

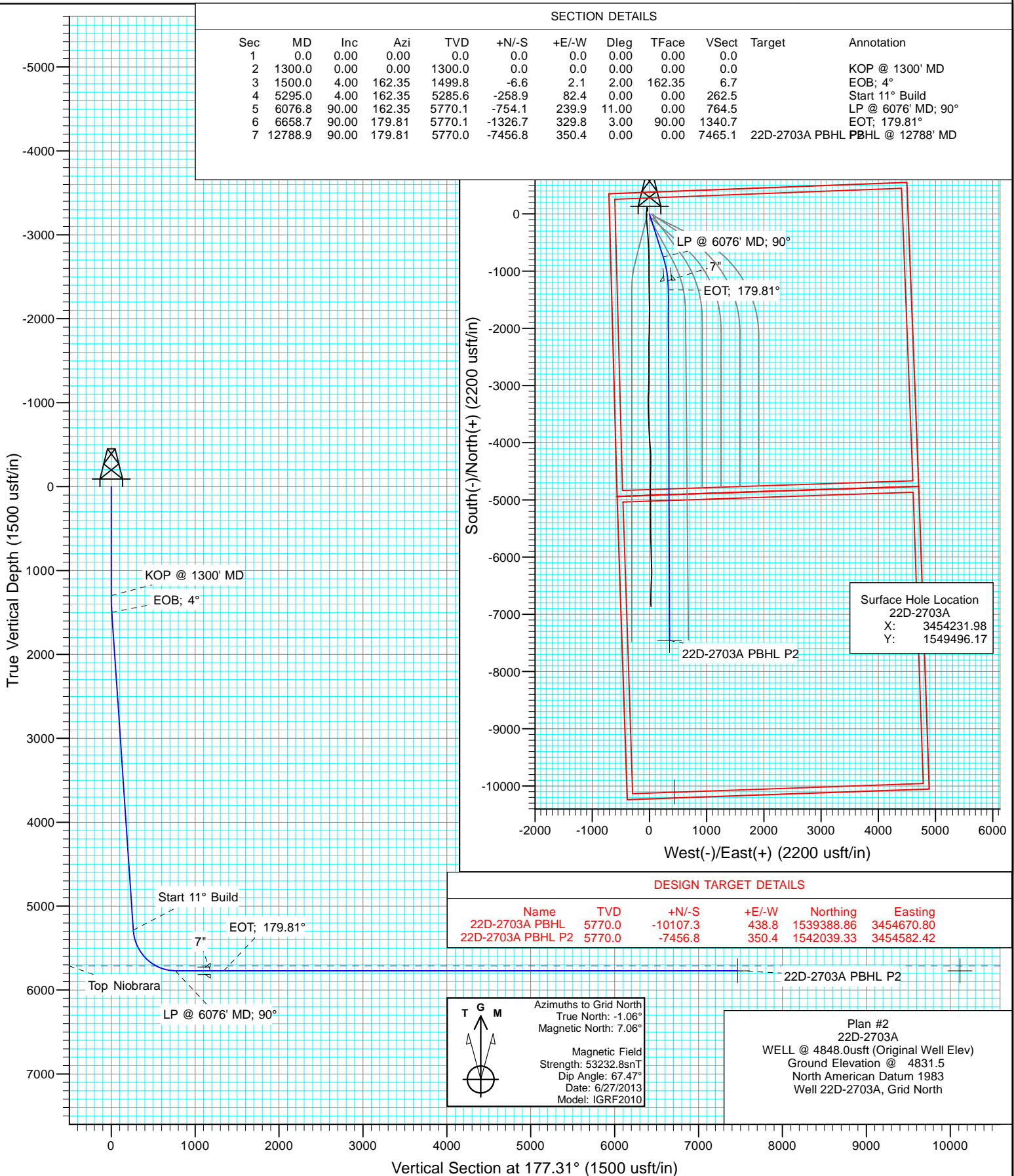


Project: Weld County, CO  
Site: S22-T10N-R58W  
Well: 22D-2703A  
Wellbore: HZ  
Design: Plan #2



#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1300.0	0.00	0.00	1300.0	0.0	0.0	0.00	0.00	0.0		KOP @ 1300' MD
3	1500.0	4.00	162.35	1499.8	-6.6	2.1	2.00	162.35	6.7		EOB; 4°
4	5295.0	4.00	162.35	5285.6	-258.9	82.4	0.00	0.00	262.5		Start 11° Build
5	6076.8	90.00	162.35	5770.1	-754.1	239.9	11.00	0.00	764.5		LP @ 6076' MD; 90°
6	6658.7	90.00	179.81	5770.1	-1326.7	329.8	3.00	90.00	1340.7		EOT; 179.81°
7	12788.9	90.00	179.81	5770.0	-7456.8	350.4	0.00	0.00	7465.1	22D-2703A PBHL	PBHL @ 12788' MD



<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Company:</b>	Whiting Petroleum Corporation	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site:</b>	S22-T10N-R58W	<b>North Reference:</b>	Grid
<b>Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

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

Site		S22-T10N-R58W			
Site Position:		Northing:	1,549,495.40 usft	Latitude:	40° 49' 48.74 N
From:	Lat/Long	Easting:	3,454,199.06 usft	Longitude:	103° 51' 31.23 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.06 °

Well	22D-2703A					
Well Position	+N/-S	0.0 usft	Northing:	1,549,496.17 usft	Latitude:	40° 49' 48.74 N
	+E/-W	0.0 usft	Easting:	3,454,231.98 usft	Longitude:	103° 51' 30.80 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,831.5 usft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/27/2013	8.12	67.47	53,233

<b>Design</b>	Plan #2				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	177.31	

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	4.00	162.35	1,499.8	-6.6	2.1	2.00	2.00	0.00	162.35	
5,295.0	4.00	162.35	5,285.6	-258.9	82.4	0.00	0.00	0.00	0.00	
6,076.8	90.00	162.35	5,770.1	-754.1	239.9	11.00	11.00	0.00	0.00	
6,658.7	90.00	179.81	5,770.1	-1,326.7	329.8	3.00	0.00	3.00	90.00	
12,788.9	90.00	179.81	5,770.0	-7,456.8	350.4	0.00	0.00	0.00	0.00	22D-2703A PBHL P2

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<b>Site:</b>	S22-T10N-R58W	<b>North Reference:</b>	Grid
<b>Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1300' MD
1,400.0	2.00	162.35	1,400.0	-1.7	0.5	1.7	2.00	2.00	
1,500.0	4.00	162.35	1,499.8	-6.6	2.1	6.7	2.00	2.00	EOB; 4°
1,600.0	4.00	162.35	1,599.6	-13.3	4.2	13.5	0.00	0.00	
1,700.0	4.00	162.35	1,699.4	-19.9	6.3	20.2	0.00	0.00	
1,800.0	4.00	162.35	1,799.1	-26.6	8.5	27.0	0.00	0.00	
1,900.0	4.00	162.35	1,898.9	-33.2	10.6	33.7	0.00	0.00	
2,000.0	4.00	162.35	1,998.6	-39.9	12.7	40.4	0.00	0.00	
2,100.0	4.00	162.35	2,098.4	-46.5	14.8	47.2	0.00	0.00	
2,200.0	4.00	162.35	2,198.1	-53.2	16.9	53.9	0.00	0.00	
2,300.0	4.00	162.35	2,297.9	-59.8	19.0	60.7	0.00	0.00	
2,400.0	4.00	162.35	2,397.6	-66.5	21.2	67.4	0.00	0.00	
2,500.0	4.00	162.35	2,497.4	-73.1	23.3	74.1	0.00	0.00	
2,600.0	4.00	162.35	2,597.2	-79.8	25.4	80.9	0.00	0.00	
2,700.0	4.00	162.35	2,696.9	-86.4	27.5	87.6	0.00	0.00	
2,800.0	4.00	162.35	2,796.7	-93.1	29.6	94.4	0.00	0.00	
2,900.0	4.00	162.35	2,896.4	-99.7	31.7	101.1	0.00	0.00	
3,000.0	4.00	162.35	2,996.2	-106.4	33.8	107.8	0.00	0.00	
3,100.0	4.00	162.35	3,095.9	-113.0	36.0	114.6	0.00	0.00	
3,200.0	4.00	162.35	3,195.7	-119.7	38.1	121.3	0.00	0.00	
3,300.0	4.00	162.35	3,295.5	-126.3	40.2	128.0	0.00	0.00	
3,400.0	4.00	162.35	3,395.2	-132.9	42.3	134.8	0.00	0.00	
3,500.0	4.00	162.35	3,495.0	-139.6	44.4	141.5	0.00	0.00	
3,600.0	4.00	162.35	3,594.7	-146.2	46.5	148.3	0.00	0.00	
3,700.0	4.00	162.35	3,694.5	-152.9	48.6	155.0	0.00	0.00	
3,800.0	4.00	162.35	3,794.2	-159.5	50.8	161.7	0.00	0.00	
3,900.0	4.00	162.35	3,894.0	-166.2	52.9	168.5	0.00	0.00	
4,000.0	4.00	162.35	3,993.7	-172.8	55.0	175.2	0.00	0.00	
4,100.0	4.00	162.35	4,093.5	-179.5	57.1	182.0	0.00	0.00	
4,200.0	4.00	162.35	4,193.3	-186.1	59.2	188.7	0.00	0.00	
4,300.0	4.00	162.35	4,293.0	-192.8	61.3	195.4	0.00	0.00	
4,400.0	4.00	162.35	4,392.8	-199.4	63.5	202.2	0.00	0.00	
4,500.0	4.00	162.35	4,492.5	-206.1	65.6	208.9	0.00	0.00	
4,600.0	4.00	162.35	4,592.3	-212.7	67.7	215.7	0.00	0.00	
4,700.0	4.00	162.35	4,692.0	-219.4	69.8	222.4	0.00	0.00	
4,800.0	4.00	162.35	4,791.8	-226.0	71.9	229.1	0.00	0.00	
4,900.0	4.00	162.35	4,891.6	-232.7	74.0	235.9	0.00	0.00	
5,000.0	4.00	162.35	4,991.3	-239.3	76.1	242.6	0.00	0.00	
5,100.0	4.00	162.35	5,091.1	-246.0	78.3	249.4	0.00	0.00	

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<b>Site:</b>	S22-T10N-R58W	<b>North Reference:</b>	Grid
<b>Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,200.0	4.00	162.35	5,190.8	-252.6	80.4	256.1	0.00	0.00	
5,295.0	4.00	162.35	5,285.6	-258.9	82.4	262.5	0.00	0.00	Start 11° Build
5,300.0	4.55	162.35	5,290.6	-259.3	82.5	262.9	11.00	11.00	
5,400.0	15.55	162.35	5,388.9	-275.9	87.8	279.7	11.00	11.00	
5,500.0	26.55	162.35	5,482.1	-310.1	98.7	314.3	11.00	11.00	
5,600.0	37.55	162.35	5,566.7	-360.5	114.7	365.5	11.00	11.00	
5,700.0	48.55	162.35	5,639.7	-425.5	135.4	431.4	11.00	11.00	
5,800.0	59.55	162.35	5,698.3	-502.5	159.9	509.5	11.00	11.00	
5,832.8	63.16	162.35	5,714.0	-529.9	168.6	537.3	11.00	11.00	Top Niobrara
5,900.0	70.55	162.35	5,740.4	-588.8	187.3	596.9	11.00	11.00	
6,000.0	81.55	162.35	5,764.5	-681.1	216.7	690.6	11.00	11.00	
6,076.8	90.00	162.35	5,770.1	-754.1	239.9	764.5	11.00	11.00	LP @ 6076' MD; 90°
6,100.0	90.00	163.05	5,770.1	-776.2	246.8	786.9	3.00	0.00	
6,200.0	90.00	166.05	5,770.1	-872.6	273.5	884.4	3.00	0.00	
6,300.0	90.00	169.05	5,770.1	-970.2	295.0	983.0	3.00	0.00	
6,400.0	90.00	172.05	5,770.1	-1,068.8	311.5	1,082.3	3.00	0.00	
6,500.0	90.00	175.05	5,770.1	-1,168.2	322.7	1,182.0	3.00	0.00	7"
6,600.0	90.00	178.05	5,770.1	-1,268.0	328.7	1,282.0	3.00	0.00	
6,658.7	90.00	179.81	5,770.1	-1,326.7	329.8	1,340.7	3.00	0.00	EOT; 179.81°
6,700.0	90.00	179.81	5,770.1	-1,368.0	330.0	1,382.0	0.00	0.00	
6,800.0	90.00	179.81	5,770.1	-1,468.0	330.3	1,481.9	0.00	0.00	
6,900.0	90.00	179.81	5,770.1	-1,568.0	330.6	1,581.8	0.00	0.00	
7,000.0	90.00	179.81	5,770.1	-1,668.0	331.0	1,681.7	0.00	0.00	
7,100.0	90.00	179.81	5,770.1	-1,768.0	331.3	1,781.6	0.00	0.00	
7,200.0	90.00	179.81	5,770.1	-1,868.0	331.6	1,881.5	0.00	0.00	
7,300.0	90.00	179.81	5,770.1	-1,968.0	332.0	1,981.4	0.00	0.00	
7,400.0	90.00	179.81	5,770.1	-2,068.0	332.3	2,081.3	0.00	0.00	
7,500.0	90.00	179.81	5,770.1	-2,168.0	332.6	2,181.2	0.00	0.00	
7,600.0	90.00	179.81	5,770.1	-2,268.0	333.0	2,281.1	0.00	0.00	
7,700.0	90.00	179.81	5,770.1	-2,368.0	333.3	2,381.0	0.00	0.00	
7,800.0	90.00	179.81	5,770.1	-2,468.0	333.7	2,480.9	0.00	0.00	
7,900.0	90.00	179.81	5,770.1	-2,568.0	334.0	2,580.8	0.00	0.00	
8,000.0	90.00	179.81	5,770.1	-2,668.0	334.3	2,680.7	0.00	0.00	
8,100.0	90.00	179.81	5,770.1	-2,768.0	334.7	2,780.6	0.00	0.00	
8,200.0	90.00	179.81	5,770.1	-2,868.0	335.0	2,880.5	0.00	0.00	
8,300.0	90.00	179.81	5,770.1	-2,968.0	335.3	2,980.4	0.00	0.00	
8,400.0	90.00	179.81	5,770.1	-3,068.0	335.7	3,080.4	0.00	0.00	
8,500.0	90.00	179.81	5,770.1	-3,168.0	336.0	3,180.3	0.00	0.00	
8,600.0	90.00	179.81	5,770.1	-3,268.0	336.3	3,280.2	0.00	0.00	
8,700.0	90.00	179.81	5,770.1	-3,368.0	336.7	3,380.1	0.00	0.00	
8,800.0	90.00	179.81	5,770.1	-3,468.0	337.0	3,480.0	0.00	0.00	
8,900.0	90.00	179.81	5,770.1	-3,568.0	337.4	3,579.9	0.00	0.00	
9,000.0	90.00	179.81	5,770.1	-3,668.0	337.7	3,679.8	0.00	0.00	
9,100.0	90.00	179.81	5,770.1	-3,768.0	338.0	3,779.7	0.00	0.00	
9,200.0	90.00	179.81	5,770.1	-3,868.0	338.4	3,879.6	0.00	0.00	
9,300.0	90.00	179.81	5,770.1	-3,968.0	338.7	3,979.5	0.00	0.00	
9,400.0	90.00	179.81	5,770.1	-4,068.0	339.0	4,079.4	0.00	0.00	
9,500.0	90.00	179.81	5,770.1	-4,168.0	339.4	4,179.3	0.00	0.00	
9,600.0	90.00	179.81	5,770.1	-4,268.0	339.7	4,279.2	0.00	0.00	
9,700.0	90.00	179.81	5,770.1	-4,368.0	340.0	4,379.1	0.00	0.00	
9,800.0	90.00	179.81	5,770.1	-4,468.0	340.4	4,479.0	0.00	0.00	
9,900.0	90.00	179.81	5,770.1	-4,568.0	340.7	4,578.9	0.00	0.00	

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<b>Site:</b>	S22-T10N-R58W	<b>North Reference:</b>	Grid
<b>Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,000.0	90.00	179.81	5,770.1	-4,668.0	341.1	4,678.8	0.00	0.00	
10,100.0	90.00	179.81	5,770.0	-4,768.0	341.4	4,778.7	0.00	0.00	
10,200.0	90.00	179.81	5,770.0	-4,868.0	341.7	4,878.6	0.00	0.00	
10,300.0	90.00	179.81	5,770.0	-4,968.0	342.1	4,978.5	0.00	0.00	
10,400.0	90.00	179.81	5,770.0	-5,068.0	342.4	5,078.5	0.00	0.00	
10,500.0	90.00	179.81	5,770.0	-5,168.0	342.7	5,178.4	0.00	0.00	
10,600.0	90.00	179.81	5,770.0	-5,268.0	343.1	5,278.3	0.00	0.00	
10,700.0	90.00	179.81	5,770.0	-5,368.0	343.4	5,378.2	0.00	0.00	
10,800.0	90.00	179.81	5,770.0	-5,468.0	343.8	5,478.1	0.00	0.00	
10,900.0	90.00	179.81	5,770.0	-5,568.0	344.1	5,578.0	0.00	0.00	
11,000.0	90.00	179.81	5,770.0	-5,668.0	344.4	5,677.9	0.00	0.00	
11,100.0	90.00	179.81	5,770.0	-5,768.0	344.8	5,777.8	0.00	0.00	
11,200.0	90.00	179.81	5,770.0	-5,868.0	345.1	5,877.7	0.00	0.00	
11,300.0	90.00	179.81	5,770.0	-5,968.0	345.4	5,977.6	0.00	0.00	
11,400.0	90.00	179.81	5,770.0	-6,068.0	345.8	6,077.5	0.00	0.00	
11,500.0	90.00	179.81	5,770.0	-6,168.0	346.1	6,177.4	0.00	0.00	
11,600.0	90.00	179.81	5,770.0	-6,268.0	346.4	6,277.3	0.00	0.00	
11,700.0	90.00	179.81	5,770.0	-6,368.0	346.8	6,377.2	0.00	0.00	
11,800.0	90.00	179.81	5,770.0	-6,468.0	347.1	6,477.1	0.00	0.00	
11,900.0	90.00	179.81	5,770.0	-6,568.0	347.5	6,577.0	0.00	0.00	
12,000.0	90.00	179.81	5,770.0	-6,668.0	347.8	6,676.9	0.00	0.00	
12,100.0	90.00	179.81	5,770.0	-6,768.0	348.1	6,776.8	0.00	0.00	
12,200.0	90.00	179.81	5,770.0	-6,868.0	348.5	6,876.7	0.00	0.00	
12,300.0	90.00	179.81	5,770.0	-6,968.0	348.8	6,976.6	0.00	0.00	
12,400.0	90.00	179.81	5,770.0	-7,068.0	349.1	7,076.6	0.00	0.00	
12,500.0	90.00	179.81	5,770.0	-7,168.0	349.5	7,176.5	0.00	0.00	
12,600.0	90.00	179.81	5,770.0	-7,268.0	349.8	7,276.4	0.00	0.00	
12,700.0	90.00	179.81	5,770.0	-7,368.0	350.1	7,376.3	0.00	0.00	
12,788.8	90.00	179.81	5,770.0	-7,456.8	350.4	7,465.0	0.00	0.00	PBHL @ 12788' MD
12,788.9	90.00	179.81	5,770.0	-7,456.8	350.4	7,465.1	0.00	0.00	

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
22D-2703A PBHL	- plan misses target center by 2651.9usft at 12788.9usft MD (5770.0 TVD, -7456.8 N, 350.4 E)	0.00	0.00	5,770.0	-10,107.3	438.8	1,539,388.86	3,454,670.80	40° 48' 8.81 N 103° 51' 27.53 W
22D-2703A PBHL P2	- plan hits target center	0.00	0.00	5,770.0	-7,456.8	350.4	1,542,039.33	3,454,582.42	40° 48' 35.01 N 103° 51' 28.04 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,500.0	5,770.1	7"	0	0	

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Company:</b>	Whiting Petroleum Corporation	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site:</b>	S22-T10N-R58W	<b>North Reference:</b>	Grid
<b>Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,832.8	5,714.0	Top Niobrara		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,300.0	1,300.0	0.0	0.0	KOP @ 1300' MD	
1,500.0	1,499.8	-6.6	2.1	EOB; 4°	
5,295.0	5,285.6	-258.9	82.4	Start 11° Build	
6,076.8	5,770.1	-754.1	239.9	LP @ 6076' MD; 90°	
6,658.7	5,770.1	-1,326.7	329.8	EOT; 179.81°	
12,788.8	5,770.0	-7,456.8	350.4	PBHL @ 12788' MD	



**WHITING PETROLEUM CORPORATION**

# **Whiting Petroleum Corporation**

**Weld County, CO**

**S22-T10N-R58W**

**22D-2703A**

**HZ**

**Plan #2**

## **Anticollision Report**

**05 August, 2013**



**CATHEDRAL**

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #2		
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 10,000.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	8/5/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,788.0	Plan #2 (HZ)	ISCWSA MWD	MWD - ISCWSA	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offet Well - Wellbore - Design						
S22-T10N-R58W						
22D-2205A - HZ - Plan #1	166.7	166.7	33.2	32.7	68.140	CC
22D-2205A - HZ - Plan #1	200.0	200.0	33.2	32.6	52.116	ES
22D-2205A - HZ - Plan #1	10,200.0	10,247.0	585.7	399.6	3.147	SF
22D-2206B - HZ - Plan #1	2,001.3	1,997.0	47.5	39.0	5.610	CC
22D-2206B - HZ - Plan #1	2,100.0	2,095.5	47.7	38.9	5.393	ES
22D-2206B - HZ - Plan #1	2,900.0	2,894.9	58.8	46.5	4.777	SF
22D-2207A - HZ - Plan #1	566.7	566.7	66.1	63.9	28.940	CC
22D-2207A - HZ - Plan #1	600.0	600.0	66.1	63.7	27.159	ES
22D-2207A - HZ - Plan #1	10,300.0	10,637.3	1,255.8	1,066.5	6.636	SF
22D-2208B - HZ - Plan #1	166.7	166.7	100.0	99.6	205.265	CC
22D-2208B - HZ - Plan #1	200.0	200.0	100.0	99.4	156.996	ES
22D-2208B - HZ - Plan #1	10,300.0	10,897.2	1,585.9	1,398.0	8.442	SF
22D-2701A - HZ - Plan #2	200.0	200.0	32.9	32.3	51.682	CC, ES
22D-2701A - HZ - Plan #2	12,788.9	12,699.7	659.5	373.2	2.304	SF
22D-2704B - HZ - Plan #2	5,665.9	5,626.0	53.7	26.3	1.958	CC
22D-2704B - HZ - Plan #2	5,700.0	5,657.3	54.6	25.9	1.904	ES
22D-2704B - HZ - Plan #2	12,788.9	12,857.7	341.2	66.1	1.240	Level 2, SF
RAZOR 22-2712H (EXISTING) - WHITING WELL - SURV	0.0	0.0	60.1			
RAZOR 22-2712H (EXISTING) - WHITING WELL - SURV	12,200.0	12,568.0	323.9	69.2	1.272	Level 3, SF



