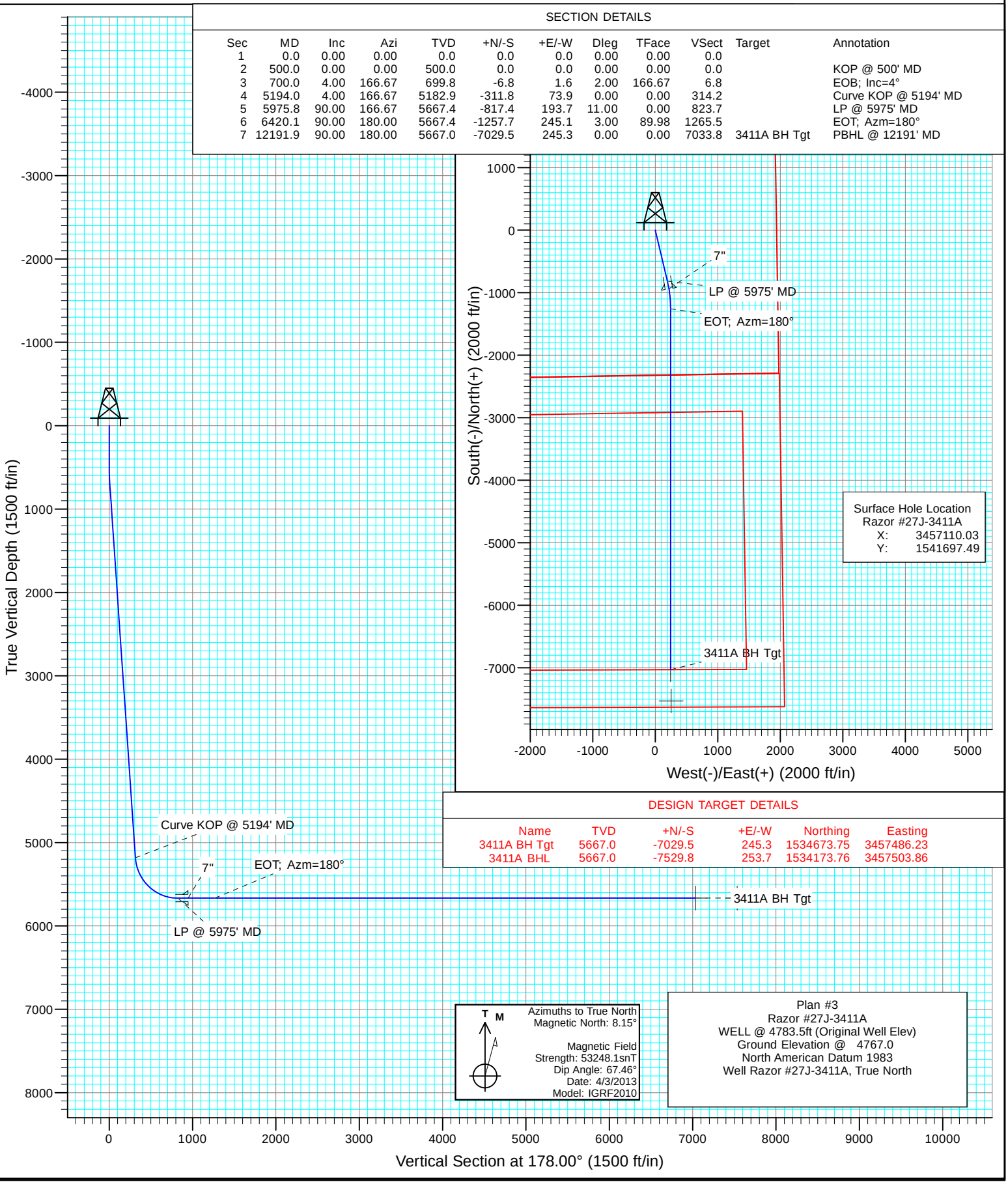
WHITING PETROLEUM CORPORATION

Project: Weld County, CO
Site: S27-T10N-R58W
Well: Razor #27J-3411A
Wellbore: HZ
Design: Plan #3

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0		KOP @ 500' MD
3	700.0	4.00	166.67	699.8	-6.8	1.6	2.00	166.67	6.8		EOB; Inc=4°
4	5194.0	4.00	166.67	5182.9	-311.8	73.9	0.00	0.00	314.2		Curve KOP @ 5194' MD
5	5975.8	90.00	166.67	5667.4	-817.4	193.7	11.00	0.00	823.7		LP @ 5975' MD
6	6420.1	90.00	180.00	5667.4	-1257.7	245.1	3.00	89.98	1265.5		EOT; Azm=180°
7	12191.9	90.00	180.00	5667.0	-7029.5	245.3	0.00	0.00	7033.8	3411A BH Tgt	PBHL @ 12191' MD



Surface Hole Location
Razor #27J-3411A
X: 3457110.03
Y: 1541697.49

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
3411A BH Tgt	5667.0	-7029.5	245.3	1534673.75	3457486.23
3411A BHL	5667.0	-7529.8	253.7	1534173.76	3457503.86

T M

Azimuths to True North
Magnetic North: 8.15°

Magnetic Field
Strength: 53248.1snT
Dip Angle: 67.46°
Date: 4/3/2013
Model: IGRF2010

Plan #3
Razor #27J-3411A
WELL @ 4783.5ft (Original Well Elev)
Ground Elevation @ 4767.0
North American Datum 1983
Well Razor #27J-3411A, True North

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27J-3411A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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 S27-T10N-R58W

Site Position:		**Northing:**	1,541,647.64 usft	**Latitude:**	40° 48' 30.938 N
From:	Lat/Long	**Easting:**	3,455,684.98 usft	**Longitude:**	103° 51' 13.799 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.06 °

Well Razor #27J-3411A

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,541,694.41 usft	**Latitude:**	40° 48' 31.140 N
	+E/-W	0.0 usft	**Easting:**	3,457,103.12 usft	**Longitude:**	103° 50' 55.349 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,767.0 usft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/3/2013	8.15	67.46	53,248

Design Plan #3

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	178.00

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	4.00	166.67	699.8	-6.8	1.6	2.00	2.00	0.00	166.67	
5,194.0	4.00	166.67	5,182.9	-311.8	73.9	0.00	0.00	0.00	0.00	
5,975.8	90.00	166.67	5,667.4	-817.4	193.7	11.00	11.00	0.00	0.00	
6,420.1	90.00	180.00	5,667.4	-1,257.7	245.1	3.00	0.00	3.00	89.98	
12,191.9	90.00	180.00	5,667.0	-7,029.5	245.3	0.00	0.00	0.00	0.00	3411A BH Tgt

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
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Project:	Weld County, CO	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27J-3411A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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	KOP @ 500' MD
600.0	2.00	166.67	600.0	-1.7	0.4	1.7	2.00	2.00	
700.0	4.00	166.67	699.8	-6.8	1.6	6.8	2.00	2.00	EOB; Inc=4°
800.0	4.00	166.67	799.6	-13.6	3.2	13.7	0.00	0.00	
900.0	4.00	166.67	899.3	-20.4	4.8	20.5	0.00	0.00	
1,000.0	4.00	166.67	999.1	-27.2	6.4	27.4	0.00	0.00	
1,100.0	4.00	166.67	1,098.9	-33.9	8.0	34.2	0.00	0.00	
1,200.0	4.00	166.67	1,198.6	-40.7	9.7	41.0	0.00	0.00	
1,300.0	4.00	166.67	1,298.4	-47.5	11.3	47.9	0.00	0.00	
1,400.0	4.00	166.67	1,398.1	-54.3	12.9	54.7	0.00	0.00	
1,500.0	4.00	166.67	1,497.9	-61.1	14.5	61.6	0.00	0.00	
1,600.0	4.00	166.67	1,597.6	-67.9	16.1	68.4	0.00	0.00	
1,700.0	4.00	166.67	1,697.4	-74.7	17.7	75.2	0.00	0.00	
1,800.0	4.00	166.67	1,797.2	-81.5	19.3	82.1	0.00	0.00	
1,900.0	4.00	166.67	1,896.9	-88.2	20.9	88.9	0.00	0.00	
2,000.0	4.00	166.67	1,996.7	-95.0	22.5	95.8	0.00	0.00	
2,100.0	4.00	166.67	2,096.4	-101.8	24.1	102.6	0.00	0.00	
2,200.0	4.00	166.67	2,196.2	-108.6	25.7	109.4	0.00	0.00	
2,300.0	4.00	166.67	2,295.9	-115.4	27.3	116.3	0.00	0.00	
2,400.0	4.00	166.67	2,395.7	-122.2	28.9	123.1	0.00	0.00	
2,500.0	4.00	166.67	2,495.4	-129.0	30.6	130.0	0.00	0.00	
2,600.0	4.00	166.67	2,595.2	-135.8	32.2	136.8	0.00	0.00	
2,700.0	4.00	166.67	2,695.0	-142.5	33.8	143.6	0.00	0.00	
2,800.0	4.00	166.67	2,794.7	-149.3	35.4	150.5	0.00	0.00	
2,900.0	4.00	166.67	2,894.5	-156.1	37.0	157.3	0.00	0.00	
3,000.0	4.00	166.67	2,994.2	-162.9	38.6	164.2	0.00	0.00	
3,100.0	4.00	166.67	3,094.0	-169.7	40.2	171.0	0.00	0.00	
3,200.0	4.00	166.67	3,193.7	-176.5	41.8	177.8	0.00	0.00	
3,300.0	4.00	166.67	3,293.5	-183.3	43.4	184.7	0.00	0.00	
3,400.0	4.00	166.67	3,393.3	-190.1	45.0	191.5	0.00	0.00	
3,500.0	4.00	166.67	3,493.0	-196.8	46.6	198.4	0.00	0.00	
3,600.0	4.00	166.67	3,592.8	-203.6	48.2	205.2	0.00	0.00	
3,700.0	4.00	166.67	3,692.5	-210.4	49.9	212.0	0.00	0.00	
3,800.0	4.00	166.67	3,792.3	-217.2	51.5	218.9	0.00	0.00	
3,900.0	4.00	166.67	3,892.0	-224.0	53.1	225.7	0.00	0.00	
4,000.0	4.00	166.67	3,991.8	-230.8	54.7	232.6	0.00	0.00	
4,100.0	4.00	166.67	4,091.5	-237.6	56.3	239.4	0.00	0.00	
4,200.0	4.00	166.67	4,191.3	-244.4	57.9	246.2	0.00	0.00	
4,300.0	4.00	166.67	4,291.1	-251.1	59.5	253.1	0.00	0.00	
4,400.0	4.00	166.67	4,390.8	-257.9	61.1	259.9	0.00	0.00	
4,500.0	4.00	166.67	4,490.6	-264.7	62.7	266.7	0.00	0.00	
4,600.0	4.00	166.67	4,590.3	-271.5	64.3	273.6	0.00	0.00	
4,700.0	4.00	166.67	4,690.1	-278.3	65.9	280.4	0.00	0.00	
4,800.0	4.00	166.67	4,789.8	-285.1	67.5	287.3	0.00	0.00	
4,900.0	4.00	166.67	4,889.6	-291.9	69.2	294.1	0.00	0.00	
5,000.0	4.00	166.67	4,989.4	-298.7	70.8	300.9	0.00	0.00	
5,100.0	4.00	166.67	5,089.1	-305.4	72.4	307.8	0.00	0.00	

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Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27J-3411A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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
5,194.0	4.00	166.67	5,182.9	-311.8	73.9	314.2	0.00	0.00	Curve KOP @ 5194' MD
5,200.0	4.66	166.67	5,188.9	-312.3	74.0	314.7	11.00	11.00	
5,300.0	15.66	166.67	5,287.1	-329.4	78.1	331.9	11.00	11.00	
5,400.0	26.66	166.67	5,380.3	-364.5	86.4	367.3	11.00	11.00	
5,500.0	37.66	166.67	5,464.8	-416.2	98.6	419.4	11.00	11.00	
5,600.0	48.66	166.67	5,537.6	-482.7	114.4	486.3	11.00	11.00	
5,700.0	59.66	166.67	5,596.1	-561.4	133.0	565.7	11.00	11.00	
5,800.0	70.66	166.67	5,638.0	-649.6	153.9	654.6	11.00	11.00	
5,900.0	81.66	166.67	5,661.9	-743.9	176.3	749.6	11.00	11.00	
5,975.8	90.00	166.67	5,667.4	-817.4	193.7	823.7	11.00	11.00	LP @ 5975' MD
6,000.0	90.00	167.40	5,667.4	-841.0	199.1	847.4	3.00	0.00	
6,100.0	90.00	170.40	5,667.4	-939.1	218.4	946.2	3.00	0.00	7"
6,200.0	90.00	173.40	5,667.4	-1,038.1	232.5	1,045.6	3.00	0.00	
6,300.0	90.00	176.40	5,667.4	-1,137.7	241.4	1,145.4	3.00	0.00	
6,400.0	90.00	179.40	5,667.4	-1,237.6	245.0	1,245.4	3.00	0.00	
6,420.1	90.00	180.00	5,667.4	-1,257.7	245.1	1,265.5	3.00	0.00	EOT; Azm=180°
6,500.0	90.00	180.00	5,667.4	-1,337.6	245.1	1,345.4	0.00	0.00	
6,600.0	90.00	180.00	5,667.4	-1,437.6	245.1	1,445.3	0.00	0.00	
6,700.0	90.00	180.00	5,667.4	-1,537.6	245.1	1,545.2	0.00	0.00	
6,800.0	90.00	180.00	5,667.4	-1,637.6	245.2	1,645.2	0.00	0.00	
6,900.0	90.00	180.00	5,667.4	-1,737.6	245.2	1,745.1	0.00	0.00	
7,000.0	90.00	180.00	5,667.4	-1,837.6	245.2	1,845.0	0.00	0.00	
7,100.0	90.00	180.00	5,667.4	-1,937.6	245.2	1,945.0	0.00	0.00	
7,200.0	90.00	180.00	5,667.3	-2,037.6	245.2	2,044.9	0.00	0.00	
7,300.0	90.00	180.00	5,667.3	-2,137.6	245.2	2,144.9	0.00	0.00	
7,400.0	90.00	180.00	5,667.3	-2,237.6	245.2	2,244.8	0.00	0.00	
7,500.0	90.00	180.00	5,667.3	-2,337.6	245.2	2,344.7	0.00	0.00	
7,600.0	90.00	180.00	5,667.3	-2,437.6	245.2	2,444.7	0.00	0.00	
7,700.0	90.00	180.00	5,667.3	-2,537.6	245.2	2,544.6	0.00	0.00	
7,800.0	90.00	180.00	5,667.3	-2,637.6	245.2	2,644.6	0.00	0.00	
7,900.0	90.00	180.00	5,667.3	-2,737.6	245.2	2,744.5	0.00	0.00	
8,000.0	90.00	180.00	5,667.3	-2,837.6	245.2	2,844.4	0.00	0.00	
8,100.0	90.00	180.00	5,667.3	-2,937.6	245.2	2,944.4	0.00	0.00	
8,200.0	90.00	180.00	5,667.3	-3,037.6	245.2	3,044.3	0.00	0.00	
8,300.0	90.00	180.00	5,667.3	-3,137.6	245.2	3,144.3	0.00	0.00	
8,400.0	90.00	180.00	5,667.3	-3,237.6	245.2	3,244.2	0.00	0.00	
8,500.0	90.00	180.00	5,667.3	-3,337.6	245.2	3,344.1	0.00	0.00	
8,600.0	90.00	180.00	5,667.2	-3,437.6	245.2	3,444.1	0.00	0.00	
8,700.0	90.00	180.00	5,667.2	-3,537.6	245.2	3,544.0	0.00	0.00	
8,800.0	90.00	180.00	5,667.2	-3,637.6	245.2	3,644.0	0.00	0.00	
8,900.0	90.00	180.00	5,667.2	-3,737.6	245.2	3,743.9	0.00	0.00	
9,000.0	90.00	180.00	5,667.2	-3,837.6	245.2	3,843.8	0.00	0.00	
9,100.0	90.00	180.00	5,667.2	-3,937.6	245.2	3,943.8	0.00	0.00	
9,200.0	90.00	180.00	5,667.2	-4,037.6	245.2	4,043.7	0.00	0.00	
9,300.0	90.00	180.00	5,667.2	-4,137.6	245.2	4,143.6	0.00	0.00	
9,400.0	90.00	180.00	5,667.2	-4,237.6	245.2	4,243.6	0.00	0.00	
9,500.0	90.00	180.00	5,667.2	-4,337.6	245.2	4,343.5	0.00	0.00	
9,600.0	90.00	180.00	5,667.2	-4,437.6	245.3	4,443.5	0.00	0.00	
9,700.0	90.00	180.00	5,667.2	-4,537.6	245.3	4,543.4	0.00	0.00	
9,800.0	90.00	180.00	5,667.2	-4,637.6	245.3	4,643.3	0.00	0.00	
9,900.0	90.00	180.00	5,667.2	-4,737.6	245.3	4,743.3	0.00	0.00	
10,000.0	90.00	180.00	5,667.2	-4,837.6	245.3	4,843.2	0.00	0.00	

