

Vertical Section at 358.32° (1000 usft/in)



Whiting Petroleum Corp.

Weld County, CO

Sec 7-T10N-R58W

Razor FED #07E-0602

Hz

Plan: APD

Standard Planning Report

20 April, 2016



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor FED #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4975.50usft
Project:	Weld County, CO	MD Reference:	KBE @ 4975.50usft
Site:	Sec 7-T10N-R58W	North Reference:	True
Well:	Razor FED #07E-0602	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 7-T10N-R58W			
Site Position:		Northing:	1,560,123.46 usft	Latitude:	40° 51' 36.619 N
From:	Lat/Long	Easting:	3,438,153.99 usft	Longitude:	103° 54' 57.449 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	1.02 °

Well		Razor FED #07E-0602				
Well Position	+N/-S	-2,344.90 usft	Northing:	1,557,789.81 usft	Latitude:	40° 51' 13.450 N
	+E/-W	609.30 usft	Easting:	3,438,805.08 usft	Longitude:	103° 54' 49.520 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	4,954.50 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/23/2015	7.92	67.42	53,053

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	358.32

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	
856.53	11.13	198.98	853.04	-50.96	-17.53	2.00	2.00	0.00	198.98	
4,757.33	11.13	198.98	4,680.46	-763.04	-262.47	0.00	0.00	0.00	0.00	
5,313.86	0.00	0.00	5,233.50	-814.00	-280.00	2.00	-2.00	0.00	180.00	
5,513.86	0.00	0.00	5,433.50	-814.00	-280.00	0.00	0.00	0.00	0.00	
6,513.68	90.00	0.34	6,070.00	-177.51	-276.23	9.00	9.00	0.00	0.34	
14,234.32	90.00	0.34	6,070.00	7,543.00	-230.47	0.00	0.00	0.00	0.00	PBHL 0602