<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2205A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	88.94	0.6	33.2	33.2					
100.0	100.0	100.0	100.0	0.1	0.1	88.94	0.6	33.2	33.2	33.0	0.19	176.945		
166.7	166.7	166.7	166.7	0.2	0.2	88.94	0.6	33.2	33.2	32.7	0.49	68.140 CC		
200.0	200.0	200.0	200.0	0.3	0.3	88.94	0.6	33.2	33.2	32.6	0.64	52.116 ES		
300.0	300.0	299.3	299.3	0.5	0.5	91.29	-0.8	34.2	34.2	33.2	1.07	32.130		
400.0	400.0	398.3	398.2	0.8	0.7	97.50	-4.9	37.3	37.6	36.1	1.50	25.069		
500.0	500.0	498.1	497.7	1.0	1.0	104.24	-10.5	41.4	42.8	40.8	1.95	21.974		
600.0	600.0	597.8	597.2	1.2	1.2	109.48	-16.1	45.5	48.4	46.0	2.39	20.238		
700.0	700.0	697.6	696.7	1.4	1.5	113.60	-21.7	49.7	54.3	51.5	2.84	19.141		
800.0	800.0	797.4	796.2	1.7	1.7	116.91	-27.3	53.8	60.5	57.2	3.29	18.400		
900.0	900.0	897.1	895.7	1.9	2.0	119.60	-32.9	57.9	66.8	63.0	3.74	17.874		
1,000.0	1,000.0	996.9	995.3	2.1	2.2	121.81	-38.5	62.1	73.2	69.0	4.19	17.484		
1,100.0	1,100.0	1,096.6	1,094.8	2.3	2.5	123.67	-44.1	66.2	79.7	75.1	4.64	17.186		
1,200.0	1,200.0	1,196.4	1,194.3	2.6	2.8	125.25	-49.7	70.3	86.3	81.2	5.09	16.951		
1,300.0	1,300.0	1,296.1	1,293.8	2.8	3.0	126.60	-55.3	74.5	93.0	87.4	5.55	16.762		
1,400.0	1,400.0	1,396.0	1,393.4	3.0	3.3	-35.09	-60.9	78.6	98.2	92.2	5.99	16.402		
1,500.0	1,499.8	1,496.0	1,493.1	3.2	3.6	-35.66	-66.5	82.7	100.6	94.2	6.39	15.740		
1,600.0	1,599.6	1,595.9	1,592.9	3.3	3.8	-36.81	-72.1	86.9	101.7	94.9	6.81	14.922		
1,700.0	1,699.4	1,695.9	1,692.6	3.5	4.1	-37.94	-77.7	91.0	102.7	95.5	7.24	14.186		
1,800.0	1,799.1	1,795.9	1,792.3	3.7	4.3	-39.04	-83.4	95.2	103.8	96.2	7.68	13.523		
1,900.0	1,898.9	1,895.9	1,892.0	4.0	4.6	-40.12	-89.0	99.3	105.0	96.9	8.12	12.925		
2,000.0	1,998.6	1,995.8	1,991.8	4.2	4.9	-41.17	-94.6	103.4	106.2	97.6	8.57	12.383		
2,100.0	2,098.4	2,095.8	2,091.5	4.4	5.1	-42.20	-100.2	107.6	107.4	98.4	9.03	11.892		
2,200.0	2,198.1	2,195.8	2,191.2	4.6	5.4	-43.21	-105.8	111.7	108.6	99.1	9.49	11.445		
2,300.0	2,297.9	2,295.7	2,291.0	4.9	5.7	-44.20	-111.4	115.9	109.9	100.0	9.96	11.037		
2,400.0	2,397.6	2,395.7	2,390.7	5.1	5.9	-45.16	-117.0	120.0	111.2	100.8	10.43	10.664		
2,500.0	2,497.4	2,495.7	2,490.4	5.3	6.2	-46.10	-122.6	124.1	112.6	101.7	10.91	10.322		
2,600.0	2,597.2	2,595.7	2,590.2	5.6	6.5	-47.01	-128.2	128.3	114.0	102.6	11.39	10.008		
2,700.0	2,696.9	2,695.6	2,689.9	5.8	6.7	-47.91	-133.9	132.4	115.4	103.5	11.87	9.719		
2,800.0	2,796.7	2,795.6	2,789.6	6.1	7.0	-48.78	-139.5	136.6	116.8	104.4	12.36	9.452		
2,900.0	2,896.4	2,895.6	2,889.4	6.3	7.2	-49.63	-145.1	140.7	118.3	105.4	12.85	9.205		
3,000.0	2,996.2	2,995.6	2,989.1	6.5	7.5	-50.46	-150.7	144.8	119.7	106.4	13.34	8.976		
3,100.0	3,095.9	3,095.5	3,088.8	6.8	7.8	-51.27	-156.3	149.0	121.2	107.4	13.83	8.764		
3,200.0	3,195.7	3,195.3	3,188.5	7.0	8.0	-52.06	-161.9	153.1	122.8	108.4	14.33	8.567		
3,300.0	3,295.5	3,295.5	3,288.3	7.3	8.3	-52.83	-167.5	157.3	124.3	109.5	14.83	8.382		
3,400.0	3,395.2	3,395.5	3,388.0	7.5	8.6	-53.58	-173.1	161.4	125.9	110.6	15.33	8.211		
3,500.0	3,495.0	3,495.4	3,487.7	7.8	8.8	-54.32	-178.8	165.5	127.5	111.7	15.84	8.050		
3,600.0	3,594.7	3,595.4	3,587.5	8.1	9.1	-55.03	-184.4	169.7	129.1	112.8	16.34	7.900		
3,700.0	3,694.5	3,695.4	3,687.2	8.3	9.4	-55.73	-190.0	173.8	130.8	113.9	16.85	7.759		
3,800.0	3,794.2	3,795.4	3,786.9	8.6	9.6	-56.41	-195.6	178.0	132.4	115.1	17.36	7.627		
3,900.0	3,894.0	3,895.3	3,886.7	8.8	9.9	-57.07	-201.2	182.1	134.1	116.2	17.87	7.502		
4,000.0	3,993.7	3,995.3	3,986.4	9.1	10.2	-57.71	-206.8	186.2	135.8	117.4	18.39	7.385		
4,100.0	4,093.5	4,095.3	4,086.1	9.3	10.4	-58.34	-212.4	190.4	137.5	118.6	18.90	7.275		
4,200.0	4,193.3	4,195.3	4,185.8	9.6	10.7	-58.96	-218.0	194.5	139.2	119.8	19.41	7.171		
4,300.0	4,293.0	4,295.2	4,285.6	9.8	10.9	-59.56	-223.6	198.7	141.0	121.0	19.93	7.072		
4,400.0	4,392.8	4,395.2	4,385.3	10.1	11.2	-60.14	-229.3	202.8	142.7	122.3	20.45	6.979		
4,500.0	4,492.5	4,495.2	4,485.0	10.4	11.5	-60.71	-234.9	206.9	144.5	123.5	20.97	6.891		
4,600.0	4,592.3	4,595.2	4,584.8	10.6	11.7	-61.27	-240.5	211.1	146.3	124.8	21.48	6.808		
4,700.0	4,692.0	4,695.1	4,684.5	10.9	12.0	-61.81	-246.1	215.2	148.1	126.1	22.00	6.728		
4,800.0	4,791.8	4,795.1	4,784.2	11.1	12.3	-62.34	-251.7	219.4	149.9	127.3	22.53	6.653		
4,900.0	4,891.6	4,895.1	4,884.0	11.4	12.5	-62.86	-257.3	223.5	151.7	128.6	23.05	6.582		
5,000.0	4,991.3	4,995.0	4,983.7	11.7	12.8	-63.36	-262.9	227.6	153.5	130.0	23.57	6.514		

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2205A - HZ - Plan #1													Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,091.1	5,095.0	5,083.4	11.9	13.1	-63.86	-268.5	231.8	155.4	131.3	24.09	6.449		
5,200.0	5,190.8	5,195.0	5,183.2	12.2	13.3	-64.34	-274.2	235.9	157.2	132.6	24.62	6.387		
5,295.0	5,285.6	5,290.0	5,277.9	12.4	13.6	-64.79	-279.5	239.9	159.0	133.9	25.11	6.331		
5,300.0	5,290.6	5,295.0	5,282.9	12.4	13.6	-64.81	-279.8	240.1	159.1	133.9	25.14	6.328		
5,350.0	5,340.2	5,336.7	5,324.3	12.6	13.7	-65.30	-283.3	242.7	160.0	134.6	25.42	6.297		
5,400.0	5,388.9	5,377.9	5,364.9	12.8	13.9	-66.14	-289.4	247.1	161.7	136.0	25.73	6.285		
5,450.0	5,436.3	5,419.1	5,404.6	13.0	14.1	-67.28	-298.0	253.5	164.2	138.1	26.11	6.291		
5,500.0	5,482.1	5,460.3	5,443.4	13.3	14.3	-68.69	-309.1	261.7	167.6	141.0	26.56	6.310		
5,550.0	5,525.7	5,500.0	5,479.7	13.6	14.5	-70.23	-322.2	271.3	171.9	144.8	27.09	6.347		
5,600.0	5,566.7	5,542.7	5,517.2	14.0	14.8	-72.06	-338.6	283.5	177.3	149.5	27.76	6.385		
5,650.0	5,604.8	5,584.0	5,551.6	14.4	15.1	-73.90	-356.8	296.9	183.7	155.1	28.54	6.437		
5,700.0	5,639.7	5,625.3	5,584.3	14.9	15.5	-75.75	-377.2	311.9	191.2	161.8	29.42	6.500		
5,750.0	5,670.9	5,666.6	5,614.9	15.4	15.9	-77.56	-399.6	328.5	199.9	169.5	30.42	6.573		
5,800.0	5,698.3	5,708.2	5,643.3	16.0	16.3	-79.28	-424.0	346.5	209.8	178.3	31.51	6.657		
5,850.0	5,721.5	5,750.0	5,669.3	16.6	16.8	-80.89	-450.3	365.9	220.7	188.0	32.69	6.752		
5,900.0	5,740.4	5,792.0	5,692.7	17.2	17.3	-82.35	-478.3	386.5	232.7	198.8	33.96	6.854		
5,950.0	5,754.8	5,834.4	5,713.5	18.0	17.9	-83.65	-508.0	408.5	245.7	210.4	35.29	6.964		
6,000.0	5,764.5	5,877.3	5,731.3	18.7	18.5	-84.80	-539.4	431.6	259.6	222.9	36.67	7.078		
6,050.0	5,769.4	5,920.7	5,746.0	19.5	19.2	-85.79	-572.3	455.9	274.2	236.1	38.10	7.195		
6,076.8	5,770.1	5,944.3	5,752.6	19.9	19.5	-86.27	-590.5	469.4	282.3	243.4	38.89	7.259		
6,100.0	5,770.1	5,965.0	5,757.5	20.2	19.9	-87.36	-606.7	481.3	289.6	250.1	39.52	7.327		
6,200.0	5,770.1	6,056.5	5,769.5	21.6	21.4	-89.89	-679.6	535.1	325.1	283.0	42.06	7.728		
6,300.0	5,770.1	6,164.0	5,770.0	23.0	23.1	-89.99	-767.2	597.4	364.2	319.4	44.75	8.137		
6,400.0	5,770.1	6,279.4	5,770.0	24.5	25.0	-89.99	-864.9	658.8	402.8	355.2	47.56	8.469		
6,500.0	5,770.1	6,398.3	5,770.0	26.1	26.9	-89.99	-969.2	715.7	440.5	390.2	50.38	8.744		
6,600.0	5,770.1	6,520.7	5,770.0	27.6	29.0	-89.99	-1,080.1	767.5	477.3	424.1	53.19	8.973		
6,658.7	5,770.1	6,594.3	5,770.0	28.5	30.3	-89.99	-1,148.3	795.2	498.4	443.5	54.81	9.092		
6,700.0	5,770.1	6,647.1	5,770.0	29.2	31.2	-89.99	-1,197.9	813.4	512.5	456.1	56.41	9.085		
6,800.0	5,770.1	6,779.1	5,770.0	30.9	33.4	-89.99	-1,323.8	852.8	542.1	481.7	60.43	8.970		
6,900.0	5,770.1	6,916.2	5,770.0	32.6	35.7	-89.99	-1,457.1	884.6	564.9	500.3	64.59	8.746		
7,000.0	5,770.1	7,057.3	5,770.0	34.3	37.9	-89.99	-1,596.4	907.1	580.6	511.7	68.83	8.434		
7,100.0	5,770.1	7,201.0	5,770.0	36.0	40.2	-89.99	-1,739.5	919.4	588.8	515.7	73.10	8.055		
7,200.0	5,770.1	7,329.5	5,770.0	37.8	42.2	-89.99	-1,868.0	921.7	590.0	513.0	77.07	7.656		
7,300.0	5,770.1	7,429.5	5,770.0	39.5	43.7	-89.99	-1,968.0	921.7	589.7	509.1	80.57	7.320		
7,400.0	5,770.1	7,529.5	5,770.0	41.3	45.3	-89.99	-2,068.0	921.7	589.4	505.3	84.09	7.009		
7,500.0	5,770.1	7,629.5	5,770.0	43.1	46.9	-89.99	-2,168.0	921.7	589.0	501.4	87.64	6.721		
7,600.0	5,770.1	7,729.5	5,770.0	44.9	48.5	-89.99	-2,268.0	921.7	588.7	497.5	91.21	6.454		
7,700.0	5,770.1	7,829.5	5,770.0	46.7	50.2	-89.99	-2,368.0	921.7	588.4	493.5	94.80	6.206		
7,800.0	5,770.1	7,929.5	5,770.0	48.6	51.9	-89.99	-2,468.0	921.7	588.0	489.6	98.41	5.975		
7,900.0	5,770.1	8,029.5	5,770.0	50.4	53.5	-89.99	-2,568.0	921.7	587.7	485.6	102.04	5.759		
8,000.0	5,770.1	8,129.5	5,770.0	52.2	55.2	-89.99	-2,668.0	921.7	587.3	481.7	105.68	5.558		
8,100.0	5,770.1	8,229.5	5,770.0	54.1	56.9	-89.99	-2,768.0	921.7	587.0	477.7	109.34	5.369		
8,200.0	5,770.1	8,329.5	5,770.0	55.9	58.7	-89.99	-2,868.0	921.7	586.7	473.7	113.00	5.191		
8,300.0	5,770.1	8,429.5	5,770.0	57.8	60.4	-89.99	-2,968.0	921.7	586.3	469.6	116.68	5.025		
8,400.0	5,770.1	8,529.5	5,770.0	59.6	62.1	-89.99	-3,068.0	921.7	586.0	465.6	120.37	4.868		
8,500.0	5,770.1	8,629.5	5,770.0	61.5	63.9	-89.99	-3,168.0	921.7	585.6	461.6	124.07	4.720		
8,600.0	5,770.1	8,729.5	5,770.0	63.4	65.7	-89.99	-3,268.0	921.6	585.3	457.5	127.77	4.581		
8,700.0	5,770.1	8,829.5	5,770.0	65.2	67.4	-89.99	-3,368.0	921.6	585.0	453.5	131.48	4.449		
8,800.0	5,770.1	8,929.5	5,770.0	67.1	69.2	-89.99	-3,468.0	921.6	584.6	449.4	135.20	4.324		
8,900.0	5,770.1	9,029.5	5,770.0	69.0	71.0	-89.99	-3,568.0	921.6	584.3	445.4	138.93	4.206		
9,000.0	5,770.1	9,129.5	5,770.0	70.8	72.8	-89.99	-3,668.0	921.6	583.9	441.3	142.66	4.093		
9,100.0	5,770.1	9,229.5	5,770.0	72.7	74.6	-89.99	-3,768.0	921.6	583.6	437.2	146.39	3.987		

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2205A - HZ - Plan #1													Offset Site Error: 0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
9,200.0	5,770.1	9,329.5	5,770.0	74.6	76.4	-89.99	-3,868.0	921.6	583.3	433.1	150.14	3.885	
9,300.0	5,770.1	9,429.5	5,770.0	76.5	78.2	-89.99	-3,968.0	921.6	582.9	429.0	153.88	3.788	
9,400.0	5,770.1	9,529.5	5,770.0	78.4	80.0	-89.99	-4,068.0	921.6	582.6	425.0	157.63	3.696	
9,500.0	5,770.1	9,629.5	5,770.0	80.2	81.8	-89.99	-4,168.0	921.6	582.2	420.9	161.39	3.608	
9,600.0	5,770.1	9,729.5	5,770.0	82.1	83.7	-89.99	-4,268.0	921.6	581.9	416.8	165.14	3.524	
9,700.0	5,770.1	9,829.5	5,770.0	84.0	85.5	-89.99	-4,368.0	921.6	581.6	412.7	168.90	3.443	
9,800.0	5,770.1	9,929.5	5,770.0	85.9	87.3	-89.99	-4,468.0	921.6	581.2	408.6	172.67	3.366	
9,900.0	5,770.1	10,029.5	5,770.0	87.8	89.2	-89.99	-4,568.0	921.6	580.9	404.5	176.44	3.292	
10,000.0	5,770.1	10,129.5	5,770.0	89.7	91.0	-90.00	-4,668.0	921.6	580.6	400.3	180.21	3.222	
10,100.0	5,770.0	10,229.5	5,770.0	91.6	92.9	-90.00	-4,768.0	921.6	580.2	396.2	183.98	3.154	
10,109.8	5,770.0	10,239.2	5,770.0	91.8	93.0	-90.00	-4,777.7	921.6	580.2	395.9	184.28	3.148	
10,200.0	5,770.0	10,247.0	5,770.0	93.5	93.2	-90.00	-4,785.5	921.6	585.7	399.6	186.14	3.147 SF	
10,300.0	5,770.0	10,247.0	5,770.0	95.4	93.2	-90.00	-4,785.5	921.6	607.6	419.6	187.97	3.232	
10,400.0	5,770.0	10,247.0	5,770.0	97.3	93.2	-90.00	-4,785.5	921.6	644.4	454.6	189.80	3.395	
10,500.0	5,770.0	10,247.0	5,770.0	99.2	93.2	-90.00	-4,785.5	921.6	693.8	502.2	191.62	3.621	
10,600.0	5,770.0	10,247.0	5,770.0	101.1	93.2	-90.00	-4,785.5	921.6	753.3	559.9	193.45	3.894	
10,700.0	5,770.0	10,247.0	5,770.0	103.0	93.2	-90.00	-4,785.5	921.6	820.7	625.4	195.28	4.203	
10,800.0	5,770.0	10,247.0	5,770.0	104.9	93.2	-90.00	-4,785.5	921.6	894.3	697.2	197.11	4.537	
10,900.0	5,770.0	10,247.0	5,770.0	106.8	93.2	-90.00	-4,785.5	921.6	972.5	773.6	198.94	4.889	
11,000.0	5,770.0	10,247.0	5,770.0	108.7	93.2	-90.00	-4,785.5	921.6	1,054.5	853.7	200.77	5.252	
11,100.0	5,770.0	10,247.0	5,770.0	110.6	93.2	-90.00	-4,785.5	921.6	1,139.3	936.7	202.60	5.623	
11,200.0	5,770.0	10,247.0	5,770.0	112.5	93.2	-90.00	-4,785.5	921.6	1,226.4	1,022.0	204.43	5.999	
11,300.0	5,770.0	10,247.0	5,770.0	114.4	93.2	-90.00	-4,785.5	921.6	1,315.4	1,109.1	206.26	6.377	
11,400.0	5,770.0	10,247.0	5,770.0	116.3	93.2	-90.00	-4,785.5	921.6	1,405.8	1,197.7	208.09	6.756	
11,500.0	5,770.0	10,247.0	5,770.0	118.2	93.2	-90.00	-4,785.5	921.6	1,497.5	1,287.6	209.93	7.133	
11,600.0	5,770.0	10,247.0	5,770.0	120.1	93.2	-90.00	-4,785.5	921.6	1,590.1	1,378.4	211.76	7.509	
11,700.0	5,770.0	10,247.0	5,770.0	122.0	93.2	-90.00	-4,785.5	921.6	1,683.6	1,470.1	213.59	7.882	
11,800.0	5,770.0	10,247.0	5,770.0	123.9	93.2	-90.00	-4,785.5	921.6	1,777.9	1,562.4	215.43	8.253	
11,900.0	5,770.0	10,247.0	5,770.0	125.8	93.2	-90.00	-4,785.5	921.6	1,872.7	1,655.4	217.27	8.619	
12,000.0	5,770.0	10,247.0	5,770.0	127.7	93.2	-90.00	-4,785.5	921.6	1,968.0	1,748.8	219.17	8.979	
12,100.0	5,770.0	10,247.0	5,770.0	129.6	93.2	-90.00	-4,785.5	921.6	2,063.8	1,842.7	221.08	9.335	
12,200.0	5,770.0	10,247.0	5,770.0	131.5	93.2	-90.00	-4,785.5	921.6	2,159.9	1,936.9	222.99	9.686	
12,300.0	5,770.0	10,247.0	5,770.0	133.4	93.2	-90.00	-4,785.5	921.6	2,256.4	2,031.5	224.90	10.033	
12,400.0	5,770.0	10,247.0	5,770.0	135.3	93.2	-90.00	-4,785.5	921.6	2,353.2	2,126.4	226.80	10.375	
12,500.0	5,770.0	10,247.0	5,770.0	137.2	93.2	-90.00	-4,785.5	921.6	2,450.2	2,221.5	228.71	10.713	
12,600.0	5,770.0	10,247.0	5,770.0	139.1	93.2	-90.00	-4,785.5	921.6	2,547.5	2,316.8	230.62	11.046	
12,700.0	5,770.0	10,247.0	5,770.0	141.0	93.2	-90.00	-4,785.5	921.6	2,644.9	2,412.4	232.53	11.375	
12,788.9	5,770.0	10,247.0	5,770.0	142.4	93.2	-90.00	-4,785.5	921.6	2,731.7	2,497.8	233.92	11.678	