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Well:	Razor #27J-3411A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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
10,100.0	90.00	180.00	5,667.1	-4,937.6	245.3	4,943.2	0.00	0.00	
10,200.0	90.00	180.00	5,667.1	-5,037.6	245.3	5,043.1	0.00	0.00	
10,300.0	90.00	180.00	5,667.1	-5,137.6	245.3	5,143.0	0.00	0.00	
10,400.0	90.00	180.00	5,667.1	-5,237.6	245.3	5,243.0	0.00	0.00	
10,500.0	90.00	180.00	5,667.1	-5,337.6	245.3	5,342.9	0.00	0.00	
10,600.0	90.00	180.00	5,667.1	-5,437.6	245.3	5,442.9	0.00	0.00	
10,700.0	90.00	180.00	5,667.1	-5,537.6	245.3	5,542.8	0.00	0.00	
10,800.0	90.00	180.00	5,667.1	-5,637.6	245.3	5,642.7	0.00	0.00	
10,900.0	90.00	180.00	5,667.1	-5,737.6	245.3	5,742.7	0.00	0.00	
11,000.0	90.00	180.00	5,667.1	-5,837.6	245.3	5,842.6	0.00	0.00	
11,100.0	90.00	180.00	5,667.1	-5,937.6	245.3	5,942.5	0.00	0.00	
11,200.0	90.00	180.00	5,667.1	-6,037.6	245.3	6,042.5	0.00	0.00	
11,300.0	90.00	180.00	5,667.1	-6,137.6	245.3	6,142.4	0.00	0.00	
11,400.0	90.00	180.00	5,667.1	-6,237.6	245.3	6,242.4	0.00	0.00	
11,500.0	90.00	180.00	5,667.0	-6,337.6	245.3	6,342.3	0.00	0.00	
11,600.0	90.00	180.00	5,667.0	-6,437.6	245.3	6,442.2	0.00	0.00	
11,700.0	90.00	180.00	5,667.0	-6,537.6	245.3	6,542.2	0.00	0.00	
11,800.0	90.00	180.00	5,667.0	-6,637.6	245.3	6,642.1	0.00	0.00	
11,900.0	90.00	180.00	5,667.0	-6,737.6	245.3	6,742.1	0.00	0.00	
12,000.0	90.00	180.00	5,667.0	-6,837.6	245.3	6,842.0	0.00	0.00	
12,100.0	90.00	180.00	5,667.0	-6,937.6	245.3	6,941.9	0.00	0.00	
12,191.9	90.00	180.00	5,667.0	-7,029.5	245.3	7,033.8	0.00	0.00	PBHL @ 12191' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
3411A BHL	0.00	1.07	5,667.0	-7,529.7	253.7	1,534,170.69	3,457,496.94	40° 47' 16.739 N	103° 50' 52.051 W
- plan misses target center by 500.3usft at 12191.9usft MD (5667.0 TVD, -7029.5 N, 245.3 E)									
- Point									
3411A BH Tgt	0.00	1.07	5,667.0	-7,029.5	245.3	1,534,670.68	3,457,479.31	40° 47' 21.682 N	103° 50' 52.159 W
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
6,100.0	5,667.4	7"	0	0

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Company:	Whiting Petroleum Corporation	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Project:	Weld County, CO	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site:	S27-T10N-R58W	**North Reference:**	True
Well:	Razor #27J-3411A	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.0	500.0	0.0	0.0	KOP @ 500' MD
700.0	699.8	-6.8	1.6	EOB; Inc=4°
5,194.0	5,182.9	-311.8	73.9	Curve KOP @ 5194' MD
5,975.8	5,667.4	-817.4	193.7	LP @ 5975' MD
6,420.1	5,667.4	-1,257.7	245.1	EOT; Azm=180°
12,191.9	5,667.0	-7,029.5	245.3	PBHL @ 12191' MD

WHITING PETROLEUM CORPORATION

Whiting Petroleum Corporation

Weld County, CO
S27-T10N-R58W
Razor #27J-3411A
HZ
Plan #3

Anticollision Report

17 June, 2013

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Reference Plan #3

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 1,000.0usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 6/17/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,191.3	Plan #3 (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
S27-T10N-R58W						
Razor #27I-2214B - HZ - Plan #3	3,825.1	3,822.1	970.6	954.1	58.918	CC, ES
Razor #27I-2214B - HZ - Plan #3	5,350.0	5,281.6	994.8	971.5	42.679	SF
Razor #27I-3413A - HZ - Plan #1	6,420.0	6,818.3	667.3	613.1	12.311	CC
Razor #27I-3413A - HZ - Plan #1	12,191.9	12,590.3	667.6	398.1	2.477	ES, SF
Razor #27I-3414B - HZ - Plan #1						Out of range
Razor #27I-3415A - HZ - Plan #1						Out of range
Razor #27I-3416B - HZ - Plan #2						Out of range
Razor #27J-2209A - HZ - Plan #2	500.0	500.0	33.2	31.2	16.729	CC, ES
Razor #27J-2209A - HZ - Plan #2	700.0	697.8	40.6	37.8	14.401	SF
Razor #27J-2210B - HZ - Plan #2	1,431.0	1,426.0	80.9	74.7	13.062	CC
Razor #27J-2210B - HZ - Plan #2	1,500.0	1,494.9	81.0	74.5	12.426	ES
Razor #27J-2210B - HZ - Plan #2	2,400.0	2,392.7	105.4	94.7	9.886	SF
Razor #27J-2211A - HZ - Plan #2	708.8	708.6	32.1	29.2	11.216	CC, ES
Razor #27J-2211A - HZ - Plan #2	1,000.0	999.1	37.9	33.8	9.159	SF
Razor #27J-2212B - HZ - Plan #2	1,703.8	1,698.9	13.1	5.7	1.768	CC, ES, SF
Razor #27J-3409A - Hz - Plan #3	500.0	500.0	65.3	63.3	32.900	CC, ES
Razor #27J-3409A - Hz - Plan #3	12,191.9	12,214.5	660.2	390.2	2.446	SF
Razor #27J-3410B - HZ - Plan #3	1,539.9	1,534.6	48.8	42.1	7.272	CC
Razor #27J-3410B - HZ - Plan #3	1,600.0	1,594.6	49.0	42.0	7.001	ES
Razor #27J-3410B - HZ - Plan #3	12,191.9	12,484.9	341.9	81.1	1.311	Level 3, SF
Razor #27J-3412B - HZ - Plan #2	700.0	691.5	81.7	79.0	29.844	CC
Razor #27J-3412B - HZ - Plan #2	5,500.0	5,463.9	95.6	67.4	3.397	ES
Razor #27J-3412B - HZ - Plan #2	12,191.9	12,280.4	349.1	88.8	1.341	Level 3, SF
Razor #27K-3405A - HZ - Plan #3						Out of range
Razor #27K-3406B - HZ - Plan #4						Out of range
Razor #27K-3407A - HZ - Plan #3						Out of range
Razor #27K-3408B - HZ - Plan #3						Out of range
Razor #27L-3401B - Hz - Plan #3						Out of range
Razor #27L-3403B - Hz - Plan #4						Out of range
Razor #27L-3404B - Hz - Plan #4						Out of range

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-2214B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-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
3,200.0	3,193.7	3,246.8	3,240.0	7.7	6.7	-92.32	88.3	1,001.3	996.9	983.2	13.71	72.717	
3,300.0	3,293.5	3,346.1	3,339.0	8.0	6.9	-92.96	90.7	994.8	991.6	977.4	14.17	69.977	
3,400.0	3,393.3	3,445.3	3,438.0	8.2	7.1	-93.59	93.1	988.3	986.4	971.7	14.63	67.415	
3,500.0	3,493.0	3,544.6	3,537.0	8.5	7.3	-94.24	95.4	981.8	981.2	966.1	15.09	65.014	
3,600.0	3,592.8	3,643.8	3,636.0	8.8	7.5	-94.89	97.8	975.2	976.3	960.7	15.56	62.760	
3,700.0	3,692.5	3,723.5	3,715.6	9.0	7.6	-95.39	99.4	970.9	972.3	956.4	15.97	60.885	
3,800.0	3,792.3	3,800.0	3,792.0	9.3	7.8	-95.79	100.2	968.7	970.6	954.3	16.37	59.296	
3,825.1	3,817.3	3,822.1	3,814.1	9.4	7.8	-95.89	100.3	968.4	970.6	954.1	16.47	58.918	CC, ES
3,900.0	3,892.0	3,889.5	3,881.5	9.6	7.9	-96.17	100.3	968.3	971.0	954.2	16.78	57.850	
4,000.0	3,991.8	3,989.3	3,981.3	9.8	8.1	-96.58	100.3	968.3	971.8	954.5	17.22	56.443	
4,100.0	4,091.6	4,089.1	4,081.1	10.1	8.2	-96.98	100.3	968.3	972.6	954.9	17.65	55.108	
4,200.0	4,191.3	4,188.8	4,180.8	10.3	8.4	-97.39	100.3	968.3	973.5	955.4	18.08	53.840	
4,300.0	4,291.1	4,288.6	4,280.6	10.6	8.5	-97.80	100.3	968.3	974.4	955.9	18.51	52.633	
4,400.0	4,390.8	4,388.3	4,380.3	10.9	8.7	-98.20	100.3	968.3	975.4	956.4	18.94	51.485	
4,500.0	4,490.6	4,488.1	4,480.1	11.1	8.8	-98.61	100.3	968.3	976.4	957.0	19.38	50.390	
4,600.0	4,590.3	4,587.8	4,579.8	11.4	9.0	-99.01	100.3	968.3	977.4	957.6	19.81	49.346	
4,700.0	4,690.1	4,687.6	4,679.6	11.7	9.1	-99.41	100.3	968.3	978.6	958.3	20.24	48.349	
4,800.0	4,789.9	4,787.3	4,779.4	11.9	9.3	-99.81	100.3	968.3	979.7	959.1	20.67	47.396	
4,900.0	4,889.6	4,887.1	4,879.1	12.2	9.4	-100.21	100.3	968.3	981.0	959.8	21.10	46.485	
5,000.0	4,989.4	4,986.9	4,978.9	12.5	9.6	-100.61	100.3	968.3	982.2	960.7	21.53	45.613	
5,100.0	5,089.1	5,086.6	5,078.6	12.7	9.8	-101.01	100.3	968.3	983.5	961.6	21.96	44.778	
5,194.0	5,182.9	5,180.4	5,172.4	13.0	9.9	-101.39	100.3	968.3	984.8	962.4	22.37	44.025	
5,200.0	5,188.9	5,186.4	5,178.4	13.0	9.9	-101.40	100.3	968.3	984.9	962.5	22.40	43.978	
5,250.0	5,238.4	5,230.2	5,222.2	13.1	10.0	-101.57	100.4	968.3	986.2	963.6	22.66	43.531	
5,300.0	5,287.2	5,250.0	5,242.0	13.4	10.0	-101.49	101.0	968.3	989.4	966.5	22.95	43.118	
5,350.0	5,334.6	5,281.6	5,273.5	13.6	10.1	-101.58	103.6	968.3	994.8	971.5	23.31	42.679	SF

