



Project: Weld County, CO  
Site: Sec 25-T10N-R58W  
Well: Razor #250-2410  
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: 7.84°  
Magnetic Field  
Strength: 53022.3nT  
Dip Angle: 67.38°  
Date: 5/21/2015  
Model: IGRF2010

#### FORMATION TOP DETAILS

MDPath	Formation
1550.00	Upper Pierre
1554.68	Hygiene
3500.00	Lower Pierre
3513.20	P200 Marker
3650.00	P300 Marker
3663.86	P350 Marker
5435.00	Sharon Springs
5455.00	Niobrara
5471.00	Top A Chalk
5485.00	Top A Marl
5489.00	A Marl
5506.00	Top Upper B
5536.00	Base Upper B
5548.00	Top Lower B
5566.00	
5580.00	
5596.00	

#### WELL DETAILS: Razor #250-2410

+N/-S	+E/-W	Northing	Ground Level:	4717.00	Eastings	40° 48' 12.460 N	Longitude	103° 48' 37.100 W	Slot
0.00	0.00	1540004.50			3467768.26				

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	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	567.31	5.35	228.71	566.92	-8.22	-9.36	2.00	228.71	-7.94	
4	4626.12	5.35	228.71	4608.08	-257.78	-293.51	0.00	0.00	-248.90	
5	4893.43	0.00	0.00	4875.00	-266.00	-302.87	2.00	180.00	-256.84	
6	5093.43	0.00	0.00	5075.00	-266.00	-302.87	0.00	0.00	-256.84	
7	5911.82	90.00	360.00	5596.00	255.00	-302.87	11.00	360.00	263.92	
8	15801.67	90.00	360.00	5596.00	10144.85	-302.87	0.00	0.00	10149.38	PBHL 2410

#### ANNOTATIONS

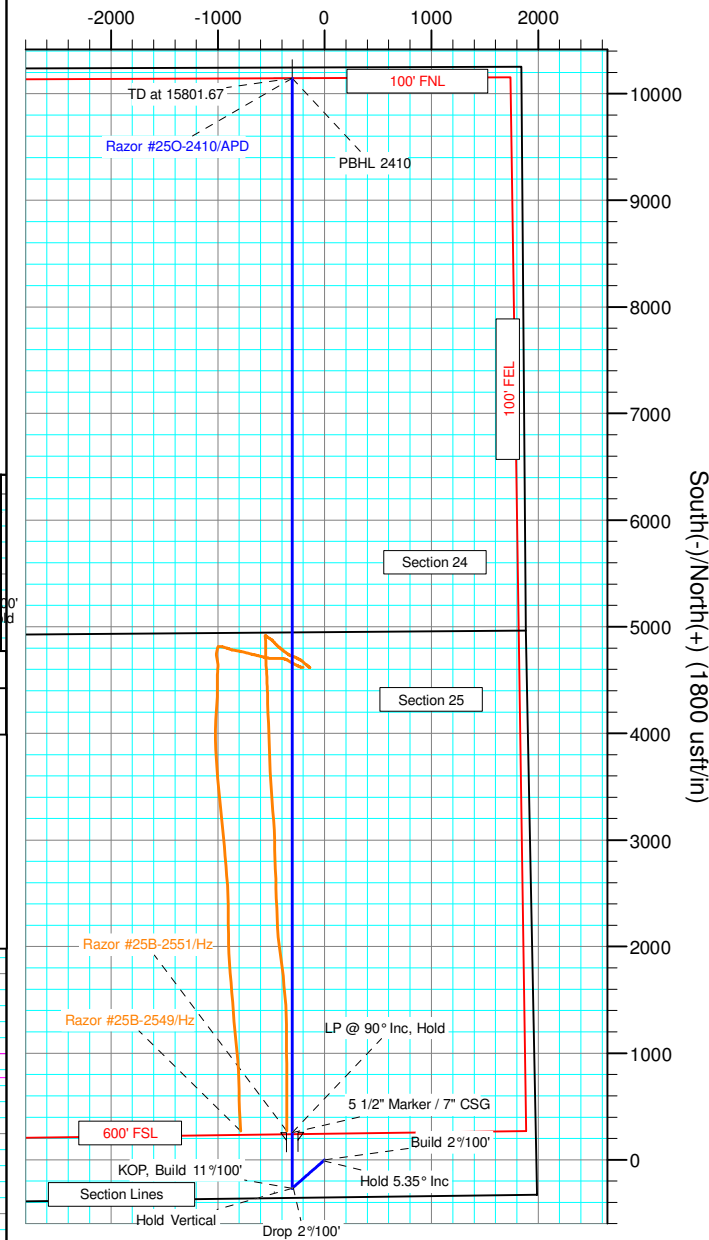
TVD	MD	Inc	Azi	+N/-S	+E/-W	VFace	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
566.92	567.31	5.35	228.71	-8.22	-9.36	-7.94	12.46	Hold 5.35° Inc
4608.08	4626.12	5.35	228.71	-257.78	-293.51	-248.90	390.64	Drop 2°/100'
4875.00	4893.43	0.00	0.00	-266.00	-302.87	-256.84	403.10	Hold Vertical
5075.00	5093.43	0.00	0.00	-266.00	-302.87	-256.84	403.10	KOP, Build 11°/100'
5596.00	5911.82	90.00	360.00	255.00	-302.87	263.92	924.10	LP @ 90° Inc, Hold
5596.00	15801.67	90.00	360.00	10144.85	-302.87	10149.38	10813.95	TD at 15801.67

