



Project: Weld County, CO  
 Site: Sec 26-T10N-R58W  
 Well: Razor Federal #26J-2343  
 Wellbore: Hz  
 Design: APD

ECT DETAILS: Weld County, CO  
 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: 52809.2snT  
 Dip Angle: 67.35°  
 Date: 6/30/2016  
 Model: IGRF2015

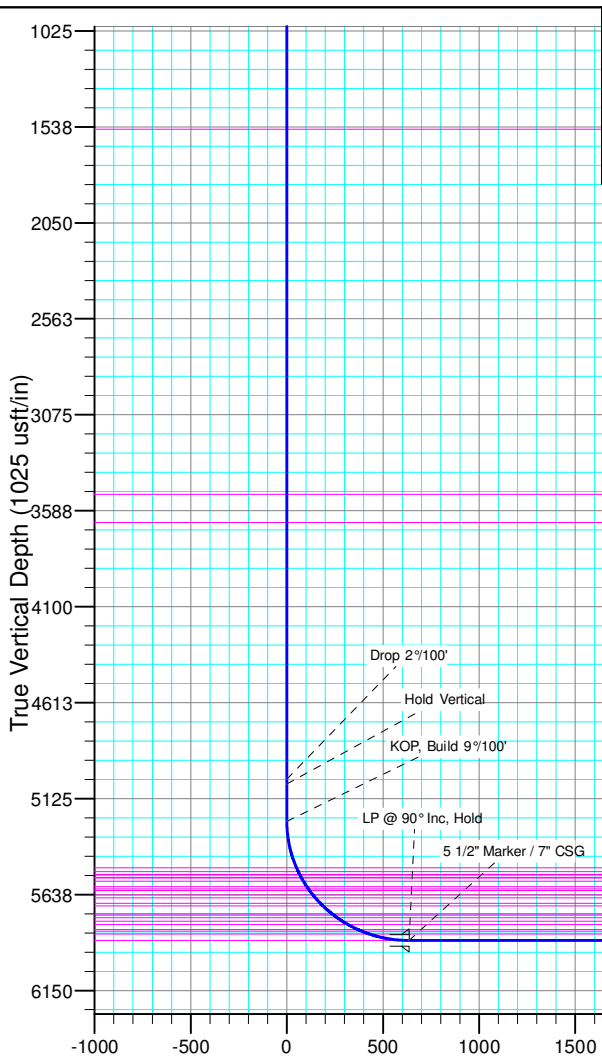
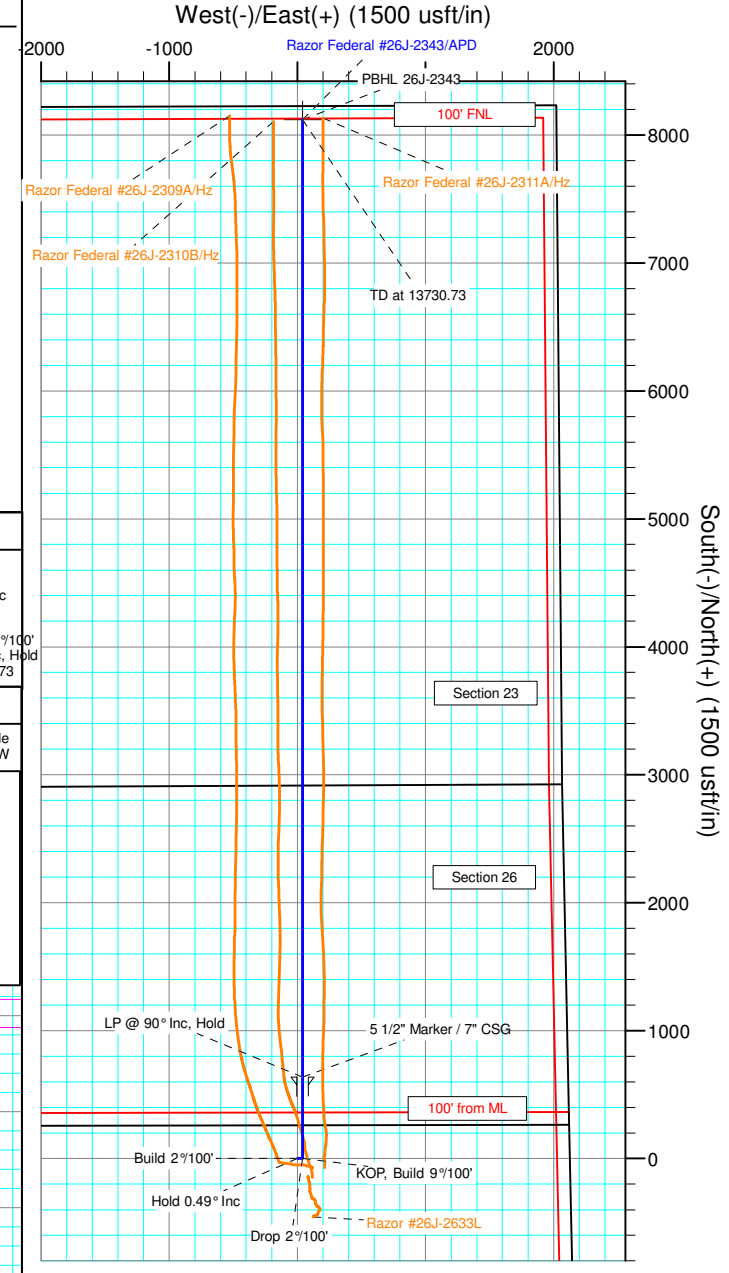
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1550.00	1550.05	Upper Pierre
3500.00	3500.12	Hygiene
3650.00	3650.12	Lower Pierre
5495.00	5501.97	P200 Marker
5515.00	5523.85	P300 Marker
5531.00	5541.62	P350 Marker
5545.00	5557.37	Sharon Springs
5549.00	5561.90	Niobrara
5566.00	5581.39	Top A Chalk
5596.00	5616.66	Top A Marl
5608.00	5631.13	A Marl
5616.00	5640.90	Top Upper B
5640.00	5670.89	Base Upper B
5656.00	5691.51	Top Lower B
5685.00	5730.42	Base Lower B
5698.00	5748.60	Top B Marl
5740.00	5811.41	Top C Chalk
5748.00	5824.23	Middle C Chalk
5762.00	5847.52	Middle C Marl
5780.00	5879.31	Lower C Chalk
5797.00	5911.77	Lower C Marl
5824.00	5970.27	Lower C Marker
5833.00	5992.52	Top Ft. Hays
5848.00	6034.43	Ft. Hays Marker
5883.00	6246.49	Top Codell

