883.8	9.7	125.1	19.15	-1,177.0	-283.2	2,068.3	2,012.1	56.15	36.837	
4,200.0	4,192.3	12,608.0	5,883.8	9.9	125.1	19.15	-1,177.0	-283.2	1,978.2	1,921.9	56.38	35.088	
4,300.0	4,292.0	12,608.0	5,883.8	10.2	125.1	19.15	-1,177.0	-283.2	1,889.2	1,832.6	56.61	33.372	
4,400.0	4,391.8	12,608.0	5,883.8	10.4	125.1	19.15	-1,177.0	-283.2	1,801.3	1,744.5	56.84	31.690	
4,500.0	4,491.6	12,608.0	5,883.8	10.7	125.1	19.15	-1,177.0	-283.2	1,714.7	1,657.7	57.07	30.044	
4,600.0	4,591.3	12,608.0	5,883.8	11.0	125.1	19.15	-1,177.0	-283.2	1,629.7	1,572.4	57.30	28.439	
4,700.0	4,691.1	12,608.0	5,883.8	11.2	125.1	19.15	-1,177.0	-283.2	1,546.4	1,488.9	57.54	26.878	
4,800.0	4,790.8	12,608.0	5,883.8	11.5	125.1	19.15	-1,177.0	-283.2	1,465.3	1,407.5	57.77	25.365	
4,900.0	4,890.6	12,608.0	5,883.8	11.8	125.1	19.15	-1,177.0	-283.2	1,386.6	1,328.6	58.00	23.907	
5,000.0	4,990.3	12,608.0	5,883.8	12.0	125.1	19.15	-1,177.0	-283.2	1,310.9	1,252.6	58.23	22.511	
5,100.0	5,090.1	12,608.0	5,883.8	12.3	125.1	19.15	-1,177.0	-283.2	1,238.5	1,180.1	58.46	21.184	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 14-1143H (EXISTING) - EXISTING - EXISTING

Offset Site Error: 0.0 usft

Survey Program: 205-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	5,189.9	12,608.0	5,883.8	12.5	125.1	19.15	-1,177.0	-283.2	1,170.3	1,111.6	58.70	19.938	
5,300.0	5,289.6	12,608.0	5,883.8	12.8	125.1	19.15	-1,177.0	-283.2	1,106.9	1,047.9	58.93	18.783	
5,400.0	5,389.2	12,608.0	5,883.8	13.1	125.1	20.32	-1,177.0	-283.2	1,047.8	986.3	61.54	17.027	
5,500.0	5,486.0	12,608.0	5,883.8	13.5	125.1	23.85	-1,177.0	-283.2	982.9	913.8	69.12	14.220	
5,600.0	5,576.3	12,608.0	5,883.8	14.1	125.1	28.97	-1,177.0	-283.2	910.6	831.4	79.15	11.504	
5,700.0	5,656.8	12,608.0	5,883.8	14.9	125.1	36.51	-1,177.0	-283.2	832.0	740.0	91.99	9.045	
5,800.0	5,724.6	12,608.0	5,883.8	15.8	125.1	47.63	-1,177.0	-283.2	748.6	638.8	109.76	6.820	
5,900.0	5,777.2	12,608.0	5,883.8	17.0	125.1	63.16	-1,177.0	-283.2	662.1	532.9	129.18	5.125	
6,000.0	5,812.6	12,608.0	5,883.8	18.3	125.1	81.59	-1,177.0	-283.2	575.1	432.9	142.17	4.045	
6,100.0	5,829.5	12,608.0	5,883.8	19.8	125.1	98.50	-1,177.0	-283.2	491.2	347.7	143.55	3.422	
6,200.0	5,831.0	12,608.0	5,883.8	21.2	125.1	103.82	-1,177.0	-283.2	415.9	273.1	142.74	2.913	
6,300.0	5,831.0	12,608.0	5,883.8	22.6	125.1	103.83	-1,177.0	-283.2	353.1	209.1	144.05	2.451	
6,400.0	5,831.0	12,608.0	5,883.8	24.0	125.1	103.84	-1,177.0	-283.2	310.5	165.1	145.44	2.135	
6,500.0	5,831.0	12,594.3	5,883.8	25.5	124.9	103.85	-1,190.6	-282.9	296.6	149.9	146.65	2.022	
6,600.0	5,831.0	12,496.2	5,883.2	27.0	123.1	103.81	-1,288.8	-281.3	295.1	148.7	146.44	2.015	
6,700.0	5,831.0	12,390.2	5,880.5	28.6	121.2	103.38	-1,394.7	-279.5	293.0	146.6	146.36	2.002	
