



Project: Weld County, CO
 Site: Sec 26-T10N-R58W
 Well: Razor Federal #26J-2340
 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	1571.98	Upper Pierre
3500.00	3574.87	Hygiene
3650.00	3728.94	Lower Pierre
5495.00	5617.14	P200 Marker
5515.00	5641.29	P300 Marker
5531.00	5661.08	P350 Marker
5545.00	5678.78	Sharon Springs
5549.00	5683.91	Niobrara
5566.00	5706.10	Top A Chalk
5596.00	5747.02	Top A Marl
5608.00	5764.12	A Marl
5616.00	5775.79	Top Upper B
5640.00	5812.31	Base Upper B
5656.00	5838.14	Top Lower B
5685.00	5888.92	Base Lower B
5698.00	5913.85	Top B Marl
5740.00	6009.78	Top C Chalk
5748.00	6032.46	Middle C Chalk
5762.00	6078.92	Middle C Marl
5780.00	6170.72	Lower C Chalk

WELL DETAILS: Razor Federal #26J-2340

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.00	0.00	1541896.82	4725.00	3462127.67	40° 48' 32.210 N	103° 49' 49.970 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	959.81	13.20	260.76	954.00	-12.14	-74.67	2.00	260.76	-3.63	
4	4390.93	13.20	260.76	4294.50	-137.86	-847.79	0.00	0.00	-41.23	
5	5050.74	0.00	0.00	4948.50	-150.00	-922.46	2.00	180.00	-44.86	
6	5250.74	0.00	0.00	5148.50	-150.00	-922.46	0.00	0.00	-44.86	
7	6250.55	90.00	360.00	5785.00	486.50	-922.46	9.00	360.00	587.57	
8	13879.75	90.00	360.00	5785.00	8115.70	-922.46	0.00	0.00	8167.96	PBHL 26J-2340

