



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

MDPath	Formation
1550.00	Upper Pierre
1554.14	Hygiene
3500.00	Lower Pierre
3511.59	P200 Marker
3650.00	P300 Marker
5444.00	P350 Marker
5497.65	Sharon Springs
5464.00	Niobrara
5526.07	Top A Chalk
5550.05	Top A Marl
5572.15	A Marl
5498.00	Top Upper B
5578.68	Base Upper B
5607.76	Top Lower B
5666.07	
5693.17	
5713.08	
5789.10	
5916.91	

#### 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	550.00	5.00	241.00	549.68	-5.29	-9.53	2.00	241.00	-4.97	
4	4650.00	5.00	241.00	4634.08	-178.53	-322.07	0.00	0.00	-167.88	
5	4900.00	0.00	0.00	4883.76	-183.81	-331.60	2.00	180.00	-172.85	
6	5100.37	0.00	0.00	5084.13	-183.81	-331.60	0.00	0.00	-172.85	
7	5918.55	90.00	360.00	5605.00	337.06	-331.63	11.00	360.00	347.74	PBHL 2414
8	15714.20	90.00	360.00	5605.00	10132.71	-332.09	0.00	0.00	10138.15	PBHL 2414

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
549.68	550.00	5.00	241.00	-5.29	-9.53	-4.97	10.90	Hold 5° Inc
4634.08	4650.00	5.00	241.00	-178.53	-322.07	-167.88	368.24	Drop 2°/100'
4883.76	4900.00	0.00	0.00	-183.81	-331.60	-172.85	379.14	Hold Vertical
5084.13	5100.37	0.00	0.00	-183.81	-331.60	-172.85	379.14	KOP, Build 11°/100'
5605.00	5918.55	90.00	360.00	337.06	-331.63	347.74	900.01	LP @ 90° Inc, Hold
5605.00	15714.20	90.00	360.00	10132.71	-332.09	10138.15	10695.66	TD at 15714.20' MD

#### DESIGN TARGET DETAILS

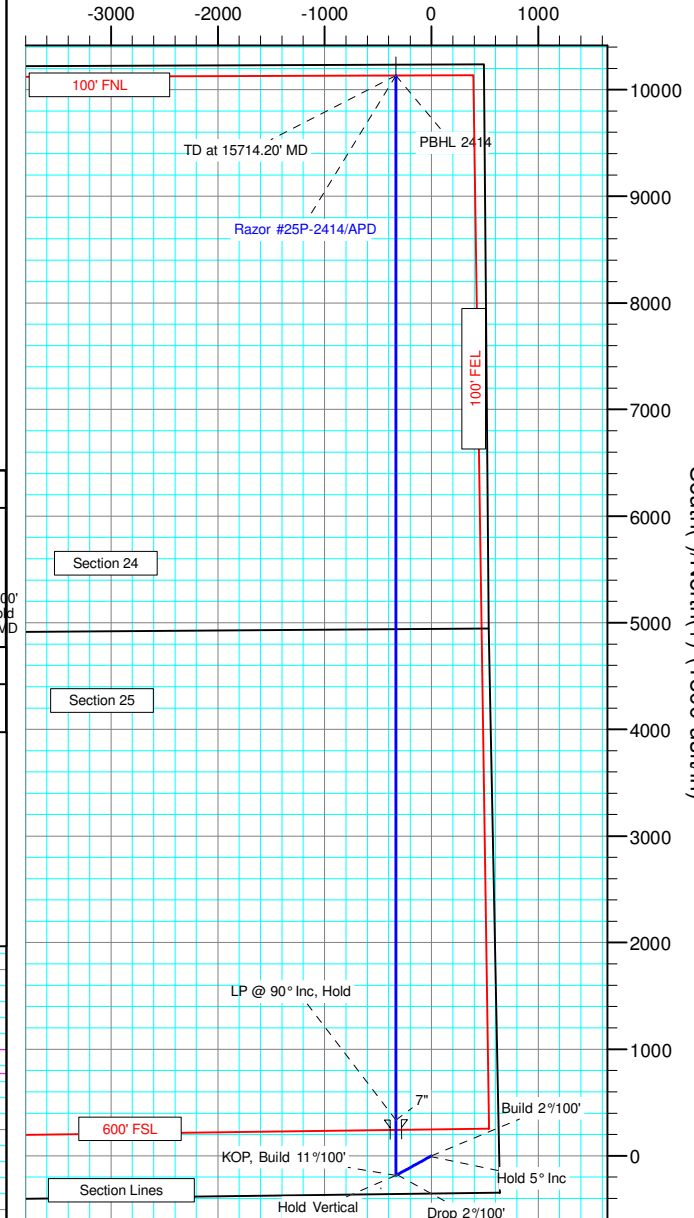
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 2414	5605.00	10132.71	-332.09	1550171.97	3468591.69	40° 49' 52.750 N	103° 48' 23.870 W

