

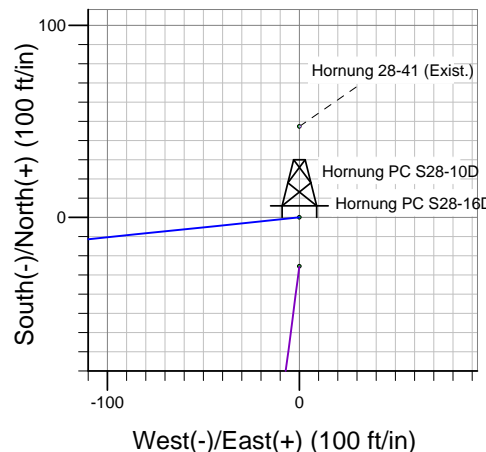
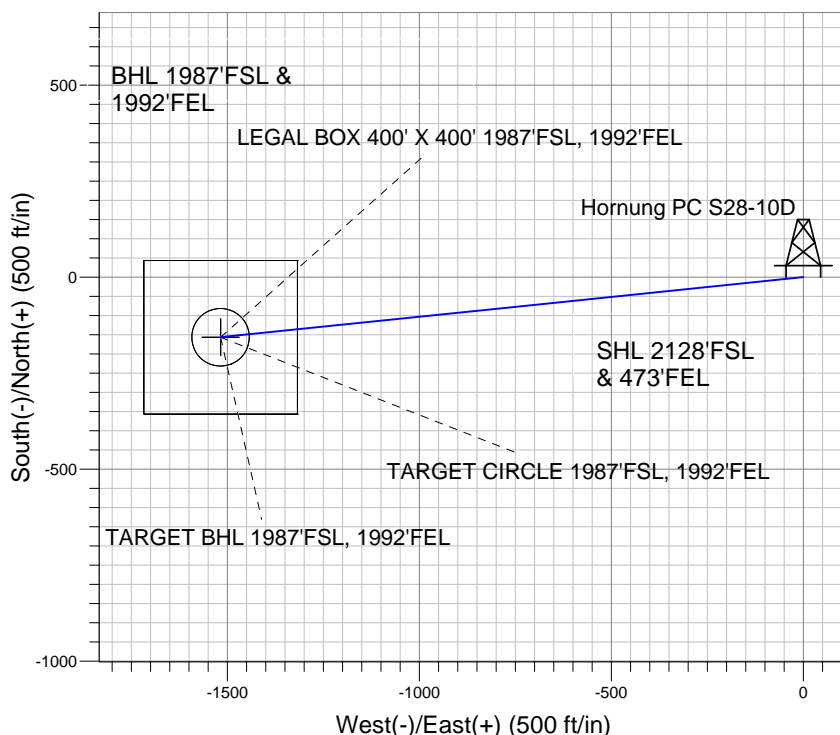
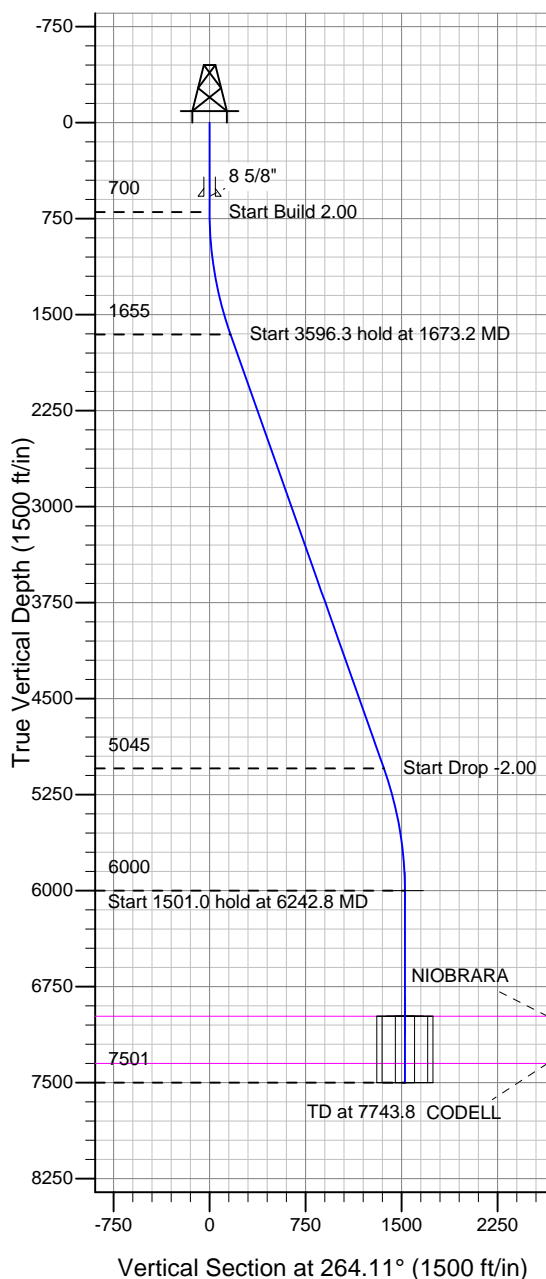
### Well Name: Hornung PC S28-10D

