

Whiting Oil & Gas

Well Name: **HORSETAIL #18-0733H**

Surface Location: HORSETAIL #18-0733H PAD 18-10N-57W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4801.0

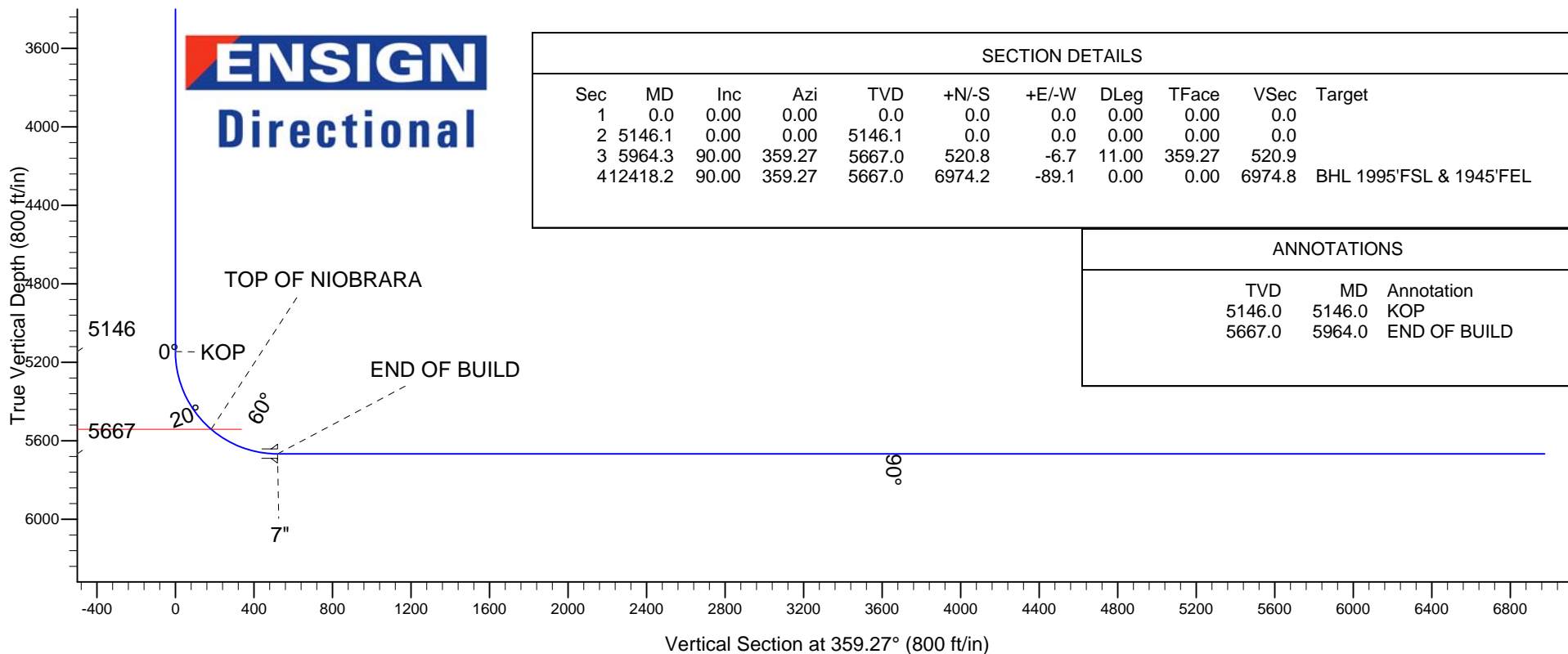
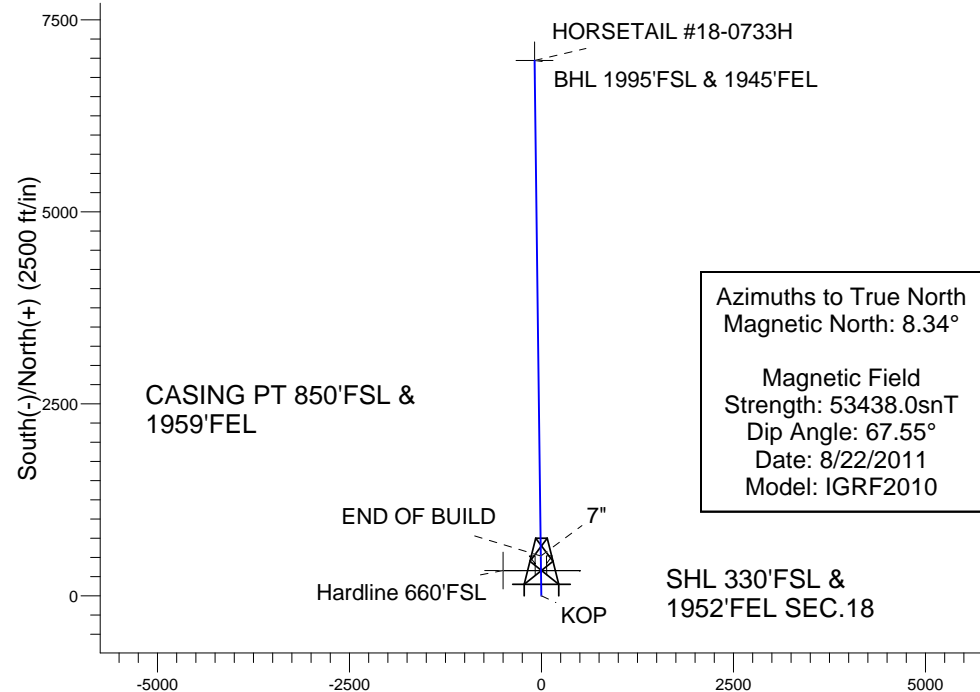
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1550685.04	3472646.06	40.832514	-103.791947	

