



Whiting Petroleum Corp.

**Weld County, CO
Sec 7-T10N-R57W
Horsetail #07H-1814**

Hz

Plan: Design #1

Standard Planning Report

27 March, 2015



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07H-1814
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4925.90usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4925.90usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07H-1814	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Design #1		

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

Well	Horsetail #07H-1814					
Well Position	+N/-S	-153.51 usft	Northing:	1,558,371.95 usft	Latitude:	40° 51' 12.780 N
	+E/-W	3,931.46 usft	Easting:	3,473,743.83 usft	Longitude:	103° 47' 14.800 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,908.90 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/6/2015	7.88	67.44	53,088

Design	Design #1			
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	180.73

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	
550.00	5.00	344.50	549.68	10.50	-2.91	2.00	2.00	0.00	344.50	
4,635.00	5.00	344.50	4,619.14	353.59	-98.06	0.00	0.00	0.00	0.00	
4,885.00	0.00	0.00	4,868.82	364.09	-100.97	2.00	-2.00	0.00	180.00	
5,332.31	0.00	0.00	5,316.13	364.09	-100.97	0.00	0.00	0.00	0.00	
6,150.49	90.00	180.00	5,837.00	-156.78	-100.95	11.00	11.00	0.00	180.00	PBHL 1814B
13,886.78	90.00	180.00	5,837.00	-7,893.07	-100.70	0.00	0.00	0.00	0.00	PBHL 1814B



