



Project: Weld County, CO
Site: Sec 7-T10N-R57W
Well: Horsetail #07E-0602
Wellbore: Hz
Design: Plan #1

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1550.00	1560.31	Upper Pierre
3500.00	3530.96	Hygiene
3650.00	3682.55	Lower Pierre
5515.00	5562.33	P200 Marker
5530.00	5577.33	P300 Marker
5550.00	5597.35	P350 Marker
5702.00	5753.12	Sharon Springs
5707.00	5758.46	Niobrara
5733.00	5786.57	Top A Chalk
5772.00	5830.08	Top A Marl
5792.00	5853.17	A Marl
5803.00	5866.13	Top Upper B
5826.00	5893.93	Base Upper B
5848.00	5921.56	Top Lower B
5882.00	5966.77	Base Lower B
5890.00	5977.96	Top B Marl
5919.00	6020.72	Top C Chalk
5931.00	6039.66	Middle C Chalk
5947.00	6066.37	Middle C Marl
5971.00	6110.56	Lower C Chalk
5987.00	6143.94	Lower C Marl
6001.00	6177.09	Lower C Marker
6013.00	6210.05	Top Ft. Hays
6027.00	6258.26	Ft. Hays Marker

WELL DETAILS: Horsetail #07E-0602

+N/-S	+E/-W	Northing	Ground Level:	4925.60	Eastings	3469949.54	Latitude	40° 51' 13.750 N	Longitude	103° 48' 4.160 W	Slot
0.00	0.00	1558397.16									

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	715.14	8.30	213.12	713.68	-25.15	-16.40	2.00	213.12	-24.28	
4	4954.20	8.30	213.12	4908.32	-537.85	-350.84	0.00	0.00	-519.35	
5	5389.33	0.00	0.00	5322.00	-563.00	-367.24	2.00	180.00	-543.64	
6	5569.33	0.00	0.00	5522.00	-563.00	-367.24	0.00	0.00	-543.64	
7	6387.72	90.00	360.00	6043.00	-42.00	-367.24	11.00	360.00	-23.31	
8	13656.93	90.00	360.00	6043.00	7227.21	-367.24	0.00	0.00	7236.54	0602 PBHL

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2'100'
713.68	715.14	8.30	213.12	-25.15	-16.40	-24.28	30.03	Hold 8.30° Inc
4908.32	4954.20	8.30	213.12	-537.85	-350.84	-519.35	642.16	Drop 2'100'
5322.00	5389.33	0.00	0.00	-563.00	-367.24	-543.64	672.19	Hold Vertical
5522.00	5569.33	0.00	0.00	-563.00	-367.24	-543.64	672.19	KOP, Build 11'100'
6043.00	6387.72	90.00	360.00	-42.00	-367.24	-23.31	1193.19	LP @ 90° Inc, Hold
6043.00	13656.93	90.00	360.00	7227.21	-367.24	7236.54	8462.40	TD at 13656.93

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude
0602 PBHL	6043.00	7227.21	-367.24	1565616.01	3469443.91	40° 52' 25.160 N	103° 48' 8.940 W
Beffie #1	6739.60	3156.89	-204.56	1561549.55	3469684.54	40° 51' 44.942 N	103° 48' 6.822 W