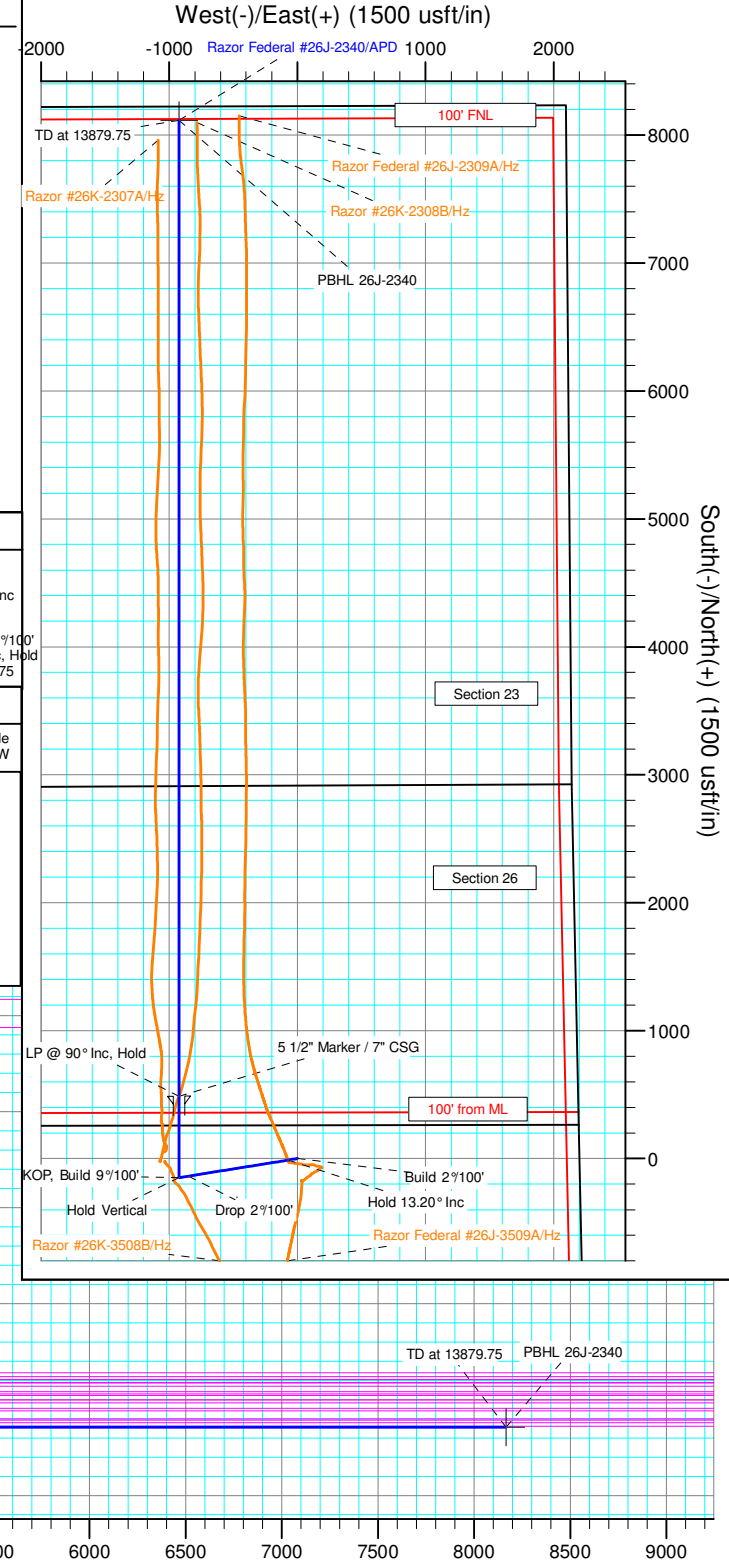
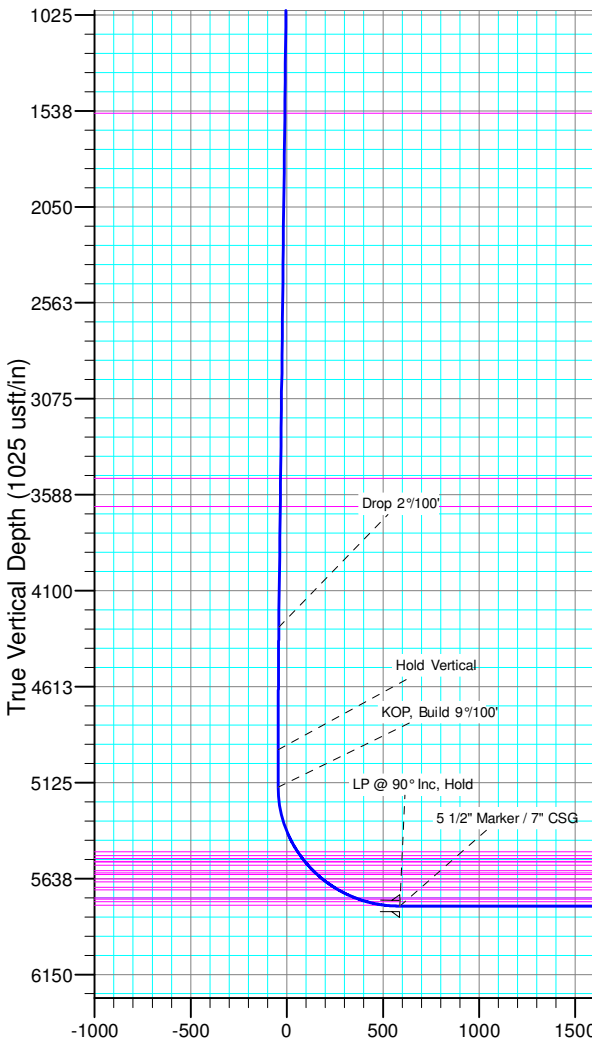
ANNOTATIONS

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'
954.00	959.81	13.20	260.76	-12.14	-74.67	-3.63	75.65	Hold 13.20° Inc
4294.50	4390.93	13.20	260.76	-137.86	-847.79	-41.23	858.93	Drop 2"100'
4948.50	5050.74	0.00	0.00	-150.00	-922.46	-44.86	934.58	Hold Vertical
5148.50	5250.74	0.00	0.00	-150.00	-922.46	-44.86	934.58	KOP Build 9"100'
5785.00	6250.55	90.00	360.00	486.50	-922.46	587.57	1571.08	LP @ 90° Inc, Hold
5785.00	13879.75	90.00	360.00	8115.70	-922.46	8167.96	9200.28	TD at 13879.75