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3413A - 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
5,300.0	5,287.2	6,100.0	5,648.9	13.4	17.4	-69.96	-544.3	973.0	992.8	962.5	30.30	32.770	
5,350.0	5,334.6	6,120.1	5,648.9	13.6	17.7	-71.47	-563.8	968.1	969.1	938.5	30.68	31.590	
5,400.0	5,380.3	6,132.3	5,648.9	13.9	17.8	-73.46	-575.7	965.2	946.0	915.0	30.99	30.523	
5,450.0	5,423.8	6,147.3	5,648.9	14.2	18.0	-75.25	-590.2	961.8	923.4	892.0	31.39	29.419	
5,500.0	5,464.8	6,164.8	5,648.9	14.6	18.3	-76.84	-607.3	957.9	901.5	869.7	31.87	28.286	
5,550.0	5,502.8	6,200.0	5,648.9	15.1	18.7	-77.47	-641.7	950.6	880.5	847.9	32.61	26.998	
5,600.0	5,537.6	6,200.0	5,648.9	15.6	18.7	-79.92	-641.7	950.6	859.9	826.9	33.02	26.039	
5,650.0	5,568.8	6,232.0	5,648.9	16.1	19.1	-80.76	-673.2	944.5	840.0	806.2	33.88	24.791	
5,700.0	5,596.1	6,258.8	5,648.9	16.7	19.5	-81.90	-699.6	939.8	820.9	786.2	34.74	23.628	
5,750.0	5,619.2	6,300.0	5,648.9	17.4	20.1	-82.62	-740.2	933.2	802.6	766.8	35.82	22.403	
5,800.0	5,638.0	6,318.0	5,648.9	18.0	20.3	-84.21	-758.0	930.7	784.6	747.9	36.71	21.370	
5,850.0	5,652.3	6,349.8	5,648.9	18.8	20.8	-85.48	-789.6	926.5	767.3	729.5	37.83	20.285	
5,900.0	5,661.9	6,382.8	5,648.9	19.5	21.3	-86.89	-822.4	922.8	750.7	711.7	39.00	19.247	
5,950.0	5,666.8	6,416.7	5,648.9	20.3	21.8	-88.45	-856.1	919.6	734.6	694.4	40.24	18.257	
5,975.8	5,667.4	6,434.5	5,648.9	20.7	22.0	-89.33	-873.8	918.1	726.7	685.8	40.90	17.767	
6,000.0	5,667.4	6,451.2	5,648.9	21.0	22.3	-89.33	-890.5	916.9	719.5	677.9	41.57	17.308	
6,100.0	5,667.4	6,522.0	5,648.9	22.4	23.3	-89.32	-961.2	913.3	695.3	651.1	44.28	15.703	
6,200.0	5,667.4	6,598.9	5,648.9	23.8	24.5	-89.32	-1,038.0	912.4	679.9	632.8	47.14	14.424	
6,300.0	5,667.4	6,698.5	5,648.9	25.3	26.0	-89.31	-1,137.6	912.4	671.1	620.7	50.35	13.329	
6,400.0	5,667.4	6,798.4	5,648.9	26.8	27.6	-89.31	-1,237.6	912.4	667.4	613.8	53.56	12.460	
6,420.0	5,667.4	6,818.3	5,648.9	27.1	27.9	-89.31	-1,257.5	912.4	667.3	613.1	54.20	12.311	CC
6,420.1	5,667.4	6,818.4	5,648.9	27.1	27.9	-89.31	-1,257.6	912.4	667.3	613.1	54.21	12.310	
6,500.0	5,667.4	6,898.4	5,648.9	28.4	29.2	-89.31	-1,337.6	912.4	667.3	610.5	56.82	11.744	
6,600.0	5,667.4	6,998.4	5,648.9	30.1	30.9	-89.31	-1,437.6	912.4	667.3	607.1	60.22	11.081	
6,700.0	5,667.4	7,098.4	5,648.9	31.9	32.5	-89.31	-1,537.6	912.4	667.3	603.6	63.66	10.481	
6,800.0	5,667.4	7,198.4	5,648.9	33.6	34.2	-89.31	-1,637.6	912.4	667.3	600.2	67.15	9.937	
6,900.0	5,667.4	7,298.4	5,648.9	35.4	36.0	-89.32	-1,737.6	912.4	667.3	596.6	70.68	9.441	
7,000.0	5,667.4	7,398.4	5,648.9	37.1	37.7	-89.32	-1,837.6	912.4	667.3	593.1	74.24	8.989	
7,100.0	5,667.4	7,498.4	5,648.9	38.9	39.5	-89.32	-1,937.6	912.4	667.3	589.5	77.82	8.575	
7,200.0	5,667.3	7,598.4	5,648.9	40.7	41.3	-89.32	-2,037.6	912.5	667.3	585.9	81.43	8.195	
7,300.0	5,667.3	7,698.4	5,648.9	42.6	43.0	-89.32	-2,137.6	912.5	667.3	582.3	85.06	7.846	
7,400.0	5,667.3	7,798.4	5,648.9	44.4	44.9	-89.32	-2,237.6	912.5	667.3	578.6	88.71	7.523	
7,500.0	5,667.3	7,898.4	5,648.9	46.2	46.7	-89.32	-2,337.6	912.5	667.4	575.0	92.37	7.225	
7,600.0	5,667.3	7,998.4	5,648.9	48.1	48.5	-89.32	-2,437.6	912.5	667.4	571.3	96.04	6.948	
7,700.0	5,667.3	8,098.4	5,648.9	49.9	50.3	-89.32	-2,537.6	912.5	667.4	567.6	99.73	6.691	
7,800.0	5,667.3	8,198.4	5,648.9	51.7	52.1	-89.32	-2,637.6	912.5	667.4	563.9	103.43	6.452	
7,900.0	5,667.3	8,298.4	5,648.9	53.6	54.0	-89.32	-2,737.6	912.5	667.4	560.2	107.14	6.229	
8,000.0	5,667.3	8,398.4	5,648.9	55.5	55.8	-89.32	-2,837.6	912.5	667.4	556.5	110.86	6.020	
8,100.0	5,667.3	8,498.4	5,648.9	57.3	57.7	-89.32	-2,937.6	912.5	667.4	552.8	114.59	5.824	
8,200.0	5,667.3	8,598.4	5,648.9	59.2	59.5	-89.33	-3,037.6	912.6	667.4	549.1	118.32	5.640	
8,300.0	5,667.3	8,698.4	5,648.9	61.1	61.4	-89.33	-3,137.6	912.6	667.4	545.3	122.06	5.468	
8,400.0	5,667.3	8,798.4	5,648.9	62.9	63.2	-89.33	-3,237.6	912.6	667.4	541.6	125.81	5.305	
8,500.0	5,667.3	8,898.4	5,648.9	64.8	65.1	-89.33	-3,337.6	912.6	667.4	537.9	129.56	5.151	
8,600.0	5,667.2	8,998.4	5,648.9	66.7	67.0	-89.33	-3,437.6	912.6	667.4	534.1	133.32	5.006	
8,700.0	5,667.2	9,098.4	5,648.9	68.6	68.9	-89.33	-3,537.6	912.6	667.4	530.3	137.08	4.869	
8,800.0	5,667.2	9,198.4	5,648.9	70.5	70.7	-89.33	-3,637.6	912.6	667.4	526.6	140.85	4.739	
8,900.0	5,667.2	9,298.4	5,648.9	72.3	72.6	-89.33	-3,737.6	912.6	667.4	522.8	144.62	4.615	
9,000.0	5,667.2	9,398.4	5,648.9	74.2	74.5	-89.33	-3,837.6	912.6	667.4	519.1	148.40	4.498	
9,100.0	5,667.2	9,498.4	5,648.9	76.1	76.4	-89.33	-3,937.6	912.6	667.5	515.3	152.17	4.386	
9,200.0	5,667.2	9,598.4	5,648.9	78.0	78.2	-89.33	-4,037.6	912.7	667.5	511.5	155.95	4.280	
9,300.0	5,667.2	9,698.4	5,648.9	79.9	80.1	-89.33	-4,137.6	912.7	667.5	507.7	159.74	4.178	
9,400.0	5,667.2	9,798.4	5,648.9	81.8	82.0	-89.33	-4,237.6	912.7	667.5	503.9	163.52	4.082	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27I-3413A - 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
9,500.0	5,667.2	9,898.4	5,648.9	83.7	83.9	-89.33	-4,337.6	912.7	667.5	500.2	167.31	3.989	
9,600.0	5,667.2	9,998.4	5,648.9	85.6	85.8	-89.34	-4,437.6	912.7	667.5	496.4	171.11	3.901	
9,700.0	5,667.2	10,098.4	5,648.9	87.5	87.7	-89.34	-4,537.6	912.7	667.5	492.6	174.90	3.816	
9,800.0	5,667.2	10,198.4	5,648.9	89.4	89.6	-89.34	-4,637.6	912.7	667.5	488.8	178.69	3.735	
9,900.0	5,667.2	10,298.4	5,648.9	91.3	91.5	-89.34	-4,737.6	912.7	667.5	485.0	182.49	3.658	
10,000.0	5,667.2	10,398.4	5,648.9	93.2	93.4	-89.34	-4,837.6	912.7	667.5	481.2	186.29	3.583	
10,100.0	5,667.1	10,498.4	5,649.0	95.1	95.3	-89.34	-4,937.6	912.7	667.5	477.4	190.09	3.512	
10,200.0	5,667.1	10,598.4	5,649.0	97.0	97.2	-89.34	-5,037.6	912.7	667.5	473.6	193.89	3.443	
10,300.0	5,667.1	10,698.4	5,649.0	98.9	99.1	-89.34	-5,137.6	912.8	667.5	469.8	197.70	3.376	
10,400.0	5,667.1	10,798.4	5,649.0	100.8	101.0	-89.34	-5,237.6	912.8	667.5	466.0	201.50	3.313	
10,500.0	5,667.1	10,898.4	5,649.0	102.7	102.9	-89.34	-5,337.6	912.8	667.5	462.2	205.31	3.251	
10,600.0	5,667.1	10,998.4	5,649.0	104.6	104.8	-89.34	-5,437.6	912.8	667.5	458.4	209.12	3.192	
10,700.0	5,667.1	11,098.4	5,649.0	106.5	106.7	-89.34	-5,537.6	912.8	667.6	454.6	212.93	3.135	
10,800.0	5,667.1	11,198.4	5,649.0	108.4	108.6	-89.34	-5,637.6	912.8	667.6	450.8	216.74	3.080	
10,900.0	5,667.1	11,298.4	5,649.0	110.3	110.5	-89.35	-5,737.6	912.8	667.6	447.0	220.55	3.027	
11,000.0	5,667.1	11,398.4	5,649.0	112.2	112.4	-89.35	-5,837.6	912.8	667.6	443.2	224.36	2.975	
11,100.0	5,667.1	11,498.4	5,649.0	114.1	114.3	-89.35	-5,937.6	912.8	667.6	439.4	228.18	2.926	
11,200.0	5,667.1	11,598.4	5,649.0	116.0	116.2	-89.35	-6,037.6	912.8	667.6	435.6	231.99	2.878	
11,300.0	5,667.1	11,698.4	5,649.0	117.9	118.1	-89.35	-6,137.6	912.9	667.6	431.8	235.81	2.831	
11,400.0	5,667.1	11,798.4	5,649.0	119.9	120.0	-89.35	-6,237.6	912.9	667.6	428.0	239.62	2.786	
11,500.0	5,667.0	11,898.4	5,649.0	121.8	121.9	-89.35	-6,337.6	912.9	667.6	424.2	243.44	2.742	
11,600.0	5,667.0	11,998.4	5,649.0	123.7	123.8	-89.35	-6,437.6	912.9	667.6	420.3	247.26	2.700	
11,700.0	5,667.0	12,098.4	5,649.0	125.6	125.7	-89.35	-6,537.6	912.9	667.6	416.5	251.08	2.659	
11,800.0	5,667.0	12,198.4	5,649.0	127.5	127.6	-89.35	-6,637.6	912.9	667.6	412.7	254.90	2.619	
11,900.0	5,667.0	12,298.4	5,649.0	129.4	129.5	-89.35	-6,737.6	912.9	667.6	408.9	258.72	2.581	
12,000.0	5,667.0	12,398.4	5,649.0	131.3	131.4	-89.35	-6,837.6	912.9	667.6	405.1	262.54	2.543	
12,100.0	5,667.0	12,498.4	5,649.0	133.2	133.3	-89.35	-6,937.6	912.9	667.6	401.3	266.36	2.507	
12,191.9	5,667.0	12,590.3	5,649.0	134.7	135.1	-89.36	-7,029.5	912.9	667.6	398.1	269.55	2.477	ES, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2209A - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.01	0.0	-33.2	33.2				
100.0	100.0	100.0	100.0	0.1	0.1	-90.01	0.0	-33.2	33.2	33.0	0.19	177.011	
200.0	200.0	200.0	200.0	0.3	0.3	-90.01	0.0	-33.2	33.2	32.6	0.64	52.135	
300.0	300.0	300.0	300.0	0.5	0.5	-90.01	0.0	-33.2	33.2	32.1	1.09	30.569	
400.0	400.0	400.0	400.0	0.8	0.8	-90.01	0.0	-33.2	33.2	31.7	1.54	21.624	
500.0	500.0	500.0	500.0	1.0	1.0	-90.01	0.0	-33.2	33.2	31.2	1.99	16.729	CC, ES
600.0	600.0	599.2	599.2	1.2	1.2	108.46	1.4	-34.2	34.7	32.3	2.40	14.434	
700.0	699.8	697.8	697.6	1.4	1.4	121.06	5.7	-36.9	40.6	37.8	2.82	14.401	SF
800.0	799.6	796.8	796.4	1.6	1.7	132.80	11.5	-40.7	50.7	47.4	3.25	15.599	
900.0	899.4	895.9	895.3	1.8	1.9	140.46	17.3	-44.5	62.2	58.5	3.68	16.893	
1,000.0	999.1	994.9	994.1	2.0	2.1	145.68	23.1	-48.3	74.4	70.3	4.12	18.082	
1,100.0	1,098.9	1,094.0	1,092.9	2.3	2.4	149.41	28.9	-52.0	87.1	82.6	4.56	19.125	
1,200.0	1,198.6	1,193.1	1,191.7	2.5	2.6	152.18	34.7	-55.8	100.1	95.1	5.00	20.027	
1,300.0	1,298.4	1,292.1	1,290.5	2.8	2.9	154.31	40.5	-59.6	113.2	107.8	5.44	20.807	
1,400.0	1,398.1	1,391.2	1,389.3	3.0	3.1	156.00	46.2	-63.3	126.5	120.6	5.89	21.482	
1,500.0	1,497.9	1,490.2	1,488.1	3.3	3.4	157.37	52.0	-67.1	139.8	133.5	6.34	22.069	
1,600.0	1,597.6	1,589.3	1,587.0	3.5	3.6	158.50	57.8	-70.9	153.2	146.4	6.78	22.585	
1,700.0	1,697.4	1,688.3	1,685.8	3.8	3.9	159.45	63.6	-74.7	166.7	159.5	7.23	23.040	
1,800.0	1,797.2	1,787.4	1,784.6	4.1	4.1	160.25	69.4	-78.4	180.2	172.5	7.69	23.443	
1,900.0	1,896.9	1,886.4	1,883.4	4.3	4.4	160.95	75.2	-82.2	193.7	185.6	8.14	23.803	
2,000.0	1,996.7	1,985.5	1,982.2	4.6	4.7	161.55	81.0	-86.0	207.3	198.7	8.59	24.126	
2,100.0	2,096.4	2,084.6	2,081.0	4.8	4.9	162.08	86.8	-89.7	220.8	211.8	9.04	24.417	
2,200.0	2,196.2	2,183.6	2,179.8	5.1	5.2	162.55	92.6	-93.5	234.4	224.9	9.50	24.681	
2,300.0	2,295.9	2,282.7	2,278.7	5.4	5.4	162.96	98.3	-97.3	248.0	238.1	9.95	24.920	
2,400.0	2,395.7	2,381.7	2,377.5	5.6	5.7	163.34	104.1	-101.1	261.6	251.2	10.41	25.140	
2,500.0	2,495.5	2,480.8	2,476.3	5.9	5.9	163.67	109.9	-104.8	275.3	264.4	10.86	25.341	
2,600.0	2,595.2	2,579.8	2,575.1	6.1	6.2	163.98	115.7	-108.6	288.9	277.6	11.32	25.525	
2,700.0	2,695.0	2,678.9	2,673.9	6.4	6.4	164.25	121.5	-112.4	302.5	290.8	11.77	25.696	
2,800.0	2,794.7	2,777.9	2,772.7	6.7	6.7	164.51	127.3	-116.2	316.2	303.9	12.23	25.854	
2,900.0	2,894.5	2,877.0	2,871.5	6.9	6.9	164.74	133.1	-119.9	329.8	317.1	12.69	26.000	
3,000.0	2,994.2	2,976.1	2,970.3	7.2	7.2	164.95	138.9	-123.7	343.5	330.3	13.14	26.136	
3,100.0	3,094.0	3,075.1	3,069.2	7.4	7.4	165.15	144.7	-127.5	357.1	343.5	13.60	26.264	
3,200.0	3,193.7	3,174.2	3,168.0	7.7	7.7	165.33	150.5	-131.2	370.8	356.8	14.06	26.382	
3,300.0	3,293.5	3,273.2	3,266.8	8.0	8.0	165.50	156.2	-135.0	384.5	370.0	14.51	26.494	
3,400.0	3,393.3	3,372.3	3,365.6	8.2	8.2	165.66	162.0	-138.8	398.1	383.2	14.97	26.598	
3,500.0	3,493.0	3,471.3	3,464.4	8.5	8.5	165.81	167.8	-142.6	411.8	396.4	15.43	26.697	
3,600.0	3,592.8	3,570.4	3,563.2	8.8	8.7	165.95	173.6	-146.3	425.5	409.6	15.88	26.789	
3,700.0	3,692.5	3,669.4	3,662.0	9.0	9.0	166.08	179.4	-150.1	439.2	422.8	16.34	26.877	
3,800.0	3,792.3	3,768.5	3,760.9	9.3	9.2	166.20	185.2	-153.9	452.9	436.1	16.80	26.959	
3,900.0	3,892.0	3,867.6	3,859.7	9.6	9.5	166.31	191.0	-157.6	466.5	449.3	17.25	27.038	
4,000.0	3,991.8	3,966.6	3,958.5	9.8	9.7	166.42	196.8	-161.4	480.2	462.5	17.71	27.112	
4,100.0	4,091.6	4,065.7	4,057.3	10.1	10.0	166.52	202.6	-165.2	493.9	475.7	18.17	27.182	
4,200.0	4,191.3	4,164.7	4,156.1	10.3	10.2	166.62	208.3	-169.0	507.6	489.0	18.63	27.249	
4,300.0	4,291.1	4,263.8	4,254.9	10.6	10.5	166.71	214.1	-172.7	521.3	502.2	19.09	27.313	
4,400.0	4,390.8	4,362.8	4,353.7	10.9	10.8	166.80	219.9	-176.5	535.0	515.4	19.54	27.374	
4,500.0	4,490.6	4,461.9	4,452.6	11.1	11.0	166.88	225.7	-180.3	548.7	528.7	20.00	27.431	
4,600.0	4,590.3	4,560.9	4,551.4	11.4	11.3	166.96	231.5	-184.0	562.3	541.9	20.46	27.487	
4,700.0	4,690.1	4,660.0	4,650.2	11.7	11.5	167.03	237.3	-187.8	576.0	555.1	20.92	27.540	
4,800.0	4,789.9	4,759.1	4,749.0	11.9	11.8	167.10	243.1	-191.6	589.7	568.4	21.37	27.590	
4,900.0	4,889.6	4,858.1	4,847.8	12.2	12.0	167.17	248.9	-195.4	603.4	581.6	21.83	27.639	
5,000.0	4,989.4	4,957.2	4,946.6	12.5	12.3	167.24	254.7	-199.1	617.1	594.8	22.29	27.685	
5,100.0	5,089.1	5,056.2	5,045.4	12.7	12.5	167.30	260.5	-202.9	630.8	608.1	22.75	27.730	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2209A - HZ - Plan #2

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
5,194.0	5,182.9	5,149.3	5,138.3	13.0	12.8	167.36	265.9	-206.4	643.7	620.5	23.18	27.770	
5,200.0	5,188.9	5,155.3	5,144.3	13.0	12.8	167.34	266.2	-206.7	644.5	621.4	23.19	27.795	
5,250.0	5,238.4	5,198.1	5,186.9	13.1	12.9	167.17	268.8	-208.3	654.3	631.2	23.16	28.257	
5,300.0	5,287.2	5,219.0	5,207.7	13.4	13.0	166.84	270.5	-209.4	670.0	647.1	22.90	29.258	
5,350.0	5,334.6	5,250.0	5,238.4	13.6	13.1	166.41	274.5	-211.7	692.0	669.5	22.49	30.763	
5,400.0	5,380.3	5,250.0	5,238.4	13.9	13.1	165.54	274.5	-211.7	719.2	697.4	21.87	32.888	
5,450.0	5,423.8	5,271.8	5,259.8	14.2	13.2	164.57	278.3	-213.9	751.6	730.4	21.17	35.506	
5,500.0	5,464.8	5,300.0	5,287.1	14.6	13.3	163.38	284.3	-217.3	788.7	768.3	20.39	38.685	
5,550.0	5,502.8	5,300.0	5,287.1	15.1	13.3	161.11	284.3	-217.3	828.8	809.2	19.59	42.301	
5,600.0	5,537.6	5,300.0	5,287.1	15.6	13.3	157.68	284.3	-217.3	872.3	853.3	19.04	45.804	
5,650.0	5,568.8	5,300.0	5,287.1	16.1	13.3	152.16	284.3	-217.3	918.3	899.1	19.20	47.832	
5,700.0	5,596.1	5,317.8	5,304.2	16.7	13.3	144.57	288.8	-219.8	965.6	945.1	20.56	46.958	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2210B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-138.96	-75.1	-65.3	99.6				
100.0	100.0	97.0	97.0	0.1	0.1	-138.96	-75.1	-65.3	99.5	99.3	0.18	538.288	
200.0	200.0	197.0	197.0	0.3	0.3	-138.96	-75.1	-65.3	99.5	98.9	0.63	157.833	
300.0	300.0	297.0	297.0	0.5	0.5	-138.96	-75.1	-65.3	99.5	98.4	1.08	92.137	
400.0	400.0	397.0	397.0	0.8	0.8	-138.96	-75.1	-65.3	99.5	98.0	1.53	65.057	
500.0	500.0	497.0	497.0	1.0	1.0	-138.96	-75.1	-65.3	99.5	97.5	1.98	50.280	
600.0	600.0	597.0	597.0	1.2	1.2	55.21	-75.1	-65.3	98.5	96.1	2.40	40.993	
700.0	699.8	696.8	696.8	1.4	1.4	57.83	-75.1	-65.3	95.6	92.8	2.82	33.953	
800.0	799.6	796.6	796.6	1.6	1.7	61.50	-75.1	-65.3	92.1	88.8	3.25	28.355	
900.0	899.4	896.3	896.3	1.8	1.9	65.45	-75.1	-65.3	89.0	85.3	3.69	24.083	
1,000.0	999.1	996.1	996.1	2.0	2.1	69.65	-75.1	-65.3	86.3	82.1	4.15	20.784	
1,100.0	1,098.9	1,095.9	1,095.9	2.3	2.3	74.10	-75.1	-65.3	84.1	79.5	4.62	18.215	
1,200.0	1,198.6	1,195.6	1,195.6	2.5	2.6	78.76	-75.1	-65.3	82.5	77.4	5.09	16.203	
1,300.0	1,298.4	1,295.4	1,295.4	2.8	2.8	83.57	-75.1	-65.3	81.4	75.8	5.57	14.624	
1,400.0	1,398.1	1,395.1	1,395.1	3.0	3.0	88.47	-75.1	-65.3	80.9	74.9	6.04	13.388	
1,431.0	1,429.0	1,426.0	1,426.0	3.1	3.1	90.00	-75.1	-65.3	80.9	74.7	6.19	13.062	CC
1,500.0	1,497.9	1,494.9	1,494.9	3.3	3.2	93.40	-75.1	-65.3	81.0	74.5	6.52	12.426	ES
1,600.0	1,597.6	1,594.6	1,594.6	3.5	3.5	98.27	-75.1	-65.3	81.7	74.7	6.99	11.684	
1,700.0	1,697.4	1,694.4	1,694.4	3.8	3.7	103.03	-75.1	-65.3	83.0	75.6	7.47	11.120	
1,800.0	1,797.2	1,794.1	1,794.1	4.1	3.9	107.62	-75.1	-65.3	84.9	76.9	7.93	10.699	
1,900.0	1,896.9	1,893.9	1,893.9	4.3	4.1	111.98	-75.1	-65.3	87.2	78.8	8.39	10.393	
2,000.0	1,996.7	1,993.7	1,993.7	4.6	4.4	116.09	-75.1	-65.3	90.1	81.2	8.85	10.175	
2,100.0	2,096.4	2,093.4	2,093.4	4.8	4.6	119.93	-75.1	-65.3	93.4	84.1	9.31	10.029	
2,200.0	2,196.2	2,193.2	2,193.2	5.1	4.8	123.49	-75.1	-65.3	97.1	87.3	9.76	9.940	
2,300.0	2,295.9	2,292.9	2,292.9	5.4	5.0	126.79	-75.1	-65.3	101.1	90.9	10.21	9.896	
2,400.0	2,395.7	2,392.7	2,392.7	5.6	5.2	129.82	-75.1	-65.3	105.4	94.7	10.66	9.886	SF
2,500.0	2,495.5	2,492.4	2,492.4	5.9	5.5	132.61	-75.1	-65.3	110.0	98.9	11.11	9.903	
2,600.0	2,595.2	2,592.2	2,592.2	6.1	5.7	135.17	-75.1	-65.3	114.9	103.3	11.55	9.940	
2,700.0	2,695.0	2,692.0	2,692.0	6.4	5.9	137.51	-75.1	-65.3	119.9	107.9	12.00	9.993	
2,800.0	2,794.7	2,791.7	2,791.7	6.7	6.1	139.67	-75.1	-65.3	125.1	112.7	12.44	10.057	
2,900.0	2,894.5	2,891.5	2,891.5	6.9	6.4	141.65	-75.1	-65.3	130.5	117.7	12.89	10.129	
3,000.0	2,994.2	2,991.2	2,991.2	7.2	6.6	143.47	-75.1	-65.3	136.1	122.8	13.33	10.208	
3,100.0	3,094.0	3,091.0	3,091.0	7.4	6.8	145.15	-75.1	-65.3	141.8	128.0	13.78	10.290	
3,200.0	3,193.7	3,190.7	3,190.7	7.7	7.0	146.70	-75.1	-65.3	147.5	133.3	14.22	10.375	
3,300.0	3,293.5	3,290.5	3,290.5	8.0	7.3	148.12	-75.1	-65.3	153.4	138.8	14.67	10.462	
3,400.0	3,393.3	3,390.3	3,390.3	8.2	7.5	149.45	-75.1	-65.3	159.4	144.3	15.11	10.549	
3,500.0	3,493.0	3,490.0	3,490.0	8.5	7.7	150.68	-75.1	-65.3	165.4	149.9	15.56	10.636	
3,600.0	3,592.8	3,589.8	3,589.8	8.8	7.9	151.82	-75.1	-65.3	171.6	155.6	16.00	10.722	
3,700.0	3,692.5	3,689.5	3,689.5	9.0	8.2	152.88	-75.1	-65.3	177.7	161.3	16.45	10.807	
3,800.0	3,792.3	3,789.3	3,789.3	9.3	8.4	153.87	-75.1	-65.3	184.0	167.1	16.89	10.891	
3,900.0	3,892.0	3,889.0	3,889.0	9.6	8.6	154.79	-75.1	-65.3	190.3	172.9	17.34	10.973	
4,000.0	3,991.8	3,988.8	3,988.8	9.8	8.8	155.66	-75.1	-65.3	196.6	178.8	17.79	11.053	
4,100.0	4,091.6	4,088.5	4,088.5	10.1	9.1	156.47	-75.1	-65.3	203.0	184.8	18.24	11.132	
4,200.0	4,191.3	4,188.3	4,188.3	10.3	9.3	157.23	-75.1	-65.3	209.4	190.7	18.68	11.208	
4,300.0	4,291.1	4,288.1	4,288.1	10.6	9.5	157.95	-75.1	-65.3	215.9	196.7	19.13	11.283	
4,400.0	4,390.8	4,387.8	4,387.8	10.9	9.7	158.62	-75.1	-65.3	222.3	202.8	19.58	11.356	
4,500.0	4,490.6	4,487.6	4,487.6	11.1	10.0	159.26	-75.1	-65.3	228.9	208.8	20.03	11.427	
4,600.0	4,590.3	4,587.3	4,587.3	11.4	10.2	159.86	-75.1	-65.3	235.4	214.9	20.48	11.496	
4,700.0	4,690.1	4,687.1	4,687.1	11.7	10.4	160.43	-75.1	-65.3	242.0	221.0	20.93	11.563	
4,800.0	4,789.9	4,786.8	4,786.8	11.9	10.6	160.97	-75.1	-65.3	248.5	227.2	21.37	11.628	
4,900.0	4,889.6	4,886.6	4,886.6	12.2	10.9	161.48	-75.1	-65.3	255.1	233.3	21.82	11.691	
5,000.0	4,989.4	4,986.4	4,986.4	12.5	11.1	161.96	-75.1	-65.3	261.8	239.5	22.27	11.752	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2210B - HZ - Plan #2

