



# **Whiting Petroleum Corp.**

**Weld County, CO**

**Sec 7-T10N-R57W**

**Horsetail #07G-0609**

**Hz**

**Plan: Design #1**

## **Standard Planning Report**

**26 March, 2015**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07G-0609
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07G-0609	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Design #1		

<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 7-T10N-R57W			
<b>Site Position:</b>		<b>Northing:</b>	1,558,450.14 usft	<b>Latitude:</b> 40° 51' 14.300 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,469,810.15 usft	<b>Longitude:</b> 103° 48' 5.960 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 1.10 °

<b>Well</b>	Horsetail #07G-0609			
<b>Well Position</b>	<b>+N/-S</b>	-169.85 usft	<b>Northing:</b>	1,558,332.62 usft
	<b>+E/-W</b>	2,731.12 usft	<b>Easting:</b>	3,472,544.02 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	
			<b>Ground Level:</b>	4,896.00 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	1/6/2015	7.88	67.44	53,088

<b>Design</b>	Design #1			
<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	354.20

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
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	
800.00	10.00	235.00	797.46	-24.96	-35.65	2.00	2.00	0.00	235.00	
4,600.00	10.00	235.00	4,539.73	-403.45	-576.18	0.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,037.20	-428.41	-611.83	2.00	-2.00	0.00	180.00	
5,291.93	0.00	0.00	5,229.13	-428.41	-611.83	0.00	0.00	0.00	0.00	
6,110.11	90.00	359.50	5,750.00	92.44	-616.40	11.00	11.00	0.00	359.50	PBHL 0609A
12,648.02	90.00	359.50	5,750.00	6,630.10	-673.76	0.00	0.00	0.00	0.00	PBHL 0609A



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07G-0609
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07G-0609	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Design #1		

