

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

TVDPath	MDPath	Formation
1550.00	1560.74	Upper Pierre
3500.00	3532.39	Hygiene
3650.00	3684.06	Lower Pierre
5480.00	5532.89	P200 Marker
5500.00	5555.58	P300 Marker
5516.00	5574.14	P350 Marker
5530.00	5590.71	Sharon Springs
5534.00	5595.51	Niobrara
5551.00	5616.26	Top A Chalk
5581.00	5654.44	Top A Marker
5593.00	5670.38	A Marker
5601.00	5681.16	Top Upper B
5610.00	5691.29	Base Upper B
5640.00	5727.33	Top Lower B
5670.00	5786.71	Base Lower B
5683.00	5810.04	Top B Marker
5725.00	5900.82	Top C Chalk
5733.00	5922.75	Middle C Chalk
5747.00	5968.95	Middle C Marker
5765.00	6104.66	Lower C Chalk

		Ground Level: 4757.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1544668.43	3467478.66	40° 48' 58.590 N	103° 48' 39.710 W

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	725.00	8.50	257.00	723.44	-7.08	-30.66	2.00	257.00	-3.71	
4	4445.00	8.50	257.00	4402.58	-130.77	-566.42	0.00	0.00	-68.57	
5	4670.00	0.00	0.00	4826.02	-136.85	-597.00	2.00	723.00	-2.73	
6	5288.11	0.00	0.00	5244.13	-137.85	-597.08	0.00	0.00	-72.28	
7	6106.29	90.00	360.00	5765.00	383.02	-597.10	11.00	360.00	445.52	PBHL 2449
8	11198.51	90.00	360.00	5765.00	5475.25	-597.29	0.00	0.00	5507.73	PBHL 2444

