



Project: Weld County, CO  
Site: Sec 25-T10N-R58W  
Well: Razor #250-2444  
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: 53022.2snT  
Dip Angle: 67.38°  
Date: 5/21/2015  
Model: IGRF2010

#### FORMATION TOP DETAILS

	TVDPath	MDPath	Formation
1550.00	1552.01	1552.01	Upper Pierre
3500.00	3505.47	3505.47	Hygiene
3650.00	3655.73	3655.73	Lower Pierre
5435.00	5451.84	5451.84	P200 Marker
5455.00	5474.53	5474.53	P300 Marker
5471.00	5493.10	5493.10	P350 Marker
5485.00	5509.67	5509.67	Sharon Springs
5489.00	5514.47	5514.47	Niobrara
5506.00	5535.22	5535.22	Top A Chalk
5536.00	5573.41	5573.41	Top A Marl
5548.00	5589.35	5589.35	A Marl
5556.00	5600.23	5600.23	Top Upper B
5580.00	5634.25	5634.25	Base Upper B
5596.00	5658.31	5658.31	Top Lower B
5625.00	5705.69	5705.69	Base Lower B
5638.00	5729.02	5729.02	Top B Marl
5680.00	5819.82	5819.82	Top C Chalk
5688.00	5841.75	5841.75	Middle C Chalk
5702.00	5887.96	5887.96	Middle C Marl
5720.00	6025.31	6025.31	Lower C Chalk

#### WELL DETAILS: Razor #250-2444

	+N/-S	+E/-W	Northing	Ground Level:	4717.00	Eastings	4717.00	Longitude	36.700 W	Slot
	0.00	0.00	1539955.51			3467799.96		40° 48' 11.970 N	103° 48' 36.700 W	

#### 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	470.39	3.41	143.23	470.29	-4.06	3.03	2.00	143.23	-4.01	
4	4836.54	3.41	143.23	4826.71	-211.94	158.40	0.00	0.00	-209.41	
5	5006.92	0.00	0.00	4999.00	-216.00	161.43	2.00	180.00	-213.42	
6	5206.92	0.00	0.00	5199.00	-216.00	161.43	0.00	0.00	-213.42	
7	6025.31	90.00	360.00	5720.00	305.00	161.43	11.00	360.00	307.52	
8	15916.77	90.00	360.00	5720.00	10196.46	161.43	0.00	0.00	10197.74	PBHL 2444

#### ANNOTATIONS

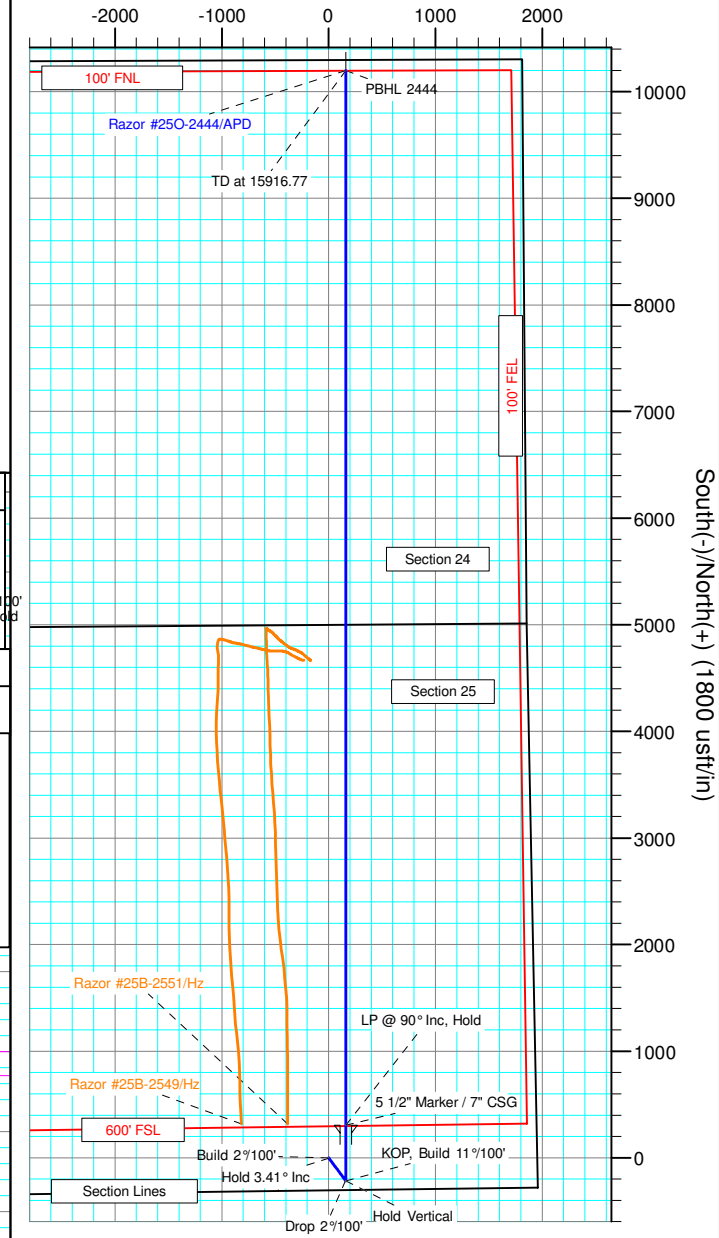
TVD	MD	Inc	Azi	+N/-S	+E/-W	VFace	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
470.29	470.39	3.41	143.23	-4.06	3.03	-4.01	5.07	Hold 3.41° Inc
4826.71	4836.54	3.41	143.23	-211.94	158.40	-209.41	264.59	Drop 2°/100'
4999.00	5006.92	0.00	0.00	-216.00	161.43	-213.42	269.66	Hold Vertical
5199.00	5206.92	0.00	0.00	-216.00	161.43	-213.42	269.66	KOP, Build 11°/100'
5720.00	6025.31	90.00	360.00	305.00	161.43	307.52	790.66	LP @ 90° Inc, Hold
5720.00	15916.77	90.00	360.00	10196.46	161.43	10197.74	10682.12	TD at 15916.77