Surface Location: Hornung PC S28-10D Pad Sec.28-T4N-R68W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 5048.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1346276.17	3139386.27	40° 16' 58.260 N	105° 0' 1.404 W	
Original Well Elev WELL @ 5061.0ft (Original Well Elev)						

## NOBLE ENERGY INC WELD COUNTY CO



Hornung PC S28-10D  
Noble Hornung PC S28-10D Plan #1 (06-11-10)  
15:49, June 14 2010



Azimuths to True North  
Magnetic North: 9.11°  
Magnetic Field  
Strength: 53148.7nT  
Dip Angle: 66.95°  
Date: 6/11/2010  
Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1987'FSL, 1992'FEL	6000.0	-156.6	-1517.8	40° 16' 56.712 N	105° 0' 20.988 W	Point
LEGAL BOX 400' X 400' 1987'FSL, 1992'FEL	6981.0	-156.6	-1517.8	40° 16' 56.712 N	105° 0' 20.988 W	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 1987'FSL, 1992'FEL	6981.0	-156.6	-1517.8	40° 16' 56.712 N	105° 0' 20.988 W	Circle (Radius: 75.0)

### 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	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	1673.2	19.46	264.11	1654.6	-16.8	-162.9	2.00	264.11	163.7	
4	5269.5	19.46	264.11	5045.4	-139.8	-1354.9	0.00	0.00	1362.1	
5	6242.8	0.00	0.00	6000.0	-156.6	-1517.8	2.00	180.00	1525.8	TARGET BHL 1987'FSL, 1992'FEL
6	7743.8	0.00	0.00	7501.0	-156.6	-1517.8	0.00	0.00	1525.8	



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.28-T4N-R68W**

**Hornbung PC S28-10D Pad Sec.28-T4N-R68W**

**Hornung PC S28-10D**

**Wellbore #1**

**Plan: Noble Hornung PC S28-10D Plan #1 (06-11-10)**

## **Standard Planning Report**

**14 June, 2010**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hornung PC S28-10D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R68W	<b>MD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Site:</b>	Hornbung PC S28-10D Pad Sec.28-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	Hornung PC S28-10D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Hornung PC S28-10D Plan #1 (06-11-10)		

<b>Project</b>	SEC.28-T4N-R68W, Weld County, Colorado		
<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						Hornbung PC S28-10D Pad Sec.28-T4N-R68W							
Site Position: From: Position Uncertainty:			Lat/Long  0.0 ft			Northing:		1,346,276.19 ft		Latitude:		40° 16' 58.260 N	
						Easting:		3,139,386.27 ft		Longitude:		105° 0' 1.404 W	
						Slot Radius:		"		Grid Convergence:		0.32 °	

Well	Hornung PC S28-10D					
Well Position	+N/-S	0.0 ft	Northing:	1,346,276.17 ft	Latitude:	40° 16' 58.260 N
	+E/-W	0.0 ft	Easting:	3,139,386.27 ft	Longitude:	105° 0' 1.404 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,048.0 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	6/11/2010	9.12	66.95	53,149

<b>Design</b>	Noble Hornung PC S28-10D Plan #1 (06-11-10)			
<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	264.11