WOG
Planning Report

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Project:	Weld County, CO	MD Reference:	KBE @ 4925.90usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07H-1814	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	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	
Build 2°/100'										
400.00	2.00	344.50	399.98	1.68	-0.47	-1.68	2.00	2.00	0.00	
500.00	4.00	344.50	499.84	6.72	-1.86	-6.70	2.00	2.00	0.00	
550.00	5.00	344.50	549.68	10.50	-2.91	-10.47	2.00	2.00	0.00	
Hold 5° Inc										
600.00	5.00	344.50	599.49	14.70	-4.08	-14.65	0.00	0.00	0.00	
700.00	5.00	344.50	699.11	23.10	-6.41	-23.02	0.00	0.00	0.00	
800.00	5.00	344.50	798.73	31.50	-8.74	-31.39	0.00	0.00	0.00	
900.00	5.00	344.50	898.35	39.90	-11.07	-39.76	0.00	0.00	0.00	
1,000.00	5.00	344.50	997.97	48.30	-13.39	-48.12	0.00	0.00	0.00	
1,100.00	5.00	344.50	1,097.59	56.70	-15.72	-56.49	0.00	0.00	0.00	
1,200.00	5.00	344.50	1,197.21	65.10	-18.05	-64.86	0.00	0.00	0.00	
1,300.00	5.00	344.50	1,296.83	73.49	-20.38	-73.23	0.00	0.00	0.00	
1,400.00	5.00	344.50	1,396.45	81.89	-22.71	-81.60	0.00	0.00	0.00	
1,500.00	5.00	344.50	1,496.07	90.29	-25.04	-89.96	0.00	0.00	0.00	
1,554.14	5.00	344.50	1,550.00	94.84	-26.30	-94.50	0.00	0.00	0.00	
Upper Pierre										
1,600.00	5.00	344.50	1,595.69	98.69	-27.37	-98.33	0.00	0.00	0.00	
1,700.00	5.00	344.50	1,695.31	107.09	-29.70	-106.70	0.00	0.00	0.00	
1,800.00	5.00	344.50	1,794.93	115.49	-32.03	-115.07	0.00	0.00	0.00	
1,900.00	5.00	344.50	1,894.55	123.89	-34.36	-123.44	0.00	0.00	0.00	
2,000.00	5.00	344.50	1,994.17	132.28	-36.69	-131.81	0.00	0.00	0.00	
2,100.00	5.00	344.50	2,093.78	140.68	-39.01	-140.17	0.00	0.00	0.00	
2,200.00	5.00	344.50	2,193.40	149.08	-41.34	-148.54	0.00	0.00	0.00	
2,300.00	5.00	344.50	2,293.02	157.48	-43.67	-156.91	0.00	0.00	0.00	
2,400.00	5.00	344.50	2,392.64	165.88	-46.00	-165.28	0.00	0.00	0.00	
2,500.00	5.00	344.50	2,492.26	174.28	-48.33	-173.65	0.00	0.00	0.00	
2,600.00	5.00	344.50	2,591.88	182.68	-50.66	-182.01	0.00	0.00	0.00	
2,700.00	5.00	344.50	2,691.50	191.07	-52.99	-190.38	0.00	0.00	0.00	
2,800.00	5.00	344.50	2,791.12	199.47	-55.32	-198.75	0.00	0.00	0.00	
2,900.00	5.00	344.50	2,890.74	207.87	-57.65	-207.12	0.00	0.00	0.00	
3,000.00	5.00	344.50	2,990.36	216.27	-59.98	-215.49	0.00	0.00	0.00	
3,100.00	5.00	344.50	3,089.98	224.67	-62.31	-223.86	0.00	0.00	0.00	
3,200.00	5.00	344.50	3,189.60	233.07	-64.64	-232.22	0.00	0.00	0.00	
3,300.00	5.00	344.50	3,289.22	241.47	-66.96	-240.59	0.00	0.00	0.00	
3,400.00	5.00	344.50	3,388.84	249.86	-69.29	-248.96	0.00	0.00	0.00	
3,500.00	5.00	344.50	3,488.46	258.26	-71.62	-257.33	0.00	0.00	0.00	
3,511.59	5.00	344.50	3,500.00	259.24	-71.89	-258.30	0.00	0.00	0.00	
Hygiene										
3,600.00	5.00	344.50	3,588.08	266.66	-73.95	-265.70	0.00	0.00	0.00	
3,662.16	5.00	344.50	3,650.00	271.88	-75.40	-270.90	0.00	0.00	0.00	
Lower Pierre										
3,700.00	5.00	344.50	3,687.70	275.06	-76.28	-274.07	0.00	0.00	0.00	
3,800.00	5.00	344.50	3,787.32	283.46	-78.61	-282.43	0.00	0.00	0.00	
3,900.00	5.00	344.50	3,886.94	291.86	-80.94	-290.80	0.00	0.00	0.00	
4,000.00	5.00	344.50	3,986.55	300.26	-83.27	-299.17	0.00	0.00	0.00	
4,100.00	5.00	344.50	4,086.17	308.65	-85.60	-307.54	0.00	0.00	0.00	
4,200.00	5.00	344.50	4,185.79	317.05	-87.93	-315.91	0.00	0.00	0.00	
4,300.00	5.00	344.50	4,285.41	325.45	-90.26	-324.27	0.00	0.00	0.00	
4,400.00	5.00	344.50	4,385.03	333.85	-92.59	-332.64	0.00	0.00	0.00	



