WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S11-T10N-R58W
Well: Razor #11H-1415A
Wellbore: HZ
Design: Plan #1

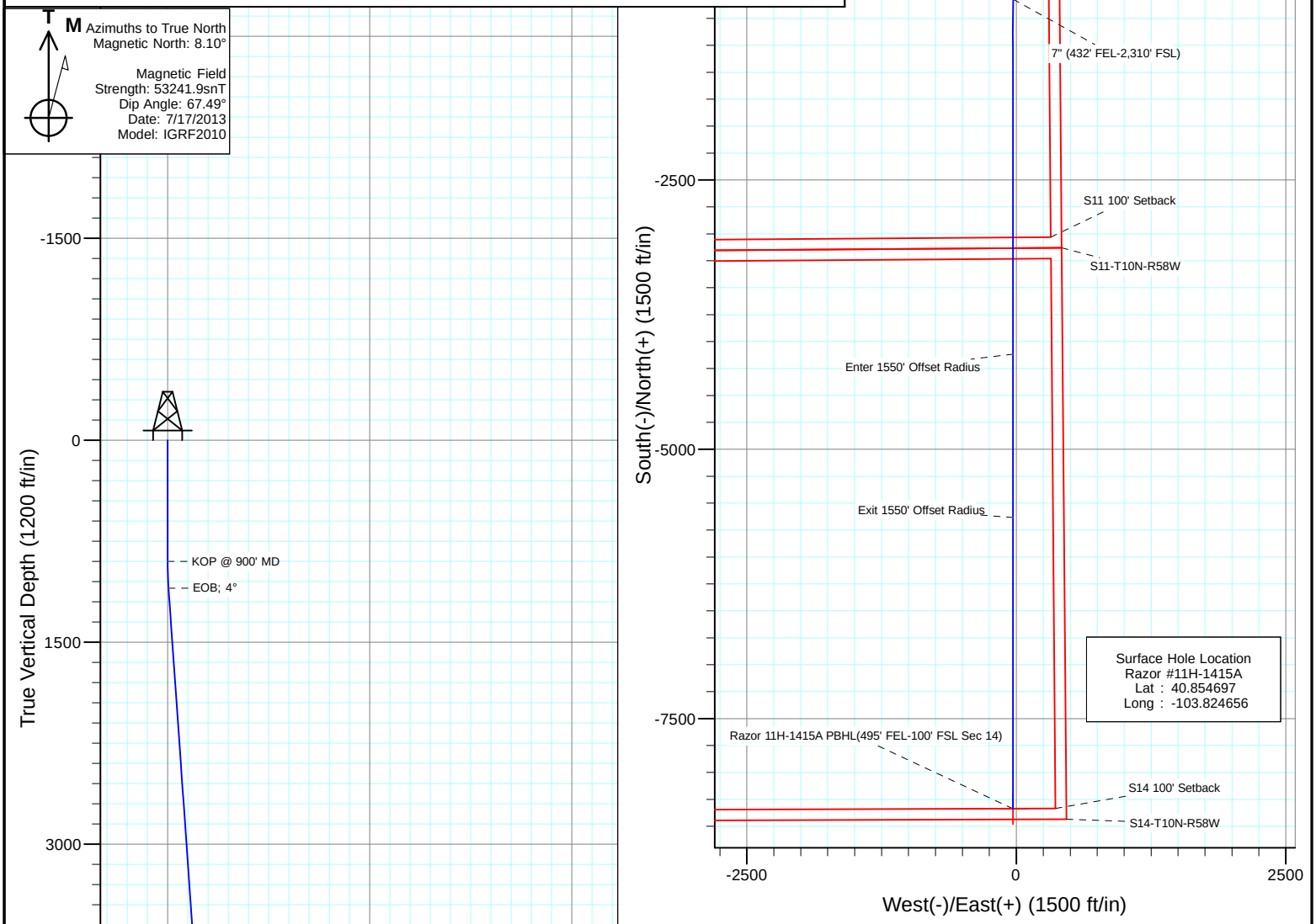
CATHEDRAL

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	182.10	1099.8	-7.0	-0.3	2.00	182.10	7.0	EOB; 4°
4	5357.0	4.00	182.10	5346.5	-303.7	-11.1	0.00	0.00	303.8	Start 11° Build
5	6138.8	90.00	182.10	5831.0	-823.0	-30.2	11.00	0.00	823.1	LP @ 6138' MD
6	6208.8	90.00	180.00	5831.0	-893.0	-31.5	3.00	-90.00	893.1	EOT; 180°
7	13654.3	90.00	180.00	5831.0	-8338.4	-31.5	0.00	0.00	8338.5	PBHL @ 13654' MD

M 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(495' FEL-100' FSL Sec 14)	5831.0	-8338.4	-31.5	1550258.83	3463576.41

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5774.0	5892.9	Top Niobrara

Plan #1
Razor #11H-1415A
WELL @ 4971.3ft (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 @ 4971.3ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

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

Site	S11-T10N-R58W				
Site Position:		**Northing:**	1,558,623.69 ft	**Latitude:**	40.854775
From:	Lat/Long	**Easting:**	3,463,396.85 ft	**Longitude:**	-103.824847
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.08 °

Well	Razor #11H-1415A				
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,558,596.35 ft	**Latitude:**	40.854697
	+E/-W	0.0 ft	**Easting:**	3,463,450.40 ft	**Longitude:**	-103.824656
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,954.5 ft

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 #1			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.0	0.0	0.0	180.22

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	4.00	182.10	1,099.8	-7.0	-0.3	2.00	2.00	0.00	182.10	
5,357.0	4.00	182.10	5,346.5	-303.7	-11.1	0.00	0.00	0.00	0.00	
6,138.8	90.00	182.10	5,831.0	-823.0	-30.2	11.00	11.00	0.00	0.00	
6,208.8	90.00	180.00	5,831.0	-893.0	-31.5	3.00	0.00	-3.00	-90.00	
13,654.3	90.00	180.00	5,831.0	-8,338.4	-31.5	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 @ 4971.3ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	KOP @ 900' MD
1,000.0	2.00	182.10	1,000.0	-1.7	-0.1	1.7	2.00	2.00	
1,100.0	4.00	182.10	1,099.8	-7.0	-0.3	7.0	2.00	2.00	EOB; 4°
1,200.0	4.00	182.10	1,199.6	-13.9	-0.5	13.9	0.00	0.00	
1,300.0	4.00	182.10	1,299.4	-20.9	-0.8	20.9	0.00	0.00	
1,400.0	4.00	182.10	1,399.1	-27.9	-1.0	27.9	0.00	0.00	
1,500.0	4.00	182.10	1,498.9	-34.9	-1.3	34.9	0.00	0.00	
1,600.0	4.00	182.10	1,598.6	-41.8	-1.5	41.8	0.00	0.00	
1,700.0	4.00	182.10	1,698.4	-48.8	-1.8	48.8	0.00	0.00	
1,800.0	4.00	182.10	1,798.1	-55.8	-2.0	55.8	0.00	0.00	
1,900.0	4.00	182.10	1,897.9	-62.7	-2.3	62.7	0.00	0.00	
2,000.0	4.00	182.10	1,997.6	-69.7	-2.6	69.7	0.00	0.00	
2,100.0	4.00	182.10	2,097.4	-76.7	-2.8	76.7	0.00	0.00	
2,200.0	4.00	182.10	2,197.2	-83.7	-3.1	83.7	0.00	0.00	
2,300.0	4.00	182.10	2,296.9	-90.6	-3.3	90.6	0.00	0.00	
2,400.0	4.00	182.10	2,396.7	-97.6	-3.6	97.6	0.00	0.00	
2,500.0	4.00	182.10	2,496.4	-104.6	-3.8	104.6	0.00	0.00	
2,600.0	4.00	182.10	2,596.2	-111.5	-4.1	111.6	0.00	0.00	
2,700.0	4.00	182.10	2,695.9	-118.5	-4.3	118.5	0.00	0.00	
2,800.0	4.00	182.10	2,795.7	-125.5	-4.6	125.5	0.00	0.00	
2,900.0	4.00	182.10	2,895.5	-132.5	-4.9	132.5	0.00	0.00	
3,000.0	4.00	182.10	2,995.2	-139.4	-5.1	139.4	0.00	0.00	
3,100.0	4.00	182.10	3,095.0	-146.4	-5.4	146.4	0.00	0.00	
3,200.0	4.00	182.10	3,194.7	-153.4	-5.6	153.4	0.00	0.00	
3,300.0	4.00	182.10	3,294.5	-160.3	-5.9	160.4	0.00	0.00	
3,400.0	4.00	182.10	3,394.2	-167.3	-6.1	167.3	0.00	0.00	
3,500.0	4.00	182.10	3,494.0	-174.3	-6.4	174.3	0.00	0.00	
3,600.0	4.00	182.10	3,593.7	-181.2	-6.6	181.3	0.00	0.00	
3,700.0	4.00	182.10	3,693.5	-188.2	-6.9	188.2	0.00	0.00	
3,800.0	4.00	182.10	3,793.3	-195.2	-7.2	195.2	0.00	0.00	
3,900.0	4.00	182.10	3,893.0	-202.2	-7.4	202.2	0.00	0.00	
4,000.0	4.00	182.10	3,992.8	-209.1	-7.7	209.2	0.00	0.00	
4,100.0	4.00	182.10	4,092.5	-216.1	-7.9	216.1	0.00	0.00	
4,200.0	4.00	182.10	4,192.3	-223.1	-8.2	223.1	0.00	0.00	
4,300.0	4.00	182.10	4,292.0	-230.0	-8.4	230.1	0.00	0.00	
4,400.0	4.00	182.10	4,391.8	-237.0	-8.7	237.0	0.00	0.00	
4,500.0	4.00	182.10	4,491.6	-244.0	-8.9	244.0	0.00	0.00	
4,600.0	4.00	182.10	4,591.3	-251.0	-9.2	251.0	0.00	0.00	
4,700.0	4.00	182.10	4,691.1	-257.9	-9.5	258.0	0.00	0.00	
4,800.0	4.00	182.10	4,790.8	-264.9	-9.7	264.9	0.00	0.00	
4,900.0	4.00	182.10	4,890.6	-271.9	-10.0	271.9	0.00	0.00	
5,000.0	4.00	182.10	4,990.3	-278.8	-10.2	278.9	0.00	0.00	
5,100.0	4.00	182.10	5,090.1	-285.8	-10.5	285.8	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 #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,200.0	4.00	182.10	5,189.9	-292.8	-10.7	292.8	0.00	0.00	
5,300.0	4.00	182.10	5,289.6	-299.8	-11.0	299.8	0.00	0.00	
5,357.0	4.00	182.10	5,346.5	-303.7	-11.1	303.8	0.00	0.00	Start 11° Build
5,400.0	8.73	182.10	5,389.2	-308.5	-11.3	308.5	11.00	11.00	
5,450.0	14.23	182.10	5,438.2	-318.4	-11.7	318.5	11.00	11.00	
5,500.0	19.73	182.10	5,486.0	-333.0	-12.2	333.1	11.00	11.00	
5,550.0	25.23	182.10	5,532.2	-352.1	-12.9	352.2	11.00	11.00	
5,600.0	30.73	182.10	5,576.3	-375.5	-13.8	375.6	11.00	11.00	
5,650.0	36.23	182.10	5,618.0	-403.1	-14.8	403.2	11.00	11.00	
5,700.0	41.73	182.10	5,656.8	-434.5	-15.9	434.6	11.00	11.00	
5,750.0	47.23	182.10	5,692.5	-469.5	-17.2	469.6	11.00	11.00	
5,800.0	52.73	182.10	5,724.6	-507.8	-18.6	507.8	11.00	11.00	
5,850.0	58.23	182.10	5,753.0	-548.9	-20.1	549.0	11.00	11.00	
5,892.9	62.94	182.10	5,774.0	-586.2	-21.5	586.3	11.00	11.00	Top Niobrara
5,900.0	63.73	182.10	5,777.2	-592.6	-21.7	592.7	11.00	11.00	
5,950.0	69.23	182.10	5,797.2	-638.4	-23.4	638.5	11.00	11.00	
6,000.0	74.73	182.10	5,812.6	-685.9	-25.2	686.0	11.00	11.00	
6,050.0	80.23	182.10	5,823.5	-734.7	-26.9	734.7	11.00	11.00	
6,100.0	85.73	182.10	5,829.6	-784.2	-28.8	784.3	11.00	11.00	
6,138.8	90.00	182.10	5,831.0	-823.0	-30.2	823.1	11.00	11.00	LP @ 6138' MD - 7" (432' FEL-2,310' FSL)
6,208.8	90.00	180.00	5,831.0	-893.0	-31.5	893.1	3.00	0.00	EOT; 180°
6,300.0	90.00	180.00	5,831.0	-984.1	-31.5	984.3	0.00	0.00	
6,400.0	90.00	180.00	5,831.0	-1,084.1	-31.5	1,084.3	0.00	0.00	
6,500.0	90.00	180.00	5,831.0	-1,184.1	-31.5	1,184.3	0.00	0.00	
6,600.0	90.00	180.00	5,831.0	-1,284.1	-31.5	1,284.3	0.00	0.00	
6,700.0	90.00	180.00	5,831.0	-1,384.1	-31.5	1,384.3	0.00	0.00	
6,800.0	90.00	180.00	5,831.0	-1,484.1	-31.5	1,484.3	0.00	0.00	
6,900.0	90.00	180.00	5,831.0	-1,584.1	-31.5	1,584.3	0.00	0.00	
7,000.0	90.00	180.00	5,831.0	-1,684.1	-31.5	1,684.3	0.00	0.00	
7,100.0	90.00	180.00	5,831.0	-1,784.1	-31.5	1,784.3	0.00	0.00	
7,200.0	90.00	180.00	5,831.0	-1,884.1	-31.5	1,884.3	0.00	0.00	
7,300.0	90.00	180.00	5,831.0	-1,984.1	-31.5	1,984.3	0.00	0.00	
7,400.0	90.00	180.00	5,831.0	-2,084.1	-31.5	2,084.3	0.00	0.00	
7,500.0	90.00	180.00	5,831.0	-2,184.1	-31.5	2,184.3	0.00	0.00	
7,600.0	90.00	180.00	5,831.0	-2,284.1	-31.5	2,284.2	0.00	0.00	
7,700.0	90.00	180.00	5,831.0	-2,384.1	-31.5	2,384.2	0.00	0.00	
7,800.0	90.00	180.00	5,831.0	-2,484.1	-31.5	2,484.2	0.00	0.00	
7,900.0	90.00	180.00	5,831.0	-2,584.1	-31.5	2,584.2	0.00	0.00	
8,000.0	90.00	180.00	5,831.0	-2,684.1	-31.5	2,684.2	0.00	0.00	
8,100.0	90.00	180.00	5,831.0	-2,784.1	-31.5	2,784.2	0.00	0.00	
8,200.0	90.00	180.00	5,831.0	-2,884.1	-31.5	2,884.2	0.00	0.00	
8,300.0	90.00	180.00	5,831.0	-2,984.1	-31.5	2,984.2	0.00	0.00	
8,400.0	90.00	180.00	5,831.0	-3,084.1	-31.5	3,084.2	0.00	0.00	
8,500.0	90.00	180.00	5,831.0	-3,184.1	-31.5	3,184.2	0.00	0.00	
8,600.0	90.00	180.00	5,831.0	-3,284.1	-31.5	3,284.2	0.00	0.00	
8,700.0	90.00	180.00	5,831.0	-3,384.1	-31.5	3,384.2	0.00	0.00	
8,800.0	90.00	180.00	5,831.0	-3,484.1	-31.5	3,484.2	0.00	0.00	
8,900.0	90.00	180.00	5,831.0	-3,584.1	-31.5	3,584.2	0.00	0.00	
9,000.0	90.00	180.00	5,831.0	-3,684.1	-31.5	3,684.2	0.00	0.00	
9,100.0	90.00	180.00	5,831.0	-3,784.1	-31.5	3,784.2	0.00	0.00	
9,200.0	90.00	180.00	5,831.0	-3,884.1	-31.5	3,884.2	0.00	0.00	
9,300.0	90.00	180.00	5,831.0	-3,984.1	-31.5	3,984.2	0.00	0.00	