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
5,100.0	5,089.1	5,086.1	5,086.1	12.7	11.3	162.42	-75.1	-65.3	268.4	245.7	22.72	11.812	
5,194.0	5,182.9	5,179.9	5,179.9	13.0	11.5	162.84	-75.1	-65.3	274.7	251.5	23.15	11.866	
5,200.0	5,188.9	5,185.9	5,185.9	13.0	11.5	162.85	-75.1	-65.3	275.1	251.9	23.16	11.876	
5,250.0	5,238.4	5,231.5	5,231.5	13.1	11.6	163.00	-75.1	-65.3	281.3	258.1	23.21	12.122	
5,300.0	5,287.2	5,265.4	5,265.3	13.4	11.7	163.07	-74.0	-65.7	293.7	270.6	23.05	12.739	
5,350.0	5,334.6	5,300.0	5,299.8	13.6	11.8	163.17	-70.8	-66.8	313.2	290.5	22.74	13.778	
5,400.0	5,380.3	5,320.5	5,320.1	13.9	11.8	162.81	-67.9	-67.9	339.1	316.9	22.24	15.249	
5,450.0	5,423.8	5,350.0	5,349.0	14.2	11.9	162.54	-62.4	-69.8	371.0	349.3	21.62	17.161	
5,500.0	5,464.8	5,362.4	5,361.0	14.6	11.9	161.28	-59.6	-70.8	407.4	386.5	20.90	19.496	
5,550.0	5,502.8	5,377.9	5,376.0	15.1	12.0	159.60	-55.8	-72.2	448.0	427.9	20.17	22.212	
5,600.0	5,537.6	5,400.0	5,397.1	15.6	12.0	157.64	-49.6	-74.4	492.0	472.5	19.50	25.230	
5,650.0	5,568.8	5,400.0	5,397.1	16.1	12.0	152.10	-49.6	-74.4	538.0	518.5	19.57	27.498	
5,700.0	5,596.1	5,400.0	5,397.1	16.7	12.0	141.81	-49.6	-74.4	586.0	564.6	21.42	27.352	
5,750.0	5,619.2	5,400.0	5,397.1	17.4	12.0	120.32	-49.6	-74.4	635.1	608.5	26.60	23.875	
5,800.0	5,638.0	5,400.0	5,397.1	18.0	12.0	80.69	-49.6	-74.4	684.6	654.4	30.21	22.665	
5,850.0	5,652.3	5,400.0	5,397.1	18.8	12.0	45.91	-49.6	-74.4	734.2	710.6	23.56	31.161	
5,900.0	5,661.9	5,400.0	5,397.1	19.5	12.0	28.77	-49.6	-74.4	783.2	766.0	17.25	45.408	
5,950.0	5,666.8	5,400.0	5,397.1	20.3	12.0	20.22	-49.6	-74.4	831.6	818.0	13.52	61.514	
5,975.8	5,667.4	5,400.0	5,397.1	20.7	12.0	17.41	-49.6	-74.4	856.1	843.8	12.31	69.546	
6,000.0	5,667.4	5,400.0	5,397.1	21.0	12.0	19.41	-49.6	-74.4	879.0	865.7	13.29	66.118	
6,100.0	5,667.4	5,400.0	5,397.1	22.4	12.0	27.68	-49.6	-74.4	973.9	956.1	17.79	54.745	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	32.9	32.9				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	32.9	32.9	32.8	0.19	175.536	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	32.9	32.9	32.3	0.64	51.700	
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	32.9	32.9	31.9	1.09	30.314	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	32.9	32.9	31.4	1.54	21.444	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	32.9	32.9	31.0	1.99	16.589	
600.0	600.0	600.0	600.0	1.2	1.2	-79.66	0.0	32.9	32.6	30.2	2.41	13.532	
700.0	699.8	699.8	699.8	1.4	1.4	-88.90	0.0	32.9	32.1	29.2	2.82	11.371	
708.8	708.7	708.6	708.6	1.4	1.5	-90.00	0.0	32.9	32.1	29.2	2.86	11.216	CC, ES
800.0	799.6	799.6	799.6	1.6	1.7	-101.19	0.0	32.9	32.7	29.4	3.25	10.046	
900.0	899.4	899.3	899.3	1.8	1.9	-112.54	0.0	32.9	34.7	31.0	3.70	9.391	
1,000.0	999.1	999.1	999.1	2.0	2.1	-122.30	0.0	32.9	37.9	33.8	4.14	9.159	SF
1,100.0	1,098.9	1,098.9	1,098.9	2.3	2.3	-130.34	0.0	32.9	42.1	37.5	4.59	9.175	
1,200.0	1,198.6	1,198.6	1,198.6	2.5	2.6	-136.84	0.0	32.9	46.9	41.9	5.03	9.324	
1,300.0	1,298.4	1,298.4	1,298.4	2.8	2.8	-142.07	0.0	32.9	52.2	46.8	5.48	9.540	
1,400.0	1,398.1	1,398.1	1,398.1	3.0	3.0	-146.32	0.0	32.9	57.9	52.0	5.92	9.783	
1,500.0	1,497.9	1,497.9	1,497.9	3.3	3.2	-149.79	0.0	32.9	63.8	57.5	6.36	10.032	
1,600.0	1,597.6	1,597.6	1,597.6	3.5	3.5	-152.66	0.0	32.9	69.9	63.1	6.81	10.276	
1,700.0	1,697.4	1,697.4	1,697.4	3.8	3.7	-155.07	0.0	32.9	76.2	69.0	7.25	10.510	
1,800.0	1,797.2	1,797.1	1,797.1	4.1	3.9	-157.11	0.0	32.9	82.6	74.9	7.70	10.730	
1,900.0	1,896.9	1,896.9	1,896.9	4.3	4.1	-158.86	0.0	32.9	89.1	80.9	8.14	10.936	
2,000.0	1,996.7	1,996.7	1,996.7	4.6	4.4	-160.36	0.0	32.9	95.6	87.0	8.59	11.129	
2,100.0	2,096.4	2,096.4	2,096.4	4.8	4.6	-161.68	0.0	32.9	102.2	93.2	9.04	11.307	
2,200.0	2,196.2	2,196.2	2,196.2	5.1	4.8	-162.83	0.0	32.9	108.8	99.4	9.49	11.474	
2,300.0	2,295.9	2,295.9	2,295.9	5.4	5.0	-163.85	0.0	32.9	115.5	105.6	9.94	11.628	
2,400.0	2,395.7	2,395.7	2,395.7	5.6	5.3	-164.76	0.0	32.9	122.2	111.9	10.38	11.772	
2,500.0	2,495.5	2,495.4	2,495.4	5.9	5.5	-165.58	0.0	32.9	129.0	118.2	10.83	11.906	
2,600.0	2,595.2	2,595.2	2,595.2	6.1	5.7	-166.31	0.0	32.9	135.8	124.5	11.28	12.031	
2,700.0	2,695.0	2,695.0	2,695.0	6.4	5.9	-166.97	0.0	32.9	142.5	130.8	11.73	12.148	
2,800.0	2,794.7	2,794.7	2,794.7	6.7	6.2	-167.58	0.0	32.9	149.4	137.2	12.18	12.258	
2,900.0	2,894.5	2,894.5	2,894.5	6.9	6.4	-168.13	0.0	32.9	156.2	143.5	12.64	12.360	
3,000.0	2,994.2	2,994.2	2,994.2	7.2	6.6	-168.63	0.0	32.9	163.0	149.9	13.09	12.457	
3,100.0	3,094.0	3,094.0	3,094.0	7.4	6.8	-169.10	0.0	32.9	169.9	156.3	13.54	12.547	
3,200.0	3,193.7	3,193.7	3,193.7	7.7	7.0	-169.52	0.0	32.9	176.7	162.7	13.99	12.632	
3,300.0	3,293.5	3,293.5	3,293.5	8.0	7.3	-169.92	0.0	32.9	183.6	169.1	14.44	12.713	
3,400.0	3,393.3	3,393.3	3,393.3	8.2	7.5	-170.29	0.0	32.9	190.4	175.6	14.89	12.789	
3,500.0	3,493.0	3,493.0	3,493.0	8.5	7.7	-170.63	0.0	32.9	197.3	182.0	15.34	12.861	
3,600.0	3,592.8	3,592.8	3,592.8	8.8	7.9	-170.95	0.0	32.9	204.2	188.4	15.79	12.929	
3,700.0	3,692.5	3,692.5	3,692.5	9.0	8.2	-171.24	0.0	32.9	211.1	194.9	16.25	12.993	
3,800.0	3,792.3	3,792.3	3,792.3	9.3	8.4	-171.52	0.0	32.9	218.0	201.3	16.70	13.055	
3,900.0	3,892.0	3,892.0	3,892.0	9.6	8.6	-171.79	0.0	32.9	224.9	207.7	17.15	13.113	
4,000.0	3,991.8	3,991.8	3,991.8	9.8	8.8	-172.03	0.0	32.9	231.8	214.2	17.60	13.168	
4,100.0	4,091.6	4,091.5	4,091.5	10.1	9.1	-172.26	0.0	32.9	238.7	220.7	18.06	13.221	
4,200.0	4,191.3	4,191.3	4,191.3	10.3	9.3	-172.48	0.0	32.9	245.6	227.1	18.51	13.272	
4,300.0	4,291.1	4,291.1	4,291.1	10.6	9.5	-172.69	0.0	32.9	252.5	233.6	18.96	13.320	
4,400.0	4,390.8	4,390.8	4,390.8	10.9	9.7	-172.89	0.0	32.9	259.5	240.1	19.41	13.366	
4,500.0	4,490.6	4,490.6	4,490.6	11.1	10.0	-173.07	0.0	32.9	266.4	246.5	19.87	13.410	
4,600.0	4,590.3	4,590.3	4,590.3	11.4	10.2	-173.25	0.0	32.9	273.3	253.0	20.32	13.452	
4,700.0	4,690.1	4,690.1	4,690.1	11.7	10.4	-173.42	0.0	32.9	280.2	259.5	20.77	13.492	
4,800.0	4,789.9	4,789.8	4,789.8	11.9	10.6	-173.58	0.0	32.9	287.2	266.0	21.22	13.531	
4,900.0	4,889.6	4,889.6	4,889.6	12.2	10.9	-173.73	0.0	32.9	294.1	272.4	21.68	13.568	
5,000.0	4,989.4	4,989.4	4,989.4	12.5	11.1	-173.87	0.0	32.9	301.0	278.9	22.13	13.604	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2211A - HZ - Plan #2

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
5,100.0	5,089.1	5,089.1	5,089.1	12.7	11.3	-174.01	0.0	32.9	308.0	285.4	22.58	13.638	
5,194.0	5,182.9	5,169.0	5,169.0	13.0	11.5	-174.11	0.5	32.9	315.3	292.3	22.98	13.723	
5,200.0	5,188.9	5,172.7	5,172.7	13.0	11.5	-174.11	0.7	32.9	316.1	293.1	22.99	13.748	
5,250.0	5,238.4	5,200.0	5,199.9	13.1	11.6	-174.04	2.8	32.7	326.4	303.5	22.98	14.207	
5,300.0	5,287.2	5,231.4	5,231.0	13.4	11.6	-173.92	7.0	32.3	344.1	321.3	22.79	15.098	
5,350.0	5,334.6	5,250.0	5,249.3	13.6	11.7	-173.67	10.3	32.0	368.5	346.1	22.39	16.462	
5,400.0	5,380.3	5,280.2	5,278.8	13.9	11.7	-173.38	17.1	31.4	398.7	376.9	21.83	18.266	
5,450.0	5,423.8	5,300.0	5,297.8	14.2	11.8	-172.90	22.5	30.9	434.1	413.0	21.07	20.598	
5,500.0	5,464.8	5,316.1	5,313.1	14.6	11.8	-172.16	27.4	30.5	473.8	453.6	20.16	23.499	
5,550.0	5,502.8	5,329.0	5,325.3	15.1	11.9	-171.02	31.7	30.1	516.9	497.7	19.13	27.021	
5,600.0	5,537.6	5,350.0	5,344.8	15.6	11.9	-169.51	39.3	29.4	562.9	544.8	18.04	31.197	
5,650.0	5,568.8	5,350.0	5,344.8	16.1	11.9	-165.90	39.3	29.4	610.4	593.2	17.15	35.596	
5,700.0	5,596.1	5,350.0	5,344.8	16.7	11.9	-157.38	39.3	29.4	659.3	641.8	17.48	37.712	
5,750.0	5,619.2	5,350.0	5,344.8	17.4	11.9	-123.72	39.3	29.4	709.0	683.7	25.38	27.936	
5,800.0	5,638.0	5,350.0	5,344.8	18.0	11.9	-39.85	39.3	29.4	759.0	737.8	21.19	35.814	
5,850.0	5,652.3	5,350.0	5,344.8	18.8	11.9	-17.46	39.3	29.4	808.6	795.2	13.42	60.268	
5,900.0	5,661.9	5,350.0	5,344.8	19.5	11.9	-10.77	39.3	29.4	857.6	847.0	10.58	81.025	
5,950.0	5,666.8	5,350.0	5,344.8	20.3	11.9	-7.68	39.3	29.4	905.7	896.6	9.08	99.797	
5,975.8	5,667.4	5,350.0	5,344.8	20.7	11.9	-6.67	39.3	29.4	930.1	921.4	8.62	107.899	
6,000.0	5,667.4	5,350.0	5,344.8	21.0	11.9	-4.70	39.3	29.4	952.8	944.4	8.35	114.160	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2