#### DESIGN TARGET DETAILS

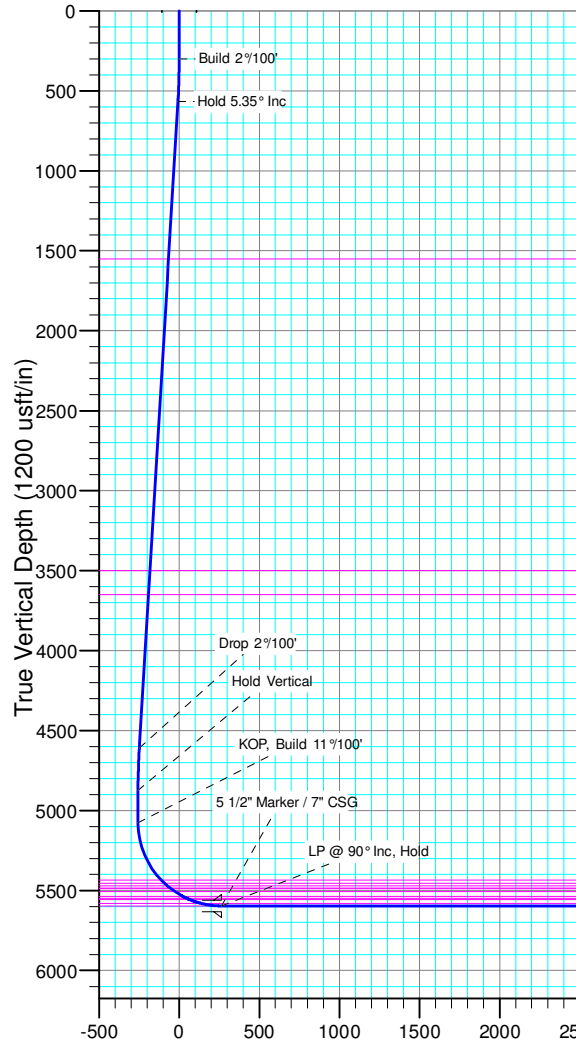
Name	TVD	+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude
PBHL 2410	5596.00	10144.85	-302.87	1550141.74	3467272.14	40° 49' 52.700 N	103° 48' 41.040 W

SHL:  
355' FSL, 1980' FEL  
Sec25-T10N-R58W  
  
BHL:  
100' FNL, 2145' FEL  
Sec24-T10N-R58W  
  
5 1/2" Marker / 7" CSG:  
610' FSL, 2283' FEL  
Sec25-T10N-R58W

#### West(-)/East(+) (1800 usft/in)



South(-)/North(+) (1800 usft/in)