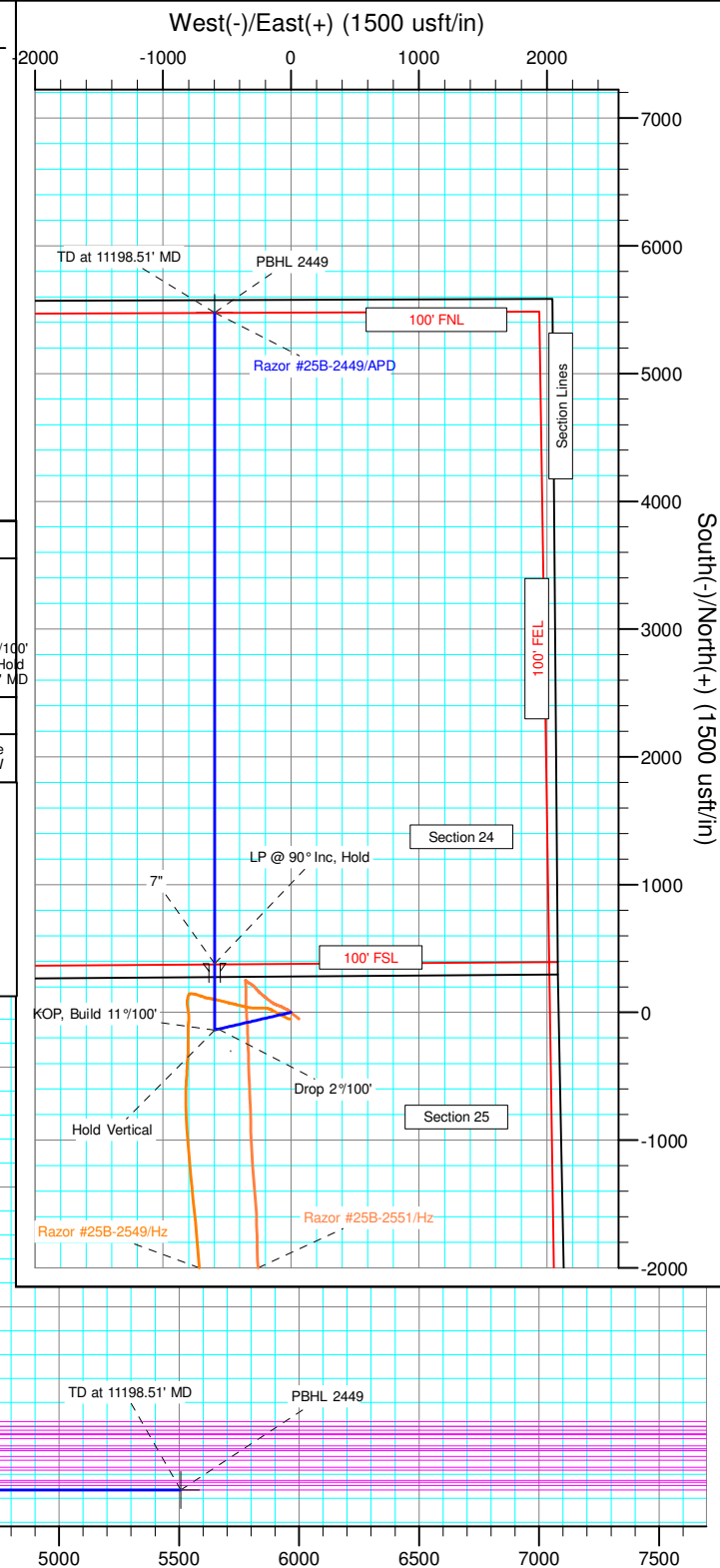
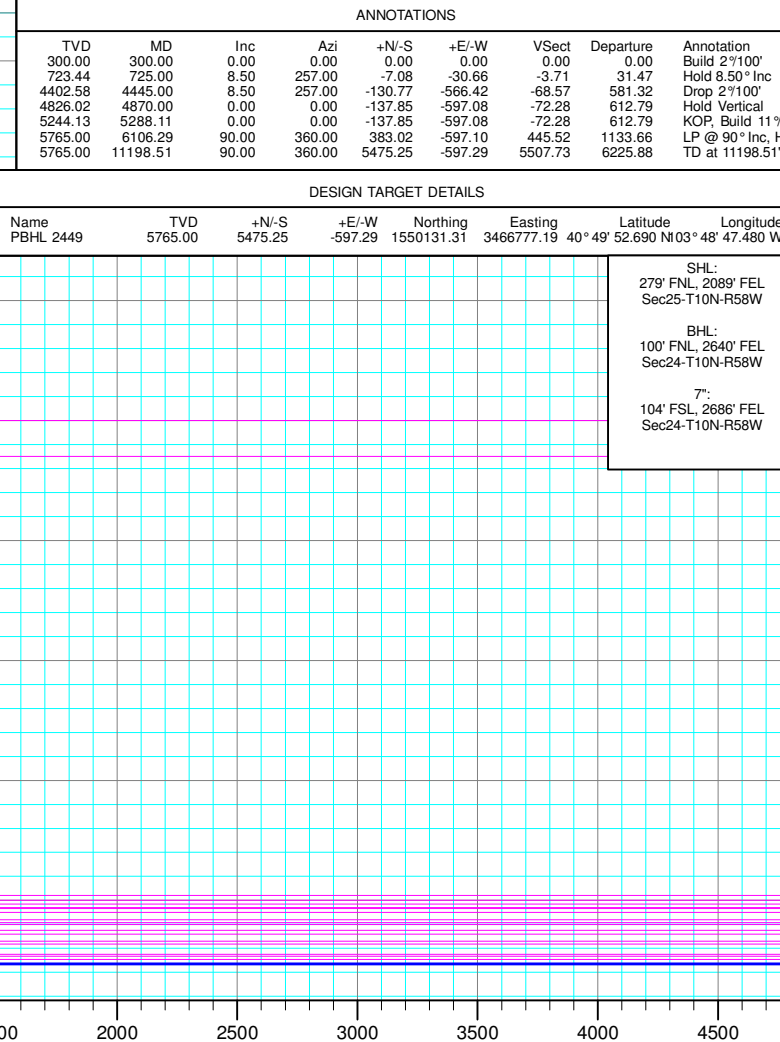
TVD	MD	Inc	Azi	+N/-S	+E/-W	V/Sect	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2'1100'
723.44	725.00	8.50	257.00	-7.08	-30.66	-3.71	31.47	Hold 8.50' Inc
4402.58	4445.00	8.50	257.00	-130.77	-566.42	-68.57	581.32	Drop 2'1100'
4826.02	4870.00	0.00	0.00	-137.85	-597.08	-72.28	612.79	Hold Vertical
5244.13	5288.11	0.00	0.00	-137.85	-597.08	-72.28	612.79	KOP, Build 11'1100'
5765.00	6106.29	90.00	360.00	383.02	-597.10	445.52	1133.66	LP @ 90° Inc, Hold
5765.00	11198.51	90.00	360.00	5475.25	-597.29	5507.73	6225.88	TD at 11985.51' Mod