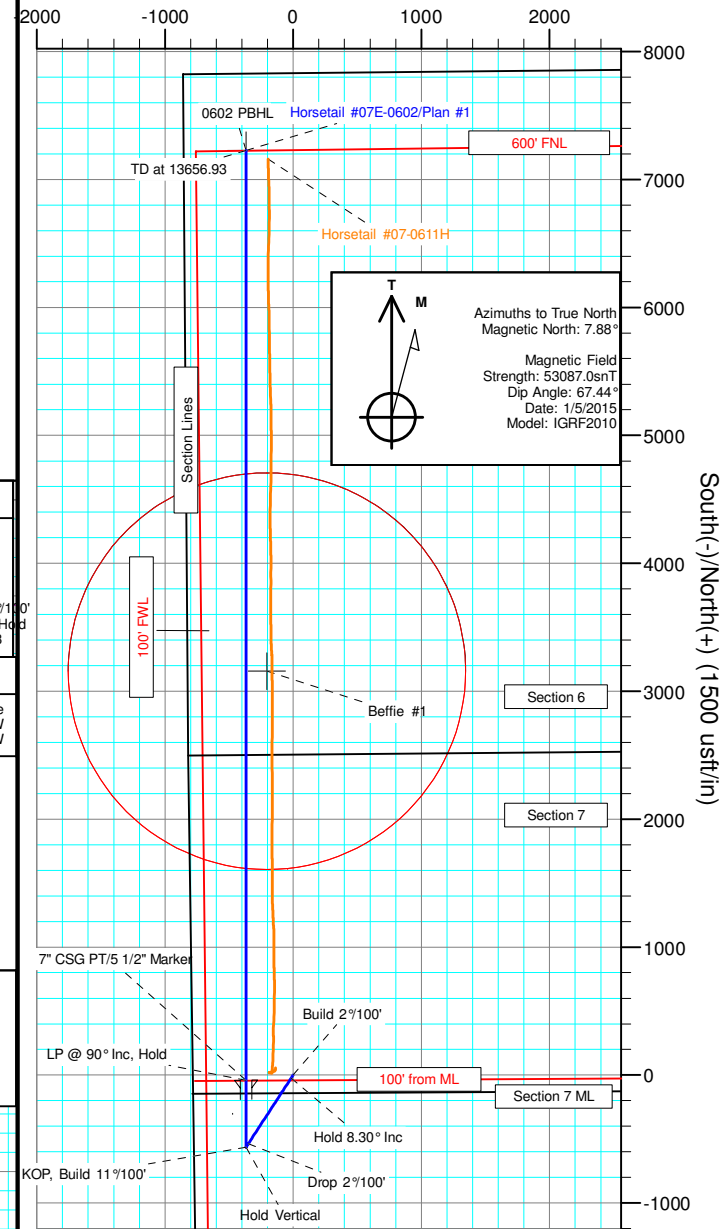
SHL:
2506' FNL, 798' FWL
Sec7-T10N-R57W

BHL:
600' FNL, 488' FWL
Sec6-T10N-R57W

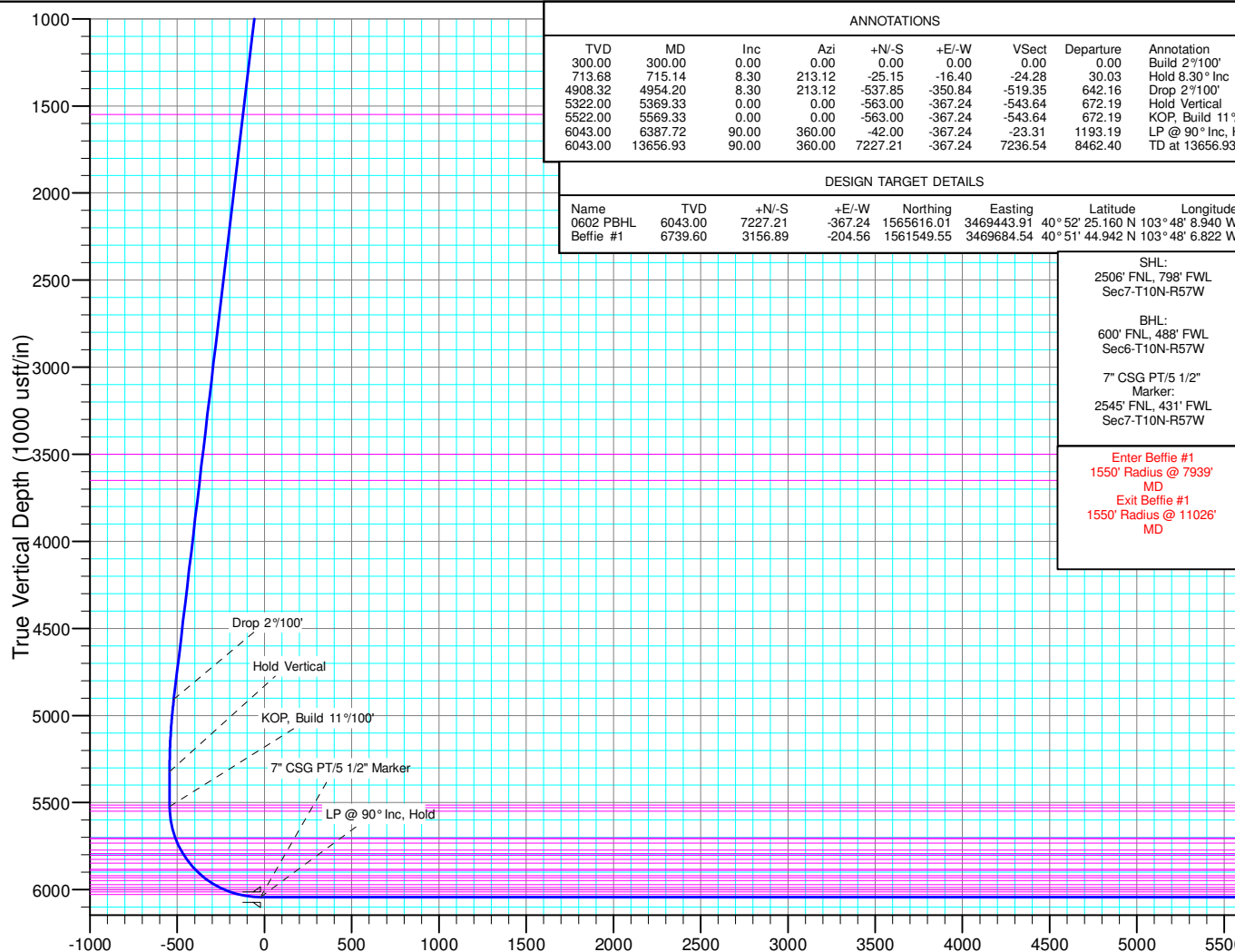
7" CSG PT/5 1/2"
Marker:
2545' FNL, 431' FWL
Sec7-T10N-R57W