Vertical Section at 358.29° (1200 usft/in)



# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25O-2410**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**26 February, 2016**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2410
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2410	<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		

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

Well		Razor #25O-2410				
Well Position	+N/-S	-4,613.77 usft	Northing:	1,540,004.50 usft	Latitude:	40° 48' 12.460 N
	+E/-W	2,797.75 usft	Easting:	3,467,768.26 usft	Longitude:	103° 48' 37.100 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	4,717.00 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	5/21/2015	7.84	67.38	53,022

<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	358.29

<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	
567.31	5.35	228.71	566.92	-8.22	-9.36	2.00	2.00	0.00	228.71	
4,626.12	5.35	228.71	4,608.08	-257.78	-293.51	0.00	0.00	0.00	0.00	
4,893.43	0.00	0.00	4,875.00	-266.00	-302.87	2.00	-2.00	0.00	180.00	
5,093.43	0.00	0.00	5,075.00	-266.00	-302.87	0.00	0.00	0.00	0.00	
5,911.82	90.00	360.00	5,596.00	255.00	-302.87	11.00	11.00	0.00	360.00	
15,801.67	90.00	360.00	5,596.00	10,144.86	-302.87	0.00	0.00	0.00	0.00	PBHL 2410



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2410
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2410	<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	228.71	399.98	-1.15	-1.31	-1.11	2.00	2.00	0.00
500.00	4.00	228.71	499.84	-4.61	-5.24	-4.45	2.00	2.00	0.00
567.31	5.35	228.71	566.92	-8.22	-9.36	-7.94	2.00	2.00	0.00
<b>Hold 5.35° Inc</b>									
600.00	5.35	228.71	599.47	-10.23	-11.65	-9.88	0.00	0.00	0.00
700.00	5.35	228.71	699.04	-16.38	-18.65	-15.82	0.00	0.00	0.00
800.00	5.35	228.71	798.60	-22.53	-25.65	-21.75	0.00	0.00	0.00
900.00	5.35	228.71	898.17	-28.68	-32.65	-27.69	0.00	0.00	0.00
1,000.00	5.35	228.71	997.73	-34.83	-39.66	-33.63	0.00	0.00	0.00
1,100.00	5.35	228.71	1,097.30	-40.98	-46.66	-39.57	0.00	0.00	0.00
1,200.00	5.35	228.71	1,196.86	-47.12	-53.66	-45.50	0.00	0.00	0.00
1,300.00	5.35	228.71	1,296.42	-53.27	-60.66	-51.44	0.00	0.00	0.00
1,400.00	5.35	228.71	1,395.99	-59.42	-67.66	-57.38	0.00	0.00	0.00
1,500.00	5.35	228.71	1,495.55	-65.57	-74.66	-63.31	0.00	0.00	0.00
1,554.68	5.35	228.71	1,550.00	-68.93	-78.49	-66.56	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	5.35	228.71	1,595.12	-71.72	-81.66	-69.25	0.00	0.00	0.00
1,700.00	5.35	228.71	1,694.68	-77.87	-88.66	-75.19	0.00	0.00	0.00
1,800.00	5.35	228.71	1,794.25	-84.01	-95.66	-81.12	0.00	0.00	0.00
1,900.00	5.35	228.71	1,893.81	-90.16	-102.66	-87.06	0.00	0.00	0.00
2,000.00	5.35	228.71	1,993.38	-96.31	-109.66	-93.00	0.00	0.00	0.00
2,100.00	5.35	228.71	2,092.94	-102.46	-116.66	-98.93	0.00	0.00	0.00
2,200.00	5.35	228.71	2,192.51	-108.61	-123.66	-104.87	0.00	0.00	0.00
2,300.00	5.35	228.71	2,292.07	-114.76	-130.67	-110.81	0.00	0.00	0.00
2,400.00	5.35	228.71	2,391.64	-120.91	-137.67	-116.74	0.00	0.00	0.00
2,500.00	5.35	228.71	2,491.20	-127.05	-144.67	-122.68	0.00	0.00	0.00
2,600.00	5.35	228.71	2,590.77	-133.20	-151.67	-128.62	0.00	0.00	0.00
2,700.00	5.35	228.71	2,690.33	-139.35	-158.67	-134.55	0.00	0.00	0.00
2,800.00	5.35	228.71	2,789.90	-145.50	-165.67	-140.49	0.00	0.00	0.00
2,900.00	5.35	228.71	2,889.46	-151.65	-172.67	-146.43	0.00	0.00	0.00
3,000.00	5.35	228.71	2,989.03	-157.80	-179.67	-152.36	0.00	0.00	0.00
3,100.00	5.35	228.71	3,088.59	-163.94	-186.67	-158.30	0.00	0.00	0.00
3,200.00	5.35	228.71	3,188.16	-170.09	-193.67	-164.24	0.00	0.00	0.00
3,300.00	5.35	228.71	3,287.72	-176.24	-200.67	-170.17	0.00	0.00	0.00
3,400.00	5.35	228.71	3,387.29	-182.39	-207.67	-176.11	0.00	0.00	0.00
3,500.00	5.35	228.71	3,486.85	-188.54	-214.67	-182.05	0.00	0.00	0.00
3,513.20	5.35	228.71	3,500.00	-189.35	-215.60	-182.83	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	5.35	228.71	3,586.42	-194.69	-221.67	-187.98	0.00	0.00	0.00
3,663.86	5.35	228.71	3,650.00	-198.61	-226.15	-191.78	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	5.35	228.71	3,685.98	-200.83	-228.68	-193.92	0.00	0.00	0.00
3,800.00	5.35	228.71	3,785.55	-206.98	-235.68	-199.86	0.00	0.00	0.00
3,900.00	5.35	228.71	3,885.11	-213.13	-242.68	-205.79	0.00	0.00	0.00
4,000.00	5.35	228.71	3,984.68	-219.28	-249.68	-211.73	0.00	0.00	0.00
4,100.00	5.35	228.71	4,084.24	-225.43	-256.68	-217.67	0.00	0.00	0.00
4,200.00	5.35	228.71	4,183.81	-231.58	-263.68	-223.60	0.00	0.00	0.00
4,300.00	5.35	228.71	4,283.37	-237.73	-270.68	-229.54	0.00	0.00	0.00
4,400.00	5.35	228.71	4,382.94	-243.87	-277.68	-235.48	0.00	0.00	0.00