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 2449	5765.00	5475.25	-597.29	1550131.31	3466777.19	40° 49' 52.690 N	03° 48' 47.480 W

SHL:  
279' FNL, 2089' FEL  
Sec25-T10N-R58W

BHL:  
100' FNL, 2640' FEL  
Sec24-T10N-R58W

7":  
104' FSL, 2686' FEL  
Sec24-T10N-R58W





# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25B-2449**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**22 April, 2015**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2449
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2449	<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 #25B-2449				
Well Position	+N/-S	54.81 usft	Northing:	1,544,668.43 usft	Latitude:	40° 48' 58.590 N
	+E/-W	2,596.54 usft	Easting:	3,467,478.66 usft	Longitude:	103° 48' 39.710 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,757.00 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	4/17/2015	7.85	67.40	53,038

<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	353.77

<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	
725.00	8.50	257.00	723.44	-7.08	-30.66	2.00	2.00	0.00	257.00	
4,445.00	8.50	257.00	4,402.58	-130.77	-566.42	0.00	0.00	0.00	0.00	
4,870.00	0.00	0.00	4,826.02	-137.85	-597.08	2.00	-2.00	0.00	180.00	
5,288.11	0.00	0.00	5,244.13	-137.85	-597.08	0.00	0.00	0.00	0.00	
6,106.29	90.00	360.00	5,765.00	383.02	-597.10	11.00	11.00	0.00	360.00	PBHL 2449
11,198.51	90.00	360.00	5,765.00	5,475.25	-597.29	0.00	0.00	0.00	0.00	PBHL 2449