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 26J-2340	5785.00	8115.70	-922.46	1549993.71	3461052.59	40° 49' 52.400 N 103° 50' 1.970 W	

SHL:
 2396' FSL, 2201' FEL
 Sec26-T10N-R58W
 BHL:
 100' FNL, 2310' FWL
 Sec23-T10N-R58W
 5 1/2" Marker / 7" CSG:
 2441' FNL, 3123' FEL
 Sec26-T10N-R58W



Vertical Section at 353.52° (1000 usft/in)



Whiting Petroleum Corp.

Weld County, CO

Sec 26-T10N-R58W

Razor Federal #26J-2340

Hz

Plan: APD

Standard Planning Report

01 July, 2016



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26J-2340
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4746.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4746.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26J-2340	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 Federal #26J-2340					
Well Position	+N/-S	72.92 usft	Northing:	1,541,896.82 usft	Latitude:	40° 48' 32.210 N
	+E/-W	1,101.17 usft	Easting:	3,462,127.67 usft	Longitude:	103° 49' 49.970 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,725.00 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/30/2016	7.84	67.35	52,809

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	353.52

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	
959.81	13.20	260.76	954.00	-12.14	-74.67	2.00	2.00	0.00	260.76	
4,390.93	13.20	260.76	4,294.50	-137.86	-847.79	0.00	0.00	0.00	0.00	
5,050.74	0.00	0.00	4,948.50	-150.00	-922.46	2.00	-2.00	0.00	180.00	
5,250.74	0.00	0.00	5,148.50	-150.00	-922.46	0.00	0.00	0.00	0.00	
6,250.55	90.00	360.00	5,785.00	486.50	-922.46	9.00	9.00	0.00	360.00	
13,879.75	90.00	360.00	5,785.00	8,115.70	-922.46	0.00	0.00	0.00	0.00	PBHL 26J-2340



