



Company: Whiting Oil & Gas
Field: Weld Co., CO
Location: Sec.30-T10N-R57W
Well: Horsetail 30F-3105
Borehole: Original Hole
Rig: Xtreme 18
Plan: Rev 0



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	Begin Nudge
3	700.00	4.00	198.25	699.84	-6.63	-2.19	2.00	198.25	6.72	Hold Tangent
4	5040.20	4.00	198.25	5029.47	-294.16	-97.00	0.00	0.00	298.33	KOP, Build 11°/100' DLS
5	5822.02	90.00	198.25	5514.00	-787.62	-259.72	11.00	0.00	798.80	LP, Begin Turn
6	6430.42	90.00	180.00	5514.00	-1385.79	-355.79	3.00	-90.00	1400.77	EOT, Hold to TD
7	12717.94	90.00	180.00	5514.00	-7673.31	-355.55	0.00	0.00	7681.54	PBHL/TD

WELL DETAILS: Horsetail 30F-3105

+N/-S	+E/-W	GL 4780.00	KB @ 4797.00usft (Xtreme 18 17' KB)	Longitude
0.00	0.00	Northing 1542660.16	Easting 3471610.10	40° 48' 37.969 N 103° 47' 46.489 W

WELLBORE TARGET DETAILS

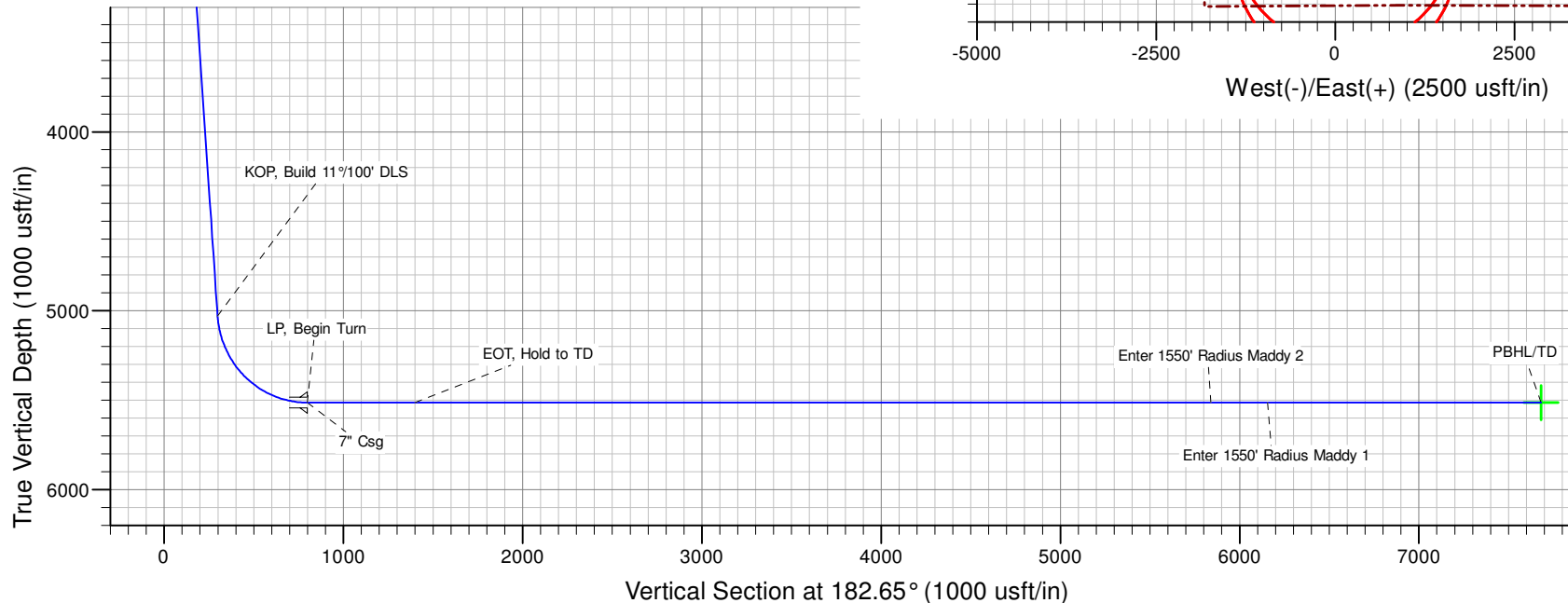
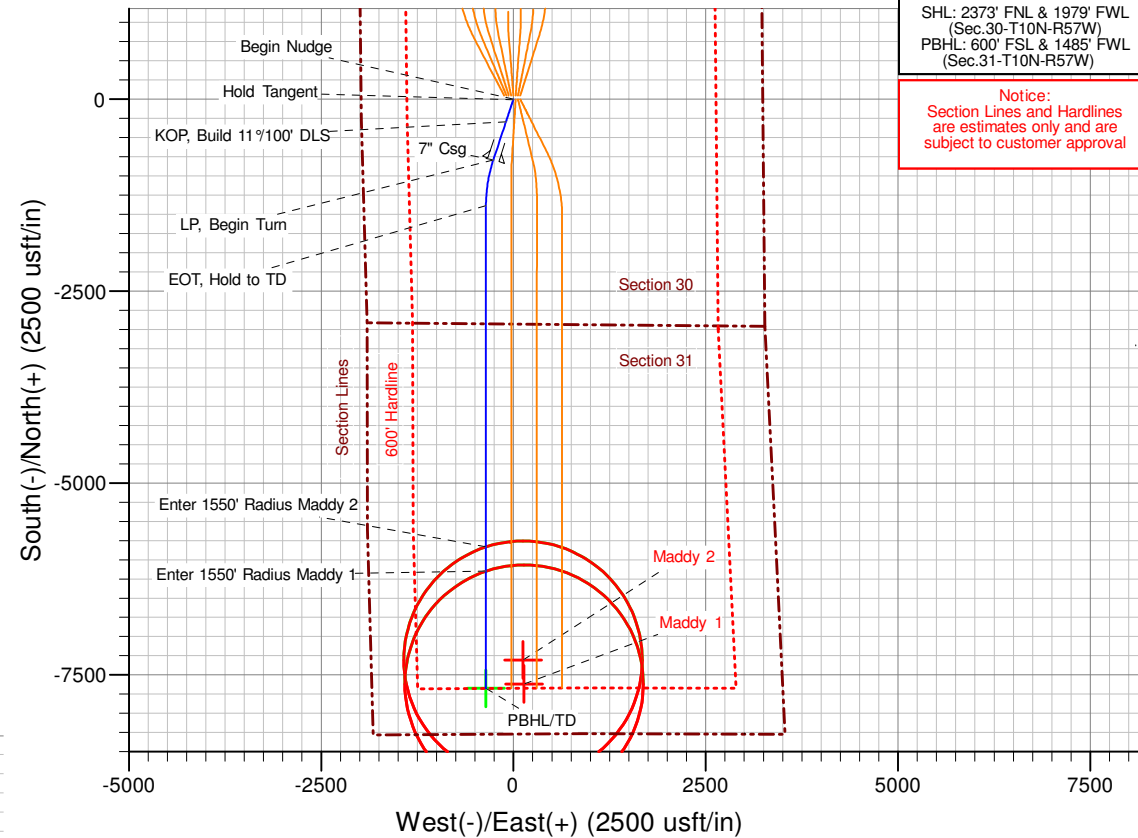
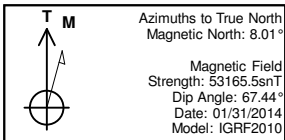
Name	TVD	+N/-S	+E/-W	Shape
PBHL Horsetail 30F-3105	5514.00	-7673.31	-355.55	Point
Maddy #1	6300.00	-7615.38	139.29	Circle (Radius: 1550.00)
Maddy #2	6500.00	-7303.87	125.72	Circle (Radius: 1550.00)

CASING DETAILS

TVD	MD	Name	Size
5514.00	5822.02	7" Csg	7

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1498.00	1500.11	Pierre
1550.00	1552.24	Surface Casing
5469.00	5603.91	Niobrara
5514.00	5820.69	Target TVD