6,800.0	5,831.0	12,280.7	5,877.7	30.2	119.3	103.04	-1,504.1	-275.0	288.5	142.3	146.23	1.973	
6,900.0	5,831.0	12,181.8	5,876.2	31.9	117.5	103.03	-1,602.7	-268.5	281.8	135.6	146.16	1.928	
7,000.0	5,831.0	12,089.0	5,878.1	33.6	115.8	103.62	-1,695.4	-264.0	277.4	131.5	145.88	1.902	
7,100.0	5,831.0	11,990.8	5,878.6	35.4	114.1	103.91	-1,793.6	-260.4	274.1	128.3	145.71	1.881	
7,200.0	5,831.0	11,897.5	5,879.0	37.1	112.4	104.09	-1,886.8	-258.4	272.0	126.3	145.70	1.867	
7,300.0	5,831.0	11,799.2	5,879.6	38.9	110.6	104.22	-1,985.1	-258.1	271.8	126.2	145.63	1.867	
7,400.0	5,831.0	11,698.2	5,878.9	40.7	108.8	104.10	-2,086.1	-257.7	271.4	125.7	145.66	1.863	
7,485.8	5,831.0	11,613.7	5,877.0	42.3	107.3	103.70	-2,170.6	-258.0	271.1	125.2	145.91	1.858	
7,500.0	5,831.0	11,600.3	5,876.8	42.5	107.0	103.65	-2,183.9	-258.0	271.1	125.1	145.96	1.857	
7,600.0	5,831.0	11,504.7	5,878.4	44.3	105.4	103.94	-2,279.5	-259.0	272.5	126.5	145.94	1.867	
7,700.0	5,831.0	11,405.1	5,879.8	46.2	103.6	104.12	-2,379.1	-260.8	274.6	128.7	145.88	1.882	
7,800.0	5,831.0	11,297.1	5,878.1	48.0	101.7	103.70	-2,487.0	-262.4	275.6	129.6	146.03	1.887	
7,900.0	5,831.0	11,193.9	5,876.0	49.8	99.8	103.34	-2,590.3	-261.4	274.2	128.0	146.20	1.876	
8,000.0	5,831.0	11,097.0	5,872.6	51.7	98.1	102.68	-2,687.1	-260.5	272.6	125.9	146.66	1.859	
8,100.0	5,831.0	10,998.7	5,869.9	53.5	96.4	102.13	-2,785.4	-260.4	271.8	124.8	147.03	1.849	
8,120.2	5,831.0	10,980.0	5,869.4	53.9	96.0	102.01	-2,804.1	-260.5	271.8	124.7	147.12	1.848	
8,200.0	5,831.0	10,900.4	5,867.3	55.4	94.6	101.56	-2,883.7	-261.1	272.0	124.6	147.40	1.845	
8,300.0	5,831.0	10,795.6	5,865.1	57.3	92.8	101.10	-2,988.4	-261.3	271.8	124.2	147.61	1.841	
8,400.0	5,831.0	10,689.2	5,861.6	59.1	90.9	100.46	-3,094.7	-258.9	268.9	121.1	147.84	1.819	
8,500.0	5,831.0	10,586.6	5,858.3	61.0	89.0	99.95	-3,197.2	-254.2	263.9	115.8	148.08	1.782	
8,600.0	5,831.0	10,492.6	5,856.5	62.9	87.3	99.67	-3,291.1	-251.4	260.5	112.2	148.36	1.756	
8,700.0	5,831.0	10,394.6	5,853.8	64.7	85.6	99.14	-3,389.0	-249.7	258.4	109.7	148.67	1.738	
8,800.0	5,831.0	10,289.7	5,850.6	66.6	83.7	98.53	-3,493.8	-246.7	255.0	106.1	148.91	1.713	
8,900.0	5,831.0	10,198.2	5,850.0	68.5	82.1	98.45	-3,585.3	-245.3	253.4	104.2	149.20	1.698	
9,000.0	5,831.0	10,096.2	5,850.8	70.4	80.3	98.64	-3,687.3	-245.0	253.2	104.0	149.19	1.697	
9,100.0	5,831.0	9,991.8	5,849.1	72.3	78.5	98.31	-3,791.7	-243.3	251.4	102.0	149.38	1.683	
9,200.0	5,831.0	9,893.0	5,848.7	74.1	76.8	98.30	-3,890.5	-240.8	248.8	99.2	149.55	1.664	
9,300.0	5,831.0	9,794.4	5,849.4	76.0	75.1	98.53	-3,989.0	-238.9	247.0	97.3	149.66	1.650	
9,400.0	5,831.0	9,691.9	5,852.1	77.9	73.3	99.25	-4,091.4	-235.7	244.3	94.8	149.49	1.634	