WELL DETAILS: Razor Federal #26J-2343

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.00	0.00	1541898.23	4725.00	3462203.02	40° 48' 32.210 N	103° 49' 48.990 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	324.72	0.49	90.00	324.72	0.00	0.11	2.00	90.00	0.00	
4	5021.96	0.49	90.00	5021.78	0.00	40.64	0.00	0.00	0.20	
5	5046.68	0.00	0.00	5046.50	0.00	40.74	2.00	180.00	0.20	
6	5246.68	0.00	0.00	5246.50	0.00	40.74	0.00	0.00	0.20	
7	6246.49	90.00	360.00	5883.00	636.50	40.74	9.00	360.00	636.70	
8	13730.73	90.00	360.00	5883.00	8120.74	40.74	0.00	0.00	8120.84	PBHL 26J-2343



ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation		
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'		
324.72	324.72	0.49	90.00	0.00	0.11	0.00	0.11	Hold 0.49° Inc		
5021.78	5021.96	0.49	90.00	0.00	40.64	0.20	40.64	Drop 2°/100'		
5046.50	5046.68	0.00	0.00	0.00	40.74	0.20	40.74	Hold Vertical		
5246.50	5246.68	0.00	0.00	0.00	40.74	0.20	40.74	KOP, Build 9°/100'		
5883.00	6246.49	90.00	360.00	636.50	40.74	636.70	677.24	LP @ 90° Inc, Hold		
5883.00	13730.73	90.00	360.00	8120.74	40.74	8120.84	8161.48	TD at 13730.73		

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 26J-2343	5883.00	8120.74	40.74	1550018.30	3462090.85	40° 49' 52.450 N	103° 49' 48.460 W