SHL:  
355' FSL, 629' FEL  
Sec25-T10N-R58W

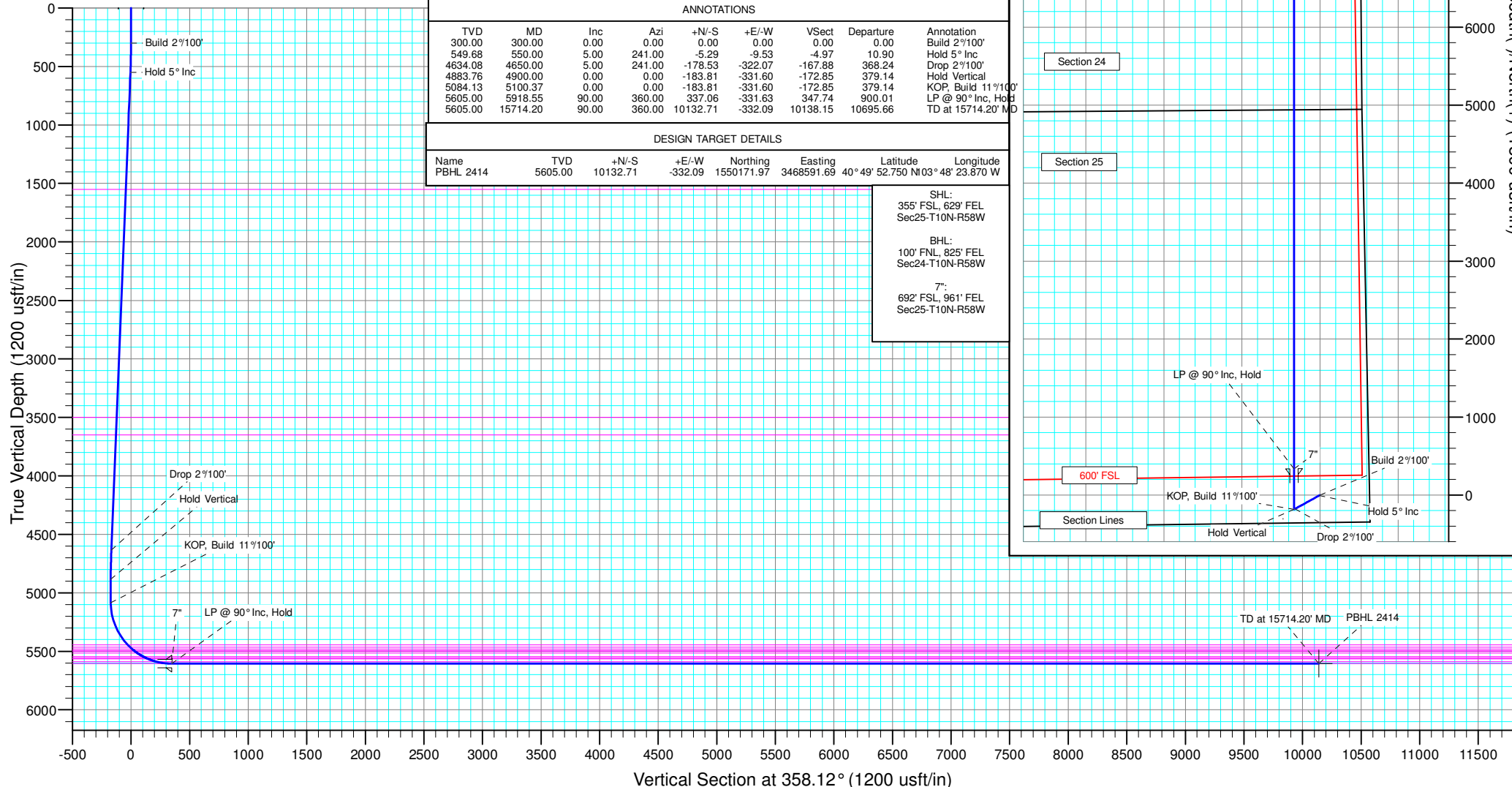
BHL:  
100' FNL, 825' FEL  
Sec24-T10N-R58W

