



Project: Weld County, CO  
Site: Sec 25-T10N-R58W  
Well: Razor #25P-2414  
Wellbore: Hz  
Design: APD

PROJECT DETAILS: Weld County, CO  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 7.83°  
Magnetic Field  
Strength: 53021.0nT  
Dip Angle: 67.38°  
Date: 5/27/2015  
Model: IGRF2010

#### FORMATION TOP DETAILS

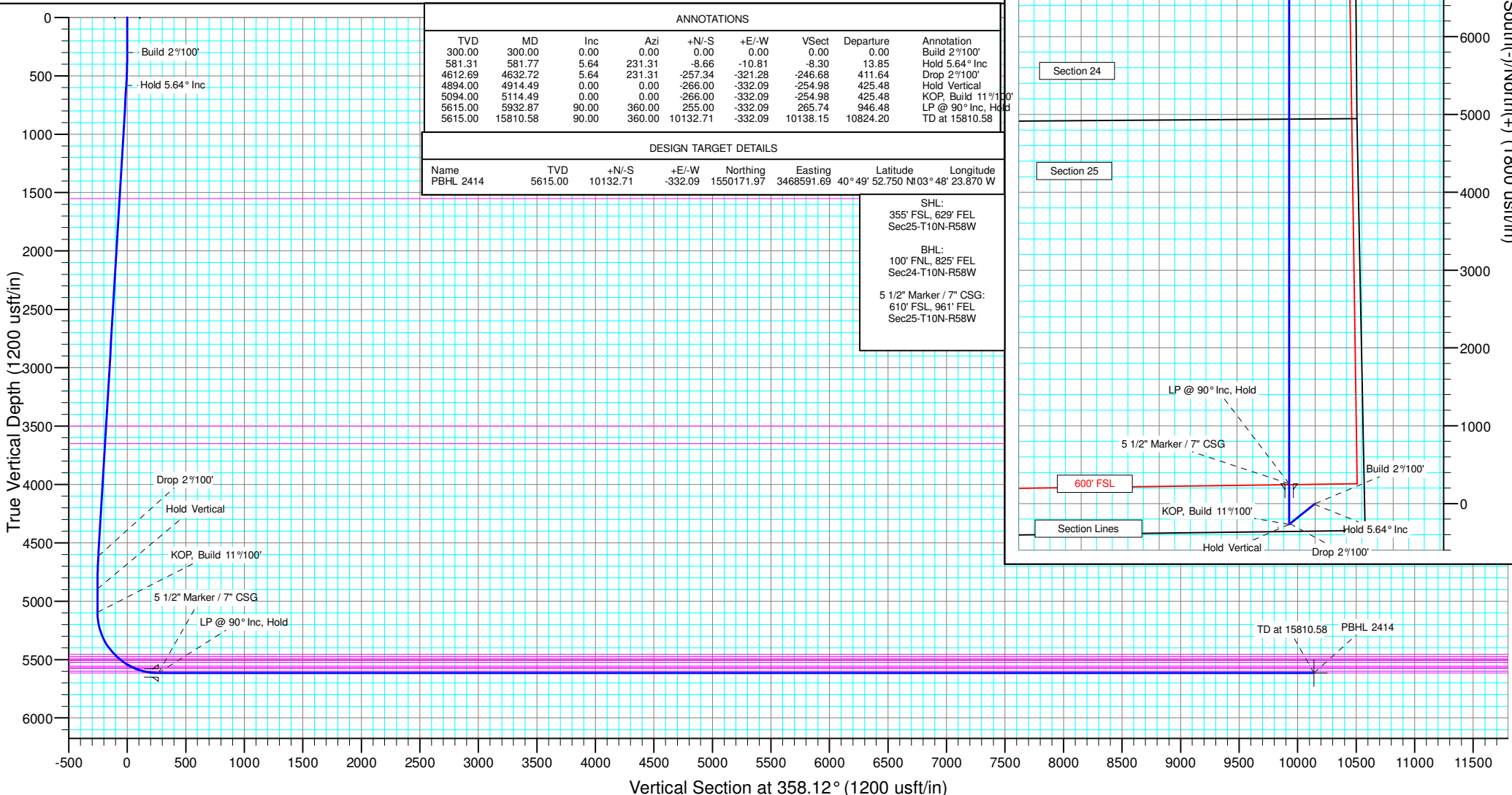
	TVDPath	MDPath	Formation
	1550.00	1555.16	Upper Pierre
	3500.00	3514.63	Hygiene
	3650.00	3665.36	Lower Pierre
	5454.00	5511.93	P200 Marker
	5474.00	5540.35	P300 Marker
	5490.00	5564.33	P350 Marker
	5504.00	5586.43	Sharon Springs
	5508.00	5592.97	Niobrara
	5525.00	5622.05	Top A Chalk
	5555.00	5680.37	Top A Marl
	5567.00	5707.48	A Marl
	5575.00	5727.39	Top Upper B
	5599.00	5803.42	Base Upper B
	5615.00	5932.87	Top Lower B