# WOG Planning Report

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<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2410	<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	5.35	228.71	4,482.50	-250.02	-284.68	-241.42	0.00	0.00	0.00
4,600.00	5.35	228.71	4,582.07	-256.17	-291.68	-247.35	0.00	0.00	0.00
4,626.12	5.35	228.71	4,608.08	-257.78	-293.51	-248.90	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,700.00	3.87	228.71	4,681.72	-261.69	-297.97	-252.68	2.00	-2.00	0.00
4,800.00	1.87	228.71	4,781.58	-264.99	-301.73	-255.87	2.00	-2.00	0.00
4,893.43	0.00	0.00	4,875.00	-266.00	-302.87	-256.84	2.00	-2.00	0.00
<b>Hold Vertical</b>									
4,900.00	0.00	0.00	4,881.57	-266.00	-302.87	-256.84	0.00	0.00	0.00
5,000.00	0.00	0.00	4,981.57	-266.00	-302.87	-256.84	0.00	0.00	0.00
5,093.43	0.00	0.00	5,075.00	-266.00	-302.87	-256.84	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,100.00	0.72	360.00	5,081.57	-265.96	-302.87	-256.80	11.00	11.00	0.00
5,200.00	11.72	360.00	5,180.83	-255.14	-302.87	-245.99	11.00	11.00	0.00
5,300.00	22.72	360.00	5,276.20	-225.58	-302.87	-216.44	11.00	11.00	0.00
5,400.00	33.71	360.00	5,364.18	-178.38	-302.87	-169.26	11.00	11.00	0.00
5,490.87	43.71	360.00	5,435.00	-121.62	-302.87	-112.53	11.00	11.00	0.00
<b>P200 Marker</b>									
5,500.00	44.71	360.00	5,441.54	-115.25	-302.87	-106.16	11.00	11.00	0.00
5,519.30	46.83	360.00	5,455.00	-101.43	-302.87	-92.34	11.00	11.00	0.00
<b>P300 Marker</b>									
5,543.28	49.47	360.00	5,471.00	-83.56	-302.87	-74.49	11.00	11.00	0.00
<b>P350 Marker</b>									
5,565.38	51.90	360.00	5,485.00	-66.47	-302.87	-57.40	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,571.91	52.62	360.00	5,489.00	-61.30	-302.87	-52.23	11.00	11.00	0.00
<b>Niobrara</b>									
5,600.00	55.71	360.00	5,505.44	-38.53	-302.87	-29.48	11.00	11.00	0.00
5,600.99	55.82	360.00	5,506.00	-37.71	-302.87	-28.66	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,659.31	62.23	360.00	5,536.00	12.27	-302.87	21.30	11.00	11.00	0.00
<b>Top A Marl</b>									
5,686.42	65.21	360.00	5,548.00	36.57	-302.87	45.59	11.00	11.00	0.00
<b>A Marl</b>									
5,700.00	66.71	360.00	5,553.53	48.97	-302.87	57.99	11.00	11.00	0.00
5,706.33	67.40	360.00	5,556.00	54.80	-302.87	63.81	11.00	11.00	0.00
<b>Top Upper B</b>									
5,782.36	75.76	360.00	5,580.00	126.88	-302.87	135.86	11.00	11.00	0.00
<b>Base Upper B</b>									
5,800.00	77.70	360.00	5,584.05	144.04	-302.87	153.01	11.00	11.00	0.00