#### DESIGN TARGET DETAILS

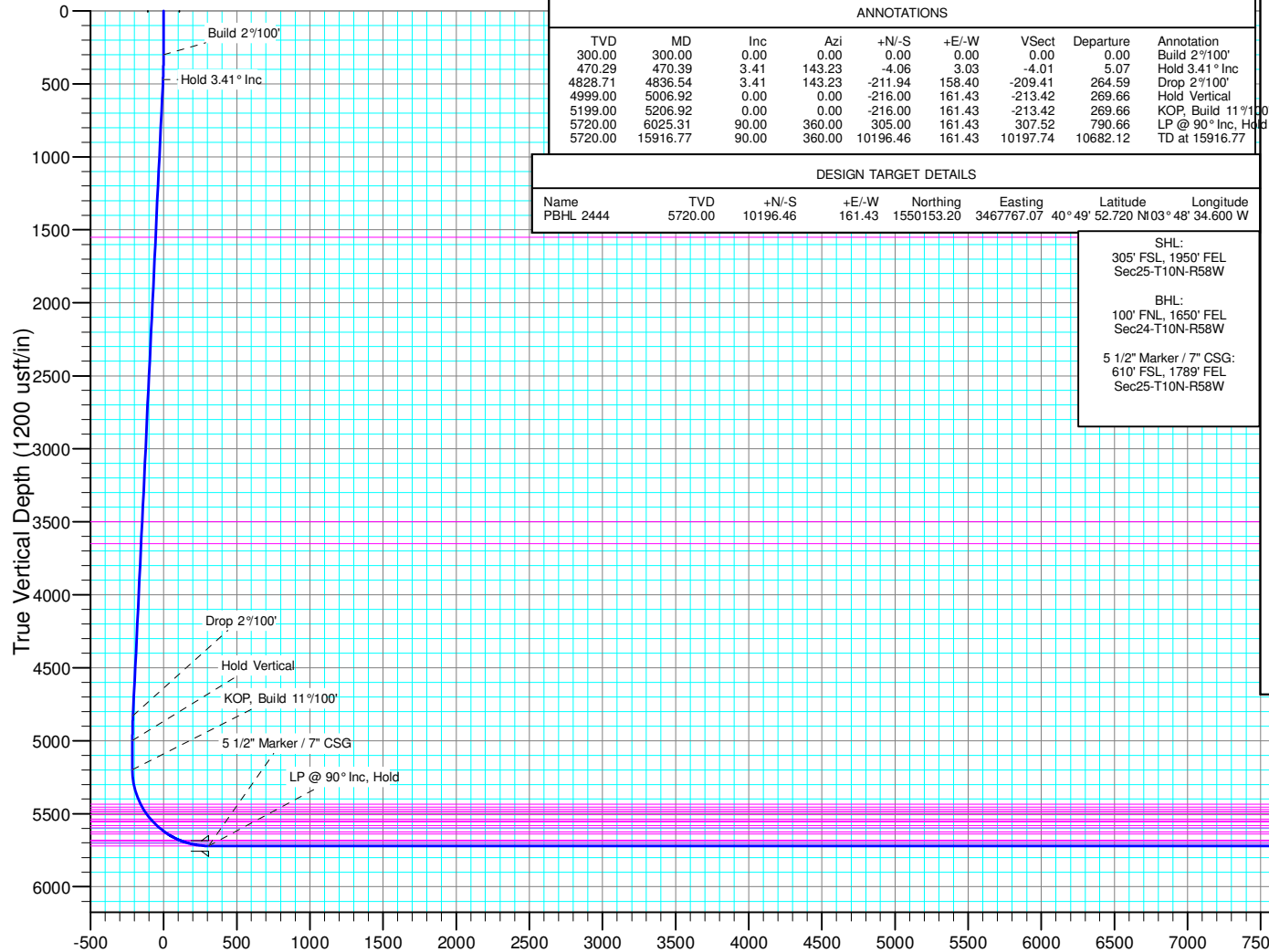
Name	TVD	+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude
PBHL 2444	5720.00	10196.46	161.43	1550153.20	3467767.07	40° 49' 52.720 N	103° 48' 34.600 W

