



Project: Weld County, CO
Site: Sec 26-T10N-R58W
Well: Razor #26I-2347
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: 52807.6snT
Dip Angle: 67.35°
Date: 7/7/2016
Model: IGRF2015

FORMATION TOP DETAILS

MDPath	Formation
1550.00	Upper Pierre
1551.38	Hygiene
3500.00	Lower Pierre
3503.70	P200 Marker
3650.00	P300 Marker
3653.88	P350 Marker
5458.00	Sharon Springs
5470.18	Niobrara
5492.07	Top A Chalk
5494.00	Top A Marl
5509.83	Top Upper B
5525.58	Base Upper B
5530.12	Top Lower B
5529.00	Base Lower B
5559.00	Top B Marl
5571.00	Top C Chalk
5579.00	Middle C Chalk
5603.00	Middle C Marl
5639.10	Lower C Chalk
5659.73	Lower C Marl
5698.63	Lower C Marker
5716.81	Top Ft. Hays
5703.00	Ft. Hays Marker
5779.62	Top Codell
5792.45	
5815.73	
5847.53	
5879.98	
5938.48	
5960.73	
6002.64	
6214.70	

WELL DETAILS: Razor #26I-2347

+N/-S	+E/-W	Northing	Ground Level:	4711.00	Longitude	Slot
0.00	0.00	1541879.87	Easting	3463537.00	40° 48' 31.780 N	103° 49' 31.650 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	439.76	2.80	169.67	439.71	-3.35	0.61	2.00	169.67	-3.35	
4	4875.13	2.80	169.67	4869.79	-216.15	39.39	0.00	0.00	-216.02	
5	5014.89	0.00	0.00	5009.50	-219.50	40.00	2.00	180.00	-219.37	
6	5214.89	0.00	0.00	5209.50	-219.50	40.00	0.00	0.00	-219.37	
7	6214.70	90.00	359.91	5846.00	417.00	39.01	9.00	359.91	417.13	
8	13971.08	90.00	359.91	5846.00	8173.37	26.91	0.00	0.00	8173.41	PBHL 26I-2347

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'
439.71	439.76	2.80	169.67	-3.35	0.61	-3.35	3.41	Hold 2.80° Inc
4869.79	4875.13	2.80	169.67	-216.15	39.39	-216.02	219.71	Drop 2°/100'
5009.50	5014.89	0.00	0.00	-219.50	40.00	-219.37	223.11	Hold Vertical
5209.50	5214.89	0.00	0.00	-219.50	40.00	-219.37	223.11	KOP Build 9°/100'
5846.00	6214.70	90.00	359.91	417.00	39.01	417.13	859.61	LP @ 90° Inc, Hold
5846.00	13971.08	90.00	359.91	8173.37	26.91	8173.41	8615.99	TD at 13971.08