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2206B - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	155.07	-74.4	34.6	82.1					
100.0	100.0	100.0	100.0	0.1	0.1	155.07	-74.4	34.6	82.1	81.9	0.19	437.304		
200.0	200.0	200.0	200.0	0.3	0.3	155.07	-74.4	34.6	82.1	81.4	0.64	128.800		
300.0	300.0	300.0	300.0	0.5	0.5	155.07	-74.4	34.6	82.1	81.0	1.09	75.522		
400.0	400.0	400.0	400.0	0.8	0.8	155.07	-74.4	34.6	82.1	80.5	1.54	53.423		
500.0	500.0	500.0	500.0	1.0	1.0	155.07	-74.4	34.6	82.1	80.1	1.99	41.330		
600.0	600.0	600.0	600.0	1.2	1.2	155.07	-74.4	34.6	82.1	79.6	2.44	33.701		
700.0	700.0	700.0	700.0	1.4	1.4	155.07	-74.4	34.6	82.1	79.2	2.88	28.449		
800.0	800.0	800.0	800.0	1.7	1.7	155.07	-74.4	34.6	82.1	78.7	3.33	24.614		
900.0	900.0	900.0	900.0	1.9	1.9	155.07	-74.4	34.6	82.1	78.3	3.78	21.690		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	155.07	-74.4	34.6	82.1	77.8	4.23	19.387		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	155.07	-74.4	34.6	82.1	77.4	4.68	17.526		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	155.07	-74.4	34.6	82.1	76.9	5.13	15.991		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	155.07	-74.4	34.6	82.1	76.5	5.58	14.703		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-7.44	-74.4	34.6	80.3	74.3	6.05	13.282		
1,500.0	1,499.8	1,499.8	1,499.8	3.2	3.2	-7.97	-74.4	34.6	75.2	68.7	6.48	11.598		
1,600.0	1,599.6	1,599.6	1,599.6	3.3	3.5	-8.78	-74.4	34.6	68.3	61.4	6.88	9.924		
1,700.0	1,699.4	1,699.4	1,699.4	3.5	3.7	-9.78	-74.4	34.6	61.4	54.1	7.28	8.429		
1,800.0	1,799.1	1,799.1	1,799.1	3.7	3.9	-11.02	-74.4	34.6	54.5	46.8	7.69	7.088		
1,900.0	1,898.9	1,897.3	1,897.3	4.0	4.1	-13.20	-75.5	35.8	49.3	41.2	8.08	6.101		
2,000.0	1,998.6	1,995.6	1,995.5	4.2	4.3	-16.94	-78.8	39.6	47.5	39.0	8.45	5.614		
2,001.3	2,000.0	1,997.0	1,996.8	4.2	4.3	-17.00	-78.9	39.7	47.5	39.0	8.46	5.610 CC		
2,100.0	2,098.4	2,095.5	2,095.1	4.4	4.5	-21.40	-83.5	44.8	47.7	38.9	8.84	5.393 ES		
2,200.0	2,198.1	2,195.4	2,194.8	4.6	4.7	-25.78	-88.1	50.0	48.2	39.0	9.24	5.217		
2,300.0	2,297.9	2,295.4	2,294.5	4.9	4.9	-30.05	-92.7	55.3	49.0	39.4	9.65	5.079		
2,400.0	2,397.6	2,395.3	2,394.2	5.1	5.1	-34.16	-97.3	60.5	50.1	40.0	10.07	4.974		
2,500.0	2,497.4	2,495.2	2,493.8	5.3	5.3	-38.08	-101.9	65.7	51.4	40.9	10.50	4.896		
2,600.0	2,597.2	2,595.1	2,593.5	5.6	5.5	-41.79	-106.5	70.9	53.0	42.0	10.94	4.841		
2,700.0	2,696.9	2,695.1	2,693.2	5.8	5.7	-45.28	-111.2	76.2	54.7	43.3	11.38	4.806		
2,800.0	2,796.7	2,795.0	2,792.9	6.1	6.0	-48.53	-115.8	81.4	56.7	44.8	11.84	4.785		
2,900.0	2,896.4	2,894.9	2,892.6	6.3	6.2	-51.57	-120.4	86.6	58.8	46.5	12.30	4.777 SF		
3,000.0	2,996.2	2,994.9	2,992.3	6.5	6.4	-54.38	-125.0	91.8	61.0	48.3	12.77	4.779		
3,100.0	3,095.9	3,094.8	3,092.0	6.8	6.7	-56.99	-129.6	97.0	63.4	50.2	13.24	4.790		
3,200.0	3,195.7	3,194.7	3,191.7	7.0	6.9	-59.40	-134.2	102.3	66.0	52.2	13.72	4.806		
3,300.0	3,295.5	3,294.7	3,291.3	7.3	7.1	-61.63	-138.9	107.5	68.6	54.4	14.21	4.828		
3,400.0	3,395.2	3,394.6	3,391.0	7.5	7.4	-63.70	-143.5	112.7	71.3	56.6	14.70	4.853		
3,500.0	3,495.0	3,494.5	3,490.7	7.8	7.6	-65.61	-148.1	117.9	74.1	58.9	15.19	4.881		
3,600.0	3,594.7	3,594.5	3,590.4	8.1	7.9	-67.37	-152.7	123.2	77.0	61.3	15.68	4.911		
3,700.0	3,694.5	3,694.4	3,690.1	8.3	8.1	-69.01	-157.3	128.4	80.0	63.8	16.18	4.943		
3,800.0	3,794.2	3,794.3	3,789.8	8.6	8.4	-70.53	-161.9	133.6	83.0	66.3	16.68	4.976		
3,900.0	3,894.0	3,894.2	3,889.5	8.8	8.6	-71.95	-166.6	138.8	86.1	68.9	17.18	5.009		
4,000.0	3,993.7	3,994.2	3,989.2	9.1	8.8	-73.26	-171.2	144.1	89.2	71.5	17.69	5.043		
4,100.0	4,093.5	4,094.1	4,088.8	9.3	9.1	-74.49	-175.8	149.3	92.4	74.2	18.19	5.077		
4,200.0	4,193.3	4,194.0	4,188.5	9.6	9.3	-75.63	-180.4	154.5	95.6	76.9	18.70	5.111		
4,300.0	4,293.0	4,294.0	4,288.2	9.8	9.6	-76.70	-185.0	159.7	98.8	79.6	19.21	5.144		
4,400.0	4,392.8	4,393.9	4,387.9	10.1	9.8	-77.70	-189.6	164.9	102.1	82.4	19.72	5.177		
4,500.0	4,492.5	4,493.8	4,487.6	10.4	10.1	-78.64	-194.3	170.2	105.4	85.2	20.23	5.210		
4,600.0	4,592.3	4,593.8	4,587.3	10.6	10.3	-79.52	-198.9	175.4	108.7	88.0	20.74	5.242		
4,700.0	4,692.0	4,693.7	4,687.0	10.9	10.6	-80.35	-203.5	180.6	112.1	90.8	21.25	5.274		
4,800.0	4,791.8	4,793.6	4,786.7	11.1	10.9	-81.13	-208.1	185.8	115.4	93.7	21.76	5.304		
4,900.0	4,891.6	4,893.6	4,886.3	11.4	11.1	-81.87	-212.7	191.1	118.8	96.6	22.28	5.335		
5,000.0	4,991.3	4,993.5	4,986.0	11.7	11.4	-82.56	-217.3	196.3	122.3	99.5	22.79	5.364		

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2206B - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,091.1	5,093.4	5,085.7	11.9	11.6	-83.22	-221.9	201.5	125.7	102.4	23.30	5.393	
5,200.0	5,190.8	5,193.4	5,185.4	12.2	11.9	-83.84	-226.6	206.7	129.1	105.3	23.82	5.421	
5,295.0	5,285.6	5,288.3	5,280.1	12.4	12.1	-84.40	-230.9	211.7	132.4	108.1	24.31	5.447	
5,300.0	5,290.6	5,293.3	5,285.1	12.4	12.1	-84.42	-231.2	212.0	132.6	108.3	24.33	5.449	
5,350.0	5,340.2	5,343.1	5,334.8	12.6	12.2	-85.76	-233.5	214.6	134.1	109.5	24.60	5.450	
5,400.0	5,388.9	5,391.0	5,382.6	12.8	12.4	-88.88	-235.8	217.1	135.6	110.6	24.97	5.430	
5,450.0	5,436.3	5,434.3	5,425.5	13.0	12.5	-92.19	-239.5	221.4	139.1	113.7	25.41	5.475	
5,500.0	5,482.1	5,477.7	5,467.9	13.3	12.7	-95.36	-245.6	228.3	145.5	119.5	25.92	5.612	
5,550.0	5,525.7	5,521.1	5,509.4	13.6	12.9	-98.21	-254.0	237.8	154.6	128.2	26.48	5.839	
5,600.0	5,566.7	5,564.6	5,549.7	14.0	13.1	-100.60	-264.7	249.9	166.6	139.5	27.09	6.150	
5,650.0	5,604.8	5,607.9	5,588.5	14.4	13.3	-102.46	-277.6	264.4	181.1	153.4	27.73	6.530	
5,700.0	5,639.7	5,651.3	5,625.5	14.9	13.6	-103.77	-292.5	281.3	198.0	169.6	28.42	6.966	
5,750.0	5,670.9	5,694.5	5,660.4	15.4	13.9	-104.55	-309.4	300.4	217.0	187.8	29.17	7.438	
5,800.0	5,698.3	5,737.6	5,693.0	16.0	14.3	-104.85	-328.1	321.6	237.9	207.9	30.00	7.931	
5,850.0	5,721.5	5,780.8	5,723.2	16.6	14.7	-104.71	-348.5	344.7	260.5	229.6	30.91	8.427	
5,900.0	5,740.4	5,824.1	5,750.8	17.2	15.2	-104.19	-370.6	369.7	284.6	252.6	31.92	8.915	
5,950.0	5,754.8	5,867.6	5,775.7	18.0	15.7	-103.34	-394.2	396.4	309.8	276.8	33.01	9.385	
6,000.0	5,764.5	5,911.5	5,797.6	18.7	16.2	-102.23	-419.4	424.9	336.1	301.9	34.20	9.828	
6,050.0	5,769.4	5,956.1	5,816.6	19.5	16.8	-100.90	-446.1	455.1	363.1	327.7	35.46	10.241	
6,076.8	5,770.1	5,980.3	5,825.4	19.9	17.2	-100.11	-461.0	472.0	377.9	341.7	36.17	10.447	
6,100.0	5,770.1	6,001.6	5,832.3	20.2	17.5	-101.07	-474.3	487.1	390.8	354.1	36.67	10.656	
6,200.0	5,770.1	6,097.2	5,852.9	21.6	19.1	-103.08	-536.0	556.9	447.7	408.8	38.88	11.516	
6,300.0	5,770.1	6,197.8	5,857.0	23.0	20.8	-102.24	-602.8	632.0	506.0	464.7	41.37	12.232	
6,400.0	5,770.1	6,309.1	5,857.0	24.5	22.7	-100.93	-680.4	711.8	564.5	520.6	43.97	12.838	
6,500.0	5,770.1	6,426.1	5,857.0	26.1	24.8	-99.84	-766.8	790.6	622.6	576.0	46.61	13.356	
6,600.0	5,770.1	6,549.3	5,857.0	27.6	27.0	-98.94	-862.8	867.8	679.9	630.7	49.27	13.799	
6,658.7	5,770.1	6,624.9	5,857.0	28.5	28.4	-98.47	-924.1	912.0	713.1	662.3	50.83	14.029	
6,700.0	5,770.1	6,680.1	5,857.0	29.2	29.5	-98.06	-969.9	942.7	735.8	683.4	52.45	14.029	
6,800.0	5,770.1	6,822.5	5,857.0	30.9	32.1	-97.21	-1,092.1	1,015.7	786.5	729.9	56.68	13.876	
6,900.0	5,770.1	6,977.4	5,857.0	32.6	34.9	-96.57	-1,230.9	1,084.7	830.5	769.2	61.27	13.556	
7,000.0	5,770.1	7,144.3	5,857.0	34.3	37.8	-96.08	-1,386.0	1,146.0	866.8	800.7	66.15	13.103	
7,100.0	5,770.1	7,321.9	5,857.0	36.0	40.8	-95.73	-1,556.3	1,196.2	894.7	823.4	71.26	12.555	
7,200.0	5,770.1	7,507.7	5,857.0	37.8	43.8	-95.51	-1,738.6	1,231.5	913.3	836.8	76.48	11.942	
7,300.0	5,770.1	7,698.7	5,857.0	39.5	46.7	-95.41	-1,928.7	1,249.2	922.2	840.5	81.69	11.290	
7,400.0	5,770.1	7,837.9	5,857.0	41.3	48.7	-95.41	-2,067.9	1,251.0	922.8	836.9	85.83	10.751	
7,500.0	5,770.1	7,937.9	5,857.0	43.1	50.1	-95.41	-2,167.9	1,251.0	922.4	833.2	89.27	10.333	
7,600.0	5,770.1	8,037.9	5,857.0	44.9	51.5	-95.41	-2,267.9	1,251.0	922.1	829.4	92.75	9.942	
7,700.0	5,770.1	8,137.9	5,857.0	46.7	53.0	-95.41	-2,367.9	1,251.0	921.8	825.5	96.25	9.577	
7,800.0	5,770.1	8,237.9	5,857.0	48.6	54.5	-95.41	-2,467.9	1,251.0	921.4	821.7	99.77	9.236	
7,900.0	5,770.1	8,337.9	5,857.0	50.4	56.0	-95.42	-2,567.9	1,251.0	921.1	817.8	103.31	8.916	
8,000.0	5,770.1	8,437.9	5,857.0	52.2	57.6	-95.42	-2,667.9	1,251.0	920.8	813.9	106.88	8.615	
8,100.0	5,770.1	8,537.9	5,857.0	54.1	59.1	-95.42	-2,767.9	1,251.0	920.5	810.0	110.46	8.333	
8,200.0	5,770.1	8,637.9	5,857.0	55.9	60.7	-95.42	-2,867.9	1,251.0	920.1	806.1	114.05	8.068	
8,300.0	5,770.1	8,737.9	5,857.0	57.8	62.3	-95.42	-2,967.9	1,251.0	919.8	802.1	117.67	7.817	
8,400.0	5,770.1	8,837.9	5,857.0	59.6	63.9	-95.43	-3,067.9	1,251.0	919.5	798.2	121.29	7.581	
8,500.0	5,770.1	8,937.9	5,857.0	61.5	65.6	-95.43	-3,167.9	1,251.0	919.1	794.2	124.93	7.358	
8,600.0	5,770.1	9,037.9	5,857.0	63.4	67.2	-95.43	-3,267.9	1,251.0	918.8	790.2	128.57	7.146	
8,700.0	5,770.1	9,137.9	5,857.0	65.2	68.9	-95.43	-3,367.9	1,251.0	918.5	786.3	132.23	6.946	
8,800.0	5,770.1	9,237.9	5,857.0	67.1	70.6	-95.43	-3,467.9	1,251.1	918.2	782.3	135.89	6.756	
8,900.0	5,770.1	9,337.9	5,857.0	69.0	72.3	-95.44	-3,567.9	1,251.1	917.8	778.3	139.57	6.576	
9,000.0	5,770.1	9,437.9	5,857.0	70.8	74.0	-95.44	-3,667.9	1,251.1	917.5	774.2	143.25	6.405	
9,100.0	5,770.1	9,537.9	5,857.0	72.7	75.7	-95.44	-3,767.9	1,251.1	917.2	770.2	146.94	6.242	

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2206B - HZ - Plan #1													Offset Site Error: 0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
9,200.0	5,770.1	9,637.9	5,857.0	74.6	77.4	-95.44	-3,867.9	1,251.1	916.8	766.2	150.63	6.086	
9,300.0	5,770.1	9,737.9	5,857.0	76.5	79.1	-95.44	-3,967.9	1,251.1	916.5	762.2	154.34	5.938	
9,400.0	5,770.1	9,837.9	5,857.0	78.4	80.9	-95.45	-4,067.9	1,251.1	916.2	758.1	158.04	5.797	
9,500.0	5,770.1	9,937.9	5,857.0	80.2	82.6	-95.45	-4,167.9	1,251.1	915.8	754.1	161.76	5.662	
9,600.0	5,770.1	10,037.9	5,857.0	82.1	84.4	-95.45	-4,267.9	1,251.1	915.5	750.0	165.47	5.533	
9,700.0	5,770.1	10,137.9	5,857.0	84.0	86.1	-95.45	-4,367.9	1,251.1	915.2	746.0	169.19	5.409	
9,800.0	5,770.1	10,237.9	5,857.0	85.9	87.9	-95.45	-4,467.9	1,251.1	914.9	741.9	172.92	5.291	
9,900.0	5,770.1	10,337.9	5,857.0	87.8	89.7	-95.46	-4,567.9	1,251.1	914.5	737.9	176.65	5.177	
10,000.0	5,770.1	10,437.9	5,857.0	89.7	91.4	-95.46	-4,667.9	1,251.1	914.2	733.8	180.38	5.068	
10,100.0	5,770.0	10,537.9	5,857.0	91.6	93.1	-95.46	-4,767.9	1,251.1	913.9	729.9	184.00	4.967	
10,108.9	5,770.0	10,543.8	5,857.0	91.7	93.2	-95.46	-4,773.8	1,251.1	913.8	729.7	184.19	4.962	
10,200.0	5,770.0	10,543.8	5,857.0	93.5	93.2	-95.46	-4,773.8	1,251.1	918.4	732.5	185.91	4.940	
10,300.0	5,770.0	10,543.8	5,857.0	95.4	93.2	-95.46	-4,773.8	1,251.1	933.6	745.9	187.73	4.973	
10,400.0	5,770.0	10,543.8	5,857.0	97.3	93.2	-95.46	-4,773.8	1,251.1	959.1	769.5	189.55	5.060	
10,500.0	5,770.0	10,543.8	5,857.0	99.2	93.2	-95.46	-4,773.8	1,251.1	994.0	802.7	191.37	5.194	
10,600.0	5,770.0	10,543.8	5,857.0	101.1	93.2	-95.46	-4,773.8	1,251.1	1,037.5	844.3	193.19	5.370	
10,700.0	5,770.0	10,543.8	5,857.0	103.0	93.2	-95.46	-4,773.8	1,251.1	1,088.4	893.3	195.01	5.581	
10,800.0	5,770.0	10,543.8	5,857.0	104.9	93.2	-95.46	-4,773.8	1,251.1	1,145.8	948.9	196.83	5.821	
10,900.0	5,770.0	10,543.8	5,857.0	106.8	93.2	-95.46	-4,773.8	1,251.1	1,208.7	1,010.0	198.66	6.084	
11,000.0	5,770.0	10,543.8	5,857.0	108.7	93.2	-95.46	-4,773.8	1,251.1	1,276.4	1,075.9	200.48	6.367	
11,100.0	5,770.0	10,543.8	5,857.0	110.6	93.2	-95.46	-4,773.8	1,251.1	1,348.1	1,145.8	202.30	6.664	
11,200.0	5,770.0	10,543.8	5,857.0	112.5	93.2	-95.46	-4,773.8	1,251.1	1,423.2	1,219.1	204.13	6.972	
11,300.0	5,770.0	10,543.8	5,857.0	114.4	93.2	-95.46	-4,773.8	1,251.1	1,501.3	1,295.3	205.95	7.290	
11,400.0	5,770.0	10,543.8	5,857.0	116.3	93.2	-95.46	-4,773.8	1,251.1	1,581.8	1,374.0	207.78	7.613	
11,500.0	5,770.0	10,543.8	5,857.0	118.2	93.2	-95.46	-4,773.8	1,251.1	1,664.4	1,454.8	209.60	7.941	
11,600.0	5,770.0	10,543.8	5,857.0	120.1	93.2	-95.46	-4,773.8	1,251.1	1,748.9	1,537.4	211.43	8.272	
11,700.0	5,770.0	10,543.8	5,857.0	122.0	93.2	-95.46	-4,773.8	1,251.1	1,834.9	1,621.6	213.25	8.604	
11,800.0	5,770.0	10,543.8	5,857.0	123.9	93.2	-95.46	-4,773.8	1,251.1	1,922.2	1,707.1	215.08	8.937	
11,900.0	5,770.0	10,543.8	5,857.0	125.8	93.2	-95.46	-4,773.8	1,251.1	2,010.8	1,793.9	216.91	9.270	
12,000.0	5,770.0	10,543.8	5,857.0	127.7	93.2	-95.46	-4,773.8	1,251.1	2,100.3	1,881.6	218.73	9.602	
12,100.0	5,770.0	10,543.8	5,857.0	129.6	93.2	-95.46	-4,773.8	1,251.1	2,190.8	1,970.2	220.56	9.933	
12,200.0	5,770.0	10,543.8	5,857.0	131.5	93.2	-95.46	-4,773.8	1,251.1	2,282.1	2,059.7	222.39	10.262	
12,300.0	5,770.0	10,543.8	5,857.0	133.4	93.2	-95.46	-4,773.8	1,251.1	2,374.0	2,149.8	224.22	10.588	
12,400.0	5,770.0	10,543.8	5,857.0	135.3	93.2	-95.46	-4,773.8	1,251.1	2,466.6	2,240.6	226.05	10.912	
12,500.0	5,770.0	10,543.8	5,857.0	137.2	93.2	-95.46	-4,773.8	1,251.1	2,559.8	2,331.9	227.87	11.233	
12,600.0	5,770.0	10,543.8	5,857.0	139.1	93.2	-95.46	-4,773.8	1,251.1	2,653.4	2,423.7	229.70	11.552	
12,700.0	5,770.0	10,543.8	5,857.0	141.0	93.2	-95.46	-4,773.8	1,251.1	2,747.5	2,516.0	231.53	11.867	
12,788.9	5,770.0	10,543.8	5,857.0	142.4	93.2	-95.46	-4,773.8	1,251.1	2,831.5	2,598.7	232.85	12.160	