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Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,400.0	90.00	180.00	5,831.0	-4,084.1	-31.5	4,084.2	0.00	0.00	
9,432.9	90.00	180.00	5,831.0	-4,117.0	-31.5	4,117.1	0.00	0.00	Enter 1550' Offset Radius
9,500.0	90.00	180.00	5,831.0	-4,184.1	-31.5	4,184.2	0.00	0.00	
9,600.0	90.00	180.00	5,831.0	-4,284.1	-31.5	4,284.2	0.00	0.00	
9,700.0	90.00	180.00	5,831.0	-4,384.1	-31.5	4,384.2	0.00	0.00	
9,800.0	90.00	180.00	5,831.0	-4,484.1	-31.5	4,484.2	0.00	0.00	
9,900.0	90.00	180.00	5,831.0	-4,584.1	-31.5	4,584.2	0.00	0.00	
10,000.0	90.00	180.00	5,831.0	-4,684.1	-31.5	4,684.2	0.00	0.00	
10,100.0	90.00	180.00	5,831.0	-4,784.1	-31.5	4,784.2	0.00	0.00	
10,200.0	90.00	180.00	5,831.0	-4,884.1	-31.5	4,884.2	0.00	0.00	
10,300.0	90.00	180.00	5,831.0	-4,984.1	-31.5	4,984.2	0.00	0.00	
10,400.0	90.00	180.00	5,831.0	-5,084.1	-31.5	5,084.2	0.00	0.00	
10,500.0	90.00	180.00	5,831.0	-5,184.1	-31.5	5,184.2	0.00	0.00	
10,600.0	90.00	180.00	5,831.0	-5,284.1	-31.5	5,284.2	0.00	0.00	
10,700.0	90.00	180.00	5,831.0	-5,384.1	-31.5	5,384.2	0.00	0.00	
10,800.0	90.00	180.00	5,831.0	-5,484.1	-31.5	5,484.2	0.00	0.00	
10,900.0	90.00	180.00	5,831.0	-5,584.1	-31.5	5,584.2	0.00	0.00	
10,948.8	90.00	180.00	5,831.0	-5,632.9	-31.5	5,633.0	0.00	0.00	Exit 1550' Offset Radius
11,000.0	90.00	180.00	5,831.0	-5,684.1	-31.5	5,684.2	0.00	0.00	
11,100.0	90.00	180.00	5,831.0	-5,784.1	-31.5	5,784.2	0.00	0.00	
11,200.0	90.00	180.00	5,831.0	-5,884.1	-31.5	5,884.2	0.00	0.00	
11,300.0	90.00	180.00	5,831.0	-5,984.1	-31.5	5,984.2	0.00	0.00	
11,400.0	90.00	180.00	5,831.0	-6,084.1	-31.5	6,084.2	0.00	0.00	
11,500.0	90.00	180.00	5,831.0	-6,184.1	-31.5	6,184.2	0.00	0.00	
11,600.0	90.00	180.00	5,831.0	-6,284.1	-31.5	6,284.2	0.00	0.00	
11,700.0	90.00	180.00	5,831.0	-6,384.1	-31.5	6,384.2	0.00	0.00	
11,800.0	90.00	180.00	5,831.0	-6,484.1	-31.5	6,484.2	0.00	0.00	
11,900.0	90.00	180.00	5,831.0	-6,584.1	-31.5	6,584.2	0.00	0.00	
12,000.0	90.00	180.00	5,831.0	-6,684.1	-31.5	6,684.2	0.00	0.00	
12,100.0	90.00	180.00	5,831.0	-6,784.1	-31.5	6,784.2	0.00	0.00	
12,200.0	90.00	180.00	5,831.0	-6,884.1	-31.5	6,884.2	0.00	0.00	
12,300.0	90.00	180.00	5,831.0	-6,984.1	-31.5	6,984.2	0.00	0.00	
12,400.0	90.00	180.00	5,831.0	-7,084.1	-31.5	7,084.2	0.00	0.00	
12,500.0	90.00	180.00	5,831.0	-7,184.1	-31.5	7,184.2	0.00	0.00	
12,600.0	90.00	180.00	5,831.0	-7,284.1	-31.5	7,284.2	0.00	0.00	
12,700.0	90.00	180.00	5,831.0	-7,384.1	-31.5	7,384.2	0.00	0.00	
12,800.0	90.00	180.00	5,831.0	-7,484.1	-31.5	7,484.2	0.00	0.00	
12,900.0	90.00	180.00	5,831.0	-7,584.1	-31.5	7,584.2	0.00	0.00	
13,000.0	90.00	180.00	5,831.0	-7,684.1	-31.5	7,684.2	0.00	0.00	
13,100.0	90.00	180.00	5,831.0	-7,784.1	-31.5	7,784.2	0.00	0.00	
13,200.0	90.00	180.00	5,831.0	-7,884.1	-31.5	7,884.2	0.00	0.00	
13,300.0	90.00	180.00	5,831.0	-7,984.1	-31.5	7,984.2	0.00	0.00	
13,400.0	90.00	180.00	5,831.0	-8,084.1	-31.5	8,084.2	0.00	0.00	
13,500.0	90.00	180.00	5,831.0	-8,184.1	-31.5	8,184.2	0.00	0.00	
13,600.0	90.00	180.00	5,831.0	-8,284.1	-31.5	8,284.2	0.00	0.00	
13,654.3	90.00	180.00	5,831.0	-8,338.4	-31.5	8,338.5	0.00	0.00	PBHL @ 13654' MD

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site:	S11-T10N-R58W	**North Reference:**	True
Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Razor 11H-1415A PBHL - plan hits target center - Point	0.00	0.00	5,831.0	-8,338.4	-31.5	1,550,258.83	3,463,576.41	40.831811	-103.824769

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,138.8	5,831.0	7" (432' FEL-2,310' FSL)	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,892.9	5,774.0	Top Niobrara		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
900.0	900.0	0.0	0.0	KOP @ 900' MD
1,100.0	1,099.8	-7.0	-0.3	EOB; 4°
5,357.0	5,346.5	-303.7	-11.1	Start 11° Build
6,138.8	5,831.0	-823.0	-30.2	LP @ 6138' MD
6,208.8	5,831.0	-893.0	-31.5	EOT; 180°
9,432.9	5,831.0	-4,117.0	-31.5	Enter 1550' Offset Radius
10,948.8	5,831.0	-5,632.9	-31.5	Exit 1550' Offset Radius
13,654.3	5,831.0	-8,338.4	-31.5	PBHL @ 13654' MD

WHITING WHITING PETROLEUM CORPORATION

Whiting Petroleum Corporation

Weld County, CO
S11-T10N-R58W
Razor #11H-1415A
HZ
Plan #1

Anticollision Report

17 July, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 7/17/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,654.3	Plan #1 (HZ)	ISCWSA MWD	MWD - ISCWSA

