

# Whiting Oil & Gas

Well Name: **Wildhorse #18-1844H**

Surface Location: Wildhorse #18-1844H Pad Sec.18-T9N-R59W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

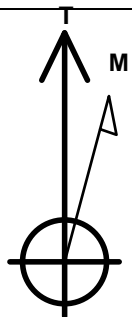
Ground Elevation: 5026.1

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1522028.03	3411659.71	40.756886	-104.014031	

RKB Ensign 14 - 15' WELL @ 5041.1ft (RKB Ensign 14 - 15')

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
HARD LINE 660'FSL	1.0	-4346.5	-461.5	1517674.43	3411271.11	40.744956	-104.015696	Polygon
HARDLINE 660'FNL	1.1	-340.0	-400.0	1521681.38	3411265.46	40.755953	-104.015475	Polygon
BHL 660'FSL & 660'FEL	6269.1	-4346.5	38.5	1517682.82	3411771.05	40.744956	-104.013892	Point



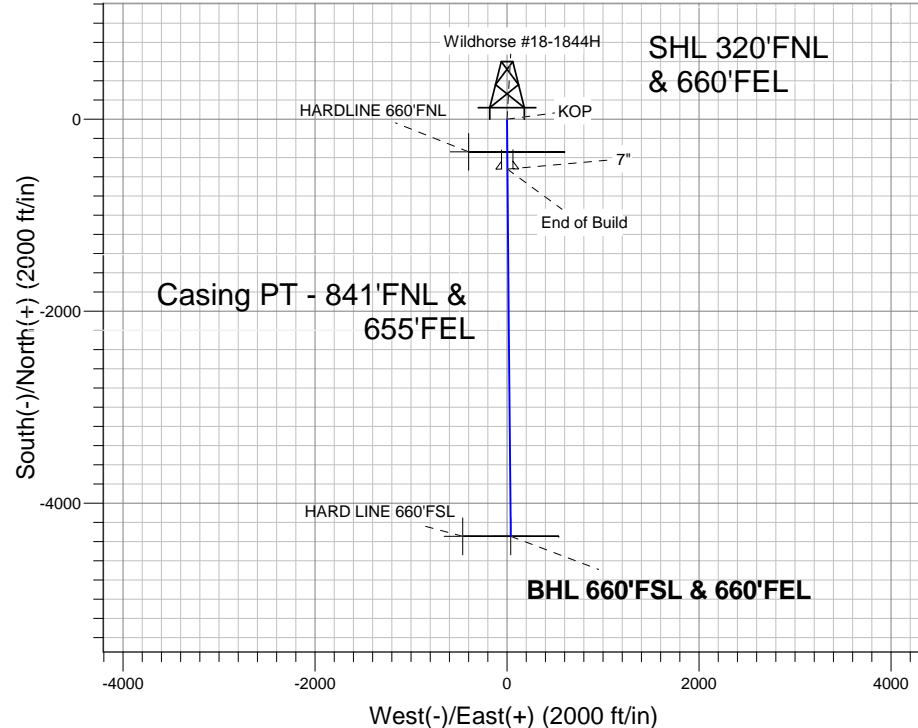
Azimuths to True North  
Magnetic North: 8.43°

Magnetic Field  
Strength: 53351.3nT  
Dip Angle: 67.45°  
Date: 11/10/2011  
Model: IGRF2010