7":  
692' FSL, 961' FEL  
Sec25-T10N-R58W

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



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





# **Whiting Petroleum Corp.**

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

**Hz**

**Plan: APD**

## **Standard Planning Report**

**27 May, 2015**



# 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		

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 #25P-2414				
Well Position	+N/-S	-4,596.37 usft	Northing:	1,540,047.46 usft	Latitude:	40° 48' 12.630 N
	+E/-W	4,147.41 usft	Easting:	3,469,117.34 usft	Longitude:	103° 48' 19.550 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	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	
550.00	5.00	241.00	549.68	-5.29	-9.53	2.00	2.00	0.00	241.00	
4,650.00	5.00	241.00	4,634.08	-178.53	-322.07	0.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,883.76	-183.81	-331.60	2.00	-2.00	0.00	180.00	
5,100.37	0.00	0.00	5,084.13	-183.81	-331.60	0.00	0.00	0.00	0.00	
5,918.55	90.00	360.00	5,605.00	337.06	-331.63	11.00	11.00	0.00	360.00	PBHL 2414
15,714.20	90.00	360.00	5,605.00	10,132.71	-332.09	0.00	0.00	0.00	0.00	PBHL 2414



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## 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	241.00	399.98	-0.85	-1.53	-0.80	2.00	2.00	0.00
500.00	4.00	241.00	499.84	-3.38	-6.10	-3.18	2.00	2.00	0.00
550.00	5.00	241.00	549.68	-5.29	-9.53	-4.97	2.00	2.00	0.00
<b>Hold 5° Inc</b>									
600.00	5.00	241.00	599.49	-7.40	-13.35	-6.96	0.00	0.00	0.00
700.00	5.00	241.00	699.11	-11.62	-20.97	-10.93	0.00	0.00	0.00
800.00	5.00	241.00	798.73	-15.85	-28.59	-14.90	0.00	0.00	0.00
900.00	5.00	241.00	898.35	-20.07	-36.21	-18.88	0.00	0.00	0.00
1,000.00	5.00	241.00	997.97	-24.30	-43.84	-22.85	0.00	0.00	0.00
1,100.00	5.00	241.00	1,097.59	-28.52	-51.46	-26.82	0.00	0.00	0.00
1,200.00	5.00	241.00	1,197.21	-32.75	-59.08	-30.80	0.00	0.00	0.00
1,300.00	5.00	241.00	1,296.83	-36.98	-66.71	-34.77	0.00	0.00	0.00
1,400.00	5.00	241.00	1,396.45	-41.20	-74.33	-38.74	0.00	0.00	0.00
1,500.00	5.00	241.00	1,496.07	-45.43	-81.95	-42.72	0.00	0.00	0.00
1,554.14	5.00	241.00	1,550.00	-47.71	-86.08	-44.87	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	5.00	241.00	1,595.69	-49.65	-89.57	-46.69	0.00	0.00	0.00