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	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	987.9	988.3	25.8	21.7	6.210	CC
Razor #11H-0215A - HZ - Plan #1	1,000.0	1,000.4	25.9	21.7	6.141	ES, SF
Razor #11H-0216B - HZ - Plan #1	1,179.7	1,180.5	16.1	11.2	3.235	CC, ES
Razor #11H-0216B - HZ - Plan #1	1,200.0	1,200.6	16.4	11.3	3.227	SF
Razor #11H-1413A - HZ - Plan #1	500.0	500.0	60.1	58.1	30.286	CC
Razor #11H-1413A - HZ - Plan #1	600.0	599.9	60.2	57.8	24.976	ES
Razor #11H-1413A - HZ - Plan #1	13,654.3	13,797.5	660.3	339.7	2.059	SF
Razor #11H-1416B - HZ - Plan #1	1,227.1	1,223.4	50.6	45.6	10.063	CC
Razor #11H-1416B - HZ - Plan #1	13,654.3	13,732.2	345.2	37.7	1.123	Level 2, ES, SF
Razor 11-0241H (Existing) - Existing - Existing	3,930.1	3,930.7	228.4	211.2	13.257	CC, ES
Razor 11-0241H (Existing) - Existing - Existing	5,000.0	4,987.4	263.7	241.7	11.973	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	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	162.551	
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	126.26	25.6	-34.5	44.1	39.9	4.20	10.506	
1,100.0	1,099.8	1,096.8	1,096.1	2.3	2.4	132.85	31.4	-38.4	54.2	49.6	4.60	11.789	
1,200.0	1,199.6	1,195.9	1,195.0	2.5	2.6	138.47	37.2	-42.2	66.1	61.1	5.01	13.203	
1,300.0	1,299.4	1,295.0	1,293.9	2.7	2.8	142.35	42.9	-46.0	78.4	73.0	5.43	14.459	
1,400.0	1,399.1	1,394.1	1,392.8	2.9	3.1	145.17	48.7	-49.8	91.0	85.2	5.85	15.561	
1,500.0	1,498.9	1,493.3	1,491.6	3.1	3.3	147.30	54.5	-53.7	103.8	97.5	6.28	16.526	
1,600.0	1,598.6	1,592.4	1,590.5	3.3	3.6	148.96	60.2	-57.5	116.7	109.9	6.72	17.371	
1,700.0	1,698.4	1,691.5	1,689.4	3.6	3.8	150.29	66.0	-61.3	129.6	122.4	7.15	18.116	
1,800.0	1,798.1	1,790.6	1,788.3	3.8	4.1	151.38	71.7	-65.1	142.6	135.0	7.60	18.774	
1,900.0	1,897.9	1,889.7	1,887.2	4.0	4.3	152.29	77.5	-69.0	155.6	147.6	8.04	19.359	
2,000.0	1,997.6	1,988.8	1,986.0	4.3	4.6	153.06	83.3	-72.8	168.7	160.2	8.49	19.882	
2,100.0	2,097.4	2,088.0	2,084.9	4.5	4.8	153.72	89.0	-76.6	181.8	172.9	8.93	20.352	
2,200.0	2,197.2	2,187.1	2,183.8	4.8	5.1	154.29	94.8	-80.4	194.9	185.6	9.38	20.775	
2,300.0	2,296.9	2,286.2	2,282.7	5.0	5.3	154.78	100.5	-84.3	208.1	198.2	9.83	21.158	
2,400.0	2,396.7	2,385.3	2,381.5	5.3	5.6	155.22	106.3	-88.1	221.2	210.9	10.29	21.507	
2,500.0	2,496.4	2,484.4	2,480.4	5.5	5.8	155.61	112.1	-91.9	234.4	223.6	10.74	21.825	
2,600.0	2,596.2	2,583.6	2,579.3	5.8	6.1	155.96	117.8	-95.7	247.6	236.4	11.19	22.117	
2,700.0	2,695.9	2,682.7	2,678.2	6.0	6.3	156.27	123.6	-99.6	260.7	249.1	11.65	22.385	
2,800.0	2,795.7	2,781.8	2,777.0	6.3	6.6	156.55	129.3	-103.4	273.9	261.8	12.10	22.633	
2,900.0	2,895.5	2,880.9	2,875.9	6.5	6.8	156.81	135.1	-107.2	287.1	274.6	12.56	22.861	
3,000.0	2,995.2	2,980.0	2,974.8	6.8	7.1	157.04	140.8	-111.0	300.3	287.3	13.02	23.073	
3,100.0	3,095.0	3,079.1	3,073.7	7.1	7.3	157.26	146.6	-114.9	313.5	300.0	13.47	23.271	
3,200.0	3,194.7	3,178.3	3,172.5	7.3	7.6	157.45	152.4	-118.7	326.7	312.8	13.93	23.454	
3,300.0	3,294.5	3,277.4	3,271.4	7.6	7.9	157.63	158.1	-122.5	339.9	325.5	14.39	23.626	
3,400.0	3,394.2	3,376.5	3,370.3	7.8	8.1	157.80	163.9	-126.3	353.1	338.3	14.85	23.787	
3,500.0	3,494.0	3,475.6	3,469.2	8.1	8.4	157.96	169.6	-130.2	366.4	351.1	15.30	23.938	
3,600.0	3,593.7	3,574.7	3,568.1	8.4	8.6	158.10	175.4	-134.0	379.6	363.8	15.76	24.079	
3,700.0	3,693.5	3,673.9	3,666.9	8.6	8.9	158.24	181.2	-137.8	392.8	376.6	16.22	24.213	
3,800.0	3,793.3	3,773.0	3,765.8	8.9	9.1	158.36	186.9	-141.6	406.0	389.3	16.68	24.338	
3,900.0	3,893.0	3,872.1	3,864.7	9.1	9.4	158.48	192.7	-145.5	419.2	402.1	17.14	24.457	
4,000.0	3,992.8	3,971.2	3,963.6	9.4	9.6	158.59	198.4	-149.3	432.5	414.9	17.60	24.570	
4,100.0	4,092.5	4,070.3	4,062.4	9.7	9.9	158.70	204.2	-153.1	445.7	427.6	18.06	24.676	
4,200.0	4,192.3	4,169.4	4,161.3	9.9	10.1	158.80	210.0	-156.9	458.9	440.4	18.52	24.777	
4,300.0	4,292.0	4,268.6	4,260.2	10.2	10.4	158.89	215.7	-160.8	472.2	453.2	18.98	24.873	
4,400.0	4,391.8	4,367.7	4,359.1	10.4	10.7	158.98	221.5	-164.6	485.4	465.9	19.44	24.964	
4,500.0	4,491.6	4,466.8	4,457.9	10.7	10.9	159.06	227.2	-168.4	498.6	478.7	19.90	25.051	
4,600.0	4,591.3	4,565.9	4,556.8	11.0	11.2	159.14	233.0	-172.2	511.8	491.5	20.36	25.134	
4,700.0	4,691.1	4,665.0	4,655.7	11.2	11.4	159.22	238.8	-176.1	525.1	504.3	20.83	25.213	
4,800.0	4,790.8	4,764.2	4,754.6	11.5	11.7	159.29	244.5	-179.9	538.3	517.0	21.29	25.289	
4,900.0	4,890.6	4,863.3	4,853.5	11.8	11.9	159.35	250.3	-183.7	551.5	529.8	21.75	25.361	
5,000.0	4,990.3	4,962.4	4,952.3	12.0	12.2	159.42	256.0	-187.5	564.8	542.6	22.21	25.430	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.1	5,061.5	5,051.2	12.3	12.4	159.48	261.8	-191.4	578.0	555.4	22.67	25.497	
5,200.0	5,189.9	5,160.6	5,150.1	12.5	12.7	159.54	267.6	-195.2	591.3	568.1	23.13	25.560	
5,300.0	5,289.6	5,259.7	5,249.0	12.8	12.9	159.60	273.3	-199.0	604.5	580.9	23.59	25.621	
5,357.0	5,346.5	5,316.2	5,305.3	13.0	13.1	159.63	276.6	-201.2	612.0	588.2	23.86	25.655	
5,400.0	5,389.2	5,357.5	5,346.5	13.1	13.2	159.42	279.0	-202.8	619.4	595.5	23.88	25.942	
5,450.0	5,438.2	5,380.3	5,369.2	13.3	13.3	158.96	280.7	-203.9	633.0	609.3	23.69	26.721	
5,500.0	5,486.0	5,400.0	5,388.7	13.5	13.3	158.23	282.9	-205.4	652.8	629.4	23.35	27.960	
5,550.0	5,532.2	5,420.4	5,408.9	13.8	13.4	157.20	285.8	-207.3	678.2	655.3	22.88	29.638	
5,600.0	5,576.3	5,450.0	5,437.7	14.1	13.5	155.93	291.2	-210.9	708.9	686.6	22.34	31.726	
5,650.0	5,618.0	5,450.0	5,437.7	14.5	13.5	153.67	291.2	-210.9	743.6	721.8	21.76	34.177	
5,700.0	5,656.8	5,465.7	5,452.8	14.9	13.6	150.93	294.5	-213.1	782.3	761.0	21.31	36.719	
5,750.0	5,692.5	5,476.3	5,463.0	15.3	13.6	146.96	297.0	-214.8	824.2	803.0	21.19	38.893	
5,800.0	5,724.6	5,484.6	5,471.0	15.8	13.7	141.18	299.1	-216.2	868.6	846.8	21.78	39.884	
5,850.0	5,753.0	5,500.0	5,485.5	16.4	13.7	133.37	303.3	-218.9	915.0	891.7	23.36	39.173	
5,900.0	5,777.2	5,500.0	5,485.5	17.0	13.7	119.77	303.3	-218.9	962.6	935.9	26.67	36.086	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0215A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	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	160.110	
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	8.721	
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	
987.9	987.9	988.3	987.9	2.1	2.1	-94.94	-0.1	25.8	25.8	21.7	4.16	6.210	CC
1,000.0	1,000.0	1,000.4	1,000.0	2.1	2.1	-97.67	0.8	25.7	25.9	21.7	4.21	6.141	ES, SF
1,100.0	1,099.8	1,099.6	1,099.0	2.3	2.4	-121.96	7.7	25.1	29.3	24.6	4.62	6.331	
1,200.0	1,199.6	1,198.7	1,197.8	2.5	2.6	-140.66	14.5	24.5	37.9	32.9	5.04	7.526	
1,300.0	1,299.4	1,297.7	1,296.6	2.7	2.8	-151.74	21.4	23.9	49.1	43.6	5.46	8.989	
1,400.0	1,399.1	1,396.7	1,395.3	2.9	3.1	-158.59	28.3	23.3	61.3	55.5	5.88	10.432	
1,500.0	1,498.9	1,495.7	1,494.1	3.1	3.3	-163.12	35.2	22.7	74.2	67.9	6.30	11.766	
1,600.0	1,598.6	1,594.8	1,592.9	3.3	3.6	-166.30	42.1	22.1	87.3	80.6	6.73	12.972	
1,700.0	1,698.4	1,693.8	1,691.7	3.6	3.8	-168.64	49.0	21.5	100.7	93.5	7.17	14.055	
1,800.0	1,798.1	1,792.8	1,790.5	3.8	4.1	-170.44	55.8	20.9	114.2	106.6	7.60	15.026	
1,900.0	1,897.9	1,891.9	1,889.3	4.0	4.3	-171.85	62.7	20.3	127.8	119.7	8.04	15.897	
2,000.0	1,997.6	1,990.9	1,988.1	4.3	4.6	-172.99	69.6	19.7	141.4	132.9	8.48	16.682	
2,100.0	2,097.4	2,089.9	2,086.9	4.5	4.8	-173.93	76.5	19.1	155.1	146.2	8.92	17.392	
2,200.0	2,197.2	2,189.0	2,185.7	4.8	5.1	-174.72	83.4	18.5	168.8	159.4	9.36	18.035	
2,300.0	2,296.9	2,288.0	2,284.4	5.0	5.3	-175.39	90.2	17.8	182.5	172.7	9.80	18.621	
2,400.0	2,396.7	2,387.0	2,383.2	5.3	5.6	-175.97	97.1	17.2	196.3	186.0	10.25	19.155	
2,500.0	2,496.4	2,486.0	2,482.0	5.5	5.8	-176.47	104.0	16.6	210.1	199.4	10.69	19.645	
2,600.0	2,596.2	2,585.1	2,580.8	5.8	6.1	-176.91	110.9	16.0	223.9	212.7	11.14	20.096	
2,700.0	2,695.9	2,684.1	2,679.6	6.0	6.3	-177.29	117.8	15.4	237.7	226.1	11.59	20.511	
2,800.0	2,795.7	2,783.1	2,778.4	6.3	6.6	-177.64	124.7	14.8	251.5	239.5	12.04	20.895	
2,900.0	2,895.5	2,882.2	2,877.2	6.5	6.8	-177.95	131.5	14.2	265.3	252.8	12.48	21.251	
3,000.0	2,995.2	2,981.2	2,976.0	6.8	7.1	-178.23	138.4	13.6	279.1	266.2	12.93	21.582	
3,100.0	3,095.0	3,080.2	3,074.8	7.1	7.3	-178.48	145.3	13.0	293.0	279.6	13.38	21.891	
3,200.0	3,194.7	3,179.3	3,173.5	7.3	7.6	-178.71	152.2	12.4	306.8	293.0	13.83	22.179	
3,300.0	3,294.5	3,278.3	3,272.3	7.6	7.8	-178.92	159.1	11.8	320.7	306.4	14.28	22.448	
3,400.0	3,394.2	3,377.3	3,371.1	7.8	8.1	-179.11	165.9	11.2	334.5	319.8	14.74	22.701	
3,500.0	3,494.0	3,476.4	3,469.9	8.1	8.3	-179.29	172.8	10.6	348.4	333.2	15.19	22.938	
3,600.0	3,593.7	3,575.4	3,568.7	8.4	8.6	-179.45	179.7	10.0	362.2	346.6	15.64	23.162	
3,700.0	3,693.5	3,674.4	3,667.5	8.6	8.8	-179.60	186.6	9.4	376.1	360.0	16.09	23.372	
3,800.0	3,793.3	3,773.4	3,766.3	8.9	9.1	-179.74	193.5	8.8	389.9	373.4	16.54	23.571	
3,900.0	3,893.0	3,872.5	3,865.1	9.1	9.3	-179.88	200.4	8.2	403.8	386.8	16.99	23.760	
4,000.0	3,992.8	3,971.5	3,963.9	9.4	9.6	-180.00	207.2	7.6	417.7	400.2	17.45	23.938	
4,100.0	4,092.5	4,070.5	4,062.7	9.7	9.9	179.89	214.1	7.0	431.5	413.6	17.90	24.107	
4,200.0	4,192.3	4,169.6	4,161.4	9.9	10.1	179.78	221.0	6.4	445.4	427.0	18.35	24.268	
4,300.0	4,292.0	4,268.6	4,260.2	10.2	10.4	179.68	227.9	5.8	459.3	440.4	18.81	24.420	
4,400.0	4,391.8	4,367.6	4,359.0	10.4	10.6	179.58	234.8	5.2	473.1	453.9	19.26	24.566	
4,500.0	4,491.6	4,466.7	4,457.8	10.7	10.9	179.49	241.6	4.6	487.0	467.3	19.71	24.704	
4,600.0	4,591.3	4,565.7	4,556.6	11.0	11.1	179.41	248.5	4.0	500.9	480.7	20.17	24.836	