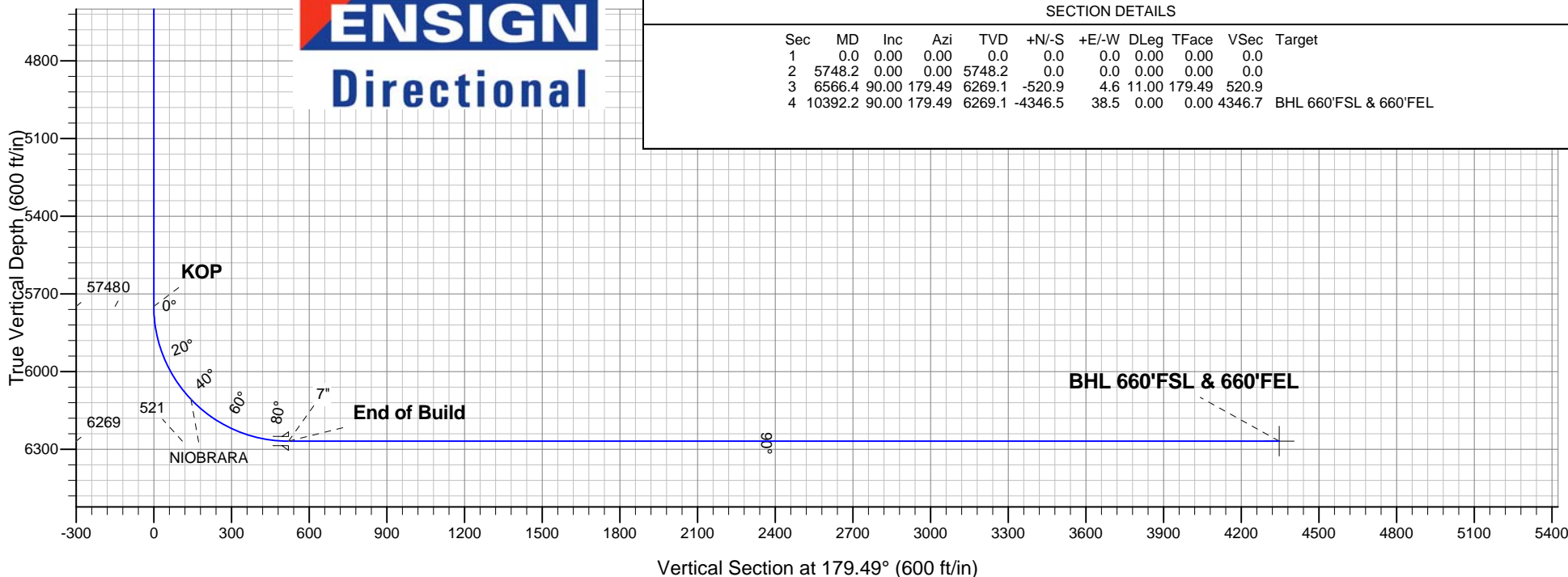
## ANNOTATIONS

TVD	MD	Annotation
5748.1	5748.1	KOP
6269.1	6566.3	End of Build

Wildhorse #18-1844H Pad Sec.18-T9N-R59W  
Wildhorse #18-1844H  
Plan #1 (11-10-11)  
15:58, November 11 2011



**ENSIGN**  
Directional



## 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	5748.2	0.00	0.00	5748.2	0.0	0.0	0.00	0.00	0.0	
3	6566.4	90.00	179.49	6269.1	-520.9	4.6	11.00	179.49	520.9	
4	10392.2	90.00	179.49	6269.1	-4346.5	38.5	0.00	0.00	4346.7	BHL 660'FSL & 660'FEL



## **Whiting Oil & Gas**

**SEC.18-T9N-R59W**

**Wildhorse #18-1844H Pad Sec.18-T9N-R59W**

**Wildhorse #18-1844H**

**Wellbore #1**

**Plan: Plan #1 (11-10-11)**

## **Standard Planning Report**

**11 November, 2011**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wildhorse #18-1844H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.18-T9N-R59W	<b>MD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wildhorse #18-1844H Pad Sec.18-T9N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wildhorse #18-1844H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-10-11)		

<b>Project</b>	SEC.18-T9N-R59W, 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		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Wildhorse #18-1844H Pad Sec.18-T9N-R59W											
Site Position:						Northing:			1,522,028.05 ft			Latitude:			40.756886		
From:			Lat/Long			Easting:			3,411,659.70 ft			Longitude:			-104.014031		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.96 °		

Well	Wildhorse #18-1844H					
Well Position	+N/-S	0.0 ft	Northing:	1,522,028.03 ft	Latitude:	40.756886
	+E/-W	0.0 ft	Easting:	3,411,659.71 ft	Longitude:	-104.014031
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,026.1 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/10/2011	8.43	67.45	53,351

<b>Design</b>	Plan #1 (11-10-11)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	179.49

<b>Plan Sections</b>										
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	
5,748.2	0.00	0.00	5,748.2	0.0	0.0	0.00	0.00	0.00	0.00	
6,566.4	90.00	179.49	6,269.1	-520.9	4.6	11.00	11.00	0.00	179.49	
10,392.2	90.00	179.49	6,269.1	-4,346.5	38.5	0.00	0.00	0.00	0.00	BHL 660'FSL & 660'