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	235.00	399.98	-1.00	-1.43	-0.85	2.00	2.00	0.00
500.00	4.00	235.00	499.84	-4.00	-5.72	-3.40	2.00	2.00	0.00
600.00	6.00	235.00	599.45	-9.00	-12.86	-7.66	2.00	2.00	0.00
700.00	8.00	235.00	698.70	-15.99	-22.84	-13.60	2.00	2.00	0.00
800.00	10.00	235.00	797.46	-24.96	-35.65	-21.23	2.00	2.00	0.00
<b>Hold 10° Inc</b>									
900.00	10.00	235.00	895.95	-34.92	-49.88	-29.70	0.00	0.00	0.00
1,000.00	10.00	235.00	994.43	-44.88	-64.10	-38.17	0.00	0.00	0.00
1,100.00	10.00	235.00	1,092.91	-54.84	-78.32	-46.64	0.00	0.00	0.00
1,200.00	10.00	235.00	1,191.39	-64.80	-92.55	-55.11	0.00	0.00	0.00
1,300.00	10.00	235.00	1,289.87	-74.76	-106.77	-63.59	0.00	0.00	0.00
1,400.00	10.00	235.00	1,388.35	-84.72	-121.00	-72.06	0.00	0.00	0.00
1,500.00	10.00	235.00	1,486.83	-94.68	-135.22	-80.53	0.00	0.00	0.00
1,564.14	10.00	235.00	1,550.00	-101.07	-144.35	-85.96	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	10.00	235.00	1,585.31	-104.64	-149.45	-89.00	0.00	0.00	0.00
1,700.00	10.00	235.00	1,683.79	-114.60	-163.67	-97.47	0.00	0.00	0.00
1,800.00	10.00	235.00	1,782.27	-124.56	-177.90	-105.94	0.00	0.00	0.00
1,900.00	10.00	235.00	1,880.75	-134.52	-192.12	-114.41	0.00	0.00	0.00
2,000.00	10.00	235.00	1,979.23	-144.48	-206.34	-122.88	0.00	0.00	0.00
2,100.00	10.00	235.00	2,077.72	-154.44	-220.57	-131.35	0.00	0.00	0.00
2,200.00	10.00	235.00	2,176.20	-164.40	-234.79	-139.82	0.00	0.00	0.00
2,300.00	10.00	235.00	2,274.68	-174.36	-249.02	-148.29	0.00	0.00	0.00
2,400.00	10.00	235.00	2,373.16	-184.32	-263.24	-156.77	0.00	0.00	0.00
2,500.00	10.00	235.00	2,471.64	-194.28	-277.47	-165.24	0.00	0.00	0.00
2,600.00	10.00	235.00	2,570.12	-204.24	-291.69	-173.71	0.00	0.00	0.00
2,700.00	10.00	235.00	2,668.60	-214.20	-305.92	-182.18	0.00	0.00	0.00
2,800.00	10.00	235.00	2,767.08	-224.16	-320.14	-190.65	0.00	0.00	0.00
2,900.00	10.00	235.00	2,865.56	-234.12	-334.36	-199.12	0.00	0.00	0.00
3,000.00	10.00	235.00	2,964.04	-244.08	-348.59	-207.59	0.00	0.00	0.00
3,100.00	10.00	235.00	3,062.52	-254.04	-362.81	-216.06	0.00	0.00	0.00
3,200.00	10.00	235.00	3,161.00	-264.00	-377.04	-224.53	0.00	0.00	0.00
3,300.00	10.00	235.00	3,259.48	-273.96	-391.26	-233.00	0.00	0.00	0.00
3,400.00	10.00	235.00	3,357.97	-283.92	-405.49	-241.48	0.00	0.00	0.00
3,500.00	10.00	235.00	3,456.45	-293.88	-419.71	-249.95	0.00	0.00	0.00
3,544.23	10.00	235.00	3,500.00	-298.29	-426.00	-253.69	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	10.00	235.00	3,554.93	-303.84	-433.94	-258.42	0.00	0.00	0.00
3,696.54	10.00	235.00	3,650.00	-313.46	-447.67	-266.59	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	10.00	235.00	3,653.41	-313.81	-448.16	-266.89	0.00	0.00	0.00
3,800.00	10.00	235.00	3,751.89	-323.77	-462.38	-275.36	0.00	0.00	0.00
3,900.00	10.00	235.00	3,850.37	-333.73	-476.61	-283.83	0.00	0.00	0.00
4,000.00	10.00	235.00	3,948.85	-343.69	-490.83	-292.30	0.00	0.00	0.00
4,100.00	10.00	235.00	4,047.33	-353.65	-505.06	-300.77	0.00	0.00	0.00
4,200.00	10.00	235.00	4,145.81	-363.61	-519.28	-309.24	0.00	0.00	0.00
4,300.00	10.00	235.00	4,244.29	-373.57	-533.51	-317.71	0.00	0.00	0.00
4,400.00	10.00	235.00	4,342.77	-383.53	-547.73	-326.18	0.00	0.00	0.00
4,500.00	10.00	235.00	4,441.25	-393.49	-561.96	-334.66	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07G-0609
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07G-0609	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Design #1		