1,700.00	5.00	241.00	1,695.31	-53.88	-97.20	-50.66	0.00	0.00	0.00
1,800.00	5.00	241.00	1,794.93	-58.10	-104.82	-54.64	0.00	0.00	0.00
1,900.00	5.00	241.00	1,894.55	-62.33	-112.44	-58.61	0.00	0.00	0.00
2,000.00	5.00	241.00	1,994.17	-66.55	-120.07	-62.58	0.00	0.00	0.00
2,100.00	5.00	241.00	2,093.78	-70.78	-127.69	-66.56	0.00	0.00	0.00
2,200.00	5.00	241.00	2,193.40	-75.00	-135.31	-70.53	0.00	0.00	0.00
2,300.00	5.00	241.00	2,293.02	-79.23	-142.93	-74.51	0.00	0.00	0.00
2,400.00	5.00	241.00	2,392.64	-83.45	-150.56	-78.48	0.00	0.00	0.00
2,500.00	5.00	241.00	2,492.26	-87.68	-158.18	-82.45	0.00	0.00	0.00
2,600.00	5.00	241.00	2,591.88	-91.91	-165.80	-86.43	0.00	0.00	0.00
2,700.00	5.00	241.00	2,691.50	-96.13	-173.43	-90.40	0.00	0.00	0.00
2,800.00	5.00	241.00	2,791.12	-100.36	-181.05	-94.37	0.00	0.00	0.00
2,900.00	5.00	241.00	2,890.74	-104.58	-188.67	-98.35	0.00	0.00	0.00
3,000.00	5.00	241.00	2,990.36	-108.81	-196.29	-102.32	0.00	0.00	0.00
3,100.00	5.00	241.00	3,089.98	-113.03	-203.92	-106.29	0.00	0.00	0.00
3,200.00	5.00	241.00	3,189.60	-117.26	-211.54	-110.27	0.00	0.00	0.00
3,300.00	5.00	241.00	3,289.22	-121.48	-219.16	-114.24	0.00	0.00	0.00
3,400.00	5.00	241.00	3,388.84	-125.71	-226.78	-118.21	0.00	0.00	0.00
3,500.00	5.00	241.00	3,488.46	-129.93	-234.41	-122.19	0.00	0.00	0.00
3,511.59	5.00	241.00	3,500.00	-130.42	-235.29	-122.65	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	5.00	241.00	3,588.08	-134.16	-242.03	-126.16	0.00	0.00	0.00
3,662.16	5.00	241.00	3,650.00	-136.79	-246.77	-128.63	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	5.00	241.00	3,687.70	-138.39	-249.65	-130.13	0.00	0.00	0.00
3,800.00	5.00	241.00	3,787.32	-142.61	-257.28	-134.11	0.00	0.00	0.00
3,900.00	5.00	241.00	3,886.94	-146.84	-264.90	-138.08	0.00	0.00	0.00
4,000.00	5.00	241.00	3,986.55	-151.06	-272.52	-142.05	0.00	0.00	0.00
4,100.00	5.00	241.00	4,086.17	-155.29	-280.14	-146.03	0.00	0.00	0.00
4,200.00	5.00	241.00	4,185.79	-159.51	-287.77	-150.00	0.00	0.00	0.00
4,300.00	5.00	241.00	4,285.41	-163.74	-295.39	-153.97	0.00	0.00	0.00
4,400.00	5.00	241.00	4,385.03	-167.96	-303.01	-157.95	0.00	0.00	0.00