DESIGN TARGET DETAILS

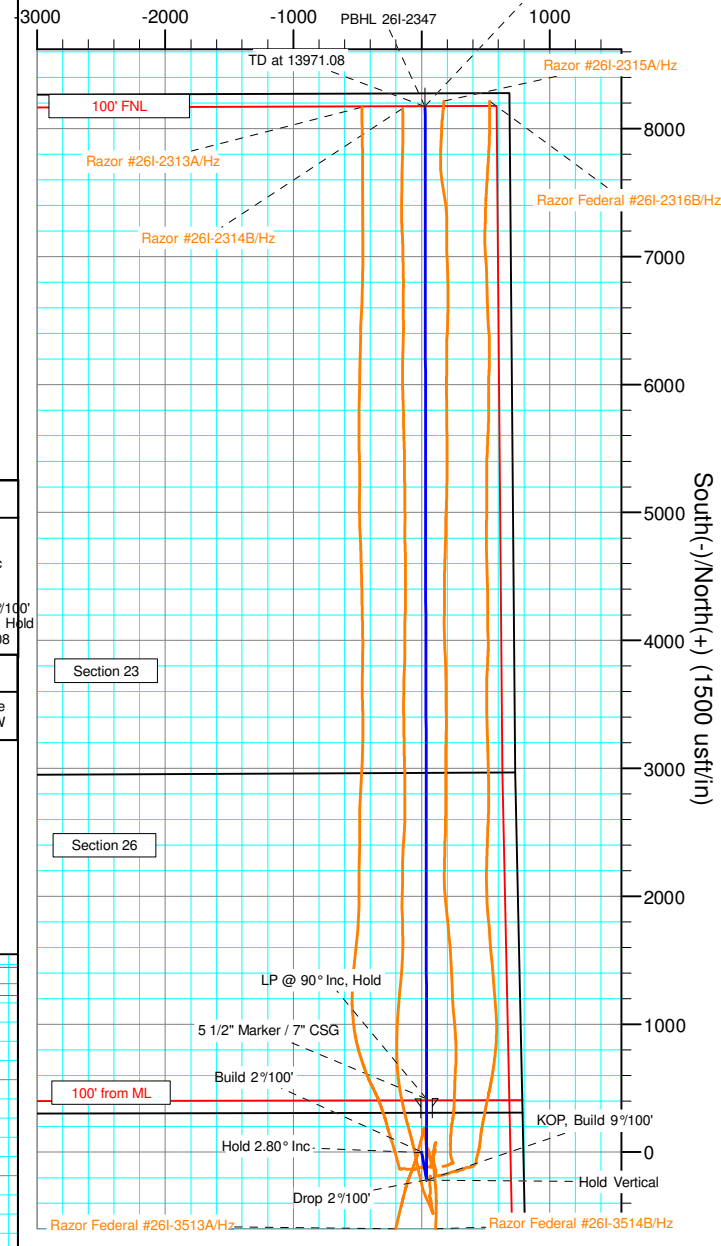
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 26I-2347	5846.00	8173.37	26.91	1550052.29	3463409.57	40° 49' 52.540 N	103° 49' 31.300 W