SHL:  
305' FSL, 1950' FEL  
Sec25-T10N-R58W  
  
BHL:  
100' FNL, 1650' FEL  
Sec24-T10N-R58W  
  
5 1/2" Marker / 7" CSG:  
610' FSL, 1789' FEL  
Sec25-T10N-R58W

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



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



Vertical Section at 0.91° (1200 usft/in)



# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25O-2444**

**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-2444
<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-2444	<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 #25O-2444			
<b>Well Position</b>	<b>+N/-S</b>	-4,663.35 usft	<b>Northing:</b>	1,539,955.51 usft
	<b>+E/-W</b>	2,828.52 usft	<b>Easting:</b>	3,467,799.96 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 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	0.91

<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	
470.39	3.41	143.23	470.29	-4.06	3.03	2.00	2.00	0.00	143.23	
4,836.54	3.41	143.23	4,828.71	-211.94	158.40	0.00	0.00	0.00	0.00	
5,006.92	0.00	0.00	4,999.00	-216.00	161.43	2.00	-2.00	0.00	180.00	
5,206.92	0.00	0.00	5,199.00	-216.00	161.43	0.00	0.00	0.00	0.00	
6,025.31	90.00	360.00	5,720.00	305.00	161.43	11.00	11.00	0.00	360.00	
15,916.77	90.00	360.00	5,720.00	10,196.46	161.43	0.00	0.00	0.00	0.00	PBHL 2444