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	-180.00	-75.1	0.0	75.1				
100.0	100.0	97.0	97.0	0.1	0.1	-180.00	-75.1	0.0	75.1	74.9	0.18	405.993	
200.0	200.0	197.0	197.0	0.3	0.3	-180.00	-75.1	0.0	75.1	74.4	0.63	119.044	
300.0	300.0	297.0	297.0	0.5	0.5	-180.00	-75.1	0.0	75.1	74.0	1.08	69.494	
400.0	400.0	397.0	397.0	0.8	0.8	-180.00	-75.1	0.0	75.1	73.5	1.53	49.070	
500.0	500.0	497.0	497.0	1.0	1.0	-180.00	-75.1	0.0	75.1	73.1	1.98	37.924	
600.0	600.0	597.0	597.0	1.2	1.2	13.65	-75.1	0.0	73.4	71.0	2.40	30.506	
700.0	699.8	696.8	696.8	1.4	1.4	14.71	-75.1	0.0	68.3	65.5	2.82	24.234	
800.0	799.6	796.6	796.6	1.6	1.7	16.36	-75.1	0.0	61.6	58.3	3.24	19.008	
900.0	899.4	896.4	896.4	1.8	1.9	18.41	-75.1	0.0	54.9	51.2	3.67	14.962	
1,000.0	999.1	996.1	996.1	2.0	2.1	21.03	-75.1	0.0	48.3	44.2	4.11	11.764	
1,100.0	1,098.9	1,095.9	1,095.9	2.3	2.3	24.45	-75.1	0.0	41.9	37.3	4.55	9.198	
1,200.0	1,198.6	1,195.6	1,195.6	2.5	2.6	29.09	-75.1	0.0	35.7	30.6	5.01	7.117	
1,300.0	1,298.4	1,295.4	1,295.4	2.8	2.8	35.63	-75.1	0.0	29.7	24.3	5.48	5.432	
1,400.0	1,398.1	1,395.1	1,395.1	3.0	3.0	45.20	-75.1	0.0	24.4	18.5	5.96	4.094	
1,500.0	1,497.9	1,494.9	1,494.9	3.3	3.2	59.43	-75.1	0.0	20.1	13.6	6.48	3.106	
1,600.0	1,597.6	1,595.2	1,595.2	3.5	3.5	80.89	-74.1	1.2	16.1	9.1	7.00	2.301	
1,700.0	1,697.4	1,695.1	1,694.9	3.8	3.7	120.21	-70.9	5.2	13.1	5.7	7.39	1.772	
1,703.8	1,701.2	1,698.9	1,698.7	3.8	3.7	122.16	-70.7	5.4	13.1	5.7	7.40	1.768	CC, ES, SF
1,800.0	1,797.2	1,794.4	1,794.0	4.1	3.9	162.89	-66.5	10.5	17.3	9.6	7.66	2.259	
1,900.0	1,896.9	1,893.7	1,893.0	4.3	4.1	-177.46	-62.2	15.9	26.5	18.5	8.08	3.285	
2,000.0	1,996.7	1,993.0	1,992.1	4.6	4.3	-168.44	-57.8	21.3	37.3	28.7	8.55	4.360	
2,100.0	2,096.4	2,092.3	2,091.2	4.8	4.6	-163.51	-53.5	26.7	48.5	39.5	9.01	5.377	
2,200.0	2,196.2	2,191.6	2,190.2	5.1	4.8	-160.45	-49.1	32.1	59.9	50.4	9.48	6.317	
2,300.0	2,295.9	2,290.9	2,289.3	5.4	5.0	-158.37	-44.8	37.5	71.4	61.5	9.95	7.180	
2,400.0	2,395.7	2,390.2	2,388.3	5.6	5.3	-156.87	-40.4	42.9	83.1	72.6	10.42	7.972	
2,500.0	2,495.5	2,489.5	2,487.4	5.9	5.5	-155.74	-36.1	48.3	94.7	83.8	10.89	8.700	
2,600.0	2,595.2	2,588.8	2,586.5	6.1	5.8	-154.85	-31.7	53.7	106.4	95.0	11.36	9.370	
2,700.0	2,695.0	2,688.1	2,685.5	6.4	6.0	-154.15	-27.4	59.0	118.1	106.3	11.82	9.989	
2,800.0	2,794.7	2,787.4	2,784.6	6.7	6.2	-153.57	-23.0	64.4	129.8	117.5	12.29	10.561	
2,900.0	2,894.5	2,886.7	2,883.7	6.9	6.5	-153.08	-18.6	69.8	141.6	128.8	12.76	11.091	
3,000.0	2,994.2	2,986.0	2,982.7	7.2	6.7	-152.67	-14.3	75.2	153.3	140.1	13.23	11.585	
3,100.0	3,094.0	3,085.3	3,081.8	7.4	7.0	-152.32	-9.9	80.6	165.0	151.3	13.70	12.044	
3,200.0	3,193.7	3,184.6	3,180.8	7.7	7.2	-152.01	-5.6	86.0	176.8	162.6	14.17	12.474	
3,300.0	3,293.5	3,283.9	3,279.9	8.0	7.5	-151.75	-1.2	91.4	188.5	173.9	14.64	12.875	
3,400.0	3,393.3	3,383.2	3,379.0	8.2	7.7	-151.51	3.1	96.8	200.3	185.2	15.11	13.252	
3,500.0	3,493.0	3,487.8	3,483.3	8.5	8.0	-151.51	6.9	101.4	211.0	195.5	15.57	13.555	
3,600.0	3,592.8	3,593.9	3,589.4	8.8	8.1	-152.10	8.2	103.1	218.9	202.9	15.99	13.689	
3,700.0	3,692.5	3,694.0	3,689.5	9.0	8.3	-152.93	8.2	103.1	225.0	208.6	16.41	13.714	
3,800.0	3,792.3	3,793.8	3,789.3	9.3	8.5	-153.71	8.2	103.1	231.3	214.4	16.85	13.723	
3,900.0	3,892.0	3,893.5	3,889.0	9.6	8.8	-154.46	8.2	103.1	237.6	220.3	17.30	13.733	
4,000.0	3,991.8	3,993.3	3,988.8	9.8	9.0	-155.17	8.2	103.1	243.9	226.1	17.74	13.744	
4,100.0	4,091.6	4,093.0	4,088.6	10.1	9.2	-155.84	8.2	103.1	250.2	232.0	18.19	13.756	
4,200.0	4,191.3	4,192.8	4,188.3	10.3	9.4	-156.47	8.2	103.1	256.6	238.0	18.64	13.770	
4,300.0	4,291.1	4,292.5	4,288.1	10.6	9.6	-157.08	8.2	103.1	263.0	243.9	19.08	13.784	
4,400.0	4,390.8	4,392.3	4,387.8	10.9	9.8	-157.66	8.2	103.1	269.5	249.9	19.53	13.799	
4,500.0	4,490.6	4,492.0	4,487.6	11.1	10.0	-158.21	8.2	103.1	275.9	256.0	19.97	13.814	
4,600.0	4,590.3	4,591.8	4,587.3	11.4	10.3	-158.73	8.2	103.1	282.4	262.0	20.42	13.830	
4,700.0	4,690.1	4,691.6	4,687.1	11.7	10.5	-159.23	8.2	103.1	288.9	268.1	20.87	13.846	
4,800.0	4,789.9	4,791.3	4,786.9	11.9	10.7	-159.71	8.2	103.1	295.5	274.2	21.31	13.862	
4,900.0	4,889.6	4,891.1	4,886.6	12.2	10.9	-160.17	8.2	103.1	302.0	280.3	21.76	13.879	
5,000.0	4,989.4	4,990.8	4,986.4	12.5	11.1	-160.61	8.2	103.1	308.6	286.4	22.21	13.896	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-2212B - HZ - Plan #2

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	5,089.1	5,090.6	5,086.1	12.7	11.3	-161.03	8.2	103.1	315.2	292.5	22.66	13.912	
5,194.0	5,182.9	5,184.3	5,179.9	13.0	11.5	-161.41	8.2	103.1	321.4	298.3	23.08	13.928	
5,200.0	5,188.9	5,190.3	5,185.9	13.0	11.6	-161.42	8.2	103.1	321.8	298.7	23.09	13.937	
5,250.0	5,238.4	5,237.0	5,232.5	13.1	11.7	-161.54	8.2	103.1	328.0	304.8	23.12	14.186	
5,300.0	5,287.2	5,268.5	5,264.0	13.4	11.7	-161.46	9.2	103.4	340.1	317.2	22.95	14.818	
5,350.0	5,334.6	5,300.0	5,295.4	13.6	11.8	-161.21	11.9	104.1	359.2	336.6	22.63	15.874	
5,400.0	5,380.3	5,321.4	5,316.6	13.9	11.9	-160.55	14.8	104.9	384.6	362.4	22.15	17.362	
5,450.0	5,423.8	5,350.0	5,344.6	14.2	11.9	-159.76	20.0	106.3	415.7	394.1	21.57	19.273	
5,500.0	5,464.8	5,362.7	5,357.0	14.6	12.0	-158.12	22.8	107.1	451.4	430.5	20.91	21.585	
5,550.0	5,502.8	5,378.4	5,372.2	15.1	12.0	-155.91	26.7	108.1	491.3	470.9	20.31	24.192	
5,600.0	5,537.6	5,400.0	5,392.9	15.6	12.1	-153.11	32.7	109.8	534.5	514.6	19.87	26.903	
5,650.0	5,568.8	5,400.0	5,392.9	16.1	12.1	-147.12	32.7	109.8	579.9	559.7	20.20	28.700	
5,700.0	5,596.1	5,400.0	5,392.9	16.7	12.1	-136.83	32.7	109.8	627.3	605.2	22.09	28.396	
5,750.0	5,619.2	5,400.0	5,392.9	17.4	12.1	-118.08	32.7	109.8	676.0	649.7	26.35	25.653	
5,800.0	5,638.0	5,400.0	5,392.9	18.0	12.1	-87.36	32.7	109.8	725.3	695.4	29.87	24.280	
5,850.0	5,652.3	5,400.0	5,392.9	18.8	12.1	-56.29	32.7	109.8	774.6	748.4	26.24	29.517	
5,900.0	5,661.9	5,400.0	5,392.9	19.5	12.1	-37.06	32.7	109.8	823.6	803.2	20.41	40.345	
5,950.0	5,666.8	5,400.0	5,392.9	20.3	12.1	-26.44	32.7	109.8	871.8	855.6	16.25	53.650	
5,975.8	5,667.4	5,400.0	5,392.9	20.7	12.1	-22.84	32.7	109.8	896.3	881.6	14.76	60.714	
6,000.0	5,667.4	5,400.0	5,392.9	21.0	12.1	-20.86	32.7	109.8	919.2	905.1	14.10	65.190	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-65.3	65.3				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-65.3	65.3	65.1	0.19	348.104	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-65.3	65.3	64.7	0.64	102.528	
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-65.3	65.3	64.2	1.09	60.117	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-65.3	65.3	63.8	1.54	42.526	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-65.3	65.3	63.3	1.99	32.900	CC, ES
600.0	600.0	599.3	599.3	1.2	1.2	103.35	-1.6	-65.9	66.3	63.9	2.38	27.843	
700.0	699.8	698.5	698.4	1.4	1.4	103.42	-6.5	-67.4	69.1	66.3	2.75	25.077	
800.0	799.6	798.5	798.1	1.6	1.6	103.53	-13.2	-69.6	72.8	69.6	3.17	22.966	
900.0	899.4	898.4	897.7	1.8	1.8	103.63	-19.8	-71.7	76.6	72.9	3.61	21.180	
1,000.0	999.1	998.3	997.4	2.0	2.0	103.72	-26.5	-73.9	80.3	76.2	4.08	19.692	
1,100.0	1,098.9	1,098.3	1,097.1	2.3	2.3	103.80	-33.1	-76.0	84.1	79.5	4.56	18.452	
1,200.0	1,198.6	1,198.2	1,196.8	2.5	2.5	103.87	-39.7	-78.1	87.8	82.8	5.04	17.415	
1,300.0	1,298.4	1,298.1	1,296.5	2.8	2.8	103.94	-46.4	-80.3	91.6	86.0	5.54	16.539	
1,400.0	1,398.1	1,398.0	1,396.2	3.0	3.0	104.01	-53.0	-82.4	95.3	89.3	6.03	15.793	
1,500.0	1,497.9	1,498.0	1,495.9	3.3	3.3	104.07	-59.6	-84.5	99.1	92.5	6.54	15.152	
1,600.0	1,597.6	1,597.9	1,595.5	3.5	3.5	104.12	-66.3	-86.7	102.8	95.8	7.04	14.595	
1,700.0	1,697.4	1,697.8	1,695.2	3.8	3.8	104.17	-72.9	-88.8	106.5	99.0	7.55	14.109	
1,800.0	1,797.2	1,797.8	1,794.9	4.1	4.0	104.22	-79.5	-91.0	110.3	102.2	8.06	13.680	
1,900.0	1,896.9	1,897.7	1,894.6	4.3	4.3	104.26	-86.2	-93.1	114.0	105.5	8.57	13.300	
2,000.0	1,996.7	1,997.6	1,994.3	4.6	4.6	104.30	-92.8	-95.2	117.8	108.7	9.09	12.961	
2,100.0	2,096.4	2,097.5	2,094.0	4.8	4.8	104.34	-99.4	-97.4	121.5	111.9	9.60	12.657	
2,200.0	2,196.2	2,197.5	2,193.7	5.1	5.1	104.38	-106.1	-99.5	125.3	115.2	10.12	12.382	
2,300.0	2,295.9	2,297.4	2,293.4	5.4	5.3	104.41	-112.7	-101.6	129.0	118.4	10.64	12.133	
2,400.0	2,395.7	2,397.3	2,393.0	5.6	5.6	104.44	-119.3	-103.8	132.8	121.6	11.15	11.906	
2,500.0	2,495.5	2,497.3	2,492.7	5.9	5.9	104.48	-126.0	-105.9	136.5	124.9	11.67	11.698	
2,600.0	2,595.2	2,597.2	2,592.4	6.1	6.1	104.50	-132.6	-108.1	140.3	128.1	12.19	11.508	
2,700.0	2,695.0	2,697.1	2,692.1	6.4	6.4	104.53	-139.2	-110.2	144.0	131.3	12.71	11.332	
2,800.0	2,794.7	2,797.1	2,791.8	6.7	6.7	104.56	-145.9	-112.3	147.8	134.6	13.23	11.170	
2,900.0	2,894.5	2,897.0	2,891.5	6.9	6.9	104.58	-152.5	-114.5	151.5	137.8	13.75	11.020	
3,000.0	2,994.2	2,996.9	2,991.2	7.2	7.2	104.61	-159.1	-116.6	155.3	141.0	14.27	10.880	
3,100.0	3,094.0	3,096.8	3,090.8	7.4	7.4	104.63	-165.8	-118.8	159.0	144.2	14.79	10.751	
3,200.0	3,193.7	3,196.8	3,190.5	7.7	7.7	104.65	-172.4	-120.9	162.8	147.5	15.31	10.629	
3,300.0	3,293.5	3,296.7	3,290.2	8.0	8.0	104.67	-179.1	-123.0	166.5	150.7	15.84	10.516	
3,400.0	3,393.3	3,396.6	3,389.9	8.2	8.2	104.69	-185.7	-125.2	170.3	153.9	16.36	10.410	
3,500.0	3,493.0	3,496.6	3,489.6	8.5	8.5	104.71	-192.3	-127.3	174.0	157.2	16.88	10.310	
3,600.0	3,592.8	3,596.5	3,589.3	8.8	8.8	104.73	-199.0	-129.4	177.8	160.4	17.40	10.216	
3,700.0	3,692.5	3,696.4	3,689.0	9.0	9.0	104.74	-205.6	-131.6	181.5	163.6	17.93	10.127	
3,800.0	3,792.3	3,796.4	3,788.6	9.3	9.3	104.76	-212.2	-133.7	185.3	166.8	18.45	10.044	
3,900.0	3,892.0	3,896.3	3,888.3	9.6	9.5	104.78	-218.9	-135.9	189.0	170.1	18.97	9.964	
4,000.0	3,991.8	3,996.2	3,988.0	9.8	9.8	104.79	-225.5	-138.0	192.8	173.3	19.49	9.890	
4,100.0	4,091.6	4,096.1	4,087.7	10.1	10.1	104.81	-232.1	-140.1	196.5	176.5	20.02	9.818	
4,200.0	4,191.3	4,196.1	4,187.4	10.3	10.3	104.82	-238.8	-142.3	200.3	179.7	20.54	9.751	
4,300.0	4,291.1	4,296.0	4,287.1	10.6	10.6	104.83	-245.4	-144.4	204.0	183.0	21.06	9.687	
4,400.0	4,390.8	4,395.9	4,386.8	10.9	10.9	104.85	-252.0	-146.5	207.8	186.2	21.59	9.626	
4,500.0	4,490.6	4,495.9	4,486.4	11.1	11.1	104.86	-258.7	-148.7	211.5	189.4	22.11	9.567	
4,600.0	4,590.3	4,595.8	4,586.1	11.4	11.4	104.87	-265.3	-150.8	215.3	192.6	22.63	9.512	
4,700.0	4,690.1	4,695.7	4,685.8	11.7	11.7	104.88	-271.9	-153.0	219.0	195.9	23.16	9.458	
4,800.0	4,789.9	4,795.6	4,785.5	11.9	11.9	104.89	-278.6	-155.1	222.8	199.1	23.68	9.408	
4,900.0	4,889.6	4,895.6	4,885.2	12.2	12.2	104.91	-285.2	-157.2	226.5	202.3	24.20	9.359	
5,000.0	4,989.4	4,995.5	4,984.9	12.5	12.4	104.92	-291.8	-159.4	230.3	205.6	24.73	9.312	
5,100.0	5,089.1	5,095.4	5,084.6	12.7	12.7	104.93	-298.5	-161.5	234.0	208.8	25.25	9.268	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3