Enter Beffie #1
1550' Radius @ 7939'
MD
Exit Beffie #1
1550' Radius @ 11026'
MD

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



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



Vertical Section at 357.09° (1000 usft/in)



Whiting Petroleum Corp.

**Weld County, CO
Sec 7-T10N-R57W
Horsetail #07E-0602**

Hz

Plan: Plan #1

Standard Planning Report

09 November, 2015



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #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 #07E-0602					
Well Position	+N/-S	-55.64 usft	Northing:	1,558,397.16 usft	Latitude:	40° 51' 13.750 N
	+E/-W	138.35 usft	Easting:	3,469,949.54 usft	Longitude:	103° 48' 4.160 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,925.60 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/5/2015	7.89	67.44	53,087

Design	Plan #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	357.09

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	
715.14	8.30	213.12	713.68	-25.15	-16.40	2.00	2.00	0.00	213.12	
4,954.20	8.30	213.12	4,908.32	-537.85	-350.84	0.00	0.00	0.00	0.00	
5,369.33	0.00	0.00	5,322.00	-563.00	-367.24	2.00	-2.00	0.00	180.00	
5,569.33	0.00	0.00	5,522.00	-563.00	-367.24	0.00	0.00	0.00	0.00	
6,387.72	90.00	360.00	6,043.00	-42.00	-367.24	11.00	11.00	0.00	360.00	
13,656.93	90.00	360.00	6,043.00	7,227.21	-367.24	0.00	0.00	0.00	0.00	0602 PBHL