# 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-2444	<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	143.23	399.98	-1.40	1.04	-1.38	2.00	2.00	0.00
470.39	3.41	143.23	470.29	-4.06	3.03	-4.01	2.00	2.00	0.00
<b>Hold 3.41° Inc</b>									
500.00	3.41	143.23	499.85	-5.47	4.09	-5.40	0.00	0.00	0.00
600.00	3.41	143.23	599.67	-10.23	7.64	-10.11	0.00	0.00	0.00
700.00	3.41	143.23	699.49	-14.99	11.20	-14.81	0.00	0.00	0.00
800.00	3.41	143.23	799.32	-19.75	14.76	-19.52	0.00	0.00	0.00
900.00	3.41	143.23	899.14	-24.51	18.32	-24.22	0.00	0.00	0.00
1,000.00	3.41	143.23	998.96	-29.27	21.88	-28.92	0.00	0.00	0.00
1,100.00	3.41	143.23	1,098.79	-34.04	25.44	-33.63	0.00	0.00	0.00
1,200.00	3.41	143.23	1,198.61	-38.80	29.00	-38.33	0.00	0.00	0.00
1,300.00	3.41	143.23	1,298.43	-43.56	32.55	-43.04	0.00	0.00	0.00
1,400.00	3.41	143.23	1,398.26	-48.32	36.11	-47.74	0.00	0.00	0.00
1,500.00	3.41	143.23	1,498.08	-53.08	39.67	-52.45	0.00	0.00	0.00
1,552.01	3.41	143.23	1,550.00	-55.56	41.52	-54.89	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	3.41	143.23	1,597.90	-57.84	43.23	-57.15	0.00	0.00	0.00
1,700.00	3.41	143.23	1,697.73	-62.60	46.79	-61.85	0.00	0.00	0.00
1,800.00	3.41	143.23	1,797.55	-67.36	50.35	-66.56	0.00	0.00	0.00
1,900.00	3.41	143.23	1,897.37	-72.13	53.90	-71.26	0.00	0.00	0.00
2,000.00	3.41	143.23	1,997.19	-76.89	57.46	-75.97	0.00	0.00	0.00
2,100.00	3.41	143.23	2,097.02	-81.65	61.02	-80.67	0.00	0.00	0.00
2,200.00	3.41	143.23	2,196.84	-86.41	64.58	-85.38	0.00	0.00	0.00
2,300.00	3.41	143.23	2,296.66	-91.17	68.14	-90.08	0.00	0.00	0.00
2,400.00	3.41	143.23	2,396.49	-95.93	71.70	-94.79	0.00	0.00	0.00
2,500.00	3.41	143.23	2,496.31	-100.69	75.25	-99.49	0.00	0.00	0.00
2,600.00	3.41	143.23	2,596.13	-105.45	78.81	-104.19	0.00	0.00	0.00
2,700.00	3.41	143.23	2,695.96	-110.22	82.37	-108.90	0.00	0.00	0.00
2,800.00	3.41	143.23	2,795.78	-114.98	85.93	-113.60	0.00	0.00	0.00
2,900.00	3.41	143.23	2,895.60	-119.74	89.49	-118.31	0.00	0.00	0.00
3,000.00	3.41	143.23	2,995.43	-124.50	93.05	-123.01	0.00	0.00	0.00
3,100.00	3.41	143.23	3,095.25	-129.26	96.61	-127.72	0.00	0.00	0.00
3,200.00	3.41	143.23	3,195.07	-134.02	100.16	-132.42	0.00	0.00	0.00
3,300.00	3.41	143.23	3,294.90	-138.78	103.72	-137.12	0.00	0.00	0.00
3,400.00	3.41	143.23	3,394.72	-143.54	107.28	-141.83	0.00	0.00	0.00
3,500.00	3.41	143.23	3,494.54	-148.31	110.84	-146.53	0.00	0.00	0.00
3,505.47	3.41	143.23	3,500.00	-148.57	111.03	-146.79	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	3.41	143.23	3,594.37	-153.07	114.40	-151.24	0.00	0.00	0.00
3,655.73	3.41	143.23	3,650.00	-155.72	116.38	-153.86	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	3.41	143.23	3,694.19	-157.83	117.96	-155.94	0.00	0.00	0.00
3,800.00	3.41	143.23	3,794.01	-162.59	121.51	-160.65	0.00	0.00	0.00
3,900.00	3.41	143.23	3,893.84	-167.35	125.07	-165.35	0.00	0.00	0.00
4,000.00	3.41	143.23	3,993.66	-172.11	128.63	-170.05	0.00	0.00	0.00
4,100.00	3.41	143.23	4,093.48	-176.87	132.19	-174.76	0.00	0.00	0.00
4,200.00	3.41	143.23	4,193.31	-181.64	135.75	-179.46	0.00	0.00	0.00
4,300.00	3.41	143.23	4,293.13	-186.40	139.31	-184.17	0.00	0.00	0.00
4,400.00	3.41	143.23	4,392.95	-191.16	142.86	-188.87	0.00	0.00	0.00