7" Casing:
2136 FSL 1719 FWL
240' From Horsetail 30F-3105

Enter Maddy 2
1550' Radius @ 10,875' MD
Enter Maddy 1
1550' Radius @ 11,191' MD



Whiting Oil & Gas

**Weld Co., CO
Sec.30-T10N-R57W
Horsetail 30F-3105**

Original Hole

Plan: Rev 0

Standard Planning Report

04 February, 2014



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Horsetail 30F-3105
Company:	Whiting Oil & Gas	TVD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Project:	Weld Co., CO	MD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Site:	Sec.30-T10N-R57W	North Reference:	True
Well:	Horsetail 30F-3105	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Project	Weld Co., 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.30-T10N-R57W			
Site Position:		Northing:	1,542,707.40 usft	Latitude: 40° 48' 38.459 N
From:	Lat/Long	Easting:	3,471,489.02 usft	Longitude: 103° 47' 48.052 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 1.10 °

Well	Horsetail 30F-3105			
Well Position	+N/-S	-49.56 usft	Northing:	1,542,660.16 usft
	+E/-W	120.14 usft	Easting:	3,471,610.09 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	4,797.00 usft	Ground Level: 4,780.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	01/31/14	8.01	67.44	53,166

Design	Rev 0			
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	182.65

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	4.00	198.25	699.84	-6.63	-2.19	2.00	2.00	0.00	198.25	
5,040.20	4.00	198.25	5,029.47	-294.16	-97.00	0.00	0.00	0.00	0.00	
5,822.02	90.00	198.25	5,514.00	-787.62	-259.72	11.00	11.00	0.00	0.00	
6,430.42	90.00	180.00	5,514.00	-1,385.79	-355.79	3.00	0.00	-3.00	-90.00	
12,717.94	90.00	180.00	5,514.00	-7,673.31	-355.55	0.00	0.00	0.00	0.00	PBHL Horsetail 30F-3