WOG

Planning Report

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Project:	Weld County, CO	MD Reference:	KBE @ 4975.50usft
Site:	Sec 7-T10N-R58W	North Reference:	True
Well:	Razor FED #07E-0602	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	198.98	399.98	-1.65	-0.57	-1.63	2.00	2.00	0.00
500.00	4.00	198.98	499.84	-6.60	-2.27	-6.53	2.00	2.00	0.00
600.00	6.00	198.98	599.45	-14.84	-5.10	-14.68	2.00	2.00	0.00
700.00	8.00	198.98	698.70	-26.36	-9.07	-26.09	2.00	2.00	0.00
800.00	10.00	198.98	797.47	-41.16	-14.16	-40.72	2.00	2.00	0.00
856.53	11.13	198.98	853.04	-50.96	-17.53	-50.42	2.00	2.00	0.00
Hold 11.13° Inc									
900.00	11.13	198.98	895.69	-58.89	-20.26	-58.27	0.00	0.00	0.00
1,000.00	11.13	198.98	993.81	-77.15	-26.54	-76.34	0.00	0.00	0.00
1,100.00	11.13	198.98	1,091.93	-95.40	-32.82	-94.40	0.00	0.00	0.00
1,200.00	11.13	198.98	1,190.05	-113.66	-39.10	-112.46	0.00	0.00	0.00
1,300.00	11.13	198.98	1,288.16	-131.91	-45.38	-130.53	0.00	0.00	0.00
1,400.00	11.13	198.98	1,386.28	-150.17	-51.65	-148.59	0.00	0.00	0.00
1,500.00	11.13	198.98	1,484.40	-168.42	-57.93	-166.65	0.00	0.00	0.00
1,566.86	11.13	198.98	1,550.00	-180.63	-62.13	-178.73	0.00	0.00	0.00
Upper Pierre									
1,600.00	11.13	198.98	1,582.52	-186.68	-64.21	-184.72	0.00	0.00	0.00
1,700.00	11.13	198.98	1,680.64	-204.93	-70.49	-202.78	0.00	0.00	0.00
1,800.00	11.13	198.98	1,778.76	-223.19	-76.77	-220.84	0.00	0.00	0.00
1,900.00	11.13	198.98	1,876.88	-241.44	-83.05	-238.91	0.00	0.00	0.00
2,000.00	11.13	198.98	1,975.00	-259.70	-89.33	-256.97	0.00	0.00	0.00
2,100.00	11.13	198.98	2,073.12	-277.95	-95.61	-275.04	0.00	0.00	0.00
2,200.00	11.13	198.98	2,171.23	-296.21	-101.89	-293.10	0.00	0.00	0.00
2,300.00	11.13	198.98	2,269.35	-314.46	-108.17	-311.16	0.00	0.00	0.00
2,400.00	11.13	198.98	2,367.47	-332.72	-114.45	-329.23	0.00	0.00	0.00
2,500.00	11.13	198.98	2,465.59	-350.97	-120.73	-347.29	0.00	0.00	0.00
2,600.00	11.13	198.98	2,563.71	-369.22	-127.01	-365.35	0.00	0.00	0.00
2,700.00	11.13	198.98	2,661.83	-387.48	-133.29	-383.42	0.00	0.00	0.00
2,800.00	11.13	198.98	2,759.95	-405.73	-139.56	-401.48	0.00	0.00	0.00
2,900.00	11.13	198.98	2,858.07	-423.99	-145.84	-419.54	0.00	0.00	0.00
3,000.00	11.13	198.98	2,956.19	-442.24	-152.12	-437.61	0.00	0.00	0.00
3,100.00	11.13	198.98	3,054.31	-460.50	-158.40	-455.67	0.00	0.00	0.00
3,200.00	11.13	198.98	3,152.42	-478.75	-164.68	-473.73	0.00	0.00	0.00
3,300.00	11.13	198.98	3,250.54	-497.01	-170.96	-491.80	0.00	0.00	0.00
3,400.00	11.13	198.98	3,348.66	-515.26	-177.24	-509.86	0.00	0.00	0.00
3,500.00	11.13	198.98	3,446.78	-533.52	-183.52	-527.92	0.00	0.00	0.00
3,554.24	11.13	198.98	3,500.00	-543.42	-186.93	-537.72	0.00	0.00	0.00
Hygiene									
3,600.00	11.13	198.98	3,544.90	-551.77	-189.80	-545.99	0.00	0.00	0.00
3,700.00	11.13	198.98	3,643.02	-570.03	-196.08	-564.05	0.00	0.00	0.00
3,707.11	11.13	198.98	3,650.00	-571.33	-196.53	-565.33	0.00	0.00	0.00
Lower Pierre									
3,800.00	11.13	198.98	3,741.14	-588.28	-202.36	-582.11	0.00	0.00	0.00
3,900.00	11.13	198.98	3,839.26	-606.54	-208.64	-600.18	0.00	0.00	0.00
4,000.00	11.13	198.98	3,937.38	-624.79	-214.92	-618.24	0.00	0.00	0.00
4,100.00	11.13	198.98	4,035.50	-643.05	-221.20	-636.30	0.00	0.00	0.00
4,200.00	11.13	198.98	4,133.61	-661.30	-227.48	-654.37	0.00	0.00	0.00
4,300.00	11.13	198.98	4,231.73	-679.56	-233.75	-672.43	0.00	0.00	0.00
4,400.00	11.13	198.98	4,329.85	-697.81	-240.03	-690.49	0.00	0.00	0.00