<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2207A - HZ - Plan #1													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	88.94	1.2	66.1	66.1					
100.0	100.0	100.0	100.0	0.1	0.1	88.94	1.2	66.1	66.1	66.0	0.19	352.416		
200.0	200.0	200.0	200.0	0.3	0.3	88.94	1.2	66.1	66.1	65.5	0.64	103.798		
300.0	300.0	300.0	300.0	0.5	0.5	88.94	1.2	66.1	66.1	65.1	1.09	60.862		
400.0	400.0	400.0	400.0	0.8	0.8	88.94	1.2	66.1	66.1	64.6	1.54	43.053		
500.0	500.0	500.0	500.0	1.0	1.0	88.94	1.2	66.1	66.1	64.2	1.99	33.307		
566.7	566.7	566.7	566.7	1.1	1.1	88.94	1.2	66.1	66.1	63.9	2.29	28.940 CC		
600.0	600.0	600.0	600.0	1.2	1.2	88.94	1.2	66.1	66.1	63.7	2.44	27.159 ES		
700.0	700.0	699.2	699.2	1.4	1.4	90.33	-0.4	66.7	66.7	63.9	2.86	23.359		
800.0	800.0	798.2	798.0	1.7	1.6	94.36	-5.2	68.5	68.7	65.4	3.26	21.042		
900.0	900.0	897.9	897.5	1.9	1.8	99.42	-11.8	70.9	71.9	68.2	3.69	19.483		
1,000.0	1,000.0	997.7	997.0	2.1	2.0	104.02	-18.3	73.2	75.5	71.4	4.12	18.337		
1,100.0	1,100.0	1,097.4	1,096.6	2.3	2.2	108.18	-24.8	75.6	79.7	75.1	4.56	17.485		
1,200.0	1,200.0	1,195.8	1,194.6	2.6	2.5	110.93	-30.3	79.2	85.0	80.0	4.99	17.020		
1,300.0	1,300.0	1,295.1	1,293.7	2.8	2.7	111.99	-34.3	84.9	91.7	86.3	5.43	16.882		
1,400.0	1,400.0	1,394.9	1,393.3	3.0	3.0	-50.19	-38.2	90.6	97.4	91.6	5.86	16.620		
1,500.0	1,499.8	1,494.8	1,493.0	3.2	3.2	-51.59	-42.1	96.4	100.9	94.7	6.26	16.135		
1,600.0	1,599.6	1,594.7	1,592.6	3.3	3.4	-53.71	-46.0	102.1	103.5	96.8	6.67	15.518		
1,700.0	1,699.4	1,694.6	1,692.3	3.5	3.7	-55.74	-49.9	107.9	106.1	99.0	7.09	14.966		
1,800.0	1,799.1	1,794.5	1,792.0	3.7	3.9	-57.66	-53.9	113.7	108.9	101.4	7.53	14.473		
1,900.0	1,898.9	1,894.4	1,891.6	4.0	4.2	-59.48	-57.8	119.4	111.8	103.8	7.97	14.031		
2,000.0	1,998.6	1,994.3	1,991.3	4.2	4.4	-61.21	-61.7	125.2	114.8	106.4	8.42	13.634		
2,100.0	2,098.4	2,094.2	2,090.9	4.4	4.7	-62.84	-65.6	130.9	117.9	109.0	8.88	13.278		
2,200.0	2,198.1	2,194.1	2,190.6	4.6	5.0	-64.40	-69.5	136.7	121.1	111.8	9.35	12.957		
2,300.0	2,297.9	2,294.0	2,290.2	4.9	5.2	-65.87	-73.5	142.5	124.4	114.6	9.82	12.668		
2,400.0	2,397.6	2,393.9	2,389.9	5.1	5.5	-67.27	-77.4	148.2	127.8	117.5	10.30	12.407		
2,500.0	2,497.4	2,493.8	2,489.5	5.3	5.7	-68.59	-81.3	154.0	131.2	120.4	10.78	12.170		
2,600.0	2,597.2	2,593.7	2,589.2	5.6	6.0	-69.85	-85.2	159.7	134.7	123.4	11.27	11.955		
2,700.0	2,696.9	2,693.6	2,688.8	5.8	6.2	-71.04	-89.1	165.5	138.3	126.5	11.76	11.759		
2,800.0	2,796.7	2,793.5	2,788.5	6.1	6.5	-72.17	-93.1	171.3	141.9	129.6	12.25	11.581		
2,900.0	2,896.4	2,893.4	2,888.1	6.3	6.8	-73.25	-97.0	177.0	145.6	132.8	12.75	11.418		
3,000.0	2,996.2	2,993.3	2,987.8	6.5	7.0	-74.27	-100.9	182.8	149.3	136.0	13.25	11.269		
3,100.0	3,095.9	3,093.2	3,087.4	6.8	7.3	-75.24	-104.8	188.6	153.1	139.3	13.75	11.131		
3,200.0	3,195.7	3,193.1	3,187.1	7.0	7.5	-76.16	-108.7	194.3	156.9	142.6	14.25	11.005		
3,300.0	3,295.5	3,293.0	3,286.7	7.3	7.8	-77.04	-112.7	200.1	160.7	145.9	14.76	10.889		
3,400.0	3,395.2	3,392.9	3,386.4	7.5	8.1	-77.88	-116.6	205.8	164.6	149.3	15.26	10.782		
3,500.0	3,495.0	3,492.8	3,486.1	7.8	8.3	-78.68	-120.5	211.6	168.5	152.7	15.77	10.683		
3,600.0	3,594.7	3,592.7	3,585.7	8.1	8.6	-79.45	-124.4	217.4	172.5	156.2	16.28	10.591		
3,700.0	3,694.5	3,692.5	3,685.4	8.3	8.8	-80.18	-128.3	223.1	176.4	159.6	16.79	10.506		
3,800.0	3,794.2	3,792.4	3,785.0	8.6	9.1	-80.88	-132.3	228.9	180.4	163.1	17.31	10.427		
3,900.0	3,894.0	3,892.3	3,884.7	8.8	9.4	-81.54	-136.2	234.6	184.5	166.6	17.82	10.353		
4,000.0	3,993.7	3,992.2	3,984.3	9.1	9.6	-82.18	-140.1	240.4	188.5	170.2	18.33	10.284		
4,100.0	4,093.5	4,092.1	4,084.0	9.3	9.9	-82.79	-144.0	246.2	192.6	173.7	18.85	10.220		
4,200.0	4,193.3	4,192.0	4,183.6	9.6	10.1	-83.38	-147.9	251.9	196.7	177.3	19.36	10.159		
4,300.0	4,293.0	4,291.9	4,283.3	9.8	10.4	-83.94	-151.9	257.7	200.8	180.9	19.88	10.103		
4,400.0	4,392.8	4,391.8	4,382.9	10.1	10.7	-84.48	-155.8	263.5	204.9	184.5	20.39	10.050		
4,500.0	4,492.5	4,491.7	4,482.6	10.4	10.9	-85.00	-159.7	269.2	209.1	188.2	20.91	10.000		
4,600.0	4,592.3	4,591.6	4,582.2	10.6	11.2	-85.50	-163.6	275.0	213.3	191.8	21.43	9.954		
4,700.0	4,692.0	4,691.5	4,681.9	10.9	11.5	-85.98	-167.5	280.7	217.4	195.5	21.94	9.910		
4,800.0	4,791.8	4,791.4	4,781.5	11.1	11.7	-86.44	-171.5	286.5	221.6	199.2	22.46	9.868		
4,900.0	4,891.6	4,891.3	4,881.2	11.4	12.0	-86.88	-175.4	292.3	225.9	202.9	22.98	9.829		
5,000.0	4,991.3	4,991.2	4,980.8	11.7	12.2	-87.31	-179.3	298.0	230.1	206.6	23.50	9.792		

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2207A - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,091.1	5,091.1	5,080.5	11.9	12.5	-87.72	-183.2	303.8	234.3	210.3	24.02	9.757	
5,200.0	5,190.8	5,191.0	5,180.1	12.2	12.8	-88.12	-187.1	309.5	238.6	214.0	24.53	9.724	
5,295.0	5,285.6	5,285.9	5,274.8	12.4	13.0	-88.48	-190.9	315.0	242.6	217.6	25.03	9.694	
5,300.0	5,290.6	5,290.9	5,279.8	12.4	13.0	-88.48	-191.1	315.3	242.8	217.8	25.05	9.693	
5,350.0	5,340.2	5,330.6	5,319.3	12.6	13.1	-88.62	-193.2	318.5	245.8	220.5	25.32	9.708	
5,400.0	5,388.9	5,368.8	5,357.0	12.8	13.3	-88.84	-196.9	323.9	251.0	225.4	25.64	9.789	
5,450.0	5,436.3	5,406.7	5,393.7	13.0	13.4	-89.10	-202.1	331.5	258.5	232.4	26.02	9.932	
5,500.0	5,482.1	5,444.1	5,429.2	13.3	13.6	-89.35	-208.6	341.1	268.1	241.6	26.46	10.133	
5,550.0	5,525.7	5,480.9	5,463.3	13.6	13.8	-89.56	-216.5	352.7	279.9	253.0	26.96	10.383	
5,600.0	5,566.7	5,517.2	5,495.8	14.0	14.1	-89.68	-225.5	366.0	293.9	266.4	27.52	10.680	
5,650.0	5,604.8	5,550.0	5,524.2	14.4	14.3	-89.51	-234.8	379.5	309.9	281.8	28.12	11.023	
5,700.0	5,639.7	5,587.8	5,555.5	14.9	14.6	-89.48	-246.6	397.0	327.9	299.1	28.82	11.376	
5,750.0	5,670.9	5,622.0	5,582.6	15.4	14.9	-89.12	-258.5	414.4	347.7	318.1	29.57	11.759	
5,800.0	5,698.3	5,655.7	5,607.7	16.0	15.2	-88.57	-271.0	432.9	369.2	338.8	30.37	12.156	
5,850.0	5,721.5	5,688.7	5,630.9	16.6	15.5	-87.81	-284.2	452.3	392.3	361.0	31.23	12.558	
5,900.0	5,740.4	5,721.1	5,652.2	17.2	15.9	-86.87	-298.0	472.5	416.7	384.6	32.15	12.961	
5,950.0	5,754.8	5,750.0	5,669.9	18.0	16.2	-85.53	-310.8	491.4	442.4	409.3	33.07	13.379	
6,000.0	5,764.5	5,784.7	5,689.4	18.7	16.7	-84.46	-327.0	515.1	469.1	435.0	34.10	13.757	
6,050.0	5,769.4	5,816.0	5,705.3	19.5	17.1	-83.04	-342.2	537.4	496.8	461.6	35.12	14.144	
6,076.8	5,770.1	5,832.8	5,713.2	19.9	17.3	-82.23	-350.5	549.6	511.9	476.2	35.68	14.347	
6,100.0	5,770.1	5,847.4	5,719.6	20.2	17.5	-83.18	-357.9	560.5	525.3	489.1	36.18	14.519	
6,200.0	5,770.1	5,913.0	5,744.0	21.6	18.5	-86.62	-392.1	610.8	587.6	549.5	38.14	15.408	
6,300.0	5,770.1	5,981.1	5,760.9	23.0	19.7	-88.87	-429.2	665.2	655.7	615.7	39.98	16.401	
6,400.0	5,770.1	6,049.0	5,769.2	24.5	20.9	-89.89	-467.1	721.0	727.9	686.2	41.70	17.456	
6,500.0	5,770.1	6,140.1	5,770.0	26.1	22.5	-89.99	-519.1	795.7	803.1	759.6	43.53	18.452	
6,600.0	5,770.1	6,258.0	5,770.0	27.6	24.7	-89.99	-591.5	888.8	878.3	832.8	45.48	19.313	
6,658.7	5,770.1	6,332.0	5,770.0	28.5	26.1	-89.99	-639.8	944.9	922.1	875.4	46.63	19.775	
6,700.0	5,770.1	6,387.2	5,770.0	29.2	27.1	-89.99	-677.1	985.4	952.3	904.4	47.89	19.887	
6,800.0	5,770.1	6,535.9	5,770.0	30.9	30.0	-89.99	-783.6	1,089.2	1,022.0	970.5	51.41	19.877	
6,900.0	5,770.1	6,708.7	5,770.0	32.6	33.4	-89.99	-917.0	1,199.0	1,085.3	1,029.4	55.87	19.424	
7,000.0	5,770.1	6,908.3	5,770.0	34.3	37.2	-89.99	-1,082.6	1,310.1	1,140.8	1,079.7	61.09	18.673	
7,100.0	5,770.1	7,135.9	5,770.0	36.0	41.3	-89.99	-1,284.5	1,415.1	1,186.7	1,119.6	67.07	17.692	
7,200.0	5,770.1	7,390.3	5,770.0	37.8	45.7	-89.99	-1,523.0	1,502.9	1,221.1	1,147.4	73.68	16.572	
7,300.0	5,770.1	7,665.8	5,770.0	39.5	50.0	-89.99	-1,792.0	1,561.5	1,242.0	1,161.4	80.63	15.404	
7,400.0	5,770.1	7,942.7	5,770.0	41.3	54.0	-90.00	-2,067.9	1,580.8	1,248.4	1,161.1	87.37	14.290	
7,500.0	5,770.1	8,042.7	5,770.0	43.1	55.3	-90.00	-2,167.9	1,580.8	1,248.1	1,157.3	90.82	13.742	
7,600.0	5,770.1	8,142.7	5,770.0	44.9	56.7	-90.00	-2,267.9	1,580.8	1,247.8	1,153.5	94.29	13.234	
7,700.0	5,770.1	8,242.7	5,770.0	46.7	58.0	-90.00	-2,367.9	1,580.8	1,247.5	1,149.7	97.78	12.758	
7,800.0	5,770.1	8,342.7	5,770.0	48.6	59.4	-90.00	-2,467.9	1,580.8	1,247.1	1,145.8	101.29	12.312	
7,900.0	5,770.1	8,442.7	5,770.0	50.4	60.9	-90.00	-2,567.9	1,580.8	1,246.8	1,142.0	104.83	11.893	
8,000.0	5,770.1	8,542.7	5,770.0	52.2	62.3	-90.00	-2,667.9	1,580.8	1,246.5	1,138.1	108.39	11.500	
8,100.0	5,770.1	8,642.7	5,770.0	54.1	63.8	-90.00	-2,767.9	1,580.8	1,246.1	1,134.2	111.97	11.130	
8,200.0	5,770.1	8,742.7	5,770.0	55.9	65.3	-90.00	-2,867.9	1,580.8	1,245.8	1,130.2	115.56	10.781	
8,300.0	5,770.1	8,842.7	5,770.0	57.8	66.8	-90.00	-2,967.9	1,580.8	1,245.5	1,126.3	119.17	10.451	
8,400.0	5,770.1	8,942.7	5,770.0	59.6	68.4	-90.00	-3,067.9	1,580.8	1,245.1	1,122.4	122.79	10.140	
8,500.0	5,770.1	9,042.7	5,770.0	61.5	69.9	-90.00	-3,167.9	1,580.8	1,244.8	1,118.4	126.42	9.846	
8,600.0	5,770.1	9,142.7	5,770.0	63.4	71.5	-90.00	-3,267.9	1,580.8	1,244.5	1,114.4	130.07	9.568	
8,700.0	5,770.1	9,242.7	5,770.0	65.2	73.1	-90.00	-3,367.9	1,580.8	1,244.1	1,110.4	133.73	9.304	
8,800.0	5,770.1	9,342.7	5,770.0	67.1	74.7	-90.00	-3,467.9	1,580.8	1,243.8	1,106.4	137.39	9.053	
8,900.0	5,770.1	9,442.7	5,770.0	69.0	76.3	-90.00	-3,567.9	1,580.8	1,243.5	1,102.4	141.07	8.815	
9,000.0	5,770.1	9,542.7	5,770.0	70.8	78.0	-90.00	-3,667.9	1,580.9	1,243.2	1,098.4	144.75	8.588	
9,100.0	5,770.1	9,642.7	5,770.0	72.7	79.6	-90.00	-3,767.9	1,580.9	1,242.8	1,094.4	148.44	8.372	

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



<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2207A - HZ - Plan #1										Offset Site Error: 0.0 usft			
Survey Program: 0-ISCWSA MWD										Offset Well Error: 0.0 usft			
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis		Separation Factor
9,200.0	5,770.1	9,742.7	5,770.0	74.6	81.3	-90.00	-3,867.9	1,580.9	1,242.5	1,090.4	152.14	8.167	
9,300.0	5,770.1	9,842.7	5,770.0	76.5	82.9	-90.00	-3,967.9	1,580.9	1,242.2	1,086.3	155.85	7.970	
9,400.0	5,770.1	9,942.7	5,770.0	78.4	84.6	-90.00	-4,067.9	1,580.9	1,241.8	1,082.3	159.56	7.783	
9,500.0	5,770.1	10,042.7	5,770.0	80.2	86.3	-90.00	-4,167.9	1,580.9	1,241.5	1,078.2	163.28	7.604	
9,600.0	5,770.1	10,142.7	5,770.0	82.1	88.0	-90.00	-4,267.9	1,580.9	1,241.2	1,074.2	167.00	7.432	
9,700.0	5,770.1	10,242.7	5,770.0	84.0	89.7	-90.00	-4,367.9	1,580.9	1,240.8	1,070.1	170.72	7.268	
9,800.0	5,770.1	10,342.7	5,770.0	85.9	91.4	-90.00	-4,467.9	1,580.9	1,240.5	1,066.1	174.46	7.111	
9,900.0	5,770.1	10,442.7	5,770.0	87.8	93.2	-90.00	-4,567.9	1,580.9	1,240.2	1,062.0	178.19	6.960	
10,000.0	5,770.1	10,542.7	5,770.0	89.7	94.9	-90.00	-4,667.9	1,580.9	1,239.8	1,057.9	181.93	6.815	
10,098.7	5,770.0	10,637.3	5,770.0	91.6	96.5	-90.00	-4,762.6	1,580.9	1,239.5	1,054.0	185.55	6.680	
10,100.0	5,770.0	10,637.3	5,770.0	91.6	96.5	-90.00	-4,762.6	1,580.9	1,239.5	1,054.0	185.57	6.679	
10,200.0	5,770.0	10,637.3	5,770.0	93.5	96.5	-90.00	-4,762.6	1,580.9	1,243.7	1,056.3	187.40	6.636	
10,300.0	5,770.0	10,637.3	5,770.0	95.4	96.5	-90.00	-4,762.6	1,580.9	1,255.8	1,066.5	189.22	6.636	SF
10,400.0	5,770.0	10,637.3	5,770.0	97.3	96.5	-90.00	-4,762.6	1,580.9	1,275.6	1,084.6	191.05	6.677	
10,500.0	5,770.0	10,637.3	5,770.0	99.2	96.5	-90.00	-4,762.6	1,580.9	1,302.8	1,110.0	192.88	6.755	
10,600.0	5,770.0	10,637.3	5,770.0	101.1	96.5	-90.00	-4,762.6	1,580.9	1,337.0	1,142.3	194.71	6.867	
10,700.0	5,770.0	10,637.3	5,770.0	103.0	96.5	-90.00	-4,762.6	1,580.9	1,377.6	1,181.1	196.53	7.010	
10,800.0	5,770.0	10,637.3	5,770.0	104.9	96.5	-90.00	-4,762.6	1,580.9	1,424.1	1,225.8	198.36	7.179	
10,900.0	5,770.0	10,637.3	5,770.0	106.8	96.5	-90.00	-4,762.6	1,580.9	1,475.9	1,275.7	200.19	7.373	
11,000.0	5,770.0	10,637.3	5,770.0	108.7	96.5	-90.00	-4,762.6	1,580.9	1,532.5	1,330.5	202.02	7.586	
11,100.0	5,770.0	10,637.3	5,770.0	110.6	96.5	-90.00	-4,762.6	1,580.9	1,593.4	1,389.5	203.85	7.816	
11,200.0	5,770.0	10,637.3	5,770.0	112.5	96.5	-90.00	-4,762.6	1,580.9	1,658.0	1,452.4	205.69	8.061	
11,300.0	5,770.0	10,637.3	5,770.0	114.4	96.5	-90.00	-4,762.6	1,580.9	1,726.1	1,518.6	207.52	8.318	
11,400.0	5,770.0	10,637.3	5,770.0	116.3	96.5	-90.00	-4,762.6	1,580.9	1,797.1	1,587.8	209.35	8.584	
11,500.0	5,770.0	10,637.3	5,770.0	118.2	96.5	-90.00	-4,762.6	1,580.9	1,870.8	1,659.6	211.18	8.859	
11,600.0	5,770.0	10,637.3	5,770.0	120.1	96.5	-90.00	-4,762.6	1,580.9	1,946.8	1,733.8	213.01	9.139	
11,700.0	5,770.0	10,637.3	5,770.0	122.0	96.5	-90.00	-4,762.6	1,580.9	2,024.9	1,810.1	214.85	9.425	
11,800.0	5,770.0	10,637.3	5,770.0	123.9	96.5	-90.00	-4,762.6	1,580.9	2,104.9	1,888.2	216.68	9.714	
11,900.0	5,770.0	10,637.3	5,770.0	125.8	96.5	-90.00	-4,762.6	1,580.9	2,186.5	1,968.0	218.52	10.006	
12,000.0	5,770.0	10,637.3	5,770.0	127.7	96.5	-90.00	-4,762.6	1,580.9	2,269.6	2,049.2	220.35	10.300	
12,100.0	5,770.0	10,637.3	5,770.0	129.6	96.5	-90.00	-4,762.6	1,580.9	2,354.0	2,131.8	222.18	10.595	
12,200.0	5,770.0	10,637.3	5,770.0	131.5	96.5	-90.00	-4,762.6	1,580.9	2,439.6	2,215.6	224.02	10.890	
12,300.0	5,770.0	10,637.3	5,770.0	133.4	96.5	-90.00	-4,762.6	1,580.9	2,526.2	2,300.4	225.86	11.185	
12,400.0	5,770.0	10,637.3	5,770.0	135.3	96.5	-90.00	-4,762.6	1,580.9	2,613.8	2,386.1	227.69	11.480	
12,500.0	5,770.0	10,637.3	5,770.0	137.2	96.5	-90.00	-4,762.6	1,580.9	2,702.3	2,472.7	229.53	11.773	
12,600.0	5,770.0	10,637.3	5,770.0	139.1	96.5	-90.00	-4,762.6	1,580.9	2,791.5	2,560.1	231.36	12.066	
12,700.0	5,770.0	10,637.3	5,770.0	141.0	96.5	-90.00	-4,762.6	1,580.9	2,881.5	2,648.3	233.20	12.356	
12,788.9	5,770.0	10,637.3	5,770.0	142.4	96.5	-90.00	-4,762.6	1,580.9	2,961.9	2,727.4	234.52	12.630	