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## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2449
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2449	<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	257.00	399.98	-0.39	-1.70	-0.21	2.00	2.00	0.00	
500.00	4.00	257.00	499.84	-1.57	-6.80	-0.82	2.00	2.00	0.00	
600.00	6.00	257.00	599.45	-3.53	-15.29	-1.85	2.00	2.00	0.00	
700.00	8.00	257.00	698.70	-6.27	-27.17	-3.29	2.00	2.00	0.00	
725.00	8.50	257.00	723.44	-7.08	-30.66	-3.71	2.00	2.00	0.00	
<b>Hold 8.50° Inc</b>										
800.00	8.50	257.00	797.62	-9.57	-41.46	-5.02	0.00	0.00	0.00	
900.00	8.50	257.00	896.52	-12.90	-55.86	-6.76	0.00	0.00	0.00	
1,000.00	8.50	257.00	995.42	-16.22	-70.27	-8.51	0.00	0.00	0.00	
1,100.00	8.50	257.00	1,094.32	-19.55	-84.67	-10.25	0.00	0.00	0.00	
1,200.00	8.50	257.00	1,193.23	-22.87	-99.07	-11.99	0.00	0.00	0.00	
1,300.00	8.50	257.00	1,292.13	-26.20	-113.47	-13.74	0.00	0.00	0.00	
1,400.00	8.50	257.00	1,391.03	-29.52	-127.88	-15.48	0.00	0.00	0.00	
1,500.00	8.50	257.00	1,489.93	-32.85	-142.28	-17.22	0.00	0.00	0.00	
1,560.74	8.50	257.00	1,550.00	-34.87	-151.02	-18.28	0.00	0.00	0.00	
<b>Upper Pierre</b>										
1,600.00	8.50	257.00	1,588.83	-36.17	-156.68	-18.97	0.00	0.00	0.00	
1,700.00	8.50	257.00	1,687.73	-39.50	-171.08	-20.71	0.00	0.00	0.00	
1,800.00	8.50	257.00	1,786.63	-42.82	-185.48	-22.45	0.00	0.00	0.00	
1,900.00	8.50	257.00	1,885.54	-46.15	-199.89	-24.20	0.00	0.00	0.00	
2,000.00	8.50	257.00	1,984.44	-49.47	-214.29	-25.94	0.00	0.00	0.00	
2,100.00	8.50	257.00	2,083.34	-52.80	-228.69	-27.69	0.00	0.00	0.00	
2,200.00	8.50	257.00	2,182.24	-56.12	-243.09	-29.43	0.00	0.00	0.00	
2,300.00	8.50	257.00	2,281.14	-59.45	-257.49	-31.17	0.00	0.00	0.00	
2,400.00	8.50	257.00	2,380.04	-62.77	-271.90	-32.92	0.00	0.00	0.00	
2,500.00	8.50	257.00	2,478.95	-66.10	-286.30	-34.66	0.00	0.00	0.00	
2,600.00	8.50	257.00	2,577.85	-69.42	-300.70	-36.40	0.00	0.00	0.00	
2,700.00	8.50	257.00	2,676.75	-72.75	-315.10	-38.15	0.00	0.00	0.00	
2,800.00	8.50	257.00	2,775.65	-76.07	-329.50	-39.89	0.00	0.00	0.00	
2,900.00	8.50	257.00	2,874.55	-79.40	-343.91	-41.63	0.00	0.00	0.00	
3,000.00	8.50	257.00	2,973.45	-82.72	-358.31	-43.38	0.00	0.00	0.00	
3,100.00	8.50	257.00	3,072.36	-86.05	-372.71	-45.12	0.00	0.00	0.00	
3,200.00	8.50	257.00	3,171.26	-89.37	-387.11	-46.86	0.00	0.00	0.00	
3,300.00	8.50	257.00	3,270.16	-92.70	-401.52	-48.61	0.00	0.00	0.00	
3,400.00	8.50	257.00	3,369.06	-96.02	-415.92	-50.35	0.00	0.00	0.00	
3,500.00	8.50	257.00	3,467.96	-99.35	-430.32	-52.09	0.00	0.00	0.00	
3,532.39	8.50	257.00	3,500.00	-100.42	-434.98	-52.66	0.00	0.00	0.00	
<b>Hygiene</b>										
3,600.00	8.50	257.00	3,566.86	-102.67	-444.72	-53.84	0.00	0.00	0.00	
3,684.06	8.50	257.00	3,650.00	-105.47	-456.83	-55.30	0.00	0.00	0.00	
<b>Lower Pierre</b>										
3,700.00	8.50	257.00	3,665.77	-106.00	-459.12	-55.58	0.00	0.00	0.00	
3,800.00	8.50	257.00	3,764.67	-109.32	-473.53	-57.33	0.00	0.00	0.00	
3,900.00	8.50	257.00	3,863.57	-112.65	-487.93	-59.07	0.00	0.00	0.00	
4,000.00	8.50	257.00	3,962.47	-115.97	-502.33	-60.81	0.00	0.00	0.00	
4,100.00	8.50	257.00	4,061.37	-119.30	-516.73	-62.56	0.00	0.00	0.00	
4,200.00	8.50	257.00	4,160.27	-122.62	-531.13	-64.30	0.00	0.00	0.00	
4,300.00	8.50	257.00	4,259.17	-125.95	-545.54	-66.04	0.00	0.00	0.00	
4,400.00	8.50	257.00	4,358.08	-129.27	-559.94	-67.79	0.00	0.00	0.00	