RKB ENSIGN RIG 14 15' RKB @ 4816.0ft (RKB ENSIGN RIG 14 15')

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Hardline 660'FSL	1.0	330.0	-500.0	40.833420	-103.793754	Polygon
BHL 1995'FSL & 1945'FEL	5667.0	6974.2	-89.1	40.851656	-103.792269	Point

HORSETAIL #18-0733H PAD 18-10N-57W
HORSETAIL #18-0733H
PLAN 1 (AUG 22, 2011)
13:05, August 22 2011



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5146.1	0.00	0.00	5146.1	0.0	0.0	0.00	0.00	0.0	
3	5964.3	90.00	359.27	5667.0	520.8	-6.7	11.00	359.27	520.9	
4	12418.2	90.00	359.27	5667.0	6974.2	-89.1	0.00	0.00	6974.8	BHL 1995'FSL & 1945'FEL

ANNOTATIONS

TVD	MD	Annotation
5146.0	5146.0	KOP
5667.0	5964.0	END OF BUILD



Directional

Whiting Oil & Gas

SEC.18-T10N-R57W

HORSETAIL #18-0733H PAD 18-10N-57W

HORSETAIL #18-0733H

Wellbore #1

Plan: PLAN 1 (AUG 22, 2011)

Standard Planning Report

22 August, 2011

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,146.1	0.00	0.00	5,146.1	0.0	0.0	0.00	0.00	0.00	0.00	
5,964.3	90.00	359.27	5,667.0	520.8	-6.7	11.00	11.00	0.00	359.27	
12,418.2	90.00	359.27	5,667.0	6,974.2	-89.1	0.00	0.00	0.00	0.00	BHL 1995'FSL & 19

Planned Survey		Actual Survey							
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,146.0	0.00	0.00	5,146.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP									