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2208B - HZ - Plan #1													Offset Site Error: 0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	137.55	-73.8	67.5	100.0				
100.0	100.0	100.0	100.0	0.1	0.1	137.55	-73.8	67.5	100.0	99.9	0.19	533.031	
166.7	166.7	166.7	166.7	0.2	0.2	137.55	-73.8	67.5	100.0	99.6	0.49	205.265 CC	
200.0	200.0	200.0	200.0	0.3	0.3	137.55	-73.8	67.5	100.0	99.4	0.64	156.996 ES	
300.0	300.0	298.1	298.1	0.5	0.5	136.75	-73.5	69.2	101.0	99.9	1.07	93.930	
400.0	400.0	396.0	395.9	0.8	0.8	134.43	-72.7	74.1	103.9	102.4	1.52	68.292	
500.0	500.0	495.7	495.3	1.0	1.0	131.43	-71.4	81.0	108.1	106.1	1.99	54.414	
600.0	600.0	595.4	594.8	1.2	1.2	128.65	-70.2	87.8	112.6	110.1	2.46	45.839	
700.0	700.0	695.2	694.3	1.4	1.5	126.10	-69.0	94.7	117.3	114.4	2.93	40.079	
800.0	800.0	795.0	793.8	1.7	1.7	123.74	-67.8	101.5	122.2	118.9	3.40	35.980	
900.0	900.0	894.7	893.3	1.9	2.0	121.58	-66.6	108.4	127.4	123.5	3.87	32.934	
1,000.0	1,000.0	994.5	992.9	2.1	2.3	119.58	-65.4	115.2	132.7	128.4	4.34	30.593	
1,100.0	1,100.0	1,094.2	1,092.4	2.3	2.5	117.74	-64.2	122.1	138.1	133.3	4.81	28.746	
1,200.0	1,200.0	1,192.5	1,190.5	2.6	2.7	116.63	-64.5	128.6	144.2	138.9	5.25	27.471	
1,300.0	1,300.0	1,291.8	1,289.5	2.8	3.0	116.56	-67.4	134.8	151.1	145.4	5.68	26.595	
1,400.0	1,400.0	1,391.6	1,389.0	3.0	3.2	-46.17	-70.5	141.1	156.9	150.9	5.99	26.188	
1,500.0	1,499.8	1,491.5	1,488.7	3.2	3.5	-47.45	-73.6	147.3	160.3	153.9	6.37	25.142	
1,600.0	1,599.6	1,591.3	1,588.3	3.3	3.7	-49.19	-76.7	153.5	162.6	155.8	6.77	24.015	
1,700.0	1,699.4	1,691.2	1,687.9	3.5	4.0	-50.87	-79.9	159.8	165.1	157.9	7.18	22.998	
1,800.0	1,799.1	1,791.0	1,787.5	3.7	4.2	-52.51	-83.0	166.0	167.7	160.1	7.60	22.079	
1,900.0	1,898.9	1,890.9	1,887.1	4.0	4.5	-54.09	-86.1	172.2	170.5	162.4	8.02	21.248	
2,000.0	1,998.6	1,990.7	1,986.7	4.2	4.7	-55.62	-89.2	178.5	173.3	164.9	8.46	20.496	
2,100.0	2,098.4	2,090.6	2,086.3	4.4	5.0	-57.10	-92.3	184.7	176.3	167.4	8.90	19.815	
2,200.0	2,198.1	2,190.4	2,185.9	4.6	5.2	-58.53	-95.4	190.9	179.5	170.1	9.35	19.195	
2,300.0	2,297.9	2,290.3	2,285.5	4.9	5.5	-59.91	-98.5	197.1	182.7	172.9	9.80	18.632	
2,400.0	2,397.6	2,390.1	2,385.1	5.1	5.8	-61.25	-101.7	203.4	186.0	175.7	10.27	18.119	
2,500.0	2,497.4	2,490.0	2,484.8	5.3	6.0	-62.53	-104.8	209.6	189.4	178.7	10.73	17.650	
2,600.0	2,597.2	2,589.8	2,584.4	5.6	6.3	-63.77	-107.9	215.8	192.9	181.7	11.20	17.220	
2,700.0	2,696.9	2,689.7	2,684.0	5.8	6.5	-64.96	-111.0	222.1	196.5	184.9	11.68	16.827	
2,800.0	2,796.7	2,789.5	2,783.6	6.1	6.8	-66.12	-114.1	228.3	200.2	188.1	12.16	16.466	
2,900.0	2,896.4	2,889.4	2,883.2	6.3	7.0	-67.22	-117.2	234.5	204.0	191.3	12.64	16.134	
3,000.0	2,996.2	2,989.3	2,982.8	6.5	7.3	-68.29	-120.3	240.8	207.8	194.7	13.13	15.827	
3,100.0	3,095.9	3,089.1	3,082.4	6.8	7.6	-69.32	-123.5	247.0	211.7	198.1	13.62	15.545	
3,200.0	3,195.7	3,189.0	3,182.0	7.0	7.8	-70.31	-126.6	253.2	215.7	201.6	14.11	15.283	
3,300.0	3,295.5	3,288.8	3,281.6	7.3	8.1	-71.27	-129.7	259.4	219.7	205.1	14.61	15.041	
3,400.0	3,395.2	3,388.7	3,381.2	7.5	8.3	-72.19	-132.8	265.7	223.8	208.7	15.11	14.816	
3,500.0	3,495.0	3,488.5	3,480.9	7.8	8.6	-73.08	-135.9	271.9	228.0	212.4	15.61	14.608	
3,600.0	3,594.7	3,588.4	3,580.5	8.1	8.9	-73.94	-139.0	278.1	232.2	216.1	16.11	14.414	
3,700.0	3,694.5	3,688.2	3,680.1	8.3	9.1	-74.76	-142.1	284.4	236.4	219.8	16.61	14.233	
3,800.0	3,794.2	3,788.1	3,779.7	8.6	9.4	-75.56	-145.3	290.6	240.7	223.6	17.12	14.064	
3,900.0	3,894.0	3,887.9	3,879.3	8.8	9.7	-76.33	-148.4	296.8	245.0	227.4	17.62	13.906	
4,000.0	3,993.7	3,987.8	3,978.9	9.1	9.9	-77.07	-151.5	303.1	249.4	231.3	18.13	13.758	
4,100.0	4,093.5	4,087.6	4,078.5	9.3	10.2	-77.78	-154.6	309.3	253.9	235.2	18.64	13.620	
4,200.0	4,193.3	4,187.5	4,178.1	9.6	10.4	-78.47	-157.7	315.5	258.3	239.2	19.15	13.491	
4,300.0	4,293.0	4,287.3	4,277.7	9.8	10.7	-79.14	-160.8	321.7	262.8	243.2	19.66	13.369	
4,400.0	4,392.8	4,387.2	4,377.3	10.1	11.0	-79.79	-163.9	328.0	267.3	247.2	20.17	13.254	
4,500.0	4,492.5	4,487.0	4,476.9	10.4	11.2	-80.41	-167.1	334.2	271.9	251.2	20.68	13.146	
4,600.0	4,592.3	4,586.9	4,576.6	10.6	11.5	-81.01	-170.2	340.4	276.5	255.3	21.20	13.045	
4,700.0	4,692.0	4,686.8	4,676.2	10.9	11.7	-81.59	-173.3	346.7	281.1	259.4	21.71	12.949	
4,800.0	4,791.8	4,786.6	4,775.8	11.1	12.0	-82.16	-176.4	352.9	285.8	263.6	22.23	12.859	
4,900.0	4,891.6	4,886.5	4,875.4	11.4	12.3	-82.70	-179.5	359.1	290.5	267.7	22.74	12.773	
5,000.0	4,991.3	4,986.3	4,975.0	11.7	12.5	-83.23	-182.6	365.4	295.2	271.9	23.26	12.692	

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2208B - HZ - Plan #1												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,091.1	5,086.2	5,074.6	11.9	12.8	-83.75	-185.7	371.6	299.9	276.1	23.77	12.616	
5,200.0	5,190.8	5,186.0	5,174.2	12.2	13.0	-84.24	-188.9	377.8	304.7	280.4	24.29	12.543	
5,295.0	5,285.6	5,280.9	5,268.8	12.4	13.3	-84.70	-191.8	383.7	309.2	284.4	24.78	12.478	
5,300.0	5,290.6	5,285.9	5,273.8	12.4	13.3	-84.70	-192.0	384.1	309.4	284.6	24.81	12.474	
5,350.0	5,340.2	5,335.6	5,323.5	12.6	13.4	-85.22	-193.5	387.2	311.6	286.5	25.10	12.414	
5,400.0	5,388.9	5,384.7	5,372.4	12.8	13.6	-86.60	-195.1	390.2	313.5	288.0	25.45	12.316	
5,450.0	5,436.3	5,418.2	5,405.7	13.0	13.7	-87.77	-196.6	393.3	316.6	290.8	25.81	12.268	
5,500.0	5,482.1	5,450.0	5,437.1	13.3	13.8	-88.82	-198.9	397.9	322.4	296.2	26.20	12.303	
5,550.0	5,525.7	5,483.9	5,470.1	13.6	13.9	-89.93	-202.3	404.8	330.9	304.2	26.67	12.409	
5,600.0	5,566.7	5,515.9	5,500.7	14.0	14.1	-90.78	-206.4	413.0	342.1	315.0	27.17	12.595	
5,650.0	5,604.8	5,550.0	5,532.7	14.4	14.2	-91.62	-211.7	423.6	356.2	328.5	27.73	12.847	
5,700.0	5,639.7	5,577.6	5,558.0	14.9	14.4	-91.76	-216.7	433.5	373.0	344.7	28.32	13.173	
5,750.0	5,670.9	5,607.2	5,584.4	15.4	14.6	-91.79	-222.7	445.5	392.5	363.5	28.97	13.547	
5,800.0	5,698.3	5,635.8	5,609.2	16.0	14.8	-91.47	-229.1	458.3	414.4	384.7	29.68	13.962	
5,850.0	5,721.5	5,663.5	5,632.4	16.6	15.0	-90.78	-235.8	471.8	438.7	408.2	30.45	14.408	
5,900.0	5,740.4	5,690.1	5,653.9	17.2	15.2	-89.71	-242.9	485.9	465.0	433.8	31.26	14.877	
5,950.0	5,754.8	5,715.8	5,673.8	18.0	15.5	-88.27	-250.1	500.3	493.3	461.2	32.11	15.363	
6,000.0	5,764.5	5,740.3	5,692.1	18.7	15.7	-86.46	-257.4	514.9	523.2	490.2	32.97	15.867	
6,050.0	5,769.4	5,763.8	5,708.9	19.5	16.0	-84.30	-264.8	529.7	554.5	520.7	33.83	16.390	
6,076.8	5,770.1	5,776.0	5,717.3	19.9	16.1	-83.01	-268.7	537.5	571.8	537.5	34.28	16.679	
6,100.0	5,770.1	5,786.5	5,724.4	20.2	16.2	-83.95	-272.2	544.5	587.1	552.4	34.70	16.920	
6,200.0	5,770.1	5,834.7	5,754.8	21.6	16.8	-87.99	-288.9	577.9	658.5	622.2	36.32	18.128	
6,300.0	5,770.1	5,887.0	5,783.7	23.0	17.4	-91.76	-308.3	616.8	736.1	698.3	37.80	19.471	
6,400.0	5,770.1	5,942.2	5,809.4	24.5	18.2	-95.01	-330.2	660.5	817.9	778.8	39.13	20.905	
6,500.0	5,770.1	5,998.7	5,830.1	26.1	19.1	-97.53	-353.7	707.5	902.9	862.5	40.32	22.392	
6,600.0	5,770.1	6,054.4	5,844.9	27.6	20.1	-99.29	-377.7	755.5	990.2	948.8	41.42	23.906	
6,658.7	5,770.1	6,086.0	5,850.7	28.5	20.6	-100.01	-391.5	783.3	1,042.4	1,000.4	42.03	24.801	
6,700.0	5,770.1	6,107.9	5,853.6	29.2	21.0	-99.95	-401.2	802.7	1,079.4	1,036.6	42.81	25.212	
6,800.0	5,770.1	6,161.6	5,856.9	30.9	22.0	-99.40	-425.2	850.7	1,168.6	1,123.8	44.84	26.064	
6,900.0	5,770.1	6,285.8	5,856.9	32.6	24.3	-97.81	-484.0	960.0	1,256.4	1,209.0	47.45	26.479	
7,000.0	5,770.1	6,454.5	5,856.9	34.3	27.6	-96.39	-575.1	1,102.0	1,340.3	1,289.7	50.58	26.500	
7,100.0	5,770.1	6,678.9	5,856.9	36.0	32.1	-95.22	-714.9	1,277.3	1,418.3	1,363.6	54.61	25.968	
7,200.0	5,770.1	6,981.2	5,856.9	37.8	38.1	-94.29	-933.9	1,485.3	1,487.0	1,426.5	60.53	24.565	
7,300.0	5,770.1	7,385.4	5,856.9	39.5	45.7	-93.61	-1,272.4	1,704.6	1,541.3	1,471.7	69.62	22.139	
7,400.0	5,770.1	7,896.1	5,856.9	41.3	54.0	-93.22	-1,753.3	1,872.2	1,574.1	1,492.9	81.17	19.392	
7,500.0	5,770.1	8,313.5	5,856.9	43.1	59.5	-93.15	-2,168.1	1,910.9	1,580.6	1,490.2	90.45	17.475	
7,600.0	5,770.1	8,413.5	5,856.9	44.9	60.7	-93.15	-2,268.1	1,910.9	1,580.3	1,486.4	93.86	16.837	
7,700.0	5,770.1	8,513.5	5,856.9	46.7	62.0	-93.15	-2,368.1	1,910.9	1,579.9	1,482.6	97.30	16.238	
7,800.0	5,770.1	8,613.5	5,856.9	48.6	63.3	-93.15	-2,468.1	1,910.9	1,579.6	1,478.8	100.76	15.676	
7,900.0	5,770.1	8,713.5	5,856.9	50.4	64.6	-93.15	-2,568.1	1,910.8	1,579.2	1,475.0	104.26	15.148	
8,000.0	5,770.1	8,813.5	5,856.9	52.2	65.9	-93.15	-2,668.1	1,910.8	1,578.9	1,471.1	107.77	14.650	
8,100.0	5,770.1	8,913.5	5,856.9	54.1	67.2	-93.15	-2,768.1	1,910.8	1,578.6	1,467.3	111.31	14.182	
8,200.0	5,770.1	9,013.5	5,857.0	55.9	68.6	-93.16	-2,868.1	1,910.8	1,578.2	1,463.4	114.86	13.740	
8,300.0	5,770.1	9,113.5	5,857.0	57.8	70.0	-93.16	-2,968.1	1,910.8	1,577.9	1,459.4	118.44	13.323	
8,400.0	5,770.1	9,213.5	5,857.0	59.6	71.4	-93.16	-3,068.1	1,910.8	1,577.5	1,455.5	122.02	12.928	
8,500.0	5,770.1	9,313.5	5,857.0	61.5	72.9	-93.16	-3,168.1	1,910.8	1,577.2	1,451.6	125.63	12.555	
8,600.0	5,770.1	9,413.5	5,857.0	63.4	74.3	-93.16	-3,268.1	1,910.8	1,576.9	1,447.6	129.24	12.201	
8,700.0	5,770.1	9,513.5	5,857.0	65.2	75.8	-93.16	-3,368.1	1,910.8	1,576.5	1,443.6	132.87	11.865	
8,800.0	5,770.1	9,613.5	5,857.0	67.1	77.3	-93.16	-3,468.1	1,910.8	1,576.2	1,439.7	136.51	11.546	
8,900.0	5,770.1	9,713.5	5,857.0	69.0	78.8	-93.16	-3,568.1	1,910.8	1,575.8	1,435.7	140.16	11.243	
9,000.0	5,770.1	9,813.5	5,857.0	70.8	80.4	-93.16	-3,668.1	1,910.8	1,575.5	1,431.7	143.81	10.955	
9,100.0	5,770.1	9,913.5	5,857.0	72.7	81.9	-93.16	-3,768.1	1,910.8	1,575.1	1,427.7	147.48	10.680	

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2208B - HZ - Plan #1													Offset Site Error: 0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,200.0	5,770.1	10,013.5	5,857.0	74.6	83.5	-93.16	-3,868.1	1,910.8	1,574.8	1,423.6	151.16	10.418	
9,300.0	5,770.1	10,113.5	5,857.0	76.5	85.1	-93.16	-3,968.1	1,910.8	1,574.5	1,419.6	154.84	10.168	
9,400.0	5,770.1	10,213.5	5,857.0	78.4	86.7	-93.17	-4,068.1	1,910.8	1,574.1	1,415.6	158.53	9.930	
9,500.0	5,770.1	10,313.5	5,857.0	80.2	88.3	-93.17	-4,168.1	1,910.7	1,573.8	1,411.6	162.22	9.701	
9,600.0	5,770.1	10,413.5	5,857.0	82.1	89.9	-93.17	-4,268.1	1,910.7	1,573.4	1,407.5	165.92	9.483	
9,700.0	5,770.1	10,513.5	5,857.0	84.0	91.5	-93.17	-4,368.1	1,910.7	1,573.1	1,403.5	169.63	9.274	
9,800.0	5,770.1	10,613.5	5,857.0	85.9	93.2	-93.17	-4,468.1	1,910.7	1,572.7	1,399.4	173.34	9.073	
9,900.0	5,770.1	10,713.5	5,857.0	87.8	94.8	-93.17	-4,568.1	1,910.7	1,572.4	1,395.3	177.06	8.880	
10,000.0	5,770.1	10,813.5	5,857.0	89.7	96.5	-93.17	-4,668.1	1,910.7	1,572.1	1,391.3	180.79	8.696	
10,082.1	5,770.0	10,895.7	5,857.0	91.2	97.9	-93.17	-4,750.2	1,910.7	1,571.8	1,387.9	183.83	8.550	
10,100.0	5,770.0	10,897.2	5,857.0	91.6	97.9	-93.17	-4,751.7	1,910.7	1,571.8	1,387.6	184.20	8.533	
10,200.0	5,770.0	10,897.2	5,857.0	93.5	97.9	-93.17	-4,751.7	1,910.7	1,575.7	1,389.7	186.02	8.470	
10,300.0	5,770.0	10,897.2	5,857.0	95.4	97.9	-93.17	-4,751.7	1,910.7	1,585.9	1,398.0	187.85	8.442 SF	
10,400.0	5,770.0	10,897.2	5,857.0	97.3	97.9	-93.17	-4,751.7	1,910.7	1,602.2	1,412.6	189.67	8.448	
10,500.0	5,770.0	10,897.2	5,857.0	99.2	97.9	-93.17	-4,751.7	1,910.7	1,624.6	1,433.1	191.49	8.484	
10,600.0	5,770.0	10,897.2	5,857.0	101.1	97.9	-93.17	-4,751.7	1,910.7	1,652.7	1,459.4	193.32	8.549	
10,700.0	5,770.0	10,897.2	5,857.0	103.0	97.9	-93.17	-4,751.7	1,910.7	1,686.3	1,491.2	195.15	8.641	
10,800.0	5,770.0	10,897.2	5,857.0	104.9	97.9	-93.17	-4,751.7	1,910.7	1,725.1	1,528.1	196.97	8.758	
10,900.0	5,770.0	10,897.2	5,857.0	106.8	97.9	-93.17	-4,751.7	1,910.7	1,768.7	1,569.9	198.80	8.897	
11,000.0	5,770.0	10,897.2	5,857.0	108.7	97.9	-93.17	-4,751.7	1,910.7	1,816.7	1,616.1	200.63	9.055	
11,100.0	5,770.0	10,897.2	5,857.0	110.6	97.9	-93.17	-4,751.7	1,910.7	1,868.8	1,666.4	202.46	9.231	
11,200.0	5,770.0	10,897.2	5,857.0	112.5	97.9	-93.17	-4,751.7	1,910.7	1,924.8	1,720.5	204.28	9.422	
11,300.0	5,770.0	10,897.2	5,857.0	114.4	97.9	-93.17	-4,751.7	1,910.7	1,984.2	1,778.1	206.11	9.627	
11,400.0	5,770.0	10,897.2	5,857.0	116.3	97.9	-93.17	-4,751.7	1,910.7	2,046.7	1,838.8	207.94	9.843	
11,500.0	5,770.0	10,897.2	5,857.0	118.2	97.9	-93.17	-4,751.7	1,910.7	2,112.2	1,902.4	209.77	10.069	
11,600.0	5,770.0	10,897.2	5,857.0	120.1	97.9	-93.17	-4,751.7	1,910.7	2,180.3	1,968.6	211.60	10.303	
11,700.0	5,770.0	10,897.2	5,857.0	122.0	97.9	-93.17	-4,751.7	1,910.7	2,250.7	2,037.3	213.44	10.545	
11,800.0	5,770.0	10,897.2	5,857.0	123.9	97.9	-93.17	-4,751.7	1,910.7	2,323.3	2,108.1	215.27	10.793	
11,900.0	5,770.0	10,897.2	5,857.0	125.8	97.9	-93.17	-4,751.7	1,910.7	2,397.9	2,180.8	217.10	11.045	
12,000.0	5,770.0	10,897.2	5,857.0	127.7	97.9	-93.17	-4,751.7	1,910.7	2,474.3	2,255.4	218.93	11.302	
12,100.0	5,770.0	10,897.2	5,857.0	129.6	97.9	-93.17	-4,751.7	1,910.7	2,552.3	2,331.6	220.76	11.562	
12,200.0	5,770.0	10,897.2	5,857.0	131.5	97.9	-93.17	-4,751.7	1,910.7	2,631.9	2,409.3	222.59	11.824	
12,300.0	5,770.0	10,897.2	5,857.0	133.4	97.9	-93.17	-4,751.7	1,910.7	2,712.7	2,488.3	224.43	12.087	
12,400.0	5,770.0	10,897.2	5,857.0	135.3	97.9	-93.17	-4,751.7	1,910.7	2,794.8	2,568.6	226.26	12.352	
12,500.0	5,770.0	10,897.2	5,857.0	137.2	97.9	-93.17	-4,751.7	1,910.7	2,878.1	2,650.0	228.09	12.618	
12,600.0	5,770.0	10,897.2	5,857.0	139.1	97.9	-93.17	-4,751.7	1,910.7	2,962.3	2,732.4	229.93	12.884	
12,700.0	5,770.0	10,897.2	5,857.0	141.0	97.9	-93.17	-4,751.7	1,910.7	3,047.6	2,815.8	231.76	13.150	
12,788.9	5,770.0	10,897.2	5,857.0	142.4	97.9	-93.17	-4,751.7	1,910.7	3,124.0	2,891.0	233.08	13.403	