<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	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,673.2	19.46	264.11	1,654.6	-16.8	-162.9	2.00	2.00	0.00	264.11	
5,269.5	19.46	264.11	5,045.4	-139.8	-1,354.9	0.00	0.00	0.00	0.00	
6,242.8	0.00	0.00	6,000.0	-156.6	-1,517.8	2.00	-2.00	0.00	180.00	TARGET BHL 1987
7,743.8	0.00	0.00	7,501.0	-156.6	-1,517.8	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hornung PC S28-10D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R68W	<b>MD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Site:</b>	Hornung PC S28-10D Pad Sec.28-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	Hornung PC S28-10D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Hornung PC S28-10D Plan #1 (06-11-10)		

#### 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
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
575.0	0.00	0.00	575.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.40	264.11	720.0	0.0	-0.1	0.1	2.00	2.00	0.00
760.0	1.20	264.11	760.0	-0.1	-0.6	0.6	2.00	2.00	0.00
800.0	2.00	264.11	800.0	-0.2	-1.7	1.7	2.00	2.00	0.00
840.0	2.80	264.11	839.9	-0.4	-3.4	3.4	2.00	2.00	0.00
880.0	3.60	264.11	879.9	-0.6	-5.6	5.7	2.00	2.00	0.00
920.0	4.40	264.11	919.8	-0.9	-8.4	8.4	2.00	2.00	0.00
960.0	5.20	264.11	959.6	-1.2	-11.7	11.8	2.00	2.00	0.00
1,000.0	6.00	264.11	999.5	-1.6	-15.6	15.7	2.00	2.00	0.00
1,040.0	6.80	264.11	1,039.2	-2.1	-20.0	20.2	2.00	2.00	0.00
1,080.0	7.60	264.11	1,078.9	-2.6	-25.0	25.2	2.00	2.00	0.00
1,120.0	8.40	264.11	1,118.5	-3.2	-30.6	30.7	2.00	2.00	0.00
1,160.0	9.20	264.11	1,158.0	-3.8	-36.7	36.9	2.00	2.00	0.00
1,200.0	10.00	264.11	1,197.5	-4.5	-43.3	43.5	2.00	2.00	0.00
1,240.0	10.80	264.11	1,236.8	-5.2	-50.5	50.7	2.00	2.00	0.00
1,280.0	11.60	264.11	1,276.0	-6.0	-58.2	58.5	2.00	2.00	0.00
1,320.0	12.40	264.11	1,315.2	-6.9	-66.5	66.8	2.00	2.00	0.00
1,360.0	13.20	264.11	1,354.2	-7.8	-75.3	75.7	2.00	2.00	0.00
1,400.0	14.00	264.11	1,393.1	-8.7	-84.6	85.1	2.00	2.00	0.00
1,440.0	14.80	264.11	1,431.8	-9.8	-94.5	95.0	2.00	2.00	0.00
1,480.0	15.60	264.11	1,470.4	-10.8	-105.0	105.5	2.00	2.00	0.00
1,520.0	16.40	264.11	1,508.8	-12.0	-115.9	116.6	2.00	2.00	0.00
1,560.0	17.20	264.11	1,547.1	-13.1	-127.4	128.1	2.00	2.00	0.00
1,600.0	18.00	264.11	1,585.3	-14.4	-139.5	140.2	2.00	2.00	0.00
1,640.0	18.80	264.11	1,623.2	-15.7	-152.0	152.8	2.00	2.00	0.00
1,673.2	19.46	264.11	1,654.6	-16.8	-162.9	163.7	2.00	2.00	0.00
1,680.0	19.46	264.11	1,661.0	-17.0	-165.1	166.0	0.00	0.00	0.00
1,720.0	19.46	264.11	1,698.7	-18.4	-178.4	179.3	0.00	0.00	0.00
1,760.0	19.46	264.11	1,736.4	-19.8	-191.6	192.6	0.00	0.00	0.00
1,800.0	19.46	264.11	1,774.1	-21.1	-204.9	206.0	0.00	0.00	0.00
1,840.0	19.46	264.11	1,811.9	-22.5	-218.1	219.3	0.00	0.00	0.00
1,880.0	19.46	264.11	1,849.6	-23.9	-231.4	232.6	0.00	0.00	0.00
1,920.0	19.46	264.11	1,887.3	-25.2	-244.7	246.0	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hornung PC S28-10D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R68W	<b>MD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Site:</b>	Hornung PC S28-10D Pad Sec.28-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	Hornung PC S28-10D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Hornung PC S28-10D Plan #1 (06-11-10)		