SHL:  
 2396' FSL, 2126' FEL  
 Sec26-T10N-R58W

BHL:  
 100' FNL, 1980' FEL  
 Sec23-T10N-R58W

5 1/2" Marker / 7" CSG:  
 2292' FNL, 2085' FEL  
 Sec26-T10N-R58W

Vertical Section at 0.29° (1000 usft/in)



# **Whiting Petroleum Corp.**

**Weld County, CO**

**Sec 26-T10N-R58W**

**Razor Federal #26J-2343**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**01 July, 2016**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor Federal #26J-2343
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4746.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4746.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor Federal #26J-2343	<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 26-T10N-R58W				
<b>Site Position:</b>		<b>Northing:</b>	1,541,803.23 usft	<b>Latitude:</b>	40° 48' 31.490 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,461,028.06 usft	<b>Longitude:</b>	103° 50' 4.290 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.08 °

<b>Well</b>	Razor Federal #26J-2343					
<b>Well Position</b>	<b>+N/-S</b>	72.92 usft	<b>Northing:</b>	1,541,898.24 usft	<b>Latitude:</b>	40° 48' 32.210 N
	<b>+E/-W</b>	1,176.53 usft	<b>Easting:</b>	3,462,203.02 usft	<b>Longitude:</b>	103° 49' 48.990 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	4,725.00 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>
	IGRF2015	6/30/2016	7.84	67.35	52,809

<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	0.29

<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	
324.72	0.49	90.00	324.72	0.00	0.11	2.00	2.00	0.00	90.00	
5,021.96	0.49	90.00	5,021.78	0.00	40.64	0.00	0.00	0.00	0.00	
5,046.68	0.00	0.00	5,046.50	0.00	40.74	2.00	-2.00	0.00	180.00	
5,246.68	0.00	0.00	5,246.50	0.00	40.74	0.00	0.00	0.00	0.00	
6,246.49	90.00	360.00	5,883.00	636.50	40.74	9.00	9.00	0.00	360.00	
13,730.73	90.00	360.00	5,883.00	8,120.74	40.74	0.00	0.00	0.00	0.00	PBHL 26J-2343