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Horsetail 30F-3105
Company:	Whiting Oil & Gas	TVD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Project:	Weld Co., CO	MD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Site:	Sec.30-T10N-R57W	North Reference:	True
Well:	Horsetail 30F-3105	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge									
600.00	2.00	198.25	599.98	-1.66	-0.55	1.68	2.00	2.00	0.00
700.00	4.00	198.25	699.84	-6.63	-2.19	6.72	2.00	2.00	0.00
Hold Tangent									
800.00	4.00	198.25	799.59	-13.25	-4.37	13.44	0.00	0.00	0.00
900.00	4.00	198.25	899.35	-19.88	-6.55	20.16	0.00	0.00	0.00
1,000.00	4.00	198.25	999.11	-26.50	-8.74	26.88	0.00	0.00	0.00
1,100.00	4.00	198.25	1,098.86	-33.13	-10.92	33.60	0.00	0.00	0.00
1,200.00	4.00	198.25	1,198.62	-39.75	-13.11	40.32	0.00	0.00	0.00
1,300.00	4.00	198.25	1,298.38	-46.38	-15.29	47.03	0.00	0.00	0.00
1,400.00	4.00	198.25	1,398.13	-53.00	-17.48	53.75	0.00	0.00	0.00
1,500.00	4.00	198.25	1,497.89	-59.63	-19.66	60.47	0.00	0.00	0.00
1,500.11	4.00	198.25	1,498.00	-59.63	-19.66	60.48	0.00	0.00	0.00
Pierre									
1,552.24	4.00	198.25	1,550.00	-63.09	-20.80	63.98	0.00	0.00	0.00
Surface Casing									
1,600.00	4.00	198.25	1,597.65	-66.25	-21.85	67.19	0.00	0.00	0.00
1,700.00	4.00	198.25	1,697.40	-72.88	-24.03	73.91	0.00	0.00	0.00
1,800.00	4.00	198.25	1,797.16	-79.50	-26.22	80.63	0.00	0.00	0.00
1,900.00	4.00	198.25	1,896.91	-86.12	-28.40	87.35	0.00	0.00	0.00
2,000.00	4.00	198.25	1,996.67	-92.75	-30.58	94.07	0.00	0.00	0.00
2,100.00	4.00	198.25	2,096.43	-99.37	-32.77	100.78	0.00	0.00	0.00
2,200.00	4.00	198.25	2,196.18	-106.00	-34.95	107.50	0.00	0.00	0.00
2,300.00	4.00	198.25	2,295.94	-112.62	-37.14	114.22	0.00	0.00	0.00
2,400.00	4.00	198.25	2,395.70	-119.25	-39.32	120.94	0.00	0.00	0.00
2,500.00	4.00	198.25	2,495.45	-125.87	-41.51	127.66	0.00	0.00	0.00
2,600.00	4.00	198.25	2,595.21	-132.50	-43.69	134.38	0.00	0.00	0.00
2,700.00	4.00	198.25	2,694.97	-139.12	-45.88	141.10	0.00	0.00	0.00
2,800.00	4.00	198.25	2,794.72	-145.75	-48.06	147.82	0.00	0.00	0.00
2,900.00	4.00	198.25	2,894.48	-152.37	-50.24	154.53	0.00	0.00	0.00
3,000.00	4.00	198.25	2,994.23	-159.00	-52.43	161.25	0.00	0.00	0.00
3,100.00	4.00	198.25	3,093.99	-165.62	-54.61	167.97	0.00	0.00	0.00
3,200.00	4.00	198.25	3,193.75	-172.25	-56.80	174.69	0.00	0.00	0.00
3,300.00	4.00	198.25	3,293.50	-178.87	-58.98	181.41	0.00	0.00	0.00
3,400.00	4.00	198.25	3,393.26	-185.50	-61.17	188.13	0.00	0.00	0.00
3,500.00	4.00	198.25	3,493.02	-192.12	-63.35	194.85	0.00	0.00	0.00
3,600.00	4.00	198.25	3,592.77	-198.75	-65.54	201.57	0.00	0.00	0.00
3,700.00	4.00	198.25	3,692.53	-205.37	-67.72	208.28	0.00	0.00	0.00
3,800.00	4.00	198.25	3,792.29	-212.00	-69.91	215.00	0.00	0.00	0.00
3,900.00	4.00	198.25	3,892.04	-218.62	-72.09	221.72	0.00	0.00	0.00
4,000.00	4.00	198.25	3,991.80	-225.24	-74.27	228.44	0.00	0.00	0.00
4,100.00	4.00	198.25	4,091.56	-231.87	-76.46	235.16	0.00	0.00	0.00
4,200.00	4.00	198.25	4,191.31	-238.49	-78.64	241.88	0.00	0.00	0.00
4,300.00	4.00	198.25	4,291.07	-245.12	-80.83	248.60	0.00	0.00	0.00
4,400.00	4.00	198.25	4,390.82	-251.74	-83.01	255.32	0.00	0.00	0.00
4,500.00	4.00	198.25	4,490.58	-258.37	-85.20	262.04	0.00	0.00	0.00
4,600.00	4.00	198.25	4,590.34	-264.99	-87.38	268.75	0.00	0.00	0.00
4,700.00	4.00	198.25	4,690.09	-271.62	-89.57	275.47	0.00	0.00	0.00