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)
1,960.0	19.46	264.11	1,925.0	-26.6	-257.9	259.3	0.00	0.00	0.00
2,000.0	19.46	264.11	1,962.7	-28.0	-271.2	272.6	0.00	0.00	0.00
2,040.0	19.46	264.11	2,000.4	-29.3	-284.4	285.9	0.00	0.00	0.00
2,080.0	19.46	264.11	2,038.1	-30.7	-297.7	299.3	0.00	0.00	0.00
2,120.0	19.46	264.11	2,075.9	-32.1	-311.0	312.6	0.00	0.00	0.00
2,160.0	19.46	264.11	2,113.6	-33.4	-324.2	325.9	0.00	0.00	0.00
2,200.0	19.46	264.11	2,151.3	-34.8	-337.5	339.3	0.00	0.00	0.00
2,240.0	19.46	264.11	2,189.0	-36.2	-350.7	352.6	0.00	0.00	0.00
2,280.0	19.46	264.11	2,226.7	-37.6	-364.0	365.9	0.00	0.00	0.00
2,320.0	19.46	264.11	2,264.4	-38.9	-377.2	379.3	0.00	0.00	0.00
2,360.0	19.46	264.11	2,302.1	-40.3	-390.5	392.6	0.00	0.00	0.00
2,400.0	19.46	264.11	2,339.9	-41.7	-403.8	405.9	0.00	0.00	0.00
2,440.0	19.46	264.11	2,377.6	-43.0	-417.0	419.2	0.00	0.00	0.00
2,480.0	19.46	264.11	2,415.3	-44.4	-430.3	432.6	0.00	0.00	0.00
2,520.0	19.46	264.11	2,453.0	-45.8	-443.5	445.9	0.00	0.00	0.00
2,560.0	19.46	264.11	2,490.7	-47.1	-456.8	459.2	0.00	0.00	0.00
2,600.0	19.46	264.11	2,528.4	-48.5	-470.1	472.6	0.00	0.00	0.00
2,640.0	19.46	264.11	2,566.1	-49.9	-483.3	485.9	0.00	0.00	0.00
2,680.0	19.46	264.11	2,603.8	-51.2	-496.6	499.2	0.00	0.00	0.00
2,720.0	19.46	264.11	2,641.6	-52.6	-509.8	512.5	0.00	0.00	0.00
2,760.0	19.46	264.11	2,679.3	-54.0	-523.1	525.9	0.00	0.00	0.00
2,800.0	19.46	264.11	2,717.0	-55.3	-536.4	539.2	0.00	0.00	0.00
2,840.0	19.46	264.11	2,754.7	-56.7	-549.6	552.5	0.00	0.00	0.00
2,880.0	19.46	264.11	2,792.4	-58.1	-562.9	565.9	0.00	0.00	0.00
2,920.0	19.46	264.11	2,830.1	-59.4	-576.1	579.2	0.00	0.00	0.00
2,960.0	19.46	264.11	2,867.8	-60.8	-589.4	592.5	0.00	0.00	0.00
3,000.0	19.46	264.11	2,905.6	-62.2	-602.6	605.8	0.00	0.00	0.00
3,040.0	19.46	264.11	2,943.3	-63.5	-615.9	619.2	0.00	0.00	0.00
3,080.0	19.46	264.11	2,981.0	-64.9	-629.2	632.5	0.00	0.00	0.00
3,120.0	19.46	264.11	3,018.7	-66.3	-642.4	645.8	0.00	0.00	0.00
3,160.0	19.46	264.11	3,056.4	-67.6	-655.7	659.2	0.00	0.00	0.00
3,200.0	19.46	264.11	3,094.1	-69.0	-668.9	672.5	0.00	0.00	0.00
3,240.0	19.46	264.11	3,131.8	-70.4	-682.2	685.8	0.00	0.00	0.00
3,280.0	19.46	264.11	3,169.6	-71.7	-695.5	699.1	0.00	0.00	0.00
3,320.0	19.46	264.11	3,207.3	-73.1	-708.7	712.5	0.00	0.00	0.00
3,360.0	19.46	264.11	3,245.0	-74.5	-722.0	725.8	0.00	0.00	0.00
3,400.0	19.46	264.11	3,282.7	-75.8	-735.2	739.1	0.00	0.00	0.00
3,440.0	19.46	264.11	3,320.4	-77.2	-748.5	752.5	0.00	0.00	0.00
3,480.0	19.46	264.11	3,358.1	-78.6	-761.8	765.8	0.00	0.00	0.00
3,520.0	19.46	264.11	3,395.8	-80.0	-775.0	779.1	0.00	0.00	0.00
3,560.0	19.46	264.11	3,433.6	-81.3	-788.3	792.5	0.00	0.00	0.00
3,600.0	19.46	264.11	3,471.3	-82.7	-801.5	805.8	0.00	0.00	0.00
3,640.0	19.46	264.11	3,509.0	-84.1	-814.8	819.1	0.00	0.00	0.00
3,680.0	19.46	264.11	3,546.7	-85.4	-828.0	832.4	0.00	0.00	0.00
3,720.0	19.46	264.11	3,584.4	-86.8	-841.3	845.8	0.00	0.00	0.00
3,760.0	19.46	264.11	3,622.1	-88.2	-854.6	859.1	0.00	0.00	0.00
3,800.0	19.46	264.11	3,659.8	-89.5	-867.8	872.4	0.00	0.00	0.00
3,840.0	19.46	264.11	3,697.5	-90.9	-881.1	885.8	0.00	0.00	0.00
3,880.0	19.46	264.11	3,735.3	-92.3	-894.3	899.1	0.00	0.00	0.00
3,920.0	19.46	264.11	3,773.0	-93.6	-907.6	912.4	0.00	0.00	0.00
3,960.0	19.46	264.11	3,810.7	-95.0	-920.9	925.7	0.00	0.00	0.00
4,000.0	19.46	264.11	3,848.4	-96.4	-934.1	939.1	0.00	0.00	0.00
4,040.0	19.46	264.11	3,886.1	-97.7	-947.4	952.4	0.00	0.00	0.00