Database:	Landmark	Local Co-ordinate Reference:	Well HORSETAIL #18-0733H
Company:	Whiting Oil & Gas	TVD Reference:	RKB @ 4816.0ft (RKB ENSIGN RIG 14 15')
Project:	SEC.18-T10N-R57W	MD Reference:	RKB @ 4816.0ft (RKB ENSIGN RIG 14 15')
Site:	HORSETAIL #18-0733H PAD 18-10N-57W	North Reference:	True
Well:	HORSETAIL #18-0733H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1 (AUG 22, 2011)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,146.1	0.00	0.00	5,146.1	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	5.93	359.27	5,199.9	2.8	0.0	2.8	11.00	11.00	0.00
5,300.0	16.93	359.27	5,297.8	22.6	-0.3	22.6	11.00	11.00	0.00
5,400.0	27.93	359.27	5,390.1	60.6	-0.8	60.7	11.00	11.00	0.00
5,500.0	38.93	359.27	5,473.4	115.6	-1.5	115.7	11.00	11.00	0.00
5,595.8	49.47	359.27	5,542.0	182.3	-2.3	182.4	11.00	11.00	0.00
TOP OF NIOBRARA									
5,600.0	49.93	359.27	5,544.7	185.5	-2.4	185.5	11.00	11.00	0.00
5,700.0	60.93	359.27	5,601.4	267.7	-3.4	267.8	11.00	11.00	0.00
5,800.0	71.93	359.27	5,641.3	359.2	-4.6	359.3	11.00	11.00	0.00
5,900.0	82.93	359.27	5,663.0	456.7	-5.8	456.7	11.00	11.00	0.00
5,964.0	89.97	359.27	5,667.0	520.5	-6.6	520.6	11.00	11.00	0.00
END OF BUILD - 7"									
5,964.3	90.00	359.27	5,667.0	520.8	-6.7	520.9	11.00	11.00	0.00
6,000.0	90.00	359.27	5,667.0	556.5	-7.1	556.6	0.00	0.00	0.00
6,100.0	90.00	359.27	5,667.0	656.5	-8.4	656.6	0.00	0.00	0.00
6,200.0	90.00	359.27	5,667.0	756.5	-9.7	756.6	0.00	0.00	0.00
6,300.0	90.00	359.27	5,667.0	856.5	-10.9	856.6	0.00	0.00	0.00
6,400.0	90.00	359.27	5,667.0	956.5	-12.2	956.6	0.00	0.00	0.00
6,500.0	90.00	359.27	5,667.0	1,056.5	-13.5	1,056.6	0.00	0.00	0.00
6,600.0	90.00	359.27	5,667.0	1,156.5	-14.8	1,156.6	0.00	0.00	0.00
6,700.0	90.00	359.27	5,667.0	1,256.5	-16.0	1,256.6	0.00	0.00	0.00
6,800.0	90.00	359.27	5,667.0	1,356.4	-17.3	1,356.6	0.00	0.00	0.00
6,900.0	90.00	359.27	5,667.0	1,456.4	-18.6	1,456.6	0.00	0.00	0.00
7,000.0	90.00	359.27	5,667.0	1,556.4	-19.9	1,556.6	0.00	0.00	0.00
7,100.0	90.00	359.27	5,667.0	1,656.4	-21.2	1,656.6	0.00	0.00	0.00
7,200.0	90.00	359.27	5,667.0	1,756.4	-22.4	1,756.6	0.00	0.00	0.00
7,300.0	90.00	359.27	5,667.0	1,856.4	-23.7	1,856.6	0.00	0.00	0.00
7,400.0	90.00	359.27	5,667.0	1,956.4	-25.0	1,956.6	0.00	0.00	0.00
7,500.0	90.00	359.27	5,667.0	2,056.4	-26.3	2,056.6	0.00	0.00	0.00
7,600.0	90.00	359.27	5,667.0	2,156.4	-27.5	2,156.6	0.00	0.00	0.00
7,700.0	90.00	359.27	5,667.0	2,256.4	-28.8	2,256.6	0.00	0.00	0.00
7,800.0	90.00	359.27	5,667.0	2,356.4	-30.1	2,356.6	0.00	0.00	0.00
7,900.0	90.00	359.27	5,667.0	2,456.4	-31.4	2,456.6	0.00	0.00	0.00
8,000.0	90.00	359.27	5,667.0	2,556.4	-32.7	2,556.6	0.00	0.00	0.00
8,100.0	90.00	359.27	5,667.0	2,656.3	-33.9	2,656.6	0.00	0.00	0.00
8,200.0	90.00	359.27	5,667.0	2,756.3	-35.2	2,756.6	0.00	0.00	0.00
8,300.0	90.00	359.27	5,667.0	2,856.3	-36.5	2,856.6	0.00	0.00	0.00
8,400.0	90.00	359.27	5,667.0	2,956.3	-37.8	2,956.6	0.00	0.00	0.00
8,500.0	90.00	359.27	5,667.0	3,056.3	-39.0	3,056.6	0.00	0.00	0.00
8,600.0	90.00	359.27	5,667.0	3,156.3	-40.3	3,156.6	0.00	0.00	0.00
8,700.0	90.00	359.27	5,667.0	3,256.3	-41.6	3,256.6	0.00	0.00	0.00
8,800.0	90.00	359.27	5,667.0	3,356.3	-42.9	3,356.6	0.00	0.00	0.00
8,900.0	90.00	359.27	5,667.0	3,456.3	-44.1	3,456.6	0.00	0.00	0.00
9,000.0	90.00	359.27	5,667.0	3,556.3	-45.4	3,556.6	0.00	0.00	0.00
9,100.0	90.00	359.27	5,667.0	3,656.3	-46.7	3,656.6	0.00	0.00	0.00
9,200.0	90.00	359.27	5,667.0	3,756.3	-48.0	3,756.6	0.00	0.00	0.00
9,300.0	90.00	359.27	5,667.0	3,856.2	-49.3	3,856.6	0.00	0.00	0.00
9,400.0	90.00	359.27	5,667.0	3,956.2	-50.5	3,956.6	0.00	0.00	0.00
9,500.0	90.00	359.27	5,667.0	4,056.2	-51.8	4,056.6	0.00	0.00	0.00
9,600.0	90.00	359.27	5,667.0	4,156.2	-53.1	4,156.6	0.00	0.00	0.00
9,700.0	90.00	359.27	5,667.0	4,256.2	-54.4	4,256.6	0.00	0.00	0.00
9,800.0	90.00	359.27	5,667.0	4,356.2	-55.6	4,356.6	0.00	0.00	0.00
9,900.0	90.00	359.27	5,667.0	4,456.2	-56.9	4,456.6	0.00	0.00	0.00