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Site:	Sec 7-T10N-R58W	North Reference:	True
Well:	Razor FED #07E-0602	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	11.13	198.98	4,427.97	-716.07	-246.31	-708.56	0.00	0.00	0.00
4,600.00	11.13	198.98	4,526.09	-734.32	-252.59	-726.62	0.00	0.00	0.00
4,700.00	11.13	198.98	4,624.21	-752.58	-258.87	-744.68	0.00	0.00	0.00
4,757.33	11.13	198.98	4,680.46	-763.04	-262.47	-755.04	0.00	0.00	0.00
Drop 2°/100'									
4,800.00	10.28	198.98	4,722.39	-770.54	-265.05	-762.45	2.00	-2.00	0.00
4,900.00	8.28	198.98	4,821.07	-785.78	-270.29	-777.54	2.00	-2.00	0.00
5,000.00	6.28	198.98	4,920.26	-797.76	-274.41	-789.39	2.00	-2.00	0.00
5,100.00	4.28	198.98	5,019.84	-806.45	-277.40	-798.00	2.00	-2.00	0.00
5,200.00	2.28	198.98	5,119.67	-811.86	-279.26	-803.34	2.00	-2.00	0.00
5,300.00	0.28	198.98	5,219.64	-813.97	-279.99	-805.43	2.00	-2.00	0.00
5,313.86	0.00	0.00	5,233.50	-814.00	-280.00	-805.46	2.00	-2.00	0.00
Hold Vertical									
5,400.00	0.00	0.00	5,319.64	-814.00	-280.00	-805.46	0.00	0.00	0.00
5,500.00	0.00	0.00	5,419.64	-814.00	-280.00	-805.46	0.00	0.00	0.00
5,513.86	0.00	0.00	5,433.50	-814.00	-280.00	-805.46	0.00	0.00	0.00
KOP, Build 9°/100'									
5,600.00	7.75	0.34	5,519.37	-808.18	-279.97	-799.65	9.00	9.00	0.00
5,700.00	16.76	0.34	5,617.00	-786.98	-279.84	-778.45	9.00	9.00	0.00
5,800.00	25.76	0.34	5,710.10	-750.76	-279.63	-742.26	9.00	9.00	0.00
5,900.00	34.76	0.34	5,796.38	-700.42	-279.33	-691.95	9.00	9.00	0.00
5,975.88	41.59	0.34	5,856.00	-653.56	-279.05	-645.11	9.00	9.00	0.00
P200 Marker									
6,000.00	43.76	0.34	5,873.73	-637.21	-278.95	-628.77	9.00	9.00	0.00
6,001.76	43.92	0.34	5,875.00	-635.99	-278.94	-627.56	9.00	9.00	0.00
P300 Marker									
6,021.49	45.70	0.34	5,889.00	-622.08	-278.86	-613.66	9.00	9.00	0.00
P350 Marker									
6,034.51	46.87	0.34	5,898.00	-612.67	-278.81	-604.25	9.00	9.00	0.00
Sharon Springs									
6,041.87	47.53	0.34	5,903.00	-607.27	-278.77	-598.86	9.00	9.00	0.00
Niobrara									
6,084.97	51.41	0.34	5,931.00	-574.53	-278.58	-566.13	9.00	9.00	0.00
Top A Chalk									
6,100.00	52.76	0.34	5,940.24	-562.67	-278.51	-554.28	9.00	9.00	0.00
6,137.43	56.13	0.34	5,962.00	-532.22	-278.33	-523.85	9.00	9.00	0.00
Top A Marl									
6,200.00	61.76	0.34	5,994.26	-478.64	-278.01	-470.30	9.00	9.00	0.00
6,244.68	65.79	0.34	6,014.00	-438.57	-277.77	-430.25	9.00	9.00	0.00
A Marl									
6,281.16	69.07	0.34	6,028.00	-404.89	-277.58	-396.60	9.00	9.00	0.00
Top Upper B									
6,300.00	70.77	0.34	6,034.47	-387.19	-277.47	-378.91	9.00	9.00	0.00
6,370.66	77.13	0.34	6,054.00	-319.33	-277.07	-311.08	9.00	9.00	0.00
Base Upper B									
6,400.00	79.77	0.34	6,059.88	-290.58	-276.90	-282.36	9.00	9.00	0.00
6,500.00	88.77	0.34	6,069.85	-191.19	-276.31	-183.02	9.00	9.00	0.00
6,513.68	90.00	0.34	6,070.00	-177.51	-276.23	-169.35	9.00	9.00	0.00
LP @ 90° Inc, Hold - Top Lower B - 5 1/2" Marker / 7" CSG									
6,600.00	90.00	0.34	6,070.00	-91.19	-275.72	-83.08	0.00	0.00	0.00
6,700.00	90.00	0.34	6,070.00	8.81	-275.12	16.85	0.00	0.00	0.00
6,800.00	90.00	0.34	6,070.00	108.81	-274.53	116.79	0.00	0.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor FED #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4975.50usft
Project:	Weld County, CO	MD Reference:	KBE @ 4975.50usft
Site:	Sec 7-T10N-R58W	North Reference:	True
Well:	Razor FED #07E-0602	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)