4,700.0	4,691.1	4,664.7	4,655.4	11.2	11.4	179.33	255.4	3.4	514.7	494.1	20.62	24.963	
4,800.0	4,790.8	4,763.8	4,754.2	11.5	11.6	179.25	262.3	2.8	528.6	507.5	21.07	25.084	
4,900.0	4,890.6	4,862.8	4,853.0	11.8	11.9	179.18	269.2	2.2	542.5	521.0	21.53	25.199	
5,000.0	4,990.3	4,961.8	4,951.8	12.0	12.1	179.11	276.1	1.6	556.4	534.4	21.98	25.310	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0215A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.1	5,060.8	5,050.5	12.3	12.4	179.05	282.9	1.0	570.2	547.8	22.44	25.416	
5,200.0	5,189.9	5,159.9	5,149.3	12.5	12.6	178.99	289.8	0.4	584.1	561.2	22.89	25.518	
5,300.0	5,289.6	5,258.9	5,248.1	12.8	12.9	178.93	296.7	-0.2	598.0	574.6	23.34	25.616	
5,357.0	5,346.5	5,315.4	5,304.4	13.0	13.0	178.89	300.6	-0.6	605.9	582.3	23.60	25.670	
5,400.0	5,389.2	5,357.5	5,346.5	13.1	13.1	178.86	303.6	-0.8	613.6	590.0	23.60	26.003	
5,450.0	5,438.2	5,379.5	5,368.4	13.3	13.2	178.81	305.5	-1.0	628.0	604.6	23.35	26.895	
5,500.0	5,486.0	5,400.0	5,388.7	13.5	13.3	178.74	308.2	-1.2	648.7	625.8	22.90	28.326	
5,550.0	5,532.2	5,418.7	5,407.1	13.8	13.3	178.65	311.4	-1.5	675.3	653.0	22.26	30.336	
5,600.0	5,576.3	5,435.3	5,423.4	14.1	13.4	178.52	314.7	-1.8	707.1	685.7	21.43	32.997	
5,650.0	5,618.0	5,450.0	5,437.7	14.5	13.4	178.34	318.1	-2.1	743.5	723.1	20.42	36.409	
5,700.0	5,656.8	5,450.0	5,437.7	14.9	13.4	178.11	318.1	-2.1	784.0	764.8	19.22	40.782	
5,750.0	5,692.5	5,471.4	5,458.3	15.3	13.5	177.75	323.7	-2.6	827.2	809.3	17.93	46.140	
5,800.0	5,724.6	5,478.9	5,465.5	15.8	13.6	177.18	325.9	-2.8	873.2	856.7	16.50	52.923	
5,850.0	5,753.0	5,500.0	5,485.5	16.4	13.7	176.25	332.6	-3.4	921.3	906.3	15.03	61.318	
5,900.0	5,777.2	5,500.0	5,485.5	17.0	13.7	174.00	332.6	-3.4	970.2	956.6	13.62	71.212	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0216B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	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	263.351	
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	39.81	-22.8	-18.9	28.3	24.1	4.23	6.704	
1,100.0	1,099.8	1,101.6	1,100.7	2.3	2.4	60.47	-16.0	-17.6	19.6	14.9	4.64	4.216	
1,179.7	1,179.3	1,180.5	1,179.4	2.4	2.6	94.60	-10.6	-16.5	16.1	11.2	4.99	3.235	CC, ES
1,200.0	1,199.6	1,200.6	1,199.5	2.5	2.6	104.42	-9.3	-16.2	16.4	11.3	5.08	3.227	SF
1,300.0	1,299.4	1,299.7	1,298.3	2.7	2.9	140.27	-2.5	-14.9	23.2	17.7	5.49	4.230	
1,400.0	1,399.1	1,398.7	1,397.1	2.9	3.1	156.52	4.3	-13.5	34.6	28.7	5.90	5.861	
1,500.0	1,498.9	1,497.7	1,495.9	3.1	3.4	164.45	11.1	-12.2	47.3	41.0	6.32	7.487	
1,600.0	1,598.6	1,596.8	1,594.7	3.3	3.6	168.98	17.8	-10.8	60.5	53.8	6.74	8.977	
1,700.0	1,698.4	1,695.8	1,693.4	3.6	3.9	171.87	24.6	-9.5	74.0	66.8	7.17	10.316	
1,800.0	1,798.1	1,794.8	1,792.2	3.8	4.1	173.87	31.4	-8.1	87.6	80.0	7.60	11.515	
1,900.0	1,897.9	1,893.9	1,891.0	4.0	4.4	175.33	38.2	-6.8	101.2	93.2	8.04	12.589	
2,000.0	1,997.6	1,992.9	1,989.8	4.3	4.6	176.45	44.9	-5.4	114.9	106.5	8.48	13.555	
2,100.0	2,097.4	2,091.9	2,088.6	4.5	4.9	177.32	51.7	-4.1	128.7	119.8	8.92	14.426	
2,200.0	2,197.2	2,191.0	2,187.4	4.8	5.1	178.03	58.5	-2.7	142.5	133.1	9.36	15.216	
2,300.0	2,296.9	2,290.0	2,286.2	5.0	5.4	178.61	65.3	-1.4	156.3	146.5	9.81	15.933	
2,400.0	2,396.7	2,389.0	2,385.0	5.3	5.6	179.10	72.0	0.0	170.1	159.8	10.25	16.588	
2,500.0	2,496.4	2,488.1	2,483.8	5.5	5.9	179.51	78.8	1.3	183.9	173.2	10.70	17.188	
2,600.0	2,596.2	2,587.1	2,582.6	5.8	6.1	179.87	85.6	2.7	197.7	186.6	11.15	17.739	
2,700.0	2,695.9	2,686.1	2,681.4	6.0	6.4	-179.82	92.4	4.0	211.5	199.9	11.59	18.247	
2,800.0	2,795.7	2,785.2	2,780.2	6.3	6.6	-179.55	99.1	5.4	225.4	213.3	12.04	18.716	
2,900.0	2,895.5	2,884.2	2,878.9	6.5	6.9	-179.31	105.9	6.7	239.2	226.7	12.49	19.151	
3,000.0	2,995.2	2,983.2	2,977.7	6.8	7.1	-179.09	112.7	8.1	253.0	240.1	12.94	19.556	
3,100.0	3,095.0	3,082.3	3,076.5	7.1	7.4	-178.90	119.5	9.5	266.9	253.5	13.39	19.933	
3,200.0	3,194.7	3,181.3	3,175.3	7.3	7.6	-178.73	126.2	10.8	280.7	266.9	13.84	20.284	
3,300.0	3,294.5	3,280.3	3,274.1	7.6	7.9	-178.57	133.0	12.2	294.6	280.3	14.29	20.614	
3,400.0	3,394.2	3,379.4	3,372.9	7.8	8.1	-178.43	139.8	13.5	308.4	293.7	14.74	20.922	
3,500.0	3,494.0	3,478.4	3,471.7	8.1	8.4	-178.30	146.6	14.9	322.3	307.1	15.19	21.213	
3,600.0	3,593.7	3,577.4	3,570.5	8.4	8.6	-178.18	153.3	16.2	336.2	320.5	15.65	21.486	
3,700.0	3,693.5	3,676.5	3,669.3	8.6	8.9	-178.07	160.1	17.6	350.0	333.9	16.10	21.743	
3,800.0	3,793.3	3,775.5	3,768.1	8.9	9.1	-177.97	166.9	18.9	363.9	347.3	16.55	21.986	
3,900.0	3,893.0	3,874.5	3,866.9	9.1	9.4	-177.87	173.6	20.3	377.7	360.7	17.00	22.216	
4,000.0	3,992.8	3,973.6	3,965.7	9.4	9.7	-177.79	180.4	21.6	391.6	374.1	17.46	22.434	
4,100.0	4,092.5	4,072.6	4,064.5	9.7	9.9	-177.70	187.2	23.0	405.5	387.5	17.91	22.640	
4,200.0	4,192.3	4,171.6	4,163.2	9.9	10.2	-177.63	194.0	24.3	419.3	401.0	18.36	22.837	
4,300.0	4,292.0	4,270.7	4,262.0	10.2	10.4	-177.56	200.7	25.7	433.2	414.4	18.81	23.023	
4,400.0	4,391.8	4,369.7	4,360.8	10.4	10.7	-177.49	207.5	27.0	447.0	427.8	19.27	23.201	
4,500.0	4,491.6	4,468.7	4,459.6	10.7	10.9	-177.43	214.3	28.4	460.9	441.2	19.72	23.370	
4,600.0	4,591.3	4,567.7	4,558.4	11.0	11.2	-177.37	221.1	29.7	474.8	454.6	20.18	23.532	
4,700.0	4,691.1	4,666.8	4,657.2	11.2	11.4	-177.31	227.8	31.1	488.6	468.0	20.63	23.686	
4,800.0	4,790.8	4,765.8	4,756.0	11.5	11.7	-177.26	234.6	32.4	502.5	481.4	21.08	23.834	
4,900.0	4,890.6	4,864.8	4,854.8	11.8	11.9	-177.21	241.4	33.8	516.4	494.8	21.54	23.975	
5,000.0	4,990.3	4,963.9	4,953.6	12.0	12.2	-177.16	248.2	35.1	530.2	508.2	21.99	24.111	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-0216B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.1	5,062.9	5,052.4	12.3	12.4	-177.12	254.9	36.5	544.1	521.7	22.45	24.240	
5,200.0	5,189.9	5,161.9	5,151.2	12.5	12.7	-177.07	261.7	37.8	558.0	535.1	22.90	24.365	
5,300.0	5,289.6	5,261.0	5,250.0	12.8	12.9	-177.03	268.5	39.2	571.8	548.5	23.35	24.485	
5,357.0	5,346.5	5,317.4	5,306.3	13.0	13.1	-177.01	272.4	40.0	579.7	556.1	23.61	24.551	
5,400.0	5,389.2	5,359.7	5,348.5	13.1	13.2	-176.96	275.3	40.5	587.5	563.8	23.61	24.884	
5,450.0	5,438.2	5,407.9	5,396.5	13.3	13.3	-176.89	278.5	41.2	600.8	577.3	23.41	25.661	
5,500.0	5,486.0	5,454.6	5,443.1	13.5	13.4	-176.82	281.7	41.8	618.6	595.6	23.01	26.882	
5,550.0	5,532.2	5,477.7	5,466.1	13.8	13.5	-176.68	283.6	42.2	641.5	619.2	22.37	28.676	
5,600.0	5,576.3	5,500.0	5,488.2	14.1	13.6	-176.49	286.3	42.7	670.1	648.6	21.55	31.102	
5,650.0	5,618.0	5,500.0	5,488.2	14.5	13.6	-176.17	286.3	42.7	703.9	683.4	20.50	34.330	
5,700.0	5,656.8	5,525.6	5,513.5	14.9	13.7	-175.79	290.6	43.6	741.6	722.2	19.36	38.299	
5,750.0	5,692.5	5,550.0	5,537.3	15.3	13.7	-175.26	295.8	44.6	783.4	765.3	18.09	43.312	
5,800.0	5,724.6	5,550.0	5,537.3	15.8	13.7	-174.31	295.8	44.6	827.6	810.9	16.68	49.604	
5,850.0	5,753.0	5,550.0	5,537.3	16.4	13.7	-172.67	295.8	44.6	874.2	858.9	15.30	57.147	
5,900.0	5,777.2	5,550.0	5,537.3	17.0	13.7	-169.31	295.8	44.6	922.6	908.4	14.25	64.754	
5,950.0	5,797.2	5,550.0	5,537.3	17.6	13.7	-159.22	295.8	44.6	972.1	956.5	15.53	62.608	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1413A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	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	321.501	
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	
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	CC
510.7	510.7	510.7	510.7	1.0	1.0	-61.89	28.3	-53.0	60.1	58.1	2.03	29.611	
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	21.463	
800.0	800.0	799.4	799.0	1.7	1.6	-74.88	16.1	-59.7	61.8	58.6	3.26	18.984	
900.0	900.0	899.2	898.5	1.9	1.8	-80.97	10.0	-63.0	63.8	60.1	3.70	17.236	
1,000.0	1,000.0	999.0	998.1	2.1	2.1	92.70	3.9	-66.3	66.5	62.4	4.13	16.117	
1,100.0	1,099.8	1,098.9	1,097.8	2.3	2.3	91.69	-2.2	-69.7	69.6	65.1	4.54	15.329	
1,200.0	1,199.6	1,198.9	1,197.5	2.5	2.5	92.19	-8.4	-73.0	72.7	67.8	4.97	14.622	
1,300.0	1,299.4	1,298.8	1,297.2	2.7	2.8	92.65	-14.5	-76.3	75.9	70.4	5.42	13.988	
1,400.0	1,399.1	1,398.8	1,396.9	2.9	3.0	93.07	-20.6	-79.7	79.0	73.1	5.89	13.422	
1,500.0	1,498.9	1,498.7	1,496.6	3.1	3.3	93.46	-26.7	-83.0	82.1	75.8	6.36	12.920	
1,600.0	1,598.6	1,598.7	1,596.3	3.3	3.5	93.83	-32.9	-86.3	85.3	78.5	6.84	12.473	
1,700.0	1,698.4	1,698.6	1,696.0	3.6	3.8	94.16	-39.0	-89.7	88.4	81.1	7.32	12.074	
1,800.0	1,798.1	1,798.6	1,795.7	3.8	4.1	94.48	-45.1	-93.0	91.6	83.8	7.82	11.718	
1,900.0	1,897.9	1,898.5	1,895.5	4.0	4.3	94.77	-51.2	-96.3	94.7	86.4	8.31	11.399	
2,000.0	1,997.6	1,998.5	1,995.2	4.3	4.6	95.04	-57.4	-99.6	97.9	89.1	8.81	11.111	
2,100.0	2,097.4	2,098.4	2,094.9	4.5	4.8	95.30	-63.5	-103.0	101.1	91.8	9.31	10.851	
2,200.0	2,197.2	2,198.4	2,194.6	4.8	5.1	95.54	-69.6	-106.3	104.2	94.4	9.82	10.614	
2,300.0	2,296.9	2,298.3	2,294.3	5.0	5.4	95.77	-75.7	-109.6	107.4	97.1	10.33	10.399	
2,400.0	2,396.7	2,398.3	2,394.0	5.3	5.6	95.98	-81.8	-113.0	110.6	99.7	10.84	10.202	
2,500.0	2,496.4	2,498.2	2,493.7	5.5	5.9	96.18	-88.0	-116.3	113.7	102.4	11.35	10.022	
2,600.0	2,596.2	2,598.2	2,593.4	5.8	6.1	96.37	-94.1	-119.6	116.9	105.0	11.86	9.856	
2,700.0	2,695.9	2,698.1	2,693.1	6.0	6.4	96.55	-100.2	-123.0	120.1	107.7	12.37	9.703	
2,800.0	2,795.7	2,798.1	2,792.8	6.3	6.7	96.73	-106.3	-126.3	123.2	110.3	12.89	9.561	
2,900.0	2,895.5	2,898.0	2,892.5	6.5	6.9	96.89	-112.5	-129.6	126.4	113.0	13.40	9.430	
3,000.0	2,995.2	2,998.0	2,992.2	6.8	7.2	97.04	-118.6	-133.0	129.6	115.7	13.92	9.308	
3,100.0	3,095.0	3,097.9	3,091.9	7.1	7.5	97.19	-124.7	-136.3	132.8	118.3	14.44	9.194	