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)
4,600.00	10.00	235.00	4,539.73	-403.45	-576.18	-343.13	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,700.00	8.00	235.00	4,638.50	-412.42	-588.99	-350.76	2.00	-2.00	0.00
4,800.00	6.00	235.00	4,737.75	-419.41	-598.98	-356.70	2.00	-2.00	0.00
4,900.00	4.00	235.00	4,837.36	-424.41	-606.11	-360.95	2.00	-2.00	0.00
5,000.00	2.00	235.00	4,937.22	-427.41	-610.40	-363.51	2.00	-2.00	0.00
5,100.00	0.00	0.00	5,037.20	-428.41	-611.83	-364.36	2.00	-2.00	0.00
<b>Hold Vertical</b>									
5,200.00	0.00	0.00	5,137.20	-428.41	-611.83	-364.36	0.00	0.00	0.00
5,291.93	0.00	0.00	5,229.13	-428.41	-611.83	-364.36	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,300.00	0.89	359.50	5,237.20	-428.35	-611.83	-364.29	11.00	11.00	0.00
5,350.00	6.39	359.50	5,287.08	-425.18	-611.86	-361.14	11.00	11.00	0.00
5,400.00	11.89	359.50	5,336.43	-417.24	-611.93	-353.23	11.00	11.00	0.00
5,450.00	17.39	359.50	5,384.79	-404.61	-612.04	-340.66	11.00	11.00	0.00
5,500.00	22.89	359.50	5,431.71	-387.40	-612.19	-323.52	11.00	11.00	0.00
5,550.00	28.39	359.50	5,476.77	-365.78	-612.38	-301.99	11.00	11.00	0.00
5,594.54	33.29	359.50	5,515.00	-342.95	-612.58	-279.26	11.00	11.00	0.00
<b>P200 Marker</b>									
5,600.00	33.89	359.50	5,519.55	-339.93	-612.61	-276.25	11.00	11.00	0.00
5,612.69	35.28	359.50	5,530.00	-332.73	-612.67	-269.08	11.00	11.00	0.00
<b>P300 Marker</b>									
5,637.63	38.03	359.50	5,550.00	-317.84	-612.80	-254.26	11.00	11.00	0.00
<b>P350 Marker</b>									
5,650.00	39.39	359.50	5,559.66	-310.11	-612.87	-246.56	11.00	11.00	0.00
5,700.00	44.89	359.50	5,596.72	-276.57	-613.16	-213.17	11.00	11.00	0.00
5,750.00	50.39	359.50	5,630.40	-239.65	-613.49	-176.39	11.00	11.00	0.00
5,800.00	55.89	359.50	5,660.38	-199.66	-613.84	-136.58	11.00	11.00	0.00
5,850.00	61.39	359.50	5,686.39	-156.98	-614.21	-94.08	11.00	11.00	0.00
5,884.74	65.21	359.50	5,702.00	-125.95	-614.49	-63.18	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,896.98	66.56	359.50	5,707.00	-114.78	-614.58	-52.06	11.00	11.00	0.00
<b>Niobrara</b>									
5,900.00	66.89	359.50	5,708.19	-112.01	-614.61	-49.30	11.00	11.00	0.00
5,950.00	72.39	359.50	5,725.58	-65.15	-615.02	-2.64	11.00	11.00	0.00
5,954.75	72.91	359.50	5,727.00	-60.62	-615.06	1.88	11.00	11.00	0.00
<b>Top A Chalk</b>									
6,000.00	77.89	359.50	5,738.40	-16.84	-615.44	45.46	11.00	11.00	0.00
6,050.00	83.39	359.50	5,746.53	32.47	-615.87	94.57	11.00	11.00	0.00
6,100.00	88.89	359.50	5,749.90	82.33	-616.31	144.22	11.00	11.00	0.00
6,110.11	90.00	359.50	5,750.00	92.44	-616.40	154.29	11.00	11.00	0.00
<b>LP @ 90° Inc, Hold - 7"</b>									
6,200.00	90.00	359.50	5,750.00	182.33	-617.19	243.79	0.00	0.00	0.00
6,300.00	90.00	359.50	5,750.00	282.33	-618.07	343.37	0.00	0.00	0.00
6,400.00	90.00	359.50	5,750.00	382.32	-618.94	442.94	0.00	0.00	0.00
6,500.00	90.00	359.50	5,750.00	482.32	-619.82	542.51	0.00	0.00	0.00
6,600.00	90.00	359.50	5,750.00	582.31	-620.70	642.08	0.00	0.00	0.00
6,700.00	90.00	359.50	5,750.00	682.31	-621.58	741.66	0.00	0.00	0.00
6,800.00	90.00	359.50	5,750.00	782.31	-622.45	841.23	0.00	0.00	0.00
6,900.00	90.00	359.50	5,750.00	882.30	-623.33	940.80	0.00	0.00	0.00
7,000.00	90.00	359.50	5,750.00	982.30	-624.21	1,040.37	0.00	0.00	0.00
7,100.00	90.00	359.50	5,750.00	1,082.29	-625.09	1,139.95	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07G-0609
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07G-0609	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	H2		
<b>Design:</b>	Design #1		