9,500.0	5,831.0	9,597.1	5,856.2	79.8	71.6	100.32	-4,186.1	-233.4	242.6	93.3	149.27	1.625	
9,600.0	5,831.0	9,497.0	5,859.3	81.7	69.8	101.09	-4,286.1	-232.0	241.8	92.7	149.07	1.622	
9,649.5	5,831.0	9,448.9	5,860.9	82.6	69.0	101.48	-4,334.2	-231.5	241.6	92.5	149.12	1.620	
9,700.0	5,831.0	9,401.0	5,862.9	83.6	68.1	101.97	-4,382.1	-231.3	241.8	92.8	149.06	1.623	
9,800.0	5,831.0	9,303.6	5,866.9	85.5	66.4	102.85	-4,479.4	-232.0	243.4	94.5	148.93	1.634	
9,900.0	5,831.0	9,199.2	5,869.7	87.4	64.6	103.37	-4,583.7	-234.3	246.2	97.3	148.87	1.654	
10,000.0	5,831.0	9,096.1	5,870.7	89.3	62.7	103.67	-4,686.8	-233.0	245.2	96.2	148.92	1.646	

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 #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor 14-1143H (EXISTING) - EXISTING - EXISTING

Offset Site Error: 0.0 usft

Survey Program: 205-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
10,031.2	5,831.0	9,067.0	5,871.0	89.9	62.2	103.76	-4,715.9	-232.7	245.0	96.0	149.06	1.644	
10,100.0	5,831.0	9,005.8	5,873.0	91.2	61.2	104.16	-4,777.1	-233.2	246.1	96.9	149.13	1.650	
10,200.0	5,831.0	8,899.8	5,877.5	93.1	59.3	105.09	-4,883.0	-234.6	248.4	99.6	148.74	1.670	
10,282.0	5,831.0	8,816.0	5,878.9	94.6	57.8	105.45	-4,966.7	-233.9	248.1	99.3	148.75	1.668	
10,300.0	5,831.0	8,799.5	5,879.0	95.0	57.5	105.49	-4,983.2	-233.9	248.1	99.4	148.78	1.668	
10,400.0	5,831.0	8,696.7	5,878.1	96.9	55.7	105.22	-5,086.0	-234.7	248.7	99.5	149.21	1.667	
10,500.0	5,831.0	8,594.7	5,876.9	98.8	54.0	105.02	-5,188.0	-233.8	247.5	97.8	149.65	1.654	
10,600.0	5,831.0	8,494.9	5,877.4	100.7	52.3	105.24	-5,287.8	-231.9	245.8	95.9	149.87	1.640	
10,700.0	5,831.0	8,395.0	5,879.7	102.6	50.5	105.90	-5,387.6	-229.6	244.2	94.4	149.80	1.630	
10,800.0	5,831.0	8,295.6	5,882.3	104.5	48.8	106.60	-5,487.0	-228.2	243.5	93.9	149.65	1.627	
10,850.4	5,831.0	8,247.5	5,883.3	105.4	48.0	106.84	-5,535.1	-227.6	243.2	93.5	149.73	1.624	
10,900.0	5,831.0	8,199.6	5,884.5	106.4	47.1	107.14	-5,583.0	-227.5	243.5	93.8	149.70	1.627	
11,000.0	5,831.0	8,097.6	5,886.0	108.3	45.3	107.46	-5,684.9	-227.5	244.0	94.2	149.73	1.629	
11,100.0	5,831.0	7,989.9	5,885.7	110.2	43.5	107.44	-5,792.7	-226.9	243.3	93.4	149.92	1.623	
11,200.0	5,831.0	7,890.2	5,883.5	112.1	41.8	107.16	-5,892.2	-223.8	239.7	89.2	150.48	1.593	
11,300.0	5,831.0	7,796.4	5,882.5	114.0	40.2	107.03	-5,986.0	-222.5	238.1	87.1	151.05	1.576	
11,381.8	5,831.0	7,715.9	5,882.9	115.6	38.9	107.17	-6,066.5	-221.8	237.5	86.2	151.33	1.570	
11,400.0	5,831.0	7,698.7	5,883.3	115.9	38.6	107.27	-6,083.7	-221.7	237.6	86.3	151.32	1.570	
11,500.0	5,831.0	7,596.7	5,884.0	117.8	36.8	107.41	-6,185.7	-221.8	237.8	86.3	151.49	1.570	
11,600.0	5,831.0	7,493.3	5,881.3	119.7	35.1	106.91	-6,289.0	-220.2	235.5	83.4	152.18	1.548	