3,200.0	3,194.7	3,197.9	3,191.6	7.3	7.7	97.33	-130.8	-139.6	135.9	121.0	14.96	9.088	
3,300.0	3,294.5	3,297.8	3,291.3	7.6	8.0	97.47	-137.0	-143.0	139.1	123.6	15.48	8.988	
3,400.0	3,394.2	3,397.8	3,391.0	7.8	8.2	97.59	-143.1	-146.3	142.3	126.3	15.99	8.895	
3,500.0	3,494.0	3,497.7	3,490.7	8.1	8.5	97.72	-149.2	-149.6	145.5	128.9	16.51	8.807	
3,600.0	3,593.7	3,597.7	3,590.4	8.4	8.8	97.83	-155.3	-153.0	148.6	131.6	17.03	8.725	
3,700.0	3,693.5	3,697.6	3,690.2	8.6	9.0	97.95	-161.5	-156.3	151.8	134.3	17.56	8.647	
3,800.0	3,793.3	3,797.6	3,789.9	8.9	9.3	98.05	-167.6	-159.6	155.0	136.9	18.08	8.574	
3,900.0	3,893.0	3,897.5	3,889.6	9.1	9.6	98.16	-173.7	-163.0	158.2	139.6	18.60	8.505	
4,000.0	3,992.8	3,997.5	3,989.3	9.4	9.8	98.26	-179.8	-166.3	161.3	142.2	19.12	8.439	
4,100.0	4,092.5	4,097.4	4,089.0	9.7	10.1	98.35	-186.0	-169.6	164.5	144.9	19.64	8.377	
4,200.0	4,192.3	4,197.4	4,188.7	9.9	10.4	98.45	-192.1	-173.0	167.7	147.5	20.16	8.317	
4,300.0	4,292.0	4,297.3	4,288.4	10.2	10.6	98.53	-198.2	-176.3	170.9	150.2	20.69	8.261	
4,400.0	4,391.8	4,397.3	4,388.1	10.4	10.9	98.62	-204.3	-179.6	174.1	152.9	21.21	8.208	
4,500.0	4,491.6	4,497.2	4,487.8	10.7	11.1	98.70	-210.5	-183.0	177.2	155.5	21.73	8.157	
4,600.0	4,591.3	4,597.2	4,587.5	11.0	11.4	98.78	-216.6	-186.3	180.4	158.2	22.25	8.108	
4,700.0	4,691.1	4,697.1	4,687.2	11.2	11.7	98.86	-222.7	-189.6	183.6	160.8	22.78	8.061	
4,800.0	4,790.8	4,797.1	4,786.9	11.5	11.9	98.93	-228.8	-192.9	186.8	163.5	23.30	8.017	
4,900.0	4,890.6	4,897.0	4,886.6	11.8	12.2	99.00	-235.0	-196.3	190.0	166.2	23.82	7.974	
5,000.0	4,990.3	4,997.0	4,986.3	12.0	12.5	99.07	-241.1	-199.6	193.2	168.8	24.35	7.934	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1413A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.1	5,096.9	5,086.0	12.3	12.7	99.14	-247.2	-202.9	196.3	171.5	24.87	7.895	
5,200.0	5,189.9	5,196.9	5,185.7	12.5	13.0	99.20	-253.3	-206.3	199.5	174.1	25.39	7.857	
5,300.0	5,289.6	5,296.8	5,285.4	12.8	13.3	99.27	-259.5	-209.6	202.7	176.8	25.92	7.821	
5,357.0	5,346.5	5,353.8	5,342.3	13.0	13.4	99.30	-262.9	-211.5	204.5	178.3	26.22	7.801	
5,400.0	5,389.2	5,392.7	5,381.0	13.1	13.5	99.23	-266.3	-213.4	206.6	180.1	26.45	7.809	
5,450.0	5,438.2	5,437.4	5,424.9	13.3	13.7	99.09	-273.3	-217.2	210.8	184.0	26.78	7.870	
5,500.0	5,486.0	5,481.8	5,467.8	13.5	13.9	98.88	-283.6	-222.7	217.0	189.8	27.18	7.983	
5,550.0	5,532.2	5,526.0	5,509.3	13.8	14.1	98.58	-296.9	-230.0	225.1	197.5	27.65	8.142	
5,600.0	5,576.3	5,569.9	5,549.1	14.1	14.4	98.19	-313.1	-238.8	235.1	206.9	28.19	8.339	
5,650.0	5,618.0	5,613.4	5,586.9	14.5	14.7	97.70	-332.0	-249.1	246.8	218.0	28.81	8.568	
5,700.0	5,656.8	5,656.6	5,622.5	14.9	15.0	97.11	-353.5	-260.8	260.2	230.7	29.50	8.819	
5,750.0	5,692.5	5,700.0	5,656.1	15.3	15.4	96.43	-377.6	-273.9	275.1	244.8	30.30	9.079	
5,800.0	5,724.6	5,741.9	5,686.3	15.8	15.8	95.62	-403.1	-287.8	291.3	260.1	31.19	9.341	
5,850.0	5,753.0	5,784.1	5,714.2	16.4	16.2	94.72	-430.9	-302.9	308.8	276.7	32.17	9.601	
5,900.0	5,777.2	5,826.2	5,739.4	17.0	16.7	93.74	-460.5	-319.0	327.5	294.3	33.23	9.856	
5,950.0	5,797.2	5,868.0	5,761.7	17.6	17.2	92.67	-491.6	-335.9	347.1	312.7	34.36	10.100	
6,000.0	5,812.6	5,909.9	5,781.1	18.3	17.7	91.54	-524.1	-353.6	367.5	331.9	35.57	10.333	
6,050.0	5,823.5	5,951.8	5,797.5	19.0	18.3	90.36	-558.0	-372.1	388.6	351.7	36.83	10.550	
6,100.0	5,829.6	5,994.0	5,810.7	19.8	18.9	89.14	-593.2	-391.2	410.1	372.0	38.15	10.750	
6,138.8	5,831.0	6,027.0	5,818.9	20.3	19.4	88.19	-621.3	-406.5	427.1	387.9	39.21	10.893	
6,208.8	5,831.0	6,087.4	5,828.4	21.3	20.3	89.63	-673.7	-435.0	459.3	418.3	40.92	11.224	
6,300.0	5,831.0	6,177.2	5,831.0	22.7	21.6	90.00	-752.6	-477.5	502.6	459.0	43.57	11.534	
6,400.0	5,831.0	6,301.6	5,831.0	24.3	23.4	90.00	-864.8	-531.2	545.7	498.9	46.89	11.639	
6,500.0	5,831.0	6,433.5	5,831.0	26.0	25.3	90.00	-987.3	-580.0	582.8	532.3	50.45	11.552	
6,600.0	5,831.0	6,572.2	5,831.0	27.7	27.3	90.00	-1,119.5	-622.1	613.1	558.9	54.23	11.306	
6,700.0	5,831.0	6,716.8	5,831.0	29.4	29.5	90.00	-1,260.1	-655.6	636.3	578.1	58.20	10.933	
6,800.0	5,831.0	6,865.9	5,831.0	31.1	31.8	90.00	-1,407.3	-678.9	652.0	589.7	62.31	10.463	
6,900.0	5,831.0	7,017.8	5,831.0	32.9	34.1	90.00	-1,558.7	-690.8	659.8	593.3	66.50	9.922	
7,000.0	5,831.0	7,143.3	5,831.0	34.7	36.1	90.00	-1,684.2	-692.2	660.8	590.4	70.32	9.396	
7,100.0	5,831.0	7,243.3	5,831.0	36.5	37.7	90.00	-1,784.2	-692.2	660.7	586.9	73.80	8.953	
7,200.0	5,831.0	7,343.3	5,831.0	38.3	39.3	90.00	-1,884.2	-692.2	660.7	583.4	77.32	8.546	
7,300.0	5,831.0	7,443.3	5,831.0	40.1	40.9	90.00	-1,984.2	-692.2	660.7	579.9	80.86	8.171	
7,400.0	5,831.0	7,543.3	5,831.0	41.9	42.6	90.00	-2,084.2	-692.2	660.7	576.3	84.43	7.826	
7,500.0	5,831.0	7,643.3	5,831.0	43.8	44.3	90.00	-2,184.2	-692.2	660.7	572.7	88.03	7.506	
7,600.0	5,831.0	7,743.3	5,831.0	45.6	46.0	90.00	-2,284.2	-692.2	660.7	569.1	91.64	7.210	
7,700.0	5,831.0	7,843.3	5,831.0	47.4	47.7	90.00	-2,384.2	-692.2	660.7	565.4	95.28	6.935	
7,800.0	5,831.0	7,943.3	5,831.0	49.3	49.4	90.00	-2,484.2	-692.2	660.7	561.8	98.93	6.679	
7,900.0	5,831.0	8,043.3	5,831.0	51.2	51.2	90.00	-2,584.2	-692.2	660.7	558.1	102.59	6.440	
8,000.0	5,831.0	8,143.3	5,831.0	53.0	52.9	90.00	-2,684.2	-692.2	660.7	554.4	106.27	6.217	
8,100.0	5,831.0	8,243.3	5,831.0	54.9	54.7	90.00	-2,784.2	-692.2	660.7	550.7	109.95	6.009	
8,200.0	5,831.0	8,343.3	5,831.0	56.8	56.5	90.00	-2,884.2	-692.2	660.7	547.0	113.65	5.813	
8,300.0	5,831.0	8,443.3	5,831.0	58.6	58.3	90.00	-2,984.2	-692.1	660.7	543.3	117.36	5.629	
8,400.0	5,831.0	8,543.3	5,831.0	60.5	60.1	90.00	-3,084.2	-692.1	660.7	539.6	121.08	5.456	
8,500.0	5,831.0	8,643.3	5,831.0	62.4	61.9	90.00	-3,184.2	-692.1	660.7	535.9	124.80	5.294	
8,600.0	5,831.0	8,743.3	5,831.0	64.3	63.7	90.00	-3,284.2	-692.1	660.6	532.1	128.54	5.140	
8,700.0	5,831.0	8,843.3	5,831.0	66.2	65.5	90.00	-3,384.2	-692.1	660.6	528.4	132.27	4.994	
8,800.0	5,831.0	8,943.3	5,831.0	68.1	67.4	90.00	-3,484.2	-692.1	660.6	524.6	136.02	4.857	
8,900.0	5,831.0	9,043.3	5,831.0	69.9	69.2	90.00	-3,584.2	-692.1	660.6	520.9	139.77	4.727	
9,000.0	5,831.0	9,143.3	5,831.0	71.8	71.0	90.00	-3,684.2	-692.1	660.6	517.1	143.52	4.603	
9,100.0	5,831.0	9,243.3	5,831.0	73.7	72.9	90.00	-3,784.2	-692.1	660.6	513.3	147.28	4.485	
9,200.0	5,831.0	9,343.3	5,831.0	75.6	74.7	90.00	-3,884.2	-692.1	660.6	509.6	151.05	4.374	
9,300.0	5,831.0	9,443.3	5,831.0	77.5	76.6	90.00	-3,984.2	-692.1	660.6	505.8	154.81	4.267	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1413A - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,831.0	9,543.3	5,831.0	79.4	78.4	90.00	-4,084.2	-692.1	660.6	502.0	158.59	4.166	
9,500.0	5,831.0	9,643.3	5,831.0	81.3	80.3	90.00	-4,184.2	-692.1	660.6	498.2	162.36	4.069	
9,600.0	5,831.0	9,743.3	5,831.0	83.2	82.1	90.00	-4,284.2	-692.1	660.6	494.4	166.14	3.976	
9,700.0	5,831.0	9,843.3	5,831.0	85.1	84.0	90.00	-4,384.2	-692.1	660.6	490.7	169.92	3.888	
9,800.0	5,831.0	9,943.3	5,831.0	87.0	85.9	90.00	-4,484.2	-692.1	660.6	486.9	173.70	3.803	
9,900.0	5,831.0	10,043.3	5,831.0	88.9	87.7	90.00	-4,584.2	-692.1	660.6	483.1	177.49	3.722	
10,000.0	5,831.0	10,143.3	5,831.0	90.8	89.6	90.00	-4,684.2	-692.0	660.6	479.3	181.28	3.644	
10,100.0	5,831.0	10,243.3	5,831.0	92.7	91.5	90.00	-4,784.2	-692.0	660.6	475.5	185.07	3.569	
10,200.0	5,831.0	10,343.3	5,831.0	94.6	93.3	90.00	-4,884.2	-692.0	660.5	471.7	188.86	3.498	
10,300.0	5,831.0	10,443.3	5,831.0	96.5	95.2	90.00	-4,984.2	-692.0	660.5	467.9	192.66	3.429	
10,400.0	5,831.0	10,543.3	5,831.0	98.4	97.1	90.00	-5,084.2	-692.0	660.5	464.1	196.45	3.362	
10,500.0	5,831.0	10,643.3	5,831.0	100.3	99.0	90.00	-5,184.2	-692.0	660.5	460.3	200.25	3.298	
10,600.0	5,831.0	10,743.3	5,831.0	102.2	100.8	90.00	-5,284.2	-692.0	660.5	456.5	204.05	3.237	
10,700.0	5,831.0	10,843.3	5,831.0	104.2	102.7	90.00	-5,384.2	-692.0	660.5	452.7	207.86	3.178	
10,800.0	5,831.0	10,943.3	5,831.0	106.1	104.6	90.00	-5,484.2	-692.0	660.5	448.8	211.66	3.121	
10,900.0	5,831.0	11,043.3	5,831.0	108.0	106.5	90.00	-5,584.2	-692.0	660.5	445.0	215.46	3.065	
11,000.0	5,831.0	11,143.3	5,831.0	109.9	108.4	90.00	-5,684.2	-692.0	660.5	441.2	219.27	3.012	
11,100.0	5,831.0	11,243.3	5,831.0	111.8	110.3	90.00	-5,784.2	-692.0	660.5	437.4	223.08	2.961	
11,200.0	5,831.0	11,343.3	5,831.0	113.7	112.2	90.00	-5,884.2	-692.0	660.5	433.6	226.89	2.911	
11,300.0	5,831.0	11,443.3	5,831.0	115.6	114.0	90.00	-5,984.2	-692.0	660.5	429.8	230.70	2.863	
11,400.0	5,831.0	11,543.3	5,831.0	117.5	115.9	90.00	-6,084.2	-692.0	660.5	426.0	234.51	2.816	
11,500.0	5,831.0	11,643.3	5,831.0	119.4	117.8	90.00	-6,184.2	-692.0	660.5	422.1	238.32	2.771	
11,600.0	5,831.0	11,743.3	5,831.0	121.3	119.7	90.00	-6,284.2	-692.0	660.5	418.3	242.13	2.728	
11,700.0	5,831.0	11,843.3	5,831.0	123.3	121.6	90.00	-6,384.2	-692.0	660.5	414.5	245.95	2.685	
11,800.0	5,831.0	11,943.3	5,831.0	125.2	123.5	90.00	-6,484.2	-691.9	660.4	410.7	249.76	2.644	
11,900.0	5,831.0	12,043.3	5,831.0	127.1	125.4	90.00	-6,584.2	-691.9	660.4	406.9	253.58	2.604	
12,000.0	5,831.0	12,143.3	5,831.0	129.0	127.3	90.00	-6,684.2	-691.9	660.4	403.0	257.40	2.566	
12,100.0	5,831.0	12,243.3	5,831.0	130.9	129.2	90.00	-6,784.2	-691.9	660.4	399.2	261.21	2.528	
12,200.0	5,831.0	12,343.3	5,831.0	132.8	131.1	90.00	-6,884.2	-691.9	660.4	395.4	265.03	2.492	
12,300.0	5,831.0	12,443.3	5,831.0	134.7	133.0	90.00	-6,984.2	-691.9	660.4	391.6	268.85	2.456	
12,400.0	5,831.0	12,543.3	5,831.0	136.6	134.9	90.00	-7,084.2	-691.9	660.4	387.7	272.67	2.422	