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Company:	Whiting Oil & Gas	TVD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Project:	Weld Co., CO	MD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Site:	Sec.30-T10N-R57W	North Reference:	True
Well:	Horsetail 30F-3105	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.00	4.00	198.25	4,789.85	-278.24	-91.75	282.19	0.00	0.00	0.00
4,900.00	4.00	198.25	4,889.61	-284.87	-93.94	288.91	0.00	0.00	0.00
5,000.00	4.00	198.25	4,989.36	-291.49	-96.12	295.63	0.00	0.00	0.00
5,040.20	4.00	198.25	5,029.47	-294.16	-97.00	298.33	0.00	0.00	0.00
KOP, Build 11°/100' DLS									
5,100.00	10.58	198.25	5,088.75	-301.36	-99.37	305.63	11.00	11.00	0.00
5,200.00	21.58	198.25	5,184.69	-327.62	-108.03	332.27	11.00	11.00	0.00
5,300.00	32.58	198.25	5,273.59	-370.78	-122.27	376.04	11.00	11.00	0.00
5,400.00	43.58	198.25	5,352.19	-429.26	-141.55	435.36	11.00	11.00	0.00
5,500.00	54.58	198.25	5,417.59	-500.91	-165.18	508.02	11.00	11.00	0.00
5,600.00	65.58	198.25	5,467.40	-583.10	-192.28	591.37	11.00	11.00	0.00
5,603.91	66.01	198.25	5,469.00	-586.48	-193.39	594.81	11.00	11.00	0.00
Niobrara									
5,700.00	76.58	198.25	5,499.78	-672.80	-221.86	682.35	11.00	11.00	0.00
5,800.00	87.58	198.25	5,513.54	-766.72	-252.83	777.60	11.00	11.00	0.00
5,820.69	89.85	198.25	5,514.00	-786.36	-259.30	797.52	11.00	11.00	0.00
Target TVD									
5,822.02	90.00	198.25	5,514.00	-787.62	-259.72	798.80	10.98	10.98	0.00
LP, Begin Turn - 7" Csg									
5,900.00	90.00	195.91	5,514.00	-862.16	-282.62	874.32	3.00	0.00	-3.00
6,000.00	90.00	192.91	5,514.00	-959.00	-307.50	972.21	3.00	0.00	-3.00
6,100.00	90.00	189.91	5,514.00	-1,057.01	-327.29	1,071.03	3.00	0.00	-3.00
6,200.00	90.00	186.91	5,514.00	-1,155.93	-341.91	1,170.51	3.00	0.00	-3.00
6,300.00	90.00	183.91	5,514.00	-1,255.47	-351.34	1,270.39	3.00	0.00	-3.00
6,400.00	90.00	180.91	5,514.00	-1,355.37	-355.54	1,370.37	3.00	0.00	-3.00
6,430.42	90.00	180.00	5,514.00	-1,385.79	-355.79	1,400.77	3.00	0.00	-3.00
EOT, Hold to TD									
6,500.00	90.00	180.00	5,514.00	-1,455.37	-355.78	1,470.28	0.00	0.00	0.00
6,600.00	90.00	180.00	5,514.00	-1,555.37	-355.78	1,570.17	0.00	0.00	0.00
6,700.00	90.00	180.00	5,514.00	-1,655.37	-355.78	1,670.06	0.00	0.00	0.00
6,800.00	90.00	180.00	5,514.00	-1,755.37	-355.77	1,769.95	0.00	0.00	0.00
6,900.00	90.00	180.00	5,514.00	-1,855.37	-355.77	1,869.85	0.00	0.00	0.00
7,000.00	90.00	180.00	5,514.00	-1,955.37	-355.76	1,969.74	0.00	0.00	0.00
7,100.00	90.00	180.00	5,514.00	-2,055.37	-355.76	2,069.63	0.00	0.00	0.00
7,200.00	90.00	180.00	5,514.00	-2,155.37	-355.76	2,169.53	0.00	0.00	0.00
7,300.00	90.00	180.00	5,514.00	-2,255.37	-355.75	2,269.42	0.00	0.00	0.00
7,400.00	90.00	180.00	5,514.00	-2,355.37	-355.75	2,369.31	0.00	0.00	0.00
7,500.00	90.00	180.00	5,514.00	-2,455.37	-355.75	2,469.20	0.00	0.00	0.00
7,600.00	90.00	180.00	5,514.00	-2,555.37	-355.74	2,569.10	0.00	0.00	0.00
7,700.00	90.00	180.00	5,514.00	-2,655.37	-355.74	2,668.99	0.00	0.00	0.00
7,800.00	90.00	180.00	5,514.00	-2,755.37	-355.74	2,768.88	0.00	0.00	0.00
7,900.00	90.00	180.00	5,514.00	-2,855.37	-355.73	2,868.77	0.00	0.00	0.00
8,000.00	90.00	180.00	5,514.00	-2,955.37	-355.73	2,968.67	0.00	0.00	0.00
8,100.00	90.00	180.00	5,514.00	-3,055.37	-355.72	3,068.56	0.00	0.00	0.00
8,200.00	90.00	180.00	5,514.00	-3,155.37	-355.72	3,168.45	0.00	0.00	0.00
8,300.00	90.00	180.00	5,514.00	-3,255.37	-355.72	3,268.34	0.00	0.00	0.00
8,400.00	90.00	180.00	5,514.00	-3,355.37	-355.71	3,368.24	0.00	0.00	0.00
8,500.00	90.00	180.00	5,514.00	-3,455.37	-355.71	3,468.13	0.00	0.00	0.00
8,600.00	90.00	180.00	5,514.00	-3,555.37	-355.71	3,568.02	0.00	0.00	0.00
8,700.00	90.00	180.00	5,514.00	-3,655.37	-355.70	3,667.91	0.00	0.00	0.00
8,800.00	90.00	180.00	5,514.00	-3,755.37	-355.70	3,767.81	0.00	0.00	0.00
8,900.00	90.00	180.00	5,514.00	-3,855.37	-355.69	3,867.70	0.00	0.00	0.00
9,000.00	90.00	180.00	5,514.00	-3,955.37	-355.69	3,967.59	0.00	0.00	0.00