# WOG Planning Report

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<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)
4,500.00	5.00	241.00	4,484.65	-172.19	-310.64	-161.92	0.00	0.00	0.00
4,600.00	5.00	241.00	4,584.27	-176.41	-318.26	-165.89	0.00	0.00	0.00
4,650.00	5.00	241.00	4,634.08	-178.53	-322.07	-167.88	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,700.00	4.00	241.00	4,683.93	-180.43	-325.50	-169.67	2.00	-2.00	0.00
4,800.00	2.00	241.00	4,783.78	-182.97	-330.08	-172.06	2.00	-2.00	0.00
4,900.00	0.00	0.00	4,883.76	-183.81	-331.60	-172.85	2.00	-2.00	0.00
<b>Hold Vertical</b>									
5,000.00	0.00	0.00	4,983.76	-183.81	-331.60	-172.85	0.00	0.00	0.00
5,100.37	0.00	0.00	5,084.13	-183.81	-331.60	-172.85	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,150.00	5.46	360.00	5,133.69	-181.45	-331.60	-170.49	11.00	11.00	0.00
5,200.00	10.96	360.00	5,183.16	-174.31	-331.60	-163.36	11.00	11.00	0.00
5,250.00	16.46	360.00	5,231.71	-162.47	-331.61	-151.52	11.00	11.00	0.00
5,300.00	21.96	360.00	5,278.91	-146.02	-331.61	-135.08	11.00	11.00	0.00
5,350.00	27.46	360.00	5,324.32	-125.13	-331.61	-114.20	11.00	11.00	0.00
5,400.00	32.96	360.00	5,367.51	-99.98	-331.61	-89.06	11.00	11.00	0.00
5,450.00	38.46	360.00	5,408.09	-70.81	-331.61	-59.91	11.00	11.00	0.00
5,497.65	43.70	360.00	5,444.00	-39.51	-331.61	-28.62	11.00	11.00	0.00
<b>P200 Marker</b>									
5,500.00	43.96	360.00	5,445.69	-37.88	-331.61	-27.00	11.00	11.00	0.00
5,526.07	46.83	360.00	5,464.00	-19.32	-331.61	-8.45	11.00	11.00	0.00
<b>P300 Marker</b>									
5,550.00	49.46	360.00	5,479.97	-1.50	-331.61	9.36	11.00	11.00	0.00
5,550.05	49.46	360.00	5,480.00	-1.46	-331.61	9.40	0.00	0.00	0.00
<b>P350 Marker</b>									
5,572.15	51.90	360.00	5,494.00	15.63	-331.61	26.49	11.03	11.03	0.00
<b>Sharon Springs</b>									
5,578.68	52.61	360.00	5,498.00	20.80	-331.61	31.65	11.00	11.00	0.00
<b>Niobrara</b>									
5,600.00	54.96	360.00	5,510.59	38.00	-331.61	48.84	11.00	11.00	0.00
5,607.76	55.81	360.00	5,515.00	44.38	-331.62	55.22	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,650.00	60.46	360.00	5,537.29	80.25	-331.62	91.07	11.00	11.00	0.00
5,666.07	62.23	360.00	5,545.00	94.35	-331.62	105.16	11.00	11.00	0.00
<b>Top A Marl</b>									
5,693.17	65.21	360.00	5,557.00	118.65	-331.62	129.45	11.00	11.00	0.00
<b>A Marl</b>									
5,700.00	65.96	360.00	5,559.82	124.87	-331.62	135.66	11.00	11.00	0.00
5,713.08	67.40	360.00	5,565.00	136.88	-331.62	147.67	11.00	11.00	0.00
<b>Top Upper B</b>									
5,750.00	71.46	360.00	5,577.97	171.44	-331.62	182.21	11.00	11.00	0.00
5,789.10	75.76	360.00	5,589.00	208.94	-331.62	219.69	11.00	11.00	0.00
<b>Base Upper B</b>									
5,800.00	76.96	360.00	5,591.57	219.53	-331.62	230.27	11.00	11.00	0.00
5,850.00	82.46	360.00	5,600.50	268.71	-331.63	279.43	11.00	11.00	0.00
5,900.00	87.96	360.00	5,604.67	318.51	-331.63	329.20	11.00	11.00	0.00