SHL:
2354' FSL, 793' FEL
Sec26-T10N-R58W

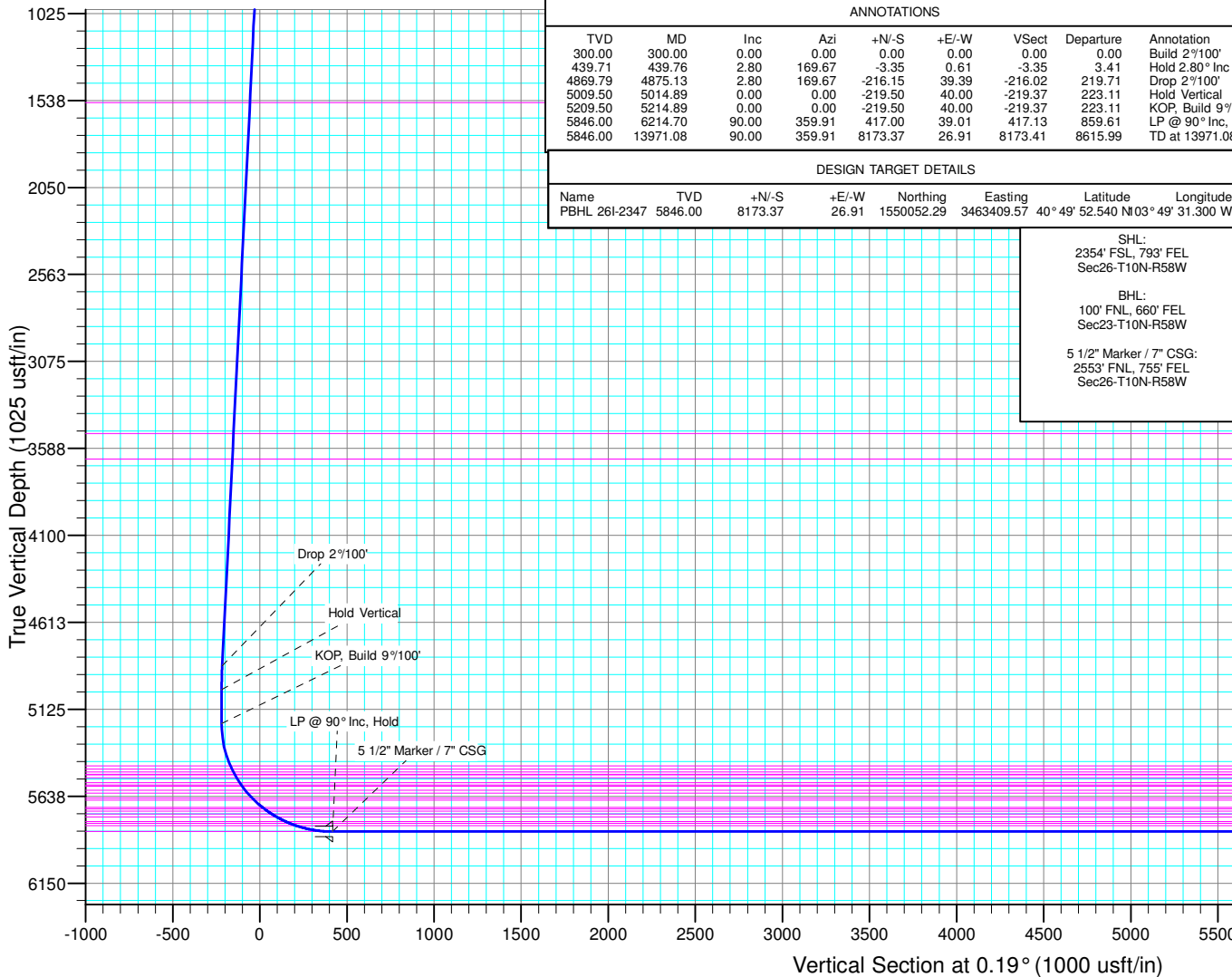
BHL:
100' FNL, 660' FEL
Sec23-T10N-R58W

5 1/2" Marker / 7" CSG:
2553' FNL, 755' FEL
Sec26-T10N-R58W

West(-)/East(+) (1500 usft/in)



South(-)/North(+) (1500 usft/in)





Whiting Petroleum Corp.

**Weld County, CO
Sec 26-T10N-R58W
Razor #26I-2347**

Hz

Plan: APD

Standard Planning Report

08 July, 2016



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #26I-2347
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor #26I-2347	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 26-T10N-R58W			
Site Position:		Northing:	1,541,803.23 usft	Latitude:	40° 48' 31.490 N
From:	Lat/Long	Easting:	3,461,028.06 usft	Longitude:	103° 50' 4.290 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	1.08 °

Well	Razor #26I-2347					
Well Position	+N/-S	29.51 usft	Northing:	1,541,879.87 usft	Latitude:	40° 48' 31.780 N
	+E/-W	2,509.93 usft	Easting:	3,463,537.00 usft	Longitude:	103° 49' 31.650 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,711.00 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/7/2016	7.83	67.35	52,808

Design	APD			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.19

Plan Sections										
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	
439.76	2.80	169.67	439.71	-3.35	0.61	2.00	2.00	0.00	169.67	
4,875.13	2.80	169.67	4,869.79	-216.15	39.39	0.00	0.00	0.00	0.00	
5,014.89	0.00	0.00	5,009.50	-219.50	40.00	2.00	-2.00	0.00	180.00	
5,214.89	0.00	0.00	5,209.50	-219.50	40.00	0.00	0.00	0.00	0.00	
6,214.70	90.00	359.91	5,846.00	417.00	39.01	9.00	9.00	0.00	359.91	
13,971.08	90.00	359.91	5,846.00	8,173.37	26.91	0.00	0.00	0.00	0.00	PBHL 26I-2347