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wildhorse #18-1844H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.18-T9N-R59W	<b>MD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wildhorse #18-1844H Pad Sec.18-T9N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wildhorse #18-1844H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-10-11)		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
HARD LINE 660'FSL									
1.1	0.00	0.00	1.1	0.0	0.0	0.0	0.00	0.00	0.00
HARDLINE 660'FNL									
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	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
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	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
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	0.00
1,520.0	0.00	0.00	1,520.0	0.0	0.0	0.0	0.00	0.00	0.00
1,560.0	0.00	0.00	1,560.0	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
1,640.0	0.00	0.00	1,640.0	0.0	0.0	0.0	0.00	0.00	0.00
1,680.0	0.00	0.00	1,680.0	0.0	0.0	0.0	0.00	0.00	0.00
1,720.0	0.00	0.00	1,720.0	0.0	0.0	0.0	0.00	0.00	0.00
1,760.0	0.00	0.00	1,760.0	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
1,840.0	0.00	0.00	1,840.0	0.0	0.0	0.0	0.00	0.00	0.00
1,880.0	0.00	0.00	1,880.0	0.0	0.0	0.0	0.00	0.00	0.00
1,920.0	0.00	0.00	1,920.0	0.0	0.0	0.0	0.00	0.00	0.00
1,960.0	0.00	0.00	1,960.0	0.0	0.0	0.0	0.00	0.00	0.00

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<b>Site:</b>	Wildhorse #18-1844H Pad Sec.18-T9N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wildhorse #18-1844H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-10-11)		

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)
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,040.0	0.00	0.00	2,040.0	0.0	0.0	0.0	0.00	0.00	0.00
2,080.0	0.00	0.00	2,080.0	0.0	0.0	0.0	0.00	0.00	0.00
2,120.0	0.00	0.00	2,120.0	0.0	0.0	0.0	0.00	0.00	0.00
2,160.0	0.00	0.00	2,160.0	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
2,240.0	0.00	0.00	2,240.0	0.0	0.0	0.0	0.00	0.00	0.00
2,280.0	0.00	0.00	2,280.0	0.0	0.0	0.0	0.00	0.00	0.00
2,320.0	0.00	0.00	2,320.0	0.0	0.0	0.0	0.00	0.00	0.00
2,360.0	0.00	0.00	2,360.0	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
2,440.0	0.00	0.00	2,440.0	0.0	0.0	0.0	0.00	0.00	0.00
2,480.0	0.00	0.00	2,480.0	0.0	0.0	0.0	0.00	0.00	0.00
2,520.0	0.00	0.00	2,520.0	0.0	0.0	0.0	0.00	0.00	0.00
2,560.0	0.00	0.00	2,560.0	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
2,640.0	0.00	0.00	2,640.0	0.0	0.0	0.0	0.00	0.00	0.00
2,680.0	0.00	0.00	2,680.0	0.0	0.0	0.0	0.00	0.00	0.00
2,720.0	0.00	0.00	2,720.0	0.0	0.0	0.0	0.00	0.00	0.00
2,760.0	0.00	0.00	2,760.0	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
2,840.0	0.00	0.00	2,840.0	0.0	0.0	0.0	0.00	0.00	0.00
2,880.0	0.00	0.00	2,880.0	0.0	0.0	0.0	0.00	0.00	0.00
2,920.0	0.00	0.00	2,920.0	0.0	0.0	0.0	0.00	0.00	0.00
2,960.0	0.00	0.00	2,960.0	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
3,040.0	0.00	0.00	3,040.0	0.0	0.0	0.0	0.00	0.00	0.00
3,080.0	0.00	0.00	3,080.0	0.0	0.0	0.0	0.00	0.00	0.00
3,120.0	0.00	0.00	3,120.0	0.0	0.0	0.0	0.00	0.00	0.00
3,160.0	0.00	0.00	3,160.0	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
3,240.0	0.00	0.00	3,240.0	0.0	0.0	0.0	0.00	0.00	0.00
3,280.0	0.00	0.00	3,280.0	0.0	0.0	0.0	0.00	0.00	0.00
3,320.0	0.00	0.00	3,320.0	0.0	0.0	0.0	0.00	0.00	0.00
3,360.0	0.00	0.00	3,360.0	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
3,440.0	0.00	0.00	3,440.0	0.0	0.0	0.0	0.00	0.00	0.00
3,480.0	0.00	0.00	3,480.0	0.0	0.0	0.0	0.00	0.00	0.00
3,520.0	0.00	0.00	3,520.0	0.0	0.0	0.0	0.00	0.00	0.00
3,560.0	0.00	0.00	3,560.0	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
3,640.0	0.00	0.00	3,640.0	0.0	0.0	0.0	0.00	0.00	0.00
3,680.0	0.00	0.00	3,680.0	0.0	0.0	0.0	0.00	0.00	0.00
3,720.0	0.00	0.00	3,720.0	0.0	0.0	0.0	0.00	0.00	0.00
3,760.0	0.00	0.00	3,760.0	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
3,840.0	0.00	0.00	3,840.0	0.0	0.0	0.0	0.00	0.00	0.00
3,880.0	0.00	0.00	3,880.0	0.0	0.0	0.0	0.00	0.00	0.00
3,920.0	0.00	0.00	3,920.0	0.0	0.0	0.0	0.00	0.00	0.00
3,960.0	0.00	0.00	3,960.0	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
4,040.0	0.00	0.00	4,040.0	0.0	0.0	0.0	0.00	0.00	0.00
4,080.0	0.00	0.00	4,080.0	0.0	0.0	0.0	0.00	0.00	0.00
4,120.0	0.00	0.00	4,120.0	0.0	0.0	0.0	0.00	0.00	0.00