5,916.91	89.82	360.00	5,605.00	335.42	-331.63	346.11	11.00	11.00	0.00
<b>Top Lower B</b>									
5,918.55	90.00	360.00	5,605.00	337.06	-331.63	347.74	10.99	10.99	0.00
<b>LP @ 90° Inc, Hold - 7"</b>									
6,000.00	90.00	360.00	5,605.00	418.51	-331.63	429.15	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)
6,100.00	90.00	360.00	5,605.00	518.51	-331.64	529.09	0.00	0.00	0.00
6,200.00	90.00	360.00	5,605.00	618.51	-331.64	629.04	0.00	0.00	0.00
6,300.00	90.00	360.00	5,605.00	718.51	-331.65	728.99	0.00	0.00	0.00
6,400.00	90.00	360.00	5,605.00	818.51	-331.65	828.93	0.00	0.00	0.00
6,500.00	90.00	360.00	5,605.00	918.51	-331.66	928.88	0.00	0.00	0.00
6,600.00	90.00	360.00	5,605.00	1,018.51	-331.66	1,028.83	0.00	0.00	0.00
6,700.00	90.00	360.00	5,605.00	1,118.51	-331.67	1,128.77	0.00	0.00	0.00
6,800.00	90.00	360.00	5,605.00	1,218.51	-331.67	1,228.72	0.00	0.00	0.00
6,900.00	90.00	360.00	5,605.00	1,318.51	-331.67	1,328.67	0.00	0.00	0.00
7,000.00	90.00	360.00	5,605.00	1,418.51	-331.68	1,428.61	0.00	0.00	0.00
7,100.00	90.00	360.00	5,605.00	1,518.51	-331.68	1,528.56	0.00	0.00	0.00
7,200.00	90.00	360.00	5,605.00	1,618.51	-331.69	1,628.51	0.00	0.00	0.00
7,300.00	90.00	360.00	5,605.00	1,718.51	-331.69	1,728.45	0.00	0.00	0.00
7,400.00	90.00	360.00	5,605.00	1,818.51	-331.70	1,828.40	0.00	0.00	0.00
7,500.00	90.00	360.00	5,605.00	1,918.51	-331.70	1,928.34	0.00	0.00	0.00
7,600.00	90.00	360.00	5,605.00	2,018.51	-331.71	2,028.29	0.00	0.00	0.00
7,700.00	90.00	360.00	5,605.00	2,118.51	-331.71	2,128.24	0.00	0.00	0.00
7,800.00	90.00	360.00	5,605.00	2,218.51	-331.72	2,228.18	0.00	0.00	0.00
7,900.00	90.00	360.00	5,605.00	2,318.51	-331.72	2,328.13	0.00	0.00	0.00
8,000.00	90.00	360.00	5,605.00	2,418.51	-331.73	2,428.08	0.00	0.00	0.00
8,100.00	90.00	360.00	5,605.00	2,518.51	-331.73	2,528.02	0.00	0.00	0.00
8,200.00	90.00	360.00	5,605.00	2,618.51	-331.74	2,627.97	0.00	0.00	0.00
8,300.00	90.00	360.00	5,605.00	2,718.51	-331.74	2,727.92	0.00	0.00	0.00
8,400.00	90.00	360.00	5,605.00	2,818.51	-331.74	2,827.86	0.00	0.00	0.00
8,500.00	90.00	360.00	5,605.00	2,918.51	-331.75	2,927.81	0.00	0.00	0.00
8,600.00	90.00	360.00	5,605.00	3,018.51	-331.75	3,027.76	0.00	0.00	0.00
8,700.00	90.00	360.00	5,605.00	3,118.51	-331.76	3,127.70	0.00	0.00	0.00
8,800.00	90.00	360.00	5,605.00	3,218.51	-331.76	3,227.65	0.00	0.00	0.00
8,900.00	90.00	360.00	5,605.00	3,318.51	-331.77	3,327.60	0.00	0.00	0.00
9,000.00	90.00	360.00	5,605.00	3,418.51	-331.77	3,427.54	0.00	0.00	0.00
9,100.00	90.00	360.00	5,605.00	3,518.51	-331.78	3,527.49	0.00	0.00	0.00
9,200.00	90.00	360.00	5,605.00	3,618.51	-331.78	3,627.44	0.00	0.00	0.00
9,300.00	90.00	360.00	5,605.00	3,718.51	-331.79	3,727.38	0.00	0.00	0.00
9,400.00	90.00	360.00	5,605.00	3,818.51	-331.79	3,827.33	0.00	0.00	0.00
9,500.00	90.00	360.00	5,605.00	3,918.51	-331.80	3,927.27	0.00	0.00	0.00
9,600.00	90.00	360.00	5,605.00	4,018.51	-331.80	4,027.22	0.00	0.00	0.00