WOG
Planning Report

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Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4746.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4746.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26J-2340	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	260.76	399.98	-0.28	-1.72	-0.08	2.00	2.00	0.00	
500.00	4.00	260.76	499.84	-1.12	-6.89	-0.33	2.00	2.00	0.00	
600.00	6.00	260.76	599.45	-2.52	-15.49	-0.75	2.00	2.00	0.00	
700.00	8.00	260.76	698.70	-4.47	-27.52	-1.34	2.00	2.00	0.00	
800.00	10.00	260.76	797.47	-6.99	-42.96	-2.09	2.00	2.00	0.00	
900.00	12.00	260.76	895.62	-10.05	-61.79	-3.00	2.00	2.00	0.00	
959.81	13.20	260.76	954.00	-12.14	-74.67	-3.63	2.00	2.00	0.00	
Hold 13.20° Inc										
1,000.00	13.20	260.76	993.12	-13.61	-83.72	-4.07	0.00	0.00	0.00	
1,100.00	13.20	260.76	1,090.48	-17.28	-106.26	-5.17	0.00	0.00	0.00	
1,200.00	13.20	260.76	1,187.84	-20.94	-128.79	-6.26	0.00	0.00	0.00	
1,300.00	13.20	260.76	1,285.20	-24.61	-151.32	-7.36	0.00	0.00	0.00	
1,400.00	13.20	260.76	1,382.56	-28.27	-173.85	-8.45	0.00	0.00	0.00	
1,500.00	13.20	260.76	1,479.92	-31.93	-196.39	-9.55	0.00	0.00	0.00	
1,571.98	13.20	260.76	1,550.00	-34.57	-212.61	-10.34	0.00	0.00	0.00	
Upper Pierre										
1,600.00	13.20	260.76	1,577.28	-35.60	-218.92	-10.65	0.00	0.00	0.00	
1,700.00	13.20	260.76	1,674.64	-39.26	-241.45	-11.74	0.00	0.00	0.00	
1,800.00	13.20	260.76	1,772.00	-42.93	-263.99	-12.84	0.00	0.00	0.00	
1,900.00	13.20	260.76	1,869.36	-46.59	-286.52	-13.93	0.00	0.00	0.00	
2,000.00	13.20	260.76	1,966.71	-50.25	-309.05	-15.03	0.00	0.00	0.00	
2,100.00	13.20	260.76	2,064.07	-53.92	-331.58	-16.13	0.00	0.00	0.00	
2,200.00	13.20	260.76	2,161.43	-57.58	-354.12	-17.22	0.00	0.00	0.00	
2,300.00	13.20	260.76	2,258.79	-61.25	-376.65	-18.32	0.00	0.00	0.00	
2,400.00	13.20	260.76	2,356.15	-64.91	-399.18	-19.41	0.00	0.00	0.00	
2,500.00	13.20	260.76	2,453.51	-68.57	-421.72	-20.51	0.00	0.00	0.00	
2,600.00	13.20	260.76	2,550.87	-72.24	-444.25	-21.60	0.00	0.00	0.00	
2,700.00	13.20	260.76	2,648.23	-75.90	-466.78	-22.70	0.00	0.00	0.00	
2,800.00	13.20	260.76	2,745.59	-79.57	-489.31	-23.80	0.00	0.00	0.00	
2,900.00	13.20	260.76	2,842.95	-83.23	-511.85	-24.89	0.00	0.00	0.00	
3,000.00	13.20	260.76	2,940.31	-86.89	-534.38	-25.99	0.00	0.00	0.00	
3,100.00	13.20	260.76	3,037.67	-90.56	-556.91	-27.08	0.00	0.00	0.00	
3,200.00	13.20	260.76	3,135.03	-94.22	-579.45	-28.18	0.00	0.00	0.00	
3,300.00	13.20	260.76	3,232.39	-97.89	-601.98	-29.27	0.00	0.00	0.00	
3,400.00	13.20	260.76	3,329.75	-101.55	-624.51	-30.37	0.00	0.00	0.00	
3,500.00	13.20	260.76	3,427.11	-105.21	-647.04	-31.47	0.00	0.00	0.00	
3,574.87	13.20	260.76	3,500.00	-107.96	-663.91	-32.29	0.00	0.00	0.00	
Hygiene										
3,600.00	13.20	260.76	3,524.46	-108.88	-669.58	-32.56	0.00	0.00	0.00	
3,700.00	13.20	260.76	3,621.82	-112.54	-692.11	-33.66	0.00	0.00	0.00	
3,728.94	13.20	260.76	3,650.00	-113.60	-698.63	-33.98	0.00	0.00	0.00	
Lower Pierre										
3,800.00	13.20	260.76	3,719.18	-116.21	-714.64	-34.75	0.00	0.00	0.00	
3,900.00	13.20	260.76	3,816.54	-119.87	-737.18	-35.85	0.00	0.00	0.00	
4,000.00	13.20	260.76	3,913.90	-123.53	-759.71	-36.95	0.00	0.00	0.00	
4,100.00	13.20	260.76	4,011.26	-127.20	-782.24	-38.04	0.00	0.00	0.00	
4,200.00	13.20	260.76	4,108.62	-130.86	-804.77	-39.14	0.00	0.00	0.00	
4,300.00	13.20	260.76	4,205.98	-134.53	-827.31	-40.23	0.00	0.00	0.00	
4,390.93	13.20	260.76	4,294.50	-137.86	-847.79	-41.23	0.00	0.00	0.00	