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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-2444	<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	3.41	143.23	4,492.77	-195.92	146.42	-193.58	0.00	0.00	0.00
4,600.00	3.41	143.23	4,592.60	-200.68	149.98	-198.28	0.00	0.00	0.00
4,700.00	3.41	143.23	4,692.42	-205.44	153.54	-202.99	0.00	0.00	0.00
4,800.00	3.41	143.23	4,792.24	-210.20	157.10	-207.69	0.00	0.00	0.00
4,836.54	3.41	143.23	4,828.71	-211.94	158.40	-209.41	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,900.00	2.14	143.23	4,892.10	-214.40	160.24	-211.84	2.00	-2.00	0.00
5,000.00	0.14	143.23	4,992.08	-215.99	161.43	-213.41	2.00	-2.00	0.00
5,006.92	0.00	0.00	4,999.00	-216.00	161.43	-213.42	2.00	-2.00	0.00
<b>Hold Vertical</b>									
5,100.00	0.00	0.00	5,092.08	-216.00	161.43	-213.42	0.00	0.00	0.00
5,200.00	0.00	0.00	5,192.08	-216.00	161.43	-213.42	0.00	0.00	0.00
5,206.92	0.00	0.00	5,199.00	-216.00	161.43	-213.42	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,300.00	10.24	360.00	5,291.58	-207.71	161.43	-205.13	11.00	11.00	0.00
5,400.00	21.23	360.00	5,387.69	-180.63	161.43	-178.05	11.00	11.00	0.00
5,451.84	26.93	360.00	5,435.00	-159.48	161.43	-156.91	11.00	11.00	0.00
<b>P200 Marker</b>									
5,474.53	29.43	360.00	5,455.00	-148.77	161.43	-146.19	11.00	11.00	0.00
<b>P300 Marker</b>									
5,493.10	31.47	360.00	5,471.00	-139.36	161.43	-136.79	11.00	11.00	0.00
<b>P350 Marker</b>									
5,500.00	32.23	360.00	5,476.86	-135.72	161.43	-133.15	11.00	11.00	0.00
5,509.67	33.29	360.00	5,485.00	-130.48	161.43	-127.91	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,514.47	33.82	360.00	5,489.00	-127.83	161.43	-125.26	11.00	11.00	0.00
<b>Niobrara</b>									
5,535.22	36.10	360.00	5,506.00	-115.94	161.43	-113.37	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,573.41	40.30	360.00	5,536.00	-92.33	161.43	-89.76	11.00	11.00	0.00
<b>Top A Marl</b>									
5,589.35	42.06	360.00	5,548.00	-81.83	161.43	-79.27	11.00	11.00	0.00
<b>A Marl</b>									
5,600.00	43.23	360.00	5,555.83	-74.62	161.43	-72.05	11.00	11.00	0.00
5,600.23	43.23	360.00	5,556.00	-74.46	161.43	-71.90	0.00	0.00	0.00
<b>Top Upper B</b>									
5,634.25	46.99	360.00	5,580.00	-50.36	161.43	-47.80	11.07	11.07	0.00
<b>Base Upper B</b>									
5,658.31	49.64	360.00	5,596.00	-32.39	161.43	-29.83	11.00	11.00	0.00
<b>Top Lower B</b>									
5,700.00	54.23	360.00	5,621.70	0.42	161.43	2.98	11.00	11.00	0.00
5,705.69	54.85	360.00	5,625.00	5.06	161.43	7.61	11.00	11.00	0.00
<b>Base Lower B</b>									
5,729.02	57.42	360.00	5,638.00	24.43	161.43	26.98	11.00	11.00	0.00
<b>Top B Marl</b>									
5,800.00	65.22	360.00	5,672.04	86.65	161.43	89.20	11.00	11.00	0.00
5,819.82	67.40	360.00	5,680.00	104.80	161.43	107.34	11.00	11.00	0.00
<b>Top C Chalk</b>									
5,841.75	69.81	360.00	5,688.00	125.22	161.43	127.76	11.00	11.00	0.00
<b>Middle C Chalk</b>									
5,887.96	74.90	360.00	5,702.00	169.24	161.43	171.77	11.00	11.00	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-2444	<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)
<b>Middle C Marl</b>									
5,900.00	76.22	360.00	5,705.00	180.90	161.43	183.43	11.00	11.00	0.00
6,000.00	87.22	360.00	5,719.39	279.70	161.43	282.22	11.00	11.00	0.00
6,025.31	90.00	360.00	5,720.00	305.00	161.43	307.52	11.00	11.00	0.00
<b>LP @ 90° Inc, Hold - Lower C Chalk - 5 1/2" Marker / 7" CSG</b>									
6,100.00	90.00	360.00	5,720.00	379.69	161.43	382.20	0.00	0.00	0.00