WOG

Planning Report

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Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #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	213.12	399.98	-1.46	-0.95	-1.41	2.00	2.00	0.00	
500.00	4.00	213.12	499.84	-5.84	-3.81	-5.64	2.00	2.00	0.00	
600.00	6.00	213.12	599.45	-13.14	-8.57	-12.69	2.00	2.00	0.00	
700.00	8.00	213.12	698.70	-23.35	-15.23	-22.55	2.00	2.00	0.00	
715.14	8.30	213.12	713.68	-25.15	-16.40	-24.28	2.00	2.00	0.00	
Hold 8.30° Inc										
800.00	8.30	213.12	797.66	-35.41	-23.10	-34.19	0.00	0.00	0.00	
900.00	8.30	213.12	896.61	-47.51	-30.99	-45.87	0.00	0.00	0.00	
1,000.00	8.30	213.12	995.56	-59.60	-38.88	-57.55	0.00	0.00	0.00	
1,100.00	8.30	213.12	1,094.51	-71.70	-46.77	-69.23	0.00	0.00	0.00	
1,200.00	8.30	213.12	1,193.47	-83.79	-54.66	-80.91	0.00	0.00	0.00	
1,300.00	8.30	213.12	1,292.42	-95.89	-62.55	-92.59	0.00	0.00	0.00	
1,400.00	8.30	213.12	1,391.37	-107.98	-70.44	-104.27	0.00	0.00	0.00	
1,500.00	8.30	213.12	1,490.32	-120.08	-78.32	-115.95	0.00	0.00	0.00	
1,560.31	8.30	213.12	1,550.00	-127.37	-83.08	-122.99	0.00	0.00	0.00	
Upper Pierre										
1,600.00	8.30	213.12	1,589.27	-132.17	-86.21	-127.63	0.00	0.00	0.00	
1,700.00	8.30	213.12	1,688.23	-144.27	-94.10	-139.30	0.00	0.00	0.00	
1,800.00	8.30	213.12	1,787.18	-156.36	-101.99	-150.98	0.00	0.00	0.00	
1,900.00	8.30	213.12	1,886.13	-168.45	-109.88	-162.66	0.00	0.00	0.00	
2,000.00	8.30	213.12	1,985.08	-180.55	-117.77	-174.34	0.00	0.00	0.00	
2,100.00	8.30	213.12	2,084.03	-192.64	-125.66	-186.02	0.00	0.00	0.00	
2,200.00	8.30	213.12	2,182.99	-204.74	-133.55	-197.70	0.00	0.00	0.00	
2,300.00	8.30	213.12	2,281.94	-216.83	-141.44	-209.38	0.00	0.00	0.00	
2,400.00	8.30	213.12	2,380.89	-228.93	-149.33	-221.06	0.00	0.00	0.00	
2,500.00	8.30	213.12	2,479.84	-241.02	-157.22	-232.73	0.00	0.00	0.00	
2,600.00	8.30	213.12	2,578.79	-253.12	-165.11	-244.41	0.00	0.00	0.00	
2,700.00	8.30	213.12	2,677.75	-265.21	-173.00	-256.09	0.00	0.00	0.00	
2,800.00	8.30	213.12	2,776.70	-277.31	-180.89	-267.77	0.00	0.00	0.00	
2,900.00	8.30	213.12	2,875.65	-289.40	-188.77	-279.45	0.00	0.00	0.00	
3,000.00	8.30	213.12	2,974.60	-301.50	-196.66	-291.13	0.00	0.00	0.00	
3,100.00	8.30	213.12	3,073.55	-313.59	-204.55	-302.81	0.00	0.00	0.00	
3,200.00	8.30	213.12	3,172.50	-325.69	-212.44	-314.49	0.00	0.00	0.00	
3,300.00	8.30	213.12	3,271.46	-337.78	-220.33	-326.16	0.00	0.00	0.00	
3,400.00	8.30	213.12	3,370.41	-349.88	-228.22	-337.84	0.00	0.00	0.00	
3,500.00	8.30	213.12	3,469.36	-361.97	-236.11	-349.52	0.00	0.00	0.00	
3,530.96	8.30	213.12	3,500.00	-365.72	-238.55	-353.14	0.00	0.00	0.00	
Hygiene										
3,600.00	8.30	213.12	3,568.31	-374.06	-244.00	-361.20	0.00	0.00	0.00	
3,682.55	8.30	213.12	3,650.00	-384.05	-250.51	-370.84	0.00	0.00	0.00	
Lower Pierre										
3,700.00	8.30	213.12	3,667.26	-386.16	-251.89	-372.88	0.00	0.00	0.00	
3,800.00	8.30	213.12	3,766.22	-398.25	-259.78	-384.56	0.00	0.00	0.00	
3,900.00	8.30	213.12	3,865.17	-410.35	-267.67	-396.24	0.00	0.00	0.00	
4,000.00	8.30	213.12	3,964.12	-422.44	-275.56	-407.92	0.00	0.00	0.00	
4,100.00	8.30	213.12	4,063.07	-434.54	-283.45	-419.59	0.00	0.00	0.00	
4,200.00	8.30	213.12	4,162.02	-446.63	-291.33	-431.27	0.00	0.00	0.00	
4,300.00	8.30	213.12	4,260.98	-458.73	-299.22	-442.95	0.00	0.00	0.00	
4,400.00	8.30	213.12	4,359.93	-470.82	-307.11	-454.63	0.00	0.00	0.00	