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26J-2340
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4746.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4746.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26J-2340	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)	
Drop 2°/100'										
4,400.00	13.01	260.76	4,303.34	-138.19	-849.83	-41.33	2.00	-2.00	0.00	
4,500.00	11.01	260.76	4,401.15	-141.53	-870.37	-42.33	2.00	-2.00	0.00	
4,600.00	9.01	260.76	4,499.62	-144.32	-887.53	-43.16	2.00	-2.00	0.00	
4,700.00	7.01	260.76	4,598.64	-146.56	-901.30	-43.83	2.00	-2.00	0.00	
4,800.00	5.01	260.76	4,698.08	-148.24	-911.64	-44.33	2.00	-2.00	0.00	
4,900.00	3.01	260.76	4,797.83	-149.36	-918.55	-44.67	2.00	-2.00	0.00	
5,000.00	1.01	260.76	4,897.76	-149.93	-922.02	-44.84	2.00	-2.00	0.00	
5,050.74	0.00	0.00	4,948.50	-150.00	-922.46	-44.86	2.00	-2.00	0.00	
Hold Vertical										
5,100.00	0.00	0.00	4,997.76	-150.00	-922.46	-44.86	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,097.76	-150.00	-922.46	-44.86	0.00	0.00	0.00	
5,250.74	0.00	0.00	5,148.50	-150.00	-922.46	-44.86	0.00	0.00	0.00	
KOP, Build 9°/100'										
5,300.00	4.43	360.00	5,197.71	-148.09	-922.46	-42.97	9.00	9.00	0.00	
5,400.00	13.44	360.00	5,296.40	-132.58	-922.46	-27.55	9.00	9.00	0.00	
5,500.00	22.44	360.00	5,391.44	-101.81	-922.46	3.02	9.00	9.00	0.00	
5,600.00	31.44	360.00	5,480.50	-56.56	-922.46	47.98	9.00	9.00	0.00	
5,617.14	32.98	360.00	5,495.00	-47.42	-922.46	57.06	9.00	9.00	0.00	
P200 Marker										
5,641.29	35.16	360.00	5,515.00	-33.89	-922.46	70.50	9.00	9.00	0.00	
P300 Marker										
5,661.08	36.94	360.00	5,531.00	-22.25	-922.46	82.07	9.00	9.00	0.00	
P350 Marker										
5,678.78	38.53	360.00	5,545.00	-11.42	-922.46	92.84	9.00	9.00	0.00	
Sharon Springs										
5,683.91	38.99	360.00	5,549.00	-8.20	-922.46	96.03	9.00	9.00	0.00	
Niobrara										
5,700.00	40.44	360.00	5,561.38	2.08	-922.46	106.24	9.00	9.00	0.00	
5,706.10	40.99	360.00	5,566.00	6.06	-922.46	110.20	9.00	9.00	0.00	
Top A Chalk										
5,747.02	44.67	360.00	5,596.00	33.87	-922.46	137.83	9.00	9.00	0.00	
Top A Marl										
5,764.12	46.21	360.00	5,608.00	46.05	-922.46	149.94	9.00	9.00	0.00	
A Marl										
5,775.79	47.26	360.00	5,616.00	54.56	-922.46	158.39	9.00	9.00	0.00	
Top Upper B										
5,800.00	49.44	360.00	5,632.09	72.64	-922.46	176.36	9.00	9.00	0.00	
5,812.31	50.55	360.00	5,640.00	82.07	-922.46	185.73	9.00	9.00	0.00	
Base Upper B										
5,838.14	52.88	360.00	5,656.00	102.34	-922.46	205.87	9.00	9.00	0.00	
Top Lower B										
5,888.92	57.45	360.00	5,685.00	144.01	-922.46	247.27	9.00	9.00	0.00	
Base Lower B										
5,900.00	58.44	360.00	5,690.88	153.40	-922.46	256.60	9.00	9.00	0.00	
5,913.85	59.69	360.00	5,698.00	165.28	-922.46	268.40	9.00	9.00	0.00	
Top B Marl										
6,000.00	67.45	360.00	5,736.32	242.37	-922.46	345.00	9.00	9.00	0.00	
6,009.78	68.33	360.00	5,740.00	251.43	-922.46	354.00	9.00	9.00	0.00	
Top C Chalk										
6,032.46	70.37	360.00	5,748.00	272.65	-922.46	375.09	9.00	9.00	0.00	
Middle C Chalk										