5,900.00	88.70	360.00	5,595.87	243.18	-302.87	252.11	11.00	11.00	0.00
5,911.82	90.00	360.00	5,596.00	255.00	-302.87	263.93	10.99	10.99	0.00
<b>LP @ 90° Inc, Hold - Top Lower B - 5 1/2" Marker / 7" CSG</b>									
6,000.00	90.00	360.00	5,596.00	343.18	-302.87	352.07	0.00	0.00	0.00
6,100.00	90.00	360.00	5,596.00	443.18	-302.87	452.02	0.00	0.00	0.00
6,200.00	90.00	360.00	5,596.00	543.18	-302.87	551.98	0.00	0.00	0.00
6,300.00	90.00	360.00	5,596.00	643.18	-302.87	651.94	0.00	0.00	0.00
6,400.00	90.00	360.00	5,596.00	743.18	-302.87	751.89	0.00	0.00	0.00
6,500.00	90.00	360.00	5,596.00	843.18	-302.87	851.85	0.00	0.00	0.00
6,600.00	90.00	360.00	5,596.00	943.18	-302.87	951.80	0.00	0.00	0.00
6,700.00	90.00	360.00	5,596.00	1,043.18	-302.87	1,051.76	0.00	0.00	0.00
6,800.00	90.00	360.00	5,596.00	1,143.18	-302.87	1,151.71	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2410
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2410	<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	5,596.00	1,243.18	-302.87	1,251.67	0.00	0.00	0.00	
7,000.00	90.00	360.00	5,596.00	1,343.18	-302.87	1,351.62	0.00	0.00	0.00	
7,100.00	90.00	360.00	5,596.00	1,443.18	-302.87	1,451.58	0.00	0.00	0.00	
7,200.00	90.00	360.00	5,596.00	1,543.18	-302.87	1,551.53	0.00	0.00	0.00	
7,300.00	90.00	360.00	5,596.00	1,643.18	-302.87	1,651.49	0.00	0.00	0.00	
7,400.00	90.00	360.00	5,596.00	1,743.18	-302.87	1,751.45	0.00	0.00	0.00	
7,500.00	90.00	360.00	5,596.00	1,843.18	-302.87	1,851.40	0.00	0.00	0.00	
7,600.00	90.00	360.00	5,596.00	1,943.18	-302.87	1,951.36	0.00	0.00	0.00	
7,700.00	90.00	360.00	5,596.00	2,043.18	-302.87	2,051.31	0.00	0.00	0.00	
7,800.00	90.00	360.00	5,596.00	2,143.18	-302.87	2,151.27	0.00	0.00	0.00	
7,900.00	90.00	360.00	5,596.00	2,243.18	-302.87	2,251.22	0.00	0.00	0.00	
8,000.00	90.00	360.00	5,596.00	2,343.18	-302.87	2,351.18	0.00	0.00	0.00	
8,100.00	90.00	360.00	5,596.00	2,443.18	-302.87	2,451.13	0.00	0.00	0.00	
8,200.00	90.00	360.00	5,596.00	2,543.18	-302.87	2,551.09	0.00	0.00	0.00	
8,300.00	90.00	360.00	5,596.00	2,643.18	-302.87	2,651.04	0.00	0.00	0.00	
8,400.00	90.00	360.00	5,596.00	2,743.18	-302.87	2,751.00	0.00	0.00	0.00	
8,500.00	90.00	360.00	5,596.00	2,843.18	-302.87	2,850.96	0.00	0.00	0.00	
8,600.00	90.00	360.00	5,596.00	2,943.18	-302.87	2,950.91	0.00	0.00	0.00	
8,700.00	90.00	360.00	5,596.00	3,043.18	-302.87	3,050.87	0.00	0.00	0.00	
8,800.00	90.00	360.00	5,596.00	3,143.18	-302.87	3,150.82	0.00	0.00	0.00	
8,900.00	90.00	360.00	5,596.00	3,243.18	-302.87	3,250.78	0.00	0.00	0.00	