WOG Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #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	8.30	213.12	4,458.88	-482.92	-315.00	-466.31	0.00	0.00	0.00	
4,600.00	8.30	213.12	4,557.83	-495.01	-322.89	-477.99	0.00	0.00	0.00	
4,700.00	8.30	213.12	4,656.78	-507.11	-330.78	-489.67	0.00	0.00	0.00	
4,800.00	8.30	213.12	4,755.73	-519.20	-338.67	-501.35	0.00	0.00	0.00	
4,900.00	8.30	213.12	4,854.69	-531.30	-346.56	-513.02	0.00	0.00	0.00	
4,954.20	8.30	213.12	4,908.32	-537.85	-350.84	-519.35	0.00	0.00	0.00	
Drop 2°/100'										
5,000.00	7.39	213.12	4,953.69	-543.09	-354.25	-524.41	2.00	-2.00	0.00	
5,100.00	5.39	213.12	5,053.06	-552.40	-360.33	-533.41	2.00	-2.00	0.00	
5,200.00	3.39	213.12	5,152.77	-558.81	-364.51	-539.59	2.00	-2.00	0.00	
5,300.00	1.39	213.12	5,252.67	-562.30	-366.78	-542.96	2.00	-2.00	0.00	
5,369.33	0.00	0.00	5,322.00	-563.00	-367.24	-543.64	2.00	-2.00	211.85	
Hold Vertical										
5,400.00	0.00	0.00	5,352.67	-563.00	-367.24	-543.64	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,452.67	-563.00	-367.24	-543.64	0.00	0.00	0.00	
5,562.33	0.00	0.00	5,515.00	-563.00	-367.24	-543.64	0.00	0.00	0.00	
P200 Marker										
5,569.33	0.00	0.00	5,522.00	-563.00	-367.24	-543.64	0.00	0.00	0.00	
KOP, Build 11°/100'										
5,577.33	0.88	360.00	5,530.00	-562.94	-367.24	-543.58	11.00	11.00	0.00	
P300 Marker										
5,597.35	3.08	360.00	5,550.00	-562.25	-367.24	-542.89	11.00	11.00	0.00	
P350 Marker										
5,600.00	3.37	360.00	5,552.65	-562.10	-367.24	-542.74	11.00	11.00	0.00	
5,650.00	8.87	360.00	5,602.35	-556.77	-367.24	-537.41	11.00	11.00	0.00	
5,700.00	14.37	360.00	5,651.30	-546.70	-367.24	-527.36	11.00	11.00	0.00	
5,750.00	19.87	360.00	5,699.07	-531.99	-367.24	-512.67	11.00	11.00	0.00	
5,753.12	20.21	360.00	5,702.00	-530.92	-367.24	-511.60	11.00	11.00	0.00	
Sharon Springs										
5,758.46	20.80	360.00	5,707.00	-529.05	-367.24	-509.73	11.00	11.00	0.00	
Niobrara										
5,786.57	23.89	360.00	5,733.00	-518.36	-367.24	-499.06	11.00	11.00	0.00	
Top A Chalk										
5,800.00	25.37	360.00	5,745.21	-512.77	-367.24	-493.47	11.00	11.00	0.00	
5,830.08	28.68	360.00	5,772.00	-499.10	-367.24	-479.82	11.00	11.00	0.00	
Top A Marl										
5,850.00	30.87	360.00	5,789.29	-489.21	-367.24	-469.94	11.00	11.00	0.00	
5,853.17	31.21	360.00	5,792.00	-487.58	-367.24	-468.31	11.00	11.00	0.00	
A Marl										
5,866.13	32.64	360.00	5,803.00	-480.73	-367.24	-461.47	11.00	11.00	0.00	
Top Upper B										
5,893.93	35.70	360.00	5,826.00	-465.11	-367.24	-445.88	11.00	11.00	0.00	
Base Upper B										
5,900.00	36.36	360.00	5,830.91	-461.54	-367.24	-442.31	11.00	11.00	0.00	
5,921.56	38.74	360.00	5,848.00	-448.40	-367.24	-429.19	11.00	11.00	0.00	
Top Lower B										
5,950.00	41.86	360.00	5,869.69	-430.01	-367.24	-410.82	11.00	11.00	0.00	
5,966.77	43.71	360.00	5,882.00	-418.62	-367.24	-399.44	11.00	11.00	0.00	
Base Lower B										
5,977.96	44.94	360.00	5,890.00	-410.80	-367.24	-391.64	11.00	11.00	0.00	
Top B Marl										
6,000.00	47.36	360.00	5,905.27	-394.91	-367.24	-375.76	11.00	11.00	0.00	