#### WELL DETAILS: Razor #25P-2414

	+N/-S	+E/-W	Northing	Ground Level:	4741.00	Longitude	Slot
	0.00	0.00	1540047.45	Easting	3469117.34	40° 48' 12.630 N	103° 48' 19.550 W

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	581.77	5.64	231.31	581.31	-8.66	-10.81	2.00	231.31	-8.30	
4	4632.72	5.64	231.31	4612.69	-257.34	-321.28	0.00	0.00	-246.68	
5	4914.49	0.00	0.00	4894.00	-266.00	-332.09	2.00	180.00	-254.98	
6	5114.49	0.00	0.00	5094.00	-266.00	-332.09	0.00	0.00	-254.98	
7	5932.87	90.00	360.00	5615.00	255.00	-332.09	11.00	360.00	265.74	
8	15810.58	90.00	360.00	5615.00	10132.71	-332.09	0.00	0.00	10138.15	PBHL 2414





# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25P-2414**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**22 February, 2016**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25P-2414
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4762.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4762.00usft
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25P-2414	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

<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		

<b>Site</b>	Sec 25-T10N-R58W			
<b>Site Position:</b>		<b>Northing:</b>	1,544,564.45 usft	<b>Latitude:</b> 40° 48' 58.050 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,464,883.62 usft	<b>Longitude:</b> 103° 49' 13.480 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 1.09 °

<b>Well</b>	Razor #25P-2414			
<b>Well Position</b>	<b>+N/-S</b>	-4,596.37 usft	<b>Northing:</b>	1,540,047.46 usft
	<b>+E/-W</b>	4,147.41 usft	<b>Easting:</b>	3,469,117.34 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,741.00 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	5/27/2015	7.83	67.38	53,021

<b>Design</b>	APD			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	358.12

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
581.77	5.64	231.31	581.31	-8.66	-10.81	2.00	2.00	0.00	231.31	
4,632.72	5.64	231.31	4,612.69	-257.34	-321.28	0.00	0.00	0.00	0.00	
4,914.49	0.00	0.00	4,894.00	-266.00	-332.09	2.00	-2.00	0.00	180.00	
5,114.49	0.00	0.00	5,094.00	-266.00	-332.09	0.00	0.00	0.00	0.00	
5,932.87	90.00	360.00	5,615.00	255.00	-332.09	11.00	11.00	0.00	360.00	
15,810.58	90.00	360.00	5,615.00	10,132.71	-332.09	0.00	0.00	0.00	0.00	PBHL 2414