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<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
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<b>Site:</b>	Wildhorse #18-1844H Pad Sec.18-T9N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wildhorse #18-1844H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-10-11)		

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)
4,160.0	0.00	0.00	4,160.0	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
4,240.0	0.00	0.00	4,240.0	0.0	0.0	0.0	0.00	0.00	0.00
4,280.0	0.00	0.00	4,280.0	0.0	0.0	0.0	0.00	0.00	0.00
4,320.0	0.00	0.00	4,320.0	0.0	0.0	0.0	0.00	0.00	0.00
4,360.0	0.00	0.00	4,360.0	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
4,440.0	0.00	0.00	4,440.0	0.0	0.0	0.0	0.00	0.00	0.00
4,480.0	0.00	0.00	4,480.0	0.0	0.0	0.0	0.00	0.00	0.00
4,520.0	0.00	0.00	4,520.0	0.0	0.0	0.0	0.00	0.00	0.00
4,560.0	0.00	0.00	4,560.0	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
4,640.0	0.00	0.00	4,640.0	0.0	0.0	0.0	0.00	0.00	0.00
4,680.0	0.00	0.00	4,680.0	0.0	0.0	0.0	0.00	0.00	0.00
4,720.0	0.00	0.00	4,720.0	0.0	0.0	0.0	0.00	0.00	0.00
4,760.0	0.00	0.00	4,760.0	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
4,840.0	0.00	0.00	4,840.0	0.0	0.0	0.0	0.00	0.00	0.00
4,880.0	0.00	0.00	4,880.0	0.0	0.0	0.0	0.00	0.00	0.00
4,920.0	0.00	0.00	4,920.0	0.0	0.0	0.0	0.00	0.00	0.00
4,960.0	0.00	0.00	4,960.0	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
5,040.0	0.00	0.00	5,040.0	0.0	0.0	0.0	0.00	0.00	0.00
5,080.0	0.00	0.00	5,080.0	0.0	0.0	0.0	0.00	0.00	0.00
5,120.0	0.00	0.00	5,120.0	0.0	0.0	0.0	0.00	0.00	0.00
5,160.0	0.00	0.00	5,160.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,240.0	0.00	0.00	5,240.0	0.0	0.0	0.0	0.00	0.00	0.00
5,280.0	0.00	0.00	5,280.0	0.0	0.0	0.0	0.00	0.00	0.00
5,320.0	0.00	0.00	5,320.0	0.0	0.0	0.0	0.00	0.00	0.00
5,360.0	0.00	0.00	5,360.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,440.0	0.00	0.00	5,440.0	0.0	0.0	0.0	0.00	0.00	0.00
5,480.0	0.00	0.00	5,480.0	0.0	0.0	0.0	0.00	0.00	0.00
5,520.0	0.00	0.00	5,520.0	0.0	0.0	0.0	0.00	0.00	0.00
5,560.0	0.00	0.00	5,560.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,640.0	0.00	0.00	5,640.0	0.0	0.0	0.0	0.00	0.00	0.00
5,680.0	0.00	0.00	5,680.0	0.0	0.0	0.0	0.00	0.00	0.00
5,720.0	0.00	0.00	5,720.0	0.0	0.0	0.0	0.00	0.00	0.00
5,748.1	0.00	0.00	5,748.1	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP</b>									
5,748.2	0.00	0.00	5,748.2	0.0	0.0	0.0	0.00	0.00	0.00
5,760.0	1.29	179.49	5,760.0	-0.1	0.0	0.1	11.00	11.00	0.00
5,800.0	5.69	179.49	5,799.9	-2.6	0.0	2.6	11.00	11.00	0.00
5,840.0	10.09	179.49	5,839.5	-8.1	0.1	8.1	11.00	11.00	0.00
5,880.0	14.49	179.49	5,878.6	-16.6	0.1	16.6	11.00	11.00	0.00
5,920.0	18.89	179.49	5,916.9	-28.1	0.2	28.1	11.00	11.00	0.00
5,960.0	23.29	179.49	5,954.2	-42.5	0.4	42.5	11.00	11.00	0.00
6,000.0	27.69	179.49	5,990.3	-59.7	0.5	59.7	11.00	11.00	0.00
6,040.0	32.09	179.49	6,025.0	-79.6	0.7	79.6	11.00	11.00	0.00
6,080.0	36.49	179.49	6,058.0	-102.1	0.9	102.1	11.00	11.00	0.00
6,120.0	40.89	179.49	6,089.2	-127.1	1.1	127.1	11.00	11.00	0.00
6,144.0	43.53	179.49	6,107.0	-143.3	1.3	143.3	11.00	11.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wildhorse #18-1844H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.18-T9N-R59W	<b>MD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wildhorse #18-1844H Pad Sec.18-T9N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wildhorse #18-1844H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-10-11)		