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #26I-2347
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor #26I-2347	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	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
Build 2°/100'									
400.00	2.00	169.67	399.98	-1.72	0.31	-1.72	2.00	2.00	0.00
439.76	2.80	169.67	439.71	-3.35	0.61	-3.35	2.00	2.00	0.00
Hold 2.80° Inc									
500.00	2.80	169.67	499.87	-6.24	1.14	-6.24	0.00	0.00	0.00
600.00	2.80	169.67	599.75	-11.04	2.01	-11.03	0.00	0.00	0.00
700.00	2.80	169.67	699.63	-15.84	2.89	-15.83	0.00	0.00	0.00
800.00	2.80	169.67	799.52	-20.64	3.76	-20.62	0.00	0.00	0.00
900.00	2.80	169.67	899.40	-25.43	4.63	-25.42	0.00	0.00	0.00
1,000.00	2.80	169.67	999.28	-30.23	5.51	-30.21	0.00	0.00	0.00
1,100.00	2.80	169.67	1,099.16	-35.03	6.38	-35.01	0.00	0.00	0.00
1,200.00	2.80	169.67	1,199.04	-39.83	7.26	-39.80	0.00	0.00	0.00
1,300.00	2.80	169.67	1,298.92	-44.62	8.13	-44.60	0.00	0.00	0.00
1,400.00	2.80	169.67	1,398.80	-49.42	9.01	-49.39	0.00	0.00	0.00
1,500.00	2.80	169.67	1,498.68	-54.22	9.88	-54.19	0.00	0.00	0.00
1,551.38	2.80	169.67	1,550.00	-56.68	10.33	-56.65	0.00	0.00	0.00
Upper Pierre									
1,600.00	2.80	169.67	1,598.56	-59.02	10.75	-58.98	0.00	0.00	0.00
1,700.00	2.80	169.67	1,698.45	-63.82	11.63	-63.78	0.00	0.00	0.00
1,800.00	2.80	169.67	1,798.33	-68.61	12.50	-68.57	0.00	0.00	0.00
1,900.00	2.80	169.67	1,898.21	-73.41	13.38	-73.37	0.00	0.00	0.00
2,000.00	2.80	169.67	1,998.09	-78.21	14.25	-78.16	0.00	0.00	0.00
2,100.00	2.80	169.67	2,097.97	-83.01	15.13	-82.96	0.00	0.00	0.00
2,200.00	2.80	169.67	2,197.85	-87.80	16.00	-87.75	0.00	0.00	0.00
2,300.00	2.80	169.67	2,297.73	-92.60	16.87	-92.55	0.00	0.00	0.00
2,400.00	2.80	169.67	2,397.61	-97.40	17.75	-97.34	0.00	0.00	0.00
2,500.00	2.80	169.67	2,497.49	-102.20	18.62	-102.13	0.00	0.00	0.00
2,600.00	2.80	169.67	2,597.37	-106.99	19.50	-106.93	0.00	0.00	0.00
2,700.00	2.80	169.67	2,697.26	-111.79	20.37	-111.72	0.00	0.00	0.00
2,800.00	2.80	169.67	2,797.14	-116.59	21.25	-116.52	0.00	0.00	0.00
2,900.00	2.80	169.67	2,897.02	-121.39	22.12	-121.31	0.00	0.00	0.00
3,000.00	2.80	169.67	2,996.90	-126.18	22.99	-126.11	0.00	0.00	0.00
3,100.00	2.80	169.67	3,096.78	-130.98	23.87	-130.90	0.00	0.00	0.00
3,200.00	2.80	169.67	3,196.66	-135.78	24.74	-135.70	0.00	0.00	0.00
3,300.00	2.80	169.67	3,296.54	-140.58	25.62	-140.49	0.00	0.00	0.00
3,400.00	2.80	169.67	3,396.42	-145.38	26.49	-145.29	0.00	0.00	0.00
3,500.00	2.80	169.67	3,496.30	-150.17	27.37	-150.08	0.00	0.00	0.00
3,503.70	2.80	169.67	3,500.00	-150.35	27.40	-150.26	0.00	0.00	0.00
Hygiene									
3,600.00	2.80	169.67	3,596.18	-154.97	28.24	-154.88	0.00	0.00	0.00
3,653.88	2.80	169.67	3,650.00	-157.56	28.71	-157.46	0.00	0.00	0.00
Lower Pierre									
3,700.00	2.80	169.67	3,696.07	-159.77	29.11	-159.67	0.00	0.00	0.00
3,800.00	2.80	169.67	3,795.95	-164.57	29.99	-164.47	0.00	0.00	0.00
3,900.00	2.80	169.67	3,895.83	-169.36	30.86	-169.26	0.00	0.00	0.00
4,000.00	2.80	169.67	3,995.71	-174.16	31.74	-174.06	0.00	0.00	0.00
4,100.00	2.80	169.67	4,095.59	-178.96	32.61	-178.85	0.00	0.00	0.00
4,200.00	2.80	169.67	4,195.47	-183.76	33.49	-183.65	0.00	0.00	0.00
4,300.00	2.80	169.67	4,295.35	-188.55	34.36	-188.44	0.00	0.00	0.00