9,700.00	90.00	360.00	5,605.00	4,118.51	-331.81	4,127.17	0.00	0.00	0.00
9,800.00	90.00	360.00	5,605.00	4,218.51	-331.81	4,227.11	0.00	0.00	0.00
9,900.00	90.00	360.00	5,605.00	4,318.51	-331.81	4,327.06	0.00	0.00	0.00
10,000.00	90.00	360.00	5,605.00	4,418.51	-331.82	4,427.01	0.00	0.00	0.00
10,100.00	90.00	360.00	5,605.00	4,518.51	-331.82	4,526.95	0.00	0.00	0.00
10,200.00	90.00	360.00	5,605.00	4,618.51	-331.83	4,626.90	0.00	0.00	0.00
10,300.00	90.00	360.00	5,605.00	4,718.51	-331.83	4,726.85	0.00	0.00	0.00
10,400.00	90.00	360.00	5,605.00	4,818.51	-331.84	4,826.79	0.00	0.00	0.00
10,500.00	90.00	360.00	5,605.00	4,918.51	-331.84	4,926.74	0.00	0.00	0.00
10,600.00	90.00	360.00	5,605.00	5,018.51	-331.85	5,026.69	0.00	0.00	0.00
10,700.00	90.00	360.00	5,605.00	5,118.51	-331.85	5,126.63	0.00	0.00	0.00
10,800.00	90.00	360.00	5,605.00	5,218.51	-331.86	5,226.58	0.00	0.00	0.00
10,900.00	90.00	360.00	5,605.00	5,318.51	-331.86	5,326.53	0.00	0.00	0.00
11,000.00	90.00	360.00	5,605.00	5,418.51	-331.87	5,426.47	0.00	0.00	0.00
11,100.00	90.00	360.00	5,605.00	5,518.51	-331.87	5,526.42	0.00	0.00	0.00
11,200.00	90.00	360.00	5,605.00	5,618.51	-331.88	5,626.37	0.00	0.00	0.00
11,300.00	90.00	360.00	5,605.00	5,718.51	-331.88	5,726.31	0.00	0.00	0.00
11,400.00	90.00	360.00	5,605.00	5,818.51	-331.88	5,826.26	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)
11,500.00	90.00	360.00	5,605.00	5,918.51	-331.89	5,926.20	0.00	0.00	0.00
11,600.00	90.00	360.00	5,605.00	6,018.51	-331.89	6,026.15	0.00	0.00	0.00
11,700.00	90.00	360.00	5,605.00	6,118.51	-331.90	6,126.10	0.00	0.00	0.00
11,800.00	90.00	360.00	5,605.00	6,218.51	-331.90	6,226.04	0.00	0.00	0.00
11,900.00	90.00	360.00	5,605.00	6,318.51	-331.91	6,325.99	0.00	0.00	0.00
12,000.00	90.00	360.00	5,605.00	6,418.51	-331.91	6,425.94	0.00	0.00	0.00
12,100.00	90.00	360.00	5,605.00	6,518.51	-331.92	6,525.88	0.00	0.00	0.00
12,200.00	90.00	360.00	5,605.00	6,618.51	-331.92	6,625.83	0.00	0.00	0.00
12,300.00	90.00	360.00	5,605.00	6,718.51	-331.93	6,725.78	0.00	0.00	0.00
12,400.00	90.00	360.00	5,605.00	6,818.51	-331.93	6,825.72	0.00	0.00	0.00
12,500.00	90.00	360.00	5,605.00	6,918.51	-331.94	6,925.67	0.00	0.00	0.00
12,600.00	90.00	360.00	5,605.00	7,018.51	-331.94	7,025.62	0.00	0.00	0.00
12,700.00	90.00	360.00	5,605.00	7,118.51	-331.95	7,125.56	0.00	0.00	0.00
12,800.00	90.00	360.00	5,605.00	7,218.51	-331.95	7,225.51	0.00	0.00	0.00
12,900.00	90.00	360.00	5,605.00	7,318.51	-331.95	7,325.46	0.00	0.00	0.00
13,000.00	90.00	360.00	5,605.00	7,418.51	-331.96	7,425.40	0.00	0.00	0.00
13,100.00	90.00	360.00	5,605.00	7,518.51	-331.96	7,525.35	0.00	0.00	0.00
13,200.00	90.00	360.00	5,605.00	7,618.51	-331.97	7,625.30	0.00	0.00	0.00
13,300.00	90.00	360.00	5,605.00	7,718.51	-331.97	7,725.24	0.00	0.00	0.00
13,400.00	90.00	360.00	5,605.00	7,818.51	-331.98	7,825.19	0.00	0.00	0.00