6,900.00	90.00	0.34	6,070.00	208.81	-273.94	216.73	0.00	0.00	0.00
7,000.00	90.00	0.34	6,070.00	308.81	-273.35	316.67	0.00	0.00	0.00
7,100.00	90.00	0.34	6,070.00	408.80	-272.75	416.61	0.00	0.00	0.00
7,200.00	90.00	0.34	6,070.00	508.80	-272.16	516.54	0.00	0.00	0.00
7,300.00	90.00	0.34	6,070.00	608.80	-271.57	616.48	0.00	0.00	0.00
7,400.00	90.00	0.34	6,070.00	708.80	-270.97	716.42	0.00	0.00	0.00
7,500.00	90.00	0.34	6,070.00	808.80	-270.38	816.36	0.00	0.00	0.00
7,600.00	90.00	0.34	6,070.00	908.79	-269.79	916.30	0.00	0.00	0.00
7,700.00	90.00	0.34	6,070.00	1,008.79	-269.20	1,016.24	0.00	0.00	0.00
7,800.00	90.00	0.34	6,070.00	1,108.79	-268.60	1,116.17	0.00	0.00	0.00
7,900.00	90.00	0.34	6,070.00	1,208.79	-268.01	1,216.11	0.00	0.00	0.00
8,000.00	90.00	0.34	6,070.00	1,308.79	-267.42	1,316.05	0.00	0.00	0.00
8,100.00	90.00	0.34	6,070.00	1,408.79	-266.83	1,415.99	0.00	0.00	0.00
8,200.00	90.00	0.34	6,070.00	1,508.78	-266.23	1,515.93	0.00	0.00	0.00
8,300.00	90.00	0.34	6,070.00	1,608.78	-265.64	1,615.86	0.00	0.00	0.00
8,400.00	90.00	0.34	6,070.00	1,708.78	-265.05	1,715.80	0.00	0.00	0.00
8,500.00	90.00	0.34	6,070.00	1,808.78	-264.45	1,815.74	0.00	0.00	0.00
8,600.00	90.00	0.34	6,070.00	1,908.78	-263.86	1,915.68	0.00	0.00	0.00
8,700.00	90.00	0.34	6,070.00	2,008.78	-263.27	2,015.62	0.00	0.00	0.00
8,800.00	90.00	0.34	6,070.00	2,108.77	-262.68	2,115.55	0.00	0.00	0.00
8,900.00	90.00	0.34	6,070.00	2,208.77	-262.08	2,215.49	0.00	0.00	0.00
9,000.00	90.00	0.34	6,070.00	2,308.77	-261.49	2,315.43	0.00	0.00	0.00
9,100.00	90.00	0.34	6,070.00	2,408.77	-260.90	2,415.37	0.00	0.00	0.00
9,200.00	90.00	0.34	6,070.00	2,508.77	-260.31	2,515.31	0.00	0.00	0.00
9,300.00	90.00	0.34	6,070.00	2,608.76	-259.71	2,615.25	0.00	0.00	0.00
9,400.00	90.00	0.34	6,070.00	2,708.76	-259.12	2,715.18	0.00	0.00	0.00
9,500.00	90.00	0.34	6,070.00	2,808.76	-258.53	2,815.12	0.00	0.00	0.00
9,600.00	90.00	0.34	6,070.00	2,908.76	-257.94	2,915.06	0.00	0.00	0.00
9,700.00	90.00	0.34	6,070.00	3,008.76	-257.34	3,015.00	0.00	0.00	0.00
9,800.00	90.00	0.34	6,070.00	3,108.76	-256.75	3,114.94	0.00	0.00	0.00
9,900.00	90.00	0.34	6,070.00	3,208.75	-256.16	3,214.87	0.00	0.00	0.00
10,000.00	90.00	0.34	6,070.00	3,308.75	-255.56	3,314.81	0.00	0.00	0.00
10,100.00	90.00	0.34	6,070.00	3,408.75	-254.97	3,414.75	0.00	0.00	0.00
10,200.00	90.00	0.34	6,070.00	3,508.75	-254.38	3,514.69	0.00	0.00	0.00
10,300.00	90.00	0.34	6,070.00	3,608.75	-253.79	3,614.63	0.00	0.00	0.00
10,400.00	90.00	0.34	6,070.00	3,708.75	-253.19	3,714.56	0.00	0.00	0.00
10,500.00	90.00	0.34	6,070.00	3,808.74	-252.60	3,814.50	0.00	0.00	0.00
10,600.00	90.00	0.34	6,070.00	3,908.74	-252.01	3,914.44	0.00	0.00	0.00
10,700.00	90.00	0.34	6,070.00	4,008.74	-251.42	4,014.38	0.00	0.00	0.00
10,800.00	90.00	0.34	6,070.00	4,108.74	-250.82	4,114.32	0.00	0.00	0.00
10,900.00	90.00	0.34	6,070.00	4,208.74	-250.23	4,214.26	0.00	0.00	0.00
11,000.00	90.00	0.34	6,070.00	4,308.73	-249.64	4,314.19	0.00	0.00	0.00
11,100.00	90.00	0.34	6,070.00	4,408.73	-249.04	4,414.13	0.00	0.00	0.00
11,200.00	90.00	0.34	6,070.00	4,508.73	-248.45	4,514.07	0.00	0.00	0.00
11,300.00	90.00	0.34	6,070.00	4,608.73	-247.86	4,614.01	0.00	0.00	0.00
11,400.00	90.00	0.34	6,070.00	4,708.73	-247.27	4,713.95	0.00	0.00	0.00
11,500.00	90.00	0.34	6,070.00	4,808.73	-246.67	4,813.88	0.00	0.00	0.00
11,600.00	90.00	0.34	6,070.00	4,908.72	-246.08	4,913.82	0.00	0.00	0.00
11,700.00	90.00	0.34	6,070.00	5,008.72	-245.49	5,013.76	0.00	0.00	0.00