4,400.00	2.80	169.67	4,395.23	-193.35	35.23	-193.23	0.00	0.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #26I-2347
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor #26I-2347	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	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	2.80	169.67	4,495.11	-198.15	36.11	-198.03	0.00	0.00	0.00
4,600.00	2.80	169.67	4,594.99	-202.95	36.98	-202.82	0.00	0.00	0.00
4,700.00	2.80	169.67	4,694.88	-207.74	37.86	-207.62	0.00	0.00	0.00
4,800.00	2.80	169.67	4,794.76	-212.54	38.73	-212.41	0.00	0.00	0.00
4,875.13	2.80	169.67	4,869.79	-216.15	39.39	-216.02	0.00	0.00	0.00
Drop 2°/100'									
4,900.00	2.30	169.67	4,894.64	-217.23	39.59	-217.10	2.00	-2.00	0.00
5,000.00	0.30	169.67	4,994.61	-219.46	39.99	-219.33	2.00	-2.00	0.00
5,014.89	0.00	0.00	5,009.50	-219.50	40.00	-219.37	2.00	-2.00	0.00
Hold Vertical									
5,100.00	0.00	0.00	5,094.61	-219.50	40.00	-219.37	0.00	0.00	0.00
5,200.00	0.00	0.00	5,194.61	-219.50	40.00	-219.37	0.00	0.00	0.00
5,214.89	0.00	0.00	5,209.50	-219.50	40.00	-219.37	0.00	0.00	0.00
KOP, Build 9°/100'									
5,300.00	7.66	359.91	5,294.36	-213.82	39.99	-213.69	9.00	9.00	0.00
5,400.00	16.66	359.91	5,392.01	-192.77	39.96	-192.64	9.00	9.00	0.00
5,470.18	22.98	359.91	5,458.00	-168.99	39.92	-168.85	9.00	9.00	0.00
P200 Marker									
5,492.07	24.95	359.91	5,478.00	-160.10	39.91	-159.96	9.00	9.00	0.00
P300 Marker									
5,500.00	25.66	359.91	5,485.17	-156.70	39.90	-156.57	9.00	9.00	0.00
5,509.83	26.55	359.91	5,494.00	-152.38	39.90	-152.25	9.00	9.00	0.00
P350 Marker									
5,525.58	27.97	359.91	5,508.00	-145.17	39.88	-145.03	9.00	9.00	0.00
Sharon Springs									
5,530.12	28.38	359.91	5,512.00	-143.02	39.88	-142.89	9.00	9.00	0.00
Niobrara									
5,549.60	30.13	359.91	5,529.00	-133.50	39.87	-133.37	9.00	9.00	0.00
Top A Chalk									
5,584.87	33.31	359.91	5,559.00	-114.96	39.84	-114.83	9.00	9.00	0.00
Top A Marl									
5,599.34	34.61	359.91	5,571.00	-106.88	39.82	-106.75	9.00	9.00	0.00
A Marl									
5,600.00	34.67	359.91	5,571.54	-106.51	39.82	-106.37	9.00	9.00	0.00
5,609.11	35.49	359.91	5,579.00	-101.27	39.82	-101.14	9.00	9.00	0.00
Top Upper B									
5,639.10	38.19	359.91	5,603.00	-83.29	39.79	-83.16	9.00	9.00	0.00
Base Upper B									
5,659.73	40.04	359.91	5,619.00	-70.28	39.77	-70.15	9.00	9.00	0.00
Top Lower B									
5,698.63	43.54	359.91	5,648.00	-44.36	39.73	-44.23	9.00	9.00	0.00
Base Lower B									
5,700.00	43.67	359.91	5,648.99	-43.41	39.73	-43.28	9.00	9.00	0.00
5,716.81	45.18	359.91	5,661.00	-31.64	39.71	-31.51	9.00	9.00	0.00
Top B Marl									
5,779.62	50.84	359.91	5,703.00	15.02	39.63	15.15	9.00	9.00	0.00
Top C Chalk									
5,792.45	51.99	359.91	5,711.00	25.04	39.62	25.17	9.00	9.00	0.00
Middle C Chalk									
5,800.00	52.67	359.91	5,715.62	31.02	39.61	31.15	9.00	9.00	0.00
5,815.73	54.09	359.91	5,725.00	43.65	39.59	43.78	9.00	9.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #26I-2347
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor #26I-2347	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	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)	
Middle C Marl										
5,847.53	56.95	359.91	5,743.00	69.85	39.55	69.98	9.00	9.00	0.00	
Lower C Chalk										
5,879.98	59.87	359.91	5,760.00	97.50	39.51	97.63	9.00	9.00	0.00	