13,500.00	90.00	360.00	5,605.00	7,918.51	-331.98	7,925.13	0.00	0.00	0.00
13,600.00	90.00	360.00	5,605.00	8,018.51	-331.99	8,025.08	0.00	0.00	0.00
13,700.00	90.00	360.00	5,605.00	8,118.51	-331.99	8,125.03	0.00	0.00	0.00
13,800.00	90.00	360.00	5,605.00	8,218.51	-332.00	8,224.97	0.00	0.00	0.00
13,900.00	90.00	360.00	5,605.00	8,318.51	-332.00	8,324.92	0.00	0.00	0.00
14,000.00	90.00	360.00	5,605.00	8,418.51	-332.01	8,424.87	0.00	0.00	0.00
14,100.00	90.00	360.00	5,605.00	8,518.51	-332.01	8,524.81	0.00	0.00	0.00
14,200.00	90.00	360.00	5,605.00	8,618.51	-332.02	8,624.76	0.00	0.00	0.00
14,300.00	90.00	360.00	5,605.00	8,718.51	-332.02	8,724.71	0.00	0.00	0.00
14,400.00	90.00	360.00	5,605.00	8,818.51	-332.02	8,824.65	0.00	0.00	0.00
14,500.00	90.00	360.00	5,605.00	8,918.51	-332.03	8,924.60	0.00	0.00	0.00
14,600.00	90.00	360.00	5,605.00	9,018.51	-332.03	9,024.55	0.00	0.00	0.00
14,700.00	90.00	360.00	5,605.00	9,118.51	-332.04	9,124.49	0.00	0.00	0.00
14,800.00	90.00	360.00	5,605.00	9,218.51	-332.04	9,224.44	0.00	0.00	0.00
14,900.00	90.00	360.00	5,605.00	9,318.51	-332.05	9,324.39	0.00	0.00	0.00
15,000.00	90.00	360.00	5,605.00	9,418.51	-332.05	9,424.33	0.00	0.00	0.00
15,100.00	90.00	360.00	5,605.00	9,518.51	-332.06	9,524.28	0.00	0.00	0.00
15,200.00	90.00	360.00	5,605.00	9,618.51	-332.06	9,624.22	0.00	0.00	0.00
15,300.00	90.00	360.00	5,605.00	9,718.51	-332.07	9,724.17	0.00	0.00	0.00
15,400.00	90.00	360.00	5,605.00	9,818.51	-332.07	9,824.12	0.00	0.00	0.00
15,500.00	90.00	360.00	5,605.00	9,918.51	-332.08	9,924.06	0.00	0.00	0.00
15,600.00	90.00	360.00	5,605.00	10,018.51	-332.08	10,024.01	0.00	0.00	0.00
15,700.00	90.00	360.00	5,605.00	10,118.51	-332.09	10,123.96	0.00	0.00	0.00
15,714.20	90.00	360.00	5,605.00	10,132.71	-332.09	10,138.15	0.00	0.00	0.00
TD at 15714.20' MD									



# 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		

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	5,605.00	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									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,918.55	5,605.00	7"	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,554.14	1,550.00	Upper Pierre				
3,511.59	3,500.00	Hygiene				
3,662.16	3,650.00	Lower Pierre				
5,497.65	5,444.00	P200 Marker				
5,526.07	5,464.00	P300 Marker				
5,550.05	5,480.00	P350 Marker				
5,572.15	5,494.00	Sharon Springs				
5,578.68	5,498.00	Niobrara				
5,607.76	5,515.00	Top A Chalk				
5,666.07	5,545.00	Top A Marl				
5,693.17	5,557.00	A Marl				
5,713.08	5,565.00	Top Upper B				
5,789.10	5,589.00	Base Upper B				
5,916.91	5,605.00	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'	
550.00	549.68	-5.29	-9.53	Hold 5° Inc	
4,650.00	4,634.08	-178.53	-322.07	Drop 2°/100'	
4,900.00	4,883.76	-183.81	-331.60	Hold Vertical	
5,100.37	5,084.13	-183.81	-331.60	KOP, Build 11°/100'	
5,918.55	5,605.00	337.06	-331.63	LP @ 90° Inc, Hold	
15,714.20	5,605.00	10,132.71	-332.09	TD at 15714.20' MD	