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
5,194.0	5,182.9	5,189.4	5,178.3	13.0	13.0	104.94	-304.7	-163.5	237.6	211.8	25.74	9.227	
5,200.0	5,188.9	5,195.1	5,184.0	13.0	13.0	104.92	-305.1	-163.6	237.8	212.0	25.77	9.226	
5,250.0	5,238.4	5,239.4	5,227.9	13.1	13.1	104.71	-310.0	-165.2	241.1	215.0	26.05	9.255	
5,300.0	5,287.2	5,283.4	5,271.1	13.4	13.3	104.36	-318.3	-167.9	246.7	220.4	26.38	9.352	
5,350.0	5,334.6	5,327.1	5,313.0	13.6	13.5	103.87	-330.0	-171.7	254.7	227.9	26.78	9.512	
5,400.0	5,380.3	5,370.4	5,353.3	13.9	13.7	103.24	-344.9	-176.5	264.9	237.7	27.24	9.725	
5,450.0	5,423.8	5,413.2	5,391.8	14.2	14.0	102.47	-362.6	-182.2	277.3	249.5	27.77	9.982	
5,500.0	5,464.8	5,455.4	5,428.2	14.6	14.3	101.56	-383.1	-188.8	291.6	263.2	28.39	10.272	
5,550.0	5,502.8	5,497.1	5,462.3	15.1	14.6	100.52	-405.9	-196.1	307.8	278.7	29.12	10.570	
5,600.0	5,537.6	5,538.3	5,494.0	15.6	15.0	99.34	-430.9	-204.2	325.7	295.7	29.95	10.874	
5,650.0	5,568.8	5,579.0	5,523.1	16.1	15.4	98.03	-457.9	-212.9	345.1	314.2	30.88	11.177	
5,700.0	5,596.1	5,619.2	5,549.7	16.7	15.8	96.61	-486.6	-222.1	365.9	334.0	31.89	11.474	
5,750.0	5,619.2	5,659.0	5,573.6	17.4	16.2	95.09	-516.9	-231.9	387.9	354.9	32.98	11.761	
5,800.0	5,638.0	5,700.0	5,595.6	18.0	16.7	93.54	-549.8	-242.5	411.0	376.8	34.17	12.029	
5,850.0	5,652.3	5,737.8	5,613.5	18.8	17.2	91.81	-581.6	-252.7	434.9	399.5	35.39	12.289	
5,900.0	5,661.9	5,777.1	5,629.4	19.5	17.7	90.09	-615.8	-263.7	459.4	422.8	36.67	12.531	
5,950.0	5,666.8	5,816.6	5,642.6	20.3	18.2	88.35	-651.1	-275.1	484.5	446.6	37.98	12.757	
5,975.8	5,667.4	5,837.1	5,648.4	20.7	18.5	87.45	-669.8	-281.2	497.6	459.0	38.68	12.867	
6,000.0	5,667.4	5,856.6	5,653.1	21.0	18.8	88.15	-687.8	-287.0	509.8	470.5	39.37	12.949	
6,100.0	5,667.4	5,941.9	5,665.5	22.4	20.0	89.78	-768.1	-312.8	558.1	515.8	42.23	13.213	
6,200.0	5,667.4	6,057.7	5,666.5	23.8	21.7	89.91	-878.9	-346.6	600.6	555.1	45.48	13.205	
6,300.0	5,667.4	6,197.9	5,666.5	25.3	23.6	89.92	-1,015.2	-378.8	632.1	583.1	49.07	12.882	
6,400.0	5,667.4	6,345.7	5,666.5	26.8	25.8	89.92	-1,161.2	-401.8	651.3	598.4	52.90	12.313	
6,420.1	5,667.4	6,376.0	5,666.5	27.1	26.2	89.92	-1,191.3	-405.1	653.6	600.0	53.68	12.177	
6,500.0	5,667.4	6,497.5	5,666.5	28.4	28.0	89.93	-1,312.5	-413.6	659.2	602.4	56.84	11.598	
6,600.0	5,667.4	6,622.6	5,666.6	30.1	30.0	89.93	-1,437.6	-415.0	660.1	599.6	60.56	10.901	
6,700.0	5,667.4	6,722.6	5,666.6	31.9	31.7	89.93	-1,537.6	-415.0	660.1	596.1	64.00	10.315	
6,800.0	5,667.4	6,822.6	5,666.6	33.6	33.4	89.93	-1,637.6	-415.0	660.1	592.7	67.49	9.782	
6,900.0	5,667.4	6,922.6	5,666.6	35.4	35.1	89.93	-1,737.6	-415.0	660.1	589.1	71.01	9.296	
7,000.0	5,667.4	7,022.6	5,666.6	37.1	36.8	89.93	-1,837.6	-415.0	660.1	585.6	74.57	8.853	
7,100.0	5,667.4	7,122.6	5,666.6	38.9	38.5	89.93	-1,937.6	-415.0	660.1	582.0	78.15	8.447	
7,200.0	5,667.3	7,222.6	5,666.6	40.7	40.3	89.94	-2,037.6	-415.0	660.1	578.4	81.76	8.074	
7,300.0	5,667.3	7,322.6	5,666.6	42.6	42.1	89.94	-2,137.6	-415.0	660.1	574.8	85.39	7.731	
7,400.0	5,667.3	7,422.6	5,666.6	44.4	43.9	89.94	-2,237.6	-415.0	660.1	571.1	89.04	7.414	
7,500.0	5,667.3	7,522.6	5,666.6	46.2	45.7	89.94	-2,337.6	-415.0	660.1	567.4	92.70	7.121	
7,600.0	5,667.3	7,622.6	5,666.6	48.1	47.5	89.94	-2,437.6	-415.0	660.1	563.8	96.38	6.850	
7,700.0	5,667.3	7,722.6	5,666.6	49.9	49.3	89.94	-2,537.6	-415.0	660.1	560.1	100.07	6.597	
7,800.0	5,667.3	7,822.6	5,666.6	51.7	51.1	89.94	-2,637.6	-415.0	660.1	556.4	103.77	6.362	
7,900.0	5,667.3	7,922.6	5,666.7	53.6	53.0	89.94	-2,737.6	-415.0	660.1	552.7	107.48	6.142	
8,000.0	5,667.3	8,022.6	5,666.7	55.5	54.8	89.95	-2,837.6	-414.9	660.1	548.9	111.20	5.937	
8,100.0	5,667.3	8,122.6	5,666.7	57.3	56.7	89.95	-2,937.6	-414.9	660.1	545.2	114.93	5.744	
8,200.0	5,667.3	8,222.6	5,666.7	59.2	58.5	89.95	-3,037.6	-414.9	660.1	541.5	118.66	5.563	
8,300.0	5,667.3	8,322.6	5,666.7	61.1	60.4	89.95	-3,137.6	-414.9	660.1	537.7	122.41	5.393	
8,400.0	5,667.3	8,422.6	5,666.7	62.9	62.2	89.95	-3,237.6	-414.9	660.1	534.0	126.16	5.233	
8,500.0	5,667.3	8,522.6	5,666.7	64.8	64.1	89.95	-3,337.6	-414.9	660.1	530.2	129.91	5.082	
8,600.0	5,667.2	8,622.6	5,666.7	66.7	65.9	89.95	-3,437.6	-414.9	660.1	526.5	133.67	4.939	
8,700.0	5,667.2	8,722.6	5,666.7	68.6	67.8	89.95	-3,537.6	-414.9	660.1	522.7	137.43	4.803	
8,800.0	5,667.2	8,822.6	5,666.7	70.5	69.7	89.96	-3,637.6	-414.9	660.1	518.9	141.20	4.675	
8,900.0	5,667.2	8,922.6	5,666.7	72.3	71.6	89.96	-3,737.6	-414.9	660.1	515.2	144.97	4.554	
9,000.0	5,667.2	9,022.6	5,666.7	74.2	73.4	89.96	-3,837.6	-414.9	660.1	511.4	148.75	4.438	
9,100.0	5,667.2	9,122.6	5,666.8	76.1	75.3	89.96	-3,937.6	-414.9	660.1	507.6	152.53	4.328	
9,200.0	5,667.2	9,222.6	5,666.8	78.0	77.2	89.96	-4,037.6	-414.9	660.1	503.8	156.31	4.223	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3409A - Hz - Plan #3

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
9,300.0	5,667.2	9,322.6	5,666.8	79.9	79.1	89.96	-4,137.6	-414.9	660.1	500.1	160.09	4.123	
9,400.0	5,667.2	9,422.6	5,666.8	81.8	81.0	89.96	-4,237.6	-414.9	660.1	496.3	163.88	4.028	
9,500.0	5,667.2	9,522.6	5,666.8	83.7	82.8	89.97	-4,337.6	-414.9	660.1	492.5	167.67	3.937	
9,600.0	5,667.2	9,622.6	5,666.8	85.6	84.7	89.97	-4,437.6	-414.9	660.1	488.7	171.46	3.850	
9,700.0	5,667.2	9,722.6	5,666.8	87.5	86.6	89.97	-4,537.6	-414.9	660.1	484.9	175.26	3.767	
9,800.0	5,667.2	9,822.6	5,666.8	89.4	88.5	89.97	-4,637.6	-414.9	660.1	481.1	179.06	3.687	
9,900.0	5,667.2	9,922.6	5,666.8	91.3	90.4	89.97	-4,737.6	-414.9	660.1	477.3	182.85	3.610	
10,000.0	5,667.2	10,022.6	5,666.8	93.2	92.3	89.97	-4,837.6	-414.9	660.1	473.5	186.65	3.537	
10,100.0	5,667.1	10,122.6	5,666.8	95.1	94.2	89.97	-4,937.6	-414.9	660.1	469.7	190.46	3.466	
10,200.0	5,667.1	10,222.6	5,666.8	97.0	96.1	89.97	-5,037.6	-414.9	660.1	465.9	194.26	3.398	
10,300.0	5,667.1	10,322.6	5,666.8	98.9	98.0	89.98	-5,137.6	-414.9	660.2	462.1	198.07	3.333	
10,400.0	5,667.1	10,422.6	5,666.9	100.8	99.9	89.98	-5,237.6	-414.9	660.2	458.3	201.87	3.270	
10,500.0	5,667.1	10,522.6	5,666.9	102.7	101.8	89.98	-5,337.6	-414.9	660.2	454.5	205.68	3.210	
10,600.0	5,667.1	10,622.6	5,666.9	104.6	103.7	89.98	-5,437.6	-414.9	660.2	450.7	209.49	3.151	
10,700.0	5,667.1	10,722.6	5,666.9	106.5	105.6	89.98	-5,537.6	-414.9	660.2	446.9	213.30	3.095	
10,800.0	5,667.1	10,822.6	5,666.9	108.4	107.5	89.98	-5,637.6	-414.9	660.2	443.0	217.11	3.041	
10,900.0	5,667.1	10,922.6	5,666.9	110.3	109.4	89.98	-5,737.6	-414.9	660.2	439.2	220.92	2.988	
11,000.0	5,667.1	11,022.6	5,666.9	112.2	111.3	89.98	-5,837.6	-414.9	660.2	435.4	224.74	2.937	
11,100.0	5,667.1	11,122.6	5,666.9	114.1	113.2	89.99	-5,937.6	-414.8	660.2	431.6	228.55	2.888	
11,200.0	5,667.1	11,222.6	5,666.9	116.0	115.1	89.99	-6,037.6	-414.8	660.2	427.8	232.37	2.841	
11,300.0	5,667.1	11,322.6	5,666.9	117.9	117.0	89.99	-6,137.6	-414.8	660.2	424.0	236.18	2.795	
11,400.0	5,667.1	11,422.6	5,666.9	119.9	118.9	89.99	-6,237.6	-414.8	660.2	420.2	240.00	2.751	
11,500.0	5,667.0	11,522.6	5,666.9	121.8	120.8	89.99	-6,337.6	-414.8	660.2	416.3	243.82	2.708	
11,600.0	5,667.0	11,622.6	5,667.0	123.7	122.7	89.99	-6,437.6	-414.8	660.2	412.5	247.64	2.666	
11,700.0	5,667.0	11,722.6	5,667.0	125.6	124.6	89.99	-6,537.6	-414.8	660.2	408.7	251.46	2.625	
11,800.0	5,667.0	11,822.6	5,667.0	127.5	126.5	89.99	-6,637.6	-414.8	660.2	404.9	255.28	2.586	
11,900.0	5,667.0	11,922.6	5,667.0	129.4	128.4	90.00	-6,737.6	-414.8	660.2	401.1	259.10	2.548	
12,000.0	5,667.0	12,022.6	5,667.0	131.3	130.3	90.00	-6,837.6	-414.8	660.2	397.2	262.92	2.511	
12,100.0	5,667.0	12,122.6	5,667.0	133.2	132.2	90.00	-6,937.6	-414.8	660.2	393.4	266.74	2.475	
12,191.9	5,667.0	12,214.5	5,667.0	134.7	134.0	90.00	-7,029.5	-414.8	660.2	390.2	269.93	2.446 SF	

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-156.66	-75.1	-32.4	81.8				
100.0	100.0	97.0	97.0	0.1	0.1	-156.66	-75.1	-32.4	81.7	81.6	0.18	442.185	
200.0	200.0	197.0	197.0	0.3	0.3	-156.66	-75.1	-32.4	81.7	81.1	0.63	129.656	
300.0	300.0	297.0	297.0	0.5	0.5	-156.66	-75.1	-32.4	81.7	80.7	1.08	75.689	
400.0	400.0	397.0	397.0	0.8	0.8	-156.66	-75.1	-32.4	81.7	80.2	1.53	53.444	
500.0	500.0	497.0	497.0	1.0	1.0	-156.66	-75.1	-32.4	81.7	79.8	1.98	41.305	
600.0	600.0	597.0	597.0	1.2	1.2	37.43	-75.1	-32.4	80.4	77.9	2.40	33.426	
700.0	699.8	696.8	696.8	1.4	1.4	39.87	-75.1	-32.4	76.3	73.4	2.82	27.071	
800.0	799.6	796.6	796.6	1.6	1.7	43.48	-75.1	-32.4	71.0	67.8	3.24	21.899	
900.0	899.4	896.4	896.4	1.8	1.9	47.63	-75.1	-32.4	66.1	62.5	3.69	17.950	
1,000.0	999.1	996.1	996.1	2.0	2.1	52.42	-75.1	-32.4	61.7	57.5	4.14	14.900	
1,100.0	1,098.9	1,095.9	1,095.9	2.3	2.3	57.91	-75.1	-32.4	57.7	53.1	4.60	12.531	
1,200.0	1,198.6	1,195.6	1,195.6	2.5	2.6	64.15	-75.1	-32.4	54.3	49.2	5.07	10.695	
1,300.0	1,298.4	1,295.4	1,295.4	2.8	2.8	71.13	-75.1	-32.4	51.6	46.1	5.55	9.291	
1,400.0	1,398.1	1,395.1	1,395.1	3.0	3.0	78.73	-75.1	-32.4	49.8	43.7	6.04	8.244	
1,500.0	1,497.9	1,494.9	1,494.9	3.3	3.2	86.75	-75.1	-32.4	48.9	42.4	6.52	7.498	
1,539.9	1,537.6	1,534.6	1,534.6	3.4	3.3	90.00	-75.1	-32.4	48.8	42.1	6.71	7.272	CC
1,600.0	1,597.6	1,594.6	1,594.6	3.5	3.5	94.90	-75.1	-32.4	49.0	42.0	7.00	7.001	ES
1,700.0	1,697.4	1,694.4	1,694.4	3.8	3.7	102.86	-75.1	-32.4	50.1	42.6	7.47	6.708	
1,800.0	1,797.2	1,794.2	1,794.2	4.1	3.9	110.34	-75.1	-32.4	52.1	44.2	7.92	6.574	
1,900.0	1,896.9	1,893.9	1,893.9	4.3	4.1	117.17	-75.1	-32.4	54.9	46.5	8.37	6.559	
2,000.0	1,996.7	1,993.7	1,993.7	4.6	4.4	123.26	-75.1	-32.4	58.4	49.6	8.81	6.628	
2,100.0	2,096.4	2,093.4	2,093.4	4.8	4.6	128.60	-75.1	-32.4	62.5	53.3	9.25	6.757	
2,200.0	2,196.2	2,193.2	2,193.2	5.1	4.8	133.26	-75.1	-32.4	67.1	57.4	9.69	6.925	
2,300.0	2,295.9	2,292.9	2,292.9	5.4	5.0	137.29	-75.1	-32.4	72.1	61.9	10.13	7.117	
2,400.0	2,395.7	2,392.7	2,392.7	5.6	5.2	140.80	-75.1	-32.4	77.4	66.8	10.56	7.322	
2,500.0	2,495.5	2,492.5	2,492.5	5.9	5.5	143.84	-75.1	-32.4	82.9	71.9	11.00	7.534	
2,600.0	2,595.2	2,592.2	2,592.2	6.1	5.7	146.50	-75.1	-32.4	88.6	77.2	11.44	7.746	
2,700.0	2,695.0	2,692.0	2,692.0	6.4	5.9	148.84	-75.1	-32.4	94.5	82.6	11.88	7.956	
2,800.0	2,794.7	2,791.7	2,791.7	6.7	6.1	150.89	-75.1	-32.4	100.6	88.2	12.32	8.161	
2,900.0	2,894.5	2,891.5	2,891.5	6.9	6.4	152.71	-75.1	-32.4	106.7	93.9	12.76	8.360	
3,000.0	2,994.2	2,991.2	2,991.2	7.2	6.6	154.34	-75.1	-32.4	113.0	99.7	13.21	8.553	
3,100.0	3,094.0	3,091.0	3,091.0	7.4	6.8	155.79	-75.1	-32.4	119.3	105.6	13.65	8.738	
3,200.0	3,193.7	3,190.7	3,190.7	7.7	7.0	157.09	-75.1	-32.4	125.7	111.6	14.10	8.916	
3,300.0	3,293.5	3,290.5	3,290.5	8.0	7.3	158.27	-75.1	-32.4	132.1	117.6	14.54	9.087	
3,400.0	3,393.3	3,390.3	3,390.3	8.2	7.5	159.34	-75.1	-32.4	138.6	123.6	14.99	9.250	
3,500.0	3,493.0	3,490.0	3,490.0	8.5	7.7	160.31	-75.1	-32.4	145.2	129.8	15.43	9.406	
3,600.0	3,592.8	3,589.8	3,589.8	8.8	7.9	161.19	-75.1	-32.4	151.8	135.9	15.88	9.556	
3,700.0	3,692.5	3,689.5	3,689.5	9.0	8.2	162.01	-75.1	-32.4	158.4	142.1	16.33	9.699	
3,800.0	3,792.3	3,789.3	3,789.3	9.3	8.4	162.75	-75.1	-32.4	165.0	148.3	16.78	9.836	
3,900.0	3,892.0	3,889.0	3,889.0	9.6	8.6	163.44	-75.1	-32.4	171.7	154.5	17.23	9.968	
4,000.0	3,991.8	3,988.8	3,988.8	9.8	8.8	164.08	-75.1	-32.4	178.4	160.7	17.68	10.093	
4,100.0	4,091.6	4,088.6	4,088.6	10.1	9.1	164.67	-75.1	-32.4	185.1	167.0	18.13	10.214	
4,200.0	4,191.3	4,188.3	4,188.3	10.3	9.3	165.23	-75.1	-32.4	191.9	173.3	18.58	10.329	
4,300.0	4,291.1	4,288.1	4,288.1	10.6	9.5	165.74	-75.1	-32.4	198.6	179.6	19.03	10.439	
4,400.0	4,390.8	4,387.8	4,387.8	10.9	9.7	166.22	-75.1	-32.4	205.4	185.9	19.48	10.546	
4,500.0	4,490.6	4,487.6	4,487.6	11.1	10.0	166.67	-75.1	-32.4	212.2	192.3	19.93	10.647	
4,600.0	4,590.3	4,587.3	4,587.3	11.4	10.2	167.09	-75.1	-32.4	219.0	198.6	20.38	10.745	
4,700.0	4,690.1	4,687.1	4,687.1	11.7	10.4	167.48	-75.1	-32.4	225.8	205.0	20.83	10.839	
4,800.0	4,789.9	4,786.9	4,786.9	11.9	10.6	167.86	-75.1	-32.4	232.6	211.3	21.28	10.930	
4,900.0	4,889.6	4,886.6	4,886.6	12.2	10.9	168.21	-75.1	-32.4	239.4	217.7	21.73	11.017	
5,000.0	4,989.4	4,986.4	4,986.4	12.5	11.1	168.54	-75.1	-32.4	246.3	224.1	22.18	11.101	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3