12,500.0	5,831.0	12,643.3	5,831.0	138.6	136.8	90.00	-7,184.2	-691.9	660.4	383.9	276.49	2.388	
12,600.0	5,831.0	12,743.3	5,831.0	140.5	138.7	90.00	-7,284.2	-691.9	660.4	380.1	280.31	2.356	
12,700.0	5,831.0	12,843.3	5,831.0	142.4	140.6	90.00	-7,384.2	-691.9	660.4	376.3	284.13	2.324	
12,800.0	5,831.0	12,943.3	5,831.0	144.3	142.5	90.00	-7,484.2	-691.9	660.4	372.4	287.96	2.293	
12,900.0	5,831.0	13,043.3	5,831.0	146.2	144.4	90.00	-7,584.2	-691.9	660.4	368.6	291.78	2.263	
13,000.0	5,831.0	13,143.3	5,831.0	148.1	146.3	90.00	-7,684.2	-691.9	660.4	364.8	295.60	2.234	
13,100.0	5,831.0	13,243.3	5,831.0	150.0	148.2	90.00	-7,784.2	-691.9	660.4	360.9	299.43	2.205	
13,200.0	5,831.0	13,343.3	5,831.0	152.0	150.1	90.00	-7,884.2	-691.9	660.4	357.1	303.25	2.178	
13,300.0	5,831.0	13,443.3	5,831.0	153.9	152.0	90.00	-7,984.2	-691.9	660.3	353.3	307.08	2.150	
13,400.0	5,831.0	13,543.3	5,831.0	155.8	153.9	90.00	-8,084.2	-691.9	660.3	349.4	310.90	2.124	
13,500.0	5,831.0	13,643.3	5,831.0	157.7	155.8	90.00	-8,184.2	-691.9	660.3	345.6	314.73	2.098	
13,600.0	5,831.0	13,743.3	5,831.0	159.6	157.7	90.00	-8,284.2	-691.8	660.3	341.8	318.55	2.073	
13,654.3	5,831.0	13,797.5	5,831.0	160.7	158.8	90.00	-8,338.4	-691.8	660.3	339.7	320.63	2.059	SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1416B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	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	308.921	
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	-5.31	-57.7	3.1	56.0	51.8	4.20	13.326	
1,100.0	1,099.8	1,098.1	1,098.1	2.3	2.3	-6.24	-59.3	3.5	52.5	47.9	4.57	11.485	
1,200.0	1,199.6	1,196.3	1,196.2	2.5	2.5	-8.23	-64.2	4.9	50.6	45.7	4.93	10.272	
1,227.1	1,226.7	1,223.4	1,223.2	2.5	2.5	-8.89	-66.0	5.4	50.6	45.6	5.03	10.063	CC
1,300.0	1,299.4	1,296.2	1,295.8	2.7	2.7	-10.67	-70.9	6.8	50.6	45.3	5.30	9.547	
1,400.0	1,399.1	1,396.2	1,395.6	2.9	2.9	-13.11	-77.6	8.7	50.8	45.1	5.69	8.915	
1,500.0	1,498.9	1,496.2	1,495.3	3.1	3.1	-15.53	-84.3	10.6	51.0	44.9	6.09	8.363	
1,600.0	1,598.6	1,596.2	1,595.0	3.3	3.3	-17.93	-91.0	12.5	51.3	44.8	6.50	7.882	
1,700.0	1,698.4	1,696.1	1,694.8	3.6	3.5	-20.30	-97.7	14.3	51.6	44.7	6.92	7.461	
1,800.0	1,798.1	1,796.1	1,794.5	3.8	3.8	-22.63	-104.4	16.2	52.1	44.8	7.35	7.093	
1,900.0	1,897.9	1,896.1	1,894.2	4.0	4.0	-24.91	-111.1	18.1	52.7	44.9	7.78	6.769	
2,000.0	1,997.6	1,996.1	1,994.0	4.3	4.2	-27.14	-117.9	20.0	53.3	45.1	8.22	6.484	
2,100.0	2,097.4	2,096.1	2,093.7	4.5	4.5	-29.32	-124.6	21.9	54.0	45.3	8.67	6.232	
2,200.0	2,197.2	2,196.0	2,193.4	4.8	4.7	-31.44	-131.3	23.8	54.8	45.7	9.12	6.009	
2,300.0	2,296.9	2,296.0	2,293.2	5.0	5.0	-33.49	-138.0	25.7	55.7	46.1	9.58	5.810	
2,400.0	2,396.7	2,396.0	2,392.9	5.3	5.2	-35.48	-144.7	27.6	56.6	46.6	10.05	5.634	
2,500.0	2,496.4	2,496.0	2,492.6	5.5	5.5	-37.40	-151.4	29.5	57.6	47.1	10.52	5.476	
2,600.0	2,596.2	2,595.9	2,592.4	5.8	5.7	-39.25	-158.1	31.3	58.7	47.7	11.00	5.335	
2,700.0	2,695.9	2,695.9	2,692.1	6.0	6.0	-41.04	-164.9	33.2	59.8	48.3	11.48	5.209	
2,800.0	2,795.7	2,795.9	2,791.8	6.3	6.2	-42.76	-171.6	35.1	61.0	49.0	11.97	5.095	
2,900.0	2,895.5	2,895.9	2,891.6	6.5	6.5	-44.41	-178.3	37.0	62.2	49.7	12.46	4.993	
3,000.0	2,995.2	2,995.8	2,991.3	6.8	6.7	-46.00	-185.0	38.9	63.5	50.5	12.95	4.901	
3,100.0	3,095.0	3,095.8	3,091.0	7.1	7.0	-47.52	-191.7	40.8	64.8	51.4	13.45	4.818	
3,200.0	3,194.7	3,195.8	3,190.8	7.3	7.2	-48.98	-198.4	42.7	66.2	52.2	13.95	4.742	
3,300.0	3,294.5	3,295.8	3,290.5	7.6	7.5	-50.39	-205.1	44.6	67.6	53.1	14.46	4.674	
3,400.0	3,394.2	3,395.8	3,390.2	7.8	7.8	-51.73	-211.8	46.5	69.0	54.1	14.97	4.612	
3,500.0	3,494.0	3,495.7	3,490.0	8.1	8.0	-53.02	-218.6	48.4	70.5	55.0	15.48	4.556	
3,600.0	3,593.7	3,595.7	3,589.7	8.4	8.3	-54.25	-225.3	50.2	72.0	56.1	15.99	4.505	
3,700.0	3,693.5	3,695.7	3,689.4	8.6	8.5	-55.43	-232.0	52.1	73.6	57.1	16.51	4.459	
3,800.0	3,793.3	3,795.7	3,789.2	8.9	8.8	-56.56	-238.7	54.0	75.2	58.2	17.02	4.416	
3,900.0	3,893.0	3,895.6	3,888.9	9.1	9.0	-57.65	-245.4	55.9	76.8	59.3	17.54	4.378	
4,000.0	3,992.8	3,995.6	3,988.6	9.4	9.3	-58.69	-252.1	57.8	78.4	60.4	18.06	4.342	
4,100.0	4,092.5	4,095.6	4,088.4	9.7	9.6	-59.69	-258.8	59.7	80.1	61.5	18.58	4.310	
4,200.0	4,192.3	4,195.6	4,188.1	9.9	9.8	-60.64	-265.5	61.6	81.8	62.7	19.11	4.280	
4,300.0	4,292.0	4,295.5	4,287.8	10.2	10.1	-61.56	-272.3	63.5	83.5	63.9	19.63	4.253	
4,400.0	4,391.8	4,395.5	4,387.6	10.4	10.3	-62.44	-279.0	65.4	85.2	65.1	20.16	4.228	
4,500.0	4,491.6	4,495.5	4,487.3	10.7	10.6	-63.29	-285.7	67.2	87.0	66.3	20.68	4.205	
4,600.0	4,591.3	4,595.5	4,587.0	11.0	10.9	-64.10	-292.4	69.1	88.7	67.5	21.21	4.184	
4,700.0	4,691.1	4,695.4	4,686.8	11.2	11.1	-64.88	-299.1	71.0	90.5	68.8	21.74	4.164	
4,800.0	4,790.8	4,795.4	4,786.5	11.5	11.4	-65.63	-305.8	72.9	92.3	70.0	22.26	4.146	
4,900.0	4,890.6	4,895.4	4,886.2	11.8	11.7	-66.35	-312.5	74.8	94.1	71.3	22.79	4.130	
5,000.0	4,990.3	4,995.4	4,986.0	12.0	11.9	-67.05	-319.3	76.7	96.0	72.6	23.32	4.115	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1416B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,090.1	5,095.4	5,085.7	12.3	12.2	-67.71	-326.0	78.6	97.8	73.9	23.85	4.101	
5,200.0	5,189.9	5,195.3	5,185.4	12.5	12.4	-68.36	-332.7	80.5	99.7	75.3	24.38	4.088	
5,300.0	5,289.6	5,295.3	5,285.2	12.8	12.7	-68.98	-339.4	82.4	101.5	76.6	24.91	4.076	
5,357.0	5,346.5	5,352.3	5,342.0	13.0	12.9	-69.32	-343.2	83.4	102.6	77.4	25.21	4.069	
5,400.0	5,389.2	5,395.2	5,384.8	13.1	13.0	-70.48	-346.1	84.3	102.8	77.3	25.48	4.034	
5,450.0	5,438.2	5,444.8	5,434.2	13.3	13.1	-74.29	-349.4	85.2	101.8	75.9	25.90	3.929	
5,499.3	5,485.4	5,490.0	5,479.3	13.5	13.2	-79.72	-353.4	86.3	100.8	74.4	26.41	3.817	
5,500.0	5,486.0	5,490.6	5,479.9	13.5	13.2	-79.80	-353.4	86.3	100.8	74.4	26.42	3.816	
5,550.0	5,532.2	5,535.6	5,524.2	13.8	13.4	-85.51	-360.9	88.4	102.0	75.0	26.98	3.781	
5,600.0	5,576.3	5,581.3	5,568.3	14.1	13.6	-91.14	-372.2	91.6	105.7	78.2	27.57	3.835	
5,650.0	5,618.0	5,627.5	5,611.8	14.5	13.8	-96.34	-387.5	95.9	111.9	83.8	28.14	3.979	
5,700.0	5,656.8	5,674.5	5,654.3	14.9	14.1	-100.87	-406.6	101.3	120.5	91.9	28.66	4.204	
5,750.0	5,692.5	5,722.1	5,695.3	15.3	14.4	-104.61	-429.8	107.8	131.2	102.0	29.17	4.499	
5,800.0	5,724.6	5,770.4	5,734.7	15.8	14.8	-107.54	-456.8	115.4	143.7	114.1	29.68	4.844	
5,850.0	5,753.0	5,819.6	5,771.8	16.4	15.2	-109.73	-487.9	124.1	157.8	127.6	30.23	5.219	
5,900.0	5,777.2	5,869.6	5,806.2	17.0	15.7	-111.23	-522.7	134.0	173.1	142.2	30.89	5.605	
5,950.0	5,797.2	5,920.6	5,837.6	17.6	16.2	-112.16	-561.4	144.8	189.4	157.8	31.66	5.982	
6,000.0	5,812.6	5,972.6	5,865.5	18.3	16.9	-112.59	-603.6	156.7	206.5	173.9	32.59	6.336	
6,050.0	5,823.5	6,025.8	5,889.2	19.0	17.5	-112.61	-649.4	169.6	224.1	190.4	33.72	6.647	
6,100.0	5,829.6	6,080.2	5,908.4	19.8	18.3	-112.29	-698.4	183.4	242.1	207.1	35.02	6.913	
6,138.8	5,831.0	6,123.5	5,919.8	20.3	18.9	-111.84	-738.5	194.7	256.1	220.0	36.14	7.087	
6,208.8	5,831.0	6,204.8	5,931.8	21.3	20.1	-112.11	-815.9	216.5	278.5	240.2	38.28	7.275	
6,300.0	5,831.0	6,309.8	5,933.0	22.7	21.7	-110.34	-917.3	243.7	301.0	259.5	41.51	7.251	
6,400.0	5,831.0	6,425.5	5,933.0	24.3	23.3	-108.83	-1,030.4	267.6	320.5	275.5	45.04	7.117	
6,500.0	5,831.0	6,543.7	5,933.0	26.0	25.0	-107.87	-1,147.4	284.9	334.4	285.8	48.59	6.883	
6,600.0	5,831.0	6,663.6	5,933.0	27.7	26.8	-107.35	-1,266.8	295.0	342.5	290.3	52.14	6.568	
6,700.0	5,831.0	6,780.9	5,933.0	29.4	28.6	-107.22	-1,384.1	297.7	344.6	289.0	55.62	6.196	
6,800.0	5,831.0	6,880.9	5,933.0	31.1	30.3	-107.22	-1,484.1	297.7	344.6	285.7	58.92	5.848	
6,900.0	5,831.0	6,980.9	5,933.0	32.9	32.0	-107.22	-1,584.1	297.7	344.6	282.3	62.28	5.533	
7,000.0	5,831.0	7,080.9	5,933.0	34.7	33.7	-107.22	-1,684.1	297.7	344.6	278.9	65.67	5.247	
7,100.0	5,831.0	7,180.9	5,933.0	36.5	35.5	-107.22	-1,784.1	297.7	344.6	275.5	69.10	4.987	
7,200.0	5,831.0	7,280.9	5,933.0	38.3	37.2	-107.22	-1,884.1	297.7	344.6	272.1	72.55	4.750	
7,300.0	5,831.0	7,380.9	5,933.0	40.1	39.0	-107.21	-1,984.1	297.7	344.6	268.6	76.03	4.533	
7,400.0	5,831.0	7,480.9	5,933.0	41.9	40.8	-107.21	-2,084.1	297.7	344.6	265.1	79.52	4.334	
7,500.0	5,831.0	7,580.9	5,933.0	43.8	42.6	-107.21	-2,184.1	297.7	344.6	261.6	83.04	4.150	
7,600.0	5,831.0	7,680.9	5,933.0	45.6	44.4	-107.21	-2,284.1	297.7	344.7	258.1	86.57	3.981	
7,700.0	5,831.0	7,780.9	5,933.0	47.4	46.2	-107.21	-2,384.1	297.8	344.7	254.6	90.11	3.825	
7,800.0	5,831.0	7,880.9	5,933.0	49.3	48.0	-107.21	-2,484.1	297.8	344.7	251.0	93.66	3.680	
7,900.0	5,831.0	7,980.9	5,933.0	51.2	49.9	-107.21	-2,584.1	297.8	344.7	247.5	97.23	3.545	
8,000.0	5,831.0	8,080.9	5,933.0	53.0	51.7	-107.21	-2,684.1	297.8	344.7	243.9	100.80	3.419	
8,100.0	5,831.0	8,180.9	5,933.0	54.9	53.6	-107.21	-2,784.1	297.8	344.7	240.3	104.39	3.302	
8,200.0	5,831.0	8,280.9	5,933.0	56.8	55.4	-107.21	-2,884.1	297.8	344.7	236.7	107.98	3.192	
8,300.0	5,831.0	8,380.9	5,933.0	58.6	57.3	-107.21	-2,984.1	297.8	344.7	233.1	111.58	3.090	
8,400.0	5,831.0	8,480.9	5,933.0	60.5	59.1	-107.21	-3,084.1	297.8	344.7	229.5	115.18	2.993	
8,500.0	5,831.0	8,580.9	5,933.0	62.4	61.0	-107.21	-3,184.1	297.8	344.7	225.9	118.79	2.902	
8,600.0	5,831.0	8,680.9	5,933.0	64.3	62.9	-107.21	-3,284.1	297.8	344.7	222.3	122.41	2.816	
8,700.0	5,831.0	8,780.9	5,933.0	66.2	64.7	-107.21	-3,384.1	297.8	344.8	218.7	126.03	2.736	
8,800.0	5,831.0	8,880.9	5,933.0	68.1	66.6	-107.21	-3,484.1	297.9	344.8	215.1	129.65	2.659	
8,900.0	5,831.0	8,980.9	5,933.0	69.9	68.5	-107.21	-3,584.1	297.9	344.8	211.5	133.28	2.587	