9,000.00	90.00	360.00	5,596.00	3,343.18	-302.87	3,350.73	0.00	0.00	0.00	
9,100.00	90.00	360.00	5,596.00	3,443.18	-302.87	3,450.69	0.00	0.00	0.00	
9,200.00	90.00	360.00	5,596.00	3,543.18	-302.87	3,550.64	0.00	0.00	0.00	
9,300.00	90.00	360.00	5,596.00	3,643.18	-302.87	3,650.60	0.00	0.00	0.00	
9,400.00	90.00	360.00	5,596.00	3,743.18	-302.87	3,750.55	0.00	0.00	0.00	
9,500.00	90.00	360.00	5,596.00	3,843.18	-302.87	3,850.51	0.00	0.00	0.00	
9,600.00	90.00	360.00	5,596.00	3,943.18	-302.87	3,950.47	0.00	0.00	0.00	
9,700.00	90.00	360.00	5,596.00	4,043.18	-302.87	4,050.42	0.00	0.00	0.00	
9,800.00	90.00	360.00	5,596.00	4,143.18	-302.87	4,150.38	0.00	0.00	0.00	
9,900.00	90.00	360.00	5,596.00	4,243.18	-302.87	4,250.33	0.00	0.00	0.00	
10,000.00	90.00	360.00	5,596.00	4,343.18	-302.87	4,350.29	0.00	0.00	0.00	
10,100.00	90.00	360.00	5,596.00	4,443.18	-302.87	4,450.24	0.00	0.00	0.00	
10,200.00	90.00	360.00	5,596.00	4,543.18	-302.87	4,550.20	0.00	0.00	0.00	
10,300.00	90.00	360.00	5,596.00	4,643.18	-302.87	4,650.15	0.00	0.00	0.00	
10,400.00	90.00	360.00	5,596.00	4,743.18	-302.87	4,750.11	0.00	0.00	0.00	
10,500.00	90.00	360.00	5,596.00	4,843.18	-302.87	4,850.06	0.00	0.00	0.00	
10,600.00	90.00	360.00	5,596.00	4,943.18	-302.87	4,950.02	0.00	0.00	0.00	
10,700.00	90.00	360.00	5,596.00	5,043.18	-302.87	5,049.98	0.00	0.00	0.00	
10,800.00	90.00	360.00	5,596.00	5,143.18	-302.87	5,149.93	0.00	0.00	0.00	
10,900.00	90.00	360.00	5,596.00	5,243.18	-302.87	5,249.89	0.00	0.00	0.00	
11,000.00	90.00	360.00	5,596.00	5,343.18	-302.87	5,349.84	0.00	0.00	0.00	
11,100.00	90.00	360.00	5,596.00	5,443.18	-302.87	5,449.80	0.00	0.00	0.00	
11,200.00	90.00	360.00	5,596.00	5,543.18	-302.87	5,549.75	0.00	0.00	0.00	
11,300.00	90.00	360.00	5,596.00	5,643.18	-302.87	5,649.71	0.00	0.00	0.00	
11,400.00	90.00	360.00	5,596.00	5,743.18	-302.87	5,749.66	0.00	0.00	0.00	
11,500.00	90.00	360.00	5,596.00	5,843.18	-302.87	5,849.62	0.00	0.00	0.00	
11,600.00	90.00	360.00	5,596.00	5,943.18	-302.87	5,949.57	0.00	0.00	0.00	
11,700.00	90.00	360.00	5,596.00	6,043.18	-302.87	6,049.53	0.00	0.00	0.00	
11,800.00	90.00	360.00	5,596.00	6,143.18	-302.87	6,149.49	0.00	0.00	0.00	
11,900.00	90.00	360.00	5,596.00	6,243.18	-302.87	6,249.44	0.00	0.00	0.00	
12,000.00	90.00	360.00	5,596.00	6,343.18	-302.87	6,349.40	0.00	0.00	0.00	
12,100.00	90.00	360.00	5,596.00	6,443.18	-302.87	6,449.35	0.00	0.00	0.00	
12,200.00	90.00	360.00	5,596.00	6,543.18	-302.87	6,549.31	0.00	0.00	0.00	