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor Federal #26J-2343
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4746.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4746.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor Federal #26J-2343	<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>										
324.72	0.49	90.00	324.72	0.00	0.11	0.00	2.00	2.00	0.00	
<b>Hold 0.49° Inc</b>										
400.00	0.49	90.00	400.00	0.00	0.76	0.00	0.00	0.00	0.00	
500.00	0.49	90.00	499.99	0.00	1.62	0.01	0.00	0.00	0.00	
600.00	0.49	90.00	599.99	0.00	2.48	0.01	0.00	0.00	0.00	
700.00	0.49	90.00	699.99	0.00	3.34	0.02	0.00	0.00	0.00	
800.00	0.49	90.00	799.98	0.00	4.21	0.02	0.00	0.00	0.00	
900.00	0.49	90.00	899.98	0.00	5.07	0.03	0.00	0.00	0.00	
1,000.00	0.49	90.00	999.97	0.00	5.93	0.03	0.00	0.00	0.00	
1,100.00	0.49	90.00	1,099.97	0.00	6.80	0.03	0.00	0.00	0.00	
1,200.00	0.49	90.00	1,199.97	0.00	7.66	0.04	0.00	0.00	0.00	
1,300.00	0.49	90.00	1,299.96	0.00	8.52	0.04	0.00	0.00	0.00	
1,400.00	0.49	90.00	1,399.96	0.00	9.38	0.05	0.00	0.00	0.00	
1,500.00	0.49	90.00	1,499.96	0.00	10.25	0.05	0.00	0.00	0.00	
1,550.05	0.49	90.00	1,550.00	0.00	10.68	0.05	0.00	0.00	0.00	
<b>Upper Pierre</b>										
1,600.00	0.49	90.00	1,599.95	0.00	11.11	0.06	0.00	0.00	0.00	
1,700.00	0.49	90.00	1,699.95	0.00	11.97	0.06	0.00	0.00	0.00	
1,800.00	0.49	90.00	1,799.94	0.00	12.84	0.06	0.00	0.00	0.00	
1,900.00	0.49	90.00	1,899.94	0.00	13.70	0.07	0.00	0.00	0.00	
2,000.00	0.49	90.00	1,999.94	0.00	14.56	0.07	0.00	0.00	0.00	
2,100.00	0.49	90.00	2,099.93	0.00	15.42	0.08	0.00	0.00	0.00	
2,200.00	0.49	90.00	2,199.93	0.00	16.29	0.08	0.00	0.00	0.00	
2,300.00	0.49	90.00	2,299.93	0.00	17.15	0.09	0.00	0.00	0.00	
2,400.00	0.49	90.00	2,399.92	0.00	18.01	0.09	0.00	0.00	0.00	
2,500.00	0.49	90.00	2,499.92	0.00	18.88	0.09	0.00	0.00	0.00	
2,600.00	0.49	90.00	2,599.92	0.00	19.74	0.10	0.00	0.00	0.00	
2,700.00	0.49	90.00	2,699.91	0.00	20.60	0.10	0.00	0.00	0.00	
2,800.00	0.49	90.00	2,799.91	0.00	21.46	0.11	0.00	0.00	0.00	
2,900.00	0.49	90.00	2,899.90	0.00	22.33	0.11	0.00	0.00	0.00	
3,000.00	0.49	90.00	2,999.90	0.00	23.19	0.12	0.00	0.00	0.00	
3,100.00	0.49	90.00	3,099.90	0.00	24.05	0.12	0.00	0.00	0.00	
3,200.00	0.49	90.00	3,199.89	0.00	24.92	0.12	0.00	0.00	0.00	
3,300.00	0.49	90.00	3,299.89	0.00	25.78	0.13	0.00	0.00	0.00	
3,400.00	0.49	90.00	3,399.89	0.00	26.64	0.13	0.00	0.00	0.00	
3,500.00	0.49	90.00	3,499.88	0.00	27.50	0.14	0.00	0.00	0.00	
3,500.12	0.49	90.00	3,500.00	0.00	27.50	0.14	0.00	0.00	0.00	
<b>Hygiene</b>										
3,600.00	0.49	90.00	3,599.88	0.00	28.37	0.14	0.00	0.00	0.00	
3,650.12	0.49	90.00	3,650.00	0.00	28.80	0.14	0.00	0.00	0.00	
<b>Lower Pierre</b>										
3,700.00	0.49	90.00	3,699.87	0.00	29.23	0.15	0.00	0.00	0.00	
3,800.00	0.49	90.00	3,799.87	0.00	30.09	0.15	0.00	0.00	0.00	
3,900.00	0.49	90.00	3,899.87	0.00	30.95	0.16	0.00	0.00	0.00	
4,000.00	0.49	90.00	3,999.86	0.00	31.82	0.16	0.00	0.00	0.00	
4,100.00	0.49	90.00	4,099.86	0.00	32.68	0.16	0.00	0.00	0.00	
4,200.00	0.49	90.00	4,199.86	0.00	33.54	0.17	0.00	0.00	0.00	
4,300.00	0.49	90.00	4,299.85	0.00	34.41	0.17	0.00	0.00	0.00	
4,400.00	0.49	90.00	4,399.85	0.00	35.27	0.18	0.00	0.00	0.00	