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Project:	Weld Co., CO	MD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Site:	Sec.30-T10N-R57W	North Reference:	True
Well:	Horsetail 30F-3105	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,100.00	90.00	180.00	5,514.00	-4,055.37	-355.69	4,067.49	0.00	0.00	0.00
9,200.00	90.00	180.00	5,514.00	-4,155.37	-355.68	4,167.38	0.00	0.00	0.00
9,300.00	90.00	180.00	5,514.00	-4,255.37	-355.68	4,267.27	0.00	0.00	0.00
9,400.00	90.00	180.00	5,514.00	-4,355.37	-355.68	4,367.16	0.00	0.00	0.00
9,500.00	90.00	180.00	5,514.00	-4,455.37	-355.67	4,467.06	0.00	0.00	0.00
9,600.00	90.00	180.00	5,514.00	-4,555.37	-355.67	4,566.95	0.00	0.00	0.00
9,700.00	90.00	180.00	5,514.00	-4,655.37	-355.66	4,666.84	0.00	0.00	0.00
9,800.00	90.00	180.00	5,514.00	-4,755.37	-355.66	4,766.73	0.00	0.00	0.00
9,900.00	90.00	180.00	5,514.00	-4,855.37	-355.66	4,866.63	0.00	0.00	0.00
10,000.00	90.00	180.00	5,514.00	-4,955.37	-355.65	4,966.52	0.00	0.00	0.00
10,100.00	90.00	180.00	5,514.00	-5,055.37	-355.65	5,066.41	0.00	0.00	0.00
10,200.00	90.00	180.00	5,514.00	-5,155.37	-355.65	5,166.30	0.00	0.00	0.00
10,300.00	90.00	180.00	5,514.00	-5,255.37	-355.64	5,266.20	0.00	0.00	0.00
10,400.00	90.00	180.00	5,514.00	-5,355.37	-355.64	5,366.09	0.00	0.00	0.00
10,500.00	90.00	180.00	5,514.00	-5,455.37	-355.64	5,465.98	0.00	0.00	0.00
10,600.00	90.00	180.00	5,514.00	-5,555.37	-355.63	5,565.88	0.00	0.00	0.00
10,700.00	90.00	180.00	5,514.00	-5,655.37	-355.63	5,665.77	0.00	0.00	0.00
10,800.00	90.00	180.00	5,514.00	-5,755.37	-355.62	5,765.66	0.00	0.00	0.00
10,875.00	90.00	180.00	5,514.00	-5,830.37	-355.62	5,840.58	0.00	0.00	0.00
Enter 1550' Radius Maddy 2									
10,900.00	90.00	180.00	5,514.00	-5,855.37	-355.62	5,865.55	0.00	0.00	0.00
11,000.00	90.00	180.00	5,514.00	-5,955.37	-355.62	5,965.45	0.00	0.00	0.00
11,100.00	90.00	180.00	5,514.00	-6,055.37	-355.61	6,065.34	0.00	0.00	0.00
11,191.00	90.00	180.00	5,514.00	-6,146.37	-355.61	6,156.24	0.00	0.00	0.00
Enter 1550' Radius Maddy 1									
11,200.00	90.00	180.00	5,514.00	-6,155.37	-355.61	6,165.23	0.00	0.00	0.00
11,300.00	90.00	180.00	5,514.00	-6,255.37	-355.61	6,265.12	0.00	0.00	0.00
11,400.00	90.00	180.00	5,514.00	-6,355.37	-355.60	6,365.02	0.00	0.00	0.00
11,500.00	90.00	180.00	5,514.00	-6,455.37	-355.60	6,464.91	0.00	0.00	0.00
11,600.00	90.00	180.00	5,514.00	-6,555.37	-355.59	6,564.80	0.00	0.00	0.00
11,700.00	90.00	180.00	5,514.00	-6,655.37	-355.59	6,664.69	0.00	0.00	0.00
11,800.00	90.00	180.00	5,514.00	-6,755.37	-355.59	6,764.59	0.00	0.00	0.00
11,900.00	90.00	180.00	5,514.00	-6,855.37	-355.58	6,864.48	0.00	0.00	0.00
12,000.00	90.00	180.00	5,514.00	-6,955.37	-355.58	6,964.37	0.00	0.00	0.00
12,100.00	90.00	180.00	5,514.00	-7,055.37	-355.58	7,064.26	0.00	0.00	0.00
12,200.00	90.00	180.00	5,514.00	-7,155.37	-355.57	7,164.16	0.00	0.00	0.00
12,300.00	90.00	180.00	5,514.00	-7,255.37	-355.57	7,264.05	0.00	0.00	0.00
12,400.00	90.00	180.00	5,514.00	-7,355.37	-355.56	7,363.94	0.00	0.00	0.00
12,500.00	90.00	180.00	5,514.00	-7,455.37	-355.56	7,463.84	0.00	0.00	0.00
12,600.00	90.00	180.00	5,514.00	-7,555.37	-355.56	7,563.73	0.00	0.00	0.00
12,700.00	90.00	180.00	5,514.00	-7,655.37	-355.55	7,663.62	0.00	0.00	0.00
12,717.94	90.00	180.00	5,514.00	-7,673.31	-355.55	7,681.54	0.00	0.00	0.00
PBHL/TD									