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)	
7,200.00	90.00	359.50	5,750.00	1,182.29	-625.96	1,239.52	0.00	0.00	0.00	
7,300.00	90.00	359.50	5,750.00	1,282.29	-626.84	1,339.09	0.00	0.00	0.00	
7,400.00	90.00	359.50	5,750.00	1,382.28	-627.72	1,438.66	0.00	0.00	0.00	
7,500.00	90.00	359.50	5,750.00	1,482.28	-628.60	1,538.24	0.00	0.00	0.00	
7,600.00	90.00	359.50	5,750.00	1,582.28	-629.47	1,637.81	0.00	0.00	0.00	
7,700.00	90.00	359.50	5,750.00	1,682.27	-630.35	1,737.38	0.00	0.00	0.00	
7,800.00	90.00	359.50	5,750.00	1,782.27	-631.23	1,836.95	0.00	0.00	0.00	
7,900.00	90.00	359.50	5,750.00	1,882.26	-632.10	1,936.53	0.00	0.00	0.00	
8,000.00	90.00	359.50	5,750.00	1,982.26	-632.98	2,036.10	0.00	0.00	0.00	
8,100.00	90.00	359.50	5,750.00	2,082.26	-633.86	2,135.67	0.00	0.00	0.00	
8,200.00	90.00	359.50	5,750.00	2,182.25	-634.74	2,235.24	0.00	0.00	0.00	
8,300.00	90.00	359.50	5,750.00	2,282.25	-635.61	2,334.82	0.00	0.00	0.00	
8,400.00	90.00	359.50	5,750.00	2,382.24	-636.49	2,434.39	0.00	0.00	0.00	
8,500.00	90.00	359.50	5,750.00	2,482.24	-637.37	2,533.96	0.00	0.00	0.00	
8,600.00	90.00	359.50	5,750.00	2,582.24	-638.25	2,633.53	0.00	0.00	0.00	
8,700.00	90.00	359.50	5,750.00	2,682.23	-639.12	2,733.11	0.00	0.00	0.00	
8,800.00	90.00	359.50	5,750.00	2,782.23	-640.00	2,832.68	0.00	0.00	0.00	
8,900.00	90.00	359.50	5,750.00	2,882.23	-640.88	2,932.25	0.00	0.00	0.00	
9,000.00	90.00	359.50	5,750.00	2,982.22	-641.76	3,031.82	0.00	0.00	0.00	
9,100.00	90.00	359.50	5,750.00	3,082.22	-642.63	3,131.40	0.00	0.00	0.00	
9,200.00	90.00	359.50	5,750.00	3,182.21	-643.51	3,230.97	0.00	0.00	0.00	
9,300.00	90.00	359.50	5,750.00	3,282.21	-644.39	3,330.54	0.00	0.00	0.00	
9,400.00	90.00	359.50	5,750.00	3,382.21	-645.26	3,430.11	0.00	0.00	0.00	
9,500.00	90.00	359.50	5,750.00	3,482.20	-646.14	3,529.69	0.00	0.00	0.00	
9,600.00	90.00	359.50	5,750.00	3,582.20	-647.02	3,629.26	0.00	0.00	0.00	
9,700.00	90.00	359.50	5,750.00	3,682.19	-647.90	3,728.83	0.00	0.00	0.00	
9,800.00	90.00	359.50	5,750.00	3,782.19	-648.77	3,828.40	0.00	0.00	0.00	
9,900.00	90.00	359.50	5,750.00	3,882.19	-649.65	3,927.98	0.00	0.00	0.00	
10,000.00	90.00	359.50	5,750.00	3,982.18	-650.53	4,027.55	0.00	0.00	0.00	
10,100.00	90.00	359.50	5,750.00	4,082.18	-651.41	4,127.12	0.00	0.00	0.00	
10,200.00	90.00	359.50	5,750.00	4,182.18	-652.28	4,226.69	0.00	0.00	0.00	
10,300.00	90.00	359.50	5,750.00	4,282.17	-653.16	4,326.27	0.00	0.00	0.00	
10,400.00	90.00	359.50	5,750.00	4,382.17	-654.04	4,425.84	0.00	0.00	0.00	
10,500.00	90.00	359.50	5,750.00	4,482.16	-654.92	4,525.41	0.00	0.00	0.00	
10,600.00	90.00	359.50	5,750.00	4,582.16	-655.79	4,624.98	0.00	0.00	0.00	
10,700.00	90.00	359.50	5,750.00	4,682.16	-656.67	4,724.56	0.00	0.00	0.00	
10,800.00	90.00	359.50	5,750.00	4,782.15	-657.55	4,824.13	0.00	0.00	0.00	
10,900.00	90.00	359.50	5,750.00	4,882.15	-658.42	4,923.70	0.00	0.00	0.00	
11,000.00	90.00	359.50	5,750.00	4,982.14	-659.30	5,023.27	0.00	0.00	0.00	
11,100.00	90.00	359.50	5,750.00	5,082.14	-660.18	5,122.85	0.00	0.00	0.00	
11,200.00	90.00	359.50	5,750.00	5,182.14	-661.06	5,222.42	0.00	0.00	0.00	
11,300.00	90.00	359.50	5,750.00	5,282.13	-661.93	5,321.99	0.00	0.00	0.00	
11,400.00	90.00	359.50	5,750.00	5,382.13	-662.81	5,421.56	0.00	0.00	0.00	
11,500.00	90.00	359.50	5,750.00	5,482.13	-663.69	5,521.14	0.00	0.00	0.00	
11,600.00	90.00	359.50	5,750.00	5,582.12	-664.57	5,620.71	0.00	0.00	0.00	
11,700.00	90.00	359.50	5,750.00	5,682.12	-665.44	5,720.28	0.00	0.00	0.00	
11,800.00	90.00	359.50	5,750.00	5,782.11	-666.32	5,819.85	0.00	0.00	0.00	
11,900.00	90.00	359.50	5,750.00	5,882.11	-667.20	5,919.43	0.00	0.00	0.00	
12,000.00	90.00	359.50	5,750.00	5,982.11	-668.08	6,019.00	0.00	0.00	0.00	
12,100.00	90.00	359.50	5,750.00	6,082.10	-668.95	6,118.57	0.00	0.00	0.00	
12,200.00	90.00	359.50	5,750.00	6,182.10	-669.83	6,218.14	0.00	0.00	0.00	
12,300.00	90.00	359.50	5,750.00	6,282.09	-670.71	6,317.72	0.00	0.00	0.00	
12,400.00	90.00	359.50	5,750.00	6,382.09	-671.59	6,417.29	0.00	0.00	0.00	
12,500.00	90.00	359.50	5,750.00	6,482.09	-672.46	6,516.86	0.00	0.00	0.00	