WOG

Planning Report

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Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #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)
6,020.72	49.64	360.00	5,919.00	-379.39	-367.24	-360.26	11.00	11.00	0.00
Top C Chalk									
6,039.66	51.72	360.00	5,931.00	-364.74	-367.24	-345.63	11.00	11.00	0.00
Middle C Chalk									
6,050.00	52.86	360.00	5,937.32	-356.56	-367.24	-337.46	11.00	11.00	0.00
6,066.37	54.66	360.00	5,947.00	-343.36	-367.24	-324.28	11.00	11.00	0.00
Middle C Marl									
6,100.00	58.36	360.00	5,965.55	-315.31	-367.24	-296.27	11.00	11.00	0.00
6,110.56	59.52	360.00	5,971.00	-306.27	-367.24	-287.24	11.00	11.00	0.00
Lower C Chalk									
6,143.94	63.19	360.00	5,987.00	-276.98	-367.24	-257.99	11.00	11.00	0.00
Lower C Marl									
6,150.00	63.86	360.00	5,989.70	-271.55	-367.24	-252.57	11.00	11.00	0.00
6,177.09	66.84	360.00	6,001.00	-246.94	-367.24	-227.98	11.00	11.00	0.00
Lower C Marker									
6,200.00	69.36	360.00	6,009.55	-225.68	-367.24	-206.75	11.00	11.00	0.00
6,210.05	70.46	360.00	6,013.00	-216.24	-367.24	-197.33	11.00	11.00	0.00
Top Ft. Hays									
6,250.00	74.85	360.00	6,024.90	-178.12	-367.24	-159.25	11.00	11.00	0.00
6,258.26	75.76	360.00	6,027.00	-170.12	-367.24	-151.27	11.00	11.00	0.00
Ft. Hays Marker									
6,300.00	80.35	360.00	6,035.63	-129.30	-367.24	-110.50	11.00	11.00	0.00
6,350.00	85.85	360.00	6,041.64	-79.68	-367.24	-60.95	11.00	11.00	0.00
6,387.72	90.00	360.00	6,043.00	-42.00	-367.24	-23.31	11.00	11.00	0.00
LP @ 90° Inc, Hold - 7" CSG PT/5 1/2" Marker									
6,400.00	90.00	360.00	6,043.00	-29.72	-367.24	-11.04	0.00	0.00	0.00
6,500.00	90.00	360.00	6,043.00	70.28	-367.24	88.83	0.00	0.00	0.00
6,600.00	90.00	360.00	6,043.00	170.28	-367.24	188.70	0.00	0.00	0.00
6,700.00	90.00	360.00	6,043.00	270.28	-367.24	288.57	0.00	0.00	0.00
6,800.00	90.00	360.00	6,043.00	370.28	-367.24	388.44	0.00	0.00	0.00
6,900.00	90.00	360.00	6,043.00	470.28	-367.24	488.31	0.00	0.00	0.00
7,000.00	90.00	360.00	6,043.00	570.28	-367.24	588.18	0.00	0.00	0.00
7,100.00	90.00	360.00	6,043.00	670.28	-367.24	688.06	0.00	0.00	0.00
7,200.00	90.00	360.00	6,043.00	770.28	-367.24	787.93	0.00	0.00	0.00
7,300.00	90.00	360.00	6,043.00	870.28	-367.24	887.80	0.00	0.00	0.00
7,400.00	90.00	360.00	6,043.00	970.28	-367.24	987.67	0.00	0.00	0.00
7,500.00	90.00	360.00	6,043.00	1,070.28	-367.24	1,087.54	0.00	0.00	0.00
7,600.00	90.00	360.00	6,043.00	1,170.28	-367.24	1,187.41	0.00	0.00	0.00
7,700.00	90.00	360.00	6,043.00	1,270.28	-367.24	1,287.28	0.00	0.00	0.00
7,800.00	90.00	360.00	6,043.00	1,370.28	-367.24	1,387.15	0.00	0.00	0.00
7,900.00	90.00	360.00	6,043.00	1,470.28	-367.24	1,487.02	0.00	0.00	0.00
8,000.00	90.00	360.00	6,043.00	1,570.28	-367.24	1,586.90	0.00	0.00	0.00
8,100.00	90.00	360.00	6,043.00	1,670.28	-367.24	1,686.77	0.00	0.00	0.00
8,200.00	90.00	360.00	6,043.00	1,770.28	-367.24	1,786.64	0.00	0.00	0.00
8,300.00	90.00	360.00	6,043.00	1,870.28	-367.24	1,886.51	0.00	0.00	0.00
8,400.00	90.00	360.00	6,043.00	1,970.28	-367.24	1,986.38	0.00	0.00	0.00
8,500.00	90.00	360.00	6,043.00	2,070.28	-367.24	2,086.25	0.00	0.00	0.00
8,600.00	90.00	360.00	6,043.00	2,170.28	-367.24	2,186.12	0.00	0.00	0.00
8,700.00	90.00	360.00	6,043.00	2,270.28	-367.24	2,285.99	0.00	0.00	0.00
8,800.00	90.00	360.00	6,043.00	2,370.28	-367.24	2,385.87	0.00	0.00	0.00
8,900.00	90.00	360.00	6,043.00	2,470.28	-367.24	2,485.74	0.00	0.00	0.00
9,000.00	90.00	360.00	6,043.00	2,570.28	-367.24	2,585.61	0.00	0.00	0.00
9,100.00	90.00	360.00	6,043.00	2,670.28	-367.24	2,685.48	0.00	0.00	0.00