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2701A - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	-91.06	-0.6	-32.9	32.9					
100.0	100.0	100.0	100.0	0.1	0.1	-91.06	-0.6	-32.9	32.9	32.7	0.19	175.471		
200.0	200.0	200.0	200.0	0.3	0.3	-91.06	-0.6	-32.9	32.9	32.3	0.64	51.682 CC, ES		
300.0	300.0	299.7	299.6	0.5	0.5	-93.92	-2.3	-33.4	33.4	32.4	1.06	31.464		
400.0	400.0	399.1	398.9	0.8	0.7	-101.91	-7.3	-34.6	35.4	33.9	1.49	23.696		
500.0	500.0	498.8	498.4	1.0	1.0	-111.11	-14.0	-36.4	39.0	37.1	1.95	19.972		
600.0	600.0	598.6	597.9	1.2	1.2	-118.61	-20.8	-38.1	43.5	41.0	2.42	17.961		
700.0	700.0	698.3	697.4	1.4	1.5	-124.64	-27.5	-39.8	48.5	45.6	2.89	16.805		
800.0	800.0	798.1	797.0	1.7	1.7	-129.50	-34.3	-41.6	54.0	50.6	3.35	16.106		
900.0	900.0	897.8	896.5	1.9	2.0	-133.44	-41.0	-43.3	59.7	55.9	3.81	15.666		
1,000.0	1,000.0	997.6	996.0	2.1	2.2	-136.68	-47.7	-45.0	65.8	61.5	4.28	15.380		
1,100.0	1,100.0	1,097.4	1,095.5	2.3	2.5	-139.36	-54.5	-46.8	71.9	67.2	4.74	15.189		
1,200.0	1,200.0	1,197.1	1,195.0	2.6	2.8	-141.62	-61.2	-48.5	78.3	73.1	5.20	15.059		
1,300.0	1,300.0	1,296.9	1,294.5	2.8	3.0	-143.54	-68.0	-50.2	84.7	79.0	5.66	14.970		
1,400.0	1,400.0	1,396.7	1,394.1	3.0	3.3	53.26	-74.7	-52.0	90.1	84.1	5.99	15.036		
1,500.0	1,499.8	1,496.6	1,493.8	3.2	3.5	54.23	-81.5	-53.7	93.5	87.1	6.41	14.598		
1,600.0	1,599.6	1,596.6	1,593.5	3.3	3.8	56.03	-88.2	-55.4	96.0	89.1	6.84	14.038		
1,700.0	1,699.4	1,696.5	1,693.2	3.5	4.1	57.75	-95.0	-57.2	98.5	91.2	7.28	13.537		
1,800.0	1,799.1	1,796.4	1,792.8	3.7	4.3	59.37	-101.7	-58.9	101.1	93.4	7.72	13.087		
1,900.0	1,898.9	1,896.3	1,892.5	4.0	4.6	60.92	-108.5	-60.6	103.8	95.6	8.18	12.684		
2,000.0	1,998.6	1,996.3	1,992.2	4.2	4.9	62.38	-115.2	-62.4	106.5	97.9	8.65	12.321		
2,100.0	2,098.4	2,096.2	2,091.9	4.4	5.1	63.77	-122.0	-64.1	109.3	100.2	9.12	11.994		
2,200.0	2,198.1	2,196.1	2,191.6	4.6	5.4	65.10	-128.7	-65.8	112.2	102.6	9.59	11.698		
2,300.0	2,297.9	2,296.0	2,291.3	4.9	5.7	66.35	-135.5	-67.6	115.2	105.1	10.08	11.429		
2,400.0	2,397.6	2,396.0	2,390.9	5.1	5.9	67.54	-142.2	-69.3	118.2	107.6	10.56	11.186		
2,500.0	2,497.4	2,495.9	2,490.6	5.3	6.2	68.67	-149.0	-71.0	121.2	110.1	11.05	10.964		
2,600.0	2,597.2	2,595.8	2,590.3	5.6	6.5	69.75	-155.7	-72.8	124.3	112.7	11.55	10.762		
2,700.0	2,696.9	2,695.7	2,690.0	5.8	6.7	70.77	-162.5	-74.5	127.4	115.4	12.05	10.577		
2,800.0	2,796.7	2,795.7	2,789.7	6.1	7.0	71.75	-169.2	-76.2	130.6	118.0	12.55	10.407		
2,900.0	2,896.4	2,895.6	2,889.4	6.3	7.2	72.67	-176.0	-78.0	133.8	120.7	13.05	10.251		
3,000.0	2,996.2	2,995.5	2,989.0	6.5	7.5	73.56	-182.7	-79.7	137.0	123.5	13.56	10.107		
3,100.0	3,095.9	3,095.4	3,088.7	6.8	7.8	74.40	-189.5	-81.4	140.3	126.2	14.06	9.975		
3,200.0	3,195.7	3,195.4	3,188.4	7.0	8.0	75.21	-196.2	-83.2	143.6	129.0	14.57	9.853		
3,300.0	3,295.5	3,295.3	3,288.1	7.3	8.3	75.97	-203.0	-84.9	146.9	131.8	15.08	9.739		
3,400.0	3,395.2	3,395.2	3,387.8	7.5	8.6	76.71	-209.7	-86.6	150.2	134.7	15.60	9.634		
3,500.0	3,495.0	3,495.2	3,487.4	7.8	8.8	77.41	-216.5	-88.4	153.6	137.5	16.11	9.536		
3,600.0	3,594.7	3,595.1	3,587.1	8.1	9.1	78.08	-223.2	-90.1	157.0	140.4	16.62	9.445		
3,700.0	3,694.5	3,695.0	3,686.8	8.3	9.4	78.73	-230.0	-91.8	160.4	143.3	17.14	9.360		
3,800.0	3,794.2	3,794.9	3,786.5	8.6	9.6	79.34	-236.7	-93.6	163.9	146.2	17.66	9.280		
3,900.0	3,894.0	3,894.9	3,886.2	8.8	9.9	79.93	-243.5	-95.3	167.3	149.1	18.17	9.206		
4,000.0	3,993.7	3,994.8	3,985.9	9.1	10.2	80.50	-250.2	-97.0	170.8	152.1	18.69	9.136		
4,100.0	4,093.5	4,094.7	4,085.5	9.3	10.4	81.05	-257.0	-98.8	174.3	155.0	19.21	9.071		
4,200.0	4,193.3	4,194.6	4,185.2	9.6	10.7	81.57	-263.8	-100.5	177.8	158.0	19.73	9.010		
4,300.0	4,293.0	4,294.6	4,284.9	9.8	10.9	82.07	-270.5	-102.2	181.3	161.0	20.25	8.952		
4,400.0	4,392.8	4,394.5	4,384.6	10.1	11.2	82.56	-277.3	-104.0	184.8	164.0	20.77	8.897		
4,500.0	4,492.5	4,494.4	4,484.3	10.4	11.5	83.02	-284.0	-105.7	188.3	167.0	21.29	8.846		
4,600.0	4,592.3	4,594.3	4,584.0	10.6	11.7	83.47	-290.8	-107.4	191.9	170.1	21.81	8.797		
4,700.0	4,692.0	4,694.3	4,683.6	10.9	12.0	83.90	-297.5	-109.2	195.5	173.1	22.33	8.751		
4,800.0	4,791.8	4,794.2	4,783.3	11.1	12.3	84.32	-304.3	-110.9	199.0	176.2	22.86	8.708		
4,900.0	4,891.6	4,894.1	4,883.0	11.4	12.5	84.72	-311.0	-112.6	202.6	179.2	23.38	8.666		
5,000.0	4,991.3	4,994.0	4,982.7	11.7	12.8	85.11	-317.8	-114.4	206.2	182.3	23.90	8.627		
5,100.0	5,091.1	5,094.0	5,082.4	11.9	13.1	85.48	-324.5	-116.1	209.8	185.4	24.43	8.590		

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2701A - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.8	5,193.9	5,182.0	12.2	13.3	85.85	-331.3	-117.8	213.4	188.5	24.95	8.554	
5,295.0	5,285.6	5,288.8	5,276.7	12.4	13.6	86.18	-337.7	-119.5	216.9	191.4	25.45	8.522	
5,300.0	5,290.6	5,293.8	5,281.7	12.4	13.6	86.18	-338.0	-119.6	217.0	191.6	25.47	8.521	
5,350.0	5,340.2	5,334.7	5,322.4	12.6	13.7	86.36	-342.1	-120.6	219.6	193.9	25.75	8.529	
5,400.0	5,388.9	5,374.6	5,361.7	12.8	13.9	86.65	-349.0	-122.4	224.1	198.1	26.09	8.592	
5,450.0	5,436.3	5,414.3	5,400.1	13.0	14.0	87.02	-358.7	-124.9	230.6	204.1	26.49	8.706	
5,500.0	5,482.1	5,450.0	5,433.8	13.3	14.2	87.28	-369.8	-127.7	239.1	212.1	26.93	8.877	
5,550.0	5,525.7	5,492.8	5,473.2	13.6	14.5	87.81	-386.1	-131.9	249.3	221.8	27.48	9.072	
5,600.0	5,566.7	5,531.4	5,507.4	14.0	14.7	88.14	-403.4	-136.3	261.5	233.4	28.08	9.312	
5,650.0	5,604.8	5,569.6	5,539.8	14.4	15.0	88.38	-422.9	-141.4	275.5	246.7	28.78	9.572	
5,700.0	5,639.7	5,607.3	5,570.4	14.9	15.3	88.50	-444.4	-146.9	291.3	261.7	29.57	9.851	
5,750.0	5,670.9	5,644.7	5,598.9	15.4	15.6	88.47	-467.7	-152.9	308.6	278.2	30.43	10.143	
5,800.0	5,698.3	5,681.6	5,625.4	16.0	16.0	88.28	-492.6	-159.3	327.5	296.2	31.37	10.442	
5,850.0	5,721.5	5,718.3	5,649.8	16.6	16.4	87.94	-519.1	-166.1	347.8	315.4	32.38	10.742	
5,900.0	5,740.4	5,754.6	5,672.0	17.2	16.8	87.44	-547.0	-173.2	369.4	335.9	33.46	11.040	
5,950.0	5,754.8	5,790.9	5,692.1	18.0	17.2	86.79	-576.2	-180.7	392.0	357.4	34.60	11.330	
6,000.0	5,764.5	5,827.1	5,710.1	18.7	17.6	86.02	-606.6	-188.5	415.6	379.8	35.80	11.610	
6,050.0	5,769.4	5,863.4	5,725.9	19.5	18.1	85.14	-638.3	-196.7	440.0	403.0	37.04	11.880	
6,076.8	5,770.1	5,883.0	5,733.4	19.9	18.4	84.63	-655.8	-201.2	453.4	415.6	37.72	12.018	
6,100.0	5,770.1	5,900.0	5,739.4	20.2	18.6	85.63	-671.2	-205.1	465.0	426.6	38.39	12.113	
6,200.0	5,770.1	5,980.8	5,760.7	21.6	19.8	88.81	-746.6	-224.5	513.7	472.5	41.20	12.468	
6,300.0	5,770.1	6,068.8	5,769.9	23.0	21.1	89.98	-831.2	-246.2	558.8	514.6	44.16	12.653	
6,400.0	5,770.1	6,197.0	5,770.0	24.5	22.8	89.99	-956.3	-274.6	596.7	549.2	47.54	12.552	
6,500.0	5,770.1	6,338.8	5,770.0	26.1	24.8	89.99	-1,096.4	-296.1	623.0	571.8	51.19	12.170	
6,600.0	5,770.1	6,486.6	5,770.0	27.6	27.0	89.99	-1,243.7	-307.5	636.6	581.7	54.99	11.578	
6,658.7	5,770.1	6,569.6	5,770.0	28.5	28.2	89.99	-1,326.7	-308.8	638.7	581.5	57.16	11.173	
6,700.0	5,770.1	6,610.9	5,770.0	29.2	28.9	89.99	-1,368.0	-308.8	638.8	580.3	58.51	10.917	
6,800.0	5,770.1	6,710.9	5,770.0	30.9	30.5	89.99	-1,468.0	-308.8	639.1	577.2	61.91	10.323	
6,900.0	5,770.1	6,810.9	5,770.0	32.6	32.2	89.99	-1,568.0	-308.9	639.5	574.1	65.36	9.784	
7,000.0	5,770.1	6,910.9	5,770.0	34.3	34.0	89.99	-1,668.0	-308.9	639.8	571.0	68.85	9.293	
7,100.0	5,770.1	7,010.9	5,770.0	36.0	35.7	89.99	-1,768.0	-308.9	640.2	567.8	72.38	8.845	
7,200.0	5,770.1	7,110.9	5,770.0	37.8	37.4	89.99	-1,868.0	-308.9	640.5	564.6	75.94	8.435	
7,300.0	5,770.1	7,210.9	5,770.0	39.5	39.2	89.99	-1,968.0	-308.9	640.8	561.3	79.52	8.059	
7,400.0	5,770.1	7,310.9	5,770.0	41.3	41.0	89.99	-2,068.0	-308.9	641.2	558.1	83.13	7.713	
7,500.0	5,770.1	7,410.9	5,770.0	43.1	42.8	89.99	-2,168.0	-308.9	641.5	554.8	86.75	7.395	
7,600.0	5,770.1	7,510.9	5,770.0	44.9	44.6	89.99	-2,268.0	-308.9	641.9	551.5	90.40	7.100	
7,700.0	5,770.1	7,610.9	5,770.0	46.7	46.4	89.99	-2,368.0	-308.9	642.2	548.1	94.06	6.828	
7,800.0	5,770.1	7,710.9	5,770.0	48.6	48.2	89.99	-2,468.0	-308.9	642.5	544.8	97.73	6.574	
7,900.0	5,770.1	7,810.9	5,770.0	50.4	50.1	89.99	-2,568.0	-308.9	642.9	541.5	101.42	6.339	
8,000.0	5,770.1	7,910.9	5,770.0	52.2	51.9	89.99	-2,668.0	-308.9	643.2	538.1	105.12	6.119	
8,100.0	5,770.1	8,010.9	5,770.0	54.1	53.7	89.99	-2,768.0	-308.9	643.6	534.7	108.82	5.914	
8,200.0	5,770.1	8,110.9	5,770.0	55.9	55.6	89.99	-2,868.0	-308.9	643.9	531.4	112.54	5.722	
8,300.0	5,770.1	8,210.9	5,770.0	57.8	57.4	89.99	-2,968.0	-308.9	644.2	528.0	116.26	5.541	
8,400.0	5,770.1	8,310.9	5,770.0	59.6	59.3	89.99	-3,068.0	-308.9	644.6	524.6	119.99	5.372	
8,500.0	5,770.1	8,410.9	5,770.0	61.5	61.1	89.99	-3,168.0	-308.9	644.9	521.2	123.73	5.212	
8,600.0	5,770.1	8,510.9	5,770.0	63.4	63.0	90.00	-3,268.0	-308.9	645.2	517.8	127.47	5.062	
8,700.0	5,770.1	8,610.9	5,770.0	65.2	64.9	90.00	-3,368.0	-308.9	645.6	514.4	131.22	4.920	
8,800.0	5,770.1	8,710.9	5,770.0	67.1	66.7	90.00	-3,468.0	-308.9	645.9	510.9	134.98	4.785	
8,900.0	5,770.1	8,810.9	5,770.0	69.0	68.6	90.00	-3,568.0	-308.9	646.3	507.5	138.74	4.658	
9,000.0	5,770.1	8,910.9	5,770.0	70.8	70.5	90.00	-3,668.0	-308.9	646.6	504.1	142.50	4.538	
9,100.0	5,770.1	9,010.8	5,770.0	72.7	72.4	90.00	-3,768.0	-308.9	646.9	500.7	146.27	4.423	
9,200.0	5,770.1	9,110.8	5,770.0	74.6	74.2	90.00	-3,868.0	-308.9	647.3	497.2	150.04	4.314	

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



<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2701A - HZ - Plan #2												Offset Site Error: 0.0 usft	
Survey Program: 0-ISCWSA MWD												Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
9,300.0	5,770.1	9,210.8	5,770.0	76.5	76.1	90.00	-3,968.0	-308.9	647.6	493.8	153.81	4.211	
9,400.0	5,770.1	9,310.8	5,770.0	78.4	78.0	90.00	-4,068.0	-308.9	648.0	490.4	157.59	4.112	
9,500.0	5,770.1	9,410.8	5,770.0	80.2	79.9	90.00	-4,168.0	-308.9	648.3	486.9	161.36	4.018	
9,600.0	5,770.1	9,510.8	5,770.0	82.1	81.8	90.00	-4,268.0	-308.9	648.6	483.5	165.15	3.928	
9,700.0	5,770.1	9,610.8	5,770.0	84.0	83.7	90.00	-4,368.0	-308.9	649.0	480.0	168.93	3.842	
9,800.0	5,770.1	9,710.8	5,770.0	85.9	85.5	90.00	-4,468.0	-308.9	649.3	476.6	172.72	3.759	
9,900.0	5,770.1	9,810.8	5,770.0	87.8	87.4	90.00	-4,568.0	-308.9	649.7	473.1	176.51	3.681	
10,000.0	5,770.1	9,910.8	5,770.0	89.7	89.3	90.00	-4,668.0	-308.9	650.0	469.7	180.30	3.605	
10,100.0	5,770.0	10,010.8	5,770.0	91.6	91.2	90.00	-4,768.0	-308.9	650.3	466.2	184.09	3.533	
10,200.0	5,770.0	10,110.8	5,770.0	93.5	93.1	90.00	-4,868.0	-308.9	650.7	462.8	187.89	3.463	
10,300.0	5,770.0	10,210.8	5,770.0	95.4	95.0	90.00	-4,968.0	-308.9	651.0	459.3	191.68	3.396	
10,400.0	5,770.0	10,310.8	5,770.0	97.3	96.9	90.00	-5,067.9	-308.9	651.4	455.9	195.48	3.332	
10,500.0	5,770.0	10,410.8	5,770.0	99.2	98.8	90.00	-5,167.9	-308.9	651.7	452.4	199.28	3.270	
10,600.0	5,770.0	10,510.8	5,770.0	101.1	100.7	90.00	-5,267.9	-309.0	652.0	448.9	203.08	3.211	
10,700.0	5,770.0	10,610.8	5,770.0	103.0	102.6	90.00	-5,367.9	-309.0	652.4	445.5	206.88	3.153	
10,800.0	5,770.0	10,710.8	5,770.0	104.9	104.5	90.00	-5,467.9	-309.0	652.7	442.0	210.69	3.098	
10,900.0	5,770.0	10,810.8	5,770.0	106.8	106.4	90.00	-5,567.9	-309.0	653.0	438.6	214.49	3.045	
11,000.0	5,770.0	10,910.8	5,770.0	108.7	108.3	90.00	-5,667.9	-309.0	653.4	435.1	218.30	2.993	
11,100.0	5,770.0	11,010.8	5,770.0	110.6	110.2	90.00	-5,767.9	-309.0	653.7	431.6	222.11	2.943	
11,200.0	5,770.0	11,110.8	5,770.0	112.5	112.1	90.00	-5,867.9	-309.0	654.1	428.1	225.91	2.895	
11,300.0	5,770.0	11,210.8	5,770.0	114.4	114.0	90.00	-5,967.9	-309.0	654.4	424.7	229.72	2.849	
11,400.0	5,770.0	11,310.8	5,770.0	116.3	115.9	90.00	-6,067.9	-309.0	654.7	421.2	233.53	2.804	
11,500.0	5,770.0	11,410.8	5,770.0	118.2	117.8	90.00	-6,167.9	-309.0	655.1	417.7	237.34	2.760	
11,600.0	5,770.0	11,510.8	5,770.0	120.1	119.7	90.00	-6,267.9	-309.0	655.4	414.3	241.16	2.718	
11,700.0	5,770.0	11,610.8	5,770.0	122.0	121.6	90.00	-6,367.9	-309.0	655.8	410.8	244.97	2.677	
11,800.0	5,770.0	11,710.8	5,770.0	123.9	123.5	90.00	-6,467.9	-309.0	656.1	407.3	248.78	2.637	
11,900.0	5,770.0	11,810.8	5,770.0	125.8	125.4	90.00	-6,567.9	-309.0	656.4	403.8	252.59	2.599	
12,000.0	5,770.0	11,910.8	5,770.0	127.7	127.3	90.00	-6,667.9	-309.0	656.8	400.4	256.41	2.561	
12,100.0	5,770.0	12,010.8	5,770.0	129.6	129.2	90.00	-6,767.9	-309.0	657.1	396.9	260.22	2.525	
12,200.0	5,770.0	12,110.8	5,770.0	131.5	131.1	90.00	-6,867.9	-309.0	657.5	393.4	264.04	2.490	
12,300.0	5,770.0	12,210.8	5,770.0	133.4	133.0	90.00	-6,967.9	-309.0	657.8	389.9	267.86	2.456	
12,400.0	5,770.0	12,310.8	5,770.0	135.3	134.9	90.00	-7,067.9	-309.0	658.1	386.5	271.67	2.423	
12,500.0	5,770.0	12,410.8	5,770.0	137.2	136.8	90.00	-7,167.9	-309.0	658.5	383.0	275.49	2.390	
12,600.0	5,770.0	12,510.8	5,770.0	139.1	138.7	90.00	-7,267.9	-309.0	658.8	379.5	279.31	2.359	
12,700.0	5,770.0	12,610.8	5,770.0	141.0	140.6	90.00	-7,367.9	-309.0	659.2	376.0	283.13	2.328	
12,788.9	5,770.0	12,699.7	5,770.0	142.4	142.3	90.00	-7,456.8	-309.0	659.5	373.2	286.21	2.304 SF	

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2704B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.0	0.0	0.0	0.0	0.0	0.0	178.94	-75.0	1.4	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	178.94	-75.0	1.4	75.1	74.9	0.19	399.906		
200.0	200.0	200.0	200.0	0.3	0.3	178.94	-75.0	1.4	75.1	74.4	0.64	117.786		
300.0	300.0	300.0	300.0	0.5	0.5	178.94	-75.0	1.4	75.1	74.0	1.09	69.064		
400.0	400.0	400.0	400.0	0.8	0.8	178.94	-75.0	1.4	75.1	73.5	1.54	48.855		
500.0	500.0	500.0	500.0	1.0	1.0	178.94	-75.0	1.4	75.1	73.1	1.99	37.795		
600.0	600.0	600.0	600.0	1.2	1.2	178.94	-75.0	1.4	75.1	72.6	2.44	30.819		
700.0	700.0	700.0	700.0	1.4	1.4	178.94	-75.0	1.4	75.1	72.2	2.88	26.017		
800.0	800.0	800.0	800.0	1.7	1.7	178.94	-75.0	1.4	75.1	71.7	3.33	22.509		
900.0	900.0	900.0	900.0	1.9	1.9	178.94	-75.0	1.4	75.1	71.3	3.78	19.835		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	178.94	-75.0	1.4	75.1	70.8	4.23	17.729		
1,100.0	1,100.0	1,097.7	1,097.7	2.3	2.3	178.36	-76.5	2.2	76.6	71.9	4.65	16.456		
1,200.0	1,200.0	1,195.2	1,195.0	2.6	2.5	176.75	-80.9	4.6	81.2	76.1	5.06	16.045		
1,300.0	1,300.0	1,294.8	1,294.4	2.8	2.7	174.79	-87.0	7.9	87.5	82.0	5.48	15.980		
1,400.0	1,400.0	1,394.7	1,394.0	3.0	2.9	10.93	-93.1	11.3	92.2	86.4	5.85	15.752		
1,500.0	1,499.8	1,494.6	1,493.7	3.2	3.1	9.93	-99.2	14.6	93.6	87.3	6.22	15.043		
1,600.0	1,599.6	1,594.6	1,593.5	3.3	3.3	9.13	-105.3	18.0	93.2	86.6	6.60	14.114		
1,700.0	1,699.4	1,694.6	1,693.2	3.5	3.5	8.32	-111.4	21.3	92.9	85.9	7.00	13.272		
1,800.0	1,799.1	1,794.6	1,793.0	3.7	3.8	7.51	-117.5	24.7	92.6	85.2	7.40	12.510		
1,900.0	1,898.9	1,894.6	1,892.7	4.0	4.0	6.69	-123.6	28.1	92.3	84.5	7.81	11.819		
2,000.0	1,998.6	1,994.6	1,992.5	4.2	4.3	5.87	-129.8	31.4	92.0	83.8	8.22	11.192		
2,100.0	2,098.4	2,094.6	2,092.2	4.4	4.5	5.05	-135.9	34.8	91.7	83.1	8.64	10.621		
2,200.0	2,198.1	2,194.6	2,192.0	4.6	4.7	4.22	-142.0	38.1	91.5	82.4	9.06	10.101		
2,300.0	2,297.9	2,294.6	2,291.7	4.9	5.0	3.38	-148.1	41.5	91.3	81.8	9.48	9.626		
2,400.0	2,397.6	2,394.5	2,391.5	5.1	5.2	2.54	-154.2	44.8	91.1	81.2	9.91	9.191		
2,500.0	2,497.4	2,494.5	2,491.2	5.3	5.5	1.70	-160.3	48.2	90.9	80.6	10.34	8.792		
2,600.0	2,597.2	2,594.5	2,591.0	5.6	5.7	0.86	-166.4	51.5	90.7	80.0	10.77	8.424		
2,700.0	2,696.9	2,694.5	2,690.7	5.8	6.0	0.01	-172.6	54.9	90.6	79.4	11.21	8.086		
2,800.0	2,796.7	2,794.5	2,790.5	6.1	6.2	-0.84	-178.7	58.2	90.5	78.8	11.64	7.773		
2,900.0	2,896.4	2,894.5	2,890.2	6.3	6.5	-1.69	-184.8	61.6	90.4	78.3	12.08	7.483		
3,000.0	2,996.2	2,994.5	2,990.0	6.5	6.7	-2.55	-190.9	65.0	90.3	77.8	12.52	7.214		
3,100.0	3,095.9	3,094.5	3,089.7	6.8	7.0	-3.40	-197.0	68.3	90.2	77.3	12.96	6.963		
3,200.0	3,195.7	3,194.5	3,189.4	7.0	7.3	-4.26	-203.1	71.7	90.2	76.8	13.40	6.731		
3,300.0	3,295.5	3,294.5	3,289.2	7.3	7.5	-5.12	-209.3	75.0	90.2	76.3	13.85	6.513		
3,349.0	3,344.4	3,343.5	3,338.1	7.4	7.6	-5.54	-212.2	76.7	90.2	76.1	14.06	6.412		
3,400.0	3,395.2	3,394.5	3,388.9	7.5	7.8	-5.97	-215.4	78.4	90.2	75.9	14.29	6.310		
3,500.0	3,495.0	3,494.4	3,488.7	7.8	8.0	-6.83	-221.5	81.7	90.2	75.5	14.74	6.120		
3,600.0	3,594.7	3,594.4	3,588.4	8.1	8.3	-7.69	-227.6	85.1	90.2	75.1	15.19	5.942		
3,700.0	3,694.5	3,694.4	3,688.2	8.3	8.6	-8.54	-233.7	88.4	90.3	74.7	15.64	5.775		
3,800.0	3,794.2	3,794.4	3,787.9	8.6	8.8	-9.40	-239.8	91.8	90.4	74.3	16.09	5.618		
3,900.0	3,894.0	3,894.4	3,887.7	8.8	9.1	-10.25	-245.9	95.1	90.5	73.9	16.54	5.470		
4,000.0	3,993.7	3,994.4	3,987.4	9.1	9.3	-11.10	-252.1	98.5	90.6	73.6	17.00	5.330		
4,100.0	4,093.5	4,094.4	4,087.2	9.3	9.6	-11.95	-258.2	101.9	90.7	73.3	17.46	5.199		
4,200.0	4,193.3	4,194.4	4,186.9	9.6	9.8	-12.79	-264.3	105.2	90.9	73.0	17.91	5.075		
4,300.0	4,293.0	4,294.4	4,286.7	9.8	10.1	-13.63	-270.4	108.6	91.1	72.7	18.37	4.958		
4,400.0	4,392.8	4,394.4	4,386.4	10.1	10.4	-14.47	-276.5	111.9	91.3	72.5	18.84	4.847		
4,500.0	4,492.5	4,494.4	4,486.2	10.4	10.6	-15.31	-282.6	115.3	91.5	72.2	19.30	4.741		
4,600.0	4,592.3	4,594.3	4,585.9	10.6	10.9	-16.14	-288.7	118.6	91.7	72.0	19.77	4.642		
4,700.0	4,692.0	4,694.3	4,685.7	10.9	11.2	-16.96	-294.9	122.0	92.0	71.8	20.23	4.547		
4,800.0	4,791.8	4,794.3	4,785.4	11.1	11.4	-17.78	-301.0	125.3	92.3	71.6	20.70	4.458		
4,900.0	4,891.6	4,894.3	4,885.2	11.4	11.7	-18.60	-307.1	128.7	92.6	71.4	21.17	4.372		
5,000.0	4,991.3	4,994.3	4,984.9	11.7	11.9	-19.41	-313.2	132.1	92.9	71.2	21.65	4.291		