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2410
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2410	<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	5,596.00	6,643.18	-302.87	6,649.26	0.00	0.00	0.00
12,400.00	90.00	360.00	5,596.00	6,743.18	-302.87	6,749.22	0.00	0.00	0.00
12,500.00	90.00	360.00	5,596.00	6,843.18	-302.87	6,849.17	0.00	0.00	0.00
12,600.00	90.00	360.00	5,596.00	6,943.18	-302.87	6,949.13	0.00	0.00	0.00
12,700.00	90.00	360.00	5,596.00	7,043.18	-302.87	7,049.08	0.00	0.00	0.00
12,800.00	90.00	360.00	5,596.00	7,143.18	-302.87	7,149.04	0.00	0.00	0.00
12,900.00	90.00	360.00	5,596.00	7,243.18	-302.87	7,249.00	0.00	0.00	0.00
13,000.00	90.00	360.00	5,596.00	7,343.18	-302.87	7,348.95	0.00	0.00	0.00
13,100.00	90.00	360.00	5,596.00	7,443.18	-302.87	7,448.91	0.00	0.00	0.00
13,200.00	90.00	360.00	5,596.00	7,543.18	-302.87	7,548.86	0.00	0.00	0.00
13,300.00	90.00	360.00	5,596.00	7,643.18	-302.87	7,648.82	0.00	0.00	0.00
13,400.00	90.00	360.00	5,596.00	7,743.18	-302.87	7,748.77	0.00	0.00	0.00
13,500.00	90.00	360.00	5,596.00	7,843.18	-302.87	7,848.73	0.00	0.00	0.00
13,600.00	90.00	360.00	5,596.00	7,943.18	-302.87	7,948.68	0.00	0.00	0.00
13,700.00	90.00	360.00	5,596.00	8,043.18	-302.87	8,048.64	0.00	0.00	0.00
13,800.00	90.00	360.00	5,596.00	8,143.18	-302.87	8,148.60	0.00	0.00	0.00
13,900.00	90.00	360.00	5,596.00	8,243.18	-302.87	8,248.55	0.00	0.00	0.00
14,000.00	90.00	360.00	5,596.00	8,343.18	-302.87	8,348.51	0.00	0.00	0.00
14,100.00	90.00	360.00	5,596.00	8,443.18	-302.87	8,448.46	0.00	0.00	0.00
14,200.00	90.00	360.00	5,596.00	8,543.18	-302.87	8,548.42	0.00	0.00	0.00
14,300.00	90.00	360.00	5,596.00	8,643.18	-302.87	8,648.37	0.00	0.00	0.00
14,400.00	90.00	360.00	5,596.00	8,743.18	-302.87	8,748.33	0.00	0.00	0.00
14,500.00	90.00	360.00	5,596.00	8,843.18	-302.87	8,848.28	0.00	0.00	0.00
14,600.00	90.00	360.00	5,596.00	8,943.18	-302.87	8,948.24	0.00	0.00	0.00
14,700.00	90.00	360.00	5,596.00	9,043.18	-302.87	9,048.19	0.00	0.00	0.00
14,800.00	90.00	360.00	5,596.00	9,143.18	-302.87	9,148.15	0.00	0.00	0.00
14,900.00	90.00	360.00	5,596.00	9,243.18	-302.87	9,248.11	0.00	0.00	0.00
15,000.00	90.00	360.00	5,596.00	9,343.18	-302.87	9,348.06	0.00	0.00	0.00
15,100.00	90.00	360.00	5,596.00	9,443.18	-302.87	9,448.02	0.00	0.00	0.00
15,200.00	90.00	360.00	5,596.00	9,543.18	-302.87	9,547.97	0.00	0.00	0.00
15,300.00	90.00	360.00	5,596.00	9,643.18	-302.87	9,647.93	0.00	0.00	0.00
15,400.00	90.00	360.00	5,596.00	9,743.18	-302.87	9,747.88	0.00	0.00	0.00
15,500.00	90.00	360.00	5,596.00	9,843.18	-302.87	9,847.84	0.00	0.00	0.00
15,600.00	90.00	360.00	5,596.00	9,943.18	-302.87	9,947.79	0.00	0.00	0.00
15,700.00	90.00	360.00	5,596.00	10,043.18	-302.87	10,047.75	0.00	0.00	0.00
15,800.00	90.00	360.00	5,596.00	10,143.18	-302.87	10,147.70	0.00	0.00	0.00
15,801.67	90.00	360.00	5,596.00	10,144.86	-302.87	10,149.38	0.00	0.00	0.00
TD at 15801.67									