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)	
<b>NIOBARRA</b>										
6,160.0	45.29	179.49	6,118.4	-154.5	1.4	154.5	11.00	11.00	0.00	
6,200.0	49.69	179.49	6,145.5	-183.9	1.6	183.9	11.00	11.00	0.00	
6,240.0	54.09	179.49	6,170.1	-215.4	1.9	215.4	11.00	11.00	0.00	
6,280.0	58.49	179.49	6,192.3	-248.7	2.2	248.7	11.00	11.00	0.00	
6,320.0	62.89	179.49	6,211.9	-283.5	2.5	283.5	11.00	11.00	0.00	
6,360.0	67.29	179.49	6,228.7	-319.8	2.8	319.8	11.00	11.00	0.00	
6,400.0	71.69	179.49	6,242.7	-357.3	3.2	357.3	11.00	11.00	0.00	
6,440.0	76.09	179.49	6,253.8	-395.7	3.5	395.7	11.00	11.00	0.00	
6,480.0	80.49	179.49	6,261.9	-434.8	3.9	434.9	11.00	11.00	0.00	
6,520.0	84.89	179.49	6,267.0	-474.5	4.2	474.5	11.00	11.00	0.00	
6,560.0	89.29	179.49	6,269.1	-514.4	4.6	514.5	11.00	11.00	0.00	
6,566.3	89.99	179.49	6,269.1	-520.7	4.6	520.8	11.00	11.00	0.00	
<b>End of Build - 7"</b>										
6,566.4	90.00	179.49	6,269.1	-520.9	4.6	520.9	11.00	11.00	0.00	
6,600.0	90.00	179.49	6,269.1	-554.4	4.9	554.5	0.00	0.00	0.00	
6,640.0	90.00	179.49	6,269.1	-594.4	5.3	594.5	0.00	0.00	0.00	
6,680.0	90.00	179.49	6,269.1	-634.4	5.6	634.5	0.00	0.00	0.00	
6,720.0	90.00	179.49	6,269.1	-674.4	6.0	674.5	0.00	0.00	0.00	
6,760.0	90.00	179.49	6,269.1	-714.4	6.3	714.5	0.00	0.00	0.00	
6,800.0	90.00	179.49	6,269.1	-754.4	6.7	754.5	0.00	0.00	0.00	
6,840.0	90.00	179.49	6,269.1	-794.4	7.0	794.5	0.00	0.00	0.00	
6,880.0	90.00	179.49	6,269.1	-834.4	7.4	834.5	0.00	0.00	0.00	
6,920.0	90.00	179.49	6,269.1	-874.4	7.7	874.5	0.00	0.00	0.00	
6,960.0	90.00	179.49	6,269.1	-914.4	8.1	914.5	0.00	0.00	0.00	
7,000.0	90.00	179.49	6,269.1	-954.4	8.5	954.5	0.00	0.00	0.00	
7,040.0	90.00	179.49	6,269.1	-994.4	8.8	994.5	0.00	0.00	0.00	
7,080.0	90.00	179.49	6,269.1	-1,034.4	9.2	1,034.5	0.00	0.00	0.00	
7,120.0	90.00	179.49	6,269.1	-1,074.4	9.5	1,074.5	0.00	0.00	0.00	
7,160.0	90.00	179.49	6,269.1	-1,114.4	9.9	1,114.5	0.00	0.00	0.00	
7,200.0	90.00	179.49	6,269.1	-1,154.4	10.2	1,154.5	0.00	0.00	0.00	
7,240.0	90.00	179.49	6,269.1	-1,194.4	10.6	1,194.5	0.00	0.00	0.00	
7,280.0	90.00	179.49	6,269.1	-1,234.4	10.9	1,234.5	0.00	0.00	0.00	
7,320.0	90.00	179.49	6,269.1	-1,274.4	11.3	1,274.5	0.00	0.00	0.00	
7,360.0	90.00	179.49	6,269.1	-1,314.4	11.6	1,314.5	0.00	0.00	0.00	
7,400.0	90.00	179.49	6,269.1	-1,354.4	12.0	1,354.5	0.00	0.00	0.00	
7,440.0	90.00	179.49	6,269.1	-1,394.4	12.4	1,394.5	0.00	0.00	0.00	
7,480.0	90.00	179.49	6,269.1	-1,434.4	12.7	1,434.5	0.00	0.00	0.00	
7,520.0	90.00	179.49	6,269.1	-1,474.4	13.1	1,474.5	0.00	0.00	0.00	
7,560.0	90.00	179.49	6,269.1	-1,514.4	13.4	1,514.5	0.00	0.00	0.00	
7,600.0	90.00	179.49	6,269.1	-1,554.4	13.8	1,554.5	0.00	0.00	0.00	
7,640.0	90.00	179.49	6,269.1	-1,594.4	14.1	1,594.5	0.00	0.00	0.00	
7,680.0	90.00	179.49	6,269.1	-1,634.4	14.5	1,634.5	0.00	0.00	0.00	
7,720.0	90.00	179.49	6,269.1	-1,674.4	14.8	1,674.5	0.00	0.00	0.00	
7,760.0	90.00	179.49	6,269.1	-1,714.4	15.2	1,714.5	0.00	0.00	0.00	
7,800.0	90.00	179.49	6,269.1	-1,754.4	15.5	1,754.5	0.00	0.00	0.00	
7,840.0	90.00	179.49	6,269.1	-1,794.4	15.9	1,794.5	0.00	0.00	0.00	
7,880.0	90.00	179.49	6,269.1	-1,834.4	16.3	1,834.5	0.00	0.00	0.00	
7,920.0	90.00	179.49	6,269.1	-1,874.4	16.6	1,874.5	0.00	0.00	0.00	
7,960.0	90.00	179.49	6,269.1	-1,914.4	17.0	1,914.5	0.00	0.00	0.00	
8,000.0	90.00	179.49	6,269.1	-1,954.4	17.3	1,954.5	0.00	0.00	0.00	
8,040.0	90.00	179.49	6,269.1	-1,994.4	17.7	1,994.5	0.00	0.00	0.00	
8,080.0	90.00	179.49	6,269.1	-2,034.4	18.0	2,034.5	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wildhorse #18-1844H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.18-T9N-R59W	<b>MD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wildhorse #18-1844H Pad Sec.18-T9N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wildhorse #18-1844H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-10-11)		