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



<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2704B - HZ - Plan #2													Offset Site Error:	0.0 usft
Survey Program: 0-ISCWSA MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,091.1	5,094.3	5,084.6	11.9	12.2	-20.22	-319.3	135.4	93.2	71.1	22.12	4.214		
5,200.0	5,190.8	5,194.3	5,184.4	12.2	12.5	-21.01	-325.4	138.8	93.6	71.0	22.60	4.141		
5,295.0	5,285.6	5,289.3	5,279.1	12.4	12.7	-21.77	-331.2	141.9	93.9	70.9	23.05	4.074		
5,300.0	5,290.6	5,294.3	5,284.1	12.4	12.7	-21.81	-331.6	142.1	93.9	70.8	23.08	4.070		
5,350.0	5,340.2	5,344.2	5,333.9	12.6	12.9	-22.99	-334.6	143.8	91.5	68.2	23.23	3.938		
5,400.0	5,388.9	5,392.1	5,381.7	12.8	13.0	-25.65	-337.6	145.4	84.8	61.5	23.28	3.641		
5,450.0	5,436.3	5,434.8	5,424.0	13.0	13.1	-29.46	-342.4	148.1	76.8	53.5	23.30	3.296		
5,500.0	5,482.1	5,478.0	5,466.3	13.3	13.3	-34.88	-350.3	152.4	69.0	45.6	23.44	2.945		
5,550.0	5,525.7	5,521.8	5,508.2	13.6	13.5	-42.36	-361.5	158.5	62.1	38.1	23.94	2.592		
5,600.0	5,566.3	5,563.3	5,549.5	14.0	13.7	-52.26	-375.9	166.5	56.7	31.6	25.06	2.261		
5,650.0	5,604.8	5,611.4	5,589.8	14.4	14.0	-64.34	-393.7	176.2	53.9	27.1	26.79	2.010		
5,665.9	5,616.3	5,626.0	5,602.4	14.5	14.1	-68.48	-400.1	179.7	53.7	26.3	27.42	1.958 CC		
5,700.0	5,639.7	5,657.3	5,628.9	14.9	14.3	-77.42	-414.8	187.8	54.6	25.9	28.66	1.904 ES		
5,750.0	5,670.9	5,704.1	5,666.3	15.4	14.7	-89.72	-439.4	201.3	59.0	29.0	30.03	1.966		
5,800.0	5,698.3	5,751.8	5,701.8	16.0	15.1	-99.92	-467.3	216.6	66.8	36.1	30.71	2.176		
5,850.0	5,721.5	5,800.6	5,734.9	16.6	15.6	-107.70	-498.7	233.8	77.2	46.2	30.96	2.493		
5,900.0	5,740.4	5,850.4	5,765.1	17.2	16.2	-113.34	-533.5	252.9	89.3	58.2	31.06	2.874		
5,950.0	5,754.8	5,901.5	5,791.9	18.0	16.8	-117.33	-571.5	273.8	102.5	71.3	31.22	3.283		
6,000.0	5,764.5	5,953.9	5,814.9	18.7	17.5	-120.06	-612.8	296.4	116.5	84.9	31.57	3.690		
6,050.0	5,769.4	6,007.7	5,833.5	19.5	18.3	-121.87	-657.0	320.7	130.8	98.7	32.14	4.070		
6,076.8	5,770.1	6,037.2	5,841.5	19.9	18.7	-122.54	-681.9	334.3	138.6	106.0	32.55	4.258		
6,100.0	5,770.1	6,063.2	5,847.1	20.2	19.1	-123.50	-704.2	346.5	145.1	112.3	32.79	4.426		
6,200.0	5,770.1	6,177.3	5,857.0	21.6	20.9	-121.73	-803.7	401.1	169.1	133.1	35.91	4.708		
6,300.0	5,770.1	6,282.9	5,857.0	23.0	22.5	-117.83	-897.9	448.7	190.7	151.1	39.63	4.813		
6,400.0	5,770.1	6,390.1	5,857.0	24.5	24.1	-114.75	-996.1	491.6	212.8	169.6	43.17	4.928		
6,500.0	5,770.1	6,498.9	5,857.0	26.1	25.9	-112.28	-1,098.1	529.4	234.9	188.4	46.53	5.049		
6,600.0	5,770.1	6,609.4	5,857.0	27.6	27.7	-110.28	-1,203.8	561.8	256.9	207.2	49.71	5.169		
6,658.7	5,770.1	6,675.1	5,857.0	28.5	28.7	-109.26	-1,267.4	578.2	269.7	218.2	51.50	5.237		
6,700.0	5,770.1	6,721.7	5,857.0	29.2	29.5	-108.56	-1,312.9	588.5	278.2	225.1	53.11	5.238		
6,800.0	5,770.1	6,836.6	5,857.0	30.9	31.3	-107.30	-1,425.9	609.0	295.0	238.0	57.01	5.174		
6,900.0	5,770.1	6,953.6	5,857.0	32.6	33.2	-106.55	-1,542.0	622.9	306.1	245.2	60.82	5.032		
7,000.0	5,770.1	7,071.8	5,857.0	34.3	35.1	-106.21	-1,660.0	629.8	311.3	246.7	64.54	4.823		
7,100.0	5,770.1	7,177.2	5,857.0	36.0	36.7	-106.17	-1,765.4	631.0	312.0	244.1	67.98	4.590		
7,200.0	5,770.1	7,277.2	5,857.0	37.8	38.4	-106.14	-1,865.4	631.9	312.5	241.2	71.37	4.379		
7,300.0	5,770.1	7,377.2	5,857.0	39.5	40.0	-106.11	-1,965.4	632.7	313.1	238.3	74.79	4.186		
7,400.0	5,770.1	7,477.2	5,857.0	41.3	41.7	-106.09	-2,065.4	633.6	313.6	235.3	78.24	4.008		
7,500.0	5,770.1	7,577.2	5,857.0	43.1	43.4	-106.06	-2,165.4	634.4	314.1	232.4	81.71	3.844		
7,600.0	5,770.1	7,677.2	5,857.0	44.9	45.1	-106.03	-2,265.4	635.3	314.6	229.4	85.21	3.692		
7,700.0	5,770.1	7,777.2	5,857.0	46.7	46.8	-106.01	-2,365.4	636.2	315.1	226.4	88.72	3.551		
7,800.0	5,770.1	7,877.2	5,857.0	48.6	48.6	-105.98	-2,465.4	637.0	315.6	223.3	92.25	3.421		
7,900.0	5,770.1	7,977.2	5,857.0	50.4	50.3	-105.96	-2,565.3	637.9	316.1	220.3	95.80	3.300		
8,000.0	5,770.1	8,077.2	5,857.0	52.2	52.1	-105.93	-2,665.3	638.8	316.6	217.3	99.36	3.186		
8,100.0	5,770.1	8,177.2	5,857.0	54.1	53.9	-105.90	-2,765.3	639.6	317.1	214.2	102.94	3.081		
8,200.0	5,770.1	8,277.2	5,857.0	55.9	55.6	-105.88	-2,865.3	640.5	317.6	211.1	106.52	2.982		
8,300.0	5,770.1	8,377.2	5,857.0	57.8	57.4	-105.85	-2,965.3	641.4	318.1	208.0	110.12	2.889		
8,400.0	5,770.1	8,477.2	5,857.0	59.6	59.2	-105.83	-3,065.3	642.2	318.7	204.9	113.72	2.802		
8,500.0	5,770.1	8,577.2	5,857.0	61.5	61.1	-105.80	-3,165.3	643.1	319.2	201.8	117.33	2.720		
8,600.0	5,770.1	8,677.2	5,857.0	63.4	62.9	-105.78	-3,265.3	644.0	319.7	198.7	120.95	2.643		
8,700.0	5,770.1	8,777.2	5,857.0	65.2	64.7	-105.75	-3,365.3	644.8	320.2	195.6	124.58	2.570		
8,800.0	5,770.1	8,877.2	5,857.0	67.1	66.5	-105.73	-3,465.3	645.7	320.7	192.5	128.22	2.501		
8,900.0	5,770.1	8,977.2	5,857.0	69.0	68.4	-105.70	-3,565.3	646.6	321.2	189.4	131.86	2.436		
9,000.0	5,770.1	9,077.2	5,857.0	70.8	70.2	-105.67	-3,665.3	647.4	321.7	186.2	135.50	2.374		

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - 22D-2704B - HZ - Plan #2												Offset Site Error:	0.0 usft
Survey Program: 0-ISCSWA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
9,100.0	5,770.1	9,177.2	5,857.0	72.7	72.0	-105.65	-3,765.3	648.3	322.2	183.1	139.15	2.316	
9,200.0	5,770.1	9,277.2	5,857.0	74.6	73.9	-105.62	-3,865.3	649.2	322.7	179.9	142.81	2.260	
9,300.0	5,770.1	9,377.2	5,857.0	76.5	75.7	-105.60	-3,965.3	650.0	323.3	176.8	146.47	2.207	
9,400.0	5,770.1	9,477.2	5,857.0	78.4	77.6	-105.58	-4,065.3	650.9	323.8	173.6	150.13	2.156	
9,500.0	5,770.1	9,577.2	5,857.0	80.2	79.4	-105.55	-4,165.3	651.8	324.3	170.5	153.80	2.108	
9,600.0	5,770.1	9,677.2	5,857.0	82.1	81.3	-105.53	-4,265.3	652.6	324.8	167.3	157.48	2.062	
9,700.0	5,770.1	9,777.2	5,857.0	84.0	83.2	-105.50	-4,365.3	653.5	325.3	164.1	161.15	2.019	
9,800.0	5,770.1	9,877.2	5,857.0	85.9	85.0	-105.48	-4,465.3	654.4	325.8	161.0	164.83	1.977	
9,900.0	5,770.1	9,977.2	5,857.0	87.8	86.9	-105.45	-4,565.2	655.2	326.3	157.8	168.51	1.936	
10,000.0	5,770.1	10,077.2	5,857.0	89.7	88.7	-105.43	-4,665.2	656.1	326.8	154.6	172.20	1.898	
10,100.0	5,770.0	10,177.2	5,857.0	91.6	90.6	-105.40	-4,765.2	657.0	327.3	151.4	175.89	1.861	
10,200.0	5,770.0	10,277.2	5,857.0	93.5	92.5	-105.38	-4,865.2	657.8	327.8	148.3	179.58	1.826	
10,300.0	5,770.0	10,377.2	5,857.0	95.4	94.4	-105.35	-4,965.2	658.7	328.4	145.1	183.28	1.792	
10,400.0	5,770.0	10,477.2	5,857.0	97.3	96.2	-105.33	-5,065.2	659.6	328.9	141.9	186.97	1.759	
10,500.0	5,770.0	10,577.2	5,857.0	99.2	98.1	-105.31	-5,165.2	660.4	329.4	138.7	190.67	1.727	
10,600.0	5,770.0	10,677.2	5,857.0	101.1	100.0	-105.28	-5,265.2	661.3	329.9	135.5	194.37	1.697	
10,700.0	5,770.0	10,777.2	5,857.0	103.0	101.9	-105.26	-5,365.2	662.2	330.4	132.3	198.08	1.668	
10,800.0	5,770.0	10,877.2	5,857.0	104.9	103.8	-105.24	-5,465.2	663.0	330.9	129.1	201.78	1.640	
10,900.0	5,770.0	10,977.2	5,857.0	106.8	105.6	-105.21	-5,565.2	663.9	331.4	125.9	205.49	1.613	
11,000.0	5,770.0	11,077.2	5,857.0	108.7	107.5	-105.19	-5,665.2	664.8	331.9	122.7	209.20	1.587	
11,100.0	5,770.0	11,177.1	5,857.0	110.6	109.4	-105.16	-5,765.2	665.6	332.5	119.5	212.91	1.561	
11,200.0	5,770.0	11,277.1	5,857.0	112.5	111.3	-105.14	-5,865.2	666.5	333.0	116.3	216.62	1.537	
11,300.0	5,770.0	11,377.1	5,857.0	114.4	113.2	-105.12	-5,965.2	667.4	333.5	113.1	220.34	1.513	
11,400.0	5,770.0	11,477.1	5,857.0	116.3	115.1	-105.09	-6,065.2	668.2	334.0	109.9	224.05	1.491 Level 3	
11,500.0	5,770.0	11,577.1	5,857.0	118.2	117.0	-105.07	-6,165.2	669.1	334.5	106.7	227.77	1.469 Level 3	
11,600.0	5,770.0	11,677.1	5,857.0	120.1	118.9	-105.05	-6,265.2	670.0	335.0	103.5	231.49	1.447 Level 3	
11,700.0	5,770.0	11,777.1	5,857.0	122.0	120.8	-105.02	-6,365.2	670.8	335.5	100.3	235.21	1.426 Level 3	
11,800.0	5,770.0	11,877.1	5,857.0	123.9	122.7	-105.00	-6,465.1	671.7	336.0	97.1	238.94	1.406 Level 3	
11,900.0	5,770.0	11,977.1	5,857.0	125.8	124.5	-104.98	-6,565.1	672.6	336.5	93.9	242.66	1.387 Level 3	
12,000.0	5,770.0	12,077.1	5,857.0	127.7	126.4	-104.96	-6,665.1	673.4	337.1	90.7	246.38	1.368 Level 3	
12,100.0	5,770.0	12,177.1	5,857.0	129.6	128.3	-104.93	-6,765.1	674.3	337.6	87.5	250.11	1.350 Level 3	
12,200.0	5,770.0	12,277.1	5,857.0	131.5	130.2	-104.91	-6,865.1	675.1	338.1	84.2	253.84	1.332 Level 3	
12,300.0	5,770.0	12,377.1	5,857.0	133.4	132.1	-104.89	-6,965.1	676.0	338.6	81.0	257.57	1.315 Level 3	
12,400.0	5,770.0	12,477.1	5,857.0	135.3	134.0	-104.86	-7,065.1	676.9	339.1	77.8	261.30	1.298 Level 3	
12,500.0	5,770.0	12,577.1	5,857.0	137.2	135.9	-104.84	-7,165.1	677.7	339.6	74.6	265.03	1.281 Level 3	
12,600.0	5,770.0	12,677.1	5,857.0	139.1	137.8	-104.82	-7,265.1	678.6	340.1	71.4	268.76	1.266 Level 3	
12,700.0	5,770.0	12,777.1	5,857.0	141.0	139.7	-104.80	-7,365.1	679.5	340.6	68.1	272.50	1.250 Level 3	
12,788.9	5,770.0	12,857.7	5,857.0	142.4	141.1	-104.78	-7,445.7	680.2	341.2	66.1	275.15	1.240 Level 2, SF	

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - RAZOR 22-2712H (EXISTING) - WHITING WELL - SURVEYS													Offset Site Error: 0.0 usft
Survey Program: 190-ISCWSA MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.0	0.0	0.0	0.0	0.0	0.0	-34.29	49.7	-33.9	60.1				
100.0	100.0	99.5	99.5	0.1	0.1	-34.32	50.0	-34.1	60.5	60.3	0.20	305.954	
200.0	200.0	199.0	199.0	0.3	0.2	-34.39	50.9	-34.9	61.7	61.2	0.54	115.152	
300.0	300.0	299.0	299.0	0.5	0.4	-34.04	52.5	-35.4	63.3	62.4	0.97	65.202	
400.0	400.0	399.3	399.2	0.8	0.6	-33.61	53.9	-35.8	64.7	63.3	1.40	46.349	
500.0	500.0	499.4	499.4	1.0	0.8	-32.96	55.1	-35.7	65.7	63.9	1.83	35.975	
600.0	600.0	599.4	599.3	1.2	1.0	-32.45	56.3	-35.8	66.7	64.5	2.26	29.534	
700.0	700.0	699.4	699.4	1.4	1.3	-31.91	57.4	-35.8	67.6	65.0	2.69	25.107	
800.0	800.0	799.1	799.0	1.7	1.5	-31.12	58.8	-35.5	68.7	65.6	3.13	21.956	
900.0	900.0	899.0	898.9	1.9	1.7	-30.38	60.6	-35.5	70.3	66.7	3.57	19.716	
1,000.0	1,000.0	998.8	998.7	2.1	1.9	-29.70	62.4	-35.6	71.8	67.8	4.00	17.959	
1,100.0	1,100.0	1,098.3	1,098.2	2.3	2.1	-28.69	64.8	-35.5	73.9	69.5	4.44	16.658	
1,200.0	1,200.0	1,197.7	1,197.5	2.6	2.3	-27.31	68.2	-35.2	76.7	71.9	4.88	15.732	
1,300.0	1,300.0	1,297.8	1,297.6	2.8	2.5	-25.81	72.0	-34.8	80.0	74.7	5.32	15.043	
1,400.0	1,400.0	1,397.8	1,397.5	3.0	2.8	173.12	75.3	-34.6	84.6	78.9	5.72	14.807	
1,500.0	1,499.8	1,496.8	1,496.4	3.2	3.0	174.44	78.9	-34.5	93.1	87.0	6.09	15.279	
1,600.0	1,599.6	1,595.2	1,594.7	3.3	3.2	175.99	83.5	-34.2	104.2	97.7	6.49	16.068	
1,700.0	1,699.4	1,693.4	1,692.8	3.5	3.4	177.13	88.9	-34.3	116.3	109.5	6.88	16.898	
1,800.0	1,799.1	1,797.3	1,796.5	3.7	3.6	177.07	93.1	-36.5	127.9	120.6	7.29	17.544	
1,900.0	1,898.9	1,900.1	1,899.3	4.0	3.8	176.64	93.1	-37.9	135.3	127.6	7.69	17.600	
2,000.0	1,998.6	1,999.4	1,998.6	4.2	4.0	176.38	92.5	-38.8	142.0	133.9	8.09	17.553	
2,100.0	2,098.4	2,099.1	2,098.3	4.4	4.3	176.44	92.4	-39.1	149.0	140.5	8.50	17.525	
2,200.0	2,198.1	2,199.5	2,198.7	4.6	4.5	176.52	92.1	-39.2	155.7	146.8	8.91	17.469	
2,300.0	2,297.9	2,298.5	2,297.7	4.9	4.7	176.58	91.9	-39.4	162.6	153.3	9.33	17.433	
2,400.0	2,397.6	2,398.3	2,397.5	5.1	4.9	176.67	91.9	-39.5	169.6	159.8	9.74	17.403	
2,500.0	2,497.4	2,496.7	2,496.0	5.3	5.1	176.80	92.3	-39.7	177.0	166.9	10.16	17.420	
2,600.0	2,597.2	2,595.7	2,594.9	5.6	5.3	176.96	93.3	-40.0	185.0	174.5	10.59	17.481	
2,700.0	2,696.9	2,695.4	2,694.6	5.8	5.5	177.26	94.7	-39.8	193.2	182.2	11.01	17.546	
2,800.0	2,796.7	2,795.0	2,794.2	6.1	5.7	177.69	96.2	-39.1	201.3	189.9	11.44	17.602	
2,900.0	2,896.4	2,894.5	2,893.7	6.3	5.9	178.15	97.8	-38.2	209.6	197.7	11.87	17.660	
3,000.0	2,996.2	2,994.6	2,993.8	6.5	6.1	178.56	99.5	-37.4	217.8	205.5	12.29	17.718	
3,100.0	3,095.9	3,094.6	3,093.7	6.8	6.3	178.84	100.7	-36.8	225.7	213.0	12.72	17.750	
3,200.0	3,195.7	3,195.3	3,194.4	7.0	6.6	179.01	101.7	-36.6	233.6	220.5	13.14	17.775	
3,300.0	3,295.5	3,295.7	3,294.9	7.3	6.8	179.12	102.1	-36.3	240.9	227.3	13.57	17.748	
3,400.0	3,395.2	3,394.6	3,393.7	7.5	7.0	179.25	102.6	-36.1	248.2	234.2	14.00	17.729	
3,500.0	3,495.0	3,493.5	3,492.6	7.8	7.2	179.37	103.4	-35.9	256.0	241.5	14.43	17.734	
3,600.0	3,594.7	3,592.9	3,592.0	8.1	7.4	179.44	104.5	-35.9	263.9	249.1	14.86	17.755	
3,700.0	3,694.5	3,692.2	3,691.3	8.3	7.6	179.41	105.4	-36.5	272.0	256.7	15.29	17.784	
3,800.0	3,794.2	3,792.7	3,791.8	8.6	7.8	179.20	106.1	-37.8	280.0	264.3	15.72	17.808	
3,900.0	3,894.0	3,893.6	3,892.7	8.8	8.0	178.78	106.0	-40.1	287.6	271.5	16.15	17.805	
4,000.0	3,993.7	3,992.0	3,991.0	9.1	8.2	178.25	105.7	-43.1	295.3	278.7	16.58	17.805	
4,100.0	4,093.5	4,091.8	4,090.7	9.3	8.4	177.64	105.4	-46.6	303.2	286.2	17.02	17.815	
4,200.0	4,193.3	4,201.2	4,200.1	9.6	8.7	176.94	102.9	-50.0	309.1	291.6	17.47	17.695	
4,300.0	4,293.0	4,297.2	4,296.1	9.8	8.8	176.79	101.2	-50.6	314.6	296.8	17.89	17.588	
4,400.0	4,392.8	4,398.4	4,397.3	10.1	9.1	176.90	100.2	-50.0	320.4	302.1	18.32	17.485	
4,500.0	4,492.5	4,499.4	4,498.2	10.4	9.3	176.93	98.7	-49.7	325.8	307.1	18.76	17.373	
4,600.0	4,592.3	4,601.4	4,600.2	10.6	9.5	177.05	96.8	-48.6	330.7	311.5	19.19	17.232	
4,700.0	4,692.0	4,700.4	4,699.2	10.9	9.7	177.31	94.9	-46.7	335.2	315.6	19.62	17.084	
4,800.0	4,791.8	4,796.4	4,795.2	11.1	9.9	177.60	94.0	-44.8	340.6	320.6	20.05	16.991	
4,900.0	4,891.6	4,894.4	4,893.1	11.4	10.1	177.92	94.0	-43.1	347.0	326.5	20.48	16.944	
5,000.0	4,991.3	4,993.9	4,992.6	11.7	10.3	178.25	94.2	-41.3	353.6	332.6	20.92	16.904	
5,100.0	5,091.1	5,092.2	5,090.9	11.9	10.5	178.54	94.5	-39.7	360.3	339.0	21.35	16.877	