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<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2449	<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)
4,445.00	8.50	257.00	4,402.58	-130.77	-566.42	-68.57	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,500.00	7.40	257.00	4,457.05	-132.48	-573.83	-69.47	2.00	-2.00	0.00
4,600.00	5.40	257.00	4,556.42	-134.99	-584.69	-70.78	2.00	-2.00	0.00
4,700.00	3.40	257.00	4,656.12	-136.71	-592.17	-71.69	2.00	-2.00	0.00
4,800.00	1.40	257.00	4,756.03	-137.65	-596.25	-72.18	2.00	-2.00	0.00
4,870.00	0.00	0.00	4,826.02	-137.85	-597.08	-72.28	2.00	-2.00	0.00
<b>Hold Vertical</b>									
4,900.00	0.00	0.00	4,856.02	-137.85	-597.08	-72.28	0.00	0.00	0.00
5,000.00	0.00	0.00	4,956.02	-137.85	-597.08	-72.28	0.00	0.00	0.00
5,100.00	0.00	0.00	5,056.02	-137.85	-597.08	-72.28	0.00	0.00	0.00
5,200.00	0.00	0.00	5,156.02	-137.85	-597.08	-72.28	0.00	0.00	0.00
5,288.11	0.00	0.00	5,244.13	-137.85	-597.08	-72.28	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,300.00	1.31	360.00	5,256.02	-137.71	-597.08	-72.15	11.00	11.00	0.00
5,350.00	6.81	360.00	5,305.88	-134.17	-597.08	-68.63	11.00	11.00	0.00
5,400.00	12.31	360.00	5,355.17	-125.87	-597.08	-60.38	11.00	11.00	0.00
5,450.00	17.81	360.00	5,403.43	-112.89	-597.08	-47.47	11.00	11.00	0.00
5,500.00	23.31	360.00	5,450.23	-95.34	-597.08	-30.03	11.00	11.00	0.00
5,532.89	26.93	360.00	5,480.00	-81.38	-597.08	-16.15	11.00	11.00	0.00
<b>P200 Marker</b>									
5,550.00	28.81	360.00	5,495.13	-73.38	-597.08	-8.20	11.00	11.00	0.00
5,555.58	29.42	360.00	5,500.00	-70.67	-597.08	-5.50	11.00	11.00	0.00
<b>P300 Marker</b>									
5,574.14	31.46	360.00	5,516.00	-61.27	-597.08	3.85	11.00	11.00	0.00
<b>P350 Marker</b>									
5,590.71	33.29	360.00	5,530.00	-52.39	-597.08	12.67	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,595.51	33.81	360.00	5,534.00	-49.74	-597.08	15.31	11.00	11.00	0.00
<b>Niobrara</b>									
5,600.00	34.31	360.00	5,537.72	-47.22	-597.08	17.81	11.00	11.00	0.00
5,616.26	36.10	360.00	5,551.00	-37.85	-597.08	27.12	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,650.00	39.81	360.00	5,577.60	-17.11	-597.08	47.75	11.00	11.00	0.00
5,654.44	40.30	360.00	5,581.00	-14.25	-597.08	50.59	11.00	11.00	0.00
<b>Top A Marl</b>									
5,670.38	42.05	360.00	5,593.00	-3.75	-597.08	61.02	11.00	11.00	0.00
<b>A Marl</b>									
5,681.26	43.25	360.00	5,601.00	3.61	-597.09	68.34	11.00	11.00	0.00
<b>Top Upper B</b>									
5,700.00	45.31	360.00	5,614.42	16.70	-597.09	81.35	11.00	11.00	0.00
5,715.27	46.99	360.00	5,625.00	27.71	-597.09	92.30	11.00	11.00	0.00
<b>Base Upper B</b>									
5,739.33	49.63	360.00	5,641.00	45.68	-597.09	110.16	11.00	11.00	0.00
<b>Top Lower B</b>									
5,750.00	50.81	360.00	5,647.83	53.88	-597.09	118.31	11.00	11.00	0.00
5,786.71	54.85	360.00	5,670.00	83.12	-597.09	147.38	11.00	11.00	0.00
<b>Base Lower B</b>									
5,800.00	56.31	360.00	5,677.51	94.08	-597.09	158.28	11.00	11.00	0.00
5,810.04	57.41	360.00	5,683.00	102.49	-597.09	166.63	11.00	11.00	0.00
<b>Top B Marl</b>									
5,850.00	61.81	360.00	5,703.21	136.95	-597.09	200.90	11.00	11.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2449
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2449	<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)	
5,900.00	67.31	360.00	5,724.68	182.09	-597.09	245.76	11.00	11.00	0.00	
5,900.82	67.40	360.00	5,725.00	182.84	-597.09	246.52	11.00	11.00	0.00	
<b>Top C Chalk</b>										
5,922.75	69.81	360.00	5,733.00	203.26	-597.09	266.82	11.00	11.00	0.00	
<b>Middle C Chalk</b>										
5,950.00	72.81	360.00	5,741.73	229.07	-597.09	292.47	11.00	11.00	0.00	
5,968.95	74.89	360.00	5,747.00	247.27	-597.09	310.56	11.00	11.00	0.00	
<b>Middle C Marl</b>										
6,000.00	78.31	360.00	5,754.20	277.47	-597.10	340.59	11.00	11.00	0.00	
6,050.00	83.81	360.00	5,761.96	326.84	-597.10	389.67	11.00	11.00	0.00	
6,100.00	89.31	360.00	5,764.96	376.73	-597.10	439.27	11.00	11.00	0.00	
6,104.66	89.82	360.00	5,765.00	381.40	-597.10	443.90	11.00	11.00	0.00	
<b>Lower C Chalk</b>										
6,106.29	90.00	360.00	5,765.00	383.02	-597.10	445.52	10.99	10.99	0.00	
<b>LP @ 90° Inc, Hold - 7"</b>										
6,200.00	90.00	360.00	5,765.00	476.73	-597.10	538.68	0.00	0.00	0.00	
6,300.00	90.00	360.00	5,765.00	576.73	-597.11	638.09	0.00	0.00	0.00	
6,400.00	90.00	360.00	5,765.00	676.73	-597.11	737.50	0.00	0.00	0.00	
6,500.00	90.00	360.00	5,765.00	776.73	-597.11	836.91	0.00	0.00	0.00	
6,600.00	90.00	360.00	5,765.00	876.73	-597.12	936.32	0.00	0.00	0.00	
6,700.00	90.00	360.00	5,765.00	976.73	-597.12	1,035.73	0.00	0.00	0.00	
6,800.00	90.00	360.00	5,765.00	1,076.73	-597.13	1,135.14	0.00	0.00	0.00	
6,900.00	90.00	360.00	5,765.00	1,176.73	-597.13	1,234.55	0.00	0.00	0.00	
7,000.00	90.00	360.00	5,765.00	1,276.73	-597.13	1,333.96	0.00	0.00	0.00	
7,100.00	90.00	360.00	5,765.00	1,376.73	-597.14	1,433.37	0.00	0.00	0.00	
7,200.00	90.00	360.00	5,765.00	1,476.73	-597.14	1,532.78	0.00	0.00	0.00	
7,300.00	90.00	360.00	5,765.00	1,576.73	-597.15	1,632.19	0.00	0.00	0.00	
7,400.00	90.00	360.00	5,765.00	1,676.73	-597.15	1,731.60	0.00	0.00	0.00	
7,500.00	90.00	360.00	5,765.00	1,776.73	-597.15	1,831.01	0.00	0.00	0.00	
7,600.00	90.00	360.00	5,765.00	1,876.73	-597.16	1,930.43	0.00	0.00	0.00	
7,700.00	90.00	360.00	5,765.00	1,976.73	-597.16	2,029.84	0.00	0.00	0.00	
7,800.00	90.00	360.00	5,765.00	2,076.73	-597.16	2,129.25	0.00	0.00	0.00	
7,900.00	90.00	360.00	5,765.00	2,176.73	-597.17	2,228.66	0.00	0.00	0.00	
8,000.00	90.00	360.00	5,765.00	2,276.73	-597.17	2,328.07	0.00	0.00	0.00	
8,100.00	90.00	360.00	5,765.00	2,376.73	-597.18	2,427.48	0.00	0.00	0.00	
8,200.00	90.00	360.00	5,765.00	2,476.73	-597.18	2,526.89	0.00	0.00	0.00	
8,300.00	90.00	360.00	5,765.00	2,576.73	-597.18	2,626.30	0.00	0.00	0.00	
8,400.00	90.00	360.00	5,765.00	2,676.73	-597.19	2,725.71	0.00	0.00	0.00	
8,500.00	90.00	360.00	5,765.00	2,776.73	-597.19	2,825.12	0.00	0.00	0.00	
8,600.00	90.00	360.00	5,765.00	2,876.73	-597.19	2,924.53	0.00	0.00	0.00	
8,700.00	90.00	360.00	5,765.00	2,976.73	-597.20	3,023.94	0.00	0.00	0.00	
8,800.00	90.00	360.00	5,765.00	3,076.73	-597.20	3,123.35	0.00	0.00	0.00	
8,900.00	90.00	360.00	5,765.00	3,176.73	-597.21	3,222.76	0.00	0.00	0.00	
9,000.00	90.00	360.00	5,765.00	3,276.73	-597.21	3,322.17	0.00	0.00	0.00	
9,100.00	90.00	360.00	5,765.00	3,376.73	-597.21	3,421.59	0.00	0.00	0.00	
9,200.00	90.00	360.00	5,765.00	3,476.73	-597.22	3,521.00	0.00	0.00	0.00	
9,300.00	90.00	360.00	5,765.00	3,576.73	-597.22	3,620.41	0.00	0.00	0.00	
9,400.00	90.00	360.00	5,765.00	3,676.73	-597.23	3,719.82	0.00	0.00	0.00	
9,500.00	90.00	360.00	5,765.00	3,776.73	-597.23	3,819.23	0.00	0.00	0.00	
9,600.00	90.00	360.00	5,765.00	3,876.73	-597.23	3,918.64	0.00	0.00	0.00	
9,700.00	90.00	360.00	5,765.00	3,976.73	-597.24	4,018.05	0.00	0.00	0.00	
9,800.00	90.00	360.00	5,765.00	4,076.73	-597.24	4,117.46	0.00	0.00	0.00	
9,900.00	90.00	360.00	5,765.00	4,176.73	-597.24	4,216.87	0.00	0.00	0.00	
10,000.00	90.00	360.00	5,765.00	4,276.73	-597.25	4,316.28	0.00	0.00	0.00	