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Horsetail 30F-3105
Company:	Whiting Oil & Gas	TVD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Project:	Weld Co., CO	MD Reference:	KB @ 4797.00usft (Xtreme 18 17' KB)
Site:	Sec.30-T10N-R57W	North Reference:	True
Well:	Horsetail 30F-3105	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Rev 0		

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)		
PBHL Horsetail 30F-310	0.00	0.00	5,514.00	-7,673.31	-355.55	1,534,981.44	3,471,402.03	40° 47' 22.150 N	103° 47' 51.112 W
- plan hits target center									
- Point									
Maddy #1	0.00	0.00	6,300.00	-7,615.38	139.29	1,535,048.86	3,471,895.66	40° 47' 22.722 N	103° 47' 44.678 W
- plan misses target center by 928.80usft at 12660.03usft MD (5514.00 TVD, -7615.40 N, -355.55 E)									
- Circle (radius 1,550.00)									
Maddy #2	0.00	0.00	6,500.00	-7,303.87	125.72	1,535,360.05	3,471,876.11	40° 47' 25.800 N	103° 47' 44.855 W
- plan misses target center by 1097.19usft at 12348.52usft MD (5514.00 TVD, -7303.89 N, -355.57 E)									
- Circle (radius 1,550.00)									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
5,822.02	5,514.00	7" Csg	7	7-1/2

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,500.11	1,498.00	Pierre		0.00	
1,552.24	1,550.00	Surface Casing		0.00	
5,603.91	5,469.00	Niobrara		0.00	
5,820.69	5,514.00	Target TVD		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Begin Nudge
700.00	699.84	-6.63	-2.19	Hold Tangent
5,040.20	5,029.47	-294.16	-97.00	KOP, Build 11°/100' DLS
5,822.02	5,514.00	-787.62	-259.72	LP, Begin Turn
6,430.42	5,514.00	-1,385.79	-355.79	EOT, Hold to TD
10,875.00	5,514.00	-5,830.37	-355.62	Enter 1550' Radius Maddy 2
11,191.00	5,514.00	-6,146.37	-355.61	Enter 1550' Radius Maddy 1
12,717.94	5,514.00	-7,673.31	-355.55	PBHL/TD