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Planning Report

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Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4746.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4746.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26J-2340	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)	
6,078.92	74.55	360.00	5,762.00	316.94	-922.46	419.09	9.00	9.00	0.00	
Middle C Marl										
6,100.00	76.45	360.00	5,767.28	337.35	-922.46	439.37	9.00	9.00	0.00	
6,170.72	82.81	360.00	5,780.00	406.88	-922.46	508.45	9.00	9.00	0.00	
Lower C Chalk										
6,200.00	85.45	360.00	5,782.99	436.00	-922.46	537.39	9.00	9.00	0.00	
6,250.55	90.00	360.00	5,785.00	486.50	-922.46	587.57	9.00	9.00	0.00	
LP @ 90° Inc, Hold - 5 1/2" Marker / 7" CSG										
6,300.00	90.00	360.00	5,785.00	535.95	-922.46	636.70	0.00	0.00	0.00	
6,400.00	90.00	360.00	5,785.00	635.95	-922.46	736.06	0.00	0.00	0.00	
6,500.00	90.00	360.00	5,785.00	735.95	-922.46	835.42	0.00	0.00	0.00	
6,600.00	90.00	360.00	5,785.00	835.95	-922.46	934.78	0.00	0.00	0.00	
6,700.00	90.00	360.00	5,785.00	935.95	-922.46	1,034.14	0.00	0.00	0.00	
6,800.00	90.00	360.00	5,785.00	1,035.95	-922.46	1,133.50	0.00	0.00	0.00	
6,900.00	90.00	360.00	5,785.00	1,135.95	-922.46	1,232.86	0.00	0.00	0.00	
7,000.00	90.00	360.00	5,785.00	1,235.95	-922.46	1,332.22	0.00	0.00	0.00	
7,100.00	90.00	360.00	5,785.00	1,335.95	-922.46	1,431.58	0.00	0.00	0.00	
7,200.00	90.00	360.00	5,785.00	1,435.95	-922.46	1,530.94	0.00	0.00	0.00	
7,300.00	90.00	360.00	5,785.00	1,535.95	-922.46	1,630.30	0.00	0.00	0.00	
7,400.00	90.00	360.00	5,785.00	1,635.95	-922.46	1,729.66	0.00	0.00	0.00	
7,500.00	90.00	360.00	5,785.00	1,735.95	-922.46	1,829.02	0.00	0.00	0.00	
7,600.00	90.00	360.00	5,785.00	1,835.95	-922.46	1,928.38	0.00	0.00	0.00	
7,700.00	90.00	360.00	5,785.00	1,935.95	-922.46	2,027.74	0.00	0.00	0.00	
7,800.00	90.00	360.00	5,785.00	2,035.95	-922.46	2,127.10	0.00	0.00	0.00	
7,900.00	90.00	360.00	5,785.00	2,135.95	-922.46	2,226.46	0.00	0.00	0.00	
8,000.00	90.00	360.00	5,785.00	2,235.95	-922.46	2,325.82	0.00	0.00	0.00	
8,100.00	90.00	360.00	5,785.00	2,335.95	-922.46	2,425.18	0.00	0.00	0.00	
8,200.00	90.00	360.00	5,785.00	2,435.95	-922.46	2,524.54	0.00	0.00	0.00	
8,300.00	90.00	360.00	5,785.00	2,535.95	-922.46	2,623.90	0.00	0.00	0.00	
8,400.00	90.00	360.00	5,785.00	2,635.95	-922.46	2,723.26	0.00	0.00	0.00	
8,500.00	90.00	360.00	5,785.00	2,735.95	-922.46	2,822.62	0.00	0.00	0.00	
8,600.00	90.00	360.00	5,785.00	2,835.95	-922.46	2,921.99	0.00	0.00	0.00	
8,700.00	90.00	360.00	5,785.00	2,935.95	-922.46	3,021.35	0.00	0.00	0.00	
8,800.00	90.00	360.00	5,785.00	3,035.95	-922.46	3,120.71	0.00	0.00	0.00	
8,900.00	90.00	360.00	5,785.00	3,135.95	-922.46	3,220.07	0.00	0.00	0.00	
9,000.00	90.00	360.00	5,785.00	3,235.95	-922.46	3,319.43	0.00	0.00	0.00	
9,100.00	90.00	360.00	5,785.00	3,335.95	-922.46	3,418.79	0.00	0.00	0.00	
9,200.00	90.00	360.00	5,785.00	3,435.95	-922.46	3,518.15	0.00	0.00	0.00	
9,300.00	90.00	360.00	5,785.00	3,535.95	-922.46	3,617.51	0.00	0.00	0.00	
9,400.00	90.00	360.00	5,785.00	3,635.95	-922.46	3,716.87	0.00	0.00	0.00	
9,500.00	90.00	360.00	5,785.00	3,735.95	-922.46	3,816.23	0.00	0.00	0.00	
9,600.00	90.00	360.00	5,785.00	3,835.95	-922.46	3,915.59	0.00	0.00	0.00	
9,700.00	90.00	360.00	5,785.00	3,935.95	-922.46	4,014.95	0.00	0.00	0.00	
9,800.00	90.00	360.00	5,785.00	4,035.95	-922.46	4,114.31	0.00	0.00	0.00	
9,900.00	90.00	360.00	5,785.00	4,135.95	-922.46	4,213.67	0.00	0.00	0.00	
10,000.00	90.00	360.00	5,785.00	4,235.95	-922.46	4,313.03	0.00	0.00	0.00	
10,100.00	90.00	360.00	5,785.00	4,335.95	-922.46	4,412.39	0.00	0.00	0.00	
10,200.00	90.00	360.00	5,785.00	4,435.95	-922.46	4,511.75	0.00	0.00	0.00	
10,300.00	90.00	360.00	5,785.00	4,535.95	-922.46	4,611.11	0.00	0.00	0.00	
10,400.00	90.00	360.00	5,785.00	4,635.95	-922.46	4,710.47	0.00	0.00	0.00	
10,500.00	90.00	360.00	5,785.00	4,735.95	-922.46	4,809.83	0.00	0.00	0.00	
10,600.00	90.00	360.00	5,785.00	4,835.95	-922.46	4,909.19	0.00	0.00	0.00	
10,700.00	90.00	360.00	5,785.00	4,935.95	-922.46	5,008.55	0.00	0.00	0.00	