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #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)
9,200.00	90.00	360.00	6,043.00	2,770.28	-367.24	2,785.35	0.00	0.00	0.00
9,300.00	90.00	360.00	6,043.00	2,870.28	-367.24	2,885.22	0.00	0.00	0.00
9,400.00	90.00	360.00	6,043.00	2,970.28	-367.24	2,985.09	0.00	0.00	0.00
9,500.00	90.00	360.00	6,043.00	3,070.28	-367.24	3,084.96	0.00	0.00	0.00
9,600.00	90.00	360.00	6,043.00	3,170.28	-367.24	3,184.83	0.00	0.00	0.00
9,700.00	90.00	360.00	6,043.00	3,270.28	-367.24	3,284.71	0.00	0.00	0.00
9,800.00	90.00	360.00	6,043.00	3,370.28	-367.24	3,384.58	0.00	0.00	0.00
9,900.00	90.00	360.00	6,043.00	3,470.28	-367.24	3,484.45	0.00	0.00	0.00
10,000.00	90.00	360.00	6,043.00	3,570.28	-367.24	3,584.32	0.00	0.00	0.00
10,100.00	90.00	360.00	6,043.00	3,670.28	-367.24	3,684.19	0.00	0.00	0.00
10,200.00	90.00	360.00	6,043.00	3,770.28	-367.24	3,784.06	0.00	0.00	0.00
10,300.00	90.00	360.00	6,043.00	3,870.28	-367.24	3,883.93	0.00	0.00	0.00
10,400.00	90.00	360.00	6,043.00	3,970.28	-367.24	3,983.80	0.00	0.00	0.00
10,500.00	90.00	360.00	6,043.00	4,070.28	-367.24	4,083.67	0.00	0.00	0.00
10,600.00	90.00	360.00	6,043.00	4,170.28	-367.24	4,183.55	0.00	0.00	0.00
10,700.00	90.00	360.00	6,043.00	4,270.28	-367.24	4,283.42	0.00	0.00	0.00
10,800.00	90.00	360.00	6,043.00	4,370.28	-367.24	4,383.29	0.00	0.00	0.00
10,900.00	90.00	360.00	6,043.00	4,470.28	-367.24	4,483.16	0.00	0.00	0.00
11,000.00	90.00	360.00	6,043.00	4,570.28	-367.24	4,583.03	0.00	0.00	0.00
11,100.00	90.00	360.00	6,043.00	4,670.28	-367.24	4,682.90	0.00	0.00	0.00
11,200.00	90.00	360.00	6,043.00	4,770.28	-367.24	4,782.77	0.00	0.00	0.00
11,300.00	90.00	360.00	6,043.00	4,870.28	-367.24	4,882.64	0.00	0.00	0.00
11,400.00	90.00	360.00	6,043.00	4,970.28	-367.24	4,982.52	0.00	0.00	0.00
11,500.00	90.00	360.00	6,043.00	5,070.28	-367.24	5,082.39	0.00	0.00	0.00
11,600.00	90.00	360.00	6,043.00	5,170.28	-367.24	5,182.26	0.00	0.00	0.00
11,700.00	90.00	360.00	6,043.00	5,270.28	-367.24	5,282.13	0.00	0.00	0.00
11,800.00	90.00	360.00	6,043.00	5,370.28	-367.24	5,382.00	0.00	0.00	0.00
11,900.00	90.00	360.00	6,043.00	5,470.28	-367.24	5,481.87	0.00	0.00	0.00
12,000.00	90.00	360.00	6,043.00	5,570.28	-367.24	5,581.74	0.00	0.00	0.00
12,100.00	90.00	360.00	6,043.00	5,670.28	-367.24	5,681.61	0.00	0.00	0.00
12,200.00	90.00	360.00	6,043.00	5,770.28	-367.24	5,781.48	0.00	0.00	0.00
12,300.00	90.00	360.00	6,043.00	5,870.28	-367.24	5,881.36	0.00	0.00	0.00
12,400.00	90.00	360.00	6,043.00	5,970.28	-367.24	5,981.23	0.00	0.00	0.00
12,500.00	90.00	360.00	6,043.00	6,070.28	-367.24	6,081.10	0.00	0.00	0.00
12,600.00	90.00	360.00	6,043.00	6,170.28	-367.24	6,180.97	0.00	0.00	0.00
12,700.00	90.00	360.00	6,043.00	6,270.28	-367.24	6,280.84	0.00	0.00	0.00
12,800.00	90.00	360.00	6,043.00	6,370.28	-367.24	6,380.71	0.00	0.00	0.00
12,900.00	90.00	360.00	6,043.00	6,470.28	-367.24	6,480.58	0.00	0.00	0.00
13,000.00	90.00	360.00	6,043.00	6,570.28	-367.24	6,580.45	0.00	0.00	0.00
13,100.00	90.00	360.00	6,043.00	6,670.28	-367.24	6,680.32	0.00	0.00	0.00
13,200.00	90.00	360.00	6,043.00	6,770.28	-367.24	6,780.20	0.00	0.00	0.00
13,300.00	90.00	360.00	6,043.00	6,870.28	-367.24	6,880.07	0.00	0.00	0.00
13,400.00	90.00	360.00	6,043.00	6,970.28	-367.24	6,979.94	0.00	0.00	0.00
13,500.00	90.00	360.00	6,043.00	7,070.28	-367.24	7,079.81	0.00	0.00	0.00
13,600.00	90.00	360.00	6,043.00	7,170.28	-367.24	7,179.68	0.00	0.00	0.00
13,656.93	90.00	360.00	6,043.00	7,227.21	-367.24	7,236.54	0.00	0.00	0.00
TD at 13656.93									