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25P-2414
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4762.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4762.00usft
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25P-2414	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Build 2°/100'</b>									
400.00	2.00	231.31	399.98	-1.09	-1.36	-1.05	2.00	2.00	0.00
500.00	4.00	231.31	499.84	-4.36	-5.45	-4.18	2.00	2.00	0.00
581.77	5.64	231.31	581.31	-8.66	-10.81	-8.30	2.00	2.00	0.00
<b>Hold 5.64° Inc</b>									
600.00	5.64	231.31	599.46	-9.78	-12.20	-9.37	0.00	0.00	0.00
700.00	5.64	231.31	698.97	-15.91	-19.87	-15.25	0.00	0.00	0.00
800.00	5.64	231.31	798.49	-22.05	-27.53	-21.14	0.00	0.00	0.00
900.00	5.64	231.31	898.01	-28.19	-35.20	-27.02	0.00	0.00	0.00
1,000.00	5.64	231.31	997.52	-34.33	-42.86	-32.91	0.00	0.00	0.00
1,100.00	5.64	231.31	1,097.04	-40.47	-50.52	-38.79	0.00	0.00	0.00
1,200.00	5.64	231.31	1,196.56	-46.61	-58.19	-44.68	0.00	0.00	0.00
1,300.00	5.64	231.31	1,296.07	-52.75	-65.85	-50.56	0.00	0.00	0.00
1,400.00	5.64	231.31	1,395.59	-58.89	-73.52	-56.45	0.00	0.00	0.00
1,500.00	5.64	231.31	1,495.11	-65.03	-81.18	-62.33	0.00	0.00	0.00
1,555.16	5.64	231.31	1,550.00	-68.41	-85.41	-65.58	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	5.64	231.31	1,594.62	-71.17	-88.85	-68.22	0.00	0.00	0.00
1,700.00	5.64	231.31	1,694.14	-77.30	-96.51	-74.10	0.00	0.00	0.00
1,800.00	5.64	231.31	1,793.66	-83.44	-104.17	-79.99	0.00	0.00	0.00
1,900.00	5.64	231.31	1,893.17	-89.58	-111.84	-85.87	0.00	0.00	0.00
2,000.00	5.64	231.31	1,992.69	-95.72	-119.50	-91.76	0.00	0.00	0.00
2,100.00	5.64	231.31	2,092.21	-101.86	-127.17	-97.64	0.00	0.00	0.00
2,200.00	5.64	231.31	2,191.72	-108.00	-134.83	-103.52	0.00	0.00	0.00
2,300.00	5.64	231.31	2,291.24	-114.14	-142.50	-109.41	0.00	0.00	0.00
2,400.00	5.64	231.31	2,390.76	-120.28	-150.16	-115.29	0.00	0.00	0.00
2,500.00	5.64	231.31	2,490.28	-126.42	-157.82	-121.18	0.00	0.00	0.00
2,600.00	5.64	231.31	2,589.79	-132.56	-165.49	-127.06	0.00	0.00	0.00
2,700.00	5.64	231.31	2,689.31	-138.69	-173.15	-132.95	0.00	0.00	0.00
2,800.00	5.64	231.31	2,788.83	-144.83	-180.82	-138.83	0.00	0.00	0.00
2,900.00	5.64	231.31	2,888.34	-150.97	-188.48	-144.72	0.00	0.00	0.00
3,000.00	5.64	231.31	2,987.86	-157.11	-196.14	-150.60	0.00	0.00	0.00
3,100.00	5.64	231.31	3,087.38	-163.25	-203.81	-156.49	0.00	0.00	0.00
3,200.00	5.64	231.31	3,186.89	-169.39	-211.47	-162.37	0.00	0.00	0.00
3,300.00	5.64	231.31	3,286.41	-175.53	-219.14	-168.26	0.00	0.00	0.00
3,400.00	5.64	231.31	3,385.93	-181.67	-226.80	-174.14	0.00	0.00	0.00
3,500.00	5.64	231.31	3,485.44	-187.81	-234.47	-180.03	0.00	0.00	0.00
3,514.63	5.64	231.31	3,500.00	-188.70	-235.59	-180.89	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	5.64	231.31	3,584.96	-193.95	-242.13	-185.91	0.00	0.00	0.00
3,665.36	5.64	231.31	3,650.00	-197.96	-247.14	-189.76	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	5.64	231.31	3,684.48	-200.08	-249.79	-191.79	0.00	0.00	0.00
3,800.00	5.64	231.31	3,783.99	-206.22	-257.46	-197.68	0.00	0.00	0.00
3,900.00	5.64	231.31	3,883.51	-212.36	-265.12	-203.56	0.00	0.00	0.00
4,000.00	5.64	231.31	3,983.03	-218.50	-272.79	-209.45	0.00	0.00	0.00
4,100.00	5.64	231.31	4,082.54	-224.64	-280.45	-215.33	0.00	0.00	0.00
4,200.00	5.64	231.31	4,182.06	-230.78	-288.12	-221.22	0.00	0.00	0.00
4,300.00	5.64	231.31	4,281.58	-236.92	-295.78	-227.10	0.00	0.00	0.00
4,400.00	5.64	231.31	4,381.09	-243.06	-303.44	-232.99	0.00	0.00	0.00