Lower C Marl										
5,900.00	61.67	359.91	5,769.77	114.97	39.48	115.09	9.00	9.00	0.00	
5,938.48	65.14	359.91	5,787.00	149.37	39.42	149.50	9.00	9.00	0.00	
Lower C Marker										
5,960.73	67.14	359.91	5,796.00	169.71	39.39	169.84	9.00	9.00	0.00	
Top Ft. Hays										
6,000.00	70.67	359.91	5,810.13	206.35	39.34	206.48	9.00	9.00	0.00	
6,002.64	70.91	359.91	5,811.00	208.84	39.33	208.97	9.00	9.00	0.00	
Ft. Hays Marker										
6,100.00	79.68	359.91	5,835.69	302.92	39.18	303.05	9.00	9.00	0.00	
6,200.00	88.68	359.91	5,845.83	402.30	39.03	402.43	9.00	9.00	0.00	
6,214.70	90.00	359.91	5,846.00	417.00	39.01	417.13	9.00	9.00	0.00	
LP @ 90° Inc, Hold - Top Codell - 5 1/2" Marker / 7" CSG										
6,300.00	90.00	359.91	5,846.00	502.30	38.87	502.42	0.00	0.00	0.00	
6,400.00	90.00	359.91	5,846.00	602.30	38.72	602.42	0.00	0.00	0.00	
6,500.00	90.00	359.91	5,846.00	702.30	38.56	702.42	0.00	0.00	0.00	
6,600.00	90.00	359.91	5,846.00	802.30	38.41	802.42	0.00	0.00	0.00	
6,700.00	90.00	359.91	5,846.00	902.30	38.25	902.42	0.00	0.00	0.00	
6,800.00	90.00	359.91	5,846.00	1,002.30	38.09	1,002.42	0.00	0.00	0.00	
6,900.00	90.00	359.91	5,846.00	1,102.30	37.94	1,102.42	0.00	0.00	0.00	
7,000.00	90.00	359.91	5,846.00	1,202.30	37.78	1,202.42	0.00	0.00	0.00	
7,100.00	90.00	359.91	5,846.00	1,302.30	37.63	1,302.42	0.00	0.00	0.00	
7,200.00	90.00	359.91	5,846.00	1,402.30	37.47	1,402.41	0.00	0.00	0.00	
7,300.00	90.00	359.91	5,846.00	1,502.30	37.31	1,502.41	0.00	0.00	0.00	
7,400.00	90.00	359.91	5,846.00	1,602.30	37.16	1,602.41	0.00	0.00	0.00	
7,500.00	90.00	359.91	5,846.00	1,702.30	37.00	1,702.41	0.00	0.00	0.00	
7,600.00	90.00	359.91	5,846.00	1,802.30	36.85	1,802.41	0.00	0.00	0.00	
7,700.00	90.00	359.91	5,846.00	1,902.30	36.69	1,902.41	0.00	0.00	0.00	
7,800.00	90.00	359.91	5,846.00	2,002.30	36.53	2,002.41	0.00	0.00	0.00	
7,900.00	90.00	359.91	5,846.00	2,102.30	36.38	2,102.41	0.00	0.00	0.00	
8,000.00	90.00	359.91	5,846.00	2,202.30	36.22	2,202.40	0.00	0.00	0.00	
8,100.00	90.00	359.91	5,846.00	2,302.30	36.07	2,302.40	0.00	0.00	0.00	
8,200.00	90.00	359.91	5,846.00	2,402.30	35.91	2,402.40	0.00	0.00	0.00	
8,300.00	90.00	359.91	5,846.00	2,502.30	35.75	2,502.40	0.00	0.00	0.00	
8,400.00	90.00	359.91	5,846.00	2,602.30	35.60	2,602.40	0.00	0.00	0.00	
8,500.00	90.00	359.91	5,846.00	2,702.30	35.44	2,702.40	0.00	0.00	0.00	
8,600.00	90.00	359.91	5,846.00	2,802.30	35.29	2,802.40	0.00	0.00	0.00	
8,700.00	90.00	359.91	5,846.00	2,902.30	35.13	2,902.40	0.00	0.00	0.00	
8,800.00	90.00	359.91	5,846.00	3,002.30	34.97	3,002.40	0.00	0.00	0.00	
8,900.00	90.00	359.91	5,846.00	3,102.30	34.82	3,102.39	0.00	0.00	0.00	
9,000.00	90.00	359.91	5,846.00	3,202.30	34.66	3,202.39	0.00	0.00	0.00	
9,100.00	90.00	359.91	5,846.00	3,302.30	34.51	3,302.39	0.00	0.00	0.00	
9,200.00	90.00	359.91	5,846.00	3,402.30	34.35	3,402.39	0.00	0.00	0.00	
9,300.00	90.00	359.91	5,846.00	3,502.30	34.19	3,502.39	0.00	0.00	0.00	
9,400.00	90.00	359.91	5,846.00	3,602.30	34.04	3,602.39	0.00	0.00	0.00	
9,500.00	90.00	359.91	5,846.00	3,702.30	33.88	3,702.39	0.00	0.00	0.00	
9,600.00	90.00	359.91	5,846.00	3,802.30	33.73	3,802.39	0.00	0.00	0.00	
9,700.00	90.00	359.91	5,846.00	3,902.30	33.57	3,902.38	0.00	0.00	0.00	
9,800.00	90.00	359.91	5,846.00	4,002.30	33.41	4,002.38	0.00	0.00	0.00	