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
0602 PBHL	0.00	0.00	6,043.00	7,227.21	-367.24	1,565,616.01	3,469,443.91	40° 52' 25.160 N	103° 48' 8.940 W
- plan hits target center									
- Point									
Beffie #1	0.00	0.00	6,739.60	3,156.89	-204.56	1,561,549.56	3,469,684.53	40° 51' 44.942 N	103° 48' 6.822 W
- plan misses target center by 715.34usft at 9586.61usft MD (6043.00 TVD, 3156.89 N, -367.24 E)									
- Circle (radius 1,550.00)									

Casing Points					
	Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
	(usft)	(usft)		(in)	(in)
	6,387.72	6,043.00	7" CSG PT/5 1/2" Marker	7.000	8.750

Formations						
	Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
	(usft)	(usft)			(°)	(°)
	1,560.31	1,550.00	Upper Pierre			
	3,530.96	3,500.00	Hygiene			
	3,682.55	3,650.00	Lower Pierre			
	5,562.33	5,515.00	P200 Marker			
	5,577.33	5,530.00	P300 Marker			
	5,597.35	5,550.00	P350 Marker			
	5,753.12	5,702.00	Sharon Springs			
	5,758.46	5,707.00	Niobrara			
	5,786.57	5,733.00	Top A Chalk			
	5,830.08	5,772.00	Top A Marl			
	5,853.17	5,792.00	A Marl			
	5,866.13	5,803.00	Top Upper B			
	5,893.93	5,826.00	Base Upper B			
	5,921.56	5,848.00	Top Lower B			
	5,966.77	5,882.00	Base Lower B			
	5,977.96	5,890.00	Top B Marl			
	6,020.72	5,919.00	Top C Chalk			
	6,039.66	5,931.00	Middle C Chalk			
	6,066.37	5,947.00	Middle C Marl			
	6,110.56	5,971.00	Lower C Chalk			
	6,143.94	5,987.00	Lower C Marl			
	6,177.09	6,001.00	Lower C Marker			
	6,210.05	6,013.00	Top Ft. Hays			
	6,258.26	6,027.00	Ft. Hays Marker			



WOG
Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Horsetail #07E-0602
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4946.60usft
Project:	Weld County, CO	MD Reference:	KBE @ 4946.60usft
Site:	Sec 7-T10N-R57W	North Reference:	True
Well:	Horsetail #07E-0602	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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'
715.14	713.68	-25.15	-16.40	Hold 8.30° Inc
4,954.20	4,908.32	-537.85	-350.84	Drop 2°/100'
5,369.33	5,322.00	-563.00	-367.24	Hold Vertical
5,569.33	5,522.00	-563.00	-367.24	KOP, Build 11°/100'
6,387.72	6,043.00	-42.00	-367.24	LP @ 90° Inc, Hold
13,656.93	6,043.00	7,227.21	-367.24	TD at 13656.93