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 2410	0.00	0.00	5,596.00	10,144.86	-302.87	1,550,141.75	3,467,272.14	40° 49' 52.700 N	103° 48' 41.040 W
- plan hits target center									
- Point									



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2410
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2410	<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)	
5,911.82	5,596.00	5 1/2" Marker / 7" CSG	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,554.68	1,550.00	Upper Pierre				
3,513.20	3,500.00	Hygiene				
3,663.86	3,650.00	Lower Pierre				
5,490.87	5,435.00	P200 Marker				
5,519.30	5,455.00	P300 Marker				
5,543.28	5,471.00	P350 Marker				
5,565.38	5,485.00	Sharon Springs				
5,571.91	5,489.00	Niobrara				
5,600.99	5,506.00	Top A Chalk				
5,659.31	5,536.00	Top A Marl				
5,686.42	5,548.00	A Marl				
5,706.33	5,556.00	Top Upper B				
5,782.36	5,580.00	Base Upper B				
5,911.82	5,596.00	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'	
567.31	566.92	-8.22	-9.36	Hold 5.35° Inc	
4,626.12	4,608.08	-257.78	-293.51	Drop 2°/100'	
4,893.43	4,875.00	-266.00	-302.87	Hold Vertical	
5,093.43	5,075.00	-266.00	-302.87	KOP, Build 11°/100'	
5,911.82	5,596.00	255.00	-302.87	LP @ 90° Inc, Hold	
15,801.67	5,596.00	10,144.86	-302.87	TD at 15801.67	