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2449
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2449	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	H2		
<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)	
10,100.00	90.00	360.00	5,765.00	4,376.73	-597.25	4,415.69	0.00	0.00	0.00	
10,200.00	90.00	360.00	5,765.00	4,476.73	-597.26	4,515.10	0.00	0.00	0.00	
10,300.00	90.00	360.00	5,765.00	4,576.73	-597.26	4,614.51	0.00	0.00	0.00	
10,400.00	90.00	360.00	5,765.00	4,676.73	-597.26	4,713.92	0.00	0.00	0.00	
10,500.00	90.00	360.00	5,765.00	4,776.73	-597.27	4,813.33	0.00	0.00	0.00	
10,600.00	90.00	360.00	5,765.00	4,876.73	-597.27	4,912.74	0.00	0.00	0.00	
10,700.00	90.00	360.00	5,765.00	4,976.73	-597.27	5,012.16	0.00	0.00	0.00	
10,800.00	90.00	360.00	5,765.00	5,076.73	-597.28	5,111.57	0.00	0.00	0.00	
10,900.00	90.00	360.00	5,765.00	5,176.73	-597.28	5,210.98	0.00	0.00	0.00	
11,000.00	90.00	360.00	5,765.00	5,276.73	-597.29	5,310.39	0.00	0.00	0.00	
11,100.00	90.00	360.00	5,765.00	5,376.73	-597.29	5,409.80	0.00	0.00	0.00	
11,198.51	90.00	360.00	5,765.00	5,475.25	-597.29	5,507.73	0.00	0.00	0.00	
TD at 11198.51' MD										