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #26I-2347
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor #26I-2347	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	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	359.91	5,846.00	4,102.29	33.26	4,102.38	0.00	0.00	0.00
10,000.00	90.00	359.91	5,846.00	4,202.29	33.10	4,202.38	0.00	0.00	0.00
10,100.00	90.00	359.91	5,846.00	4,302.29	32.94	4,302.38	0.00	0.00	0.00
10,200.00	90.00	359.91	5,846.00	4,402.29	32.79	4,402.38	0.00	0.00	0.00
10,300.00	90.00	359.91	5,846.00	4,502.29	32.63	4,502.38	0.00	0.00	0.00
10,400.00	90.00	359.91	5,846.00	4,602.29	32.48	4,602.38	0.00	0.00	0.00
10,500.00	90.00	359.91	5,846.00	4,702.29	32.32	4,702.38	0.00	0.00	0.00
10,600.00	90.00	359.91	5,846.00	4,802.29	32.16	4,802.37	0.00	0.00	0.00
10,700.00	90.00	359.91	5,846.00	4,902.29	32.01	4,902.37	0.00	0.00	0.00
10,800.00	90.00	359.91	5,846.00	5,002.29	31.85	5,002.37	0.00	0.00	0.00
10,900.00	90.00	359.91	5,846.00	5,102.29	31.70	5,102.37	0.00	0.00	0.00
11,000.00	90.00	359.91	5,846.00	5,202.29	31.54	5,202.37	0.00	0.00	0.00
11,100.00	90.00	359.91	5,846.00	5,302.29	31.38	5,302.37	0.00	0.00	0.00
11,200.00	90.00	359.91	5,846.00	5,402.29	31.23	5,402.37	0.00	0.00	0.00
11,300.00	90.00	359.91	5,846.00	5,502.29	31.07	5,502.37	0.00	0.00	0.00
11,400.00	90.00	359.91	5,846.00	5,602.29	30.92	5,602.36	0.00	0.00	0.00
11,500.00	90.00	359.91	5,846.00	5,702.29	30.76	5,702.36	0.00	0.00	0.00
11,600.00	90.00	359.91	5,846.00	5,802.29	30.60	5,802.36	0.00	0.00	0.00
11,700.00	90.00	359.91	5,846.00	5,902.29	30.45	5,902.36	0.00	0.00	0.00
11,800.00	90.00	359.91	5,846.00	6,002.29	30.29	6,002.36	0.00	0.00	0.00
11,900.00	90.00	359.91	5,846.00	6,102.29	30.14	6,102.36	0.00	0.00	0.00
12,000.00	90.00	359.91	5,846.00	6,202.29	29.98	6,202.36	0.00	0.00	0.00
12,100.00	90.00	359.91	5,846.00	6,302.29	29.82	6,302.36	0.00	0.00	0.00
12,200.00	90.00	359.91	5,846.00	6,402.29	29.67	6,402.36	0.00	0.00	0.00
12,300.00	90.00	359.91	5,846.00	6,502.29	29.51	6,502.35	0.00	0.00	0.00
12,400.00	90.00	359.91	5,846.00	6,602.29	29.36	6,602.35	0.00	0.00	0.00
12,500.00	90.00	359.91	5,846.00	6,702.29	29.20	6,702.35	0.00	0.00	0.00
12,600.00	90.00	359.91	5,846.00	6,802.29	29.04	6,802.35	0.00	0.00	0.00
12,700.00	90.00	359.91	5,846.00	6,902.29	28.89	6,902.35	0.00	0.00	0.00
12,800.00	90.00	359.91	5,846.00	7,002.29	28.73	7,002.35	0.00	0.00	0.00
12,900.00	90.00	359.91	5,846.00	7,102.29	28.58	7,102.35	0.00	0.00	0.00
13,000.00	90.00	359.91	5,846.00	7,202.29	28.42	7,202.35	0.00	0.00	0.00