6,200.00	90.00	360.00	5,720.00	479.69	161.43	482.19	0.00	0.00	0.00
6,300.00	90.00	360.00	5,720.00	579.69	161.43	582.18	0.00	0.00	0.00
6,400.00	90.00	360.00	5,720.00	679.69	161.43	682.16	0.00	0.00	0.00
6,500.00	90.00	360.00	5,720.00	779.69	161.43	782.15	0.00	0.00	0.00
6,600.00	90.00	360.00	5,720.00	879.69	161.43	882.14	0.00	0.00	0.00
6,700.00	90.00	360.00	5,720.00	979.69	161.43	982.13	0.00	0.00	0.00
6,800.00	90.00	360.00	5,720.00	1,079.69	161.43	1,082.11	0.00	0.00	0.00
6,900.00	90.00	360.00	5,720.00	1,179.69	161.43	1,182.10	0.00	0.00	0.00
7,000.00	90.00	360.00	5,720.00	1,279.69	161.43	1,282.09	0.00	0.00	0.00
7,100.00	90.00	360.00	5,720.00	1,379.69	161.43	1,382.08	0.00	0.00	0.00
7,200.00	90.00	360.00	5,720.00	1,479.69	161.43	1,482.06	0.00	0.00	0.00
7,300.00	90.00	360.00	5,720.00	1,579.69	161.43	1,582.05	0.00	0.00	0.00
7,400.00	90.00	360.00	5,720.00	1,679.69	161.43	1,682.04	0.00	0.00	0.00
7,500.00	90.00	360.00	5,720.00	1,779.69	161.43	1,782.03	0.00	0.00	0.00
7,600.00	90.00	360.00	5,720.00	1,879.69	161.43	1,882.01	0.00	0.00	0.00
7,700.00	90.00	360.00	5,720.00	1,979.69	161.43	1,982.00	0.00	0.00	0.00
7,800.00	90.00	360.00	5,720.00	2,079.69	161.43	2,081.99	0.00	0.00	0.00
7,900.00	90.00	360.00	5,720.00	2,179.69	161.43	2,181.98	0.00	0.00	0.00
8,000.00	90.00	360.00	5,720.00	2,279.69	161.43	2,281.96	0.00	0.00	0.00
8,100.00	90.00	360.00	5,720.00	2,379.69	161.43	2,381.95	0.00	0.00	0.00
8,200.00	90.00	360.00	5,720.00	2,479.69	161.43	2,481.94	0.00	0.00	0.00
8,300.00	90.00	360.00	5,720.00	2,579.69	161.43	2,581.93	0.00	0.00	0.00
8,400.00	90.00	360.00	5,720.00	2,679.69	161.43	2,681.91	0.00	0.00	0.00
8,500.00	90.00	360.00	5,720.00	2,779.69	161.43	2,781.90	0.00	0.00	0.00
8,600.00	90.00	360.00	5,720.00	2,879.69	161.43	2,881.89	0.00	0.00	0.00
8,700.00	90.00	360.00	5,720.00	2,979.69	161.43	2,981.88	0.00	0.00	0.00
8,800.00	90.00	360.00	5,720.00	3,079.69	161.43	3,081.86	0.00	0.00	0.00
8,900.00	90.00	360.00	5,720.00	3,179.69	161.43	3,181.85	0.00	0.00	0.00
9,000.00	90.00	360.00	5,720.00	3,279.69	161.43	3,281.84	0.00	0.00	0.00
9,100.00	90.00	360.00	5,720.00	3,379.69	161.43	3,381.83	0.00	0.00	0.00
9,200.00	90.00	360.00	5,720.00	3,479.69	161.43	3,481.81	0.00	0.00	0.00
9,300.00	90.00	360.00	5,720.00	3,579.69	161.43	3,581.80	0.00	0.00	0.00
9,400.00	90.00	360.00	5,720.00	3,679.69	161.43	3,681.79	0.00	0.00	0.00
9,500.00	90.00	360.00	5,720.00	3,779.69	161.43	3,781.78	0.00	0.00	0.00
9,600.00	90.00	360.00	5,720.00	3,879.69	161.43	3,881.76	0.00	0.00	0.00
9,700.00	90.00	360.00	5,720.00	3,979.69	161.43	3,981.75	0.00	0.00	0.00
9,800.00	90.00	360.00	5,720.00	4,079.69	161.43	4,081.74	0.00	0.00	0.00
9,900.00	90.00	360.00	5,720.00	4,179.69	161.43	4,181.73	0.00	0.00	0.00
10,000.00	90.00	360.00	5,720.00	4,279.69	161.43	4,281.71	0.00	0.00	0.00
10,100.00	90.00	360.00	5,720.00	4,379.69	161.43	4,381.70	0.00	0.00	0.00
10,200.00	90.00	360.00	5,720.00	4,479.69	161.43	4,481.69	0.00	0.00	0.00
10,300.00	90.00	360.00	5,720.00	4,579.69	161.43	4,581.68	0.00	0.00	0.00
10,400.00	90.00	360.00	5,720.00	4,679.69	161.43	4,681.66	0.00	0.00	0.00
10,500.00	90.00	360.00	5,720.00	4,779.69	161.43	4,781.65	0.00	0.00	0.00
10,600.00	90.00	360.00	5,720.00	4,879.69	161.43	4,881.64	0.00	0.00	0.00
10,700.00	90.00	360.00	5,720.00	4,979.69	161.43	4,981.63	0.00	0.00	0.00
10,800.00	90.00	360.00	5,720.00	5,079.69	161.43	5,081.61	0.00	0.00	0.00
10,900.00	90.00	360.00	5,720.00	5,179.69	161.43	5,181.60	0.00	0.00	0.00