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor Federal #26J-2343
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4746.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4746.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor Federal #26J-2343	<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	0.49	90.00	4,499.84	0.00	36.13	0.18	0.00	0.00	0.00	
4,600.00	0.49	90.00	4,599.84	0.00	36.99	0.19	0.00	0.00	0.00	
4,700.00	0.49	90.00	4,699.84	0.00	37.86	0.19	0.00	0.00	0.00	
4,800.00	0.49	90.00	4,799.83	0.00	38.72	0.19	0.00	0.00	0.00	
4,900.00	0.49	90.00	4,899.83	0.00	39.58	0.20	0.00	0.00	0.00	
5,000.00	0.49	90.00	4,999.83	0.00	40.45	0.20	0.00	0.00	0.00	
5,021.96	0.49	90.00	5,021.78	0.00	40.64	0.20	0.00	0.00	0.00	
<b>Drop 2°/100'</b>										
5,046.68	0.00	0.00	5,046.50	0.00	40.74	0.20	2.00	-2.00	0.00	
<b>Hold Vertical</b>										
5,100.00	0.00	0.00	5,099.82	0.00	40.74	0.20	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,199.82	0.00	40.74	0.20	0.00	0.00	0.00	
5,246.68	0.00	0.00	5,246.50	0.00	40.74	0.20	0.00	0.00	0.00	
<b>KOP, Build 9°/100'</b>										
5,300.00	4.80	360.00	5,299.76	2.23	40.74	2.44	9.00	9.00	0.00	
5,400.00	13.80	360.00	5,398.35	18.38	40.74	18.58	9.00	9.00	0.00	
5,500.00	22.80	360.00	5,493.19	49.75	40.74	49.95	9.00	9.00	0.00	
5,501.97	22.98	360.00	5,495.00	50.51	40.74	50.72	9.00	9.00	0.00	
<b>P200 Marker</b>										
5,523.85	24.95	360.00	5,515.00	59.40	40.74	59.61	9.00	9.00	0.00	
<b>P300 Marker</b>										
5,541.62	26.55	360.00	5,531.00	67.12	40.74	67.32	9.00	9.00	0.00	
<b>P350 Marker</b>										
5,557.37	27.97	360.00	5,545.00	74.33	40.74	74.54	9.00	9.00	0.00	
<b>Sharon Springs</b>										
5,561.90	28.38	360.00	5,549.00	76.48	40.74	76.68	9.00	9.00	0.00	
<b>Niobrara</b>										
5,581.39	30.13	360.00	5,566.00	86.00	40.74	86.20	9.00	9.00	0.00	
<b>Top A Chalk</b>										
5,600.00	31.81	360.00	5,581.96	95.57	40.74	95.78	9.00	9.00	0.00	
5,616.66	33.31	360.00	5,596.00	104.54	40.74	104.74	9.00	9.00	0.00	
<b>Top A Marl</b>										
5,631.13	34.61	360.00	5,608.00	112.62	40.74	112.82	9.00	9.00	0.00	
<b>A Marl</b>										
5,640.90	35.49	360.00	5,616.00	118.23	40.74	118.43	9.00	9.00	0.00	
<b>Top Upper B</b>										
5,670.89	38.19	360.00	5,640.00	136.21	40.74	136.41	9.00	9.00	0.00	
<b>Base Upper B</b>										
5,691.51	40.04	360.00	5,656.00	149.22	40.74	149.42	9.00	9.00	0.00	
<b>Top Lower B</b>										
5,700.00	40.81	360.00	5,662.46	154.72	40.74	154.93	9.00	9.00	0.00	
5,730.42	43.54	360.00	5,685.00	175.14	40.74	175.35	9.00	9.00	0.00	
<b>Base Lower B</b>										
5,748.60	45.18	360.00	5,698.00	187.86	40.74	188.06	9.00	9.00	0.00	
<b>Top B Marl</b>										
5,800.00	49.81	360.00	5,732.72	225.74	40.74	225.94	9.00	9.00	0.00	
5,811.41	50.84	360.00	5,740.00	234.52	40.74	234.72	9.00	9.00	0.00	
<b>Top C Chalk</b>										
5,824.23	51.99	360.00	5,748.00	244.54	40.74	244.74	9.00	9.00	0.00	
<b>Middle C Chalk</b>										
5,847.52	54.09	360.00	5,762.00	263.15	40.74	263.35	9.00	9.00	0.00	