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	5,089.1	5,086.1	5,086.1	12.7	11.3	168.85	-75.1	-32.4	253.1	230.5	22.64	11.182	
5,194.0	5,182.9	5,179.9	5,179.9	13.0	11.5	169.13	-75.1	-32.4	259.5	236.5	23.06	11.255	
5,200.0	5,188.9	5,185.9	5,185.9	13.0	11.5	169.14	-75.1	-32.4	260.0	236.9	23.08	11.266	
5,250.0	5,238.4	5,238.3	5,238.3	13.1	11.6	169.29	-75.1	-32.4	266.3	243.2	23.12	11.518	
5,300.0	5,287.2	5,330.9	5,330.3	13.4	11.8	169.10	-84.4	-32.8	272.9	249.8	23.01	11.857	
5,350.0	5,334.6	5,425.1	5,420.7	13.6	12.0	167.79	-110.4	-33.8	276.1	253.4	22.75	12.138	
5,400.0	5,380.3	5,518.8	5,504.5	13.9	12.1	165.39	-151.9	-35.5	276.1	253.7	22.37	12.341	
5,450.0	5,423.8	5,609.8	5,577.6	14.2	12.4	161.98	-206.0	-37.8	273.3	251.3	21.98	12.432	
5,500.0	5,464.8	5,696.6	5,637.4	14.6	12.7	157.67	-268.6	-40.3	268.2	246.5	21.73	12.341	
5,550.0	5,502.8	5,778.1	5,683.5	15.1	13.2	152.59	-335.8	-43.1	261.7	239.9	21.82	11.996	
5,600.0	5,537.6	5,854.2	5,716.5	15.6	13.8	146.90	-404.1	-45.9	254.8	232.4	22.42	11.362	
5,650.0	5,568.8	5,924.8	5,737.9	16.1	14.4	140.74	-471.3	-48.6	248.3	224.6	23.67	10.491	
5,700.0	5,596.1	5,990.4	5,749.5	16.7	15.1	134.27	-535.8	-51.3	243.1	217.6	25.51	9.529	
5,750.0	5,619.2	6,051.2	5,753.0	17.4	15.8	127.65	-596.4	-53.8	239.9	212.1	27.80	8.631	
5,768.1	5,626.6	6,067.2	5,753.0	17.6	15.9	125.87	-612.4	-54.4	239.6	211.1	28.49	8.410	
5,800.0	5,638.0	6,095.8	5,753.0	18.0	16.3	122.79	-641.0	-55.6	240.6	210.8	29.75	8.088	
5,850.0	5,652.3	6,141.9	5,753.0	18.8	16.9	118.22	-687.1	-57.5	245.6	213.7	31.89	7.702	
5,900.0	5,661.9	6,189.2	5,753.0	19.5	17.5	114.25	-734.3	-59.4	253.9	220.0	33.97	7.475	
5,950.0	5,666.8	6,237.1	5,753.0	20.3	18.1	111.06	-782.1	-61.4	264.8	228.8	35.96	7.364	
5,975.8	5,667.4	6,261.9	5,753.0	20.7	18.5	109.74	-806.9	-62.4	271.2	234.2	36.92	7.344	
6,000.0	5,667.4	6,285.2	5,753.0	21.0	18.8	109.23	-830.2	-63.4	277.2	239.5	37.73	7.348	
6,100.0	5,667.4	6,382.5	5,753.0	22.4	20.2	107.57	-927.4	-67.3	299.3	258.4	40.95	7.311	
6,200.0	5,667.4	6,480.8	5,753.0	23.8	21.7	106.43	-1,025.7	-71.4	316.7	272.6	44.15	7.174	
6,300.0	5,667.4	6,579.9	5,753.0	25.3	23.3	105.69	-1,124.7	-75.4	329.2	281.9	47.32	6.957	
6,400.0	5,667.4	6,679.6	5,753.0	26.8	25.0	105.27	-1,224.3	-79.5	336.7	286.3	50.41	6.679	
6,420.1	5,667.4	6,699.7	5,753.0	27.1	25.3	105.23	-1,244.3	-80.3	337.6	286.6	51.02	6.617	
6,500.0	5,667.4	6,782.0	5,753.0	28.4	26.6	105.08	-1,326.6	-83.7	340.7	287.1	53.65	6.350	
6,600.0	5,667.4	6,893.0	5,753.0	30.1	28.4	105.04	-1,437.6	-84.7	341.6	284.5	57.03	5.989	
6,700.0	5,667.4	6,993.0	5,753.0	31.9	30.1	105.04	-1,537.6	-84.7	341.6	281.2	60.40	5.655	
6,800.0	5,667.4	7,093.0	5,753.0	33.6	31.9	105.04	-1,637.6	-84.7	341.6	277.8	63.81	5.353	
6,900.0	5,667.4	7,193.0	5,753.0	35.4	33.6	105.04	-1,737.6	-84.7	341.6	274.3	67.26	5.078	
7,000.0	5,667.4	7,293.0	5,753.0	37.1	35.4	105.04	-1,837.6	-84.7	341.6	270.8	70.74	4.829	
7,100.0	5,667.4	7,393.0	5,753.0	38.9	37.2	105.04	-1,937.6	-84.7	341.6	267.3	74.25	4.601	
7,200.0	5,667.3	7,493.0	5,753.0	40.7	39.0	105.04	-2,037.6	-84.7	341.6	263.8	77.77	4.392	
7,300.0	5,667.3	7,593.0	5,753.0	42.6	40.9	105.04	-2,137.6	-84.7	341.6	260.3	81.31	4.201	
7,400.0	5,667.3	7,693.0	5,753.0	44.4	42.7	105.04	-2,237.6	-84.7	341.6	256.7	84.87	4.025	
7,500.0	5,667.3	7,793.0	5,753.0	46.2	44.5	105.04	-2,337.6	-84.7	341.6	253.2	88.45	3.862	
7,600.0	5,667.3	7,893.0	5,753.0	48.1	46.4	105.05	-2,437.6	-84.7	341.6	249.6	92.03	3.712	
7,700.0	5,667.3	7,993.0	5,753.0	49.9	48.2	105.05	-2,537.6	-84.7	341.6	246.0	95.63	3.572	
7,800.0	5,667.3	8,093.0	5,753.0	51.7	50.1	105.05	-2,637.6	-84.7	341.6	242.4	99.24	3.443	
7,900.0	5,667.3	8,193.0	5,753.0	53.6	51.9	105.05	-2,737.6	-84.7	341.6	238.8	102.85	3.322	
8,000.0	5,667.3	8,293.0	5,753.0	55.5	53.8	105.05	-2,837.6	-84.7	341.6	235.2	106.48	3.209	
8,100.0	5,667.3	8,393.0	5,753.0	57.3	55.7	105.05	-2,937.6	-84.7	341.6	231.5	110.11	3.103	
8,200.0	5,667.3	8,493.0	5,753.0	59.2	57.5	105.05	-3,037.6	-84.7	341.7	227.9	113.74	3.004	
8,300.0	5,667.3	8,593.0	5,753.0	61.1	59.4	105.05	-3,137.6	-84.7	341.7	224.3	117.39	2.911	
8,400.0	5,667.3	8,693.0	5,753.0	62.9	61.3	105.05	-3,237.6	-84.7	341.7	220.6	121.03	2.823	
8,500.0	5,667.3	8,793.0	5,753.0	64.8	63.2	105.05	-3,337.6	-84.7	341.7	217.0	124.69	2.740	
8,600.0	5,667.2	8,893.0	5,753.0	66.7	65.1	105.06	-3,437.6	-84.7	341.7	213.3	128.35	2.662	
8,700.0	5,667.2	8,993.0	5,753.0	68.6	66.9	105.06	-3,537.6	-84.7	341.7	209.7	132.01	2.588	
8,800.0	5,667.2	9,093.0	5,753.0	70.5	68.8	105.06	-3,637.6	-84.7	341.7	206.0	135.67	2.518	
8,900.0	5,667.2	9,193.0	5,753.0	72.3	70.7	105.06	-3,737.6	-84.7	341.7	202.3	139.34	2.452	
9,000.0	5,667.2	9,293.0	5,753.0	74.2	72.6	105.06	-3,837.6	-84.7	341.7	198.7	143.01	2.389	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3410B - HZ - Plan #3

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
9,100.0	5,667.2	9,393.0	5,753.0	76.1	74.5	105.06	-3,937.6	-84.7	341.7	195.0	146.69	2.329	
9,200.0	5,667.2	9,493.0	5,753.0	78.0	76.4	105.06	-4,037.6	-84.7	341.7	191.3	150.36	2.273	
9,300.0	5,667.2	9,593.0	5,753.0	79.9	78.3	105.06	-4,137.6	-84.7	341.7	187.7	154.04	2.218	
9,400.0	5,667.2	9,693.0	5,753.0	81.8	80.2	105.06	-4,237.6	-84.7	341.7	184.0	157.73	2.167	
9,500.0	5,667.2	9,793.0	5,753.0	83.7	82.1	105.06	-4,337.6	-84.7	341.7	180.3	161.41	2.117	
9,600.0	5,667.2	9,893.0	5,753.0	85.6	84.0	105.07	-4,437.6	-84.7	341.7	176.6	165.10	2.070	
9,700.0	5,667.2	9,993.0	5,753.0	87.5	85.9	105.07	-4,537.6	-84.7	341.7	172.9	168.79	2.025	
9,800.0	5,667.2	10,093.0	5,753.0	89.4	87.8	105.07	-4,637.6	-84.7	341.7	169.3	172.48	1.981	
9,900.0	5,667.2	10,193.0	5,753.0	91.3	89.7	105.07	-4,737.6	-84.7	341.7	165.6	176.17	1.940	
10,000.0	5,667.2	10,293.0	5,753.0	93.2	91.6	105.07	-4,837.6	-84.7	341.7	161.9	179.86	1.900	
10,100.0	5,667.1	10,393.0	5,753.0	95.1	93.5	105.07	-4,937.6	-84.7	341.8	158.2	183.56	1.862	
10,200.0	5,667.1	10,493.0	5,753.0	97.0	95.4	105.07	-5,037.6	-84.7	341.8	154.5	187.25	1.825	
10,300.0	5,667.1	10,593.0	5,753.0	98.9	97.3	105.07	-5,137.6	-84.7	341.8	150.8	190.95	1.790	
10,400.0	5,667.1	10,693.0	5,753.0	100.8	99.2	105.07	-5,237.6	-84.7	341.8	147.1	194.65	1.756	
10,500.0	5,667.1	10,793.0	5,753.0	102.7	101.1	105.07	-5,337.6	-84.7	341.8	143.4	198.35	1.723	
10,600.0	5,667.1	10,893.0	5,753.0	104.6	103.0	105.07	-5,437.6	-84.7	341.8	139.7	202.05	1.692	
10,700.0	5,667.1	10,993.0	5,753.0	106.5	104.9	105.08	-5,537.6	-84.7	341.8	136.0	205.75	1.661	
10,800.0	5,667.1	11,093.0	5,753.0	108.4	106.8	105.08	-5,637.6	-84.7	341.8	132.3	209.45	1.632	
10,900.0	5,667.1	11,193.0	5,753.0	110.3	108.7	105.08	-5,737.6	-84.7	341.8	128.6	213.15	1.604	
11,000.0	5,667.1	11,293.0	5,753.0	112.2	110.6	105.08	-5,837.6	-84.7	341.8	124.9	216.86	1.576	
11,100.0	5,667.1	11,393.0	5,753.0	114.1	112.6	105.08	-5,937.6	-84.7	341.8	121.2	220.56	1.550	
11,200.0	5,667.1	11,493.0	5,753.0	116.0	114.5	105.08	-6,037.6	-84.7	341.8	117.5	224.27	1.524	
11,300.0	5,667.1	11,593.0	5,753.0	117.9	116.4	105.08	-6,137.6	-84.7	341.8	113.8	227.98	1.499	Level 3
11,400.0	5,667.1	11,693.0	5,753.0	119.9	118.3	105.08	-6,237.6	-84.7	341.8	110.1	231.68	1.475	Level 3
11,500.0	5,667.0	11,793.0	5,753.0	121.8	120.2	105.08	-6,337.6	-84.7	341.8	106.4	235.39	1.452	Level 3
11,600.0	5,667.0	11,893.0	5,753.0	123.7	122.1	105.08	-6,437.6	-84.7	341.8	102.7	239.10	1.430	Level 3
11,700.0	5,667.0	11,993.0	5,753.0	125.6	124.0	105.09	-6,537.6	-84.7	341.8	99.0	242.81	1.408	Level 3
11,800.0	5,667.0	12,093.0	5,753.0	127.5	125.9	105.09	-6,637.6	-84.7	341.8	95.3	246.52	1.387	Level 3
11,900.0	5,667.0	12,193.0	5,753.0	129.4	127.8	105.09	-6,737.6	-84.7	341.9	91.6	250.23	1.366	Level 3
12,000.0	5,667.0	12,293.0	5,753.0	131.3	129.7	105.09	-6,837.6	-84.7	341.9	87.9	253.94	1.346	Level 3
12,100.0	5,667.0	12,393.0	5,753.0	133.2	131.7	105.09	-6,937.6	-84.7	341.9	84.2	257.65	1.327	Level 3
12,191.9	5,667.0	12,484.9	5,753.0	134.7	133.4	105.09	-7,029.5	-84.7	341.9	81.1	260.74	1.311	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #2