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26J-2340
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4746.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4746.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26J-2340	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)	
10,800.00	90.00	360.00	5,785.00	5,035.95	-922.46	5,107.91	0.00	0.00	0.00	
10,900.00	90.00	360.00	5,785.00	5,135.95	-922.46	5,207.27	0.00	0.00	0.00	
11,000.00	90.00	360.00	5,785.00	5,235.95	-922.46	5,306.63	0.00	0.00	0.00	
11,100.00	90.00	360.00	5,785.00	5,335.95	-922.46	5,405.99	0.00	0.00	0.00	
11,200.00	90.00	360.00	5,785.00	5,435.95	-922.46	5,505.35	0.00	0.00	0.00	
11,300.00	90.00	360.00	5,785.00	5,535.95	-922.46	5,604.71	0.00	0.00	0.00	
11,400.00	90.00	360.00	5,785.00	5,635.95	-922.46	5,704.07	0.00	0.00	0.00	
11,500.00	90.00	360.00	5,785.00	5,735.95	-922.46	5,803.43	0.00	0.00	0.00	
11,600.00	90.00	360.00	5,785.00	5,835.95	-922.46	5,902.79	0.00	0.00	0.00	
11,700.00	90.00	360.00	5,785.00	5,935.95	-922.46	6,002.15	0.00	0.00	0.00	
11,800.00	90.00	360.00	5,785.00	6,035.95	-922.46	6,101.51	0.00	0.00	0.00	
11,900.00	90.00	360.00	5,785.00	6,135.95	-922.46	6,200.87	0.00	0.00	0.00	
12,000.00	90.00	360.00	5,785.00	6,235.95	-922.46	6,300.23	0.00	0.00	0.00	
12,100.00	90.00	360.00	5,785.00	6,335.95	-922.46	6,399.59	0.00	0.00	0.00	
12,200.00	90.00	360.00	5,785.00	6,435.95	-922.46	6,498.95	0.00	0.00	0.00	
12,300.00	90.00	360.00	5,785.00	6,535.95	-922.46	6,598.31	0.00	0.00	0.00	
12,400.00	90.00	360.00	5,785.00	6,635.95	-922.46	6,697.67	0.00	0.00	0.00	
12,500.00	90.00	360.00	5,785.00	6,735.95	-922.46	6,797.03	0.00	0.00	0.00	
12,600.00	90.00	360.00	5,785.00	6,835.95	-922.46	6,896.39	0.00	0.00	0.00	
12,700.00	90.00	360.00	5,785.00	6,935.95	-922.46	6,995.75	0.00	0.00	0.00	
12,800.00	90.00	360.00	5,785.00	7,035.95	-922.46	7,095.11	0.00	0.00	0.00	
12,900.00	90.00	360.00	5,785.00	7,135.95	-922.46	7,194.47	0.00	0.00	0.00	
13,000.00	90.00	360.00	5,785.00	7,235.95	-922.46	7,293.83	0.00	0.00	0.00	
13,100.00	90.00	360.00	5,785.00	7,335.95	-922.46	7,393.19	0.00	0.00	0.00	
13,200.00	90.00	360.00	5,785.00	7,435.95	-922.46	7,492.56	0.00	0.00	0.00	
13,300.00	90.00	360.00	5,785.00	7,535.95	-922.46	7,591.92	0.00	0.00	0.00	
13,400.00	90.00	360.00	5,785.00	7,635.95	-922.46	7,691.28	0.00	0.00	0.00	
13,500.00	90.00	360.00	5,785.00	7,735.95	-922.46	7,790.64	0.00	0.00	0.00	
13,600.00	90.00	360.00	5,785.00	7,835.95	-922.46	7,890.00	0.00	0.00	0.00	
13,700.00	90.00	360.00	5,785.00	7,935.95	-922.46	7,989.36	0.00	0.00	0.00	
13,800.00	90.00	360.00	5,785.00	8,035.95	-922.46	8,088.72	0.00	0.00	0.00	
13,879.75	90.00	360.00	5,785.00	8,115.70	-922.46	8,167.96	0.00	0.00	0.00	
TD at 13879.75										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL 26J-2340	0.00	0.00	5,785.00	8,115.70	-922.46	1,549,993.72	3,461,052.59	40° 49' 52.400 N	103° 50' 1.970 W	
- hit/miss target										
- Shape										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,250.55	5,785.00	5 1/2" Marker / 7" CSG	7.000	8.750	