# WOG

## Planning Report

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<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4762.00usft
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25P-2414	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	5.64	231.31	4,480.61	-249.20	-311.11	-238.87	0.00	0.00	0.00
4,600.00	5.64	231.31	4,580.13	-255.34	-318.77	-244.76	0.00	0.00	0.00
4,632.72	5.64	231.31	4,612.69	-257.34	-321.28	-246.68	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,700.00	4.29	231.31	4,679.71	-260.98	-325.82	-250.17	2.00	-2.00	0.00
4,800.00	2.29	231.31	4,779.54	-264.57	-330.30	-253.61	2.00	-2.00	0.00
4,900.00	0.29	231.31	4,879.51	-265.98	-332.06	-254.96	2.00	-2.00	0.00
4,914.49	0.00	0.00	4,894.00	-266.00	-332.09	-254.98	2.00	-2.00	888.37
<b>Hold Vertical</b>									
5,000.00	0.00	0.00	4,979.51	-266.00	-332.09	-254.98	0.00	0.00	0.00
5,100.00	0.00	0.00	5,079.51	-266.00	-332.09	-254.98	0.00	0.00	0.00
5,114.49	0.00	0.00	5,094.00	-266.00	-332.09	-254.98	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,200.00	9.40	360.00	5,179.13	-259.00	-332.09	-247.98	11.00	11.00	0.00
5,300.00	20.40	360.00	5,275.62	-233.32	-332.09	-222.32	11.00	11.00	0.00
5,400.00	31.40	360.00	5,365.44	-189.71	-332.09	-178.73	11.00	11.00	0.00
5,500.00	42.40	360.00	5,445.28	-129.76	-332.09	-118.81	11.00	11.00	0.00
5,511.93	43.71	360.00	5,454.00	-121.62	-332.09	-110.67	11.00	11.00	0.00
<b>P200 Marker</b>									
5,540.35	46.83	360.00	5,474.00	-101.43	-332.09	-90.50	11.00	11.00	0.00
<b>P300 Marker</b>									
5,564.33	49.47	360.00	5,490.00	-83.56	-332.09	-72.64	11.00	11.00	0.00
<b>P350 Marker</b>									
5,586.43	51.90	360.00	5,504.00	-66.47	-332.09	-55.55	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,592.97	52.62	360.00	5,508.00	-61.30	-332.09	-50.39	11.00	11.00	0.00
<b>Niobrara</b>									
5,600.00	53.39	360.00	5,512.23	-55.68	-332.09	-44.77	11.00	11.00	0.00
5,622.05	55.82	360.00	5,525.00	-37.71	-332.09	-26.81	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,680.37	62.23	360.00	5,555.00	12.27	-332.09	23.14	11.00	11.00	0.00
<b>Top A Marl</b>									
5,700.00	64.39	360.00	5,563.82	29.81	-332.09	40.67	11.00	11.00	0.00
5,707.48	65.21	360.00	5,567.00	36.57	-332.09	47.43	11.00	11.00	0.00
<b>A Marl</b>									
5,727.39	67.40	360.00	5,575.00	54.80	-332.09	65.65	11.00	11.00	0.00
<b>Top Upper B</b>									
5,800.00	75.39	360.00	5,598.15	123.56	-332.09	134.38	11.00	11.00	0.00
5,803.42	75.76	360.00	5,599.00	126.88	-332.09	137.68	11.00	11.00	0.00
<b>Base Upper B</b>									
5,900.00	86.39	360.00	5,613.96	222.15	-332.09	232.91	11.00	11.00	0.00
5,932.87	90.00	360.00	5,615.00	255.00	-332.09	265.74	11.00	11.00	0.00
<b>LP @ 90° Inc, Hold - Top Lower B - 5 1/2" Marker / 7" CSG</b>									
6,000.00	90.00	360.00	5,615.00	322.13	-332.09	332.83	0.00	0.00	0.00
6,100.00	90.00	360.00	5,615.00	422.13	-332.09	432.78	0.00	0.00	0.00
6,200.00	90.00	360.00	5,615.00	522.13	-332.09	532.73	0.00	0.00	0.00
6,300.00	90.00	360.00	5,615.00	622.13	-332.09	632.67	0.00	0.00	0.00
6,400.00	90.00	360.00	5,615.00	722.13	-332.09	732.62	0.00	0.00	0.00
6,500.00	90.00	360.00	5,615.00	822.13	-332.09	832.57	0.00	0.00	0.00
6,600.00	90.00	360.00	5,615.00	922.13	-332.09	932.51	0.00	0.00	0.00
6,700.00	90.00	360.00	5,615.00	1,022.13	-332.09	1,032.46	0.00	0.00	0.00
6,800.00	90.00	360.00	5,615.00	1,122.13	-332.09	1,132.40	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25P-2414
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4762.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4762.00usft
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25P-2414	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
6,900.00	90.00	360.00	5,615.00	1,222.13	-332.09	1,232.35	0.00	0.00	0.00	
7,000.00	90.00	360.00	5,615.00	1,322.13	-332.09	1,332.30	0.00	0.00	0.00	