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)
8,120.0	90.00	179.49	6,269.1	-2,074.4	18.4	2,074.5	0.00	0.00	0.00
8,160.0	90.00	179.49	6,269.1	-2,114.4	18.7	2,114.5	0.00	0.00	0.00
8,200.0	90.00	179.49	6,269.1	-2,154.4	19.1	2,154.5	0.00	0.00	0.00
8,240.0	90.00	179.49	6,269.1	-2,194.4	19.4	2,194.5	0.00	0.00	0.00
8,280.0	90.00	179.49	6,269.1	-2,234.4	19.8	2,234.5	0.00	0.00	0.00
8,320.0	90.00	179.49	6,269.1	-2,274.4	20.2	2,274.5	0.00	0.00	0.00
8,360.0	90.00	179.49	6,269.1	-2,314.4	20.5	2,314.5	0.00	0.00	0.00
8,400.0	90.00	179.49	6,269.1	-2,354.4	20.9	2,354.5	0.00	0.00	0.00
8,440.0	90.00	179.49	6,269.1	-2,394.4	21.2	2,394.5	0.00	0.00	0.00
8,480.0	90.00	179.49	6,269.1	-2,434.4	21.6	2,434.5	0.00	0.00	0.00
8,520.0	90.00	179.49	6,269.1	-2,474.4	21.9	2,474.5	0.00	0.00	0.00
8,560.0	90.00	179.49	6,269.1	-2,514.4	22.3	2,514.5	0.00	0.00	0.00
8,600.0	90.00	179.49	6,269.1	-2,554.4	22.6	2,554.5	0.00	0.00	0.00
8,640.0	90.00	179.49	6,269.1	-2,594.4	23.0	2,594.5	0.00	0.00	0.00
8,680.0	90.00	179.49	6,269.1	-2,634.4	23.3	2,634.5	0.00	0.00	0.00
8,720.0	90.00	179.49	6,269.1	-2,674.4	23.7	2,674.5	0.00	0.00	0.00
8,760.0	90.00	179.49	6,269.1	-2,714.4	24.1	2,714.5	0.00	0.00	0.00
8,800.0	90.00	179.49	6,269.1	-2,754.4	24.4	2,754.5	0.00	0.00	0.00
8,840.0	90.00	179.49	6,269.1	-2,794.4	24.8	2,794.5	0.00	0.00	0.00
8,880.0	90.00	179.49	6,269.1	-2,834.3	25.1	2,834.5	0.00	0.00	0.00
8,920.0	90.00	179.49	6,269.1	-2,874.3	25.5	2,874.5	0.00	0.00	0.00
8,960.0	90.00	179.49	6,269.1	-2,914.3	25.8	2,914.5	0.00	0.00	0.00
9,000.0	90.00	179.49	6,269.1	-2,954.3	26.2	2,954.5	0.00	0.00	0.00
9,040.0	90.00	179.49	6,269.1	-2,994.3	26.5	2,994.5	0.00	0.00	0.00
9,080.0	90.00	179.49	6,269.1	-3,034.3	26.9	3,034.5	0.00	0.00	0.00
9,120.0	90.00	179.49	6,269.1	-3,074.3	27.2	3,074.5	0.00	0.00	0.00
9,160.0	90.00	179.49	6,269.1	-3,114.3	27.6	3,114.5	0.00	0.00	0.00
9,200.0	90.00	179.49	6,269.1	-3,154.3	28.0	3,154.5	0.00	0.00	0.00
9,240.0	90.00	179.49	6,269.1	-3,194.3	28.3	3,194.5	0.00	0.00	0.00
9,280.0	90.00	179.49	6,269.1	-3,234.3	28.7	3,234.5	0.00	0.00	0.00