11,800.00	90.00	0.34	6,070.00	5,108.72	-244.90	5,113.70	0.00	0.00	0.00
11,900.00	90.00	0.34	6,070.00	5,208.72	-244.30	5,213.64	0.00	0.00	0.00
12,000.00	90.00	0.34	6,070.00	5,308.72	-243.71	5,313.57	0.00	0.00	0.00
12,100.00	90.00	0.34	6,070.00	5,408.72	-243.12	5,413.51	0.00	0.00	0.00
12,200.00	90.00	0.34	6,070.00	5,508.71	-242.52	5,513.45	0.00	0.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor FED #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4975.50usft
Project:	Weld County, CO	MD Reference:	KBE @ 4975.50usft
Site:	Sec 7-T10N-R58W	North Reference:	True
Well:	Razor FED #07E-0602	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)	
12,300.00	90.00	0.34	6,070.00	5,608.71	-241.93	5,613.39	0.00	0.00	0.00	
12,400.00	90.00	0.34	6,070.00	5,708.71	-241.34	5,713.33	0.00	0.00	0.00	
12,500.00	90.00	0.34	6,070.00	5,808.71	-240.75	5,813.27	0.00	0.00	0.00	
12,600.00	90.00	0.34	6,070.00	5,908.71	-240.15	5,913.20	0.00	0.00	0.00	
12,700.00	90.00	0.34	6,070.00	6,008.71	-239.56	6,013.14	0.00	0.00	0.00	
12,800.00	90.00	0.34	6,070.00	6,108.70	-238.97	6,113.08	0.00	0.00	0.00	
12,900.00	90.00	0.34	6,070.00	6,208.70	-238.38	6,213.02	0.00	0.00	0.00	
13,000.00	90.00	0.34	6,070.00	6,308.70	-237.78	6,312.96	0.00	0.00	0.00	
13,100.00	90.00	0.34	6,070.00	6,408.70	-237.19	6,412.89	0.00	0.00	0.00	
13,200.00	90.00	0.34	6,070.00	6,508.70	-236.60	6,512.83	0.00	0.00	0.00	
13,300.00	90.00	0.34	6,070.00	6,608.69	-236.01	6,612.77	0.00	0.00	0.00	
13,400.00	90.00	0.34	6,070.00	6,708.69	-235.41	6,712.71	0.00	0.00	0.00	
13,500.00	90.00	0.34	6,070.00	6,808.69	-234.82	6,812.65	0.00	0.00	0.00	
13,600.00	90.00	0.34	6,070.00	6,908.69	-234.23	6,912.58	0.00	0.00	0.00	
13,700.00	90.00	0.34	6,070.00	7,008.69	-233.63	7,012.52	0.00	0.00	0.00	
13,800.00	90.00	0.34	6,070.00	7,108.69	-233.04	7,112.46	0.00	0.00	0.00	
13,900.00	90.00	0.34	6,070.00	7,208.68	-232.45	7,212.40	0.00	0.00	0.00	
14,000.00	90.00	0.34	6,070.00	7,308.68	-231.86	7,312.34	0.00	0.00	0.00	
14,100.00	90.00	0.34	6,070.00	7,408.68	-231.26	7,412.28	0.00	0.00	0.00	
14,200.00	90.00	0.34	6,070.00	7,508.68	-230.67	7,512.21	0.00	0.00	0.00	
14,234.32	90.00	0.34	6,070.00	7,543.00	-230.47	7,546.51	0.00	0.00	0.00	
TD at 14234.32										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
PBHL 0602 - hit/miss target - Shape - Point	0.00	0.00	6,070.00	7,543.00	-230.47	1,565,327.48	3,438,439.72	40° 52' 27.980 N		103° 54' 52.520 W
Nelson Ranches #1 - plan misses target center by 757.50usft at 8413.75usft MD (6070.00 TVD, 1722.53 N, -264.97 E) - Circle (radius 1,550.00)	0.00	0.00	6,790.50	1,721.14	-31.11	1,559,510.12	3,438,743.19	40° 51' 30.456 N		103° 54' 49.925 W
Nelson Ranches #3 - plan misses target center by 1301.57usft at 6338.74usft MD (6046.11 TVD, -350.25 N, -277.25 E) - Circle (radius 1,550.00)	0.00	0.00	6,818.50	-578.59	745.18	1,557,224.64	3,439,560.49	40° 51' 7.733 N		103° 54' 39.823 W
Nelson Ranches #2 - plan misses target center by 834.35usft at 7061.26usft MD (6070.00 TVD, 370.06 N, -272.98 E) - Circle (radius 1,550.00)	0.00	0.00	6,851.50	368.33	19.24	1,558,158.43	3,438,817.73	40° 51' 17.089 N		103° 54' 49.270 W
Dolan Ranches #1 - plan misses target center by 1054.92usft at 9710.74usft MD (6070.00 TVD, 3019.50 N, -257.28 E) - Circle (radius 1,550.00)	0.00	0.00	6,903.50	3,015.67	389.35	1,560,811.96	3,439,140.42	40° 51' 43.247 N		103° 54' 44.453 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
6,513.68	6,070.00	5 1/2" Marker / 7" CSG		7.000	8.750