7,100.00	90.00	360.00	5,615.00	1,422.13	-332.09	1,432.24	0.00	0.00	0.00	
7,200.00	90.00	360.00	5,615.00	1,522.13	-332.09	1,532.19	0.00	0.00	0.00	
7,300.00	90.00	360.00	5,615.00	1,622.13	-332.09	1,632.14	0.00	0.00	0.00	
7,400.00	90.00	360.00	5,615.00	1,722.13	-332.09	1,732.08	0.00	0.00	0.00	
7,500.00	90.00	360.00	5,615.00	1,822.13	-332.09	1,832.03	0.00	0.00	0.00	
7,600.00	90.00	360.00	5,615.00	1,922.13	-332.09	1,931.97	0.00	0.00	0.00	
7,700.00	90.00	360.00	5,615.00	2,022.13	-332.09	2,031.92	0.00	0.00	0.00	
7,800.00	90.00	360.00	5,615.00	2,122.13	-332.09	2,131.87	0.00	0.00	0.00	
7,900.00	90.00	360.00	5,615.00	2,222.13	-332.09	2,231.81	0.00	0.00	0.00	
8,000.00	90.00	360.00	5,615.00	2,322.13	-332.09	2,331.76	0.00	0.00	0.00	
8,100.00	90.00	360.00	5,615.00	2,422.13	-332.09	2,431.71	0.00	0.00	0.00	
8,200.00	90.00	360.00	5,615.00	2,522.13	-332.09	2,531.65	0.00	0.00	0.00	
8,300.00	90.00	360.00	5,615.00	2,622.13	-332.09	2,631.60	0.00	0.00	0.00	
8,400.00	90.00	360.00	5,615.00	2,722.13	-332.09	2,731.55	0.00	0.00	0.00	
8,500.00	90.00	360.00	5,615.00	2,822.13	-332.09	2,831.49	0.00	0.00	0.00	
8,600.00	90.00	360.00	5,615.00	2,922.13	-332.09	2,931.44	0.00	0.00	0.00	
8,700.00	90.00	360.00	5,615.00	3,022.13	-332.09	3,031.38	0.00	0.00	0.00	
8,800.00	90.00	360.00	5,615.00	3,122.13	-332.09	3,131.33	0.00	0.00	0.00	
8,900.00	90.00	360.00	5,615.00	3,222.13	-332.09	3,231.28	0.00	0.00	0.00	
9,000.00	90.00	360.00	5,615.00	3,322.13	-332.09	3,331.22	0.00	0.00	0.00	
9,100.00	90.00	360.00	5,615.00	3,422.13	-332.09	3,431.17	0.00	0.00	0.00	
9,200.00	90.00	360.00	5,615.00	3,522.13	-332.09	3,531.12	0.00	0.00	0.00	
9,300.00	90.00	360.00	5,615.00	3,622.13	-332.09	3,631.06	0.00	0.00	0.00	
9,400.00	90.00	360.00	5,615.00	3,722.13	-332.09	3,731.01	0.00	0.00	0.00	
9,500.00	90.00	360.00	5,615.00	3,822.13	-332.09	3,830.96	0.00	0.00	0.00	
9,600.00	90.00	360.00	5,615.00	3,922.13	-332.09	3,930.90	0.00	0.00	0.00	
9,700.00	90.00	360.00	5,615.00	4,022.13	-332.09	4,030.85	0.00	0.00	0.00	
9,800.00	90.00	360.00	5,615.00	4,122.13	-332.09	4,130.79	0.00	0.00	0.00	
9,900.00	90.00	360.00	5,615.00	4,222.13	-332.09	4,230.74	0.00	0.00	0.00	
10,000.00	90.00	360.00	5,615.00	4,322.13	-332.09	4,330.69	0.00	0.00	0.00	
10,100.00	90.00	360.00	5,615.00	4,422.13	-332.09	4,430.63	0.00	0.00	0.00	
10,200.00	90.00	360.00	5,615.00	4,522.13	-332.09	4,530.58	0.00	0.00	0.00	
10,300.00	90.00	360.00	5,615.00	4,622.13	-332.09	4,630.53	0.00	0.00	0.00	
10,400.00	90.00	360.00	5,615.00	4,722.13	-332.09	4,730.47	0.00	0.00	0.00	
10,500.00	90.00	360.00	5,615.00	4,822.13	-332.09	4,830.42	0.00	0.00	0.00	
10,600.00	90.00	360.00	5,615.00	4,922.13	-332.09	4,930.37	0.00	0.00	0.00	
10,700.00	90.00	360.00	5,615.00	5,022.13	-332.09	5,030.31	0.00	0.00	0.00	
10,800.00	90.00	360.00	5,615.00	5,122.13	-332.09	5,130.26	0.00	0.00	0.00	
10,900.00	90.00	360.00	5,615.00	5,222.13	-332.09	5,230.20	0.00	0.00	0.00	
11,000.00	90.00	360.00	5,615.00	5,322.13	-332.09	5,330.15	0.00	0.00	0.00	
11,100.00	90.00	360.00	5,615.00	5,422.13	-332.09	5,430.10	0.00	0.00	0.00	
11,200.00	90.00	360.00	5,615.00	5,522.13	-332.09	5,530.04	0.00	0.00	0.00	
11,300.00	90.00	360.00	5,615.00	5,622.13	-332.09	5,629.99	0.00	0.00	0.00	
11,400.00	90.00	360.00	5,615.00	5,722.13	-332.09	5,729.94	0.00	0.00	0.00	
11,500.00	90.00	360.00	5,615.00	5,822.13	-332.09	5,829.88	0.00	0.00	0.00	
11,600.00	90.00	360.00	5,615.00	5,922.13	-332.09	5,929.83	0.00	0.00	0.00	
11,700.00	90.00	360.00	5,615.00	6,022.13	-332.09	6,029.77	0.00	0.00	0.00	
11,800.00	90.00	360.00	5,615.00	6,122.13	-332.09	6,129.72	0.00	0.00	0.00	
11,900.00	90.00	360.00	5,615.00	6,222.13	-332.09	6,229.67	0.00	0.00	0.00	
12,000.00	90.00	360.00	5,615.00	6,322.13	-332.09	6,329.61	0.00	0.00	0.00	
12,100.00	90.00	360.00	5,615.00	6,422.13	-332.09	6,429.56	0.00	0.00	0.00	
12,200.00	90.00	360.00	5,615.00	6,522.13	-332.09	6,529.51	0.00	0.00	0.00	