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor Federal #26J-2343
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4746.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4746.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor Federal #26J-2343	<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>										
5,879.31	56.95	360.00	5,780.00	289.35	40.74	289.56	9.00	9.00	0.00	
<b>Lower C Chalk</b>										
5,900.00	58.81	360.00	5,791.00	306.87	40.74	307.07	9.00	9.00	0.00	
5,911.77	59.87	360.00	5,797.00	317.00	40.74	317.20	9.00	9.00	0.00	
<b>Lower C Marl</b>										
5,970.27	65.14	360.00	5,824.00	368.87	40.74	369.07	9.00	9.00	0.00	
<b>Lower C Marker</b>										
5,992.52	67.14	360.00	5,833.00	389.21	40.74	389.41	9.00	9.00	0.00	
<b>Top Ft. Hays</b>										
6,000.00	67.81	360.00	5,835.87	396.13	40.74	396.33	9.00	9.00	0.00	
6,034.43	70.91	360.00	5,848.00	428.34	40.74	428.54	9.00	9.00	0.00	
<b>Ft. Hays Marker</b>										
6,100.00	76.81	360.00	5,866.22	491.30	40.74	491.50	9.00	9.00	0.00	
6,200.00	85.82	360.00	5,881.30	590.05	40.74	590.25	9.00	9.00	0.00	
6,246.49	90.00	360.00	5,883.00	636.50	40.74	636.70	9.00	9.00	0.00	
<b>LP @ 90° Inc, Hold - Top Codell - 5 1/2" Marker / 7" CSG</b>										
6,300.00	90.00	360.00	5,883.00	690.01	40.74	690.21	0.00	0.00	0.00	
6,400.00	90.00	360.00	5,883.00	790.01	40.74	790.21	0.00	0.00	0.00	
6,500.00	90.00	360.00	5,883.00	890.01	40.74	890.21	0.00	0.00	0.00	
6,600.00	90.00	360.00	5,883.00	990.01	40.74	990.20	0.00	0.00	0.00	
6,700.00	90.00	360.00	5,883.00	1,090.01	40.74	1,090.20	0.00	0.00	0.00	
6,800.00	90.00	360.00	5,883.00	1,190.01	40.74	1,190.20	0.00	0.00	0.00	
6,900.00	90.00	360.00	5,883.00	1,290.01	40.74	1,290.20	0.00	0.00	0.00	
7,000.00	90.00	360.00	5,883.00	1,390.01	40.74	1,390.20	0.00	0.00	0.00	
7,100.00	90.00	360.00	5,883.00	1,490.01	40.74	1,490.20	0.00	0.00	0.00	
7,200.00	90.00	360.00	5,883.00	1,590.01	40.74	1,590.20	0.00	0.00	0.00	
7,300.00	90.00	360.00	5,883.00	1,690.01	40.74	1,690.20	0.00	0.00	0.00	
7,400.00	90.00	360.00	5,883.00	1,790.01	40.74	1,790.19	0.00	0.00	0.00	
7,500.00	90.00	360.00	5,883.00	1,890.01	40.74	1,890.19	0.00	0.00	0.00	
7,600.00	90.00	360.00	5,883.00	1,990.01	40.74	1,990.19	0.00	0.00	0.00	
7,700.00	90.00	360.00	5,883.00	2,090.01	40.74	2,090.19	0.00	0.00	0.00	
7,800.00	90.00	360.00	5,883.00	2,190.01	40.74	2,190.19	0.00	0.00	0.00	
7,900.00	90.00	360.00	5,883.00	2,290.01	40.74	2,290.19	0.00	0.00	0.00	
8,000.00	90.00	360.00	5,883.00	2,390.01	40.74	2,390.19	0.00	0.00	0.00	
8,100.00	90.00	360.00	5,883.00	2,490.01	40.74	2,490.19	0.00	0.00	0.00	
8,200.00	90.00	360.00	5,883.00	2,590.01	40.74	2,590.18	0.00	0.00	0.00	
8,300.00	90.00	360.00	5,883.00	2,690.01	40.74	2,690.18	0.00	0.00	0.00	
8,400.00	90.00	360.00	5,883.00	2,790.01	40.74	2,790.18	0.00	0.00	0.00	
8,500.00	90.00	360.00	5,883.00	2,890.01	40.74	2,890.18	0.00	0.00	0.00	
8,600.00	90.00	360.00	5,883.00	2,990.01	40.74	2,990.18	0.00	0.00	0.00	
8,700.00	90.00	360.00	5,883.00	3,090.01	40.74	3,090.18	0.00	0.00	0.00	
8,800.00	90.00	360.00	5,883.00	3,190.01	40.74	3,190.18	0.00	0.00	0.00	
8,900.00	90.00	360.00	5,883.00	3,290.01	40.74	3,290.18	0.00	0.00	0.00	
9,000.00	90.00	360.00	5,883.00	3,390.01	40.74	3,390.17	0.00	0.00	0.00	
9,100.00	90.00	360.00	5,883.00	3,490.01	40.74	3,490.17	0.00	0.00	0.00	
9,200.00	90.00	360.00	5,883.00	3,590.01	40.74	3,590.17	0.00	0.00	0.00	
9,300.00	90.00	360.00	5,883.00	3,690.01	40.74	3,690.17	0.00	0.00	0.00	
9,400.00	90.00	360.00	5,883.00	3,790.01	40.74	3,790.17	0.00	0.00	0.00	
9,500.00	90.00	360.00	5,883.00	3,890.01	40.74	3,890.17	0.00	0.00	0.00	
9,600.00	90.00	360.00	5,883.00	3,990.01	40.74	3,990.17	0.00	0.00	0.00	
9,700.00	90.00	360.00	5,883.00	4,090.01	40.74	4,090.17	0.00	0.00	0.00	
9,800.00	90.00	360.00	5,883.00	4,190.01	40.74	4,190.16	0.00	0.00	0.00	