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2444
<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-2444	<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)
11,000.00	90.00	360.00	5,720.00	5,279.69	161.43	5,281.59	0.00	0.00	0.00
11,100.00	90.00	360.00	5,720.00	5,379.69	161.43	5,381.58	0.00	0.00	0.00
11,200.00	90.00	360.00	5,720.00	5,479.69	161.43	5,481.56	0.00	0.00	0.00
11,300.00	90.00	360.00	5,720.00	5,579.69	161.43	5,581.55	0.00	0.00	0.00
11,400.00	90.00	360.00	5,720.00	5,679.69	161.43	5,681.54	0.00	0.00	0.00
11,500.00	90.00	360.00	5,720.00	5,779.69	161.43	5,781.53	0.00	0.00	0.00
11,600.00	90.00	360.00	5,720.00	5,879.69	161.43	5,881.51	0.00	0.00	0.00
11,700.00	90.00	360.00	5,720.00	5,979.69	161.43	5,981.50	0.00	0.00	0.00
11,800.00	90.00	360.00	5,720.00	6,079.69	161.43	6,081.49	0.00	0.00	0.00
11,900.00	90.00	360.00	5,720.00	6,179.69	161.43	6,181.48	0.00	0.00	0.00
12,000.00	90.00	360.00	5,720.00	6,279.69	161.43	6,281.46	0.00	0.00	0.00
12,100.00	90.00	360.00	5,720.00	6,379.69	161.43	6,381.45	0.00	0.00	0.00
12,200.00	90.00	360.00	5,720.00	6,479.69	161.43	6,481.44	0.00	0.00	0.00
12,300.00	90.00	360.00	5,720.00	6,579.69	161.43	6,581.43	0.00	0.00	0.00
12,400.00	90.00	360.00	5,720.00	6,679.69	161.43	6,681.41	0.00	0.00	0.00
12,500.00	90.00	360.00	5,720.00	6,779.69	161.43	6,781.40	0.00	0.00	0.00
12,600.00	90.00	360.00	5,720.00	6,879.69	161.43	6,881.39	0.00	0.00	0.00
12,700.00	90.00	360.00	5,720.00	6,979.69	161.43	6,981.38	0.00	0.00	0.00
12,800.00	90.00	360.00	5,720.00	7,079.69	161.43	7,081.36	0.00	0.00	0.00
12,900.00	90.00	360.00	5,720.00	7,179.69	161.43	7,181.35	0.00	0.00	0.00
13,000.00	90.00	360.00	5,720.00	7,279.69	161.43	7,281.34	0.00	0.00	0.00
13,100.00	90.00	360.00	5,720.00	7,379.69	161.43	7,381.33	0.00	0.00	0.00
13,200.00	90.00	360.00	5,720.00	7,479.69	161.43	7,481.31	0.00	0.00	0.00
13,300.00	90.00	360.00	5,720.00	7,579.69	161.43	7,581.30	0.00	0.00	0.00
13,400.00	90.00	360.00	5,720.00	7,679.69	161.43	7,681.29	0.00	0.00	0.00
13,500.00	90.00	360.00	5,720.00	7,779.69	161.43	7,781.27	0.00	0.00	0.00
13,600.00	90.00	360.00	5,720.00	7,879.69	161.43	7,881.26	0.00	0.00	0.00
13,700.00	90.00	360.00	5,720.00	7,979.69	161.43	7,981.25	0.00	0.00	0.00
13,800.00	90.00	360.00	5,720.00	8,079.69	161.43	8,081.24	0.00	0.00	0.00
13,900.00	90.00	360.00	5,720.00	8,179.69	161.43	8,181.22	0.00	0.00	0.00
14,000.00	90.00	360.00	5,720.00	8,279.69	161.43	8,281.21	0.00	0.00	0.00
14,100.00	90.00	360.00	5,720.00	8,379.69	161.43	8,381.20	0.00	0.00	0.00
14,200.00	90.00	360.00	5,720.00	8,479.69	161.43	8,481.19	0.00	0.00	0.00
14,300.00	90.00	360.00	5,720.00	8,579.69	161.43	8,581.17	0.00	0.00	0.00
14,400.00	90.00	360.00	5,720.00	8,679.69	161.43	8,681.16	0.00	0.00	0.00
14,500.00	90.00	360.00	5,720.00	8,779.69	161.43	8,781.15	0.00	0.00	0.00
14,600.00	90.00	360.00	5,720.00	8,879.69	161.43	8,881.14	0.00	0.00	0.00
14,700.00	90.00	360.00	5,720.00	8,979.69	161.43	8,981.12	0.00	0.00	0.00
14,800.00	90.00	360.00	5,720.00	9,079.69	161.43	9,081.11	0.00	0.00	0.00
14,900.00	90.00	360.00	5,720.00	9,179.69	161.43	9,181.10	0.00	0.00	0.00
15,000.00	90.00	360.00	5,720.00	9,279.69	161.43	9,281.09	0.00	0.00	0.00
15,100.00	90.00	360.00	5,720.00	9,379.69	161.43	9,381.07	0.00	0.00	0.00
15,200.00	90.00	360.00	5,720.00	9,479.69	161.43	9,481.06	0.00	0.00	0.00
15,300.00	90.00	360.00	5,720.00	9,579.69	161.43	9,581.05	0.00	0.00	0.00
15,400.00	90.00	360.00	5,720.00	9,679.69	161.43	9,681.04	0.00	0.00	0.00
15,500.00	90.00	360.00	5,720.00	9,779.69	161.43	9,781.02	0.00	0.00	0.00
15,600.00	90.00	360.00	5,720.00	9,879.69	161.43	9,881.01	0.00	0.00	0.00
15,700.00	90.00	360.00	5,720.00	9,979.69	161.43	9,981.00	0.00	0.00	0.00
15,800.00	90.00	360.00	5,720.00	10,079.69	161.43	10,080.99	0.00	0.00	0.00
15,900.00	90.00	360.00	5,720.00	10,179.69	161.43	10,180.97	0.00	0.00	0.00
15,916.77	90.00	360.00	5,720.00	10,196.46	161.43	10,197.74	0.00	0.00	0.00
TD at 15916.77									