9,320.0	90.00	179.49	6,269.1	-3,274.3	29.0	3,274.5	0.00	0.00	0.00
9,360.0	90.00	179.49	6,269.1	-3,314.3	29.4	3,314.5	0.00	0.00	0.00
9,400.0	90.00	179.49	6,269.1	-3,354.3	29.7	3,354.5	0.00	0.00	0.00
9,440.0	90.00	179.49	6,269.1	-3,394.3	30.1	3,394.5	0.00	0.00	0.00
9,480.0	90.00	179.49	6,269.1	-3,434.3	30.4	3,434.5	0.00	0.00	0.00
9,520.0	90.00	179.49	6,269.1	-3,474.3	30.8	3,474.5	0.00	0.00	0.00
9,560.0	90.00	179.49	6,269.1	-3,514.3	31.1	3,514.5	0.00	0.00	0.00
9,600.0	90.00	179.49	6,269.1	-3,554.3	31.5	3,554.5	0.00	0.00	0.00
9,640.0	90.00	179.49	6,269.1	-3,594.3	31.9	3,594.5	0.00	0.00	0.00
9,680.0	90.00	179.49	6,269.1	-3,634.3	32.2	3,634.5	0.00	0.00	0.00
9,720.0	90.00	179.49	6,269.1	-3,674.3	32.6	3,674.5	0.00	0.00	0.00
9,760.0	90.00	179.49	6,269.1	-3,714.3	32.9	3,714.5	0.00	0.00	0.00
9,800.0	90.00	179.49	6,269.1	-3,754.3	33.3	3,754.5	0.00	0.00	0.00
9,840.0	90.00	179.49	6,269.1	-3,794.3	33.6	3,794.5	0.00	0.00	0.00
9,880.0	90.00	179.49	6,269.1	-3,834.3	34.0	3,834.5	0.00	0.00	0.00
9,920.0	90.00	179.49	6,269.1	-3,874.3	34.3	3,874.5	0.00	0.00	0.00
9,960.0	90.00	179.49	6,269.1	-3,914.3	34.7	3,914.5	0.00	0.00	0.00
10,000.0	90.00	179.49	6,269.1	-3,954.3	35.0	3,954.5	0.00	0.00	0.00
10,040.0	90.00	179.49	6,269.1	-3,994.3	35.4	3,994.5	0.00	0.00	0.00
10,080.0	90.00	179.49	6,269.1	-4,034.3	35.7	4,034.5	0.00	0.00	0.00
10,120.0	90.00	179.49	6,269.1	-4,074.3	36.1	4,074.5	0.00	0.00	0.00
10,160.0	90.00	179.49	6,269.1	-4,114.3	36.5	4,114.5	0.00	0.00	0.00
10,200.0	90.00	179.49	6,269.1	-4,154.3	36.8	4,154.5	0.00	0.00	0.00
10,240.0	90.00	179.49	6,269.1	-4,194.3	37.2	4,194.5	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wildhorse #18-1844H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.18-T9N-R59W	<b>MD Reference:</b>	WELL @ 5041.1ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wildhorse #18-1844H Pad Sec.18-T9N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wildhorse #18-1844H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-10-11)		