9,000.0	5,831.0	9,080.9	5,933.0	71.8	70.4	-107.21	-3,684.1	297.9	344.8	207.9	136.91	2.518	
9,100.0	5,831.0	9,180.9	5,933.0	73.7	72.2	-107.21	-3,784.1	297.9	344.8	204.2	140.55	2.453	
9,200.0	5,831.0	9,280.9	5,933.0	75.6	74.1	-107.21	-3,884.1	297.9	344.8	200.6	144.18	2.391	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S11-T10N-R58W - Razor #11H-1416B - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,300.0	5,831.0	9,380.9	5,933.0	77.5	76.0	-107.21	-3,984.1	297.9	344.8	197.0	147.83	2.333	
9,400.0	5,831.0	9,480.9	5,933.0	79.4	77.9	-107.21	-4,084.1	297.9	344.8	193.3	151.47	2.276	
9,500.0	5,831.0	9,580.9	5,933.0	81.3	79.8	-107.21	-4,184.1	297.9	344.8	189.7	155.12	2.223	
9,600.0	5,831.0	9,680.9	5,933.0	83.2	81.7	-107.20	-4,284.1	297.9	344.8	186.1	158.77	2.172	
9,700.0	5,831.0	9,780.9	5,933.0	85.1	83.6	-107.20	-4,384.1	297.9	344.8	182.4	162.42	2.123	
9,800.0	5,831.0	9,880.9	5,933.0	87.0	85.5	-107.20	-4,484.1	297.9	344.9	178.8	166.07	2.077	
9,900.0	5,831.0	9,980.9	5,933.0	88.9	87.4	-107.20	-4,584.1	297.9	344.9	175.1	169.73	2.032	
10,000.0	5,831.0	10,080.9	5,933.0	90.8	89.2	-107.20	-4,684.1	298.0	344.9	171.5	173.38	1.989	
10,100.0	5,831.0	10,180.9	5,933.0	92.7	91.1	-107.20	-4,784.1	298.0	344.9	167.8	177.04	1.948	
10,200.0	5,831.0	10,280.9	5,933.0	94.6	93.0	-107.20	-4,884.1	298.0	344.9	164.2	180.70	1.909	
10,300.0	5,831.0	10,380.9	5,933.0	96.5	94.9	-107.20	-4,984.1	298.0	344.9	160.5	184.36	1.871	
10,400.0	5,831.0	10,480.9	5,933.0	98.4	96.8	-107.20	-5,084.1	298.0	344.9	156.9	188.03	1.834	
10,500.0	5,831.0	10,580.9	5,933.0	100.3	98.7	-107.20	-5,184.1	298.0	344.9	153.2	191.69	1.799	
10,600.0	5,831.0	10,680.9	5,933.0	102.2	100.6	-107.20	-5,284.1	298.0	344.9	149.6	195.36	1.766	
10,700.0	5,831.0	10,780.9	5,933.0	104.2	102.5	-107.20	-5,384.1	298.0	344.9	145.9	199.02	1.733	
10,800.0	5,831.0	10,880.9	5,933.0	106.1	104.4	-107.20	-5,484.1	298.0	344.9	142.2	202.69	1.702	
10,900.0	5,831.0	10,980.9	5,933.0	108.0	106.3	-107.20	-5,584.1	298.0	344.9	138.6	206.36	1.672	
11,000.0	5,831.0	11,080.9	5,933.0	109.9	108.3	-107.20	-5,684.1	298.0	345.0	134.9	210.03	1.642	
11,100.0	5,831.0	11,180.9	5,933.0	111.8	110.2	-107.20	-5,784.1	298.0	345.0	131.3	213.70	1.614	
11,200.0	5,831.0	11,280.9	5,933.0	113.7	112.1	-107.20	-5,884.1	298.1	345.0	127.6	217.37	1.587	
11,300.0	5,831.0	11,380.9	5,933.0	115.6	114.0	-107.20	-5,984.1	298.1	345.0	123.9	221.05	1.561	
11,400.0	5,831.0	11,480.9	5,933.0	117.5	115.9	-107.20	-6,084.1	298.1	345.0	120.3	224.72	1.535	
11,500.0	5,831.0	11,580.9	5,933.0	119.4	117.8	-107.20	-6,184.1	298.1	345.0	116.6	228.39	1.511	
11,600.0	5,831.0	11,680.9	5,933.0	121.3	119.7	-107.20	-6,284.1	298.1	345.0	112.9	232.07	1.487	Level 3
11,700.0	5,831.0	11,780.9	5,933.0	123.3	121.6	-107.20	-6,384.1	298.1	345.0	109.3	235.74	1.464	Level 3
11,800.0	5,831.0	11,880.9	5,933.0	125.2	123.5	-107.19	-6,484.1	298.1	345.0	105.6	239.42	1.441	Level 3
11,900.0	5,831.0	11,980.9	5,933.0	127.1	125.4	-107.19	-6,584.1	298.1	345.0	101.9	243.10	1.419	Level 3
12,000.0	5,831.0	12,080.9	5,933.0	129.0	127.3	-107.19	-6,684.1	298.1	345.0	98.3	246.78	1.398	Level 3
12,100.0	5,831.0	12,180.9	5,933.0	130.9	129.2	-107.19	-6,784.1	298.1	345.1	94.6	250.45	1.378	Level 3
12,200.0	5,831.0	12,280.9	5,933.0	132.8	131.1	-107.19	-6,884.1	298.1	345.1	90.9	254.13	1.358	Level 3
12,300.0	5,831.0	12,380.9	5,933.0	134.7	133.0	-107.19	-6,984.1	298.1	345.1	87.3	257.81	1.338	Level 3
12,400.0	5,831.0	12,480.9	5,933.0	136.6	135.0	-107.19	-7,084.1	298.2	345.1	83.6	261.49	1.320	Level 3
12,500.0	5,831.0	12,580.9	5,933.0	138.6	136.9	-107.19	-7,184.1	298.2	345.1	79.9	265.17	1.301	Level 3
12,600.0	5,831.0	12,680.9	5,933.0	140.5	138.8	-107.19	-7,284.1	298.2	345.1	76.2	268.85	1.284	Level 3
12,700.0	5,831.0	12,780.9	5,933.0	142.4	140.7	-107.19	-7,384.1	298.2	345.1	72.6	272.53	1.266	Level 3
12,800.0	5,831.0	12,880.9	5,933.0	144.3	142.6	-107.19	-7,484.1	298.2	345.1	68.9	276.22	1.249	Level 2
12,900.0	5,831.0	12,980.9	5,933.0	146.2	144.5	-107.19	-7,584.1	298.2	345.1	65.2	279.90	1.233	Level 2
13,000.0	5,831.0	13,080.9	5,933.0	148.1	146.4	-107.19	-7,684.1	298.2	345.1	61.6	283.58	1.217	Level 2
13,100.0	5,831.0	13,180.9	5,933.0	150.0	148.3	-107.19	-7,784.1	298.2	345.1	57.9	287.26	1.201	Level 2
13,200.0	5,831.0	13,280.9	5,933.0	152.0	150.3	-107.19	-7,884.1	298.2	345.2	54.2	290.95	1.186	Level 2
13,300.0	5,831.0	13,380.9	5,933.0	153.9	152.2	-107.19	-7,984.1	298.2	345.2	50.5	294.63	1.172	Level 2
13,400.0	5,831.0	13,480.9	5,933.0	155.8	154.1	-107.19	-8,084.1	298.2	345.2	46.9	298.31	1.157	Level 2
13,500.0	5,831.0	13,580.9	5,933.0	157.7	156.0	-107.19	-8,184.1	298.2	345.2	43.2	302.00	1.143	Level 2
13,600.0	5,831.0	13,680.9	5,933.0	159.6	157.9	-107.19	-8,284.1	298.3	345.2	39.5	305.68	1.129	Level 2
13,629.3	5,831.0	13,710.2	5,933.0	160.2	158.4	-107.19	-8,313.4	298.3	345.2	38.5	306.71	1.125	Level 2
13,654.3	5,831.0	13,732.2	5,933.0	160.7	158.8	-107.19	-8,335.4	298.3	345.2	37.7	307.51	1.123	Level 2, ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 132-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	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	1,165.823	
200.0	200.0	192.8	192.7	0.3	0.3	-104.68	-59.0	-225.1	232.8	232.2	0.59	393.905	
300.0	300.0	292.7	292.6	0.5	0.5	-104.34	-58.3	-228.2	235.7	234.7	1.03	228.647	
400.0	400.0	393.3	393.2	0.8	0.7	-103.85	-57.1	-231.4	238.4	237.0	1.47	162.186	
500.0	500.0	493.1	492.9	1.0	0.9	-103.34	-55.6	-234.5	241.1	239.2	1.91	126.226	
600.0	600.0	592.3	592.0	1.2	1.2	-102.81	-54.1	-237.7	243.9	241.6	2.36	103.555	
700.0	700.0	693.5	693.1	1.4	1.4	-102.25	-52.3	-241.0	246.7	243.9	2.80	88.233	
800.0	800.0	795.6	795.2	1.7	1.6	-101.88	-51.2	-243.5	248.8	245.6	3.22	77.158	
900.0	900.0	895.3	894.9	1.9	1.8	-101.66	-50.7	-245.4	250.6	247.0	3.65	68.587	
1,000.0	1,000.0	996.9	996.5	2.1	2.0	76.72	-50.5	-246.9	251.6	247.6	4.05	62.123	
1,100.0	1,099.8	1,097.4	1,097.0	2.3	2.2	77.78	-51.1	-247.8	251.5	247.0	4.43	56.792	
1,200.0	1,199.6	1,197.8	1,197.4	2.5	2.4	79.14	-52.1	-248.5	250.9	246.1	4.82	52.017	
1,300.0	1,299.4	1,298.5	1,298.0	2.7	2.6	80.43	-53.5	-248.7	250.0	244.8	5.24	47.762	
1,400.0	1,399.1	1,397.7	1,397.2	2.9	2.8	81.57	-55.4	-248.8	249.3	243.7	5.66	44.086	
1,500.0	1,498.9	1,497.0	1,496.5	3.1	3.0	82.59	-57.8	-249.2	249.0	242.9	6.09	40.911	
1,550.8	1,549.5	1,547.4	1,546.9	3.2	3.1	83.09	-59.2	-249.5	248.9	242.6	6.31	39.456	
1,600.0	1,598.6	1,595.5	1,595.0	3.3	3.2	83.51	-60.7	-249.8	249.0	242.5	6.52	38.168	
1,700.0	1,698.4	1,694.8	1,694.2	3.6	3.4	84.22	-64.6	-251.0	249.7	242.7	6.97	35.809	
1,800.0	1,798.1	1,793.6	1,792.9	3.8	3.7	84.81	-69.0	-252.3	250.6	243.2	7.42	33.760	
1,900.0	1,897.9	1,893.3	1,892.4	4.0	3.9	85.46	-73.2	-254.1	252.0	244.2	7.88	31.998	
2,000.0	1,997.6	1,996.9	1,996.0	4.3	4.1	86.22	-77.1	-255.3	252.8	244.5	8.34	30.317	
2,100.0	2,097.4	2,097.6	2,096.7	4.5	4.3	87.24	-79.6	-255.3	252.5	243.7	8.80	28.700	
2,119.3	2,116.7	2,116.2	2,115.3	4.6	4.3	87.40	-80.2	-255.4	252.5	243.6	8.89	28.410	
2,200.0	2,197.2	2,191.7	2,190.7	4.8	4.5	87.96	-83.0	-256.3	253.3	244.1	9.25	27.374	
2,300.0	2,296.9	2,302.0	2,300.9	5.0	4.7	88.97	-86.2	-256.7	253.5	243.7	9.74	26.025	
2,400.0	2,396.7	2,402.5	2,401.4	5.3	5.0	90.05	-88.5	-254.9	251.5	241.3	10.21	24.643	
2,500.0	2,496.4	2,502.8	2,501.6	5.5	5.2	90.96	-91.7	-252.4	249.0	238.3	10.68	23.320	
2,564.6	2,560.8	2,561.9	2,560.6	5.7	5.3	91.39	-93.9	-251.8	248.3	237.3	10.97	22.633	
2,600.0	2,596.2	2,596.2	2,594.9	5.8	5.4	91.61	-95.4	-252.0	248.5	237.3	11.13	22.314	
2,700.0	2,695.9	2,698.3	2,697.0	6.0	5.6	92.43	-99.0	-252.0	248.4	236.8	11.61	21.403	
2,800.0	2,795.7	2,802.0	2,800.6	6.3	5.8	93.22	-102.9	-251.2	247.7	235.6	12.09	20.497	
2,900.0	2,895.5	2,906.9	2,905.4	6.5	6.0	94.90	-103.4	-247.3	244.4	231.9	12.56	19.459	
3,000.0	2,995.2	3,006.4	3,004.8	6.8	6.2	96.64	-103.5	-243.1	240.9	227.9	13.02	18.499	
3,100.0	3,095.0	3,106.1	3,104.4	7.1	6.4	98.46	-103.5	-238.8	237.5	224.1	13.48	17.620	
3,200.0	3,194.7	3,204.5	3,202.8	7.3	6.6	100.22	-103.8	-234.8	234.6	220.7	13.94	16.833	
3,300.0	3,294.5	3,302.2	3,300.4	7.6	6.8	101.92	-104.3	-231.6	232.7	218.3	14.39	16.168	
3,400.0	3,394.2	3,400.6	3,398.7	7.8	7.0	103.54	-105.0	-229.4	231.8	216.9	14.85	15.609	
3,500.0	3,494.0	3,500.3	3,498.4	8.1	7.3	105.11	-106.0	-227.5	231.4	216.1	15.31	15.116	
3,600.0	3,593.7	3,600.8	3,598.9	8.4	7.5	106.68	-107.1	-225.4	231.0	215.2	15.77	14.653	
3,700.0	3,693.5	3,701.7	3,699.8	8.6	7.7	108.36	-108.0	-222.7	230.4	214.2	16.22	14.207	
3,800.0	3,793.3	3,802.4	3,800.5	8.9	7.9	110.20	-108.5	-219.5	229.5	212.8	16.66	13.773	
3,900.0	3,893.0	3,902.3	3,900.2	9.1	8.1	112.19	-108.5	-215.7	228.5	211.4	17.10	13.367	
3,930.1	3,923.0	3,930.7	3,928.6	9.2	8.1	112.76	-108.5	-214.7	228.4	211.2	17.23	13.257	CC, ES
4,000.0	3,992.8	3,995.0	3,992.9	9.4	8.3	113.80	-108.8	-213.8	229.3	211.7	17.53	13.080	
4,100.0	4,092.5	4,094.2	4,092.1	9.7	8.5	115.07	-109.9	-214.4	232.2	214.2	17.98	12.915	
4,200.0	4,192.3	4,194.4	4,192.3	9.9	8.7	116.36	-110.9	-214.7	235.0	216.6	18.43	12.755	
4,300.0	4,292.0	4,294.1	4,292.0	10.2	8.9	117.60	-112.0	-215.0	237.9	219.1	18.88	12.605	
4,400.0	4,391.8	4,393.4	4,391.3	10.4	9.1	118.70	-113.3	-215.7	241.1	221.8	19.33	12.475	
4,500.0	4,491.6	4,492.7	4,490.5	10.7	9.3	119.70	-114.9	-216.7	244.6	224.8	19.78	12.369	
4,600.0	4,591.3	4,594.2	4,592.0	11.0	9.5	120.46	-117.4	-218.0	247.9	227.7	20.24	12.251	
4,700.0	4,691.1	4,694.5	4,692.2	11.2	9.8	120.96	-121.0	-219.5	250.7	230.0	20.70	12.111	