# WOG Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2444
<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-2444	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	APD		

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 2444	0.00	0.00	5,720.00	10,196.46	161.43	1,550,153.20	3,467,767.06	40° 49' 52.720 N	103° 48' 34.600 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,025.31	5,720.00	5 1/2" Marker / 7" CSG	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,552.01	1,550.00	Upper Pierre				
3,505.47	3,500.00	Hygiene				
3,655.73	3,650.00	Lower Pierre				
5,451.84	5,435.00	P200 Marker				
5,474.53	5,455.00	P300 Marker				
5,493.10	5,471.00	P350 Marker				
5,509.67	5,485.00	Sharon Springs				
5,514.47	5,489.00	Niobrara				
5,535.22	5,506.00	Top A Chalk				
5,573.41	5,536.00	Top A Marl				
5,589.35	5,548.00	A Marl				
5,600.23	5,556.00	Top Upper B				
5,634.25	5,580.00	Base Upper B				
5,658.31	5,596.00	Top Lower B				
5,705.69	5,625.00	Base Lower B				
5,729.02	5,638.00	Top B Marl				
5,819.82	5,680.00	Top C Chalk				
5,841.75	5,688.00	Middle C Chalk				
5,887.96	5,702.00	Middle C Marl				
6,025.31	5,720.00	Lower C Chalk				

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'	
470.39	470.29	-4.06	3.03	Hold 3.41° Inc	
4,836.54	4,828.71	-211.94	158.40	Drop 2°/100'	
5,006.92	4,999.00	-216.00	161.43	Hold Vertical	
5,206.92	5,199.00	-216.00	161.43	KOP, Build 11°/100'	
6,025.31	5,720.00	305.00	161.43	LP @ 90° Inc, Hold	
15,916.77	5,720.00	10,196.46	161.43	TD at 15916.77	