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor Federal #26J-2343
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4746.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4746.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor Federal #26J-2343	<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)	
9,900.00	90.00	360.00	5,883.00	4,290.01	40.74	4,290.16	0.00	0.00	0.00	
10,000.00	90.00	360.00	5,883.00	4,390.01	40.74	4,390.16	0.00	0.00	0.00	
10,100.00	90.00	360.00	5,883.00	4,490.01	40.74	4,490.16	0.00	0.00	0.00	
10,200.00	90.00	360.00	5,883.00	4,590.01	40.74	4,590.16	0.00	0.00	0.00	
10,300.00	90.00	360.00	5,883.00	4,690.01	40.74	4,690.16	0.00	0.00	0.00	
10,400.00	90.00	360.00	5,883.00	4,790.01	40.74	4,790.16	0.00	0.00	0.00	
10,500.00	90.00	360.00	5,883.00	4,890.01	40.74	4,890.16	0.00	0.00	0.00	
10,600.00	90.00	360.00	5,883.00	4,990.01	40.74	4,990.15	0.00	0.00	0.00	
10,700.00	90.00	360.00	5,883.00	5,090.01	40.74	5,090.15	0.00	0.00	0.00	
10,800.00	90.00	360.00	5,883.00	5,190.01	40.74	5,190.15	0.00	0.00	0.00	
10,900.00	90.00	360.00	5,883.00	5,290.01	40.74	5,290.15	0.00	0.00	0.00	
11,000.00	90.00	360.00	5,883.00	5,390.01	40.74	5,390.15	0.00	0.00	0.00	
11,100.00	90.00	360.00	5,883.00	5,490.01	40.74	5,490.15	0.00	0.00	0.00	
11,200.00	90.00	360.00	5,883.00	5,590.01	40.74	5,590.15	0.00	0.00	0.00	
11,300.00	90.00	360.00	5,883.00	5,690.01	40.74	5,690.15	0.00	0.00	0.00	
11,400.00	90.00	360.00	5,883.00	5,790.01	40.74	5,790.14	0.00	0.00	0.00	
11,500.00	90.00	360.00	5,883.00	5,890.01	40.74	5,890.14	0.00	0.00	0.00	
11,600.00	90.00	360.00	5,883.00	5,990.01	40.74	5,990.14	0.00	0.00	0.00	
11,700.00	90.00	360.00	5,883.00	6,090.01	40.74	6,090.14	0.00	0.00	0.00	
11,800.00	90.00	360.00	5,883.00	6,190.01	40.74	6,190.14	0.00	0.00	0.00	
11,900.00	90.00	360.00	5,883.00	6,290.01	40.74	6,290.14	0.00	0.00	0.00	
12,000.00	90.00	360.00	5,883.00	6,390.01	40.74	6,390.14	0.00	0.00	0.00	
12,100.00	90.00	360.00	5,883.00	6,490.01	40.74	6,490.14	0.00	0.00	0.00	
12,200.00	90.00	360.00	5,883.00	6,590.01	40.74	6,590.13	0.00	0.00	0.00	
12,300.00	90.00	360.00	5,883.00	6,690.01	40.74	6,690.13	0.00	0.00	0.00	
12,400.00	90.00	360.00	5,883.00	6,790.01	40.74	6,790.13	0.00	0.00	0.00	
12,500.00	90.00	360.00	5,883.00	6,890.01	40.74	6,890.13	0.00	0.00	0.00	
12,600.00	90.00	360.00	5,883.00	6,990.01	40.74	6,990.13	0.00	0.00	0.00	
12,700.00	90.00	360.00	5,883.00	7,090.01	40.74	7,090.13	0.00	0.00	0.00	
12,800.00	90.00	360.00	5,883.00	7,190.01	40.74	7,190.13	0.00	0.00	0.00	