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Wellbore:	Hz		
Design:	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)
4,500.00	5.00	344.50	4,484.65	342.25	-94.91	-341.01	0.00	0.00	0.00
4,600.00	5.00	344.50	4,584.27	350.65	-97.24	-349.38	0.00	0.00	0.00
4,635.00	5.00	344.50	4,619.14	353.59	-98.06	-352.31	0.00	0.00	0.00
Drop 2°/100'									
4,700.00	3.70	344.50	4,683.95	358.34	-99.38	-357.04	2.00	-2.00	0.00
4,800.00	1.70	344.50	4,783.83	362.88	-100.63	-361.56	2.00	-2.00	0.00
4,885.00	0.00	0.00	4,868.82	364.09	-100.97	-362.77	2.00	-2.00	0.00
Hold Vertical									
4,900.00	0.00	0.00	4,883.82	364.09	-100.97	-362.77	0.00	0.00	0.00
5,000.00	0.00	0.00	4,983.82	364.09	-100.97	-362.77	0.00	0.00	0.00
5,100.00	0.00	0.00	5,083.82	364.09	-100.97	-362.77	0.00	0.00	0.00
5,200.00	0.00	0.00	5,183.82	364.09	-100.97	-362.77	0.00	0.00	0.00
5,300.00	0.00	0.00	5,283.82	364.09	-100.97	-362.77	0.00	0.00	0.00
5,332.31	0.00	0.00	5,316.13	364.09	-100.97	-362.77	0.00	0.00	0.00
KOP, Build 11°/100'									
5,350.00	1.95	180.00	5,333.82	363.79	-100.97	-362.47	11.00	11.00	0.00
5,400.00	7.45	180.00	5,383.63	359.70	-100.97	-358.38	11.00	11.00	0.00
5,450.00	12.95	180.00	5,432.82	350.85	-100.97	-349.54	11.00	11.00	0.00
5,500.00	18.45	180.00	5,480.94	337.33	-100.97	-336.02	11.00	11.00	0.00
5,536.36	22.45	180.00	5,515.00	324.63	-100.97	-323.32	11.00	11.00	0.00
P200 Marker									
5,550.00	23.95	180.00	5,527.54	319.26	-100.97	-317.95	11.00	11.00	0.00
5,552.70	24.24	180.00	5,530.00	318.16	-100.97	-316.85	11.00	11.00	0.00
P300 Marker									
5,574.85	26.68	180.00	5,550.00	308.64	-100.97	-307.32	11.00	11.00	0.00
P350 Marker									
5,600.00	29.45	180.00	5,572.19	296.81	-100.97	-295.49	11.00	11.00	0.00
5,650.00	34.95	180.00	5,614.49	270.18	-100.97	-268.86	11.00	11.00	0.00
5,700.00	40.45	180.00	5,654.04	239.61	-100.97	-238.31	11.00	11.00	0.00
5,750.00	45.95	180.00	5,690.47	205.40	-100.97	-204.10	11.00	11.00	0.00
5,766.86	47.80	180.00	5,702.00	193.09	-100.97	-191.79	11.00	11.00	0.00
Sharon Springs									
5,774.37	48.63	180.00	5,707.00	187.50	-100.97	-186.20	11.00	11.00	0.00
Niobrara									
5,800.00	51.45	180.00	5,723.46	167.85	-100.97	-166.55	11.00	11.00	0.00
5,805.72	52.07	180.00	5,727.00	163.36	-100.97	-162.06	11.00	11.00	0.00
Top A Chalk									
5,850.00	56.95	180.00	5,752.70	127.32	-100.96	-126.02	11.00	11.00	0.00
5,871.40	59.30	180.00	5,764.00	109.15	-100.96	-107.85	11.00	11.00	0.00
Top A Marl									
5,900.00	62.45	180.00	5,777.92	84.17	-100.96	-82.87	11.00	11.00	0.00
5,911.21	63.68	180.00	5,783.00	74.17	-100.96	-72.88	11.00	11.00	0.00
A Marl									
5,932.39	66.01	180.00	5,792.00	55.01	-100.96	-53.72	11.00	11.00	0.00
Top Upper B									
5,950.00	67.95	180.00	5,798.89	38.80	-100.96	-37.51	11.00	11.00	0.00
6,000.00	73.45	180.00	5,815.41	-8.37	-100.96	9.66	11.00	11.00	0.00
6,017.05	75.32	180.00	5,820.00	-24.79	-100.96	26.08	11.00	11.00	0.00
Base Upper B									
6,050.00	78.95	180.00	5,827.34	-56.91	-100.96	58.19	11.00	11.00	0.00
6,100.00	84.45	180.00	5,834.55	-106.37	-100.96	107.65	11.00	11.00	0.00
6,150.49	90.00	180.00	5,837.00	-156.78	-100.95	158.05	11.00	11.00	0.00