11,700.0	5,831.0	7,382.7	5,881.3	121.6	33.3	107.24	-6,399.5	-215.5	231.4	79.2	152.24	1.520	
11,800.0	5,831.0	7,285.2	5,881.0	123.6	31.6	107.64	-6,496.8	-209.3	225.4	73.0	152.41	1.479	Level 3
11,900.0	5,831.0	7,187.4	5,880.5	125.5	30.0	107.88	-6,594.5	-204.6	220.6	68.0	152.65	1.445	Level 3
12,000.0	5,831.0	7,093.1	5,879.2	127.4	28.5	107.81	-6,688.7	-201.7	217.2	64.0	153.28	1.417	Level 3
12,049.0	5,831.0	7,048.2	5,880.1	128.3	27.8	108.07	-6,733.7	-201.1	216.9	63.5	153.43	1.414	Level 3
12,100.0	5,831.0	7,001.6	5,881.3	129.3	27.0	108.38	-6,780.2	-201.2	217.4	64.0	153.45	1.417	Level 3
12,200.0	5,831.0	6,908.3	5,884.0	131.2	25.6	108.76	-6,873.4	-204.5	221.6	67.9	153.71	1.442	Level 3
12,300.0	5,831.0	6,794.7	5,883.8	133.1	23.9	108.52	-6,987.0	-206.9	223.6	69.3	154.25	1.449	Level 3
12,400.0	5,831.0	6,689.4	5,883.0	135.0	22.2	108.55	-7,092.3	-204.2	220.9	66.3	154.64	1.429	Level 3
12,500.0	5,831.0	6,592.8	5,881.8	136.9	20.9	108.55	-7,188.7	-200.6	217.0	61.6	155.35	1.397	Level 3
12,544.7	5,831.0	6,552.2	5,882.8	137.8	20.3	108.85	-7,229.4	-199.9	216.6	61.1	155.52	1.393	Level 3, CC, ES
12,600.0	5,831.0	6,500.9	5,884.5	138.8	19.7	109.28	-7,280.6	-199.8	217.1	61.5	155.56	1.395	Level 3
12,700.0	5,831.0	6,410.6	5,887.8	140.7	18.4	109.84	-7,370.8	-202.7	221.3	65.4	155.88	1.420	Level 3
12,800.0	5,831.0	6,307.1	5,888.7	142.7	17.0	109.55	-7,474.1	-208.6	227.0	70.3	156.72	1.448	Level 3
12,900.0	5,831.0	6,199.2	5,886.9	144.6	15.8	108.75	-7,581.8	-213.2	230.6	72.4	158.11	1.458	Level 3
13,000.0	5,831.0	6,094.0	5,870.6	146.5	14.6	104.60	-7,685.5	-217.0	229.5	67.5	161.95	1.417	Level 3
13,016.0	5,831.0	6,078.4	5,866.5	146.8	14.4	103.54	-7,700.6	-218.0	229.5	66.6	162.83	1.409	Level 3
13,100.0	5,831.0	5,995.6	5,838.7	148.4	13.6	96.45	-7,778.3	-223.8	230.4	63.6	166.79	1.381	Level 3, SF
13,200.0	5,831.0	5,897.8	5,792.9	150.3	12.8	85.12	-7,864.4	-228.2	234.9	66.5	168.44	1.395	Level 3
13,300.0	5,831.0	5,817.9	5,746.8	152.2	12.3	74.33	-7,929.6	-230.1	250.4	85.4	164.95	1.518	
13,400.0	5,831.0	5,739.0	5,694.0	154.1	12.0	62.98	-7,988.1	-227.9	278.8	123.0	155.77	1.790	
13,500.0	5,831.0	5,680.5	5,650.7	156.1	11.7	54.49	-8,027.0	-222.1	320.5	174.6	145.95	2.196	
13,600.0	5,831.0	5,639.6	5,618.2	158.0	11.6	48.77	-8,051.3	-217.1	376.4	238.1	138.32	2.721	
13,650.7	5,831.0	5,623.0	5,604.4	158.9	11.6	46.54	-8,060.3	-214.9	409.2	273.9	135.23	3.026	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**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 #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4971.3usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00 W °
Coordinates are relative to: Razor #11H-1415A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.08°