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25P-2414
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4762.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4762.00usft
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25P-2414	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,300.00	90.00	360.00	5,615.00	6,622.13	-332.09	6,629.45	0.00	0.00	0.00
12,400.00	90.00	360.00	5,615.00	6,722.13	-332.09	6,729.40	0.00	0.00	0.00
12,500.00	90.00	360.00	5,615.00	6,822.13	-332.09	6,829.35	0.00	0.00	0.00
12,600.00	90.00	360.00	5,615.00	6,922.13	-332.09	6,929.29	0.00	0.00	0.00
12,700.00	90.00	360.00	5,615.00	7,022.13	-332.09	7,029.24	0.00	0.00	0.00
12,800.00	90.00	360.00	5,615.00	7,122.13	-332.09	7,129.18	0.00	0.00	0.00
12,900.00	90.00	360.00	5,615.00	7,222.13	-332.09	7,229.13	0.00	0.00	0.00
13,000.00	90.00	360.00	5,615.00	7,322.13	-332.09	7,329.08	0.00	0.00	0.00
13,100.00	90.00	360.00	5,615.00	7,422.13	-332.09	7,429.02	0.00	0.00	0.00
13,200.00	90.00	360.00	5,615.00	7,522.13	-332.09	7,528.97	0.00	0.00	0.00
13,300.00	90.00	360.00	5,615.00	7,622.13	-332.09	7,628.92	0.00	0.00	0.00
13,400.00	90.00	360.00	5,615.00	7,722.13	-332.09	7,728.86	0.00	0.00	0.00
13,500.00	90.00	360.00	5,615.00	7,822.13	-332.09	7,828.81	0.00	0.00	0.00
13,600.00	90.00	360.00	5,615.00	7,922.13	-332.09	7,928.76	0.00	0.00	0.00
13,700.00	90.00	360.00	5,615.00	8,022.13	-332.09	8,028.70	0.00	0.00	0.00
13,800.00	90.00	360.00	5,615.00	8,122.13	-332.09	8,128.65	0.00	0.00	0.00
13,900.00	90.00	360.00	5,615.00	8,222.13	-332.09	8,228.59	0.00	0.00	0.00
14,000.00	90.00	360.00	5,615.00	8,322.13	-332.09	8,328.54	0.00	0.00	0.00
14,100.00	90.00	360.00	5,615.00	8,422.13	-332.09	8,428.49	0.00	0.00	0.00
14,200.00	90.00	360.00	5,615.00	8,522.13	-332.09	8,528.43	0.00	0.00	0.00
14,300.00	90.00	360.00	5,615.00	8,622.13	-332.09	8,628.38	0.00	0.00	0.00
14,400.00	90.00	360.00	5,615.00	8,722.13	-332.09	8,728.33	0.00	0.00	0.00
14,500.00	90.00	360.00	5,615.00	8,822.13	-332.09	8,828.27	0.00	0.00	0.00
14,600.00	90.00	360.00	5,615.00	8,922.13	-332.09	8,928.22	0.00	0.00	0.00
14,700.00	90.00	360.00	5,615.00	9,022.13	-332.09	9,028.17	0.00	0.00	0.00
14,800.00	90.00	360.00	5,615.00	9,122.13	-332.09	9,128.11	0.00	0.00	0.00
14,900.00	90.00	360.00	5,615.00	9,222.13	-332.09	9,228.06	0.00	0.00	0.00
15,000.00	90.00	360.00	5,615.00	9,322.13	-332.09	9,328.00	0.00	0.00	0.00
15,100.00	90.00	360.00	5,615.00	9,422.13	-332.09	9,427.95	0.00	0.00	0.00
15,200.00	90.00	360.00	5,615.00	9,522.13	-332.09	9,527.90	0.00	0.00	0.00
15,300.00	90.00	360.00	5,615.00	9,622.13	-332.09	9,627.84	0.00	0.00	0.00
15,400.00	90.00	360.00	5,615.00	9,722.13	-332.09	9,727.79	0.00	0.00	0.00
15,500.00	90.00	360.00	5,615.00	9,822.13	-332.09	9,827.74	0.00	0.00	0.00
15,600.00	90.00	360.00	5,615.00	9,922.13	-332.09	9,927.68	0.00	0.00	0.00
15,700.00	90.00	360.00	5,615.00	10,022.13	-332.09	10,027.63	0.00	0.00	0.00
15,800.00	90.00	360.00	5,615.00	10,122.13	-332.09	10,127.57	0.00	0.00	0.00
15,810.58	90.00	360.00	5,615.00	10,132.71	-332.09	10,138.15	0.00	0.00	0.00
TD at 15810.58									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL 2414	0.00	0.00	5,615.00	10,132.71	-332.09	1,550,171.97	3,468,591.69	40° 49' 52.750 N	103° 48' 23.870 W
- plan hits target center									
- Point									