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Planning Report

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Project:	Weld County, CO	MD Reference:	KBE @ 4925.90usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07H-1814	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	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)	
LP @ 90° Inc, Hold - Top Lower B - 7"										
6,200.00	90.00	180.00	5,837.00	-206.29	-100.95	207.56	0.00	0.00	0.00	
6,300.00	90.00	180.00	5,837.00	-306.29	-100.95	307.55	0.00	0.00	0.00	
6,400.00	90.00	180.00	5,837.00	-406.29	-100.95	407.54	0.00	0.00	0.00	
6,500.00	90.00	180.00	5,837.00	-506.29	-100.94	507.53	0.00	0.00	0.00	
6,600.00	90.00	180.00	5,837.00	-606.29	-100.94	607.53	0.00	0.00	0.00	
6,700.00	90.00	180.00	5,837.00	-706.29	-100.94	707.52	0.00	0.00	0.00	
6,800.00	90.00	180.00	5,837.00	-806.29	-100.93	807.51	0.00	0.00	0.00	
6,900.00	90.00	180.00	5,837.00	-906.29	-100.93	907.50	0.00	0.00	0.00	
7,000.00	90.00	180.00	5,837.00	-1,006.29	-100.93	1,007.49	0.00	0.00	0.00	
7,100.00	90.00	180.00	5,837.00	-1,106.29	-100.92	1,107.49	0.00	0.00	0.00	
7,200.00	90.00	180.00	5,837.00	-1,206.29	-100.92	1,207.48	0.00	0.00	0.00	
7,300.00	90.00	180.00	5,837.00	-1,306.29	-100.92	1,307.47	0.00	0.00	0.00	
7,400.00	90.00	180.00	5,837.00	-1,406.29	-100.91	1,407.46	0.00	0.00	0.00	
7,500.00	90.00	180.00	5,837.00	-1,506.29	-100.91	1,507.45	0.00	0.00	0.00	
7,600.00	90.00	180.00	5,837.00	-1,606.29	-100.91	1,607.44	0.00	0.00	0.00	
7,700.00	90.00	180.00	5,837.00	-1,706.29	-100.90	1,707.44	0.00	0.00	0.00	
7,800.00	90.00	180.00	5,837.00	-1,806.29	-100.90	1,807.43	0.00	0.00	0.00	
7,900.00	90.00	180.00	5,837.00	-1,906.29	-100.90	1,907.42	0.00	0.00	0.00	
8,000.00	90.00	180.00	5,837.00	-2,006.29	-100.89	2,007.41	0.00	0.00	0.00	
8,100.00	90.00	180.00	5,837.00	-2,106.29	-100.89	2,107.40	0.00	0.00	0.00	
8,200.00	90.00	180.00	5,837.00	-2,206.29	-100.89	2,207.40	0.00	0.00	0.00	
8,300.00	90.00	180.00	5,837.00	-2,306.29	-100.88	2,307.39	0.00	0.00	0.00	
8,400.00	90.00	180.00	5,837.00	-2,406.29	-100.88	2,407.38	0.00	0.00	0.00	
8,500.00	90.00	180.00	5,837.00	-2,506.29	-100.88	2,507.37	0.00	0.00	0.00	
8,600.00	90.00	180.00	5,837.00	-2,606.29	-100.87	2,607.36	0.00	0.00	0.00	
8,700.00	90.00	180.00	5,837.00	-2,706.29	-100.87	2,707.35	0.00	0.00	0.00	
8,800.00	90.00	180.00	5,837.00	-2,806.29	-100.87	2,807.35	0.00	0.00	0.00	
8,900.00	90.00	180.00	5,837.00	-2,906.29	-100.86	2,907.34	0.00	0.00	0.00	
9,000.00	90.00	180.00	5,837.00	-3,006.29	-100.86	3,007.33	0.00	0.00	0.00	
9,100.00	90.00	180.00	5,837.00	-3,106.29	-100.86	3,107.32	0.00	0.00	0.00	
9,200.00	90.00	180.00	5,837.00	-3,206.29	-100.85	3,207.31	0.00	0.00	0.00	
9,300.00	90.00	180.00	5,837.00	-3,306.29	-100.85	3,307.31	0.00	0.00	0.00	
9,400.00	90.00	180.00	5,837.00	-3,406.29	-100.85	3,407.30	0.00	0.00	0.00	
9,500.00	90.00	180.00	5,837.00	-3,506.29	-100.84	3,507.29	0.00	0.00	0.00	
9,600.00	90.00	180.00	5,837.00	-3,606.29	-100.84	3,607.28	0.00	0.00	0.00	
9,700.00	90.00	180.00	5,837.00	-3,706.29	-100.84	3,707.27	0.00	0.00	0.00	
9,800.00	90.00	180.00	5,837.00	-3,806.29	-100.84	3,807.26	0.00	0.00	0.00	
9,900.00	90.00	180.00	5,837.00	-3,906.29	-100.83	3,907.26	0.00	0.00	0.00	
10,000.00	90.00	180.00	5,837.00	-4,006.29	-100.83	4,007.25	0.00	0.00	0.00	
10,100.00	90.00	180.00	5,837.00	-4,106.29	-100.83	4,107.24	0.00	0.00	0.00	
10,200.00	90.00	180.00	5,837.00	-4,206.29	-100.82	4,207.23	0.00	0.00	0.00	
10,300.00	90.00	180.00	5,837.00	-4,306.29	-100.82	4,307.22	0.00	0.00	0.00	
10,400.00	90.00	180.00	5,837.00	-4,406.29	-100.82	4,407.22	0.00	0.00	0.00	
10,500.00	90.00	180.00	5,837.00	-4,506.29	-100.81	4,507.21	0.00	0.00	0.00	
10,600.00	90.00	180.00	5,837.00	-4,606.29	-100.81	4,607.20	0.00	0.00	0.00	
10,700.00	90.00	180.00	5,837.00	-4,706.29	-100.81	4,707.19	0.00	0.00	0.00	
10,800.00	90.00	180.00	5,837.00	-4,806.29	-100.80	4,807.18	0.00	0.00	0.00	
10,900.00	90.00	180.00	5,837.00	-4,906.29	-100.80	4,907.17	0.00	0.00	0.00	
11,000.00	90.00	180.00	5,837.00	-5,006.29	-100.80	5,007.17	0.00	0.00	0.00	
11,100.00	90.00	180.00	5,837.00	-5,106.29	-100.79	5,107.16	0.00	0.00	0.00	
11,200.00	90.00	180.00	5,837.00	-5,206.29	-100.79	5,207.15	0.00	0.00	0.00	
11,300.00	90.00	180.00	5,837.00	-5,306.29	-100.79	5,307.14	0.00	0.00	0.00	