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor FED #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4975.50usft
Project:	Weld County, CO	MD Reference:	KBE @ 4975.50usft
Site:	Sec 7-T10N-R58W	North Reference:	True
Well:	Razor FED #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,566.86	1,550.00	Upper Pierre			
3,554.24	3,500.00	Hygiene			
3,707.11	3,650.00	Lower Pierre			
5,975.88	5,856.00	P200 Marker			
6,001.76	5,875.00	P300 Marker			
6,021.49	5,889.00	P350 Marker			
6,034.51	5,898.00	Sharon Springs			
6,041.87	5,903.00	Niobrara			
6,084.97	5,931.00	Top A Chalk			
6,137.43	5,962.00	Top A Marl			
6,244.68	6,014.00	A Marl			
6,281.16	6,028.00	Top Upper B			
6,370.66	6,054.00	Base Upper B			
6,513.68	6,070.00	Top Lower B			

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'
856.53	853.04	-50.96	-17.53	Hold 11.13° Inc
4,757.33	4,680.46	-763.04	-262.47	Drop 2°/100'
5,313.86	5,233.50	-814.00	-280.00	Hold Vertical
5,513.86	5,433.50	-814.00	-280.00	KOP, Build 9°/100'
6,513.68	6,070.00	-177.51	-276.23	LP @ 90° Inc, Hold
14,234.32	6,070.00	7,543.00	-230.47	TD at 14234.32