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)	
10,280.0	90.00	179.49	6,269.1	-4,234.3	37.5	4,234.5	0.00	0.00	0.00	
10,320.0	90.00	179.49	6,269.1	-4,274.3	37.9	4,274.5	0.00	0.00	0.00	
10,360.0	90.00	179.49	6,269.1	-4,314.3	38.2	4,314.5	0.00	0.00	0.00	
10,392.2	90.00	179.49	6,269.1	-4,346.5	38.5	4,346.7	0.00	0.00	0.00	
BHL 660'FSL & 660'FEL										

Targets										
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
HARD LINE 660'FSL		0.00	0.00	1.0	-4,346.5	-461.5	1,517,674.43	3,411,271.11	40.744956	-104.015696
- plan misses target center by 4370.9ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)										
- Polygon										
Point 1				1.0	0.0	0.0	1,517,674.43	3,411,271.11		
Point 2				1.0	0.0	1,000.0	1,517,691.19	3,412,270.96		
HARDLINE 660'FNL		0.00	0.00	1.1	-340.0	-400.0	1,521,681.38	3,411,265.46	40.755953	-104.015475
- plan misses target center by 525.0ft at 1.1ft MD (1.1 TVD, 0.0 N, 0.0 E)										
- Polygon										
Point 1				1.1	0.0	0.0	1,521,681.38	3,411,265.46		
Point 2				1.1	0.0	1,000.0	1,521,698.14	3,412,265.31		
BHL 660'FSL & 660'F		0.00	0.00	6,269.1	-4,346.5	38.5	1,517,682.82	3,411,771.05	40.744956	-104.013892
- plan hits target center										
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
6,566.3	6,269.1	7"	7	7-1/2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,144.0	6,107.0	NIOBRARA		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment	
5,748.1	5,748.1	0.0	0.0	KOP	
6,566.3	6,269.1	-520.7	4.6	End of Build	