13,100.00	90.00	359.91	5,846.00	7,302.29	28.26	7,302.34	0.00	0.00	0.00
13,200.00	90.00	359.91	5,846.00	7,402.29	28.11	7,402.34	0.00	0.00	0.00
13,300.00	90.00	359.91	5,846.00	7,502.29	27.95	7,502.34	0.00	0.00	0.00
13,400.00	90.00	359.91	5,846.00	7,602.29	27.80	7,602.34	0.00	0.00	0.00
13,500.00	90.00	359.91	5,846.00	7,702.29	27.64	7,702.34	0.00	0.00	0.00
13,600.00	90.00	359.91	5,846.00	7,802.29	27.48	7,802.34	0.00	0.00	0.00
13,700.00	90.00	359.91	5,846.00	7,902.29	27.33	7,902.34	0.00	0.00	0.00
13,800.00	90.00	359.91	5,846.00	8,002.29	27.17	8,002.34	0.00	0.00	0.00
13,900.00	90.00	359.91	5,846.00	8,102.29	27.02	8,102.34	0.00	0.00	0.00
13,971.08	90.00	359.91	5,846.00	8,173.37	26.91	8,173.41	0.00	0.00	0.00
TD at 13971.08									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL 26I-2347	0.00	0.00	5,846.00	8,173.37	26.91	1,550,052.29	3,463,409.56	40° 49' 52.540 N	103° 49' 31.300 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #26I-2347
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4732.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4732.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor #26I-2347	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,214.70	5,846.00	5 1/2" Marker / 7" CSG	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,551.38	1,550.00	Upper Pierre				
3,503.70	3,500.00	Hygiene				
3,653.88	3,650.00	Lower Pierre				
5,470.18	5,458.00	P200 Marker				
5,492.07	5,478.00	P300 Marker				
5,509.83	5,494.00	P350 Marker				
5,525.58	5,508.00	Sharon Springs				
5,530.12	5,512.00	Niobrara				
5,549.60	5,529.00	Top A Chalk				
5,584.87	5,559.00	Top A Marl				
5,599.34	5,571.00	A Marl				
5,609.11	5,579.00	Top Upper B				
5,639.10	5,603.00	Base Upper B				
5,659.73	5,619.00	Top Lower B				
5,698.63	5,648.00	Base Lower B				
5,716.81	5,661.00	Top B Marl				
5,779.62	5,703.00	Top C Chalk				
5,792.45	5,711.00	Middle C Chalk				
5,815.73	5,725.00	Middle C Marl				
5,847.53	5,743.00	Lower C Chalk				
5,879.98	5,760.00	Lower C Marl				
5,938.48	5,787.00	Lower C Marker				
5,960.73	5,796.00	Top Ft. Hays				
6,002.64	5,811.00	Ft. Hays Marker				
6,214.70	5,846.00	Top Codell				

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'	
439.76	439.71	-3.35	0.61	Hold 2.80° Inc	
4,875.13	4,869.79	-216.15	39.39	Drop 2°/100'	
5,014.89	5,009.50	-219.50	40.00	Hold Vertical	
5,214.89	5,209.50	-219.50	40.00	KOP, Build 9°/100'	
6,214.70	5,846.00	417.00	39.01	LP @ 90° Inc, Hold	
13,971.08	5,846.00	8,173.37	26.91	TD at 13971.08	