Offset Site Error: 0.0 usft

Survey Program: 0-ISCWSA MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	156.30	-75.1	32.9	82.0				
100.0	100.0	97.0	97.0	0.1	0.1	156.30	-75.1	32.9	82.0	81.8	0.18	443.380	
200.0	200.0	197.0	197.0	0.3	0.3	156.30	-75.1	32.9	82.0	81.3	0.63	130.007	
300.0	300.0	297.0	297.0	0.5	0.5	156.30	-75.1	32.9	82.0	80.9	1.08	75.894	
400.0	400.0	397.0	397.0	0.8	0.8	156.30	-75.1	32.9	82.0	80.4	1.53	53.588	
500.0	500.0	497.0	497.0	1.0	1.0	156.30	-75.1	32.9	82.0	80.0	1.98	41.416	
600.0	600.0	594.3	594.3	1.2	1.2	-10.62	-76.5	33.6	81.8	79.5	2.37	34.492	
700.0	699.8	691.5	691.4	1.4	1.4	-11.37	-80.8	35.7	81.7	79.0	2.74	29.844	CC
710.3	710.1	701.6	701.4	1.4	1.4	-11.47	-81.5	36.0	81.7	78.9	2.78	29.427	
800.0	799.6	791.3	790.9	1.6	1.6	-12.39	-87.1	38.7	81.8	78.7	3.13	26.159	
900.0	899.4	891.3	890.6	1.8	1.8	-13.42	-93.4	41.7	82.0	78.5	3.54	23.188	
1,000.0	999.1	991.2	990.4	2.0	2.0	-14.44	-99.7	44.7	82.2	78.3	3.96	20.773	
1,100.0	1,098.9	1,091.2	1,090.1	2.3	2.3	-15.46	-106.0	47.7	82.4	78.0	4.39	18.788	
1,200.0	1,198.6	1,191.2	1,189.9	2.5	2.5	-16.47	-112.3	50.7	82.7	77.9	4.83	17.137	
1,300.0	1,298.4	1,291.2	1,289.6	2.8	2.8	-17.48	-118.6	53.7	83.0	77.7	5.27	15.749	
1,400.0	1,398.1	1,391.2	1,389.4	3.0	3.0	-18.47	-124.9	56.7	83.3	77.6	5.72	14.569	
1,500.0	1,497.9	1,491.2	1,489.1	3.3	3.3	-19.46	-131.2	59.7	83.6	77.4	6.17	13.555	
1,600.0	1,597.6	1,591.2	1,588.8	3.5	3.5	-20.44	-137.5	62.7	84.0	77.3	6.62	12.676	
1,700.0	1,697.4	1,691.2	1,688.6	3.8	3.8	-21.42	-143.8	65.7	84.3	77.3	7.08	11.909	
1,800.0	1,797.2	1,791.2	1,788.3	4.1	4.0	-22.38	-150.1	68.7	84.7	77.2	7.54	11.233	
1,900.0	1,896.9	1,891.2	1,888.1	4.3	4.3	-23.34	-156.3	71.7	85.2	77.2	8.01	10.635	
2,000.0	1,996.7	1,991.1	1,987.8	4.6	4.6	-24.28	-162.6	74.7	85.6	77.1	8.48	10.102	
2,100.0	2,096.4	2,091.1	2,087.6	4.8	4.8	-25.22	-168.9	77.7	86.1	77.1	8.95	9.624	
2,200.0	2,196.2	2,191.1	2,187.3	5.1	5.1	-26.14	-175.2	80.7	86.6	77.2	9.42	9.194	
2,300.0	2,295.9	2,291.1	2,287.1	5.4	5.3	-27.05	-181.5	83.7	87.1	77.2	9.89	8.805	
2,400.0	2,395.7	2,391.1	2,386.8	5.6	5.6	-27.96	-187.8	86.7	87.7	77.3	10.37	8.452	
2,500.0	2,495.5	2,491.1	2,486.6	5.9	5.9	-28.85	-194.1	89.7	88.2	77.4	10.85	8.130	
2,600.0	2,595.2	2,591.1	2,586.3	6.1	6.1	-29.73	-200.4	92.7	88.8	77.5	11.33	7.836	
2,700.0	2,695.0	2,691.1	2,686.1	6.4	6.4	-30.60	-206.7	95.7	89.4	77.6	11.82	7.566	
2,800.0	2,794.7	2,791.1	2,785.8	6.7	6.6	-31.45	-213.0	98.7	90.0	77.7	12.30	7.318	
2,900.0	2,894.5	2,891.0	2,885.5	6.9	6.9	-32.30	-219.3	101.7	90.7	77.9	12.79	7.089	
3,000.0	2,994.2	2,991.0	2,985.3	7.2	7.2	-33.13	-225.6	104.7	91.3	78.1	13.28	6.877	
3,100.0	3,094.0	3,091.0	3,085.0	7.4	7.4	-33.95	-231.9	107.8	92.0	78.2	13.77	6.681	
3,200.0	3,193.7	3,191.0	3,184.8	7.7	7.7	-34.76	-238.2	110.8	92.7	78.4	14.27	6.499	
3,300.0	3,293.5	3,291.0	3,284.5	8.0	8.0	-35.55	-244.5	113.8	93.4	78.7	14.76	6.329	
3,400.0	3,393.3	3,391.0	3,384.3	8.2	8.2	-36.34	-250.8	116.8	94.2	78.9	15.26	6.171	
3,500.0	3,493.0	3,491.0	3,484.0	8.5	8.5	-37.11	-257.1	119.8	94.9	79.2	15.76	6.023	
3,600.0	3,592.8	3,591.0	3,583.8	8.8	8.8	-37.87	-263.4	122.8	95.7	79.4	16.26	5.885	
3,700.0	3,692.5	3,691.0	3,683.5	9.0	9.0	-38.61	-269.7	125.8	96.5	79.7	16.76	5.755	
3,800.0	3,792.3	3,790.9	3,783.3	9.3	9.3	-39.35	-276.0	128.8	97.3	80.0	17.27	5.634	
3,900.0	3,892.0	3,890.9	3,883.0	9.6	9.5	-40.07	-282.3	131.8	98.1	80.3	17.77	5.519	
4,000.0	3,991.8	3,990.9	3,982.7	9.8	9.8	-40.78	-288.6	134.8	98.9	80.7	18.28	5.412	
4,100.0	4,091.6	4,090.9	4,082.5	10.1	10.1	-41.48	-294.8	137.8	99.8	81.0	18.79	5.310	
4,200.0	4,191.3	4,190.9	4,182.2	10.3	10.3	-42.16	-301.1	140.8	100.7	81.3	19.30	5.214	
4,300.0	4,291.1	4,290.9	4,282.0	10.6	10.6	-42.84	-307.4	143.8	101.5	81.7	19.81	5.124	
4,400.0	4,390.8	4,390.9	4,381.7	10.9	10.9	-43.50	-313.7	146.8	102.4	82.1	20.33	5.039	
4,500.0	4,490.6	4,490.9	4,481.5	11.1	11.1	-44.15	-320.0	149.8	103.3	82.5	20.84	4.958	
4,600.0	4,590.3	4,590.9	4,581.2	11.4	11.4	-44.79	-326.3	152.8	104.2	82.9	21.36	4.881	
4,700.0	4,690.1	4,690.8	4,681.0	11.7	11.7	-45.42	-332.6	155.8	105.2	83.3	21.87	4.808	
4,800.0	4,789.9	4,790.8	4,780.7	11.9	11.9	-46.04	-338.9	158.8	106.1	83.7	22.39	4.739	
4,900.0	4,889.6	4,890.8	4,880.5	12.2	12.2	-46.64	-345.2	161.8	107.1	84.2	22.91	4.673	
5,000.0	4,989.4	4,990.8	4,980.2	12.5	12.4	-47.24	-351.5	164.8	108.0	84.6	23.43	4.611	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #2

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	5,089.1	5,090.8	5,079.9	12.7	12.7	-47.82	-357.8	167.8	109.0	85.1	23.95	4.552	
5,194.0	5,182.9	5,184.8	5,173.7	13.0	13.0	-48.36	-363.7	170.6	110.0	85.5	24.44	4.498	
5,200.0	5,188.9	5,190.8	5,179.7	13.0	13.0	-48.41	-364.1	170.8	110.0	85.5	24.48	4.494	
5,250.0	5,238.4	5,240.7	5,229.4	13.1	13.1	-49.99	-367.2	172.3	108.6	83.8	24.78	4.381	
5,300.0	5,287.2	5,288.7	5,277.4	13.4	13.2	-53.73	-370.3	173.8	104.3	79.2	25.18	4.144	
5,350.0	5,334.6	5,331.7	5,319.9	13.6	13.4	-58.42	-375.3	176.1	99.9	74.3	25.67	3.892	
5,400.0	5,380.3	5,375.1	5,362.4	13.9	13.5	-63.93	-383.5	180.1	96.7	70.4	26.33	3.674	
5,450.0	5,423.8	5,419.2	5,404.6	14.2	13.8	-70.11	-395.0	185.6	95.2	68.0	27.16	3.503	
5,465.4	5,436.7	5,432.9	5,417.5	14.4	13.8	-72.12	-399.3	187.6	95.1	67.6	27.46	3.462	
5,500.0	5,464.8	5,463.9	5,446.1	14.6	14.0	-76.70	-410.0	192.7	95.6	67.4	28.14	3.397 ES	
5,550.0	5,502.8	5,509.3	5,486.6	15.1	14.3	-83.33	-428.4	201.5	98.2	69.1	29.16	3.369	
5,600.0	5,537.6	5,555.5	5,525.9	15.6	14.6	-89.63	-450.3	211.9	103.2	73.0	30.13	3.424	
5,650.0	5,568.8	5,602.5	5,563.5	16.1	15.0	-95.31	-475.8	224.1	110.3	79.3	30.99	3.558	
5,700.0	5,596.1	5,650.4	5,599.0	16.7	15.5	-100.21	-504.8	237.9	119.4	87.6	31.75	3.759	
5,750.0	5,619.2	5,699.3	5,632.1	17.4	16.0	-104.26	-537.3	253.4	130.0	97.6	32.45	4.008	
5,800.0	5,638.0	5,749.4	5,662.3	18.0	16.5	-107.52	-573.3	270.6	142.0	108.9	33.14	4.286	
5,850.0	5,652.3	5,800.6	5,689.1	18.8	17.2	-110.04	-612.7	289.4	155.0	121.2	33.88	4.575	
5,900.0	5,661.9	5,853.2	5,712.0	19.5	17.9	-111.94	-655.4	309.7	168.7	134.0	34.73	4.859	
5,950.0	5,666.8	5,907.1	5,730.4	20.3	18.7	-113.29	-701.1	331.6	182.9	147.2	35.71	5.122	
5,975.8	5,667.4	5,935.6	5,738.0	20.7	19.1	-113.81	-725.9	343.4	190.3	154.0	36.27	5.246	
6,000.0	5,667.4	5,962.7	5,743.8	21.0	19.5	-114.80	-749.8	354.8	197.1	160.5	36.64	5.379	
6,100.0	5,667.4	6,077.1	5,753.2	22.4	21.4	-114.24	-852.5	403.7	223.0	183.6	39.44	5.654	
6,200.0	5,667.4	6,186.0	5,753.2	23.8	23.0	-111.72	-952.4	447.0	247.5	204.7	42.72	5.792	
6,300.0	5,667.4	6,296.7	5,753.2	25.3	24.7	-109.68	-1,056.4	485.0	271.8	225.9	45.89	5.923	
6,400.0	5,667.4	6,409.4	5,753.2	26.8	26.4	-108.00	-1,164.2	517.5	295.8	246.9	48.97	6.041	
6,420.1	5,667.4	6,432.2	5,753.2	27.1	26.8	-107.70	-1,186.3	523.3	300.6	251.0	49.58	6.064	
6,500.0	5,667.4	6,524.4	5,753.2	28.4	28.3	-106.55	-1,276.1	544.1	317.8	265.2	52.61	6.041	
6,600.0	5,667.4	6,642.3	5,753.2	30.1	30.2	-105.55	-1,392.3	564.2	334.3	277.9	56.46	5.922	
6,700.0	5,667.4	6,762.3	5,753.2	31.9	32.1	-104.97	-1,511.6	577.4	344.9	284.6	60.27	5.722	
6,800.0	5,667.4	6,883.5	5,753.2	33.6	34.0	-104.73	-1,632.6	583.0	349.4	285.4	64.02	5.457	
6,900.0	5,667.4	6,988.5	5,753.2	35.4	35.7	-104.72	-1,737.6	583.2	349.5	282.1	67.47	5.181	
7,000.0	5,667.4	7,088.5	5,753.2	37.1	37.3	-104.72	-1,837.6	583.2	349.5	278.6	70.89	4.931	
7,100.0	5,667.4	7,188.5	5,753.2	38.9	39.0	-104.72	-1,937.6	583.2	349.5	275.2	74.34	4.702	
7,200.0	5,667.3	7,288.5	5,753.2	40.7	40.7	-104.72	-2,037.6	583.2	349.5	271.7	77.82	4.491	
7,300.0	5,667.3	7,388.5	5,753.2	42.6	42.4	-104.72	-2,137.6	583.2	349.5	268.2	81.33	4.298	
7,400.0	5,667.3	7,488.5	5,753.2	44.4	44.2	-104.73	-2,237.6	583.2	349.5	264.7	84.85	4.119	
7,500.0	5,667.3	7,588.5	5,753.2	46.2	45.9	-104.73	-2,337.6	583.2	349.5	261.1	88.39	3.954	
7,600.0	5,667.3	7,688.5	5,753.2	48.1	47.7	-104.73	-2,437.6	583.2	349.5	257.5	91.95	3.801	
7,700.0	5,667.3	7,788.5	5,753.2	49.9	49.4	-104.73	-2,537.6	583.2	349.5	254.0	95.52	3.659	
7,800.0	5,667.3	7,888.5	5,753.2	51.7	51.2	-104.73	-2,637.6	583.2	349.5	250.4	99.10	3.527	
7,900.0	5,667.3	7,988.5	5,753.2	53.6	53.0	-104.73	-2,737.6	583.2	349.5	246.8	102.69	3.403	
8,000.0	5,667.3	8,088.5	5,753.2	55.5	54.8	-104.73	-2,837.6	583.2	349.5	243.2	106.29	3.288	
8,100.0	5,667.3	8,188.5	5,753.2	57.3	56.6	-104.73	-2,937.6	583.2	349.5	239.5	109.91	3.180	
8,200.0	5,667.3	8,288.5	5,753.1	59.2	58.5	-104.73	-3,037.6	583.2	349.4	235.9	113.52	3.078	
8,300.0	5,667.3	8,388.5	5,753.1	61.1	60.3	-104.73	-3,137.6	583.2	349.4	232.3	117.15	2.983	
8,400.0	5,667.3	8,488.5	5,753.1	62.9	62.1	-104.74	-3,237.6	583.1	349.4	228.6	120.78	2.893	
8,500.0	5,667.3	8,588.5	5,753.1	64.8	64.0	-104.74	-3,337.6	583.1	349.4	225.0	124.42	2.808	
8,600.0	5,667.2	8,688.5	5,753.1	66.7	65.8	-104.74	-3,437.6	583.1	349.4	221.3	128.07	2.728	
8,700.0	5,667.2	8,788.5	5,753.1	68.6	67.6	-104.74	-3,537.6	583.1	349.4	217.7	131.72	2.653	
8,800.0	5,667.2	8,888.5	5,753.1	70.5	69.5	-104.74	-3,637.6	583.1	349.4	214.0	135.37	2.581	
8,900.0	5,667.2	8,988.5	5,753.1	72.3	71.3	-104.74	-3,737.6	583.1	349.4	210.4	139.03	2.513	
9,000.0	5,667.2	9,088.5	5,753.1	74.2	73.2	-104.74	-3,837.6	583.1	349.4	206.7	142.69	2.449	

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 #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design S27-T10N-R58W - Razor #27J-3412B - HZ - Plan #2

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
9,100.0	5,667.2	9,188.5	5,753.1	76.1	75.1	-104.74	-3,937.6	583.1	349.4	203.0	146.36	2.387	
9,200.0	5,667.2	9,288.5	5,753.1	78.0	76.9	-104.74	-4,037.6	583.1	349.4	199.3	150.02	2.329	
9,300.0	5,667.2	9,388.5	5,753.1	79.9	78.8	-104.74	-4,137.6	583.1	349.4	195.7	153.70	2.273	
9,400.0	5,667.2	9,488.5	5,753.1	81.8	80.7	-104.74	-4,237.6	583.1	349.4	192.0	157.37	2.220	
9,500.0	5,667.2	9,588.5	5,753.1	83.7	82.5	-104.75	-4,337.6	583.1	349.3	188.3	161.05	2.169	
9,600.0	5,667.2	9,688.5	5,753.1	85.6	84.4	-104.75	-4,437.6	583.1	349.3	184.6	164.73	2.121	
9,700.0	5,667.2	9,788.5	5,753.1	87.5	86.3	-104.75	-4,537.6	583.1	349.3	180.9	168.41	2.074	
9,800.0	5,667.2	9,888.5	5,753.1	89.4	88.2	-104.75	-4,637.6	583.1	349.3	177.2	172.10	2.030	
9,900.0	5,667.2	9,988.5	5,753.1	91.3	90.0	-104.75	-4,737.6	583.1	349.3	173.5	175.78	1.987	
10,000.0	5,667.2	10,088.5	5,753.1	93.2	91.9	-104.75	-4,837.6	583.1	349.3	169.8	179.47	1.946	
10,100.0	5,667.1	10,188.5	5,753.1	95.1	93.8	-104.75	-4,937.6	583.1	349.3	166.1	183.16	1.907	
10,200.0	5,667.1	10,288.5	5,753.1	97.0	95.7	-104.75	-5,037.6	583.0	349.3	162.4	186.85	1.869	
10,300.0	5,667.1	10,388.5	5,753.1	98.9	97.6	-104.75	-5,137.6	583.0	349.3	158.7	190.55	1.833	
10,400.0	5,667.1	10,488.5	5,753.1	100.8	99.5	-104.75	-5,237.6	583.0	349.3	155.0	194.24	1.798	
10,500.0	5,667.1	10,588.5	5,753.1	102.7	101.3	-104.76	-5,337.6	583.0	349.3	151.3	197.94	1.765	
10,600.0	5,667.1	10,688.5	5,753.1	104.6	103.2	-104.76	-5,437.6	583.0	349.3	147.6	201.63	1.732	
10,700.0	5,667.1	10,788.5	5,753.1	106.5	105.1	-104.76	-5,537.6	583.0	349.2	143.9	205.33	1.701	
10,800.0	5,667.1	10,888.5	5,753.1	108.4	107.0	-104.76	-5,637.6	583.0	349.2	140.2	209.03	1.671	
10,900.0	5,667.1	10,988.5	5,753.1	110.3	108.9	-104.76	-5,737.6	583.0	349.2	136.5	212.73	1.642	
11,000.0	5,667.1	11,088.5	5,753.1	112.2	110.8	-104.76	-5,837.6	583.0	349.2	132.8	216.44	1.614	
11,100.0	5,667.1	11,188.5	5,753.1	114.1	112.7	-104.76	-5,937.6	583.0	349.2	129.1	220.14	1.586	
11,200.0	5,667.1	11,288.5	5,753.0	116.0	114.6	-104.76	-6,037.6	583.0	349.2	125.4	223.84	1.560	
11,300.0	5,667.1	11,388.5	5,753.0	117.9	116.5	-104.76	-6,137.6	583.0	349.2	121.7	227.55	1.535	
11,400.0	5,667.1	11,488.5	5,753.0	119.9	118.4	-104.76	-6,237.6	583.0	349.2	117.9	231.25	1.510	
11,500.0	5,667.0	11,588.5	5,753.0	121.8	120.3	-104.76	-6,337.6	583.0	349.2	114.2	234.96	1.486	Level 3
11,600.0	5,667.0	11,688.5	5,753.0	123.7	122.2	-104.77	-6,437.6	583.0	349.2	110.5	238.67	1.463	Level 3
11,700.0	5,667.0	11,788.5	5,753.0	125.6	124.1	-104.77	-6,537.6	583.0	349.2	106.8	242.38	1.441	Level 3
11,800.0	5,667.0	11,888.5	5,753.0	127.5	126.0	-104.77	-6,637.6	583.0	349.2	103.1	246.09	1.419	Level 3
11,900.0	5,667.0	11,988.5	5,753.0	129.4	127.9	-104.77	-6,737.6	583.0	349.2	99.4	249.80	1.398	Level 3
12,000.0	5,667.0	12,088.5	5,753.0	131.3	129.8	-104.77	-6,837.6	582.9	349.1	95.6	253.51	1.377	Level 3
12,100.0	5,667.0	12,188.5	5,753.0	133.2	131.7	-104.77	-6,937.6	582.9	349.1	91.9	257.22	1.357	Level 3
12,191.9	5,667.0	12,280.4	5,753.0	134.7	133.4	-104.77	-7,029.5	582.9	349.1	88.8	260.31	1.341	Level 3, SF

Company:	Whiting Petroleum Corporation	**Local Co-ordinate Reference:**	Well Razor #27J-3411A
Project:	Weld County, CO	**TVD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Reference Site:	S27-T10N-R58W	**MD Reference:**	WELL @ 4783.5usft (Original Well Elev)
Site Error:	0.0usft	**North Reference:**	True
Reference Well:	Razor #27J-3411A	**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 #3	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4783.5usft (Original Well Elev
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W °

Coordinates are relative to: Razor #27J-3411A
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°