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor Federal #26J-2340
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4746.00usft
Project:	Weld County, CO	MD Reference:	KBE @ 4746.00usft
Site:	Sec 26-T10N-R58W	North Reference:	True
Well:	Razor Federal #26J-2340	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,571.98	1,550.00	Upper Pierre				
3,574.87	3,500.00	Hygiene				
3,728.94	3,650.00	Lower Pierre				
5,617.14	5,495.00	P200 Marker				
5,641.29	5,515.00	P300 Marker				
5,661.08	5,531.00	P350 Marker				
5,678.78	5,545.00	Sharon Springs				
5,683.91	5,549.00	Niobrara				
5,706.10	5,566.00	Top A Chalk				
5,747.02	5,596.00	Top A Marl				
5,764.12	5,608.00	A Marl				
5,775.79	5,616.00	Top Upper B				
5,812.31	5,640.00	Base Upper B				
5,838.14	5,656.00	Top Lower B				
5,888.92	5,685.00	Base Lower B				
5,913.85	5,698.00	Top B Marl				
6,009.78	5,740.00	Top C Chalk				
6,032.46	5,748.00	Middle C Chalk				
6,078.92	5,762.00	Middle C Marl				
6,170.72	5,780.00	Lower C Chalk				

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'	
959.81	954.00	-12.14	-74.67	Hold 13.20° Inc	
4,390.93	4,294.50	-137.86	-847.79	Drop 2°/100'	
5,050.74	4,948.50	-150.00	-922.46	Hold Vertical	
5,250.74	5,148.50	-150.00	-922.46	KOP, Build 9°/100'	
6,250.55	5,785.00	486.50	-922.46	LP @ 90° Inc, Hold	
13,879.75	5,785.00	8,115.70	-922.46	TD at 13879.75	