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07G-0609
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	WELL @ 4913.00usft (Original Well Elev)
<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07G-0609	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Design #1		

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)
12,600.00	90.00	359.50	5,750.00	6,582.08	-673.34	6,616.43	0.00	0.00	0.00
12,648.02	90.00	359.50	5,750.00	6,630.10	-673.76	6,664.24	0.00	0.00	0.00
TD at 12648.02' MD									

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 0609A	0.00	0.00	5,750.00	6,630.10	-673.76	1,564,948.51	3,471,742.67	40° 52' 18.130 N	103° 47' 39.190 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,110.11	5,750.00	7"	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,564.14	1,550.00	Upper Pierre				
3,544.23	3,500.00	Hygiene				
3,696.54	3,650.00	Lower Pierre				
5,594.54	5,515.00	P200 Marker				
5,612.69	5,530.00	P300 Marker				
5,637.63	5,550.00	P350 Marker				
5,884.74	5,702.00	Sharon Springs				
5,896.98	5,707.00	Niobrara				
5,954.75	5,727.00	Top A 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'	
800.00	797.46	-24.96	-35.65	Hold 10° Inc	
4,600.00	4,539.73	-403.45	-576.18	Drop 2°/100'	
5,100.00	5,037.20	-428.41	-611.83	Hold Vertical	
5,291.93	5,229.13	-428.41	-611.83	KOP, Build 11°/100'	
6,110.11	5,750.00	92.44	-616.40	LP @ 90° Inc, Hold	
12,648.02	5,750.00	6,630.10	-673.76	TD at 12648.02' MD	