Planned Survey		Actual Survey								
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,000.0	90.00	359.27	5,667.0	4,556.2	-58.2	4,556.6	0.00	0.00	0.00	
10,100.0	90.00	359.27	5,667.0	4,656.2	-59.5	4,656.6	0.00	0.00	0.00	
10,200.0	90.00	359.27	5,667.0	4,756.2	-60.8	4,756.6	0.00	0.00	0.00	
10,300.0	90.00	359.27	5,667.0	4,856.2	-62.0	4,856.6	0.00	0.00	0.00	
10,400.0	90.00	359.27	5,667.0	4,956.2	-63.3	4,956.6	0.00	0.00	0.00	
10,500.0	90.00	359.27	5,667.0	5,056.1	-64.6	5,056.6	0.00	0.00	0.00	
10,600.0	90.00	359.27	5,667.0	5,156.1	-65.9	5,156.6	0.00	0.00	0.00	
10,700.0	90.00	359.27	5,667.0	5,256.1	-67.1	5,256.6	0.00	0.00	0.00	
10,800.0	90.00	359.27	5,667.0	5,356.1	-68.4	5,356.6	0.00	0.00	0.00	
10,900.0	90.00	359.27	5,667.0	5,456.1	-69.7	5,456.6	0.00	0.00	0.00	
11,000.0	90.00	359.27	5,667.0	5,556.1	-71.0	5,556.6	0.00	0.00	0.00	
11,100.0	90.00	359.27	5,667.0	5,656.1	-72.2	5,656.6	0.00	0.00	0.00	
11,200.0	90.00	359.27	5,667.0	5,756.1	-73.5	5,756.6	0.00	0.00	0.00	
11,300.0	90.00	359.27	5,667.0	5,856.1	-74.8	5,856.6	0.00	0.00	0.00	
11,400.0	90.00	359.27	5,667.0	5,956.1	-76.1	5,956.6	0.00	0.00	0.00	
11,500.0	90.00	359.27	5,667.0	6,056.1	-77.4	6,056.6	0.00	0.00	0.00	
11,600.0	90.00	359.27	5,667.0	6,156.1	-78.6	6,156.6	0.00	0.00	0.00	
11,700.0	90.00	359.27	5,667.0	6,256.0	-79.9	6,256.6	0.00	0.00	0.00	
11,800.0	90.00	359.27	5,667.0	6,356.0	-81.2	6,356.6	0.00	0.00	0.00	
11,900.0	90.00	359.27	5,667.0	6,456.0	-82.5	6,456.6	0.00	0.00	0.00	
12,000.0	90.00	359.27	5,667.0	6,556.0	-83.7	6,556.6	0.00	0.00	0.00	
12,100.0	90.00	359.27	5,667.0	6,656.0	-85.0	6,656.6	0.00	0.00	0.00	
12,200.0	90.00	359.27	5,667.0	6,756.0	-86.3	6,756.6	0.00	0.00	0.00	
12,300.0	90.00	359.27	5,667.0	6,856.0	-87.6	6,856.6	0.00	0.00	0.00	
12,400.0	90.00	359.27	5,667.0	6,956.0	-88.8	6,956.6	0.00	0.00	0.00	
12,418.2	90.00	359.27	5,667.0	6,974.2	-89.1	6,974.8	0.00	0.00	0.00	

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting		
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Latitude	Longitude
Hardline 660'FSL	0.00	0.00	1.0	330.0	-500.0	1,551,005.35	3,472,139.80	40.833420	-103.793754
- plan misses target center by 599.1ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			1.0	0.0	0.0	1,551,005.35	3,472,139.80		
Point 2			1.0	0.0	1,000.0	1,551,024.62	3,473,139.62		
BHL 1995'FSL & 1945'FSL	0.00	0.00	5,667.0	6,974.2	-89.1	1,557,656.29	3,472,422.67	40.851656	-103.792269
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
5,964.0	5,667.0	7"		7	8-3/4

Database:	Landmark	Local Co-ordinate Reference:	Well HORSETAIL #18-0733H
Company:	Whiting Oil & Gas	TVD Reference:	RKB @ 4816.0ft (RKB ENSIGN RIG 14 15')
Project:	SEC.18-T10N-R57W	MD Reference:	RKB @ 4816.0ft (RKB ENSIGN RIG 14 15')
Site:	HORSETAIL #18-0733H PAD 18-10N-57W	North Reference:	True
Well:	HORSETAIL #18-0733H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PLAN 1 (AUG 22, 2011)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,595.8	5,542.0	TOP OF NIOBRARA		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,146.0	5,146.0	0.0	0.0	KOP	
5,964.0	5,667.0	520.5	-6.6	END OF BUILD	