**Database:** Landmark  
**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.28-T4N-R68W  
**Site:** Hornung PC S28-10D Pad  
 Sec.28-T4N-R68W  
**Well:** Hornung PC S28-10D  
**Wellbore:** Wellbore #1  
**Design:** Noble Hornung PC S28-10D Plan #1 (06-11-10)

**Local Co-ordinate Reference:** Well Hornung PC S28-10D  
**TVD Reference:** WELL @ 5061.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5061.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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)
4,080.0	19.46	264.11	3,923.8	-99.1	-960.6	965.7	0.00	0.00	0.00
4,120.0	19.46	264.11	3,961.5	-100.5	-973.9	979.1	0.00	0.00	0.00
4,160.0	19.46	264.11	3,999.3	-101.8	-987.2	992.4	0.00	0.00	0.00
4,200.0	19.46	264.11	4,037.0	-103.2	-1,000.4	1,005.7	0.00	0.00	0.00
4,240.0	19.46	264.11	4,074.7	-104.6	-1,013.7	1,019.0	0.00	0.00	0.00
4,280.0	19.46	264.11	4,112.4	-105.9	-1,026.9	1,032.4	0.00	0.00	0.00
4,320.0	19.46	264.11	4,150.1	-107.3	-1,040.2	1,045.7	0.00	0.00	0.00
4,360.0	19.46	264.11	4,187.8	-108.7	-1,053.4	1,059.0	0.00	0.00	0.00
4,400.0	19.46	264.11	4,225.5	-110.0	-1,066.7	1,072.4	0.00	0.00	0.00
4,440.0	19.46	264.11	4,263.3	-111.4	-1,080.0	1,085.7	0.00	0.00	0.00
4,480.0	19.46	264.11	4,301.0	-112.8	-1,093.2	1,099.0	0.00	0.00	0.00
4,520.0	19.46	264.11	4,338.7	-114.1	-1,106.5	1,112.4	0.00	0.00	0.00
4,560.0	19.46	264.11	4,376.4	-115.5	-1,119.7	1,125.7	0.00	0.00	0.00
4,600.0	19.46	264.11	4,414.1	-116.9	-1,133.0	1,139.0	0.00	0.00	0.00
4,640.0	19.46	264.11	4,451.8	-118.3	-1,146.3	1,152.3	0.00	0.00	0.00
4,680.0	19.46	264.11	4,489.5	-119.6	-1,159.5	1,165.7	0.00	0.00	0.00
4,720.0	19.46	264.11	4,527.3	-121.0	-1,172.8	1,179.0	0.00	0.00	0.00
4,760.0	19.46	264.11	4,565.0	-122.4	-1,186.0	1,192.3	0.00	0.00	0.00
4,800.0	19.46	264.11	4,602.7	-123.7	-1,199.3	1,205.7	0.00	0.00	0.00
4,840.0	19.46	264.11	4,640.4	-125.1	-1,212.5	1,219.0	0.00	0.00	0.00
4,880.0	19.46	264.11	4,678.1	-126.5	-1,225.8	1,232.3	0.00	0.00	0.00
4,920.0	19.46	264.11	4,715.8	-127.8	-1,239.1	1,245.6	0.00	0.00	0.00
4,960.0	19.46	264.11	4,753.5	-129.2	-1,252.3	1,259.0	0.00	0.00	0.00