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07H-1814
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4925.90usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4925.90usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07H-1814	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	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)
11,400.00	90.00	180.00	5,837.00	-5,406.29	-100.78	5,407.13	0.00	0.00	0.00
11,500.00	90.00	180.00	5,837.00	-5,506.29	-100.78	5,507.13	0.00	0.00	0.00
11,600.00	90.00	180.00	5,837.00	-5,606.29	-100.78	5,607.12	0.00	0.00	0.00
11,700.00	90.00	180.00	5,837.00	-5,706.29	-100.77	5,707.11	0.00	0.00	0.00
11,800.00	90.00	180.00	5,837.00	-5,806.29	-100.77	5,807.10	0.00	0.00	0.00
11,900.00	90.00	180.00	5,837.00	-5,906.29	-100.77	5,907.09	0.00	0.00	0.00
12,000.00	90.00	180.00	5,837.00	-6,006.29	-100.76	6,007.09	0.00	0.00	0.00
12,100.00	90.00	180.00	5,837.00	-6,106.29	-100.76	6,107.08	0.00	0.00	0.00
12,200.00	90.00	180.00	5,837.00	-6,206.29	-100.76	6,207.07	0.00	0.00	0.00
12,300.00	90.00	180.00	5,837.00	-6,306.29	-100.75	6,307.06	0.00	0.00	0.00
12,400.00	90.00	180.00	5,837.00	-6,406.29	-100.75	6,407.05	0.00	0.00	0.00
12,500.00	90.00	180.00	5,837.00	-6,506.29	-100.75	6,507.04	0.00	0.00	0.00
12,600.00	90.00	180.00	5,837.00	-6,606.29	-100.74	6,607.04	0.00	0.00	0.00
12,700.00	90.00	180.00	5,837.00	-6,706.29	-100.74	6,707.03	0.00	0.00	0.00
12,800.00	90.00	180.00	5,837.00	-6,806.29	-100.74	6,807.02	0.00	0.00	0.00
12,900.00	90.00	180.00	5,837.00	-6,906.29	-100.73	6,907.01	0.00	0.00	0.00
13,000.00	90.00	180.00	5,837.00	-7,006.29	-100.73	7,007.00	0.00	0.00	0.00
13,100.00	90.00	180.00	5,837.00	-7,106.29	-100.73	7,107.00	0.00	0.00	0.00
13,200.00	90.00	180.00	5,837.00	-7,206.29	-100.72	7,206.99	0.00	0.00	0.00
13,300.00	90.00	180.00	5,837.00	-7,306.29	-100.72	7,306.98	0.00	0.00	0.00
13,400.00	90.00	180.00	5,837.00	-7,406.29	-100.72	7,406.97	0.00	0.00	0.00
13,500.00	90.00	180.00	5,837.00	-7,506.29	-100.71	7,506.96	0.00	0.00	0.00
13,600.00	90.00	180.00	5,837.00	-7,606.29	-100.71	7,606.95	0.00	0.00	0.00
13,700.00	90.00	180.00	5,837.00	-7,706.29	-100.71	7,706.95	0.00	0.00	0.00
13,800.00	90.00	180.00	5,837.00	-7,806.29	-100.70	7,806.94	0.00	0.00	0.00
13,886.78	90.00	180.00	5,837.00	-7,893.07	-100.70	7,893.71	0.00	0.00	0.00
TD at 13886.78' MD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL 1814B - hit/miss target - Shape - Point	0.00	0.00	5,837.00	-7,893.07	-100.70	1,550,478.41	3,473,795.57	40° 49' 54.790 N	103° 47' 16.110 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,150.49	5,837.00	7"	7.000	8.750	