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25P-2414
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4762.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4762.00usft
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25P-2414	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,932.87	5,615.00	5 1/2" Marker / 7" CSG	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,555.16	1,550.00	Upper Pierre				
3,514.63	3,500.00	Hygiene				
3,665.36	3,650.00	Lower Pierre				
5,511.93	5,454.00	P200 Marker				
5,540.35	5,474.00	P300 Marker				
5,564.33	5,490.00	P350 Marker				
5,586.43	5,504.00	Sharon Springs				
5,592.97	5,508.00	Niobrara				
5,622.05	5,525.00	Top A Chalk				
5,680.37	5,555.00	Top A Marl				
5,707.48	5,567.00	A Marl				
5,727.39	5,575.00	Top Upper B				
5,803.42	5,599.00	Base Upper B				
5,932.87	5,615.00	Top Lower B				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.00	300.00	0.00	0.00	Build 2°/100'	
581.77	581.31	-8.66	-10.81	Hold 5.64° Inc	
4,632.72	4,612.69	-257.34	-321.28	Drop 2°/100'	
4,914.49	4,894.00	-266.00	-332.09	Hold Vertical	
5,114.49	5,094.00	-266.00	-332.09	KOP, Build 11°/100'	
5,932.87	5,615.00	255.00	-332.09	LP @ 90° Inc, Hold	
15,810.58	5,615.00	10,132.71	-332.09	TD at 15810.58	