12,900.00	90.00	360.00	5,883.00	7,290.01	40.74	7,290.13	0.00	0.00	0.00	
13,000.00	90.00	360.00	5,883.00	7,390.01	40.74	7,390.12	0.00	0.00	0.00	
13,100.00	90.00	360.00	5,883.00	7,490.01	40.74	7,490.12	0.00	0.00	0.00	
13,200.00	90.00	360.00	5,883.00	7,590.01	40.74	7,590.12	0.00	0.00	0.00	
13,300.00	90.00	360.00	5,883.00	7,690.01	40.74	7,690.12	0.00	0.00	0.00	
13,400.00	90.00	360.00	5,883.00	7,790.01	40.74	7,790.12	0.00	0.00	0.00	
13,500.00	90.00	360.00	5,883.00	7,890.01	40.74	7,890.12	0.00	0.00	0.00	
13,600.00	90.00	360.00	5,883.00	7,990.01	40.74	7,990.12	0.00	0.00	0.00	
13,700.00	90.00	360.00	5,883.00	8,090.01	40.74	8,090.12	0.00	0.00	0.00	
13,730.73	90.00	360.00	5,883.00	8,120.74	40.74	8,120.84	0.00	0.00	0.00	
TD at 13730.73										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL 26J-2343	0.00	0.00	5,883.00	8,120.74	40.74	1,550,018.31	3,462,090.85	40° 49' 52.450 N	103° 49' 48.460 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor Federal #26J-2343
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4746.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4746.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor Federal #26J-2343	<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)	
6,246.49	5,883.00	5 1/2" Marker / 7" CSG	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,550.05	1,550.00	Upper Pierre				
3,500.12	3,500.00	Hygiene				
3,650.12	3,650.00	Lower Pierre				
5,501.97	5,495.00	P200 Marker				
5,523.85	5,515.00	P300 Marker				
5,541.62	5,531.00	P350 Marker				
5,557.37	5,545.00	Sharon Springs				
5,561.90	5,549.00	Niobrara				
5,581.39	5,566.00	Top A Chalk				
5,616.66	5,596.00	Top A Marl				
5,631.13	5,608.00	A Marl				
5,640.90	5,616.00	Top Upper B				
5,670.89	5,640.00	Base Upper B				
5,691.51	5,656.00	Top Lower B				
5,730.42	5,685.00	Base Lower B				
5,748.60	5,698.00	Top B Marl				
5,811.41	5,740.00	Top C Chalk				
5,824.23	5,748.00	Middle C Chalk				
5,847.52	5,762.00	Middle C Marl				
5,879.31	5,780.00	Lower C Chalk				
5,911.77	5,797.00	Lower C Marl				
5,970.27	5,824.00	Lower C Marker				
5,992.52	5,833.00	Top Ft. Hays				
6,034.43	5,848.00	Ft. Hays Marker				
6,246.49	5,883.00	Top Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.00	300.00	0.00	0.00	Build 2°/100'	
324.72	324.72	0.00	0.11	Hold 0.49° Inc	
5,021.96	5,021.78	0.00	40.64	Drop 2°/100'	
5,046.68	5,046.50	0.00	40.74	Hold Vertical	
5,246.68	5,246.50	0.00	40.74	KOP, Build 9°/100'	
6,246.49	5,883.00	636.50	40.74	LP @ 90° Inc, Hold	
13,730.73	5,883.00	8,120.74	40.74	TD at 13730.73	