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 @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 132-ISCWSA MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
4,800.0	4,790.8	4,791.2	4,788.8	11.5	10.0	121.25	-124.8	-221.9	254.2	233.0	21.16	12.013	
4,900.0	4,890.6	4,889.1	4,886.7	11.8	10.2	122.17	-125.6	-223.8	259.1	237.5	21.60	11.996	
5,000.0	4,990.3	4,987.4	4,984.9	12.0	10.4	123.72	-124.1	-223.7	263.7	241.7	22.02	11.973	SF
5,100.0	5,090.1	5,077.0	5,074.5	12.3	10.6	125.43	-119.6	-225.0	271.8	249.4	22.42	12.123	
5,200.0	5,189.9	5,178.0	5,175.3	12.5	10.8	127.29	-113.7	-227.1	281.2	258.4	22.84	12.313	
5,300.0	5,289.6	5,277.9	5,275.1	12.8	11.0	128.89	-108.8	-229.1	290.3	267.0	23.26	12.479	
5,357.0	5,346.5	5,325.3	5,322.4	13.0	11.0	129.64	-106.0	-230.3	296.1	272.7	23.48	12.612	
5,400.0	5,389.2	5,354.4	5,351.2	13.1	11.1	129.78	-102.9	-231.4	303.5	279.9	23.60	12.858	
5,450.0	5,438.2	5,387.7	5,384.0	13.3	11.2	130.12	-97.3	-232.9	317.3	293.6	23.69	13.392	
5,500.0	5,486.0	5,418.3	5,413.8	13.5	11.2	130.43	-90.4	-234.0	336.4	312.6	23.73	14.177	
5,550.0	5,532.2	5,445.2	5,439.6	13.8	11.3	130.38	-82.8	-234.7	360.8	337.1	23.72	15.210	
5,600.0	5,576.3	5,469.6	5,462.6	14.1	11.3	129.82	-74.9	-235.1	390.1	366.4	23.72	16.448	
5,650.0	5,618.0	5,490.0	5,481.7	14.5	11.4	128.31	-67.6	-235.3	423.8	400.0	23.80	17.810	
5,700.0	5,656.8	5,505.5	5,496.1	14.9	11.4	125.39	-61.6	-235.4	461.4	437.3	24.09	19.151	
5,750.0	5,692.5	5,516.9	5,506.5	15.3	11.4	120.67	-57.1	-235.4	502.1	477.3	24.74	20.293	
5,800.0	5,724.6	5,528.0	5,516.6	15.8	11.4	114.34	-52.5	-235.5	545.3	519.5	25.77	21.162	
5,850.0	5,753.0	5,528.0	5,516.6	16.4	11.4	103.63	-52.5	-235.5	590.3	562.9	27.34	21.590	
5,900.0	5,777.2	5,528.0	5,516.6	17.0	11.4	90.56	-52.5	-235.5	636.4	607.9	28.53	22.306	
5,950.0	5,797.2	5,528.0	5,516.6	17.6	11.4	76.30	-52.5	-235.5	683.1	654.6	28.49	23.973	
6,000.0	5,812.6	5,528.0	5,516.6	18.3	11.4	62.73	-52.5	-235.5	729.9	702.9	26.96	27.078	
6,050.0	5,823.5	5,528.0	5,516.6	19.0	11.4	51.24	-52.5	-235.5	776.3	751.8	24.47	31.726	
6,100.0	5,829.6	5,515.6	5,505.3	19.8	11.4	40.89	-57.6	-235.4	821.8	800.5	21.37	38.460	
6,138.8	5,831.0	5,509.2	5,499.5	20.3	11.4	35.15	-60.2	-235.4	856.4	837.0	19.40	44.152	
6,208.8	5,831.0	5,496.0	5,487.3	21.3	11.4	30.71	-65.3	-235.3	918.9	900.6	18.21	50.457	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #11H-1415A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Reference Site:	S11-T10N-R58W	**MD Reference:**	WELL @ 4971.3ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Razor #11H-1415A	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	HZ	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4971.3ft (Original Well Elev)
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°