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 2449	0.00	0.00	5,765.00	5,475.25	-597.29	1,550,131.31	3,466,777.19	40° 49' 52.690 N	103° 48' 47.480 W	
- plan hits target center										
- Point										

Casing Points						Casing Diameter (in)	Hole Diameter (in)
Measured Depth (usft)	Vertical Depth (usft)	Name					
6,106.29	5,765.00	7"				7.000	8.750



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2449
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2449	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,560.74	1,550.00	Upper Pierre				
3,532.39	3,500.00	Hygiene				
3,684.06	3,650.00	Lower Pierre				
5,532.89	5,480.00	P200 Marker				
5,555.58	5,500.00	P300 Marker				
5,574.14	5,516.00	P350 Marker				
5,590.71	5,530.00	Sharon Springs				
5,595.51	5,534.00	Niobrara				
5,616.26	5,551.00	Top A Chalk				
5,654.44	5,581.00	Top A Marl				
5,670.38	5,593.00	A Marl				
5,681.26	5,601.00	Top Upper B				
5,715.27	5,625.00	Base Upper B				
5,739.33	5,641.00	Top Lower B				
5,786.71	5,670.00	Base Lower B				
5,810.04	5,683.00	Top B Marl				
5,900.82	5,725.00	Top C Chalk				
5,922.75	5,733.00	Middle C Chalk				
5,968.95	5,747.00	Middle C Marl				
6,104.66	5,765.00	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'	
725.00	723.44	-7.08	-30.66	Hold 8.50° Inc	
4,445.00	4,402.58	-130.77	-566.42	Drop 2°/100'	
4,870.00	4,826.02	-137.85	-597.08	Hold Vertical	
5,288.11	5,244.13	-137.85	-597.08	KOP, Build 11°/100'	
6,106.29	5,765.00	383.02	-597.10	LP @ 90° Inc, Hold	
11,198.51	5,765.00	5,475.25	-597.29	TD at 11198.51' MD	