5,000.0	19.46	264.11	4,791.3	-130.6	-1,265.6	1,272.3	0.00	0.00	0.00
5,040.0	19.46	264.11	4,829.0	-131.9	-1,278.8	1,285.6	0.00	0.00	0.00
5,080.0	19.46	264.11	4,866.7	-133.3	-1,292.1	1,299.0	0.00	0.00	0.00
5,120.0	19.46	264.11	4,904.4	-134.7	-1,305.4	1,312.3	0.00	0.00	0.00
5,160.0	19.46	264.11	4,942.1	-136.0	-1,318.6	1,325.6	0.00	0.00	0.00
5,200.0	19.46	264.11	4,979.8	-137.4	-1,331.9	1,338.9	0.00	0.00	0.00
5,240.0	19.46	264.11	5,017.5	-138.8	-1,345.1	1,352.3	0.00	0.00	0.00
5,269.5	19.46	264.11	5,045.4	-139.8	-1,354.9	1,362.1	0.00	0.00	0.00
5,280.0	19.26	264.11	5,055.3	-140.1	-1,358.4	1,365.6	2.00	-2.00	0.00
5,320.0	18.46	264.11	5,093.1	-141.5	-1,371.2	1,378.5	2.00	-2.00	0.00
5,360.0	17.66	264.11	5,131.1	-142.7	-1,383.6	1,390.9	2.00	-2.00	0.00
5,400.0	16.86	264.11	5,169.3	-144.0	-1,395.4	1,402.8	2.00	-2.00	0.00
5,440.0	16.06	264.11	5,207.7	-145.1	-1,406.6	1,414.1	2.00	-2.00	0.00
5,480.0	15.26	264.11	5,246.2	-146.2	-1,417.4	1,424.9	2.00	-2.00	0.00
5,520.0	14.46	264.11	5,284.9	-147.3	-1,427.6	1,435.2	2.00	-2.00	0.00
5,560.0	13.66	264.11	5,323.7	-148.3	-1,437.2	1,444.9	2.00	-2.00	0.00
5,600.0	12.86	264.11	5,362.6	-149.2	-1,446.4	1,454.0	2.00	-2.00	0.00
5,640.0	12.06	264.11	5,401.7	-150.1	-1,454.9	1,462.7	2.00	-2.00	0.00
5,680.0	11.26	264.11	5,440.8	-150.9	-1,463.0	1,470.7	2.00	-2.00	0.00
5,720.0	10.46	264.11	5,480.1	-151.7	-1,470.5	1,478.3	2.00	-2.00	0.00
5,760.0	9.66	264.11	5,519.5	-152.4	-1,477.4	1,485.3	2.00	-2.00	0.00
5,800.0	8.86	264.11	5,559.0	-153.1	-1,483.8	1,491.7	2.00	-2.00	0.00
5,840.0	8.06	264.11	5,598.6	-153.7	-1,489.7	1,497.6	2.00	-2.00	0.00
5,880.0	7.26	264.11	5,638.2	-154.2	-1,495.0	1,502.9	2.00	-2.00	0.00
5,920.0	6.46	264.11	5,677.9	-154.7	-1,499.7	1,507.7	2.00	-2.00	0.00
5,960.0	5.66	264.11	5,717.7	-155.1	-1,503.9	1,511.9	2.00	-2.00	0.00
6,000.0	4.86	264.11	5,757.5	-155.5	-1,507.6	1,515.6	2.00	-2.00	0.00
6,040.0	4.06	264.11	5,797.4	-155.8	-1,510.7	1,518.7	2.00	-2.00	0.00
6,080.0	3.26	264.11	5,837.3	-156.1	-1,513.2	1,521.2	2.00	-2.00	0.00
6,120.0	2.46	264.11	5,877.3	-156.3	-1,515.2	1,523.2	2.00	-2.00	0.00