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07H-1814
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4925.90usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4925.90usft (Original Well Elev)
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07H-1814	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,554.14	1,550.00	Upper Pierre				
3,511.59	3,500.00	Hygiene				
3,662.16	3,650.00	Lower Pierre				
5,536.36	5,515.00	P200 Marker				
5,552.70	5,530.00	P300 Marker				
5,574.85	5,550.00	P350 Marker				
5,766.86	5,702.00	Sharon Springs				
5,774.37	5,707.00	Niobrara				
5,805.72	5,727.00	Top A Chalk				
5,871.40	5,764.00	Top A Marl				
5,911.21	5,783.00	A Marl				
5,932.39	5,792.00	Top Upper B				
6,017.05	5,820.00	Base Upper B				
6,150.49	5,837.00	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'	
550.00	549.68	10.50	-2.91	Hold 5° Inc	
4,635.00	4,619.14	353.59	-98.06	Drop 2°/100'	
4,885.00	4,868.82	364.09	-100.97	Hold Vertical	
5,332.31	5,316.13	364.09	-100.97	KOP, Build 11°/100'	
6,150.49	5,837.00	-156.78	-100.95	LP @ 90° Inc, Hold	
13,886.78	5,837.00	-7,893.07	-100.70	TD at 13886.78' MD	