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - RAZOR 22-2712H (EXISTING) - WHITING WELL - SURVEYS												Offset Site Error:	0.0 usft
Survey Program: 190-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,190.8	5,190.7	5,189.4	12.2	10.7	178.80	95.3	-38.3	367.6	345.8	21.78	16.873	
5,295.0	5,285.6	5,326.4	5,324.9	12.4	11.0	178.36	89.8	-39.7	371.6	349.3	22.28	16.680	
5,300.0	5,290.6	5,335.2	5,333.6	12.4	11.0	178.27	88.7	-40.0	371.4	349.1	22.30	16.657	
5,350.0	5,340.2	5,425.3	5,421.8	12.6	11.2	176.84	71.2	-44.0	369.4	347.0	22.39	16.496	
5,400.0	5,388.9	5,509.4	5,501.8	12.8	11.3	174.87	45.6	-48.9	367.1	344.8	22.29	16.468	
5,450.0	5,436.3	5,681.6	5,649.6	13.0	11.8	169.33	-40.6	-54.5	360.2	337.9	22.30	16.152	
5,500.0	5,482.1	5,816.3	5,739.6	13.3	12.4	163.70	-140.1	-47.4	341.4	319.1	22.26	15.339	
5,550.0	5,525.7	5,893.8	5,780.6	13.6	12.9	159.58	-205.6	-42.7	321.7	299.6	22.08	14.569	
5,600.0	5,566.7	5,986.9	5,819.1	14.0	13.7	153.61	-289.8	-34.4	301.5	279.2	22.36	13.485	
5,650.0	5,604.8	6,061.3	5,837.4	14.4	14.5	147.40	-361.6	-28.1	279.8	256.7	23.02	12.152	
5,700.0	5,639.7	6,128.0	5,843.4	14.9	15.2	140.12	-427.9	-24.6	259.0	234.7	24.36	10.633	
5,750.0	5,670.9	6,173.3	5,843.4	15.4	15.7	134.86	-473.1	-22.3	242.0	216.5	25.57	9.467	
5,800.0	5,698.3	6,214.6	5,843.3	16.0	16.2	130.05	-514.4	-19.7	231.2	204.2	26.92	8.586	
5,850.0	5,721.5	6,256.2	5,843.3	16.6	16.6	125.17	-555.9	-17.1	226.4	197.8	28.58	7.919	
5,868.6	5,729.1	6,272.6	5,843.3	16.8	16.8	123.28	-572.2	-16.2	226.0	196.7	29.30	7.714	
5,900.0	5,740.4	6,300.2	5,843.0	17.2	17.2	120.12	-599.8	-14.8	227.0	196.4	30.55	7.430	
5,950.0	5,754.8	6,348.1	5,841.9	18.0	17.9	115.02	-647.7	-12.5	231.8	199.1	32.71	7.087	
6,000.0	5,764.5	6,392.8	5,840.7	18.7	18.5	110.91	-692.3	-10.4	239.8	205.2	34.65	6.921	
6,050.0	5,769.4	6,433.0	5,840.1	19.5	19.0	107.81	-732.4	-9.1	251.1	214.8	36.31	6.915	
6,076.8	5,770.1	6,457.4	5,839.9	19.9	19.3	106.35	-756.9	-8.8	258.3	221.1	37.25	6.934	
6,100.0	5,770.1	6,479.2	5,839.8	20.2	19.5	105.87	-778.7	-8.6	264.8	226.8	37.99	6.970	
6,200.0	5,770.1	6,569.5	5,840.0	21.6	20.7	104.38	-868.9	-8.3	290.3	249.4	40.97	7.086	
6,300.0	5,770.1	6,671.3	5,840.6	23.0	22.2	103.31	-970.7	-8.4	311.5	267.3	44.15	7.055	
6,400.0	5,770.1	6,774.0	5,841.0	24.5	23.8	102.60	-1,073.4	-7.9	327.1	279.8	47.36	6.908	
6,500.0	5,770.1	6,873.1	5,839.1	26.1	25.3	101.85	-1,172.4	-7.0	336.9	286.4	50.45	6.677	
6,600.0	5,770.1	6,974.2	5,836.2	27.6	26.9	101.17	-1,273.5	-6.0	341.2	287.7	53.51	6.377	
6,658.7	5,770.1	7,033.6	5,834.8	28.5	27.8	100.93	-1,333.0	-5.1	341.2	286.0	55.22	6.179	
6,700.0	5,770.1	7,075.2	5,833.9	29.2	28.4	100.79	-1,374.4	-4.5	340.6	284.0	56.54	6.023	
6,800.0	5,770.1	7,177.2	5,831.3	30.9	30.1	100.41	-1,476.5	-2.6	338.6	278.6	59.95	5.648	
6,900.0	5,770.1	7,271.5	5,829.8	32.6	31.6	100.21	-1,570.8	-0.8	336.8	273.6	63.16	5.332	
7,000.0	5,770.1	7,375.7	5,828.7	34.3	33.4	100.05	-1,674.9	0.2	336.0	269.4	66.63	5.043	
7,043.0	5,770.1	7,413.0	5,828.2	35.0	34.0	99.97	-1,712.2	0.5	335.6	267.6	68.06	4.932	
7,100.0	5,770.1	7,469.5	5,827.7	36.0	34.9	99.88	-1,768.7	0.5	335.8	265.9	69.92	4.803	
7,200.0	5,770.1	7,566.3	5,826.6	37.8	36.5	99.66	-1,865.5	0.2	336.3	262.9	73.33	4.585	
7,300.0	5,770.1	7,662.0	5,826.0	39.5	38.1	99.52	-1,961.2	-1.4	338.1	261.4	76.71	4.408	
7,400.0	5,770.1	7,757.2	5,826.2	41.3	39.7	99.47	-2,056.3	-4.3	341.4	261.3	80.11	4.262	
7,500.0	5,770.1	7,860.1	5,827.4	43.1	41.4	99.57	-2,159.1	-7.2	344.8	261.2	83.56	4.126	
7,600.0	5,770.1	7,959.7	5,830.2	44.9	43.0	99.96	-2,258.7	-9.5	347.9	260.9	86.94	4.001	
7,700.0	5,770.1	8,075.8	5,834.0	46.7	45.0	100.58	-2,374.7	-8.5	347.8	257.3	90.55	3.841	
7,800.0	5,770.1	8,171.9	5,831.4	48.6	46.7	100.19	-2,470.8	-7.7	346.9	252.7	94.13	3.685	
7,820.5	5,770.1	8,190.9	5,830.7	48.9	47.1	100.06	-2,489.8	-7.7	346.8	251.9	94.91	3.654	
7,900.0	5,770.1	8,265.6	5,828.3	50.4	48.3	99.64	-2,564.5	-8.6	347.6	249.9	97.67	3.558	
8,000.0	5,770.1	8,369.0	5,826.9	52.2	50.1	99.39	-2,667.8	-9.4	348.4	247.1	101.31	3.439	
8,100.0	5,770.1	8,471.0	5,825.8	54.1	51.9	99.20	-2,769.8	-9.3	348.4	243.5	104.95	3.320	
8,104.2	5,770.1	8,474.6	5,825.7	54.2	51.9	99.19	-2,773.4	-9.3	348.4	243.3	105.16	3.313	
8,200.0	5,770.1	8,569.1	5,823.5	55.9	53.6	98.80	-2,867.9	-10.2	349.3	240.7	108.59	3.216	
8,300.0	5,770.1	8,664.8	5,823.4	57.8	55.2	98.75	-2,963.6	-10.8	350.2	238.1	112.08	3.125	
8,400.0	5,770.1	8,754.9	5,824.0	59.6	56.8	98.80	-3,053.6	-12.5	352.6	237.1	115.48	3.053	
8,500.0	5,770.1	8,853.7	5,823.9	61.5	58.5	98.65	-3,152.2	-17.9	358.3	239.2	119.07	3.009	
8,600.0	5,770.1	8,964.6	5,829.0	63.4	60.4	99.37	-3,263.0	-21.0	362.2	239.6	122.60	2.954	
8,700.0	5,770.1	9,074.6	5,832.9	65.2	62.3	99.98	-3,373.0	-20.3	362.5	236.4	126.17	2.873	
8,800.0	5,770.1	9,182.0	5,831.6	67.1	64.2	99.86	-3,480.2	-17.3	359.8	229.9	129.94	2.769	

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

<b>Company:</b>	Whiting Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well 22D-2703A
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Reference Site:</b>	S22-T10N-R58W	<b>MD Reference:</b>	WELL @ 4848.0usft (Original Well Elev)
<b>Site Error:</b>	0.0usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	22D-2703A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S22-T10N-R58W - RAZOR 22-2712H (EXISTING) - WHITING WELL - SURVEYS												Offset Site Error:	0.0 usft
Survey Program: 190-ISCWSA MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,900.0	5,770.1	9,283.3	5,829.2	69.0	66.0	99.55	-3,581.4	-14.2	356.7	223.1	133.65	2.669	
9,000.0	5,770.1	9,388.0	5,828.0	70.8	67.8	99.48	-3,686.0	-9.2	352.1	214.8	137.31	2.564	
9,100.0	5,770.1	9,478.7	5,825.5	72.7	69.4	99.16	-3,776.7	-6.1	348.6	207.8	140.87	2.475	
9,200.0	5,770.1	9,589.2	5,821.4	74.6	71.4	98.54	-3,887.1	-3.4	346.1	201.2	144.85	2.389	
9,300.0	5,770.1	9,704.1	5,819.8	76.5	73.4	98.50	-4,001.5	5.9	338.1	189.4	148.68	2.274	
9,400.0	5,770.1	9,792.2	5,820.8	78.4	74.9	98.87	-4,089.2	14.1	329.5	177.6	151.93	2.169	
9,500.0	5,770.1	9,888.0	5,823.6	80.2	76.6	99.52	-4,184.8	20.5	323.8	168.6	155.20	2.086	
9,600.0	5,770.1	9,974.0	5,827.8	82.1	78.1	100.35	-4,270.7	23.7	321.3	163.1	158.23	2.030	
9,608.5	5,770.1	9,980.9	5,828.0	82.3	78.3	100.39	-4,277.5	23.8	321.3	162.7	158.56	2.026	
9,700.0	5,770.1	10,057.6	5,829.3	84.0	79.6	100.55	-4,354.2	22.2	323.6	162.1	161.48	2.004	
9,800.0	5,770.1	10,163.5	5,829.6	85.9	81.5	100.48	-4,460.0	18.3	327.6	162.4	165.24	1.983	
9,900.0	5,770.1	10,268.6	5,828.7	87.8	83.3	100.24	-4,565.1	16.2	329.8	160.7	169.03	1.951	
10,000.0	5,770.1	10,370.2	5,826.2	89.7	85.1	99.78	-4,666.6	15.3	330.6	157.7	172.89	1.912	
10,086.9	5,770.0	10,458.5	5,823.8	91.3	86.7	99.38	-4,754.9	15.8	329.9	153.7	176.24	1.872	
10,100.0	5,770.0	10,471.1	5,823.6	91.6	86.9	99.34	-4,767.5	15.8	330.0	153.3	176.71	1.867	
10,200.0	5,770.0	10,571.7	5,822.0	93.5	88.7	99.05	-4,868.0	15.5	330.4	149.9	180.46	1.831	
10,300.0	5,770.0	10,677.6	5,820.5	95.4	90.5	98.79	-4,973.9	16.1	329.9	145.6	184.30	1.790	
10,400.0	5,770.0	10,779.0	5,820.0	97.3	92.3	98.79	-5,075.3	19.2	327.1	139.1	187.94	1.740	
10,453.0	5,770.0	10,825.7	5,819.6	98.3	93.2	98.73	-5,122.0	19.9	326.4	136.6	189.82	1.720	
10,500.0	5,770.0	10,868.8	5,818.4	99.2	93.9	98.52	-5,165.0	19.5	326.8	135.3	191.52	1.706	
10,600.0	5,770.0	10,973.2	5,815.7	101.1	95.8	98.01	-5,269.4	18.7	327.6	132.2	195.44	1.676	
10,611.0	5,770.0	10,983.8	5,815.5	101.3	96.0	97.97	-5,280.0	18.7	327.6	131.7	195.92	1.672	
10,700.0	5,770.0	11,073.8	5,813.4	103.0	97.6	97.60	-5,370.0	18.7	327.6	128.3	199.27	1.644	
10,800.0	5,770.0	11,175.9	5,811.5	104.9	99.4	97.28	-5,472.0	19.4	327.0	123.9	203.08	1.610	
10,900.0	5,770.0	11,281.4	5,810.6	106.8	101.2	97.16	-5,577.6	21.3	325.5	118.7	206.85	1.574	
11,000.0	5,770.0	11,380.0	5,811.1	108.7	103.0	97.32	-5,676.1	24.7	322.5	112.1	210.42	1.533	
11,100.0	5,770.0	11,479.4	5,810.6	110.6	104.8	97.26	-5,775.5	26.3	321.1	107.0	214.09	1.500 Level 3	
11,200.0	5,770.0	11,580.1	5,810.7	112.5	106.6	97.33	-5,876.2	29.0	318.8	101.1	217.72	1.464 Level 3	
11,300.0	5,770.0	11,683.0	5,809.9	114.4	108.4	97.24	-5,979.0	31.8	316.4	94.9	221.47	1.429 Level 3	
11,400.0	5,770.0	11,776.5	5,810.3	116.3	110.1	97.39	-6,072.5	34.8	313.6	88.7	224.94	1.394 Level 3	
11,500.0	5,770.0	11,879.9	5,812.2	118.2	111.9	97.77	-6,175.8	36.9	312.2	83.8	228.47	1.367 Level 3	
11,579.2	5,770.0	11,952.3	5,814.3	119.7	113.2	98.18	-6,248.2	38.1	311.4	80.4	231.05	1.348 Level 3	
11,600.0	5,770.0	11,970.6	5,814.9	120.1	113.5	98.28	-6,266.4	38.2	311.5	79.8	231.70	1.344 Level 3	
11,700.0	5,770.0	12,056.6	5,817.1	122.0	115.0	98.61	-6,352.4	36.0	314.7	79.8	234.94	1.340 Level 3	
11,800.0	5,770.0	12,160.5	5,815.5	123.9	116.8	98.19	-6,456.1	31.3	319.3	80.5	238.88	1.337 Level 3	
11,900.0	5,770.0	12,262.7	5,812.8	125.8	118.6	97.62	-6,558.3	27.6	322.8	80.0	242.84	1.329 Level 3	
12,000.0	5,770.0	12,368.5	5,810.1	127.7	120.5	97.09	-6,664.0	25.2	325.1	78.2	246.85	1.317 Level 3	
12,100.0	5,770.0	12,476.8	5,806.6	129.6	122.4	96.46	-6,772.3	25.2	325.1	74.1	250.93	1.295 Level 3	
12,188.5	5,770.0	12,566.9	5,803.2	131.3	124.0	95.89	-6,862.3	26.3	323.9	69.4	254.45	1.273 Level 3	
12,200.0	5,770.0	12,568.0	5,803.2	131.5	124.1	95.88	-6,863.3	26.3	323.9	69.2	254.69	1.272 Level 3, SF	
12,300.0	5,770.0	12,568.0	5,803.2	133.4	124.1	95.88	-6,863.3	26.3	340.6	84.0	256.66	1.327 Level 3	
12,400.0	5,770.0	12,568.0	5,803.2	135.3	124.1	95.88	-6,863.3	26.3	383.6	125.0	258.63	1.483 Level 3	
12,500.0	5,770.0	12,568.0	5,803.2	137.2	124.1	95.88	-6,863.3	26.3	445.3	184.7	260.61	1.709	
12,600.0	5,770.0	12,568.0	5,803.2	139.1	124.1	95.88	-6,863.3	26.3	519.1	256.5	262.58	1.977	
12,700.0	5,770.0	12,568.0	5,803.2	141.0	124.1	95.88	-6,863.3	26.3	600.5	335.9	264.55	2.270	
12,788.9	5,770.0	12,568.0	5,803.2	142.4	124.1	95.88	-6,863.3	26.3	677.0	411.0	266.00	2.545	

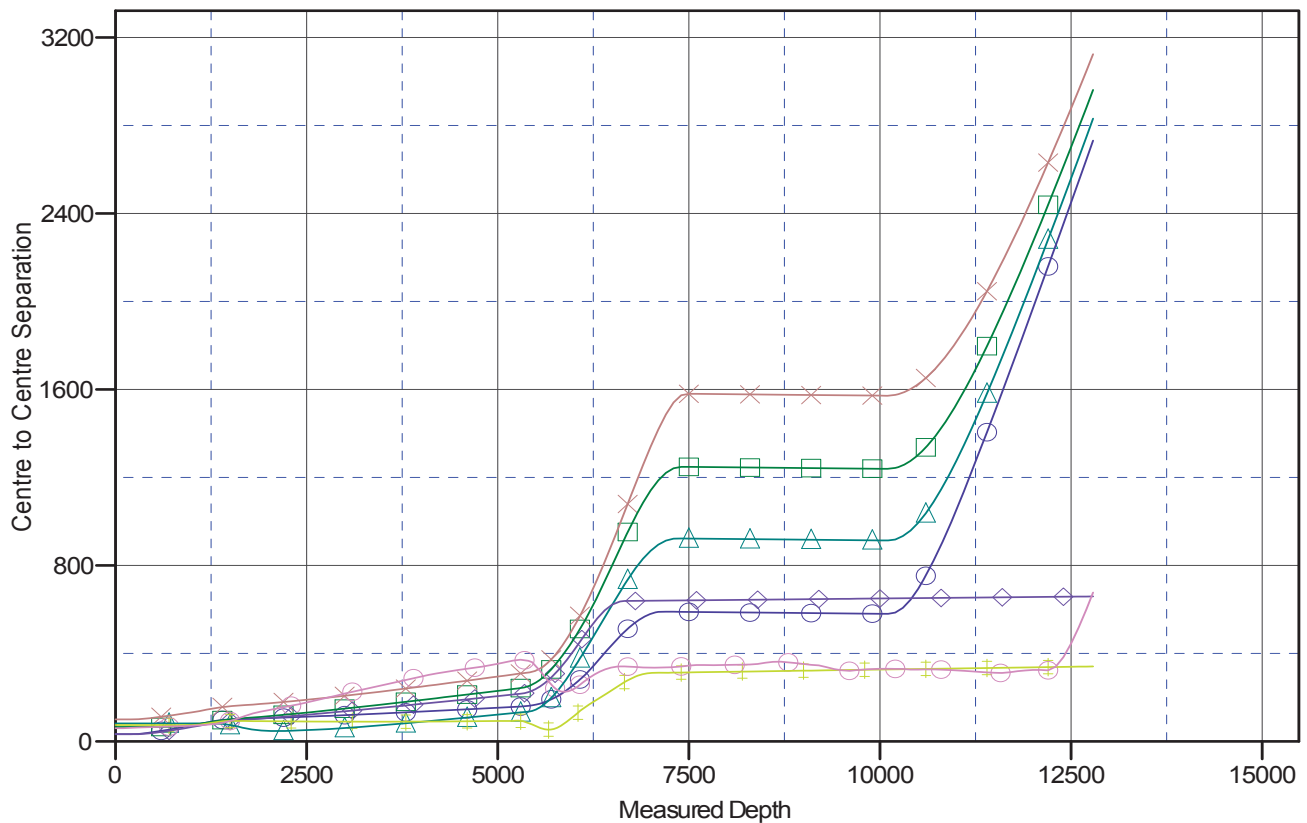
**Company:** Whiting Petroleum Corporation  
**Project:** Weld County, CO  
**Reference Site:** S22-T10N-R58W  
**Site Error:** 0.0usft  
**Reference Well:** 22D-2703A  
**Well Error:** 0.0usft  
**Reference Wellbore:** HZ  
**Reference Design:** Plan #2

**Local Co-ordinate Reference:** Well 22D-2703A  
**TVD Reference:** WELL @ 4848.0usft (Original Well Elev)  
**MD Reference:** WELL @ 4848.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** USA EDM 5000 Multi Users DB  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 4848.0usft (Original Well Elev)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: 22D-2703A  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 1.06°

## Ladder Plot



## LEGEND

lan #1 V0 ✕ 22D-2208B, HZ, Plan#1 V0 ○ RAZOR22-2712H (EXISTING), WHITIN  
 lan #1 V0 ◆ 22D-2701A, HZ, Plan#2 V0  
 lan #1 V0 ■ 22D-2704B, HZ, Plan#2 V0