**Database:** Landmark  
**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.28-T4N-R68W  
**Site:** Hornung PC S28-10D Pad  
 Sec.28-T4N-R68W  
**Well:** Hornung PC S28-10D  
**Wellbore:** Wellbore #1  
**Design:** Noble Hornung PC S28-10D Plan #1 (06-11-10)

**Local Co-ordinate Reference:** Well Hornung PC S28-10D  
**TVD Reference:** WELL @ 5061.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5061.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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)
6,160.0	1.66	264.11	5,917.2	-156.5	-1,516.6	1,524.7	2.00	-2.00	0.00
6,200.0	0.86	264.11	5,957.2	-156.5	-1,517.5	1,525.5	2.00	-2.00	0.00
6,240.0	0.06	264.11	5,997.2	-156.6	-1,517.8	1,525.8	2.00	-2.00	0.00
6,242.8	0.00	0.00	6,000.0	-156.6	-1,517.8	1,525.8	2.00	-2.00	0.00
<b>TARGET BHL 1987'FSL, 1992'FEL</b>									
6,280.0	0.00	0.00	6,037.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,320.0	0.00	0.00	6,077.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,360.0	0.00	0.00	6,117.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,157.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,440.0	0.00	0.00	6,197.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,480.0	0.00	0.00	6,237.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,277.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,317.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,357.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,397.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,680.0	0.00	0.00	6,437.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,720.0	0.00	0.00	6,477.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,760.0	0.00	0.00	6,517.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,557.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,840.0	0.00	0.00	6,597.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,880.0	0.00	0.00	6,637.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,920.0	0.00	0.00	6,677.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
6,960.0	0.00	0.00	6,717.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,757.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,040.0	0.00	0.00	6,797.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,080.0	0.00	0.00	6,837.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,120.0	0.00	0.00	6,877.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,160.0	0.00	0.00	6,917.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,200.0	0.00	0.00	6,957.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,223.8	0.00	0.00	6,981.0	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
<b>NIOBRARA - LEGAL BOX 400' X 400' 1987'FSL, 1992'FEL - TARGET CIRCLE 1987'FSL, 1992'FEL</b>									
7,240.0	0.00	0.00	6,997.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,280.0	0.00	0.00	7,037.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,320.0	0.00	0.00	7,077.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,360.0	0.00	0.00	7,117.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,157.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,440.0	0.00	0.00	7,197.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,480.0	0.00	0.00	7,237.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,520.0	0.00	0.00	7,277.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,560.0	0.00	0.00	7,317.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,593.8	0.00	0.00	7,351.0	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
<b>CODELL</b>									
7,600.0	0.00	0.00	7,357.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,640.0	0.00	0.00	7,397.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,680.0	0.00	0.00	7,437.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,720.0	0.00	0.00	7,477.2	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00
7,743.8	0.00	0.00	7,501.0	-156.6	-1,517.8	1,525.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hornung PC S28-10D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R68W	<b>MD Reference:</b>	WELL @ 5061.0ft (Original Well Elev)
<b>Site:</b>	Hornung PC S28-10D Pad Sec.28-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	Hornung PC S28-10D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Hornung PC S28-10D Plan #1 (06-11-10)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
TARGET BHL 1987'F:	0.00	0.00	6,000.0	-156.6	-1,517.8	1,346,111.05	3,137,869.45	40° 16' 56.712 N	105° 0' 20.988 W
- plan hits target									
- Point									
LEGAL BOX 400' X 400'	0.00	0.00	6,981.0	-156.6	-1,517.8	1,346,111.04	3,137,869.45	40° 16' 56.712 N	105° 0' 20.988 W
- plan hits target									
- Rectangle (sides W400.0 H400.0 D520.0)									
TARGET CIRCLE 1987'F:	0.00	0.00	6,981.0	-156.6	-1,517.8	1,346,111.04	3,137,869.45	40° 16' 56.712 N	105° 0' 20.988 W
- plan hits target									
- Circle (radius 75.0)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
575.0	575.0	8 5/8"		8-5/8	12-1/4

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
7,223.8	6,981.0	NIOBRARA			0.00	
7,593.8	7,351.0	CODELL			0.00	